

Project Report



Industrial Internships 2024



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National Educational Alliance for Technology (NEAT)
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Campus Recruitment
Training Program

**Internship Topic: CLOUD BASED FULL STACK
DEVELOPMENT WITH AI & ML INTEGRATION USING MERN**

Mentor: Ashraf Ali Sir

NAME: RAJASREE LAHA	ROLL: CSE214002
REGISTRATION NO.:	2105 OF 2021-2022
SEMESTER: 7TH	YEAR: 4TH
PROGRAM: B. TECH	DEPARTMENT: COMPUTER SCIENCE AND
ENGINEERING	
UNIVERSITY: ALIAH UNIVERSITY BATCH NAME: SIP-FSMERN-JULY-B1-2024	
COMPANY/INSTITUTE NAME: ARDENT COMPUTECH PVT. LTD.	
LOC: MODULE NO 132, GROUND FLOOR, SDF BUILDING, SECTOR V, SALT LAKE, OPPOSITE TO CTS BUILDING	



Acknowledgment

I would like to express my sincere gratitude to **Ashraf Ali Sir** for his valuable guidance and support throughout this internship. His expertise and insights have been instrumental in successfully completing the internship and projects.

I would also like to thank Ardent Computech Pvt. Ltd. for providing me the opportunity to come across such a mentor like Sir, and also for providing this internship opportunity.

This comprehensive documentation provides a detailed overview of the tasks & projects throughout the internship, serving as a valuable resource for understanding the intricacies of the project.

CONTENTS

- INTRODUCTION
- PROJECTS DURING INTERNSHIP PERIOD
- FINAL PROJECT
- IMPORTANCE OF THIS INTERNSHIP
- FUTURE SCOPE
- CONCLUSION

Introduction:

This report documents the work undertaken during my internship at Ardent Computech Pvt Ltd, which commenced on July 4th, 2024, under the guidance of my mentor, Ashraf Ali. The focus of my internship has been on "Cloud-Based Full Stack Development with AI & ML Integration Using MERN."

The introduction is divided into two subsections:

- 1. Projects During Internship Period**
- 2. Final Project**

Projects During Internship Period

During the period of my internship, I had the opportunity to work on a variety of projects that helped me build and enhance my skills in MERN stack development. The projects include:

- Menu Card
- QR Code
- Billing Software
- Card Website
- Essay
- Gate Pass with QR
- Scan QR Speak Pass
- React Form
- Rank Card
- Resume
- AddToCart
- employee gate pass QR

These projects provided a comprehensive understanding of various aspects of web development and helped in honing my technical skills.

Final Project

The final project of my internship was the development of an "**Online Exam Panel (OEP)**." This project encapsulates the learning and skills acquired throughout the internship, focusing on creating a robust, cloud-based application integrated with AI & ML capabilities using the MERN stack. The OEP project aims to streamline the online examination process, providing an efficient platform for both students and administrators.

Projects During Internship Period

During my internship, I worked on a variety of projects that significantly enhanced my skills in MERN stack development. From creating user interfaces in projects like the **Menu Card** and **QR Code** applications to managing backend processes in the **Billing Software** and **Card Website** projects, I gained valuable experience across the MERN stack.

I also worked on specialized projects such as the **Gate Pass with QR** and **Scan QR Speak Pass**, where I integrated advanced features like QR code scanning and voice commands. Additionally, developing a **React Form** and a **Rank Card** application further honed my skills in building dynamic, responsive web applications. Each project contributed to a deeper understanding of the technologies and best practices within the MERN stack.


📄 Essay

- **Description:** A simple web page that includes essay on “Unemployment”.
- **Tech stack:** React.js
- **Links:**
<https://github.com/Rajasree460/ardent-internship-home-assignments/tree/main/essay>

● Images:


Essay

Unemployment




Unemployment is a big problem that affects many people around the world. It happens when people who can and want to work cannot find jobs. Unemployment can cause serious problems for individuals, families, and communities, leading to money troubles, social issues, a lower quality of life & most importantly depression, anxiety etc psychological affects.

Reason




1. **Economic Downturns:** Recessions and economic slowdowns lead to decreased demand for goods and services, resulting in layoffs and reduced hiring.
2. **Echnological Advancements:** Automation and new technologies can render certain jobs obsolete, displacing workers who may not have the skills to transition to new roles.
3. **Globalization:** The shifting of jobs to countries with cheaper labor can result in job losses in domestic markets.
4. **Education and Skills Mismatch:** There is often a gap between the skills possessed by the workforce and the skills required by employers, leading to unemployment.
5. **Structural Changes:** Changes in industry composition, such as the decline of manufacturing jobs and the rise of service-oriented roles, can contribute to unemployment.

Solution



- I. **Economic Stimulus:** Governments can implement policies to stimulate economic growth, such as increasing public spending, reducing taxes, and providing incentives for businesses to hire.
- II. **Education and Training Programs:** Investing in education and vocational training can help workers acquire the skills needed in the current job market, reducing the skills mismatch.
- III. **Technological Adaptation Programs:** Initiatives to help workers transition into new roles created by technological advancements can mitigate job losses due to automation.
- IV. **Support for Small and Medium Enterprises (SMEs):** Providing support and incentives for SMEs can foster job creation, as these businesses are often significant employers.
- V. **Social Safety Nets:** Implementing robust social safety nets, such as unemployment benefits and job search assistance, can support individuals while they seek new employment opportunities.



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📄 Resume

- **Description:** A simple web page that includes One’s Resume.
- **Tech stack:** React.js

- **Links:**

<https://github.com/Rajasree460/ardent-internship-home-assignments/tree/main/resume>

- **Images:**

The image shows a video player displaying a resume for Rajasree Laha. The resume content is as follows:

Header: Rajasree Laha | +91 9051485696 | laharajasree121@gmail.com | Westbengal,India

Objective: To excel as a Developer in a renowned IT company, leveraging professional guidance to grow while contributing to the company's success with dedication and determination.

Coursework:

- Data Structure And Algorithms
 - Operating systems
 - DBMS
- Design and Analysis Algorithm
- Object oriented Programming
 - Digital Logic
 - Compiler Design
- Web Development
 - Data Science

Skills: C | JavaScript | HTML/CSS | MySQL | Java | OOPs | Python | R | Lex | Shell programming | Bootstrap | GitHub | Git | Linux | Yacc | Microsoft Office | Basic Mentorship | PL/SQL | Oracle SQL | Problem Solving(Real World)

Honors:

- Appreciated for [Contiguous Academic excellence](#)
- Awarded for cracking [WBEE](#) and it's rank [Madhyamik](#) and [HS](#) result.
- Received award in [Math Program and quiz 2016](#).
- Received many [Academic awards](#), till HS.

Projects:

- Project 1: [CreativeWear](#)**
Contributed to the Web Dev and Front End part.
Designed the Login page, SignUp Page and all Loaders.
Tech Used - [ReactJs, HTML, CSS](#).
- Project 2: [Tic Tac Toe](#)**
A common and simple game tic-tac-toe, where players click squares to add X or O, taking turns, avoiding already marked squares, and the game ends with a win or a draw.
Tech Used - [JavaScript, HTML, CSS](#).
- Project 3: [Netflix Clone](#)**
A simple, responsive, basic landing page on a Gym Center with pricing and compare planes section to give a more clear view.
Tech Used - [HTML, CSS](#).

Experience:

- Oasis Infobyte: [Web Development Intern](#)**
Designed the [basic Landing Page](#), a [Temperature Converter](#) and [Personal Portfolio](#) using [HTML, CSS](#) and [JavaScript](#).
- Bharat Intern: [Web Development Intern](#)**
Designed the basic [Netflix Homepage](#), a [Temperature Converter](#) and [Personal Portfolio](#) using [HTML, CSS](#) and [JavaScript](#).
- [Open Source Contributor](#)**
Designed the basic [Netflix Homepage](#), a [Temperature Converter](#) and [Personal Portfolio](#) using [HTML, CSS](#) and [JavaScript](#).
- [Open Source Contributor](#)**
Made over **923** total contributions and **444** total commits.

Achievements:

- Selected for [Innovate 360 Internship Program in XceedIQ](#).
- Attempted to solve [Arsh Goyal's 6 Companies 30 days challenge Sheet](#) and [solved 85 percentage](#) of questions successfully.
- Attended [3 days exclusive DSA Bootcamp\(Workshop\) in 2023](#) with 4 inspiring mentors.
- Solved [150+ LeetCode problems](#).
- Secured [4k Rank among 180K Candidates in WBEE 2021](#).
- Consecutive [School Grade Till 2021: EX](#).

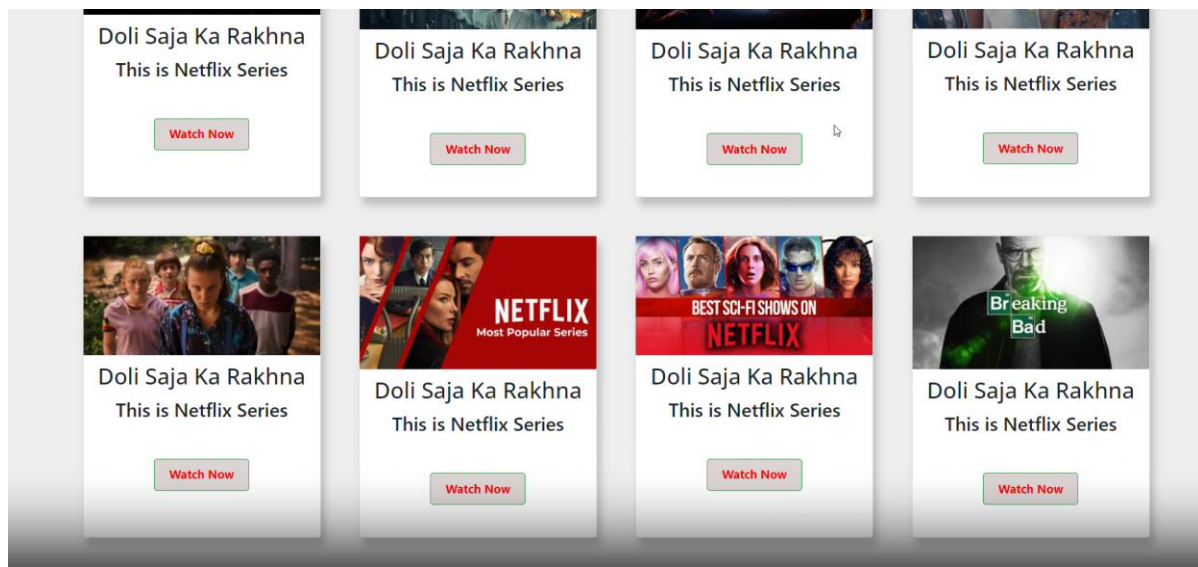
📄 Card Website

- **Description:** A simple web page made by cards.
- **Tech stack:** React.js, BootStrap, CSS, html, MUI
- **Links:**

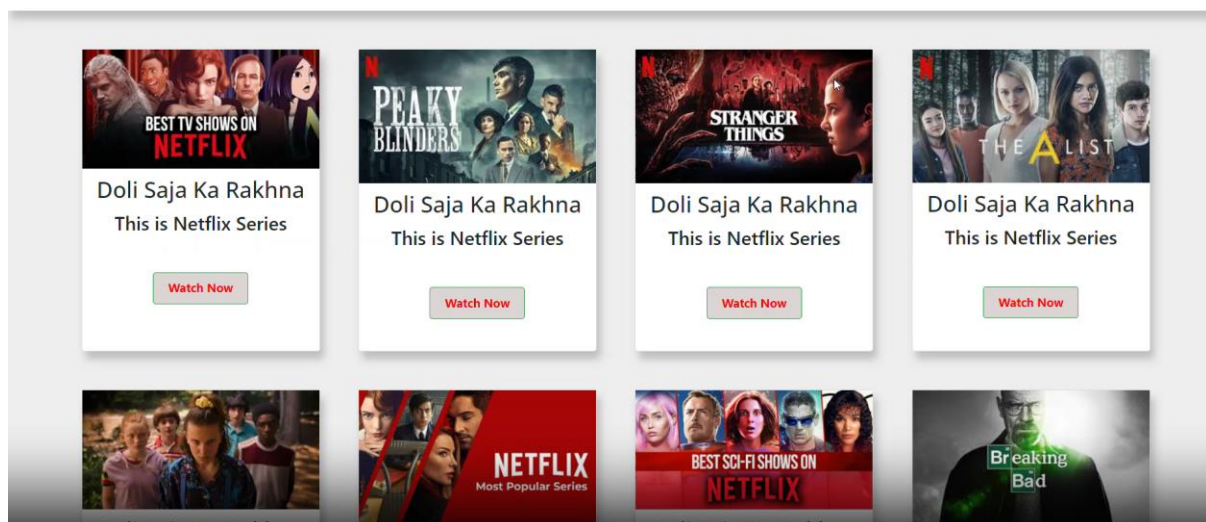
<https://github.com/Rajasree460/card-website>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



All Netflix Series Download From Here



● employee gate pass QR

- **Description:** Automated Gate Pass Management with QR Code Scanning and Voice Alerts functionalities.

I have made an employee card ,that contains some basic details. There is a QR at the below of the card. Scan the QR & if you are scanning it at 10 AM or between 12 Am-10 Am,you can see the message 'Welcome to work!" within an alert box. By any chance if you are late by 1 or more minutes then you can see the message "Sorry, you are late!" .

Employee Card with QR Code and Voice Alerts

Description

This project implements an employee card that displays essential details about an employee along with a QR code. The QR code provides real-time feedback based on the time of scanning, accompanied by voice alerts.

Components

Avatar Section: Displays the employee's photo within a circular avatar.

Employee Information:

Name: Full name of the employee.

Title: Current designation or role.

ID: Unique identifier for the employee.

QR Code Section: Positioned at the bottom of the card, provides real-time feedback based on the current time.

Functionalities

Time-Based Messages:

Welcome Message: Displays "Welcome to work!" if the QR code is scanned at exactly 10 AM or between 12 AM to 10 AM.

Late Message: Displays "Sorry, you are late!" if scanned one minute or more past 10 AM.

Real-Time Feedback: Uses moment-timezone for accurate time calculations in the Asia/Kolkata timezone.

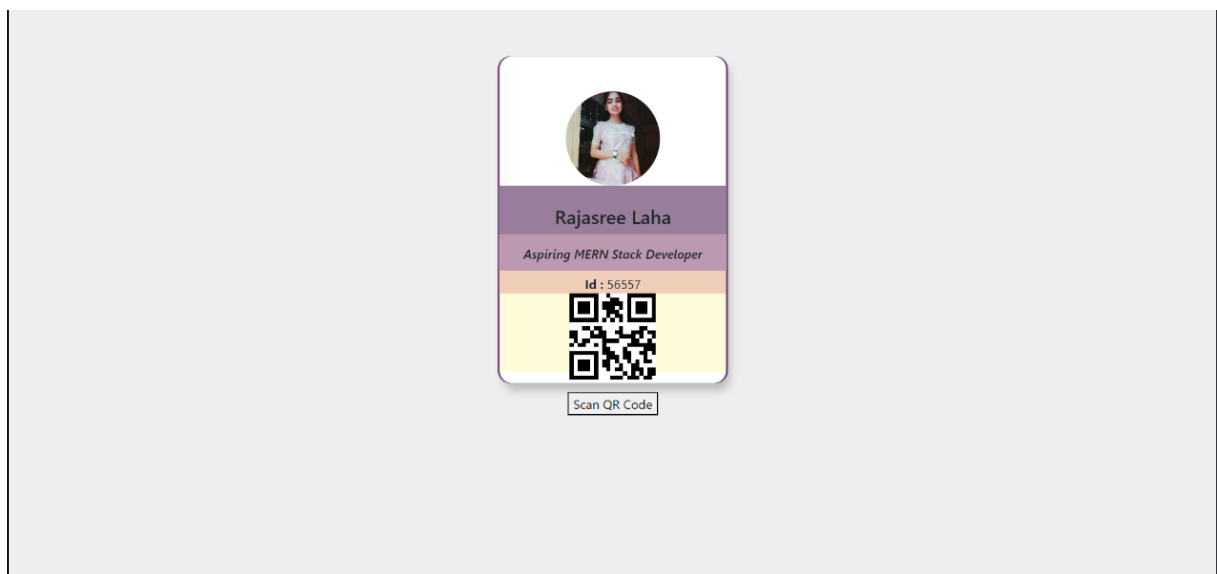
Voice Alerts: Utilizes the SpeechSynthesisUtterance API to provide auditory feedback corresponding to the displayed message.

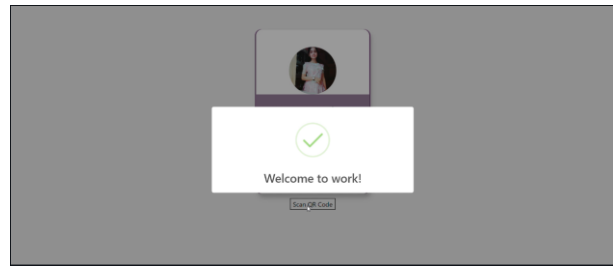
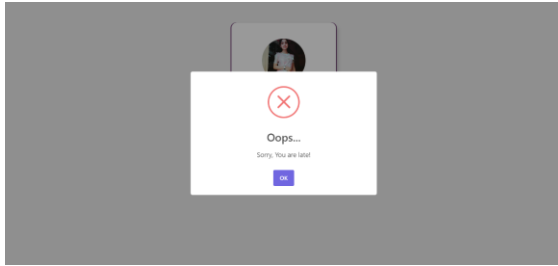
- **Tech stack:** React.js,html,CSS,Bootstrap,API,ChakraUI,MUI,Sweetalert
- **Links:**

<https://github.com/Rajasree460/Aliahns/tree/main/ReactJS/Gate-pass-with-QR>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**





🔴 Gate-Pass-Card-With-QR

- **Description:** I have made an employee card ,that contains some basic details. There is a QR at the below of the card. Scan the QR & if you are scanning it at 10 AM or between 12 Am-10 Am,you can see the message 'Welcome to work!' within an alert box. By any chance if you are late by 1 or more minutes then you can see the message "Sorry, you are late!" .

Details

Employee Card Description

This employee card is designed to display essential details about an employee along with a QR code that provides real-time feedback based on the time of scanning.

Components of the Employee Card:

Avatar Section:

Displays the employee's photo within a circular avatar.

The avatar is enhanced with a background color to make it stand out.

Employee Information:

Name: The full name of the employee.

Title: The employee's current designation or role.

ID: A unique identifier for the employee.

QR Code Section:

Positioned at the bottom of the card.

The QR code encodes a message that changes based on the current time.

Functionalities:

Time-Based Messages:

Welcome Message: If the QR code is scanned at exactly 10 AM or between 12 AM to 10 AM, the message "Welcome to work!" is displayed within an alert box.

Late Message: If the QR code is scanned even one minute past 10 AM, the message "Sorry, you are late!" is displayed within an alert box.

Real-Time Feedback:

The QR code functionality leverages the moment-timezone library to accurately determine the time in the specified timezone (Asia/Kolkata).

Upon scanning the QR code, the system checks the current time and displays the appropriate alert message based on the conditions mentioned above.

- **Tech stack:**

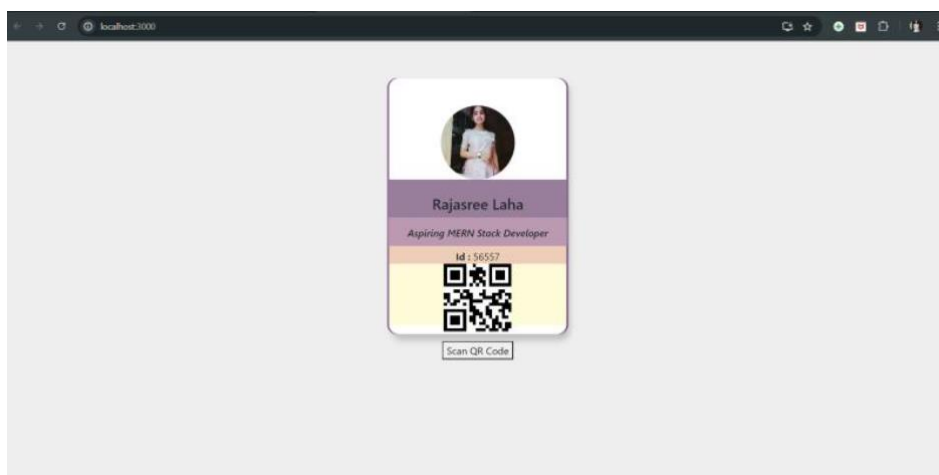
React.js,html,CSS,BootStrap,API,ChakraUI,MUI,Sweetalert

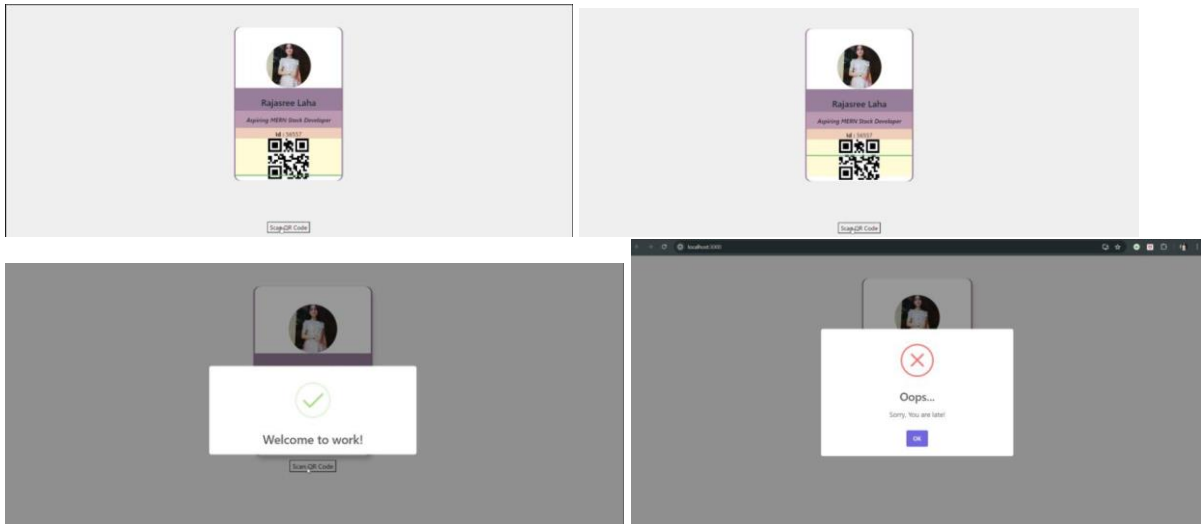
- **Links:**

<https://github.com/Rajasree460/Gate-Pass-Card-With-QR>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**





🕒 Scan QR Speak Pass

- Description:** I have made an employee card ,that contains some basic details. There is a QR at the below of the card. Scan the QR & if you are scanning it at 10 AM or between 12 Am-10 Am,you can see the message 'Welcome to work!' within an alert box. By any chance if you are late by 1 or more minutes then you can see the message "Sorry, you are late!" .

Employee Card with QR Code and Voice Alerts

Description

This project implements an employee card that displays essential details about an employee along with a QR code. The QR code provides real-time feedback based on the time of scanning, accompanied by voice alerts.

Components

Avatar Section: Displays the employee's photo within a circular avatar.

Employee Information:

Name: Full name of the employee.

Title: Current designation or role.

ID: Unique identifier for the employee.

QR Code Section: Positioned at the bottom of the card, provides real-time feedback based on the current time.

Functionalities

Time-Based Messages:

Welcome Message: Displays "Welcome to work!" if the QR code is scanned at exactly 10 AM or between 12 AM to 10 AM.

Late Message: Displays "Sorry, you are late!" if scanned one minute or more past 10 AM.

Real-Time Feedback: Uses moment-timezone for accurate time calculations in the Asia/Kolkata timezone.

Voice Alerts: Utilizes the SpeechSynthesisUtterance API to provide auditory feedback corresponding to the displayed message.

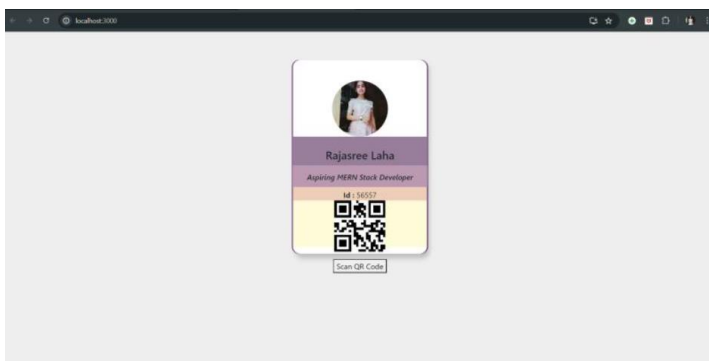
- **Tech stack:** React.js,html,CSS,BootStrap,API,ChakraUI,MUI,Sweetalert

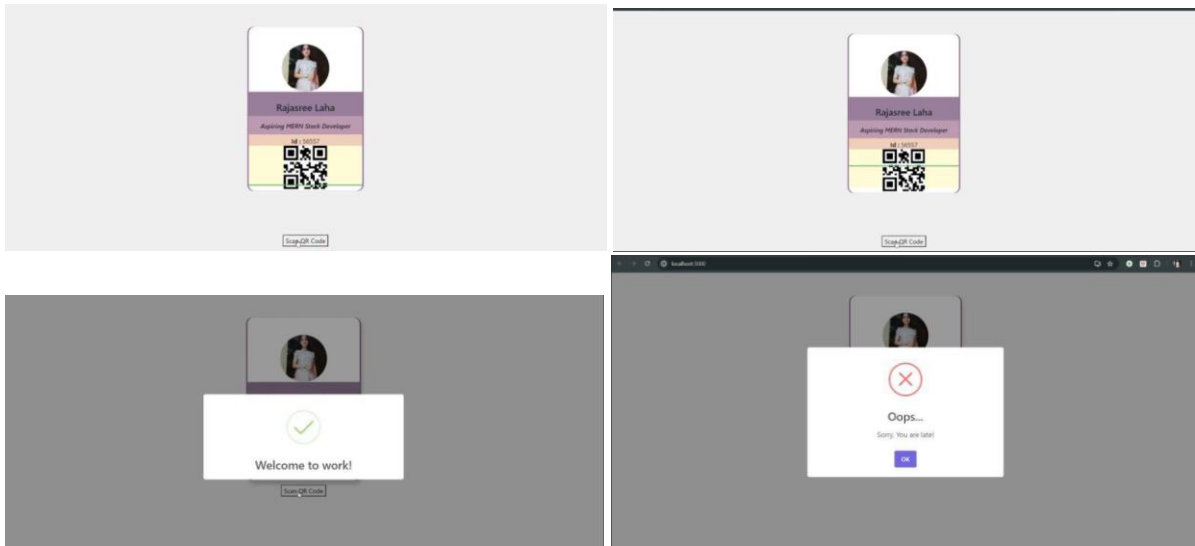
- **Links:**

<https://github.com/Rajasree460/Scan-QR-Speak-Pass>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**





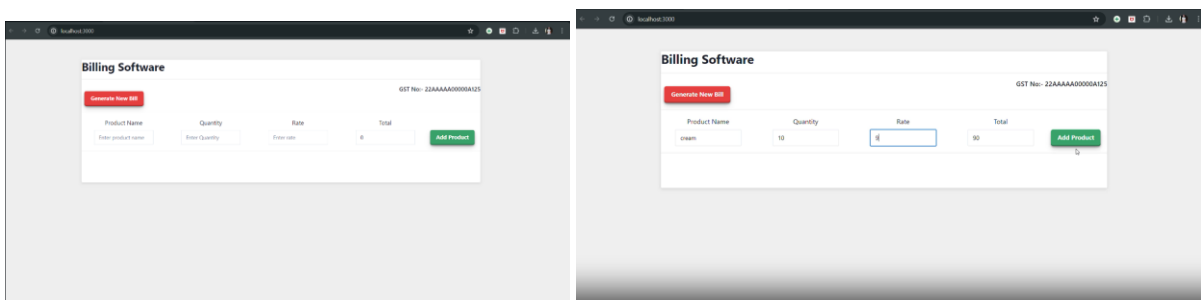
🌐 Billing Software

- **Description:** A basic billing software, without database(will be added eventually). It includes input fields for product name, quantity, and rate, and calculates the total cost based on the quantity and rate. A button allows users to reset the form, and another button is provided to add the product. (NOTE: There is no functionality of 'Add Product' now).
- **Tech stack:** React.js,html,CSS,BootStrap
- **Links:**

<https://github.com/Rajasree460/Billing-Software>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



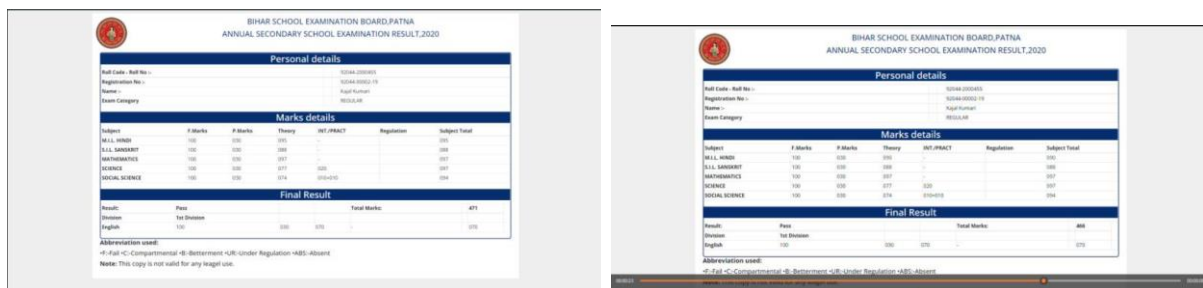
Rank Card

- **Description:** It is a rank card of a student ,based on the style of the result card of 'Bihar School Examination Board,Patna'. Currently it has no database,but I will implement it eventually. Here I have taken some random marks & based on the marks I have calculated 'Total marks', 'Division', 'Pass or Fail' & also 'Optional subject' .
- **Tech stack:** React.js,html,CSS,BootStrap,ChakraUI
- **Links:**

<https://github.com/Rajasree460/Rank-Card>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

Images:



React Form

- **Description:**
The form includes the following features:

Input Fields:

Name (text input)

Mobile Number (number input)

Aadhar Number (text input with automatic formatting)

File Upload:

Allows only .png image files

Displays a preview of the uploaded image

Validates file size (up to 150 KB)

Validation:

Displays error messages for empty required fields

Shows specific errors for image file issues

Reset Functionality:

While is clicked,clears all form fields and error messages

Submit Button:

Placeholder button for form submission

Copy/Paste Prevention:

Disables copy and paste actions in input fields.

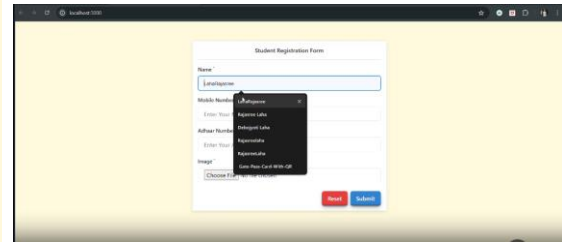
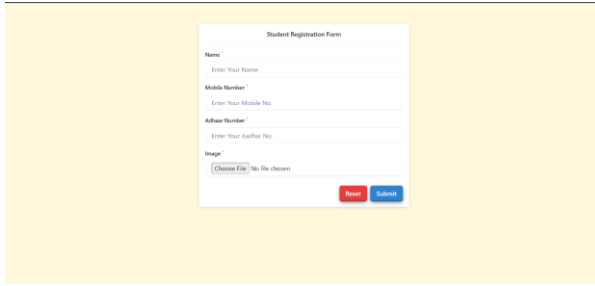
- **Tech stack: React.js,html,CSS,BootStrap,ChakraUI**

- **Links:**

<https://github.com/Rajasree460/React-Form>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



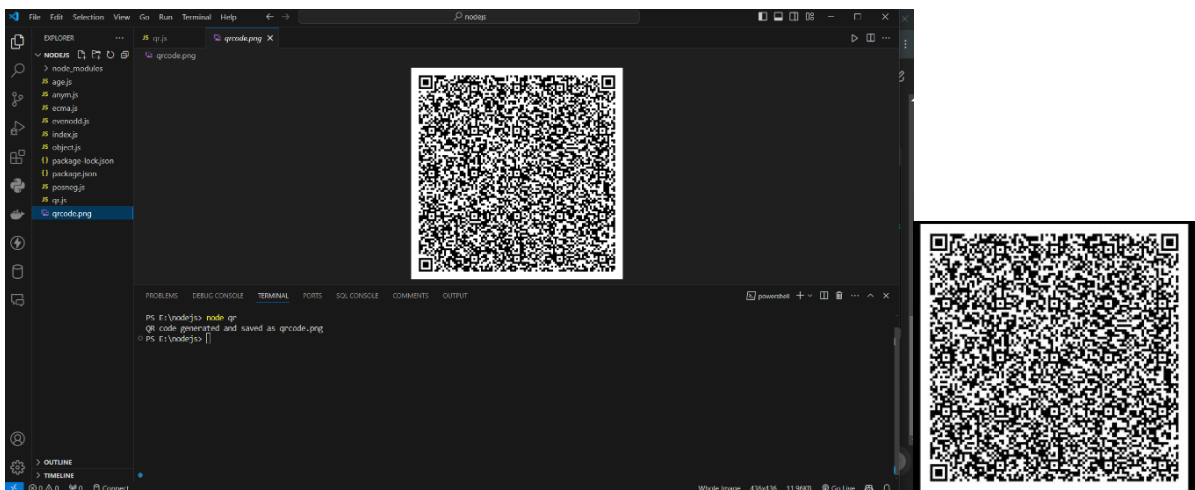
QR Code

- **Description:** Scan the QR. Its' just a basic QR code.
- **Tech stack:** Node.js
- **Links:**

<https://github.com/Rajasree460/QR-code>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



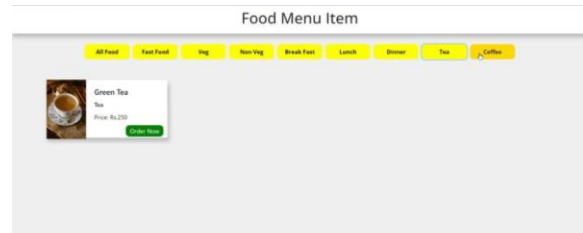
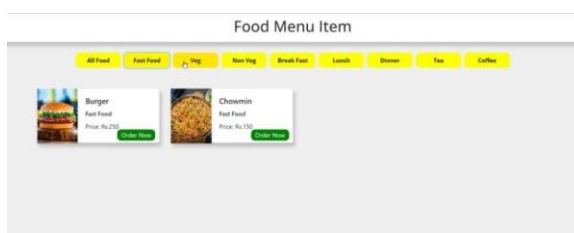
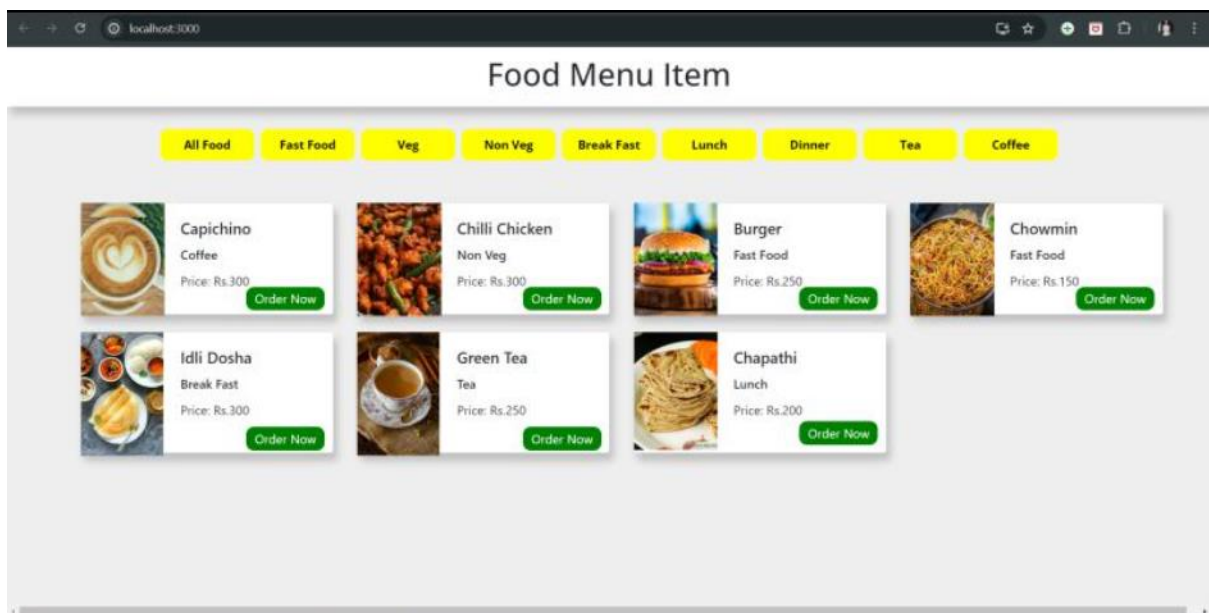
🍷 Menu Card

- **Description:** A simple menu card that displays a food menu with filter buttons for categories like "Fast Food" and "Veg." Each food item card shows an image, name, category, price, and an "Order Now" button at the bottom right. Hovering over a food item highlights it.
- **Tech stack:** React.js, CSS, HTML, ChakraUI
- **Links:**

<https://github.com/Rajasree460/Menu-Card>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



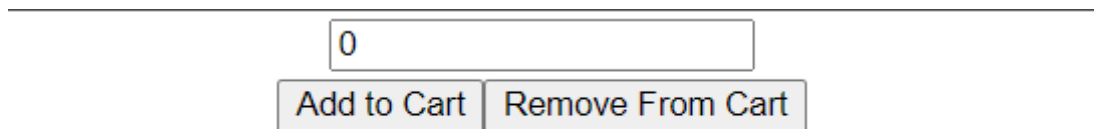
🌐 AddToCart

- **Description:** A simple web page that includes “Add to cart” functionality.
- **Tech stack:** React-Redux
- **Links:**

https://github.com/Rajasree460/ardent-internship-class-assignments/tree/main/redux_addtocart

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

- **Images:**



Cart

Cart is empty

Final Project

The final project of my internship was the development of an "Online Exam Panel (OEP)." This project encapsulates the learning and skills acquired throughout the internship, focusing on creating a robust, cloud-based application integrated with AI & ML capabilities using the MERN stack. The OEP project aims to streamline the online

examination process, providing an efficient platform for both students and administrators.

🌐 Online Exam Panel(OEP)

↳ **Description:** I've created a comprehensive online exam portal with both student and admin panels. It features secure login and signup functionalities. The admin panel allows for creating and editing tests, viewing student lists, and includes advanced face login technology. The student panel provides access to available tests, profile management, and records viewing, ensuring a smooth experience for users.

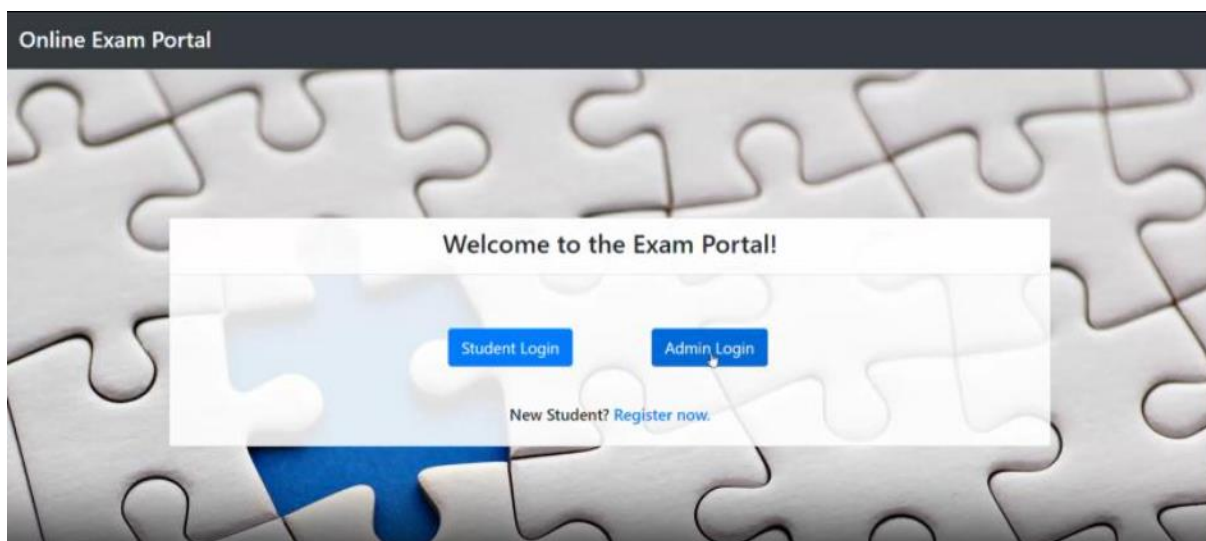
↳ **Tech stack:** React.js, Node.js, Express, MongoDB(MERN)

↳ **Links:**

<https://github.com/Rajasree460/oep>

<https://www.linkedin.com/in/rajasree-laha-756269254/details/projects/>

↳ **Images:**

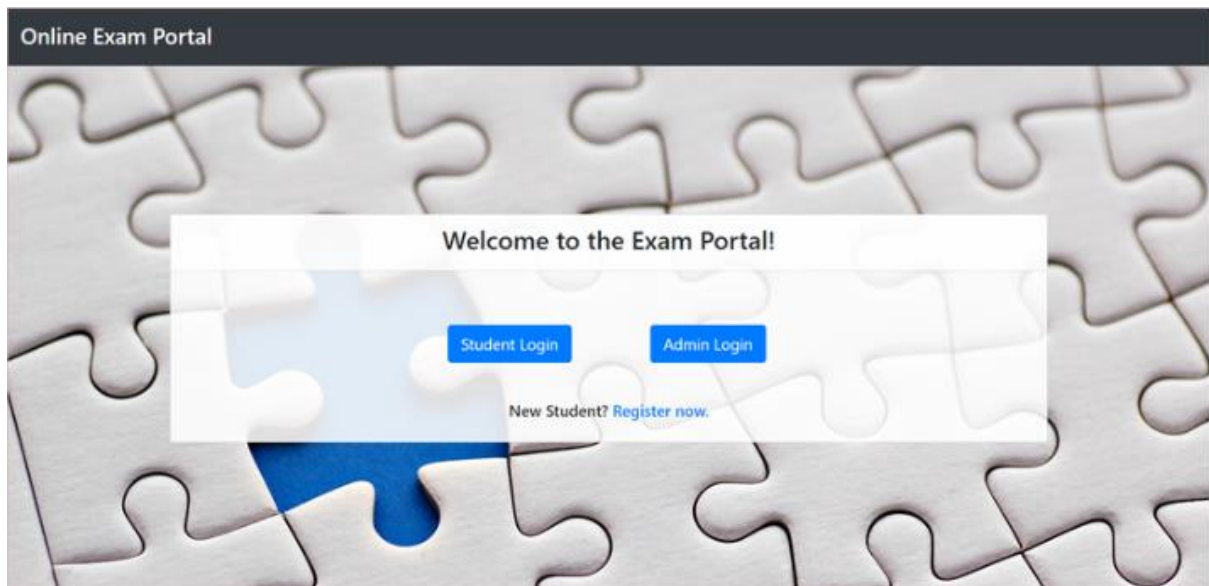


↳ Details Of Project:



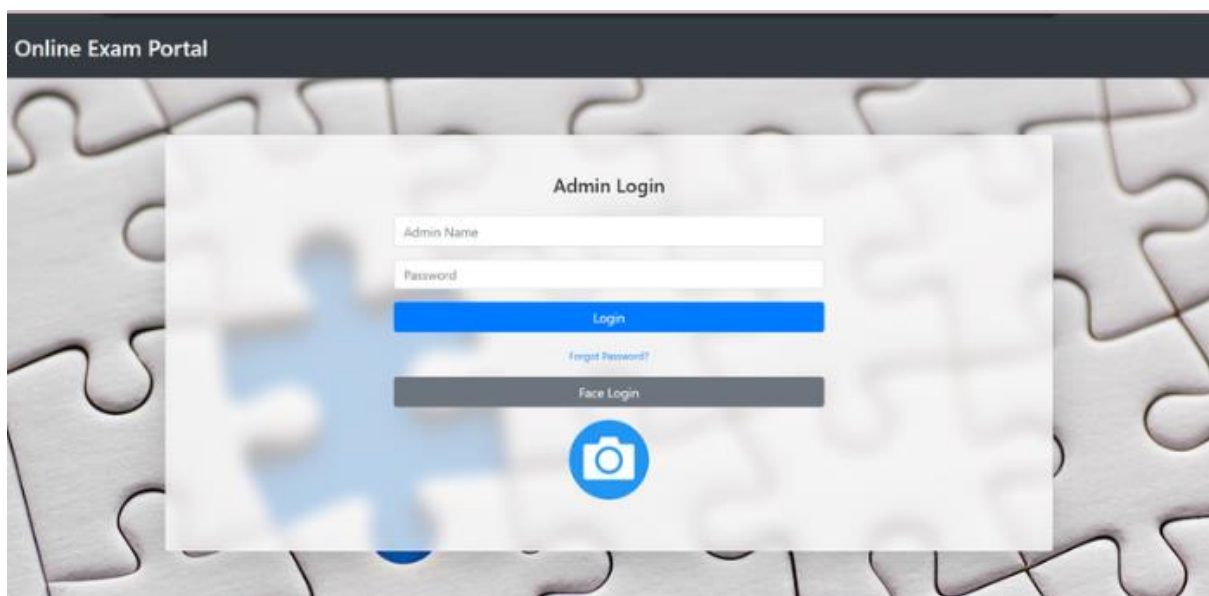
▶ Main Page:

It has a Header with the title "Online Exam Portal" & a main section with "Student Login" and "Admin Login" buttons. If there is any new student it will also show the link for "Registration".

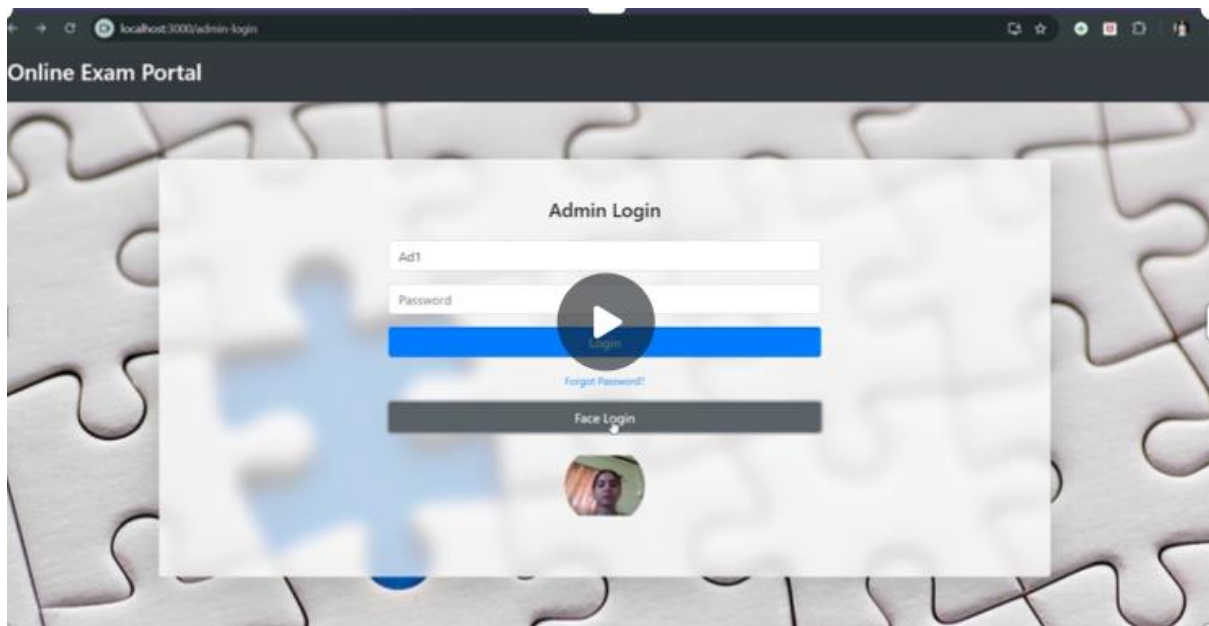


► Admin Login Page:

An Admin can login through Id & Password. By any chance if the admin forgets the password he/she cant enter to the “Admin Dashboard”. So, we have implemented “Face Login” feature. Through the face login the admin can verify his/her face & can login. After successfully login it will show Swal “Success” message. If the password is not given it will show swal “Error” message.

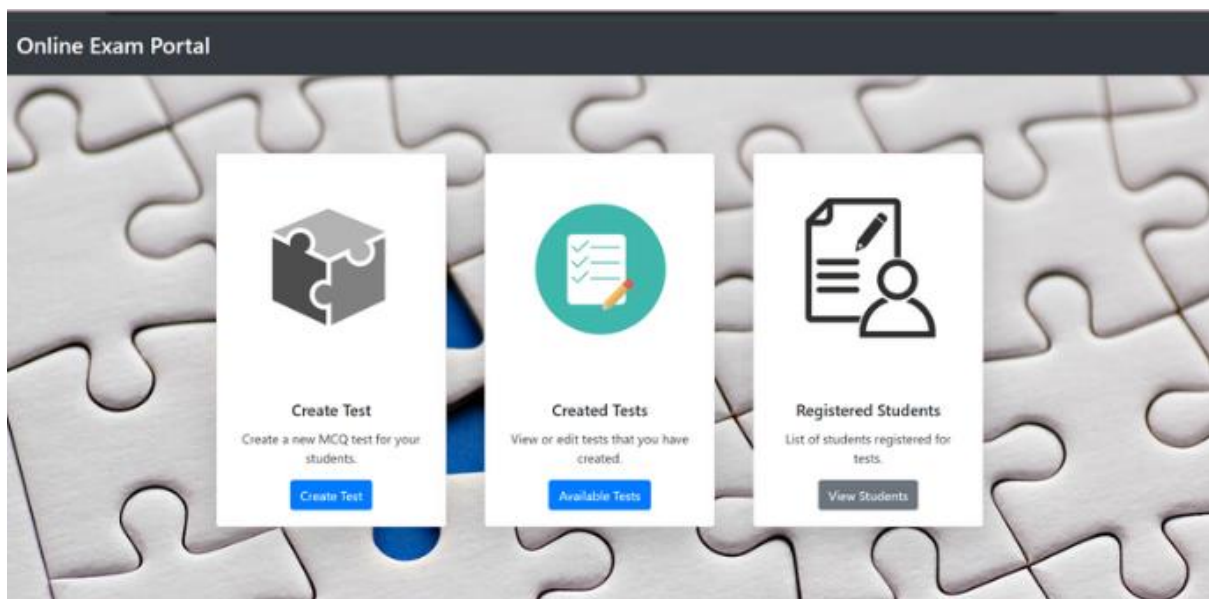


► Face Login:



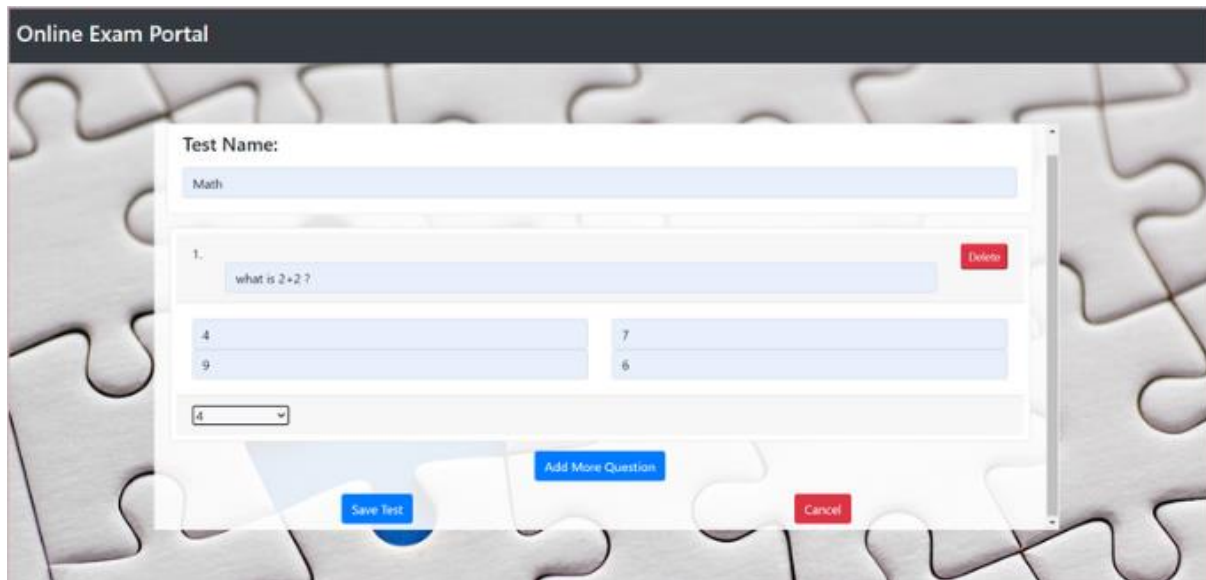
► Admin Dashboard Page:

It has 3 individual pages, 1: "Create Test" ,where admin can add,edit & create tests; 2:"Created Tests", where admin can see the tests he/she has created or available right now and 3:"Registered Students", where admin can see the registered students.



► Create Test Page:

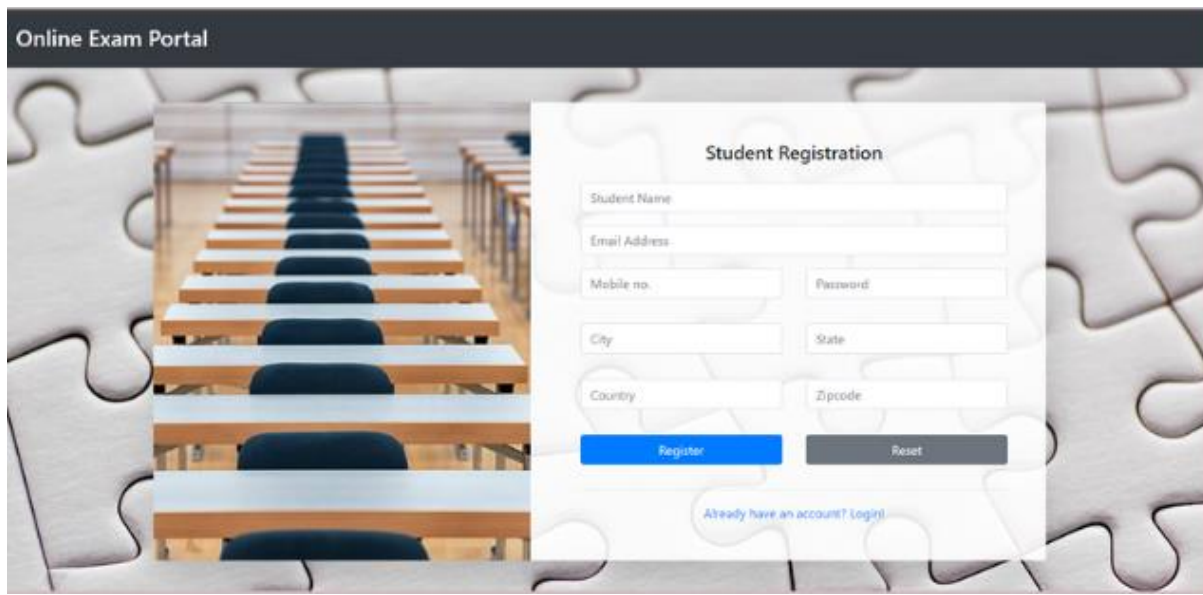
After clicking the “Create Tests” button the admin can create tests, add more questions, save the tests & if required then can cancel the tests.



The screenshot shows the 'Online Exam Portal' interface for creating a test. The form is titled 'Test Name:' and has a text input field containing 'Math'. Below this is a list of questions, with the first one being '1. what is 2+2?'. To the right of this question is a red 'Delete' button. Below the question are two input fields for answers: the first contains '4' and the second contains '7'. Below these are two more input fields, one containing '9' and the other containing '6'. At the bottom of the form is a dropdown menu with '4' selected. At the bottom of the form are three buttons: 'Save Test' (blue), 'Add More Question' (blue), and 'Cancel' (red).

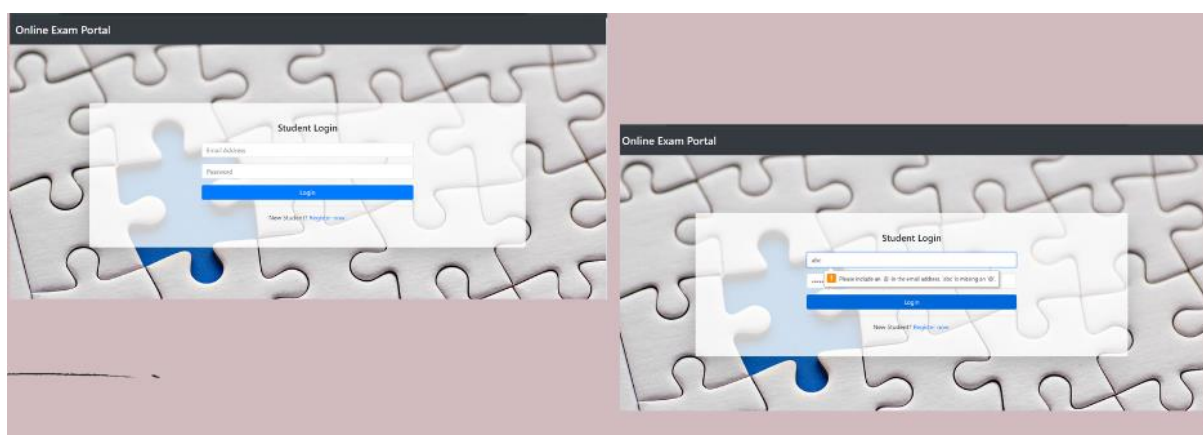
► Student Registration Page:

This page takes all necessary student details like name, password, email, phone no., city, country, pin code etc. There are some restrictions like the mobile/ phone no. should contain only digits & 10 digits exactly ;the password must contain at least 8 characters with at least 1 lowercase , 1 uppercase letter,1 symbol, 1 number; email must contain exact format (includes '@') etc.



► **Student Login Page:**

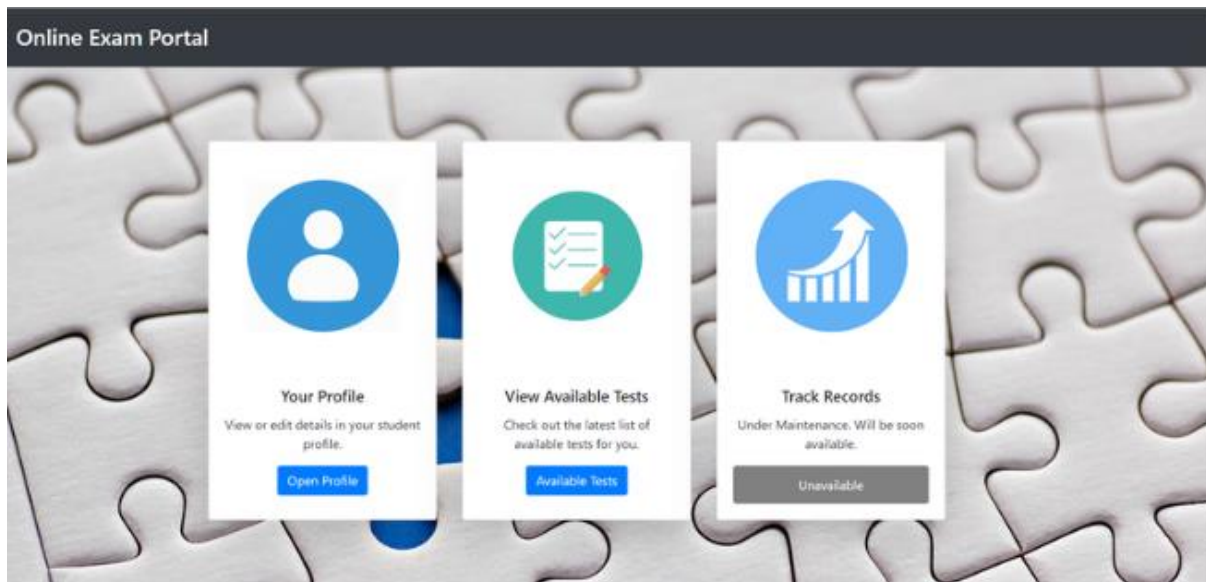
If the student is already registered then he/she can login through this page with mail id & password. This page also contains a link to the student registration page. If the student is not registered, then he/she will go to this page. There are some restrictions during login , the email id should be in its exact format.



► **Student Dashboard Page:**

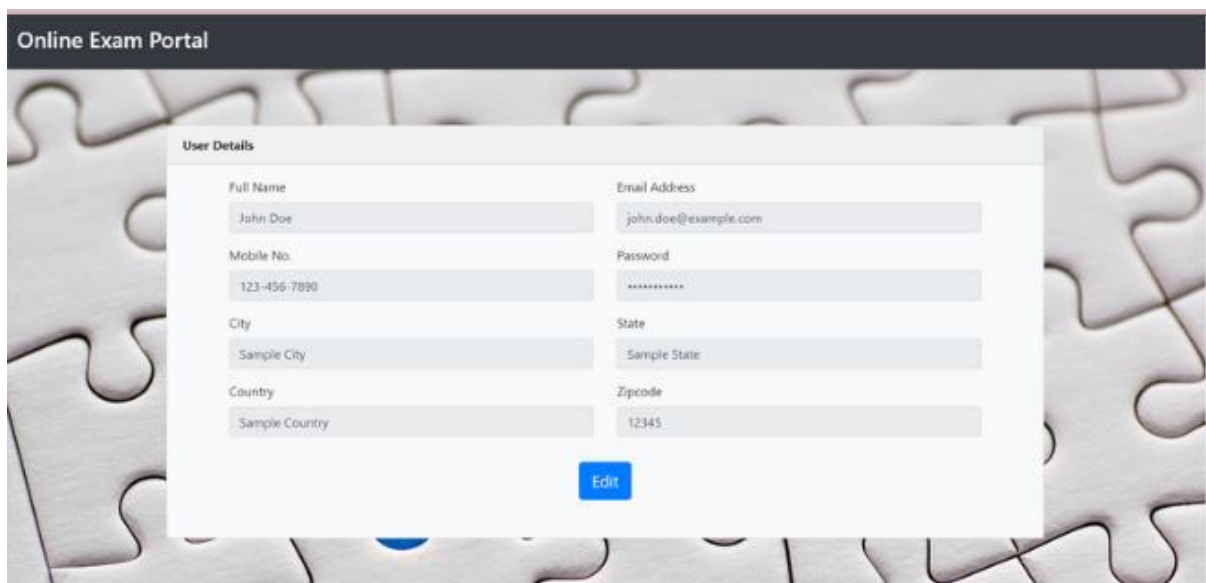
After successful “login” or “registration” a student will arrive to this page. The student can see his/her profile with details, can view available tests & can track the records. For now “Track Records” is

unavailable to a student, it will available when the admin will give permission after an interval of time. If a student want to access the page it will show block sign.



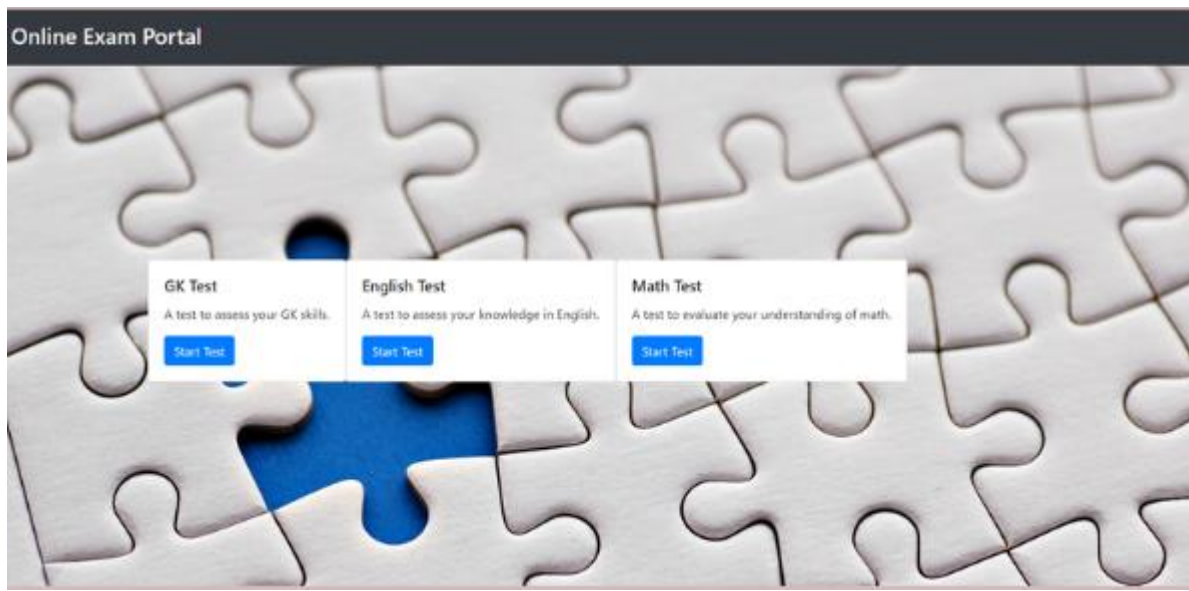
► **Student Profile Page:**

On clicking “Open Profile” a student can see his/her detailed information. The student can also edit the details & can save or cancel changes.



► Available Tests Page:

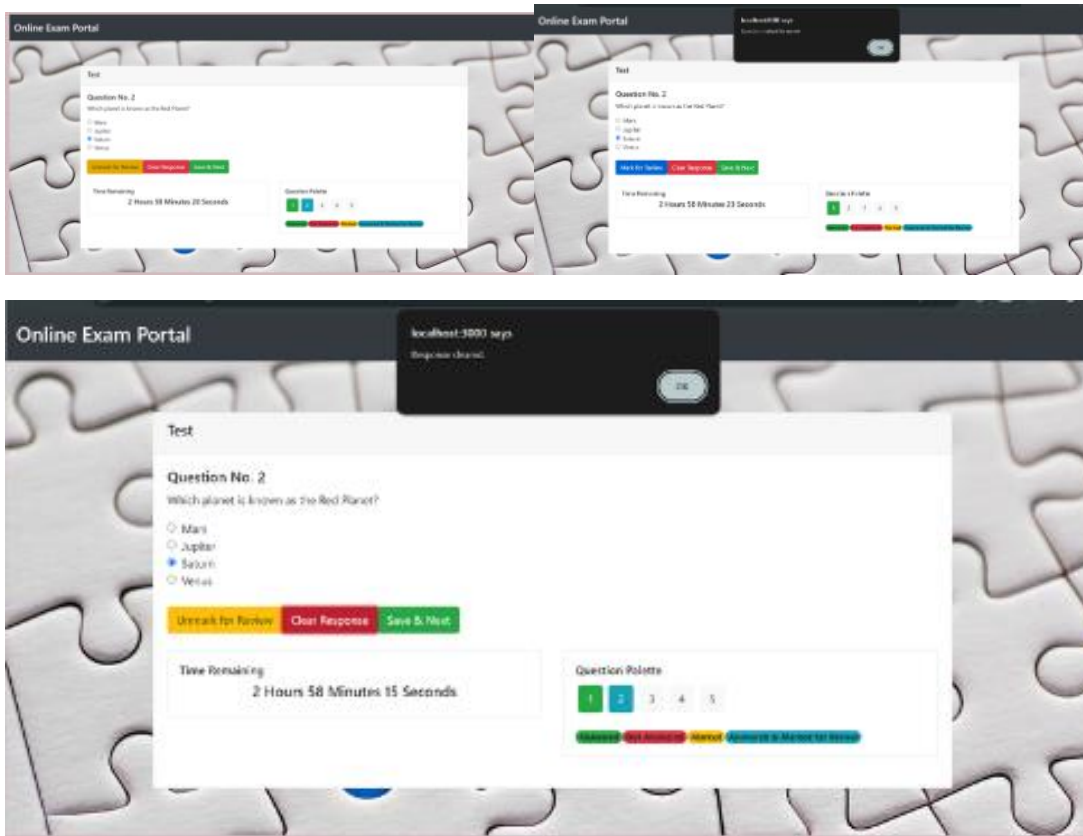
On clicking “Available Tests” a student can see the available tests. For now there are 3 tests available, 1:”GK Test”, 2:”English Test”, 3:”Math Test”. On clicking “Start Test” the student can start the test. It will take him/her to an another page where he/she can give the test.



► Test Page:

- A student can answer the MCQ & save it- in the question palette it will show “Green”, i.e “Answered”;
- Clear the response- in the question palette it will show “Red”, i.e “Not Answered”;
- Answer & mark it for review- in the question palette it will show “Blue”, i.e “Answered & Marked for review”;
- Mark question for review- in the question palette it will show “Yellow”, i.e “Marked”.

All of this changes will be showed to a student within an “Alert box” .Bellow there is a “Timer” .



🕒 Future Scope:

- **Scope 1**

Backend and Database :

Increase the backend system and database to enhance data processing, storage, and retrieval, ensuring smoother and more efficient operations.

- **Scope 2**

Social Media Login:

Introduce login options using Gmail and other social accounts to provide users with more convenient and versatile authentication methods.

- **Scope 3**

UI/UX Enhancement:

Improve the user interface and user experience by refining the design and adding more features, making the portal more intuitive, user-friendly, and feature-rich.

»Conclusion: In conclusion, the online exam portal simplifies test management for admins and provides easy access to tests and records for students. It enhances security and user experience for both groups. I will like to add all of the future scops eventually.

Future Recommendations:

Category	Recommendation	Details
Next-Generation Features	AI-Driven Personalization	Implement AI to customize exams based on individual learning patterns, providing tailored test experiences.
Voice and Chatbot Integration		Introduce voice commands and chatbot support to enhance user interaction and accessibility.
Advanced Analytics		Use AI/ML for deeper insights into student performance and predictive analytics.
Security Improvements	Biometric Authentication	Integrate biometric login options like facial recognition or fingerprint scanning for enhanced security.
Data Encryption		Ensure all data, including test results and personal information, is encrypted during storage and transit.

**Proctoring
Enhancements**

Implement AI-based proctoring to detect suspicious behavior during exams.

**Performance
Enhancements**

**Load
Balancing**

Deploy load balancing to manage high traffic and ensure consistent performance during peak exam times.

**Caching
Strategies**

Utilize caching to reduce server load and speed up page load times.

**Responsive
Design**

Further optimize the platform for seamless performance across all devices, including mobile and tablets.

Scalability

**Microservices
Architecture**

Transition to a microservices architecture for easier scaling and maintenance.

**Global Cloud
Deployment**

Deploy the portal on multiple cloud regions to ensure low latency and high availability worldwide.

**Horizontal
Scaling**

Implement horizontal scaling to handle increasing numbers of users and data efficiently.

**User
Experience**

Introduce gamification elements to engage students and make learning more interactive.

**Multilingual
Support**

Add support for multiple languages to cater to a global audience.

**Accessibility
Features**

Incorporate features like screen readers and adjustable font sizes to make the portal accessible to all.

**Lessons
Learned**

**Regular User
Feedback**

Continuously gather and incorporate user feedback to improve the platform.

Documentation and Training

Maintain detailed documentation and provide training materials for users and administrators.

Performance Monitoring

Implement continuous monitoring to quickly identify and resolve performance issues.

IMPORTANCE OF THIS INTERNSHIP

The importance of this internship lies in the invaluable experience it provided, bridging the gap between theoretical knowledge and practical application. It offered me the opportunity to work on real-world projects, enhancing my technical skills in the MERN stack and allowing me to understand the complexities of full-stack development in a professional setting.

This internship also helped me develop problem-solving abilities, adapt to emerging technologies, and collaborate effectively within a team. Working under the mentorship of experienced professionals like Ashraf Ali provided insights into industry best practices and fostered a deeper understanding of the software development lifecycle.

Moreover, the diverse projects I worked on broadened my perspective on various aspects of web development, from user interface design to backend management, and from security implementation to performance optimization. This experience has not only bolstered my confidence but also prepared me for future challenges in my career, making it a crucial step in my professional growth.

Conclusion:

Project Summary

1. Menu Card

Summary: Developed a dynamic menu card with category filters and responsive design using React.js, CSS, and ChakraUI.

Key Achievement: Created an interactive and visually appealing menu interface.

Lesson Learned: Enhanced skills in responsive design and dynamic data handling.

2. QR Code

Summary: Implemented basic QR code generation and scanning functionality with Node.js.

Key Achievement: Enabled simple QR code processing.

Lesson Learned: Gained foundational knowledge in QR code technology.

3. Billing Software

Summary: Built a billing software with product input fields and basic calculations using React.js and Bootstrap.

Key Achievement: Created a functional interface for billing operations.

Lesson Learned: Improved skills in form handling and UI design.

4. React Form

Summary: Developed an advanced form with validation, file upload, and copy/paste prevention using React.js and ChakraUI.

Key Achievement: Implemented robust form validation and file

handling.

Lesson Learned: Mastered complex form functionalities and user validation.

5. Card Website

Summary: Designed a card-based website using React.js, Bootstrap, and MUI.

Key Achievement: Delivered a responsive and aesthetically pleasing card layout.

Lesson Learned: Improved proficiency in component-based architecture and CSS frameworks.

6. Employee Gate Pass with QR

Summary: Created an employee gate pass system featuring QR code scanning, real-time time-based messages, and voice alerts using React.js and various APIs.

Key Achievement: Integrated time-based messages and voice feedback.

Lesson Learned: Enhanced skills in real-time data processing and voice technology.

7. Scan QR Speak Pass

Summary: Developed an enhanced employee card with QR code scanning, time-based messages, and voice alerts.

Key Achievement: Provided auditory feedback alongside real-time QR code responses.

Lesson Learned: Improved handling of complex user interactions and real-time feedback.

8. Rank Card

Summary: Created a student rank card simulating result cards, with dynamic calculations using React.js and Bootstrap.

Key Achievement: Developed a system for calculating and displaying student results.

Lesson Learned: Gained experience in dynamic data handling and result processing.

9. Add to Cart

Summary: Implemented "Add to Cart" functionality using React-Redux for state management.

Key Achievement: Developed a functional and interactive shopping cart experience.

Lesson Learned: Mastered state management and e-commerce dynamics.

10. Essay

Summary: Built a simple web page to display an essay using React.js.

Key Achievement: Created a clear and readable content presentation.

Lesson Learned: Focused on content-centric design and text formatting.

11. Resume

Summary: Designed a professional resume page using React.js with a responsive layout.

Key Achievement: Delivered a polished and easy-to-navigate resume.

Lesson Learned: Improved skills in professional presentation and responsive design.

12. Final Project: Online Exam Panel (OEP)

Summary: Developed a comprehensive online exam portal with student and admin panels, face login, and real-time data management using the MERN stack.

Key Achievement: Created a robust and secure online exam system.

Lesson Learned: Gained expertise in multi-user system design, AI integration, and real-time data handling.

13. Employee Gate Pass with QR

Summary: Developed an employee gate pass system with QR code integration, offering real-time feedback based on scan time, along with voice alerts using React.js and various APIs.

Key Achievement: Implemented a functional gate pass system that provides timely messages and audio feedback based on QR code scanning.

Lesson Learned: Enhanced skills in integrating real-time features and voice feedback into web applications.

Future Outlook/Scope

Continue to enhance each project by integrating backend support for dynamic content management, adding advanced features to improve user interaction and functionality, and exploring further technological advancements such as AI and ML to optimize performance and user experience. Aim to create a seamless integration between frontend and backend systems, and consider mobile and cloud-based solutions to expand accessibility and efficiency.

References:

1. MERN Stack

- **Official Documentation:** [MongoDB](#), [Express](#), [React](#), [Node.js](#)
- **YouTube Tutorial:** [MERN Stack Tutorial for Beginners](#)

2. Chakra UI

- **Official Documentation:** [Chakra UI Documentation](#)
- **YouTube Tutorial:** [Chakra UI Crash Course](#)

3. MUI (Material-UI)

- **Official Documentation:** [MUI Documentation](#)
- **YouTube Tutorial:** [MUI Material-UI Tutorial](#)

4. React.js

- **Official Documentation:** React Documentation
- **YouTube Tutorial:** [React JS Full Course](#)

5. Node.js

- **Official Documentation:** Node.js Documentation
- **YouTube Tutorial:** [Node.js Crash Course](#)

6. Express.js

- **Official Documentation:** [Express Documentation](#)
- **YouTube Tutorial:** [Express.js Tutorial](#)

7. MongoDB

- **Official Documentation:** [MongoDB Documentation](#)
- **YouTube Tutorial:** [MongoDB Crash Course](#)

8. Bootstrap

- **Official Documentation:** Bootstrap Documentation
- **YouTube Tutorial:** [Bootstrap 5 Tutorial](#)

9. SweetAlert2

- **Official Documentation:** SweetAlert2 Documentation
- **YouTube Tutorial:** [SweetAlert2 Tutorial](#)

10. React-Redux

- **Official Documentation:** Redux Documentation
- **YouTube Tutorial:** [React Redux Tutorial](#)

11. Moment.js

- **Official Documentation:** Moment.js Documentation
- **YouTube Tutorial:** [Moment.js Tutorial](#)

12. Chakra UI vs MUI

- **Comparison Article:** Chakra UI vs MUI
- **YouTube Comparison:** [Chakra UI vs MUI](#)

13. ChatGPT

- **Official Documentation:** [OpenAI ChatGPT Documentation](#)
- **YouTube Tutorial:** [ChatGPT Tutorial for Beginners](#)

Class Assignments Source Codes With Links:

<https://github.com/Rajasree460/ardent-internship-class-assignments>

These references will help you explore and understand the technologies and tools used in my projects.

◆ Final Conclusions

The internship provided a valuable opportunity to delve into various aspects of MERN stack development and other relevant technologies. Through a diverse range of projects, including the development of a menu card, billing software, and advanced features like QR code scanning, I was able to enhance my skills and gain practical experience in building dynamic web applications.

The final project, the Online Exam Panel (OEP), demonstrated the integration of AI and ML capabilities within a robust, cloud-based application. This project

encapsulated the skills acquired during the internship, showcasing the ability to create an efficient platform for online examinations. The project involved complex functionalities, including secure logins, test creation, and real-time user interactions.

Overall, the internship experience was instrumental in refining my technical abilities and understanding of modern web development practices. It provided a solid foundation for future endeavors in the field of technology, and the knowledge gained will be beneficial for continued growth and professional development.

Teacher's Signature

(End Date)

— THE END. —