FOOD ORDERING SYSTEM

A MINI PROJECT REPORT

Submitted by

RANJITH R   220701218

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RAJALAKSHMI NAGAR

THANDALAM

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BONAFIDE CERTIFICATE

Certified that this project report "**FOOD ORDERING SYSTEM**" is the

bonafide work of **"RANJITH R (220701218)"**

who carried out the project work under my supervision.

Submitted for the Practical Examination held on ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

ABSTRACT

The food ordering system is a web-based application designed to streamline the process of ordering food from restaurants or food vendors. Built using HTML, CSS, JavaScript, and PHP, the system provides a user-friendly interface that allows customers to browse menus, customize their orders, and complete transactions online. The application also integrates features such as real-time cart updates, order status tracking, and secure payment options, enhancing the convenience for users.

For restaurant administrators, the system offers efficient order management tools, including real-time notifications, order history tracking, and inventory updates. This dual-sided functionality ensures a seamless interaction between customers and food service providers. By leveraging modern web technologies, the food ordering system aims to minimize manual effort, reduce order errors, and deliver a superior user experience while catering to the growing demand for digital food

1. INTRODUCTION

1.1 INTRODUCTION

In today's fast-paced world, online food ordering has become an essential aspect of daily life, providing convenience and efficiency to customers and food vendors alike. The food ordering system is a web-based application that bridges the gap between customers and restaurants by enabling seamless interaction through a digital platform. This system eliminates the traditional methods of phone-based orders, which are prone to errors and inefficiencies, and replaces them with an intuitive interface that simplifies the ordering process.

Developed using HTML, CSS, JavaScript, and PHP, the application offers a comprehensive solution for customers to browse menus, select items, customize their preferences, and place orders from the comfort of their homes or offices. Users can view the total cost of their orders, add or remove items from the cart in real-time, and track their order status until delivery. Secure payment options further enhance the customer experience by ensuring a smooth transaction process.

On the administrative side, the system is equipped with robust tools for managing orders, updating menu items, tracking sales, and maintaining an organized order history. Restaurants receive instant notifications about new orders, which streamlines preparation and delivery processes, reducing delays and increasing customer satisfaction. The system also allows restaurants to optimize their inventory management based on order trends, minimizing waste and maximizing efficiency.

This food ordering system not only caters to the growing demand for online food services but also provides a scalable solution that can adapt to the evolving needs of the food service industry. By leveraging the power of web technologies, the application aims to enhance user convenience, improve operational efficiency, and foster a more connected ecosystem for customers and food service providers.

1.2 OBJECTIVES

1. **Simplify the Ordering Process:** Provide a user-friendly platform where customers can browse menus, customize orders, and place them seamlessly from any location.
2. **Enhance Customer Convenience:** Enable features like real-time cart updates, order tracking, and secure online payments to improve the overall user experience.
3. **Improve Order Accuracy:** Minimize errors associated with manual order-taking processes by offering a digital interface for precise selection and confirmation.
4. **Streamline Restaurant Operations:** Assist restaurant administrators in managing orders, updating menus, and tracking order history efficiently, thereby reducing operational complexities.
5. **Reduce Wait Times:** Facilitate quicker order processing through instant notifications and real-time updates to both customers and restaurant staff.
6. **Enable Scalability:** Design a system that can accommodate a growing customer base and additional restaurant partnerships without compromising performance.
7. **Support Inventory Management:** Provide tools for tracking order trends and managing inventory to reduce waste and ensure consistent availability of menu items.
8. **Increase Revenue Opportunities:** Enhance restaurant visibility through the platform, attracting a larger customer base and fostering customer loyalty through a smooth and efficient service.
9. **Promote Secure Transactions:** Ensure data privacy and secure payment options to build trust and protect customer and vendor information.
10. **Encourage Digital Transformation:** Advocate for the adoption of modern technology in the food service industry, reducing reliance on traditional, inefficient methods of order management.

1.3 MODULES

1. User Module:

- **Registration and Login:** Allows users to create an account and securely log in.

- **Profile Management:** Enables users to update their personal information such as name, address, and contact details.

- **Menu Browsing:** Displays a categorized menu with detailed descriptions, prices, and images of items.

- **Order Management:** Facilitates adding items to the cart, modifying the cart, and placing orders.

- **Order Tracking:** Provides real-time updates on order status, from confirmation to delivery.

2. Admin Module:

- **Admin Login:** Ensures secure access for administrators to manage system settings.

- **Menu Management:** Allows administrators to add, update, or remove menu items, including details like price, description, and availability.

- **Order Management:** Enables tracking and updating the status of incoming orders.

- **User Management:** Provides tools to view, block, or manage customer accounts if necessary.

- **Report Generation:** Offers insights into sales trends, top-selling items, and customer feedback.

3. Restaurant Management Module:

- **Order Notifications:** Alerts restaurant staff about new and pending orders in real-time.

- **Order Processing:** Helps manage the preparation, packing, and delivery stages.

- **Inventory Management:** Tracks stock levels to ensure menu items are available.

- **Revenue Management:** Records and analyzes revenue from orders placed through the platform.

4. **Payment Module:**

- **Payment Integration:** Supports various payment methods such as credit/debit cards, digital wallets, and cash on delivery.

- **Invoice Generation:** Provides an electronic receipt for every transaction.

- **Payment Security:** Ensures secure transactions through encryption and fraud detection measures.

5. **Search and Filter Module:**

- **Search Functionality:** Enables users to search for specific dishes, cuisines, or restaurants.

- **Filter Options:** Allows users to refine their search based on price range, dietary preferences, popularity, or availability.

6. **Feedback and Support Module:**

- **Customer Feedback:** Collects user reviews and ratings for food items and overall service.

- **Help and Support:** Provides a communication channel for users to raise queries or issues.

7. **Notification Module:**

- **Email/SMS Alerts:** Sends order confirmations, delivery updates, and promotional offers to users.

- **Push Notifications:** Notifies users of special discounts, new menu items, or system updates.

8. **Delivery Management Module (Optional):**

- **Delivery Assignment:** Assigns delivery personnel to orders based on location and availability.

- **Delivery Tracking:** Tracks the real-time location of deliveries for customers and administrators.

2. SURVEY OF TECHNOLOGIES

2.1 SOFTWARE DESCRIPTION

Survey of Technologies for Food Ordering System

To build a robust, efficient, and scalable food ordering system, a variety of technologies and frameworks are evaluated across frontend, backend, database management, and security domains. Below is an overview of the key technologies suitable for developing the system:

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1. Frontend Technologies

- HTML5/CSS3:

    o HTML5 provides semantic elements to structure the web pages effectively, including features like forms for user login, menu browsing, and checkout.

    o CSS3 is used to enhance the visual appearance, enabling responsive layouts, transitions, and animations to ensure the application is user-friendly and attractive on all devices.

- JavaScript:

    o Adds interactivity to the system, such as enabling dynamic cart updates, validating user input on the client side, and enhancing navigation menus.

- Bootstrap:

    o A CSS framework that simplifies creating a responsive design. It provides pre-designed components such as buttons, modals, and grids, ensuring a consistent and mobile-friendly user interface.

- jQuery:

    o A lightweight JavaScript library that simplifies event handling, DOM manipulation, and AJAX integration, improving interactivity and responsiveness of the interface.

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2. Backend Technologies

- PHP:

    o A widely-used server-side scripting language suitable for implementing business logic. PHP processes user requests, interacts with the database,

and handles operations like menu updates, order placements, and user authentication.

- AJAX:
  - Asynchronous JavaScript and XML (AJAX) is used for real-time data fetching without refreshing the page. This improves user experience, especially for updating the cart or fetching order status dynamically.

3. Database Management

- MySQL:
  - A reliable relational database management system for storing structured data such as user accounts, menu items, orders, and transaction records. MySQL works seamlessly with PHP for efficient data storage and retrieval.

- SQL Queries:
  - SELECT statements to fetch menu items and order history.
  - INSERT statements to save new user registrations and orders.
  - UPDATE statements for modifying cart items, menu availability, or order statuses.
  - DELETE statements for removing inactive accounts or expired session data.

4. Security Technologies

- HTTPS/SSL:
  - Implements SSL (Secure Socket Layer) encryption to protect data transmissions between the client and server, safeguarding sensitive details like user credentials and payment information.

- Data Validation and Sanitization:
  - Server-side validation and sanitization in PHP to prevent SQL injection and XSS (Cross-Site Scripting) attacks.

- Authentication and Authorization:
  - Password hashing for secure user authentication.

- o Role-based access control (RBAC) to restrict access to admin and user-specific features.

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5. Development Tools

- XAMPP:

  - o A local development environment that includes Apache, PHP, and MySQL. XAMPP is essential for hosting, developing, and testing the system locally before deployment.

- Visual Studio Code:

  - o A popular code editor supporting multiple programming languages and extensions, ideal for handling HTML, CSS, JavaScript, and PHP during development.

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6. Testing Tools

- Postman:

  - o Used for testing APIs, ensuring proper communication between the frontend and backend during operations like placing orders, fetching menu details, and updating order statuses.

- Selenium:

  - o An open-source tool for testing the user interface across multiple browsers and ensuring the food ordering system is responsive, functional, and user-friendly.

3.Requirements and Analysis for Food Ordering System

1. Introduction:

The Food Ordering System aims to provide an intuitive, efficient, and secure platform for customers and administrators to manage food orders, menus, and related services seamlessly. Below is a detailed breakdown of the system's functional and non-functional requirements, as well as an analysis of its key components and processes.

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2. Functional Requirements:

2.1 User Management:

- Customer Registration and Login:
  Users can register an account, providing personal details, and log in securely to access personalized services.

- Customer Profile Management:
  Customers can update their details, view order history, and manage their preferences.

2.2 Menu Management:

- Menu Browsing:
  The system should display categorized menus, including detailed descriptions, images, and prices of food items.

- Real-Time Updates:
  The menu should reflect availability, price changes, and newly added items in real-time.

2.3 Ordering and Checkout:

- Order Placement:
  Customers should be able to add items to the cart, modify the cart, and confirm orders.

- Order Summary:
  The system should generate a detailed order summary before finalizing the purchase.

- Payment Gateway Integration:
  A secure interface for processing payments via multiple payment options, including credit cards, digital wallets, and cash on delivery.

2.4 Delivery Management:

- Order Tracking:
  Customers should be able to track the status of their orders in real time.

- Address Management:
  Users can save and update delivery addresses for future orders.

2.5 Meal Preferences:

- Customizable Orders:
  The system should allow customers to specify preferences (e.g., spice level, extra toppings) while placing orders.

- Preference Storage:
  Customer preferences should be saved to personalize future orders.

2.6 Administrative Functions:

- Menu Management by Admins:
  Administrators should be able to add, update, or remove menu items.

- Order Management by Admins:
  Admins can view and update order statuses and manage customer feedback.

- User Management by Admins:
  Admins can view, modify, or restrict user accounts as needed.

- Report Generation:
  The system should generate detailed reports on sales, top-selling items, and customer feedback.

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3. Non-Functional Requirements:

3.1 Performance:

- The system should handle simultaneous order placements and payments with minimal delay, even during peak hours.

3.2 Reliability:

- The system uptime should be 99% or higher, ensuring uninterrupted access for users.

- Regular data backups and recovery mechanisms should be in place to prevent data loss.

3.3 Scalability:

- The system should scale to accommodate increased traffic during festivals or special promotions.

3.4 Usability:

- The interface should be user-friendly, allowing customers to browse, order, and track meals easily.
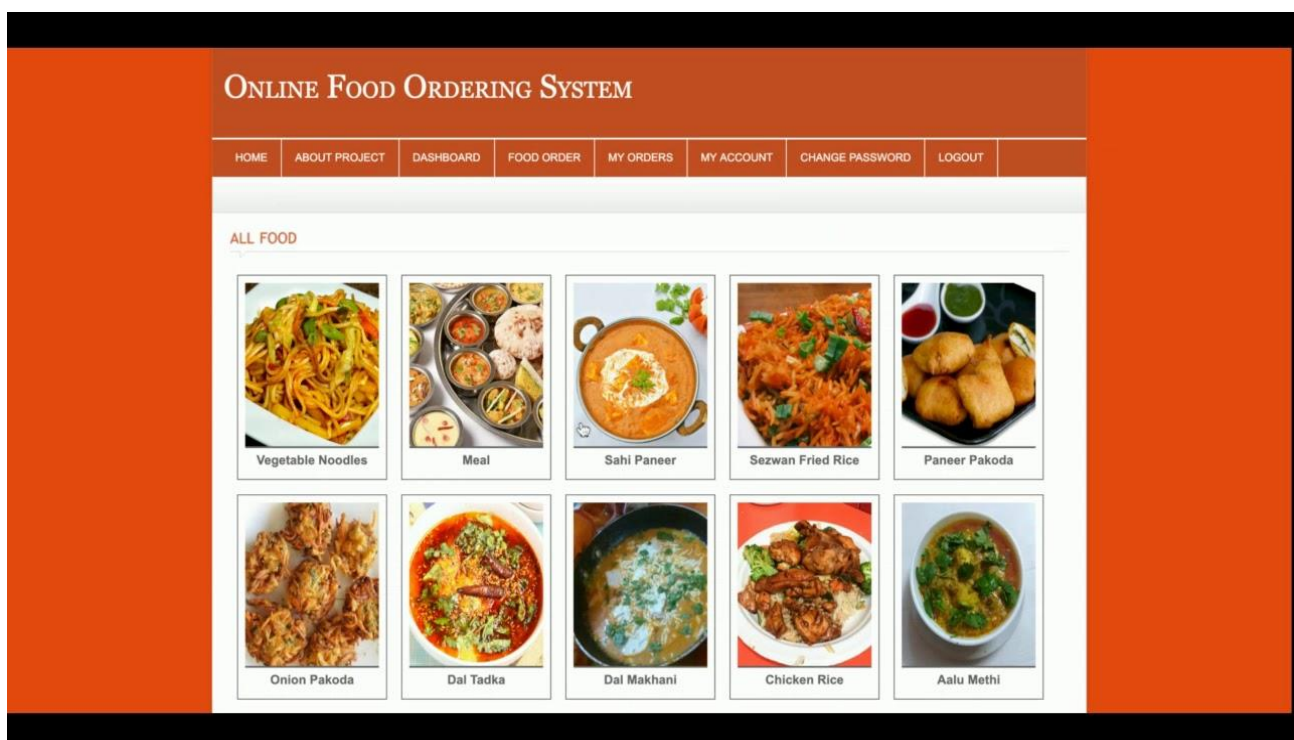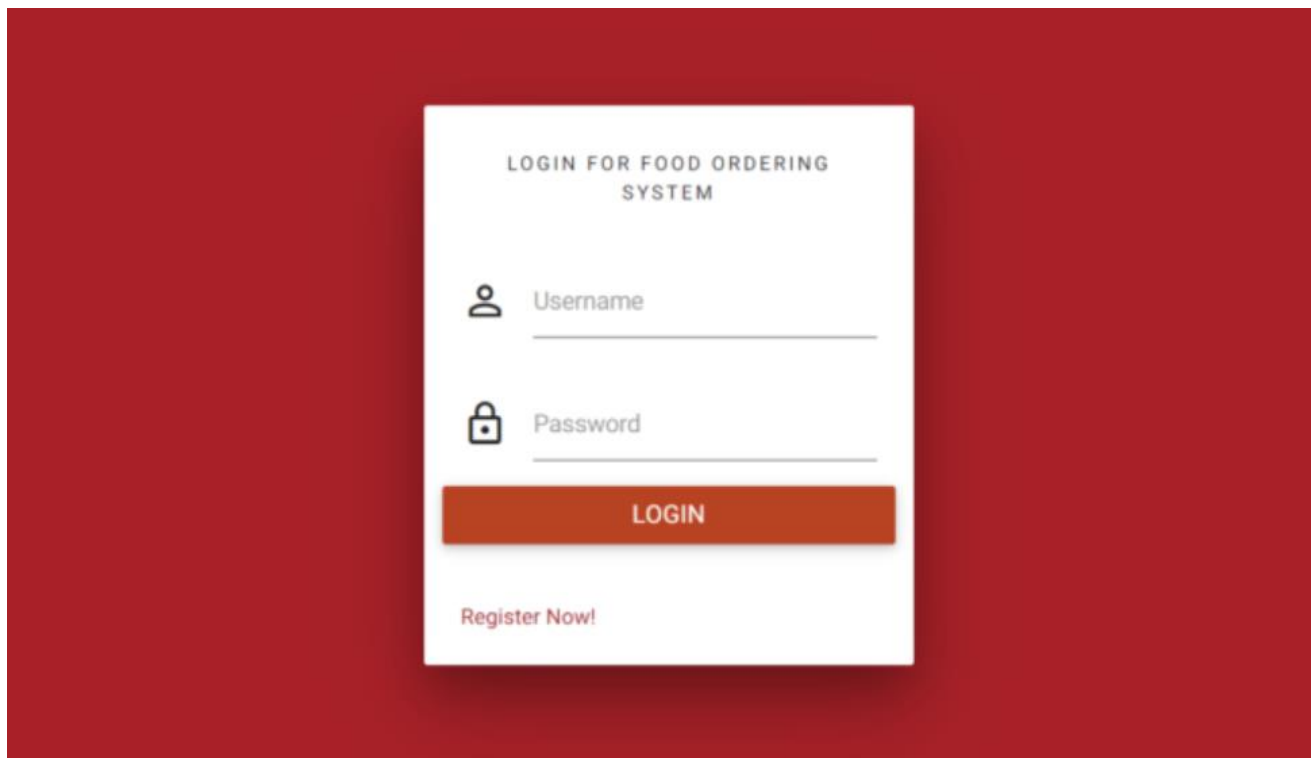
3.5 Security:

- Sensitive data, such as personal details and payment information, should be encrypted during transmission and storage.

- The system should be protected against common vulnerabilities such as SQL injection and cross-site scripting.

3.6 Compliance:

- The system should comply with relevant regulations, such as data privacy laws (e.g., GDPR) to safeguard customer information.

5. RESULTS

Output screen

ORDER PLACED DETAILS

6. CONCLUSION

The **Food Ordering System** is a user-friendly platform that simplifies the process of ordering food and managing restaurant operations. It provides customers with an easy way to browse menus, place orders, and make secure payments, while offering real-time updates on order status. For restaurants, the system streamlines order management, inventory tracking, and report generation, improving efficiency and reducing manual errors. By storing customer preferences and providing personalized recommendations, the system enhances the user experience. In summary, the Food Ordering System modernizes food services, ensuring convenience, reliability, and efficiency for both customers and restaurants.