Project Report On

PrimeFoodNetwork

Submitted in partial fulfillment for the award of

Post Graduate Diploma in Advanced Computing

from

C-DAC ACTS (Pune)

Guided by

Ms. Tejaswini Apte

Presented By

Aditya Ghadge – 240340120009

Aniket Ghodake – 240340120032

Sarvesh Indalkar – 240340120070

Shubham Jadhav - 240340120199

Centre of Development of Advanced Computing (C-DAC), Pune

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that

Aditya Ghadge-240340120032

Aniket Ghodake - 240340120032

Sarvesh Indalkar - 240340120070

Shubham Jadhav - 240340120199

have successfully completed their project titled

“PrimeFoodNetwork”

Under the Guidance of Ms. Tejaswini Apte

Project Guide **HOD ACTS**

ACKNOWLEDGEMENT

This project **"PrimeFoodNetwork"** was a great learning experience for us and we are submitting this work to Advanced Computing Training School (CDAC ACTS).

We all are very glad to mention the name of **Ms. Tejaswini Apte** for his valuable guidance to work on this project. His guidance and support helped us to overcome various obstacles and intricacies during the course of project work.

Our most heartfelt thank goes to Ms. Swati Salunkhe (Course Coordinator, PG-DAC) who gave all the required support and kind coordination to provide all the necessities like required hardware, internet facility and extra Lab hours to complete the project and throughout the course up to the last day here in C-DAC ACTS, Pune.

Aditya Ghadge -240340120009
Aniket Ghodake -240340120032
Sarvesh Indalkar -240340120070
Shubham Jadhav-240340120199

TABLE OF CONTENTS

1. Introduction

PrimeFoodNetwork is an advanced online food ordering system designed to enhance the culinary experience for both customers and restaurant owners. This platform offers a seamless interface for exploring a diverse range of food options, placing orders, and managing deliveries, all within a user-friendly environment.

Built with a suite of modern technologies, PrimeFoodNetwork revolutionizes how users interact with food services online. Utilizing the power and flexibility of Spring Boot, Jakarta Persistence (JPA), and RESTful Web Services, we have crafted a robust backend infrastructure that ensures secure user authentication, efficient data handling, and smooth integration of various system components. The application features a technology stack that includes Java for backend development and a range of standard web technologies for the frontend, ensuring a responsive and engaging user experience.

To provide a holistic service, PrimeFoodNetwork incorporates secure payment gateways for smooth financial transactions. Customers can confidently place orders and make payments using multiple options, enhancing convenience and reliability in the food ordering process.

Furthermore, PrimeFoodNetwork's frontend is expertly designed using React and CSS, creating an engaging and visually captivating user interface. The platform features intuitive login and registration functionalities prominently, allowing users to easily personalize their experience and access exclusive features with ease.

The design of PrimeFoodNetwork emphasizes user responsiveness, ensuring an optimal experience across various devices. The website dynamically adjusts its layout and features to offer a user-friendly and visually appealing interface, regardless of screen size.

The responsiveness of PrimeFoodNetwork goes beyond mere adaptability. The website employs a fluid design that not only scales seamlessly but also optimizes content presentation for enhanced usability. Touch-friendly buttons, intuitive navigation, and fast loading times contribute to a smooth and immersive user experience. By leveraging React.js for dynamic content rendering, PrimeFoodNetwork ensures real-time updates and a personalized touch, enriching user satisfaction and fostering a strong connection with the platform. This commitment to responsiveness underscores PrimeFoodNetwork's dedication to delivering a modern, accessible, and enjoyable online food ordering experience for all users.

2. Software/Hardware Requirement

Server:

Processor: Intel Core i5 or equivalent AMD processor.

RAM: Minimum 8GB RAM.

Storage: SSD storage for improved performance.

Network: Ethernet or Wi-Fi connectivity.

Operating System: Windows 10/11.

Client Devices:

Processor: Dual-core processor or higher.

RAM: Minimum 4GB RAM.

Storage: Sufficient storage for caching and local data.

Network: Ethernet or Wi-Fi connectivity.

Browser: Compatible with latest versions of popular browsers like Google Chrome, Mozilla Firefox, and Safari.

3. Tools and technologies used

- SpringBoot
- SpringDataJPA
- RESTful Web
- SpringWeb
- MYSQL Database
- JWT
- Git
- Spring Security
- React JS
- HTML and CSS
- Axios
- Stripe Payment Getway
- Material UI

1. Spring Boot: Utilized to develop the backend of the application, providing a robust framework for building Java-based web applications with ease.

2. Spring Data JPA: Implemented for data access, allowing seamless interaction with the MySQL database to store and retrieve sports data efficiently.

3. RESTful Web Services: In the context of an e-commerce web application like Book Charm, RESTful web services play a crucial role in facilitating communication between the frontend and backend components. These services adhere to the principles of Representational State Transfer (REST), which emphasizes a stateless, standardized approach for building web services

4. Node JS: Employed for web scraping, enabling the application to extract live scores andmatch details from various sports websites and APIs.

5. Express JS: Express.js is a web application framework for Node.js that simplifies the creation of robust, scalable APIs and web applications by providing a set of middleware and routing mechanisms. It streamlines the process of handling HTTP requests, making it efficient for building server-side components in a Node.js application.

6. Spring Web: Used for handling web requests and responses, managing controllers, and serving static resources to the frontend.

7. MySQL: Chosen as the relational database management system to store book data on cloud ,including user detail ,seller detail, book information and admin details.

8. JWT (JSON Web Tokens): Implemented for secure user authentication and authorization, ensuring that only authenticated users can access into account and buy books and seller can add books .

9. Axios: In the context of a web application like Book Charm, Axios is likely used as a client-side HTTP library. Axios simplifies the process of making asynchronous HTTP requests from the frontend (React.js) to the backend (Node.js/Express.js). It is instrumental in fetching data from the server, handling API calls, and facilitating smooth communication between the frontend and backend components, ensuring efficient data retrieval and seamless user interactions in the e-commerce application

10. React: Employed to build the frontend of the application, offering a component-based architecture for creating dynamic and interactive user interfaces.

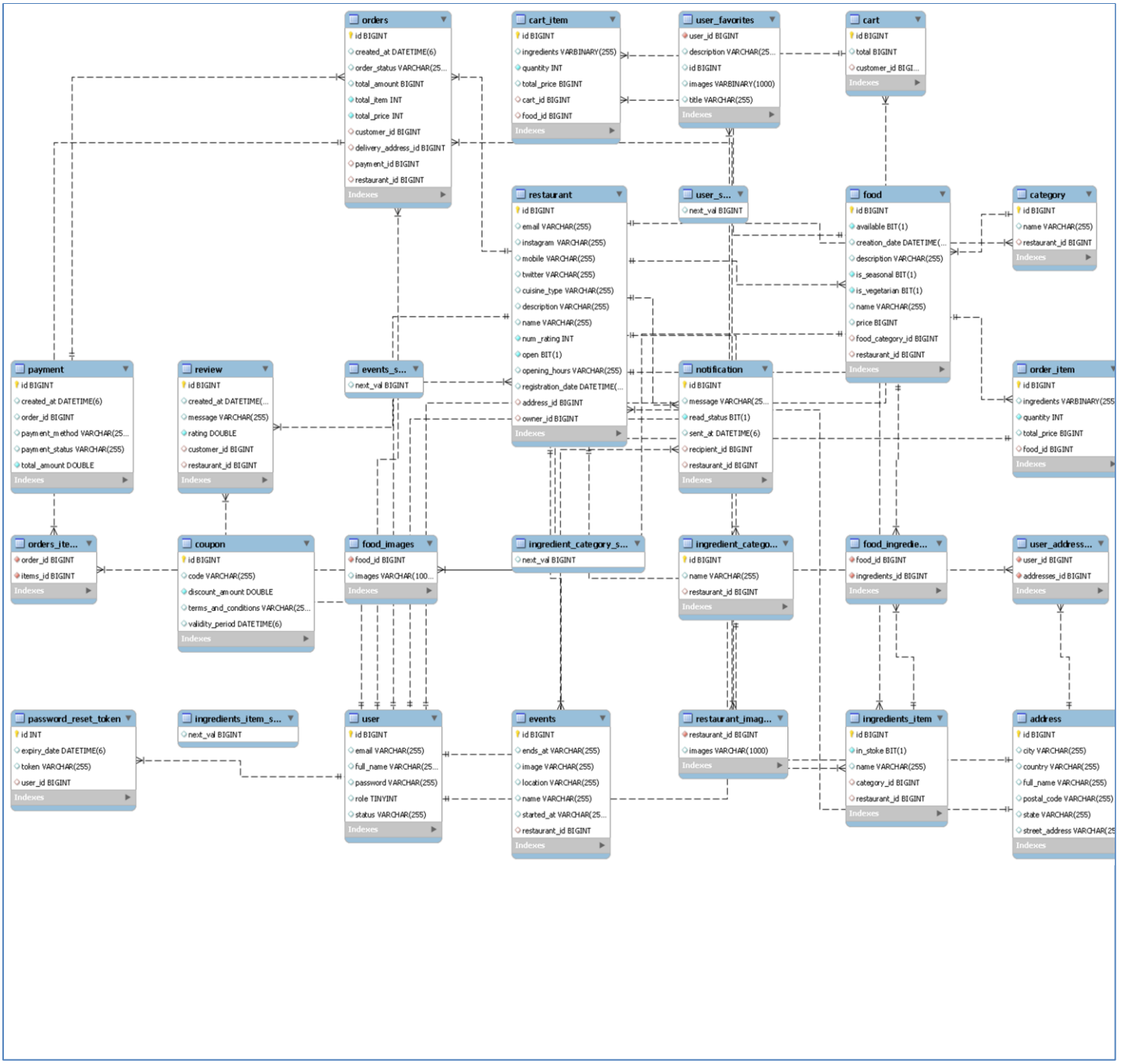
11. CSS: Used for styling the frontend components with utility-first CSS classes,allowing for rapid prototyping and customization of the user interface.

12. Material UI: Leveraged to enhance the visual appeal and user experience of the application by incorporating pre-designed React components following Google's Material Design principles.

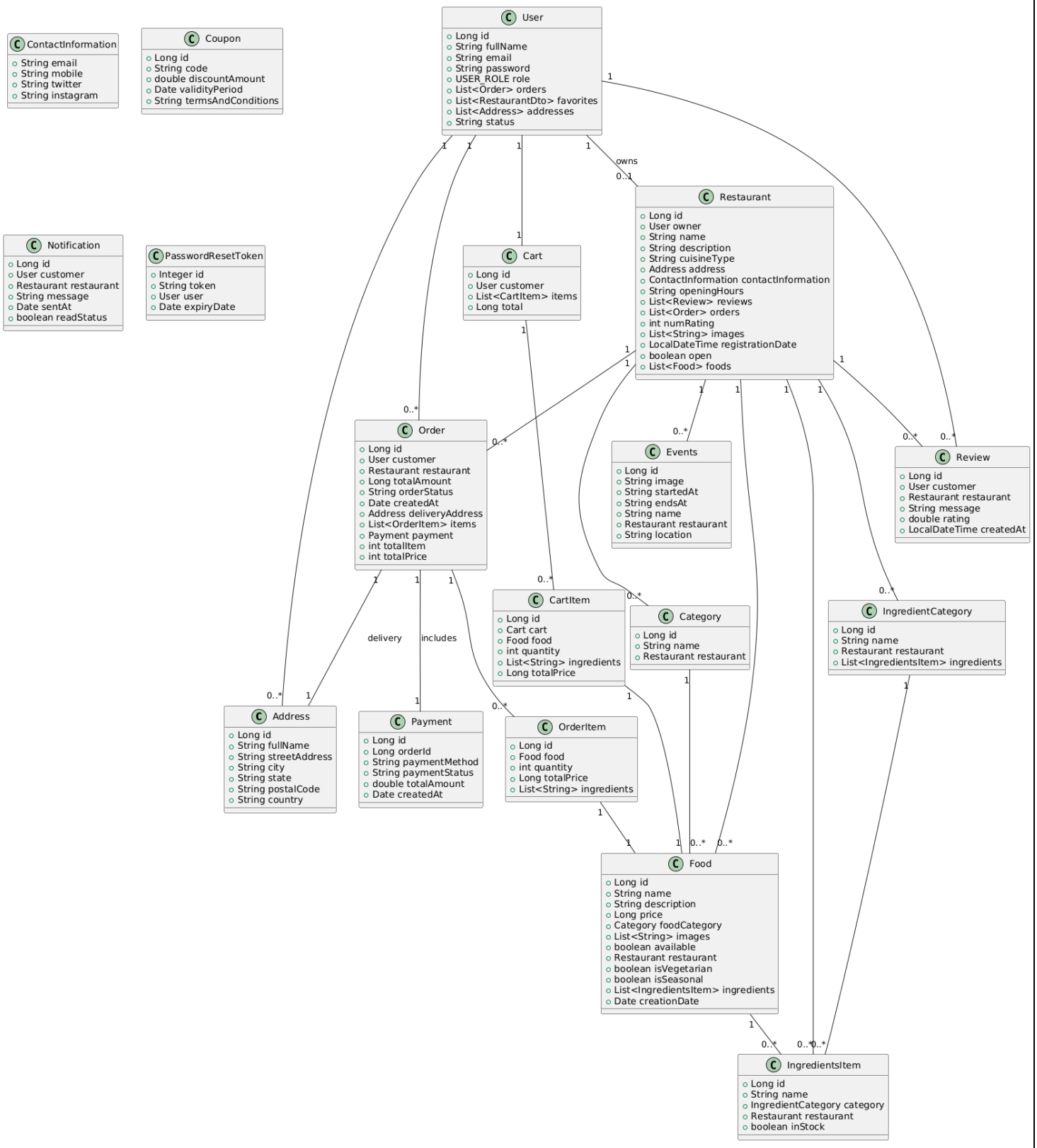
13. Git: Implemented as a version control system to track changes in the source code, enabling collaboration among developers, and facilitating code management and deployment workflows.

14. Strip Payment Getway: In the PrimeFoodNetwork, Strip is integrated as the payment gateway, enabling secure and streamlined online transactions. Strip provides a developer-friendly API, allowing seamless integration for processing payments, managing subscriptions, and ensuring a reliable end-to-end payment experience for users in the web application

4. Project Database Diagram



5. Project E-R(Entity relationship) Diagram



PrimeFoodNetwork

6. Advantages

- Use of MySQL Cloud Database(aiven)
    - The PrimeFoodNetwork project utilizes the Aiven cloud-based MySQL database for efficient and scalable data management. Here are key points about its integration:
    - 1. Reliability: Aiven offers a reliable database solution with high availability, ensuring uninterrupted service for PrimeFoodNetwork users.
    - 2.Scalability: The cloud-based nature of Aiven allows seamless scalability, accommodating the growing data needs of the web application.
    - 3.Managed Services: Aiven provides managed MySQL services, handling administrative tasks such as backups and maintenance, reducing the operational burden on the development team.
    - 4.Security: The Aiven platform prioritizes data security, implementing encryption and access controls to safeguard sensitive information stored in the MySQL database.
    - 5.Automatic Backups: Book Charm benefits from automatic backups provided by Aiven, ensuring data integrity and easy recovery in case of unexpected issues.
    - 6.API Compatibility: Aiven supports standard MySQL APIs, facilitating seamless integration with the backend components of the PrimeFoodNetwork web application.
    - 7.Developer-Friendly: The Aiven platform offers a developer-friendly environment, making it straightforward for the development team to configure and manage the MySQL database for PrimeFoodNetwork.
    - 8.Cost-Effective: Aiven's cloud-based model allows cost-effective utilization, enabling PrimeFoodNetwork to pay for the resources it consumes without the need for extensive infrastructure management.

- 9.Data Durability: With Aiven, data durability is enhanced through redundant storage and backup mechanisms, ensuring that critical information is safeguarded against data loss scenarios.

- Use of JWT for authorization
  - Stateless Authentication: JWT allows for stateless authentication, meaning server-side sessions or database lookups for authentication are not required, resulting in reduced server load and improved scalability.
  - Enhanced Security: JWTs are digitally signed, ensuring data integrity and preventing tampering or unauthorized access to user data. Additionally, since JWTs do not store sensitive information, they mitigate the risk of data exposure in case of a breach.
  - Cross-Domain Compatibility: JWTs can be easily transmitted over HTTP headers or URLs, making them suitable for use in cross-domain communication and enabling seamless integration with various frontend and backend technologies.

7. Screenshots

A) User Related Functionalities

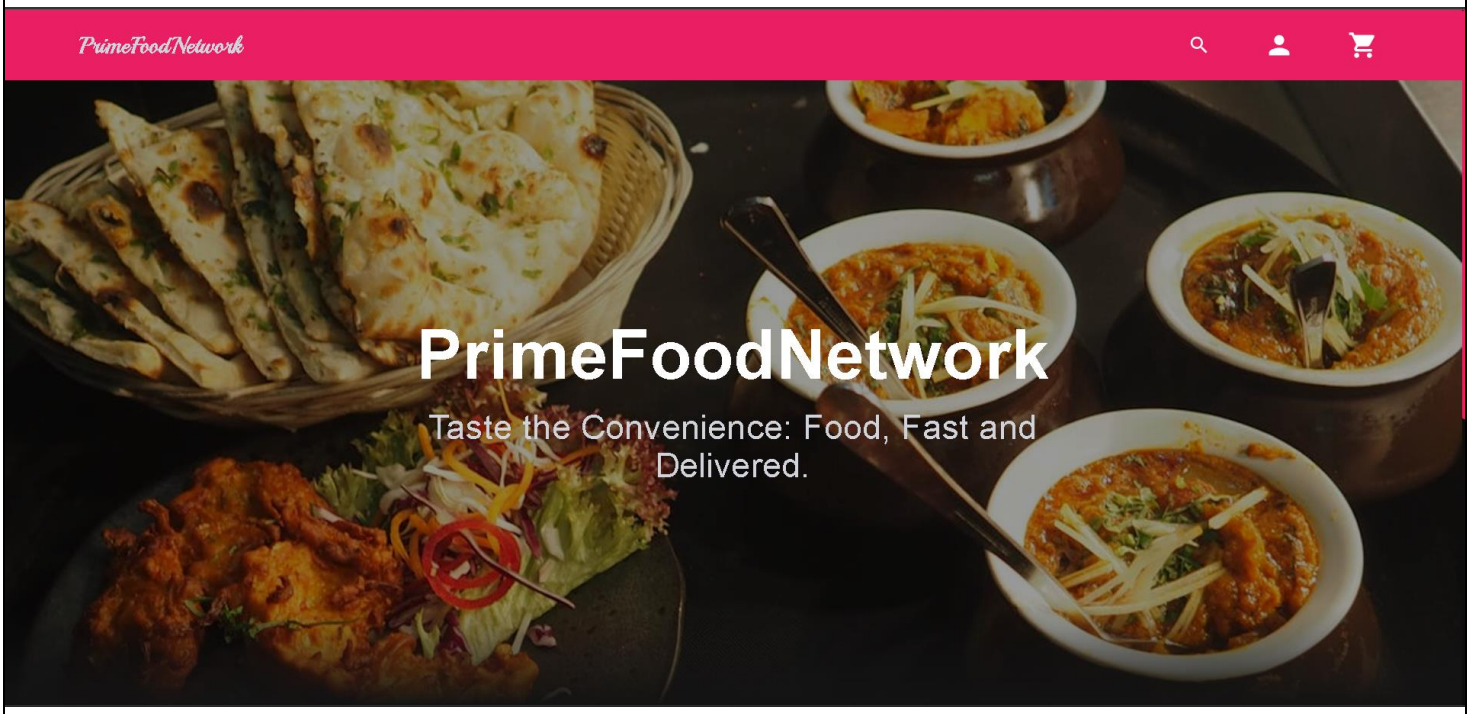


Fig-1: Home Page

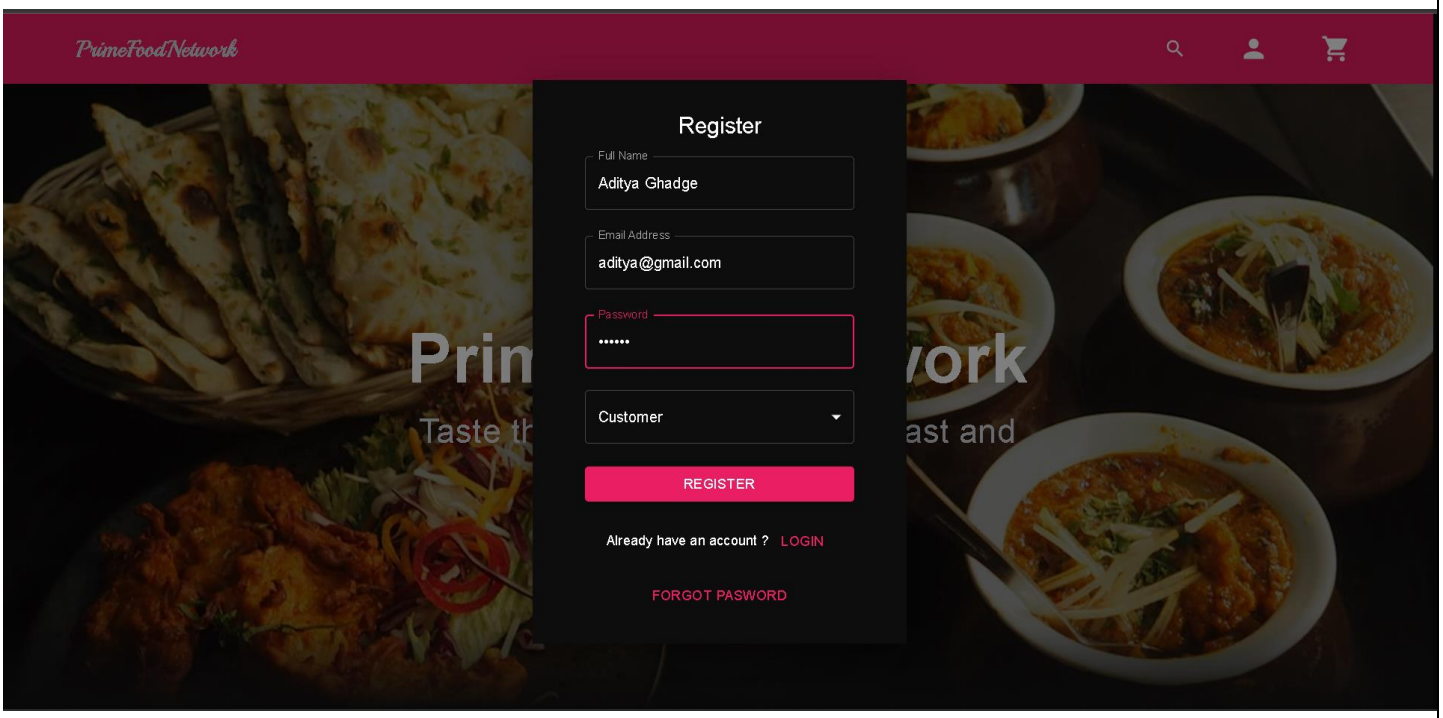


Fig2 – User Registration page

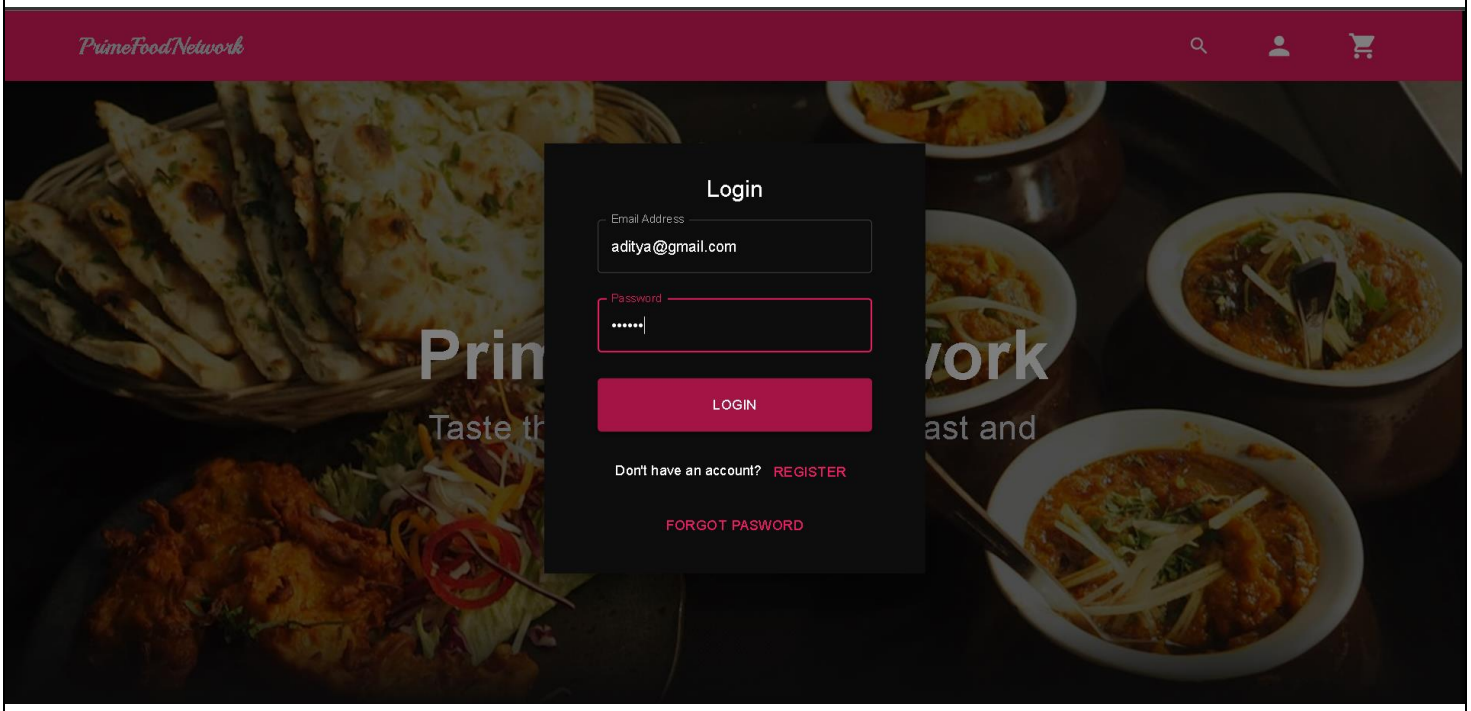


Fig 3 –User login page

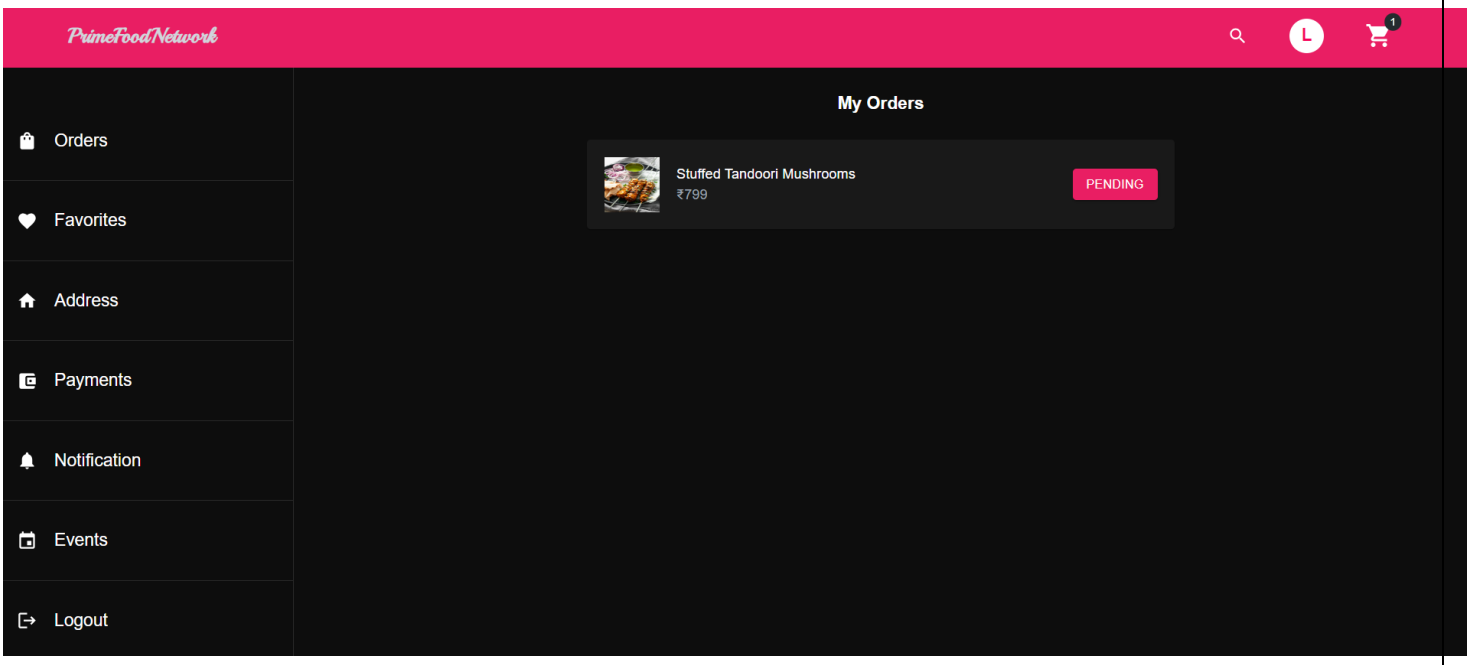


Fig 4 – Users Order

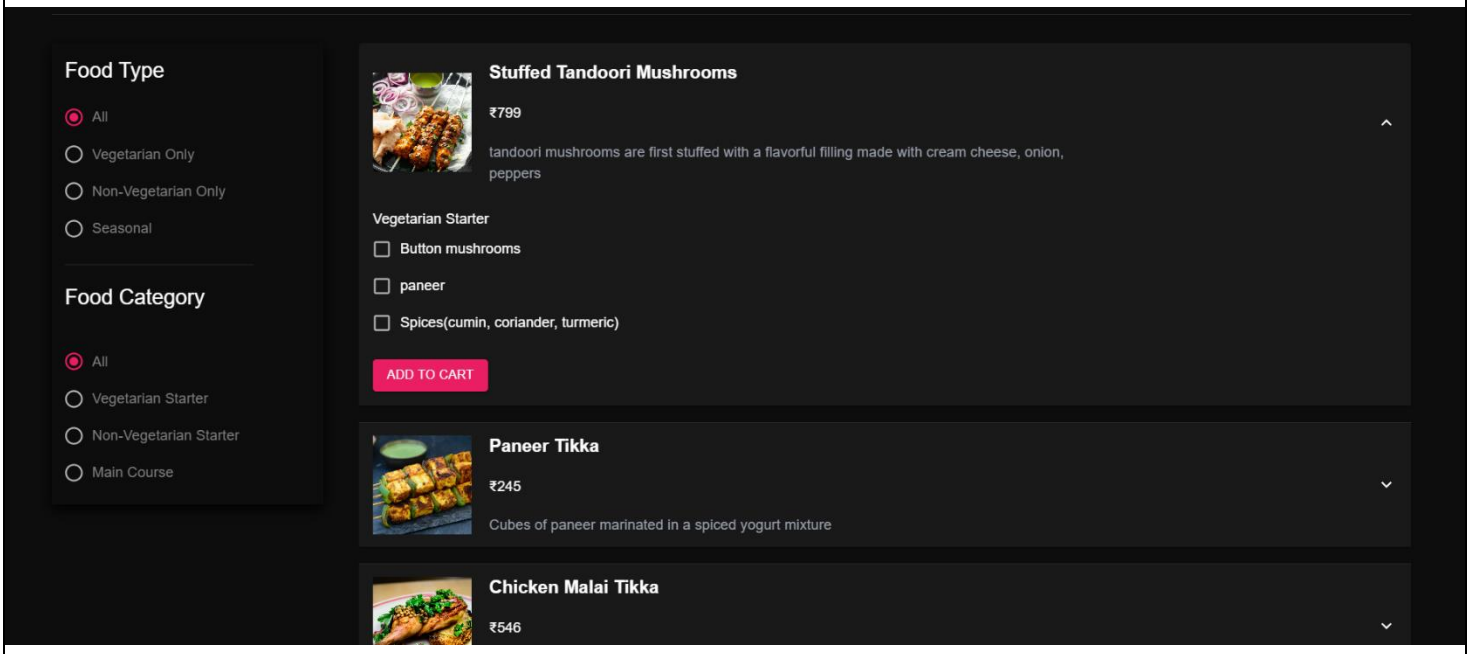


Fig 5 – Add to Cart

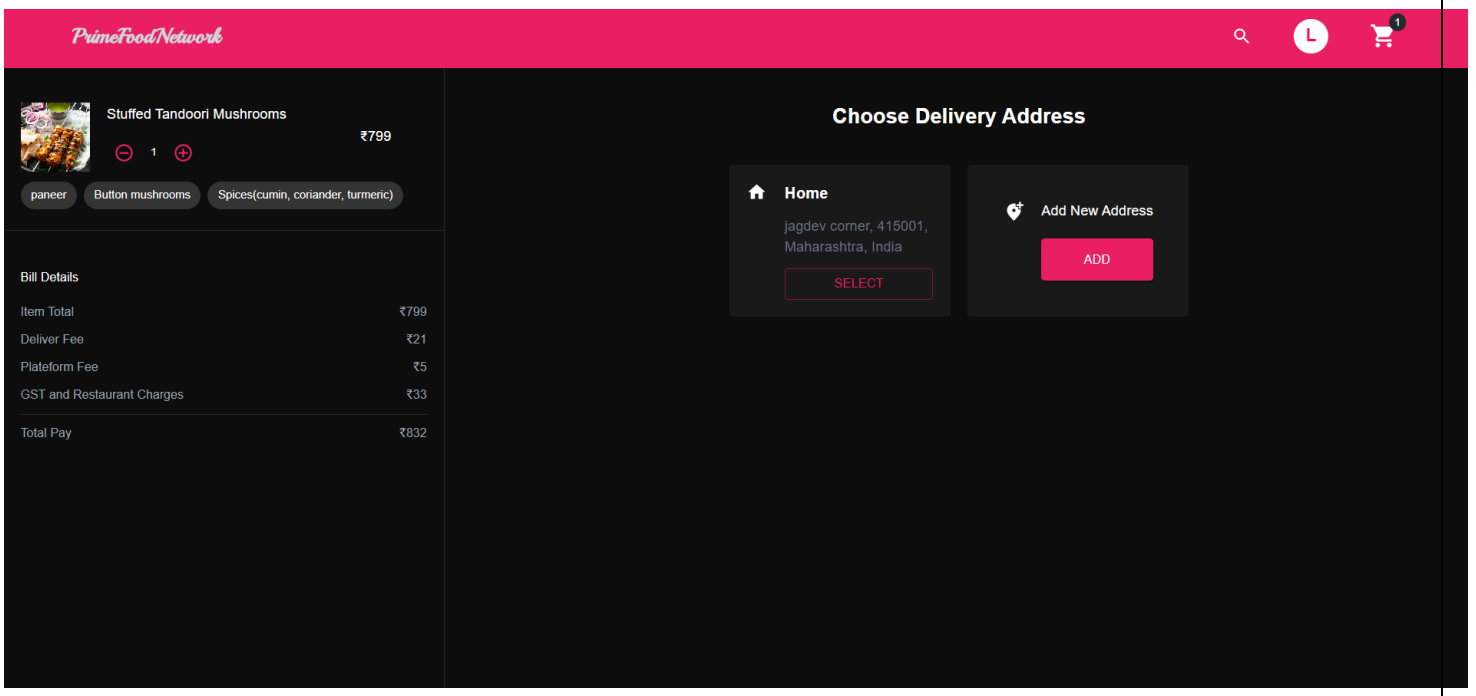


Fig 6 – Bill

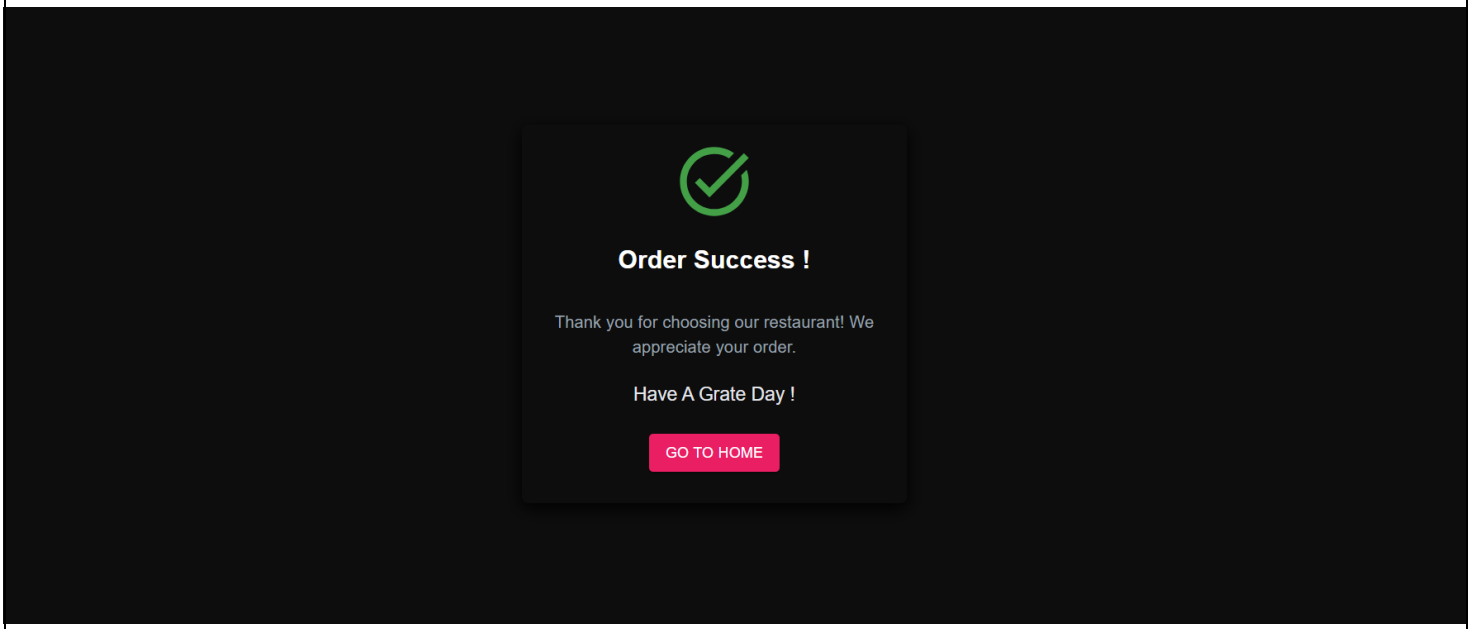


Fig 7 – Order Success

B) Seller Related Functionalities

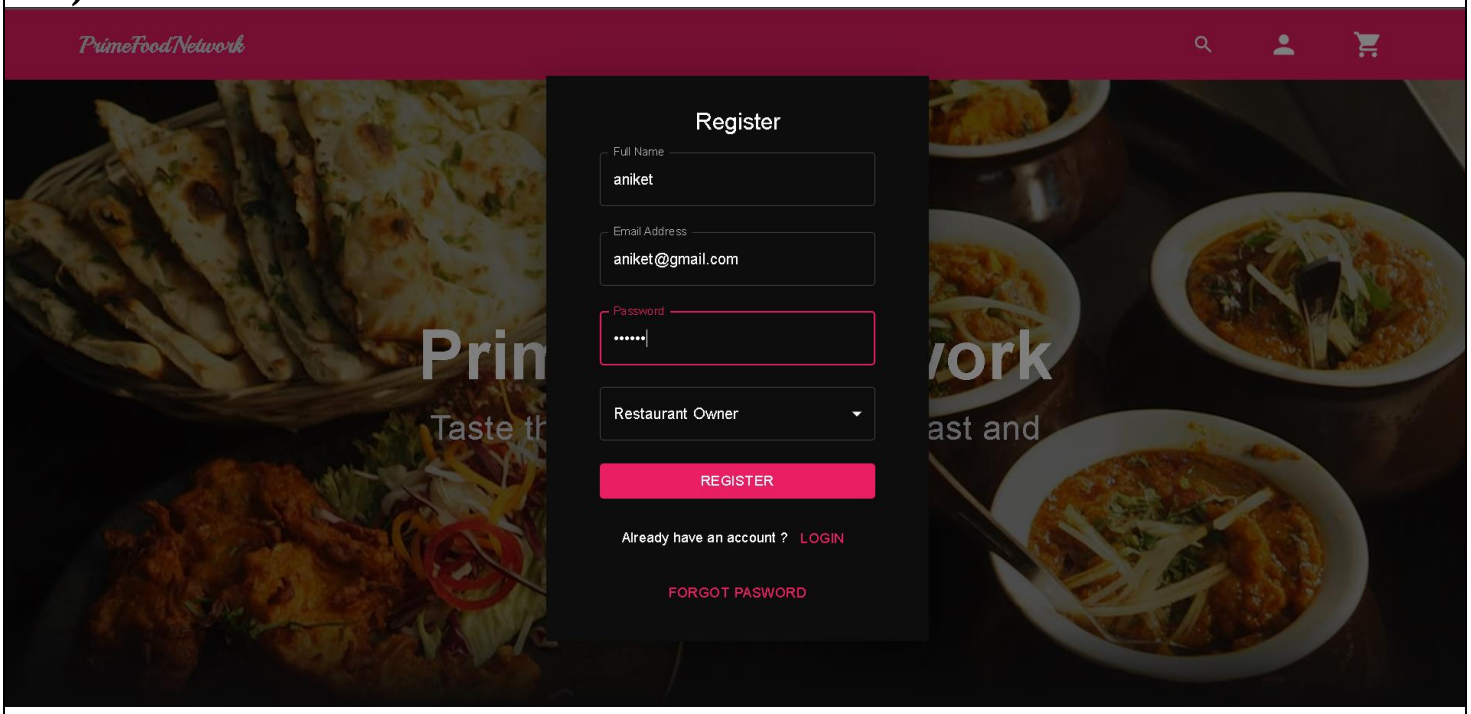


Fig 8 – Restaurant Owner Registration Page

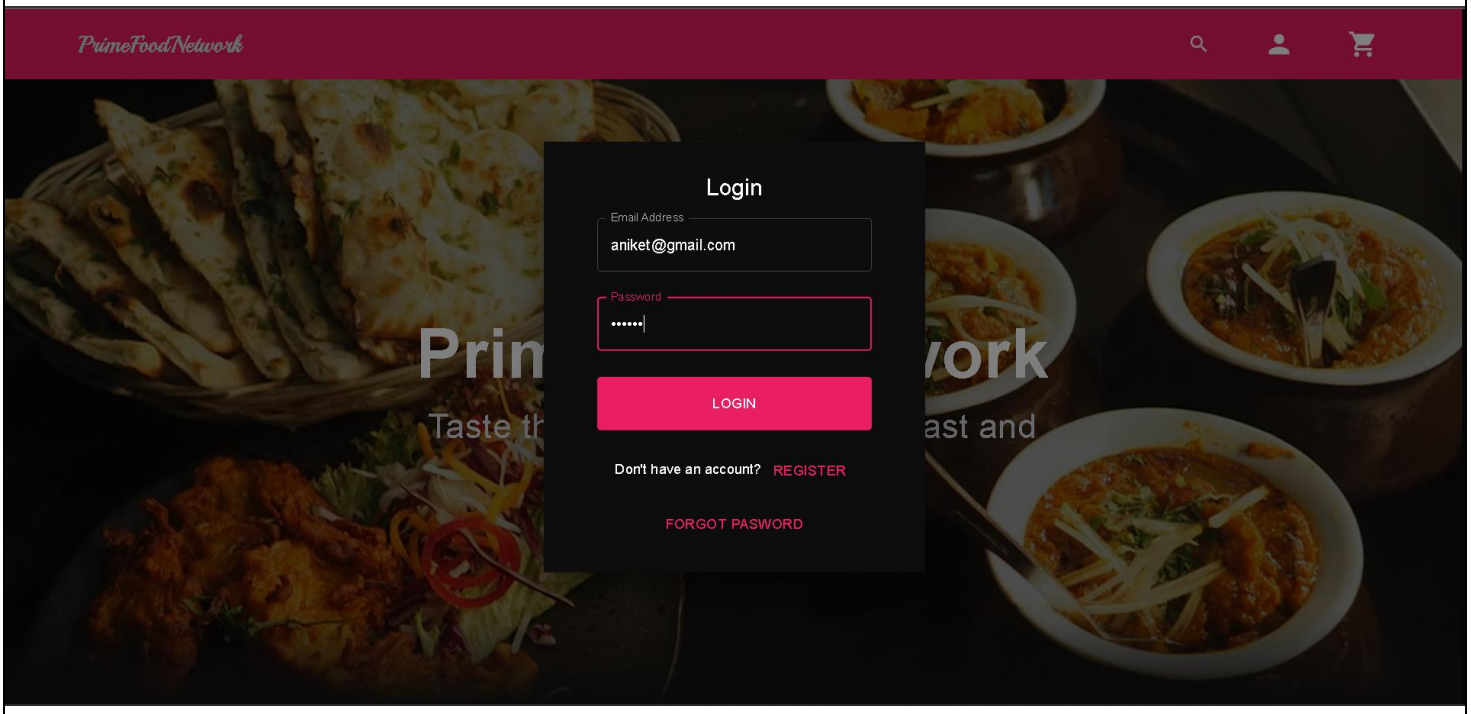


Fig 9 – Restaurant Owner Login Page

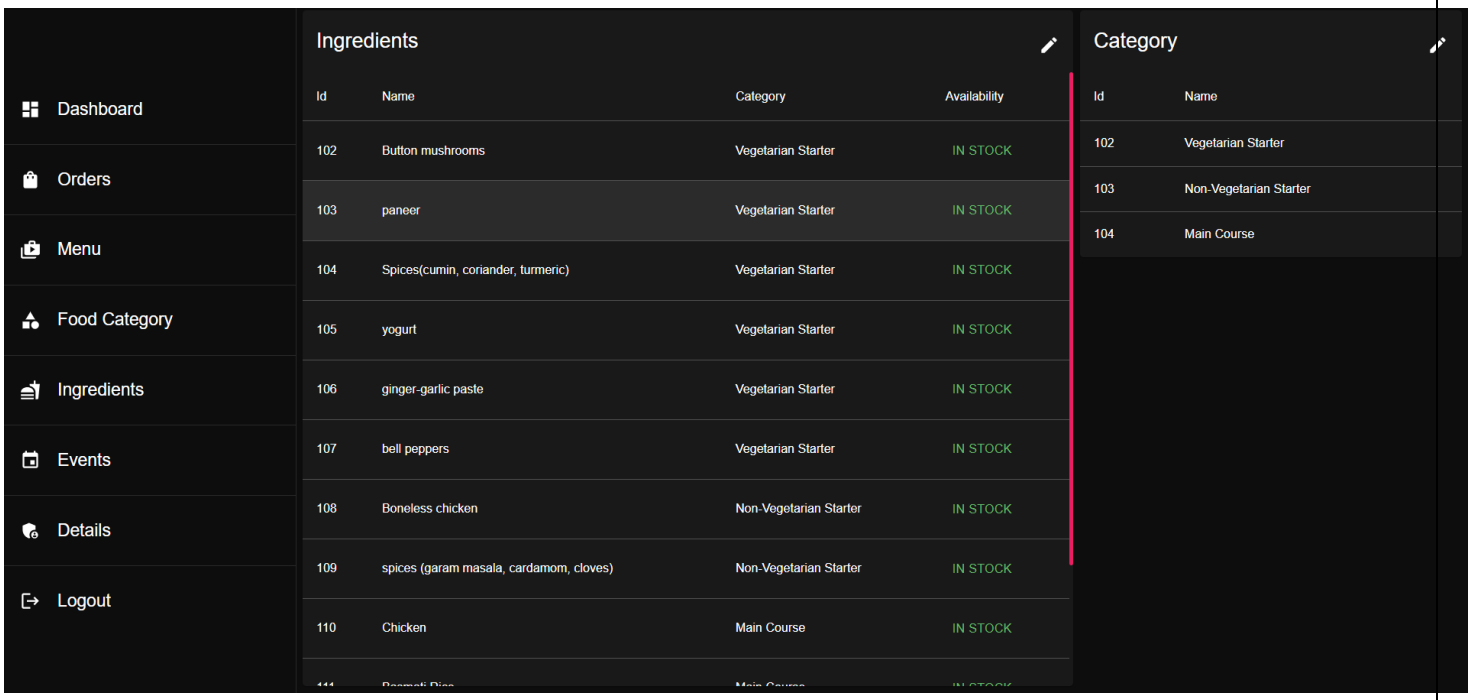
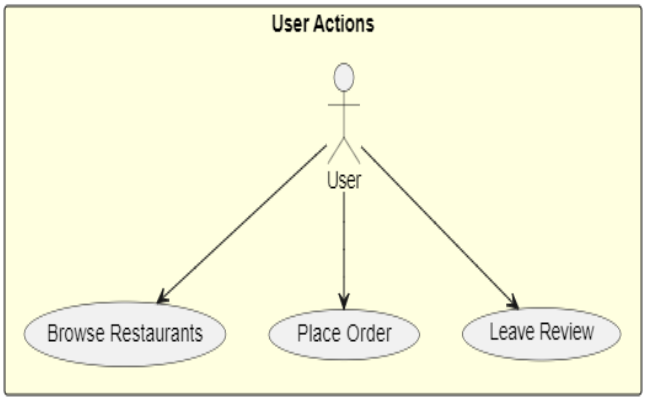
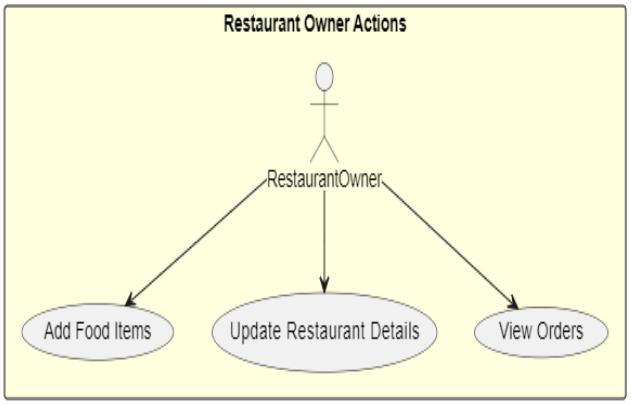
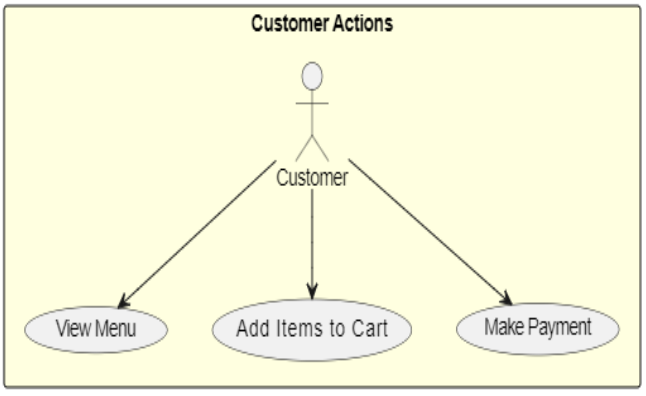


Fig 10 – Owner Can Add Ingredients

C) Use Case Diagram







8. FUTURE SCOPE:

- **Subscription-Based Model:**
  - **Introduce a subscription-based model offering users exclusive benefits such as priority access to special restaurant deals, discounts on orders, and personalized dining recommendations.**
  - **Implement tiered subscription plans to cater to different user preferences and dining habits, ensuring that both occasional and frequent users find value in their subscriptions.**
- **Mobile App Development:**
  - **Expand the accessibility and convenience of PrimeFoodNetwork by developing dedicated mobile applications for both iOS and Android platforms.**
  - **Optimize the user interface and experience specifically for mobile devices, ensuring a smooth and intuitive navigation, fast loading times, and a seamless ordering process on the go.**
- **Enhance Personalization:**
  - **Implement advanced recommendation algorithms that consider user preferences, order history, and browsing behavior to provide highly personalized food suggestions and restaurant options.**
  - **Integrate user profiles across devices, enabling a consistent and tailored experience whether users access the platform from a desktop, tablet, or mobile device.**
- **Data Analytics and Reporting:**
  - **Incorporate data analytics capabilities within the platform to generate insightful reports for restaurants and users. Restaurants could analyze customer behavior, peak order times, and popular dishes, while users could track their spending habits, favorite orders, and loyalty rewards.**
  - **Provide visualizations and dashboards for both restaurants and users, helping them make informed decisions and track progress towards their goals, such as sales targets or healthy eating objectives.**

9. Conclusion

In conclusion, the "PrimeFoodNetwork" project successfully integrates a range of cutting-edge technologies to deliver a comprehensive and dynamic online food ordering platform. By leveraging Spring Boot, Spring Data JPA, and RESTful Web Services, the project ensures robust backend functionality, facilitating secure user authentication and efficient data management.

PrimeFoodNetwork embodies a user-centric approach to online food ordering, with a technology stack that includes Spring Boot, Node.js, React.js, and a cloud-based MySQL database. The platform offers a seamless and secure payment experience, user-friendly interfaces, and a responsive design that ensures optimal performance across devices.

Looking ahead, the introduction of a subscription-based model could further enhance user engagement, while the development of a dedicated mobile app will broaden the platform’s accessibility. PrimeFoodNetwork is poised for future growth, showcasing a strong commitment to innovation, user satisfaction.

10. References

1. https://spring.io/projects/spring-boot
2. https://spring.io/projects/spring-data-jpa
3. https://restfulapi.net/
4. https://www.mysql.com/
5. https://spring.io/projects/spring-web
6. https://reactjs.org/
7. https://nodejs.org/