ONLINE FOOD ORDERING SYSTEM

A MINI-PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this Mini Project "**ONLINE FOOD ORDERING SYSTEM"** is the Bonafide work of **"AGISHRAJ R (2116220701016), ALDRIN ROGER S (2116220701023)"** who carried out the project work under my supervision.

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ABSTRACT

The **Online Food Ordering System** is a comprehensive web-based application designed to enhance the process of ordering food by providing an intuitive and seamless online experience for users. Developed using PHP for the front-end interface, Java for backend logic and business operations, and SQL for managing data storage and retrieval, the system is designed with a focus on functionality, usability, and performance.

The portal enables users to create and manage accounts through a secure login system, ensuring personalized and secure access to features. Once logged in, users can explore an organized list of available food products, complete with detailed descriptions and pricing. The system allows users to add selected items to a virtual shopping cart, providing a clear overview of their intended purchases. The cart functionality includes options to modify quantities or remove items before proceeding to the checkout.

For transaction processing, the portal ensures a seamless and secure order checkout system, managing user inputs and confirming orders in real time. Users can also view their order history, which provides a record of previous purchases, fostering convenience and transparency. The portal efficiently handles user data, product details, and transactional records using a robust SQL database, ensuring scalability and reliability.

On the backend, Java facilitates the business logic, ensuring smooth communication between the front end and the database. The system adheres to industry best practices for secure data handling, modular architecture, and error-free performance, making it a dependable platform for food ordering services.

This portal not only improves the user experience but also provides businesses with an efficient way to manage and monitor online food orders, contributing to customer satisfaction and operational efficiency. It is suitable for both small and large-scale food service providers looking to digitize their ordering processes.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The Online Food Ordering System is a comprehensive web-based application designed to simplify the food ordering and management process for both customers and administrators. In response to the growing demand for efficient and convenient online food services, this platform bridges the gap between restaurants and users by providing a user-friendly interface and a robust backend infrastructure. Built with PHP for the frontend, SQL for data management, and Java for backend operations, the portal is structured to ensure seamless functionality and a responsive user experience.

The platform addresses several challenges found in traditional food ordering systems, including limited customization options, inefficiencies in order tracking, and manual inventory management. Administrators can effectively manage food item listings, update order statuses, and handle customer interactions, while users enjoy an intuitive shopping experience that includes browsing menus, liking products, adding items to their cart, and placing orders with ease. Additionally, the portal is designed to be highly scalable, making it capable of accommodating growing user bases and large volumes of data, which suits the needs of both small and large food businesses.

A standout feature of the portal is its modular architecture, which enables easy integration of additional functionalities in the future, such as secure payment gateways, real-time delivery tracking, loyalty programs, and personalized promotions. This adaptability ensures that the platform remains competitive and aligned with the evolving needs of the food service industry. Furthermore, the portal’s design emphasizes operational efficiency and usability, empowering restaurants to optimize their workflow while enhancing the customer experience.

The following sections of this report outline the system's hardware and software requirements, describe the individual modules, and discuss their contributions to improving overall system efficiency and usability.

1.2. SCOPE OF WORK

The scope of work for the Food Ordering Portal includes designing and developing a comprehensive platform to streamline the food ordering process for users. The portal will allow users to register and log in securely, browse through a wide range of food products, add selected items to a shopping cart, and review the cart before placing an order. It also incorporates an order checkout functionality and provides users with a detailed history of their past orders for reference. The backend system, powered by Java and SQL, ensures efficient data handling, secure transactions, and scalability. The frontend, developed using PHP, ensures a user-friendly interface that promotes seamless navigation and an intuitive user experience. The project aims to deliver a reliable and responsive solution, catering to the needs of both customers and food service providers, with features that enhance accessibility and convenience.

1.3. PROBLEM STATEMENT

The problem addressed by the Food Ordering Portal is the complexity and inefficiency often encountered in traditional food ordering systems. Customers frequently face difficulties when ordering food through manual or offline methods, such as long wait times, limited payment options, and lack of transparency in order tracking. Additionally, food providers often struggle with managing orders, tracking inventory, and maintaining customer relationships without a centralized system. The goal of this project is to create a seamless online food ordering platform that simplifies the user experience by providing easy access to food menus, secure order placement, and efficient order management. By integrating features like user authentication, a dynamic shopping cart, order history tracking, and secure payment processing, the system aims to enhance customer satisfaction, streamline operations for food vendors, and improve overall efficiency in the food ordering and delivery process.

1.4 AIM AND OBJECTIVES OF THE PROJECT

The aim of the Food Ordering Portal project is to create a user-friendly, secure, and efficient online platform that enables customers to easily browse food menus, place orders, and track their order history, while allowing food providers to manage orders and inventory effectively. The objectives include implementing secure user authentication, providing an interactive product catalog and cart system, facilitating smooth order checkout with secure payment options, enabling

order history tracking, and developing a scalable backend to ensure seamless performance and security.

CHAPTER 2

SYSTEM SPECIFICATIONS

2.1 HARDWARE SPECIFICATION:

To ensure the smooth deployment and operation of the Food Ordering Portal, the following hardware components are recommended for both server and client environments:

Server Requirements:

- Processor: Intel Xeon or equivalent multi-core processor for handling high-volume requests and database transactions efficiently.
- Memory: Minimum of 8 GB RAM to support multiple concurrent users and smooth performance of the backend system.
- Storage: At least 256 GB SSD storage, expandable based on the size of the product database and order history data.
- Network: High-speed internet connection with a minimum of 1 Gbps bandwidth to ensure fast data transfer and uninterrupted service for customers.

Client Requirements:

- Device: Laptop or Desktop with at least 4 GB RAM to ensure a smooth browsing experience for customers.
- Browser: Google Chrome, Mozilla Firefox, or Microsoft Edge (latest stable versions) for optimal compatibility and performance.
- Screen Resolution: Minimum of 1280x720 pixels to ensure a clear and responsive layout for a good user interface experience.

Hosting Environment:

For high availability, scalability, and reliability, the Food Ordering Portal should be hosted on a cloud-based platform such as:

AWS (Amazon Web Services)

Microsoft Azure

Heroku

These hosting solutions provide flexibility in scaling the application to handle increasing user traffic and data storage needs, ensuring the portal operates efficiently under varying load conditions.

2.2 SOFTWARE SPECIFICATIONS:

The Food Ordering Portal leverages a robust software stack to ensure seamless performance, scalability, and flexibility across all components:

Frontend:

- PHP: For creating a dynamic, user-friendly interface with server-side rendering.

Backend:

- Java: For robust backend logic and order processing.
- SQL: For efficient and secure database management.

Development Tools:

- Eclipse IDE: For coding, debugging, and building the backend in Java.
- phpMyAdmin: For managing and visualizing the SQL database.
- XAMPP/WAMP: For local server setup and PHP testing.
- Postman: For testing API requests and responses.

Libraries and Packages:

- JDBC (Java Database Connectivity): For seamless communication between the Java backend and the SQL database.
- Bootstrap: For styling and creating responsive frontend layouts.
- jQuery: For simplifying JavaScript operations and enhancing interactivity.

Platform:

The application is designed to run on cross-platform environments, ensuring compatibility with:

Windows

macOS

Linux

This software stack ensures a secure, high-performing, and flexible platform to meet the needs of both customers and food service providers.

CHAPTER 3

ARCHITECTURE DIAGRAM

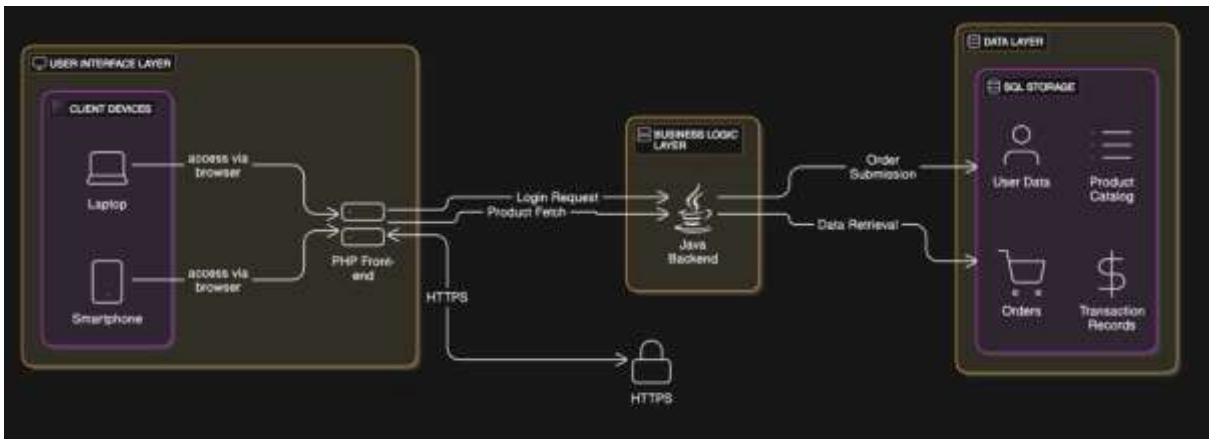

Fig.3.1 Architecture Diagram

This diagram illustrates the architecture of the **Online Food Ordering System**, highlighting interactions between **Users**, the **PHP Frontend**, the **Java Backend**, and the **SQL Database**.

Users interact via the PHP-based frontend to log in, browse products, manage their cart, place orders, and view order history. The **Java Backend** processes these requests, handling authentication, cart operations, order processing, and communication with the **SQL Database**.

The database stores and manages data in organized tables for users, products, orders, and transactions. Secure communication (HTTPS) ensures data integrity, enabling efficient and reliable system functionality.

CHAPTER 4

MODULE DESCRIPTION

3.1. Food Item Management

Overview:

This module is designed to allow administrators to efficiently manage the catalog of food items displayed to users on the **Online Food Ordering System.**

Features:

- **Add New Food Items:** Administrators can add new food items by providing details such as name, price, description, and an image to make the menu visually appealing.
- **Update Existing Food Items:** Allows updates to item details such as price, description, availability status, or image to reflect current offerings.
- **Remove Unavailable Food Items:** Administrators can remove food items that are outdated, discontinued, or temporarily unavailable.

Benefits:

This module ensures that users have access to accurate, well-organized, and up-to-date menu information, improving their browsing and ordering experience while allowing administrators to maintain a consistent and attractive menu.

3.2. Order Management

Overview:

The **Order Management module** is designed to streamline the process of managing customer orders from the moment they are placed until completion, ensuring a smooth and efficient workflow for administrators and food providers.

Features:

- Real-Time Order Notifications: Administrators are instantly notified when a new order is placed, enabling quick response and processing.
- Order Tracking: Track the status of each order as it progresses through stages such as "Order Received," "Preparing," "Ready for Pickup," or "Out for Delivery."

- Update Order Status: Administrators can update order statuses to keep both staff and customers informed, such as "Order Processing," "Out for Delivery," and "Delivered."
- Order History Management: View and manage past orders for better record-keeping and customer service.

Benefits:

This module enhances operational efficiency by keeping the order process transparent and organized. It improves customer satisfaction by providing real-time updates on their orders and ensures that businesses can handle orders effectively and reliably.

3.3. User Account Management

Overview:

The **User Account Management** module handles all aspects of user registration, authentication, and account-related functionalities, ensuring a secure and personalized experience for users.

Features:

- User Registration: Users can create accounts using their email and password for secure access.
- Edit Personal Details: Users can update their profile information, such as name, address, and contact number, for personalized service.
- Login and Authentication: Secure login functionality to ensure only authorized users can access their accounts.
- View Order History: Users can review their past orders for convenience and reference.
- Track Ongoing Orders: Users can monitor the status of their current orders in real-time.

Benefits:

This module enhances the user experience by providing personalized account management features and secure access. It also enables users to easily manage their details, track their orders, and view their purchase history, promoting a seamless and reliable platform interaction.

3.4. Cart Management

Overview:

The **Cart Management** module allows users to create and manage a temporary collection of food items they intend to purchase, providing a seamless shopping experience.

Features:

- Add or Remove Items**:** Users can easily add food items to the cart or remove unwanted items at any time.
- Automatic Price Calculation: The cart dynamically calculates the total price of selected items, including applicable taxes or discounts.
- Persistent Cart: Retains selected items in the cart until the user completes the checkout process or manually clears the cart.
- Item Quantity Adjustment: Users can modify the quantity of each item in the cart to match their preferences.

Benefits:

This module enhances the user experience by offering flexibility to review and modify their selections before finalizing their order. It ensures accuracy in billing and simplifies the purchasing process, making it convenient and user-friendly.

3.5. Search and Filter Options

Overview:

The Search and Filter Options module empowers users to quickly and efficiently find specific food items within the Online Food Ordering System, enhancing their browsing and selection process.

Features:

- Keyword Search: Users can search for food items by entering keywords, such as item names or ingredients.
- Category Filters: Filter options based on food categories (e.g., vegetarian, beverages, desserts) for targeted browsing.
- Price Range Filters: Users can set a price range to view items that fit their budget.

- Sort Options: Sort search results by popularity, price (low to high or high to low), or customer ratings.
- Dietary Preferences: Apply filters for dietary needs like vegan or gluten-free items (optional feature).

Benefits:

This module simplifies the browsing process by helping users find their desired items quickly and efficiently. It saves time, improves user satisfaction, and makes the platform more intuitive and convenient to use.

3.6. Notification System

Overview:

The **Notification System** module ensures that users and administrators of the **Online Food Ordering System** are kept informed about important updates and events in real-time.

Features:

- **Order Notifications for Users:** Notify users about successful order placement, payment confirmation, and status updates such as "Order Processing," "Out for Delivery," and "Delivered."
- **Admin Alerts:** Notify administrators about new orders, stock shortages, or critical system updates requiring attention.
- **Promotional Notifications:** Inform users about ongoing discounts, special deals, and newly added food items to encourage engagement.
- **Real-Time Updates:** Deliver notifications via email, SMS, or in-app alerts for timely communication.

Benefits:

This module fosters trust and engagement by ensuring timely and accurate communication between the system, users, and administrators. It enhances the user experience by keeping customers informed and encourages them to interact with the platform through promotional offers.

3.7. Feedback and Ratings

Overview:

The Feedback and Ratings module provides users of the Online Food Ordering System with a platform to share their experiences and rate food items, fostering transparency and trust.

Features:

- Submit Reviews and Ratings: Users can leave detailed reviews and assign ratings to individual food items after purchase.
- View Aggregate Ratings: Display average ratings for each food item, helping other users make informed decisions.
- Admin Feedback Analysis: Admins can access user feedback and ratings to identify areas for improvement, maintain quality standards, and enhance customer satisfaction.
- Flagging System: Users can flag inappropriate reviews for admin review (optional feature).

Benefits:

This module builds a transparent and interactive ecosystem where users feel valued for their opinions, promoting trust in the platform. Simultaneously, it provides admins with actionable insights to enhance product quality and overall service.

Chapter 5

SYSTEM DESIGN

5.1 USE CASE DIAGRAM

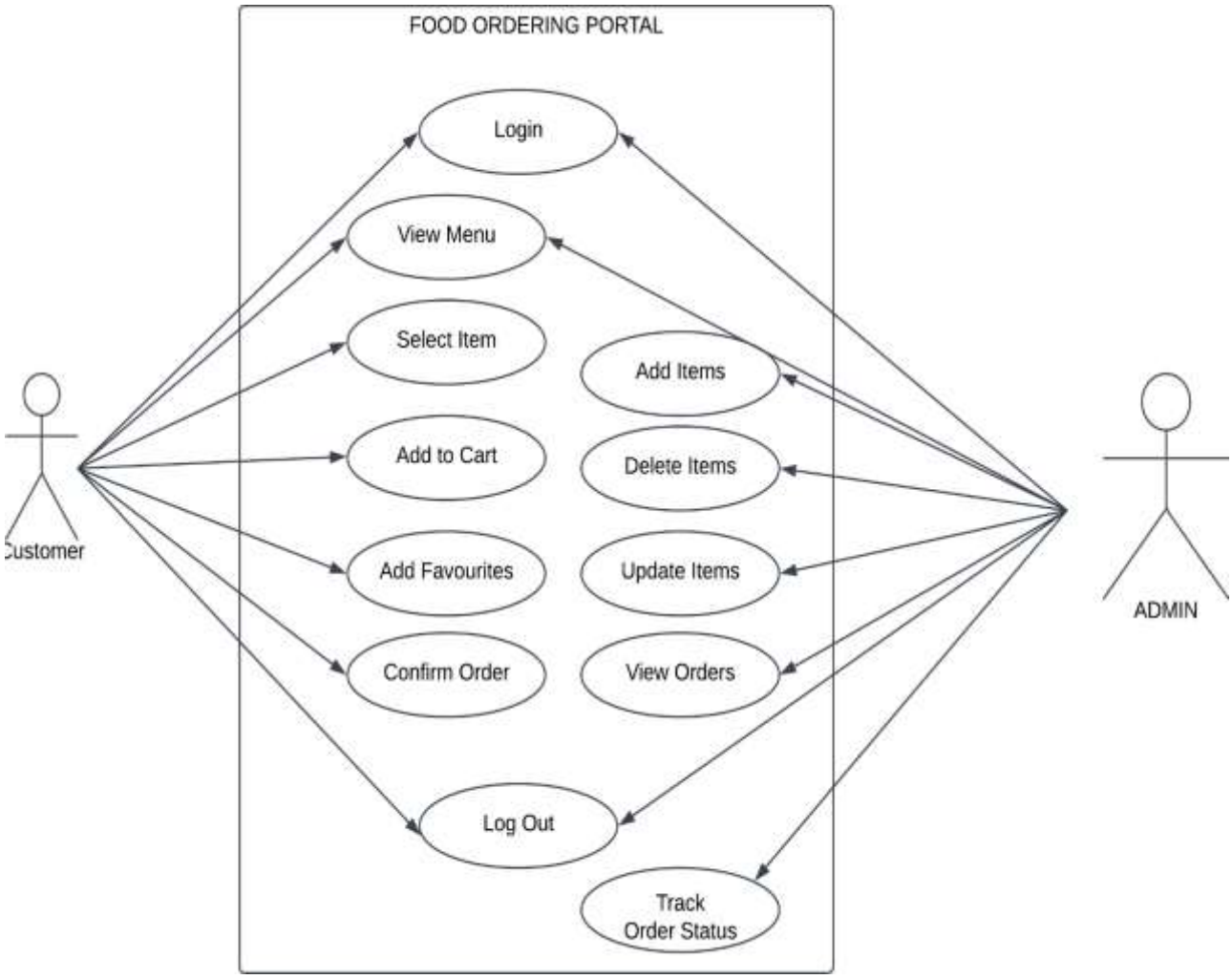

Fig.5.1 Use Case Diagram

This diagram illustrates the interactions between **Users** (Customer and Admin) and the S**ystem**, showcasing key functionalities like login, menu viewing, order management, and administrative tasks such as adding or updating food items.

5.2 ENTITY-RELATIONSHIP DIAGRAM

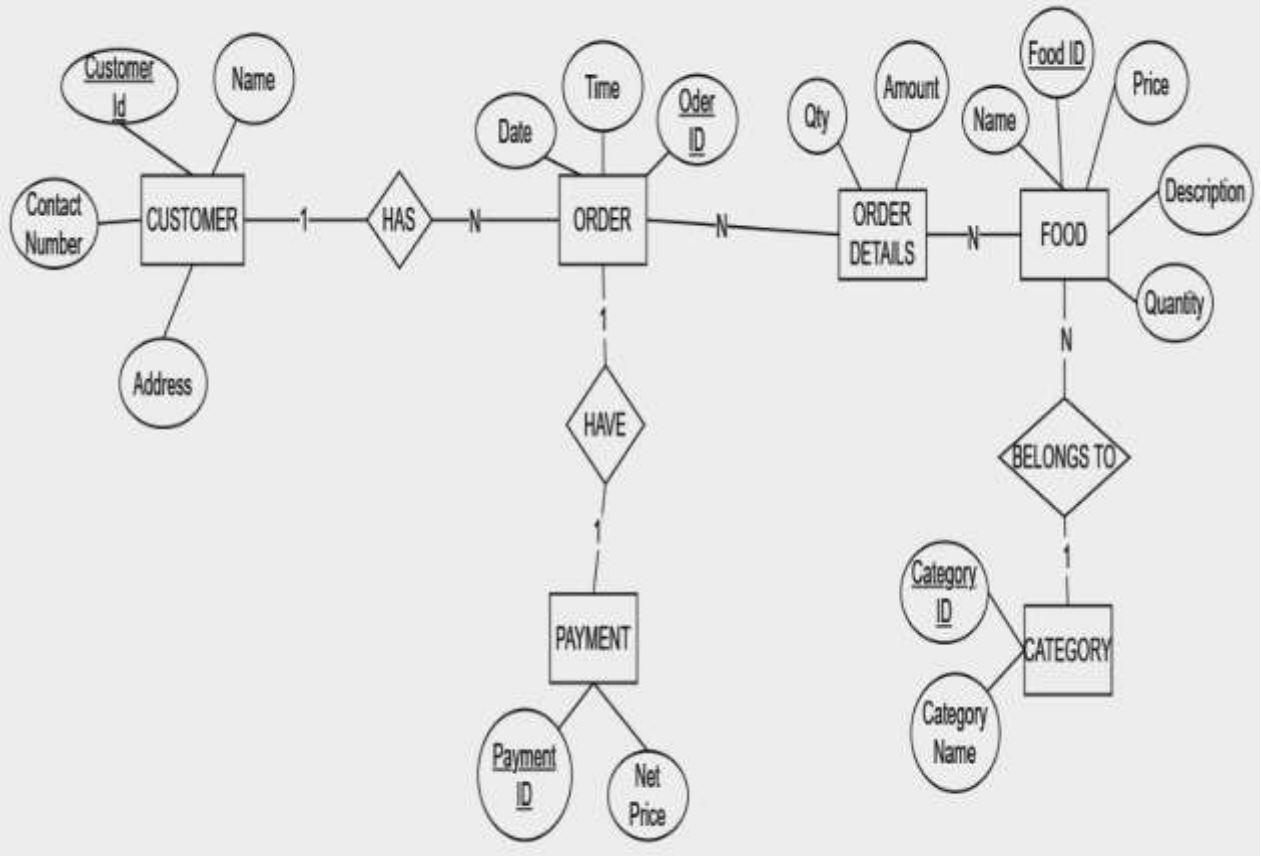

Fig.5.2 Entity-Relationship Diagram

The ER diagram represents the database structure of the Food Ordering Portal, connecting entities like **Customer**, **Order**, **Payment**, **Food**, and **Category**. Customers place orders linked to order details and payments, while food items are organized into categories. This design supports efficient data handling for orders and product management.

5.3 DATA-FLOW DIAGRAM

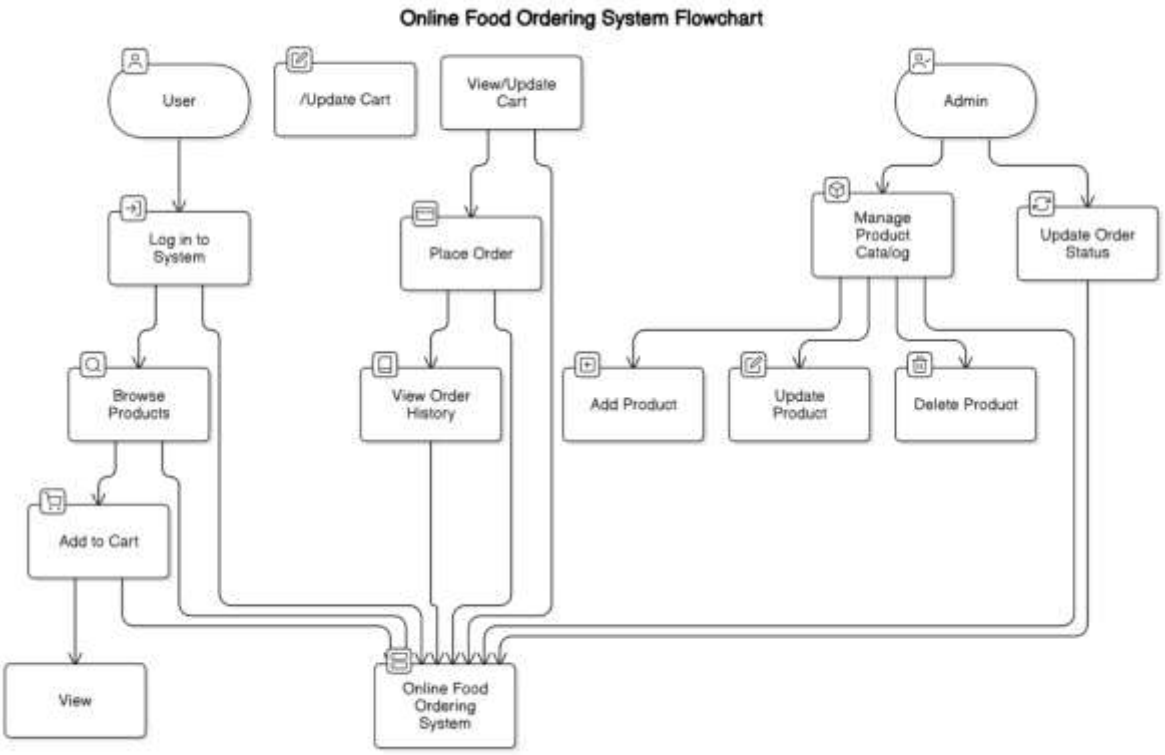

Fig.5.3 Data-Flow Diagram

The DFD outlines the flow of data between different modules of the food ordering portal, demonstrating processes like food item management, order tracking, and cart operations for both Admin and User roles.

5.4 ACTIVITY DIAGRAM

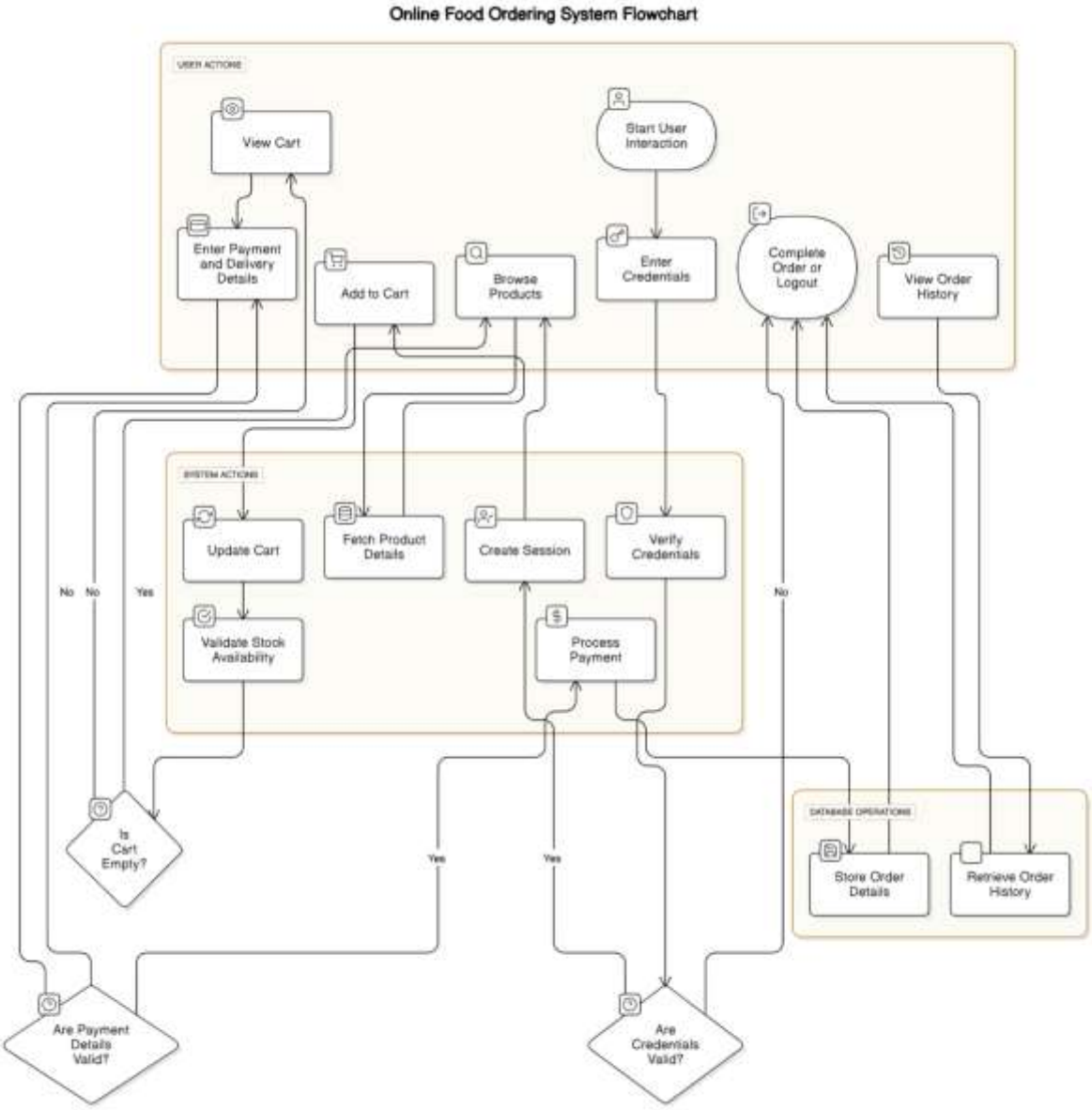

Fig.5.4 Activity Diagram

This diagram shows the workflows for Admin and User roles in the Food Ordering Portal. Admin manages food items and order statuses, while Users browse products, add to cart, and place orders. It outlines task progression and interactions.

CHAPTER 6

IMPLEMENTATION SCREENSHOTS

6.1 USER INTERFACE:

Fig.6.1.1 Home Page

The Home Page acts as the central hub, offering intuitive navigation and an engaging overview of the platform's features.

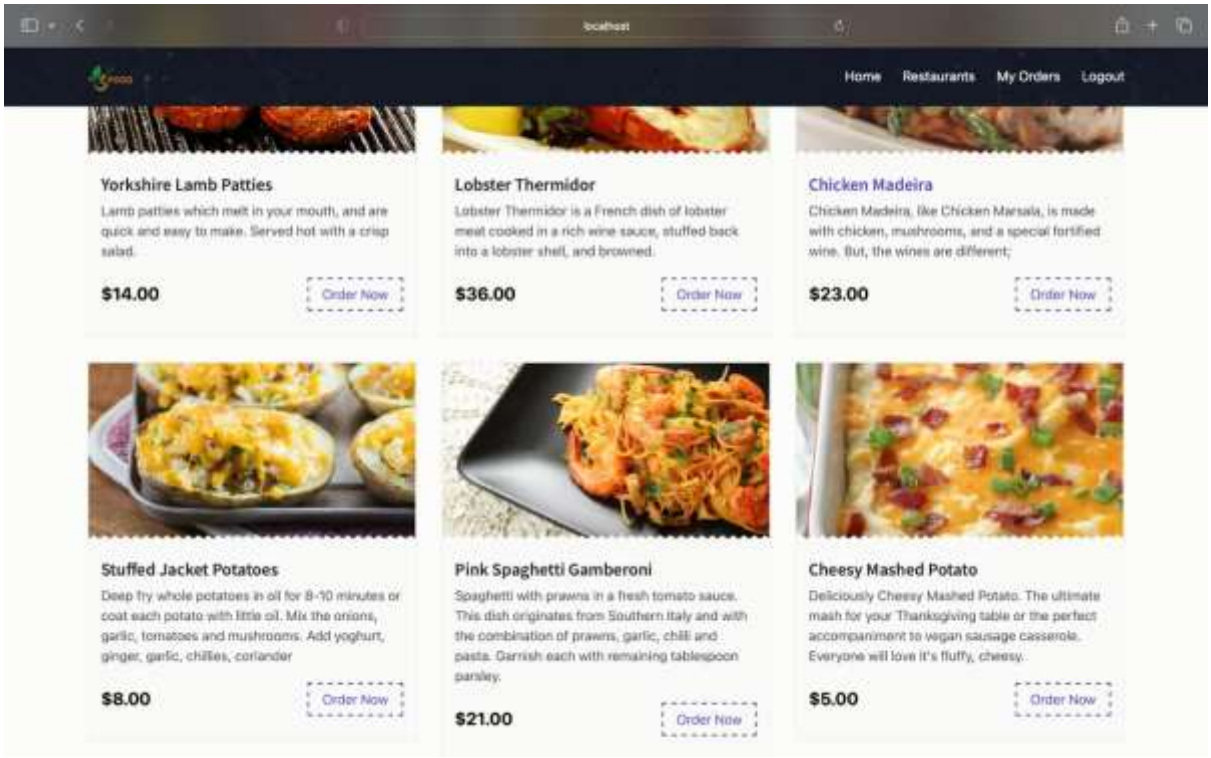

Fig.6.1.2 Menu Page

The Menu Page lists out the available food from the restaurant with their price, description and ratings.

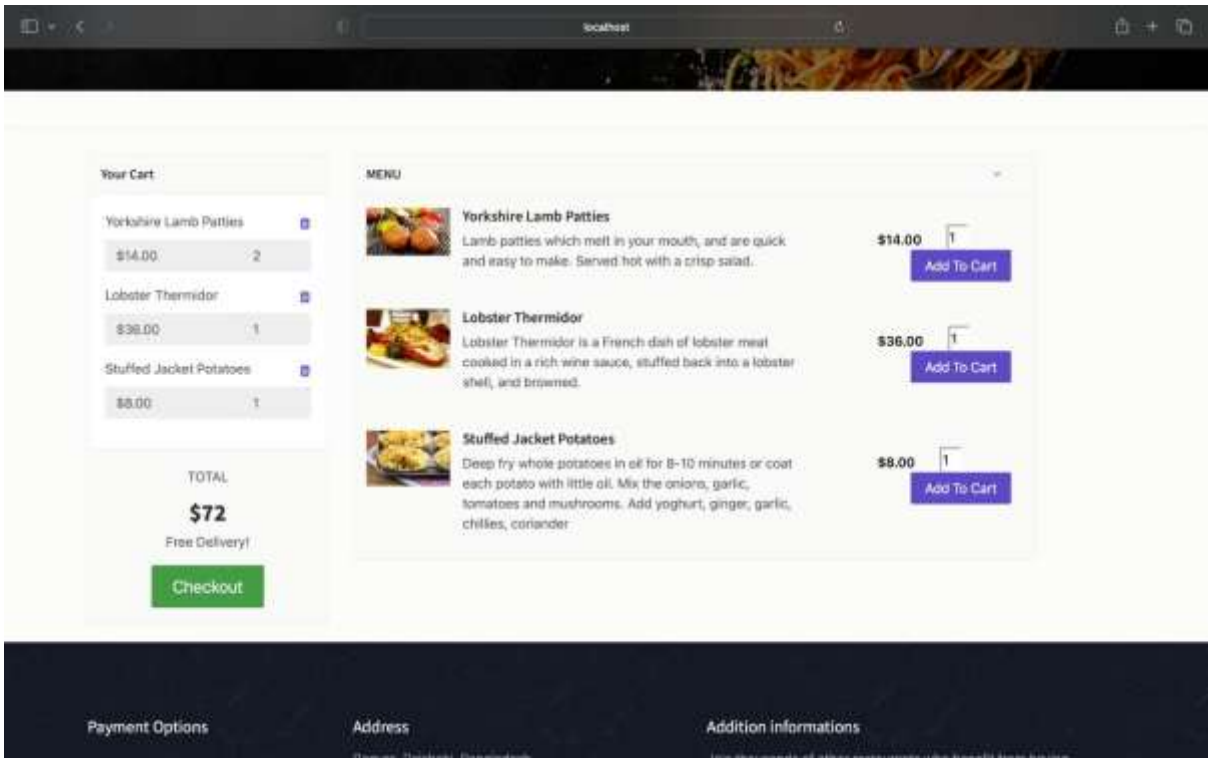

Fig.6.1.3 Cart Page

The Cart Page displays the selected menu items, allowing users to review, modify quantities, and proceed to checkout.

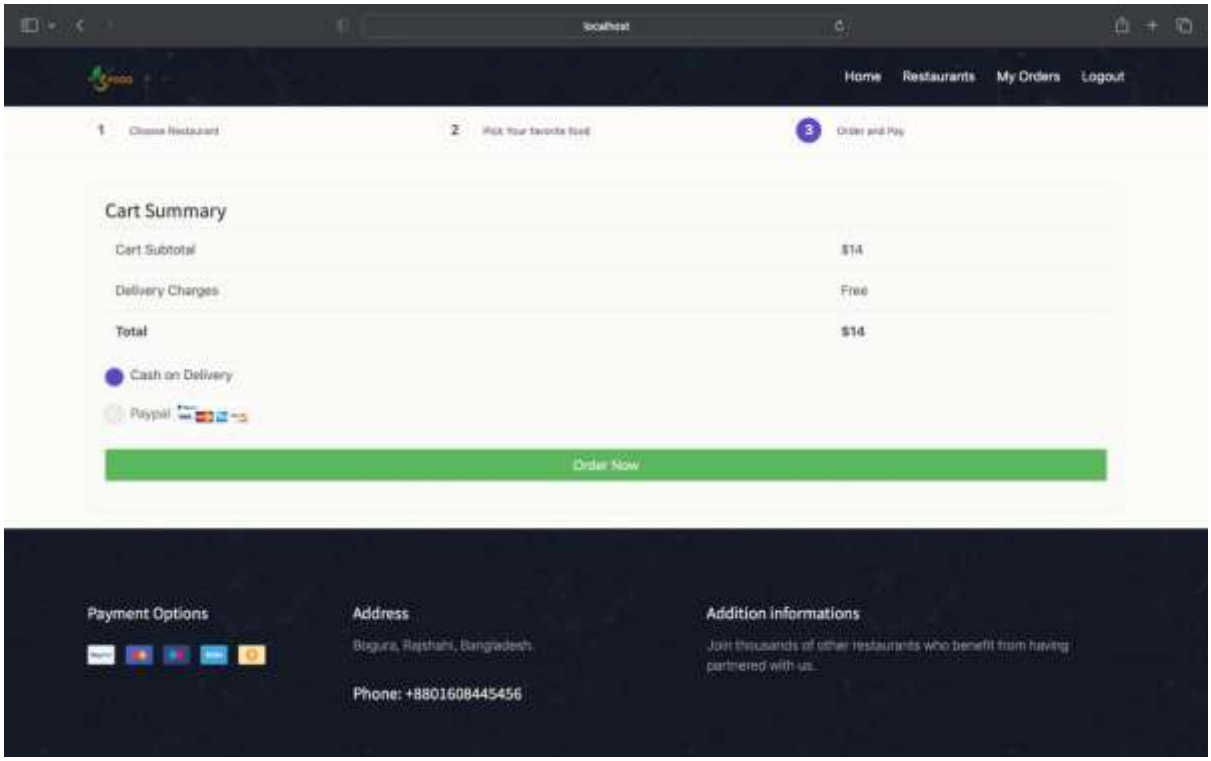

Fig.6.1.4 Payment Information Page

The Payment Information page displays user details such as name, address, mobile number, and other contact information required for payment and delivery.

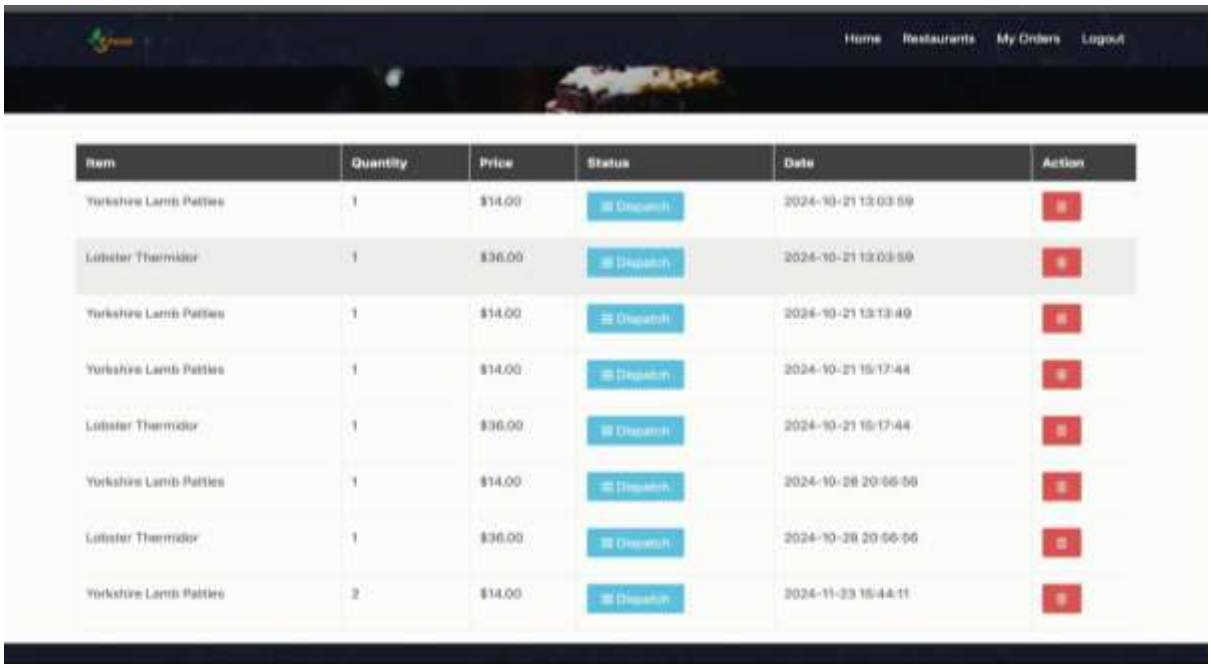

Fig.6.1.5 Orders Page

The Orders Page displays a list of user orders along with their current status, such as "Order Processing," "Out for Delivery," or "Delivered."

CHAPTER 7

RESULT AND CONCLUSION

The **Online Food Ordering System** project has been successfully completed, delivering a robust and user-friendly platform for customers and food providers to connect and streamline the food ordering process. The key features and functionalities outlined in the project requirements, such as secure user authentication, dynamic food item management, cart and order management, real-time order tracking, and customer feedback, have been successfully implemented. These features collectively offer an efficient and seamless experience for both users and administrators. The system meets the needs of customers by providing a convenient, transparent, and responsive platform for ordering food, while enabling food providers to manage orders and inventory effectively. Overall, the project provides a comprehensive solution that enhances user experience and operational efficiency, paving the way for future growth and enhancements.

7.1. CONCLUSION

The **Online Food Ordering System** is a comprehensive and efficient solution designed to streamline the process of food ordering for both customers and administrators. By integrating features like user account management, dynamic menu handling, cart management, real-time order tracking, and feedback systems, the platform enhances the overall user experience while ensuring operational efficiency for food providers. Its secure and scalable architecture ensures reliability, while the user-friendly interface simplifies the ordering process for customers. This system not only meets the current needs of the food industry but also lays the foundation for future enhancements, making it a valuable tool for businesses and a convenient solution for users.

CHAPTER 8

REFERENCES

8.1 DOCUMENTATIONS

- PHP Documentation: https://www.php.net/manual/en/
- Java Documentation: https://docs.oracle.com/en/java/
- MySQL Documentation: https://dev.mysql.com/doc/
- Apache HTTP Server Documentation: https://httpd.apache.org/docs/

8.2 ONLINE TUTORIALS

- PHP Tutorials: PHP Manual - Tutorials and Examples

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