AISSMS

INSTITUTE OF INFORMATION TECHNOLOGY

ADDING VALUE TO ENGINEERING

# DEPARTMENT OF COMPUTER ENGINEERING

A

WEB TECHNOLOGY MINI PROJECT

**ON**

# LMS PORTAL

**BY**


| | | |
|---|---|---|
| 34 | Hardik Kotangale | T190254282 |
| 45 | Salonee Pathan | T190254312 |


**Under the guidance of**

**Mrs. Minal Nerkar**


**DEPARTMENT OF COMPUTER ENGINEERING**

**ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S**

**INSTITUTE OF INFORMATION TECHNOLOGY**

**PUNE 411041**

AISSMS
INSTITUTE OF INFORMATION TECHNOLOGY
ADDING VALUE TO ENGINEERING

## DEPARTMENT OF COMPUTER ENGINEERING

# CERTIFICATE

This is to certify that the project report on

**"LMS PORTAL"**

Submitted by

| | | |
|---|---|---|
| 34 | Hardik Kotangale | T190254282 |
| 45 | Salonee Pathan | T190254312 |

is a bonafide student of this institute and the work has been carried out by him/her under the supervision of **Mrs. Minal Nerkar** and is approved for the partial fulfilment of the Department of Computer Engineering, AISSMS IOIT.

Mrs. Minal Nerkar
Guide
(Department of Computer Engineering)

Dr. S. N. Zaware
Head of
Department
(Department of Computer Engineering)

# ABSTRACT

An LMS (Learning Management System) portal is a digital platform that provides a centralized location for managing and delivering educational courses and materials. The portal allows educators to create, organize and manage learning content, track student progress, and evaluate outcomes. It also enables students to access course materials, participate in interactive activities, and receive feedback from instructors. Key benefits of an LMS portal include improved efficiency, accessibility, and engagement. As technology continues to play an increasingly important role in education, the LMS portal is becoming an essential tool for educators and learners alike.

# ACKNOWLEDGEMENT

The successful completion of this mini project report would not have been possible without the support and assistance of many individuals and organizations. I feel immensely blessed to have gotten this during the course of my program. I would like to take this opportunity to offer my earnest admiration to each and every one of them. I express my sentiment of gratitude to Mr. Vivek who has been a continuous source of inspiration as my intern trainer. Without his constant guidance and suggestions, this report would have been nowhere near completion. My gratitude for his trust and generosity goes beyond words.

I am indebted and thankful to my learned and revered Dr. S. N. Zaware, Head of Department of Computer science and Engineering, for her encouraging support and providing a meticulous platform to learn.

I owe my deepest gratitude to Internal Guide Prof. Mrs. Minal Nerkar for her upbeat personality, kindness, encouraging support and willingness to help, have tangibly and greatly improve the quality of my internship report and brought up to its present status. Thanks classmates who helped me directly or indirectly to accomplish my work. Finally, I thank all my teachers, who were the people, who prepared us for this endeavour. I owe you all my success.

# Table of Contents

# CHAPTER 1

# INTRODUCTION

## 1. Title:

The internship I applied for was based on Full-Stack Web Development where I had to developed LMS Web Portal.

## 2. Problem statement:

Developed a website for Job Searching, build full website using HTML CSS JavaScript, JSP, Firebase, ReactJS, etc.

## 3. Objectives/ Motivation:

The purpose of applying for the Web Developer role was to learn how a webpage is built and how it is made interactive.

The motivation for applying to this internship was to impart the knowledge I gained while learning web development, which motivated me to understand the real-world implementation as a Web Developer.

## 4. Scope and rationale of the study Methodological details:

**Introduction to the Role**

A Web developer is responsible for developing webpages for the internet. Due to the fragmentation of this ecosystem, a Web developer must pay special attention to the application's compatibility with multiple browsers. They must also have a strong understanding of the patterns and practices that revolve around such a platform.

**Responsibilities as a Web Developer**

- Writing clean and efficient codes for Web applications.
- Monitoring the performance of live pages and work on optimizing them at the code level.
- Identifying and resolving inefficient code, rectifying bugs and enhancing application performance.
- Performing unit and instrumentation tests on code.
- Staying up to date with new frameworks, stacks, and protocols

## 5. System Requirement Specification

**Software requirements:**

- Operating System: Windows
- Coding Language: HTML, CSS, Bootstrap, JavaScript ,ReactJS
- Text Editor: VS Code
- Backend – Firebase

**Hardware Requirements:**

- Processor: Intel core i5
- Memory: 8GB RAM
- Hard Disk: 1TB

# CHAPTER 2

# TECHNOLOGY

Various tools and technology were used during our internship Some of them are listed below:

## HTML5

HTML is a markup language used for structuring and presenting content on the World Wide Web. It is the fifth and final major HTML version that is a World Wide Web Consortium recommendation. The current specification is known as the HTML Living Standard. It is maintained by the Web Hypertext Application Technology Working Group (WHATWG), a consortium of the major browser vendors (Apple, Google, Mozilla, and Microsoft).

HTML5 includes detailed processing models to encourage more interoperable implementations; it extends, improves, and rationalizes the markup available for documents and introduces markup and application programming interfaces (APIs) for complex web applications. For the same reasons, HTML5 is also a candidate for cross- platform mobile applications because it includes features designed with low-powered devices in mind.

## CSS3

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 or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

## JavaScript

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard. It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles. It has application programming interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM).

The ECMAScript standard does not include any input/output (I/O), such as networking, storage, or graphics facilities. In practice, the web browser or other runtime system provides JavaScript APIs for I/O. JavaScript engines were originally used only in web browsers, but are now core components of some servers and a variety of applications.

## ReactJS

ReactJS is a JavaScript library for building user interfaces that was developed by Facebook. It allows developers to build reusable UI components that can be used to create complex and interactive web applications. Here are some key features of ReactJS:

- Component-based architecture: ReactJS uses a component-based architecture, which allows developers to build modular, reusable UI components that can be used across different parts of an application.

- Virtual DOM: ReactJS uses a virtual DOM (Document Object Model) to update the UI efficiently. The virtual DOM is a lightweight copy of the actual DOM, and changes are made to the virtual DOM first before being updated in the actual DOM. This approach minimizes the number of updates required and improves application performance.

- JSX syntax: ReactJS uses a syntax extension called JSX, which allows developers to write HTML-like code within their JavaScript code. This makes it easier to create and manage UI components.

- Unidirectional data flow: ReactJS uses a unidirectional data flow, which means that data flows in a single direction from parent components to child components. This simplifies the management of application state and makes it easier to debug and maintain code.

- React Native: ReactJS can be used with React Native to build native mobile applications for iOS and Android. This allows developers to use a single codebase to build both web and mobile applications.

- Large community: ReactJS has a large and active community of developers, which means that there are many resources available for learning and problem-solving. There are also many third-party libraries and tools available for ReactJS that can help developers to build applications faster and more efficiently.

## Firebase

Firebase is a cloud-based mobile and web application development platform that provides developers with a wide range of tools and services to build, manage, and deploy their applications. It was acquired by Google in 2014 and has since become one of the most popular and widely used development platforms in the industry.

Firebase provides a variety of services, including real-time database, cloud storage, hosting, authentication, messaging, and analytics. The real-time database allows developers to store and sync data in real-time between their clients and servers, while the cloud storage service enables them to store and access files, such as images and videos, from the cloud. The hosting service allows developers to deploy their web applications quickly and easily, and the authentication service provides secure user authentication with popular identity providers like Google, Facebook, and Twitter.

Firebase's messaging service allows developers to send targeted push notifications to their users, while the analytics service provides insights into user behavior and app performance, allowing developers to optimize their applications and improve user engagement.

One of the main benefits of Firebase is that it integrates well with other Google products, such as Google Cloud Platform and Google Analytics, providing developers with a comprehensive and unified platform for building and managing their applications.

## Features

- Real-time Database: Firebase provides a real-time database that allows developers to store and sync data in real-time between their clients and servers. This feature is particularly useful for applications that require real-time updates, such as chat apps or collaborative tools.

- Cloud Storage: Firebase's cloud storage service allows developers to store and access files, such as images and videos, from the cloud. It provides secure and scalable storage with fast upload and download speeds.

- Real-time Database: Firebase provides a real-time database that allows developers to store and sync data in real-time between their clients and servers. This feature is particularly useful for applications that require real-time updates, such as chat apps or collaborative tools.

- Cloud Storage: Firebase's cloud storage service allows developers to store and access files, such as images and videos, from the cloud. It provides secure and scalable storage with fast upload and download speeds.

- Hosting: Firebase's hosting service allows developers to deploy their web applications quickly and easily. It provides fast and secure hosting with a global CDN and automatic SSL certificates.

- Authentication: Firebase's authentication service provides secure user authentication with popular identity providers like Google, Facebook, and Twitter. It supports email and password authentication as well as custom authentication mechanisms.

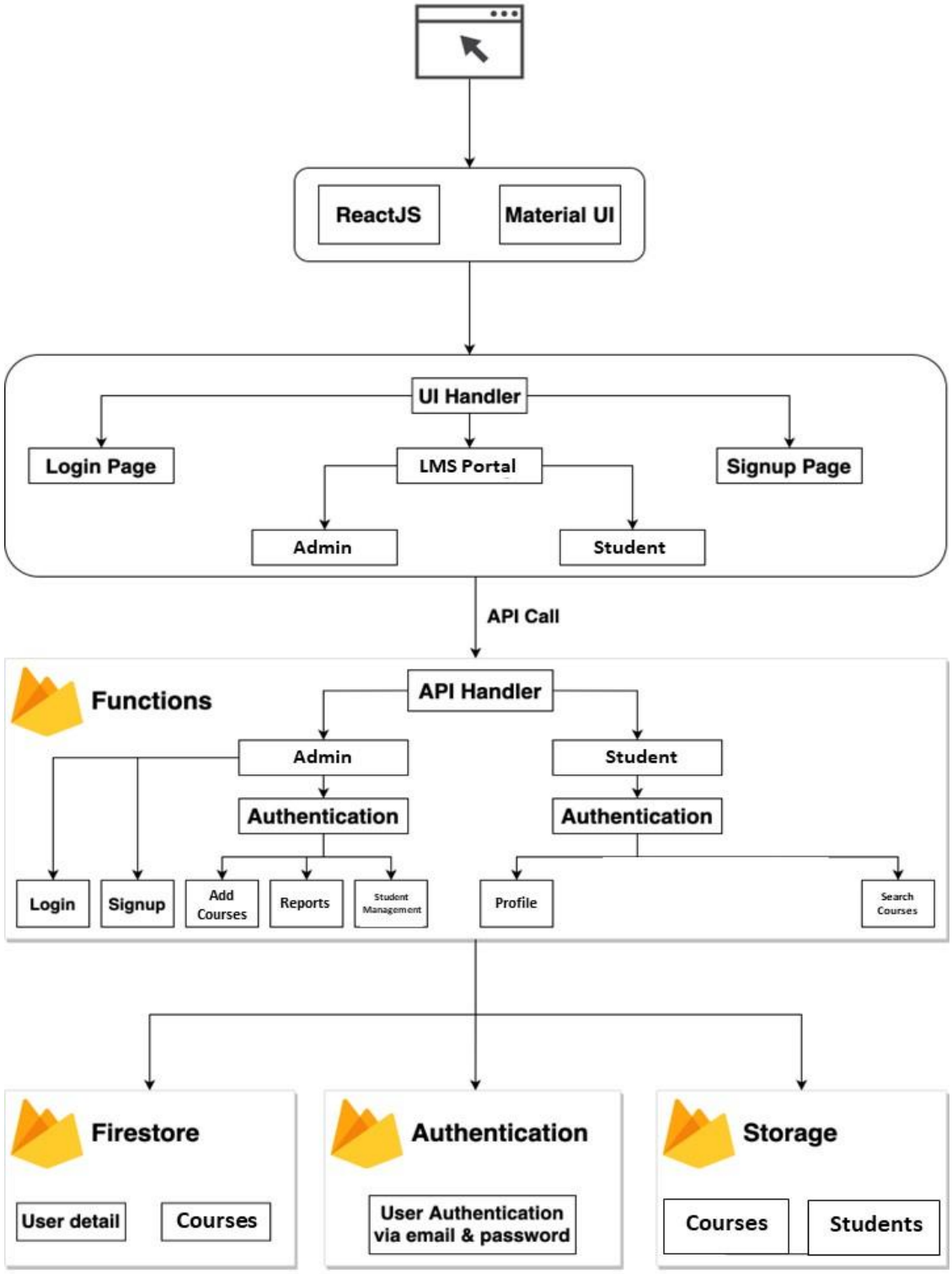
- Cloud Functions: Firebase's cloud functions allow developers to run server-side code in response to events triggered by their applications. This feature enables developers to automate tasks, such as sending emails or processing payments.

- Cloud Messaging: Firebase's cloud messaging service allows developers to send targeted push notifications to their users. It supports iOS, Android, and web notifications and provides advanced targeting and segmentation capabilities.

- Analytics: Firebase's analytics service provides insights into user behavior and app performance. It allows developers to track user engagement, retention, and conversion rates and provides real-time reports and alerts.

- Performance Monitoring: Firebase's performance monitoring service allows developers to monitor their application's performance and identify and fix performance issues. It provides detailed reports on app startup time, network latency, and other key performance metrics.

- Test Lab: Firebase's test lab allows developers to test their applications on real devices in the cloud. It provides automated testing and helps developers identify and fix issues before they affect users.



# CHAPTER 3

## PROGRAM OUTCOME

Web development really is so fascinating and at the same time tough to me, I will learn and understand several goals with interest through internship training as if after studying I could understand web development and it is so interesting then all the other languages to me. During my internship period, I solved the CSS and other problems. Clean software eliminates unforeseen errors that can impact the load of site. Automated website monitoring solutions frequently enable developers to view the websites of their customers in real time and set alerts to notify them when potential issues arise. Not only does this allow developers to recognize an issue before the customer does it, it also gives them the opportunity to address it in many situations before the problem affects the business of the customer.

- Knowing practical knowledge about programming.
- Increase communication skill with other.
- Gain essential background knowledge.
- Works well with others.
- Develop research skills.
- Improve administrative skill.
- Increase capability for solving the problem

# CHAPTER 4

# RESULTS

Github Project Link: https://github.com/HardikKotangale/LMS-Portal.git

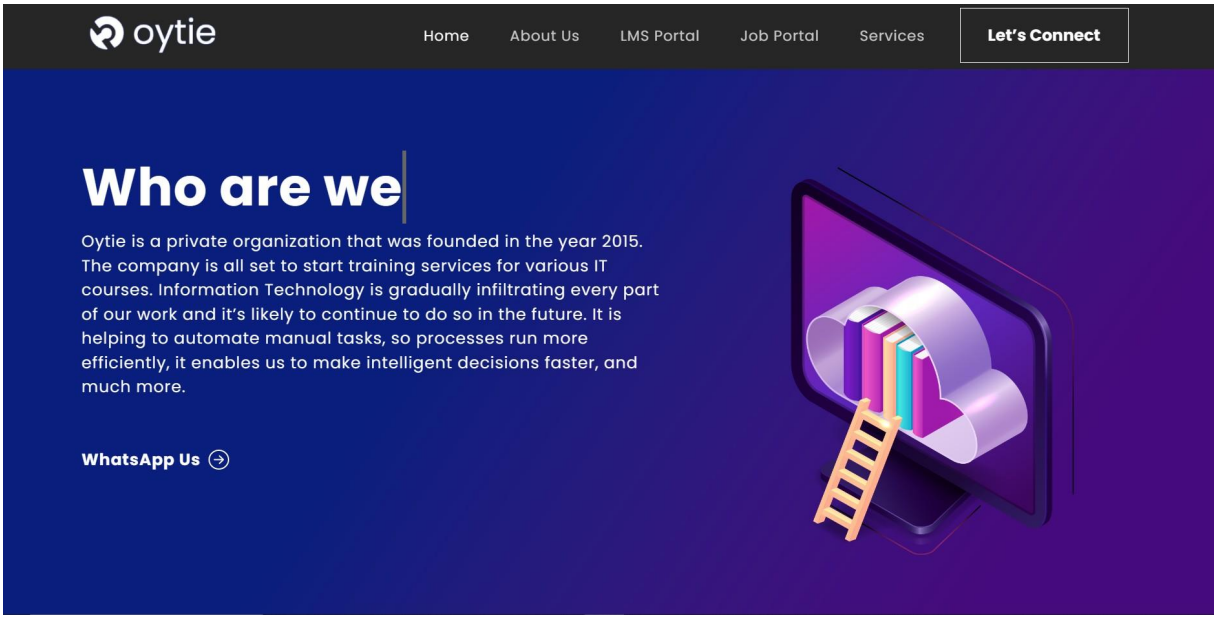



**Figure 7.1:** LMS Home Page

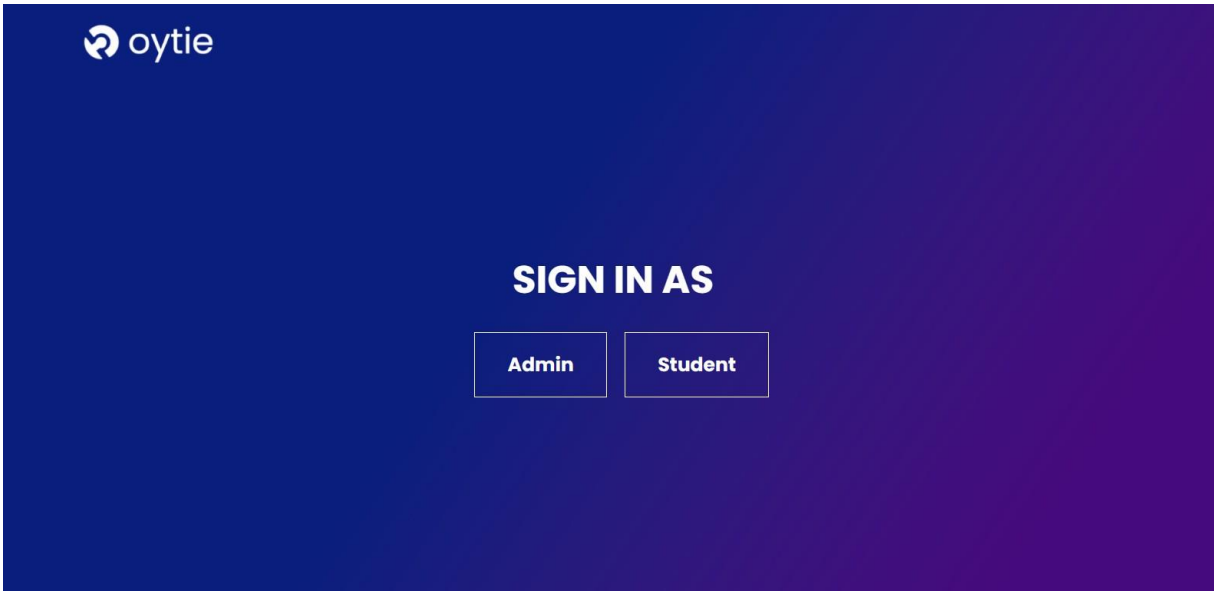



**Figure 7.2:** LMS Portal

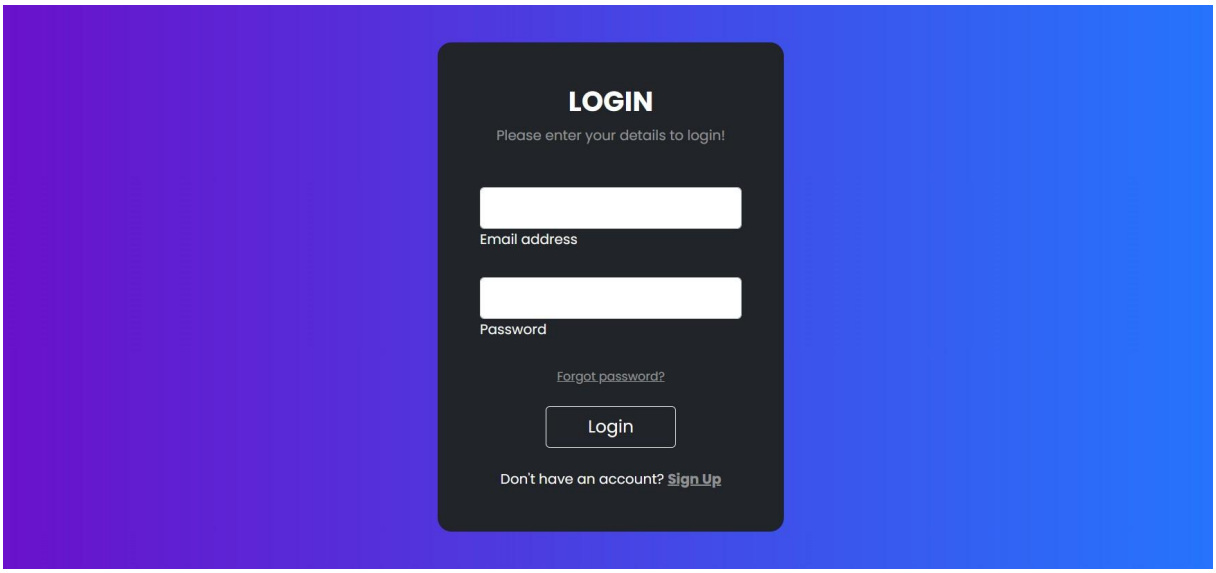



**Figure 7.3:** SignIn Page for Admin

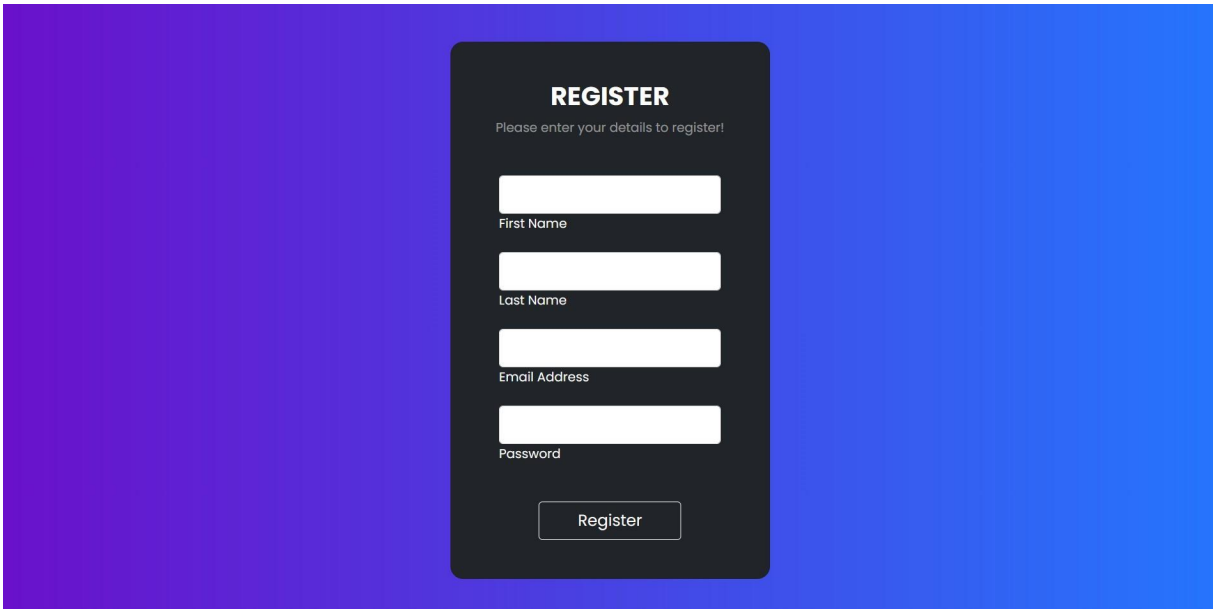



**Figure 7.4:** SignUp Page for Admin

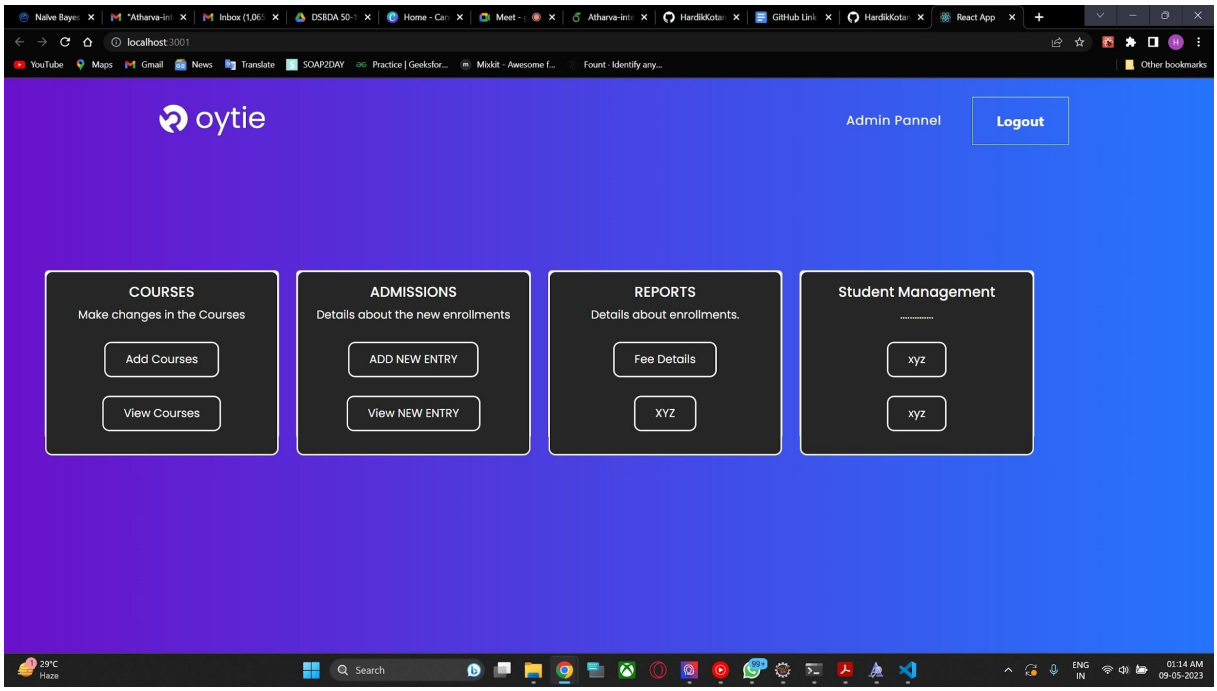



**Figure 7.6:** Admin Panel

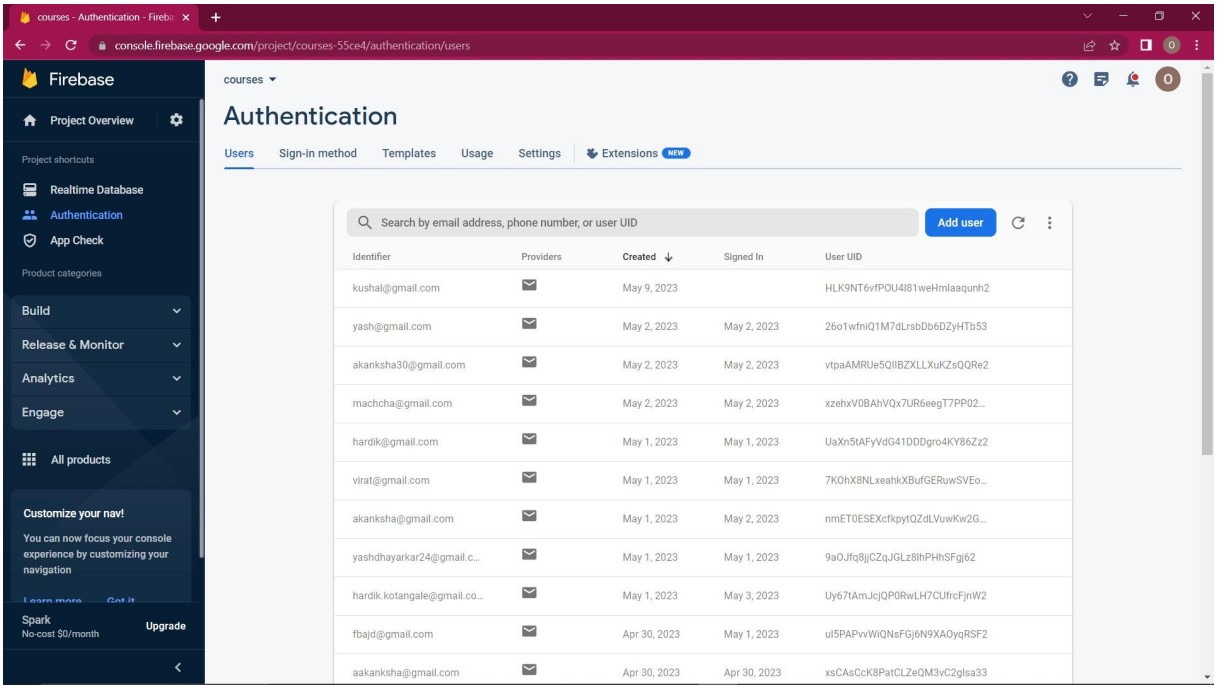



**Figure 7.5:** Authentication Details

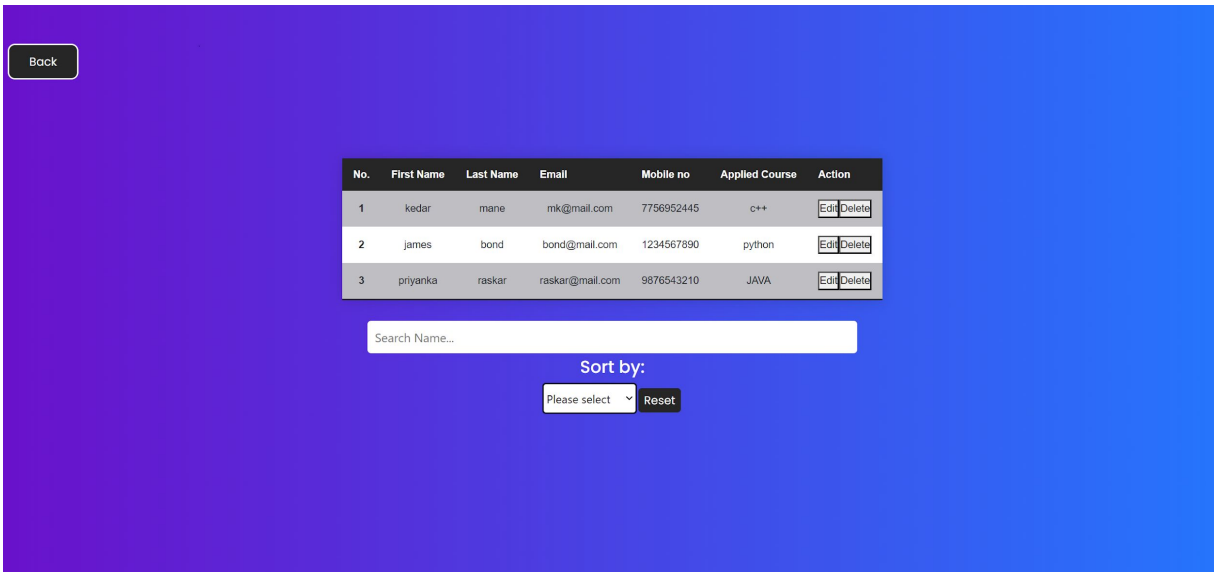



**Figure 7.7:** Admin Dashboard

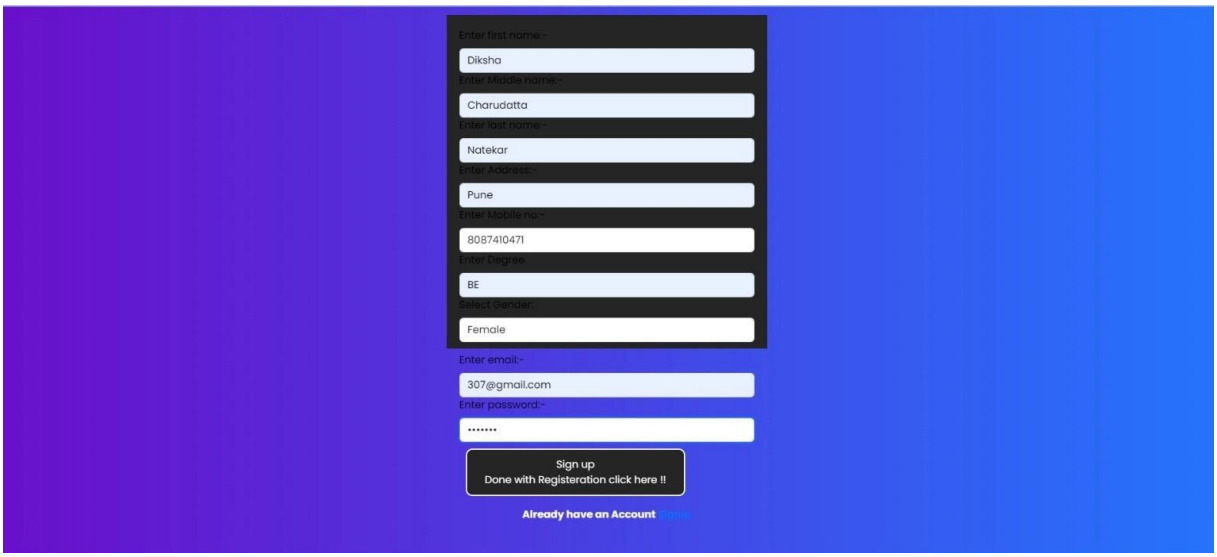



**Figure 7.8:** SignUp Page for Student

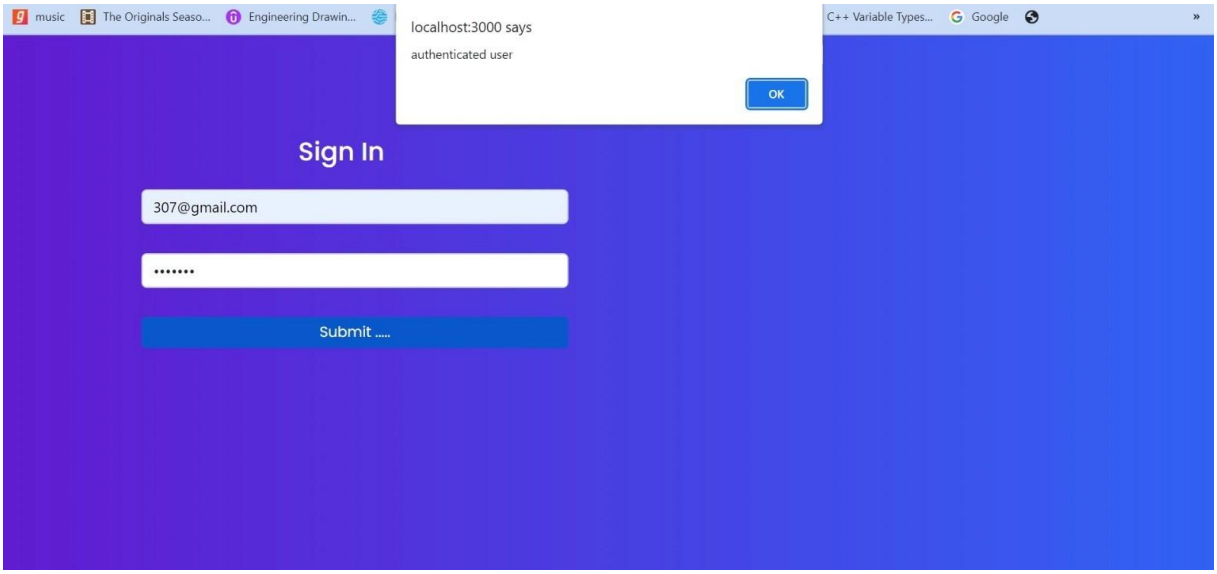



**Figure 7.9:** SignIn page for student

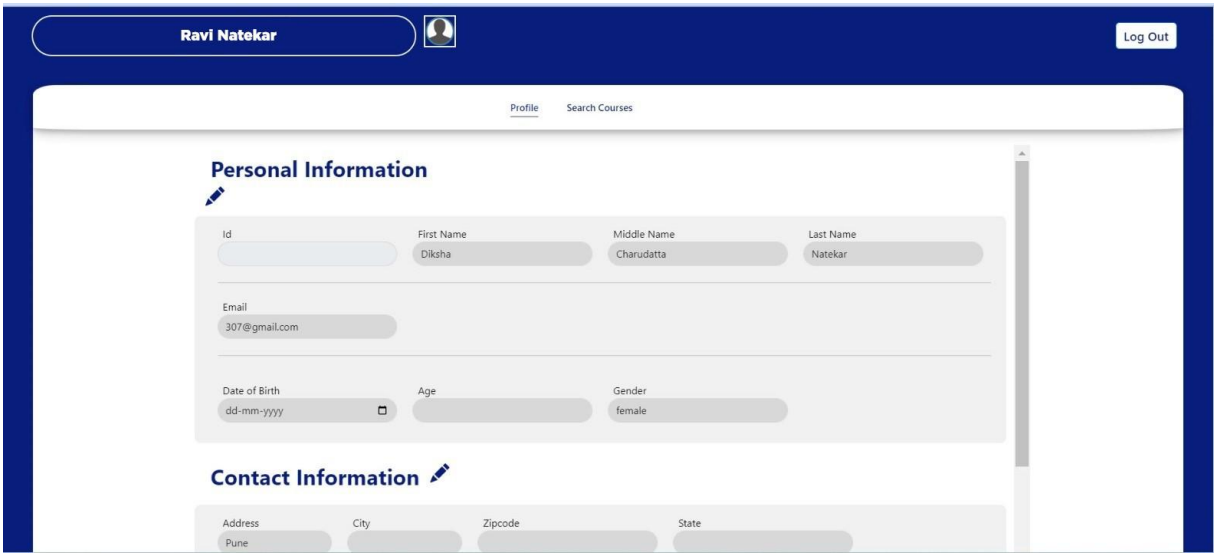



**Figure 7.10:** Student Profile

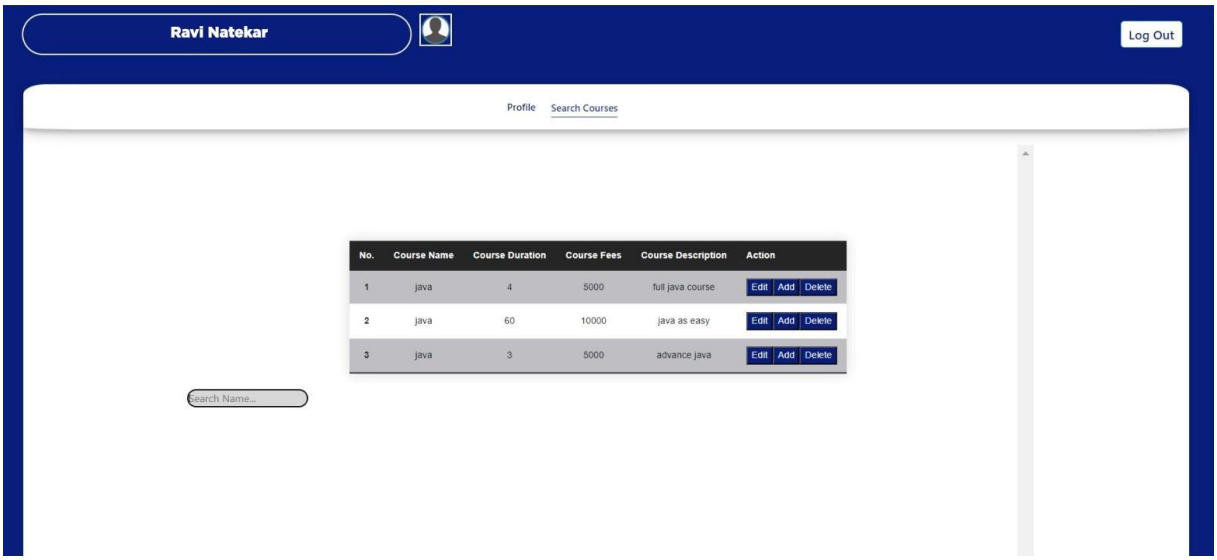



**Figure 7.11:** Student Course Details

# CHAPTER 5

## WORK REPORT

| Sr. No. | Date | Week | Content Covered |
|---|---|---|---|
| 1 | 23/01/23 - 28/01/23 | Week 1 | Introduction to the company and orienta tion |
| 2 | 29/01/23 - 04/02/23 | Week 2 | Understanding the Project |
| 3 | 5/02/23 - 12/02/23 | Week 3 | Research on Project Topic and Technologies associated with it |
| 4 | 13/02/23 - 20/02/23 | Week 4 | Acquiring fundamental knowledge of React |
| 5 | 21/02/23 - 28/02/23 | Week 5 | Develop a home page for a Learning Management System (LMS) using React. |
| 6 | 01/03/23 - 7/03/23 | Week 6 | Implementing the signup and login functionality for both Admins and Student's portal using Redux. |
| 7 | 8/03/23 - 3/04/23 | Week 7,8,9 | Developing the Admin module and Student module with Firebase integration. |
| 8 | 4/04/23 - 12/04/23 | Week 10 | Leave Due to Insem Exams . |
| 9 | 13/04/23 - 20/04/23 | Week 11 | Consolidating all modules into a unified module. |
| 10 | 21/04/23 - 28/04/23 | Week 12 | Testing and validation and Model De- ployment |
| 11 | 29/05/23 - 4/05/23 | Week 13 | Documentation and of Presentation Project. |

# CHAPTER 6

# CONCLUSION

In this internship, I have learned several valuable skills and gained significant experience in developing a React Learning Management System (LMS) portal with Firebase integration. Some key learning points from this internship may include:

Proficiency in React: I have acquired a strong understanding of React and its core concepts, such as component-based architecture, state management, and lifecycle methods. I have gained hands-on experience in developing React components, handling events, and managing the application's state.

Backend Development with Firebase: I have learned how to integrate Firebase as the backend platform for the LMS portal. I have gained knowledge of Firebase's real-time database, authentication services, and cloud functions, and have successfully implemented features such as data synchronization, user management, and server-side logic.

UI/UX Design: Through developing the LMS portal, I have gained insights into UI/UX design principles and best practices. I have learned how to create an intuitive and user- friendly interface, focusing on aspects such as navigation, information hierarchy, forms, and responsiveness.

# CHAPTER 7

## REFERENCES


1 ***Prospects and challenges of learning management systems in Higher Education.***

**Available at:** https://www.researchgate.net/publication/348271407_Prospects_and_Challenges_of_Learning_Management_Systems_in_Higher_Education (Accessed: 10 May 2023).

2 **Anon (2023) *Files.eric.ed.gov*.**
**Available at:** https://files.eric.ed.gov/fulltext/EJ1355831.pdf (Accessed: 10 May 2023).

3 **React Web Development: Firebase connectivity**

4 **Web Development - CS229 -Stanford School of Engineering**

5 **The React Developer course covering Redux, Hooks, and GraphQL.**