

Smart Food Ordering

**A PROJECT REPORT
for
Full Stack Development
(ID201B) Session (2024-25)**

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**Submitted in partial fulfilment of the
Requirements for the Degree of**

MASTER OF COMPUTER APPLICATION

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Submitted to

**DEPARTMENT OF COMPUTER APPLICATIONS
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December 2024

CERTIFICATE

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Smart Food Ordering

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ABSTRACT

System, integrating online ordering, secure payment processing, and AI-driven chatbot support to elevate customer convenience and satisfaction. Designed for restaurants, cafes, and food delivery services, the platform streamlines the entire ordering process, offering a seamless digital dining experience.

Key features of the project include:

Online Food Ordering: A user-friendly interface enabling customers to browse menus, select dishes, customize orders, and place them online with ease. The system supports real-time menu updates and availability tracking to ensure accurate selections.

AI-Powered Chatbot: An intelligent assistant that helps users with instant responses to queries related to menu items, prices, availability, order status, and suggestions based on user preferences. It simplifies the user journey by offering 24/7 support and personalized recommendations.

Integrated Payment Gateway: A secure and reliable payment system that facilitates hassle-free transactions through various modes including cards, UPI, and digital wallets, ensuring a smooth and trusted checkout experience.

By combining digital ordering, smart assistance, and secure transactions, this project redefines food ordering as fast, intuitive, and personalized. It caters to evolving customer expectations while enhancing operational efficiency for food service providers.

ACKNOWLEDGEMENT

Success in life is never attained single-handedly. My deepest gratitude goes to my project supervisor, **Ms. Shruti Aggarwal** for her guidance, help, and encouragement throughout my project work. Their enlightening ideas, comments, and suggestions.

Words are not enough to express my gratitude to **Dr. Akash Rajak**, Dean, Department of Computer Applications, for his insightful comments and administrative help on various occasions.

Fortunately, I have many understanding friends, who have helped me a lot on many critical conditions.

Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me with moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

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Introduction

1.1 Introduction

The food service industry is an essential part of daily life, contributing significantly to economic activity, social interaction, and lifestyle convenience. With increasing urbanization, fast-paced living, and a growing demand for on-the-go consumption, food ordering platforms have become indispensable. The Smart Food Ordering System is a step toward revolutionizing the way people interact with restaurants, offering a seamless fusion of convenience, speed, and personalization.

Importance of the Industry

The food and beverage industry is a major economic driver, generating employment, supporting local agriculture, and fostering entrepreneurship. It plays a vital role in urban infrastructure, catering to diverse customer preferences—from quick service and casual dining to gourmet experiences. For consumers, food is not only a necessity but also a source of comfort, exploration, and social engagement.

Key segments within the food ordering ecosystem include:

- **Dine-in and Takeaway Services:** Traditional restaurant experiences tailored to in-house or on-the-go consumption.
- **Online Food Delivery:** Digital platforms allowing customers to order food from a wide selection of restaurants and have it delivered to their doorstep.
- **Cloud Kitchens and Virtual Restaurants:** Innovative models that rely solely on digital orders, without physical dine-in facilities.

Technological Evolution in Food Services

- **AI and Chatbots:** Enhancing user experience with instant assistance, order tracking, personalized recommendations, and query resolution.
- **Payment Gateway Integration:** Ensuring secure, real-time transactions through multiple modes including credit/debit cards, UPI, and e-wallets.
- **Mobile Applications:** Providing an all-in-one platform for food ordering, restaurant discovery, reviews, offers, and more.

Challenges in Existing Systems

- **Manual Processes:** Human-dependent systems lead to inefficiencies, miscommunication, and slower order fulfillment.
- **Limited Automation:** Lack of smart features makes it difficult to handle large volumes of orders efficiently.
- **Disconnected Services:** Customers often have to switch between apps or websites to view menus, place orders, make payments, and track deliveries.
- **Security and Privacy:** Ensuring the safety of user data and transaction details is still a growing concern.
- **Lack of Real-Time Assistance:** Many platforms lack instant help or human-like support, leading to poor customer service experiences.

Proposed Solution

The **Smart Food Ordering System** is designed to address the limitations of current solutions by offering a robust, intelligent, and centralized platform. Key features include:

- **User-Friendly Interface:** A clean and intuitive interface that allows users of all ages and tech backgrounds to place orders effortlessly.
- **Smart Chatbot Integration:** A built-in AI assistant that can answer queries about menu items, suggest dishes based on preferences, and provide real-time updates on availability and order status.
- **Online Payment Gateway:** Seamless integration with trusted payment systems to facilitate safe, multi-option transactions.
- **Order Customization:** Users can tailor their meals according to dietary preferences, spice levels, ingredients, and portion sizes.
- **Real-Time Notifications:** Live updates on order status, estimated delivery time, and special offers.

This system aims to bridge the gap between traditional food ordering and modern-day expectations, delivering an enhanced experience that benefits both users and service providers.

1.2 Problem in Existing Systems

Despite significant advancements in food technology and digital transformation, the food ordering industry continues to grapple with several persistent challenges. These issues affect both customer experience and business operations, emphasizing the need for a smarter, more unified solution. Key problems include:

Manual Process

Many food establishments still depend on traditional, manual methods for taking orders, managing tables, and processing payments. This results in slow service, higher chances of human error, and increased operational workload.

Lack of Real-Time Menu Updates

Customers often encounter outdated menus, unavailable items, or incorrect pricing on food ordering platforms. The absence of real-time updates leads to confusion, last-minute cancellations, and dissatisfaction.

Limited Personalization

Current systems often lack the ability to understand user preferences or dietary needs. This limits the scope for personalized recommendations, loyalty engagement, and tailored promotional offers.

Fragmented Ordering Experience

Users typically navigate through separate platforms for browsing menus, placing orders, making payments, and tracking deliveries. This fragmented process creates friction and reduces overall convenience.

Security Concerns

With increasing online payments, ensuring the safety of financial transactions and personal data is crucial. Many platforms still lack robust encryption and secure authentication mechanisms, leaving users vulnerable to fraud and data breaches.

Inefficient Order and Inventory Management

Restaurants often struggle with mismanaged orders, stock shortages, and inaccurate kitchen communication. This results in delayed service, wasted resources, and a negative impact on customer trust.

1.3 Proposed System

The **Smart Food Ordering System** is designed to address the shortcomings of traditional and semi-digital food ordering processes by providing a unified, secure, and intelligent platform. This section highlights the system's architecture, functionalities, and advantages, aimed at streamlining food ordering for customers and enhancing operational efficiency for food service providers.

Overview of the Proposed System

The proposed system serves as an all-in-one solution that integrates menu browsing, order placement, real-time assistance, secure payments, and customer feedback within a single digital interface. It focuses on offering a smooth and personalized experience for end-users, while helping restaurants manage orders, inventory, and customer engagement with ease.

Key components of the system include:

- **AI Chatbot Integration:** A virtual assistant that helps users with menu queries, pricing, availability, and order tracking.
- **Real-Time Menu Updates:** Ensures accurate information about dish availability and pricing at all times.
- **Secure Payment Gateway:** Facilitates fast and protected online transactions through multiple payment options.
- **Order Management Dashboard:** Allows restaurant staff to view, accept, and manage orders efficiently.

Features of the Proposed System

- **User Management:**

Registration and login functionalities for both customers and administrators.

User profiles storing order history, saved favorites, and dietary preferences.

- **Menu and Order Management:**

Dynamic display of the food menu with categories, pricing, images, and customization options.

Real-time tracking of available dishes and stock levels to avoid order conflicts.

- **AI Chatbot Support:**

Conversational interface for resolving common queries such as "What's available?", "What are the prices?", or "What's popular today?".

Personalized recommendations based on past orders and current trends.

- **Real-Time Notifications:**

Instant updates for order confirmations, preparation status, delivery time, and promotional offers.

Alerts for unavailable items or delayed orders to keep users informed.

- **Payment Integration:**

Support for UPI, credit/debit cards, net banking, and digital wallets.

Secured through encryption and tokenization to ensure safe financial transactions.

- **Feedback and Review System:**

Post-order ratings and comments to gather user feedback.

Analytical tools to help restaurants evaluate service quality and improve menu offerings.

Flexible architecture allows integration with emerging technologies like voice ordering, GPS tracking, and blockchain-based payment systems.

1.4 Functional Requirements

Functional requirements for a Smart Food Ordering System define the essential features and capabilities the system must offer to ensure seamless interaction between users (customers and restaurant staff) and the platform. Below are the key functional requirements:

1. User Registration and Profile Management

- **User Registration:** Customers and restaurant admins can sign up using their details such as name, email, phone number, and address.
- **Profile Management:** Users can edit their profiles, update contact information, and view order history or saved preferences.
- **Authentication:** Secure login and logout system with password recovery and optional multi-factor authentication.

2. Menu Browsing and Food Ordering

- **Search Functionality:** Customers can search menu items using filters like cuisine type, availability, price, and dietary restrictions.
- **Menu Display:** Each dish displays a description, price, ingredients, and customization options (e.g., spice level, toppings).
- **Ordering:** Users can select items, customize their order, and add them to the cart for checkout.
- **Order Confirmation:** Users receive an order confirmation notification and email receipt upon successful order placement.

3. Payment Integration

- **Multiple Payment Methods:** Support for UPI, credit/debit cards, digital wallets, and net banking.
- **Secure Payment Gateway:** Transactions are handled through a secure and encrypted payment processor.
- **Payment Confirmation:** Customers receive instant payment receipts with order and transaction details.

4. Menu and Inventory Management (For Admins)

- **Menu Creation and Updates:** Restaurant admins can add, edit, or remove dishes from the menu, including updating prices and availability.
- **Inventory Management:** Admins can track stock levels in real time, manage ingredients, and mark items as "out of stock."
- **Pricing Management:** Pricing rules can be set based on combo offers, time slots (e.g., happy hours), or user membership status.

5. AI Chatbot Integration

- **Interactive Chatbot:** Assists users with ordering, menu navigation, availability, pricing, and FAQs.
- **Real-Time Assistance:** Responds to queries like “What’s available today?”, “Show me veg options,” or “How much is the burger?”
- **Order Guidance:** Suggests popular dishes based on time of day or user behavior.

6. Customer Support

- **Live Chat Support:** Option for real-time communication with customer support or chatbot.
- **Contact Form:** Allows users to submit complaints, suggestions, or questions.
- **Help Center:** FAQ section covering common issues like refunds, delays, and order changes.

7. Order Tracking and Notifications

- **Order Status Updates:** Users are notified at each stage—order placed, preparing, out for delivery, and delivered.
- **Delivery Time Estimates:** Real-time tracking of food delivery with map integration (optional).
- **Alerts:** Notifications for delays, unavailable items, or special promotions.

1.5 Non-Functional Requirements

Non-functional requirements (NFRs) define the quality attributes, operational constraints, and system behavior of a Smart Food Ordering System. These NFRs ensure the platform is efficient, secure, scalable, and provides a seamless user experience for both customers and restaurant administrators.

1. Performance

- **Response Time:** The system should respond to user interactions such as browsing the menu, placing orders, and checking out within 2–3 seconds to ensure a smooth and responsive experience.
- **Scalability:** The system must scale to support high traffic during peak hours, such as lunch/dinner times or festival days, by implementing load balancing and horizontal scaling.
- **Availability:** The system must maintain a minimum of 99.9% uptime to ensure continuous service availability, especially during high-demand periods.

2. Usability

- **User-Friendly Interface:** The application must have a clean, intuitive, and easy-to-navigate interface for customers, delivery staff, and admins.
- **Accessibility:** The system must comply with accessibility standards (e.g., WCAG 2.1) to accommodate users with visual, auditory, or motor impairments.
- **Cross-Platform Compatibility:** The platform must be fully responsive and functional across different devices and operating systems (desktop, tablets, and smartphones).

3. Security

- **Data Protection:** All sensitive user data, including addresses and payment information, must be protected using strong encryption protocols such as SSL/TLS.
- **Authentication:** Secure login with strong password policies, and optional multi-factor authentication (MFA) to protect user accounts.
- **Authorization:** Role-based access control (RBAC) must be implemented to distinguish access levels between customers, admins, and delivery personnel.

- **Compliance:** Ensure adherence to data protection and privacy regulations like GDPR and local IT laws to protect user rights and information.

4. Reliability

- **Error Handling:** The system must provide meaningful error messages and fallback mechanisms (e.g., retry on failed payment) without crashing or exposing system internals.
- **Backup and Recovery:** Regular automatic backups must be taken to prevent data loss and ensure quick restoration in the event of system failure.
- **Fault Tolerance:** The system must continue to function with minimal interruption in case of component failure, especially for critical operations such as placing orders or processing payments.

5. Maintainability

- **Code Quality:** The system must follow modular architecture with clean, well-commented, and maintainable code to facilitate future updates and feature enhancements.
- **Logging and Monitoring:** Detailed logging and performance monitoring should be implemented to track issues like slow requests, failed logins, or order delays.
- **System Updates:** The platform should support easy updates and patches to apply security fixes and feature upgrades with minimal or no downtime.

Feasibility Analysis

2.1 Feasibility Analysis for a Smart Food Ordering System

A feasibility analysis assesses whether a proposed system is practical and worthwhile to develop. The following evaluation examines the technical, economic, operational, legal, and scheduling feasibility of the Smart Food Ordering System.

1. Technical Feasibility

- **Technology Stack:**

Front-end: HTML, CSS, and JavaScript will be used for building a responsive and interactive user interface.

Back-end: PHP will handle server-side logic, data processing, and interaction with the database.

Database: MySQL will be used to store user details, menu items, orders, payments, and feedback.

Local Hosting: XAMPP will serve as the local development server for testing and deployment during development.

Third-Party Integration:

The system may integrate third-party APIs for online payment gateways (e.g., Razorpay, PayPal) and geolocation services for delivery tracking.

- **Security:**

Implementation of SSL/TLS encryption, input validation, and secure session handling.

Role-based access control (RBAC) to restrict admin/customer privileges.

2. Economic Feasibility

- **Development Costs:**

Estimated cost of development with a small team (developers, UI/UX designer, tester) range from

\$10,000 to \$50,000, depending on scope and custom features.

XAMPP as a local server is free, which reduces initial infrastructure costs.

- **Recurring Costs:**

Hosting and domain charges (once live) may cost \$100 to \$300 per year.

Transactional fees from payment gateway services (usually 2–3% per transaction).

- **Revenue Streams:**

Commission from restaurants per order.

Subscription model for premium restaurants (e.g., priority listing, promotional tools).

In-app advertisements and featured deals.

3. Operational Feasibility

- **User Accessibility:**

A simple and intuitive interface ensures a smooth user experience for customers placing orders and admins managing menus/orders.

- **Admin Operations:**

Admin panel allows menu management, order tracking, and feedback analysis.

- **Maintenance & Support:**

Regular bug fixes, menu updates, and security patches are essential.

Customer support via chatbot, FAQs, or contact forms can handle queries and complaints.

- **Scalability:**

While XAMPP is suitable for local development, the system must migrate to a cloud environment for public deployment and scalability.

4. Legal Feasibility

- Data Privacy:

Must adhere to GDPR or local data protection laws by securing user data and implementing user consent mechanisms.

- Payment Compliance:

Must comply with PCI DSS standards for securely processing payments.

- Food Regulations:

Ensure restaurants onboarded to the platform comply with food safety and health regulations.

5. Schedule Feasibility

- Estimated Project Timeline:

Phase 1: Planning & Design (1 month) – Requirement gathering, wireframing, and UI/UX design.

Phase 2: Development (2–3 months) – Front-end and back-end development.

Phase 3: Testing & Integration (1–2 months) – Functional testing, bug fixing, and API/payment integration.

Phase 4: Deployment & Feedback (1 month) – Launch on cloud server, collect user feedback, and optimize.

Total Estimated Duration: 5–7 months, depending on scope and developer availability.

Project Objectives:

Smart Food Ordering System

The **Smart Food Ordering System** is designed to revolutionize the dining experience by leveraging modern technology to meet the evolving needs of customers and restaurants alike. Below are the key objectives of this project, explained in detail:

1. Streamlining the Ordering Process

The primary goal is to eliminate traditional inefficiencies in the food ordering process. This is achieved by creating a digital, user-friendly platform—accessible via mobile apps, websites, or kiosks—that enables customers to browse menus, customize orders, and place them seamlessly. This automation reduces wait times, minimizes order errors, and enhances overall convenience.

Key Features:

- Interactive digital menus
- Customization options (e.g., add-ons, spice levels)
- Real-time order status tracking
- Multilingual support

2. Enhancing Customer Experience

To improve satisfaction, the system will offer a personalized user journey. By analyzing previous orders, preferences, and dietary restrictions, the platform can suggest dishes tailored to individual tastes. This adds value to the user experience and builds customer loyalty.

Key Features:

- Personalized recommendations
- Allergen and dietary filter options (e.g., vegan, gluten-free)
- Saved favorite orders and past history
- Easy reordering with one click

3. Improving Restaurant Operations

From the restaurant's perspective, the system acts as a centralized hub for managing all customer interactions and orders. It simplifies kitchen workflows and communication, reduces human error, and helps maintain inventory levels efficiently.

Key Features:

- Real-time order tracking for kitchen staff
- Inventory management system

- Integration with POS and kitchen display systems
- Notifications for special requests or modifications

4. Boosting Revenue Generation

The system supports various marketing tools to increase revenue. These include loyalty programs, promotional discounts, and targeted offers, all aimed at increasing customer retention and attracting new users.

Key Features:

- Dynamic pricing and promotional campaigns
- Loyalty rewards and referral programs
- Upselling and cross-selling suggestions
- Analytics-driven pricing strategies

5. Supporting Delivery and Pickup Services

A key component of the modern food industry is efficient delivery and pickup services. The Smart Food Ordering System integrates with third-party logistics or supports in-house delivery management to ensure timely and accurate order fulfillment.

Key Features:

- Real-time delivery tracking
- Scheduled pickup and delivery slots
- Route optimization for delivery personnel
- Integration with major delivery platforms (e.g., Uber Eats, DoorDash)

6. Enabling Analytics and Insights

Data is at the heart of decision-making. The system collects and analyzes key metrics related to customer behavior, menu popularity, and operational efficiency. This enables restaurants to refine their strategies, improve offerings, and forecast demand more accurately.

Key Features:

- Dashboard with real-time analytics
- Reports on sales trends, peak hours, and customer demographics
- Feedback collection and sentiment analysis
- Forecasting tools for demand and inventory

7. Promoting Sustainable Practices

In line with global sustainability goals, the system will include features that help restaurants and customers make environmentally responsible choices. This includes options for eco-friendly packaging, information on locally sourced ingredients, and features that minimize food waste.

Key Features:

- Eco-friendly packaging selection at checkout
- Highlighting sustainable and local menu options
- Portion control suggestions to reduce waste

- Waste tracking and sustainability score reports

Conclusion

The **Smart Food Ordering System** is a comprehensive solution that not only simplifies the ordering process but also enhances the dining experience, improves restaurant efficiency, and supports long-term sustainability. By embracing this system, restaurants can stay competitive in a rapidly evolving digital landscape while delighting customers with personalized, seamless service.

Hardware and Software Requirements

4.1 Hardware Requirements

1. For Server Setup

- **Processor:** Dual-core or higher (e.g., Intel Core i3/i5 or AMD equivalent).
- **RAM:** Minimum 4 GB (8 GB or more recommended for better performance).
- **Storage:** At least 500 GB HDD or 256 GB SSD for data storage and faster processing.

2. For Development and Client Devices

- **Desktop/Laptop:**
 - Processor: Dual-core or higher (Intel Core i3/i5).
 - RAM: 4 GB or more.
 - Storage: 128 GB SSD or higher.

4.2 Software Requirements

1. Operating System

- Windows 10/11, macOS, or Linux (Ubuntu or other distributions).

2. Development Tools

- **XAMPP:** A local server environment to run PHP and MySQL.
- **Code Editor:** VS Code, Sublime Text, or Atom for writing and editing code.
- **Browser:** Google Chrome, Firefox, or Microsoft Edge for testing and debugging.

3. Programming Languages and Frameworks

- **Frontend:** HTML, CSS, JavaScript (with optional libraries like jQuery).
- **Backend:** PHP for server-side scripting.
- **Database:** MySQL (included in XAMPP) for storing user data, travel packages, and bookings.

Project Flow

The project flow outlines the stages involved in the design, development, and deployment of the system. Below is the structured flow:

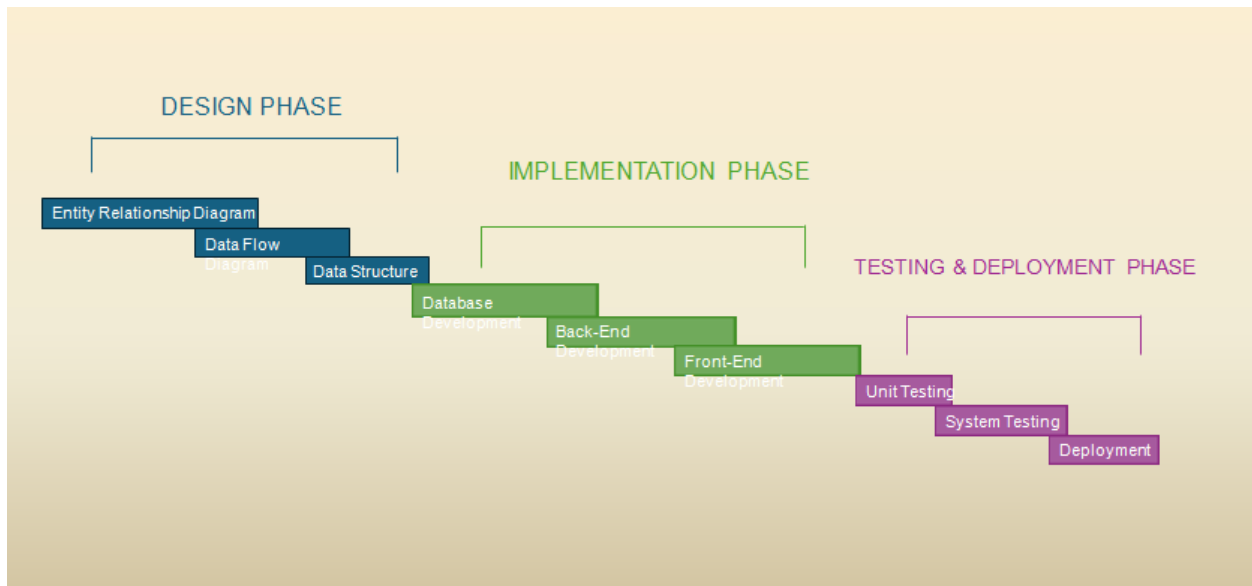


Fig. 5.1 project flow

The development of the **Smart Food Ordering System** follows a structured and phased approach to ensure the delivery of an efficient, user-friendly, and scalable platform. Each phase is designed to focus on specific aspects of the system to guarantee high-quality results.

1. Requirements Gathering

Objective: Collect comprehensive requirements from all stakeholders, including restaurant owners, customers, and administrators.

Identify Key Features:

User account management (registration, login, profile management). Menu management (adding/editing food items, prices). Order management (order placement, tracking, status updates). Payment gateway integration (for secure online transactions). Feedback system (ratings and reviews).

Document Functional and Non-Functional Requirements:

Functional requirements will cover the essential features, while non-functional requirements will include performance, security, and usability expectations.

2. System Design

Objective: Design the architecture, database, and user interfaces to meet the system's requirements.

Architecture Design: Choose a modular system design, allowing for scalability and easy maintenance. Structure it to support high traffic during peak hours and ensure quick response times.

Database Design: Create relational schemas for managing data such as users, orders, menu items, and payments using MySQL. Define tables and relationships (e.g., users, orders, payment history).

UI/UX Design: Design wireframes and prototypes for both the customer and admin interfaces. Ensure that the design is intuitive, responsive, and optimized for mobile and desktop use.

3. Development

Objective: Implement the front-end and back-end functionality based on the system design.

Front-End Development: Develop the user interface using HTML, CSS, and JavaScript to ensure an intuitive, interactive experience for users and administrators. Ensure compatibility across devices (desktop, tablet, and mobile).

Back-End Development: Implement server-side functionality using PHP to manage user accounts, menu items, orders, and payments. Integrate MySQL for data management and ensure secure handling of user data, orders, and payment processing.

4. Integration

Objective: Integrate third-party services and ensure smooth communication between system components.

Third-Party API Integration: Integrate payment gateways (e.g., Stripe, PayPal) to enable secure online transactions. Include SMS and email notifications for order confirmations, status updates, and promotional offers. Integrate weather or other relevant APIs for location-based services if required.

System Communication:

Ensure that the front-end and back-end communicate seamlessly using AJAX or API requests for

real-time updates.

5. Testing

Objective: Ensure the system is bug-free, functional, and meets user expectations.

Unit Testing: Test individual modules and components to ensure they function as expected. Include tests for order placement, payment processing, and user login.

Integration Testing: Ensure proper communication between the front-end, back-end, and third-party APIs. Test order flow from the user interface to database storage and payment processing.

User Acceptance Testing (UAT): Conduct testing with end-users to validate that the system meets the required functionalities and provides a positive user experience.

6. Deployment

Objective: Deploy the system for live use and ensure it operates smoothly.

Local Deployment: During development, use local hosting with XAMPP to test the system on a development environment.

Production Deployment: Migrate the system to a live hosting environment with a domain setup, SSL certificates for secure communication, and monitoring tools to ensure system availability. Use cloud services (e.g., AWS, Azure) for scalable infrastructure.

7. Post-Launch Support

Objective: Ensure the system remains operational and efficient after launch.

System Monitoring: Regularly monitor system performance, including server uptime, page load times, and order processing speed. Ensure that technical issues, if any, are addressed promptly to minimize downtime.

User Feedback Collection: Gather feedback from customers and restaurant owners to identify areas of improvement. Use the feedback to introduce new features, enhance usability, and fix any post-launch bugs.

5.2 Modules of a Smart Food Ordering System

The Smart Food Ordering System is structured into multiple modules, each designed to handle specific functions that ensure efficient order management, user interaction, and restaurant operations. The key modules are as follows:

1. User Management Module

Purpose: To manage user registration, login, and profile settings.

Key Features:

User registration and login with email, phone number, and social media accounts. Profile management where users can view and edit personal information, order history, and preferences. Password recovery and secure login mechanisms.

Technologies Used:

Frontend: HTML, CSS, JavaScript

Backend: PHP

Database: MySQL

2. Menu Management Module

Purpose: To manage the restaurant's menu items, categories, and prices.

Key Features:

Admins can add, edit, or remove menu items, including descriptions, prices, and images. Categorization of food items (e.g., appetizers, main course, beverages). Menu items can be marked as available or unavailable based on stock.

Technologies Used:

Frontend: HTML, CSS, JavaScript

Backend: PHP

Database: MySQL

3. Order Management Module

Purpose: To handle order placement, tracking, and status updates.

Key Features:

Users can place an order by selecting items from the menu. Real-time tracking of order status (e.g., Pending, In Progress, Delivered). Admins and restaurant staff can update order status and handle cancellations. Option for users to reorder previous meals.

Technologies Used:

Frontend: HTML, CSS, JavaScript

Backend: PHP

Database: MySQL

4. Payment Gateway Integration Module

Purpose: To facilitate secure online payments for food orders.

Key Features:

Integration with payment gateways (e.g., Stripe, PayPal) for credit card, debit card, and wallet payments. Generation of invoices and payment receipts for customers. Secure transaction processing using encryption protocols.

Technologies Used:

Frontend: JavaScript

Backend: PHP

Database: MySQL

Third-party: Stripe, PayPal APIs

5. Feedback and Rating Module

Purpose: To gather customer feedback and ratings for food items and services.

Key Features:

Users can rate their food items and overall experience after completing an order. Feedback form to allow users to provide detailed comments or suggestions. Admins can moderate reviews and analyze feedback for improvements.

Technologies Used:

Frontend: HTML, CSS, JavaScript

Backend: PHP

Database: MySQL

6. Admin Dashboard Module

Purpose: To provide an admin interface for managing orders, users, and menu items.

Key Features:

View and manage all customer orders, with options to update statuses. Manage users and their orders, including cancelations and refunds. Analytics on sales, order history, popular items, and customer preferences.

Technologies Used:

Frontend: HTML, CSS, JavaScript

Backend: PHP

Database: MySQL

Additional Tools: JavaScript libraries for charts/graphs (e.g., Chart.js)

7. Real-time Notification Module

Purpose: To send notifications to customers and staff regarding order status, promotions, or offers.

Key Features:

Push notifications or SMS alerts to customers for order confirmations, status updates, and delivery time. Admin notifications for new orders or issues requiring attention. Integration with email and SMS gateways for communication.

Technologies Used:

Frontend: JavaScript

Backend: PHP

Database: MySQL

Third-party: Twilio (SMS), SendGrid (Email)

5.3 Entity-Relationship (ER) Diagram

Entities and Attributes

1. User

- UserID (Primary Key)
- Name
- Email
- Phone
- Address
- Role (Customer, Admin, Delivery Driver)

2. Menu

- MenuID (Primary Key)
- DishName
- Description
- Price
- Category (Starter, Main Course, Dessert, etc.)
- Image

3. Order

- OrderID (Primary Key)
- UserID (Foreign Key)
- OrderDate
- Status (Pending, In Progress, Delivered, Cancelled)

- TotalAmount
- DeliveryAddress (optional if different from user address)

4. OrderDetails

- OrderDetailsID (Primary Key)
- OrderID (Foreign Key)
- MenuID (Foreign Key)
- Quantity
- Price (Price at the time of order)

5. Payment

- PaymentID (Primary Key)
- OrderID (Foreign Key)
- PaymentDate
- Amount
- PaymentMethod (Credit Card, PayPal, Cash on Delivery)
- PaymentStatus (Successful, Failed, Pending)

6. Delivery

- DeliveryID (Primary Key)
- OrderID (Foreign Key)
- DriverID (Foreign Key, Delivery Driver)
- DeliveryDate
- DeliveryStatus (Pending, In Transit, Delivered)

7. Delivery Driver (Optional)

- DriverID (Primary Key)
- Name
- Phone
- Vehicle

Relationships

- User to Order: A User can place multiple Orders, but each Order is associated with only one User.

1:N relationship (One-to-Many).

- Menu to OrderDetails: A Menu item can be part of multiple Orders through the OrderDetails table, but each OrderDetails record corresponds to only one Menu item.

1:N relationship (One-to-Many).

- Order to OrderDetails: An Order can contain multiple Menu items (through OrderDetails), but each OrderDetails record belongs to only one Order.

1:N relationship (One-to-Many).

- Order to Payment: An Order can have one or more Payments associated with it (in cases of installments or multiple payment methods), but each Payment is linked to only one Order.

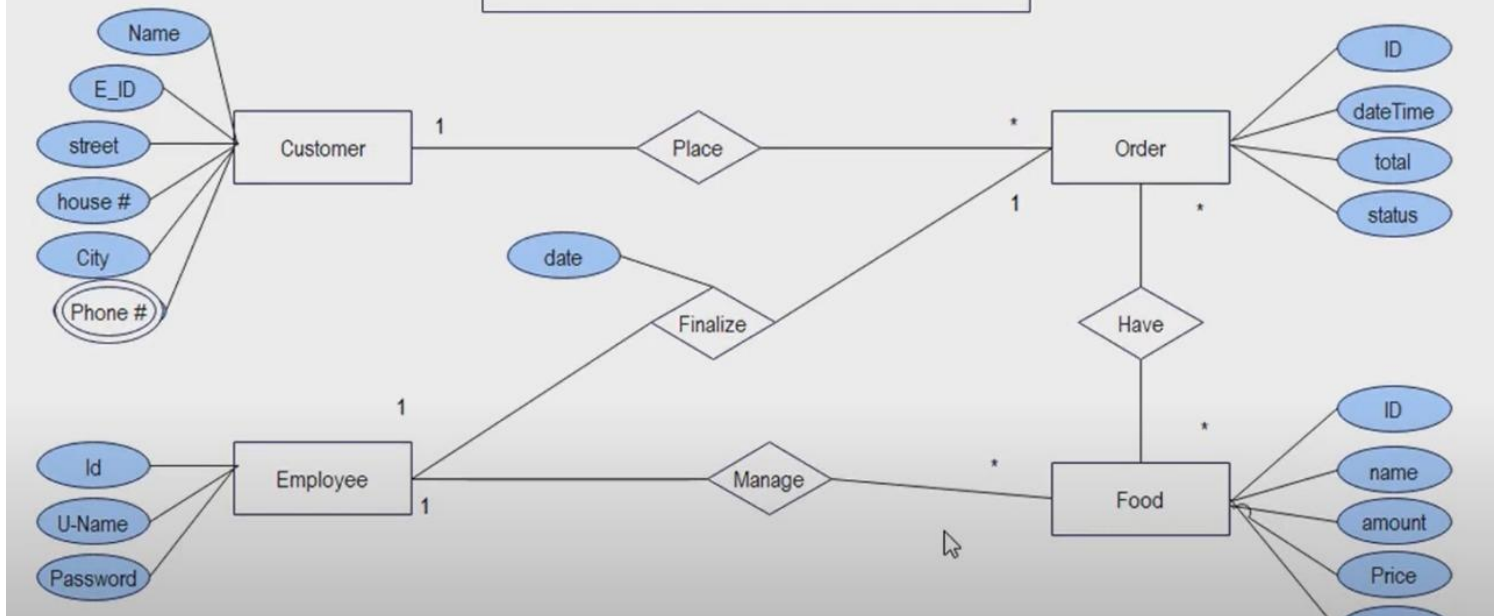
1:N relationship (One-to-Many).

- Order to Delivery: An Order can be associated with one Delivery record, and each Delivery corresponds to one Order.

1:1 relationship (One-to-One).

- Delivery Driver to Delivery: A Delivery Driver can handle multiple deliveries, but each Delivery is associated with only one Driver.

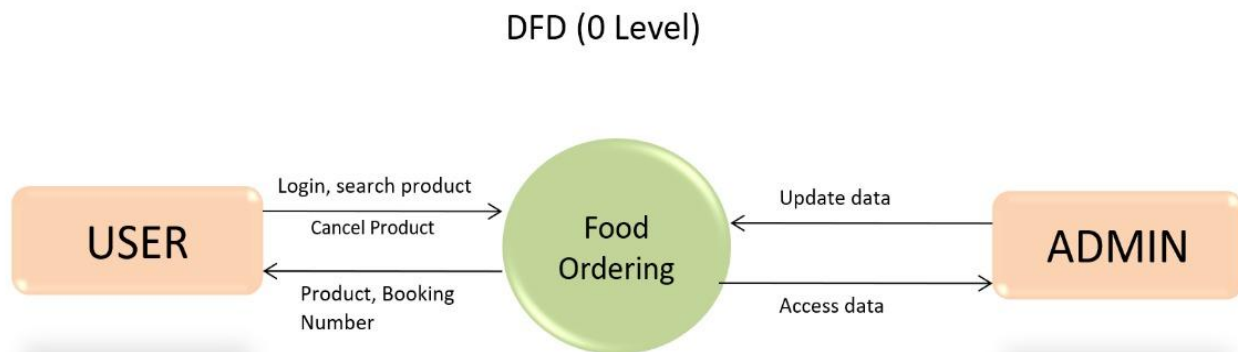
ERD of Online Food Order System



5.4 Data Flow Diagram (DFD) for a Tour and Travel System

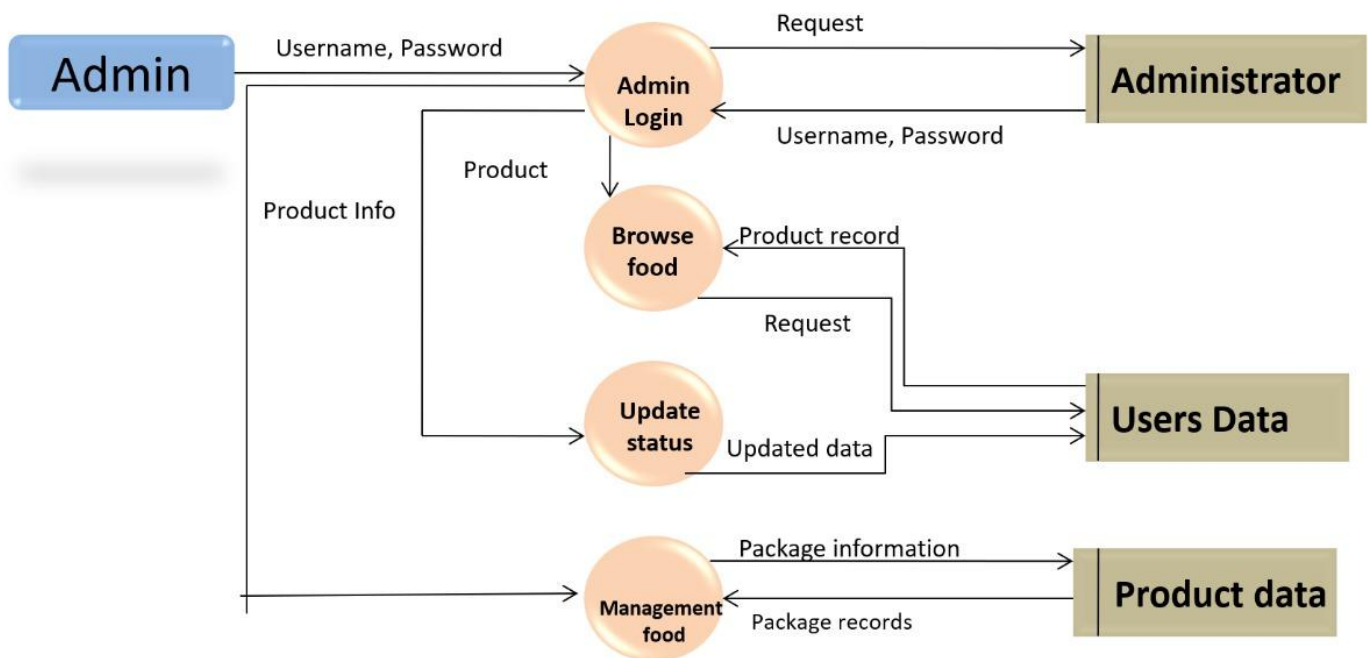
Data Flow Diagram (DFD) for a Smart Food Ordering System that represents the flow of information between different components like Users, Orders, Menu, Payments, and Delivery

Level 0: High-Level DFD (Context Diagram)

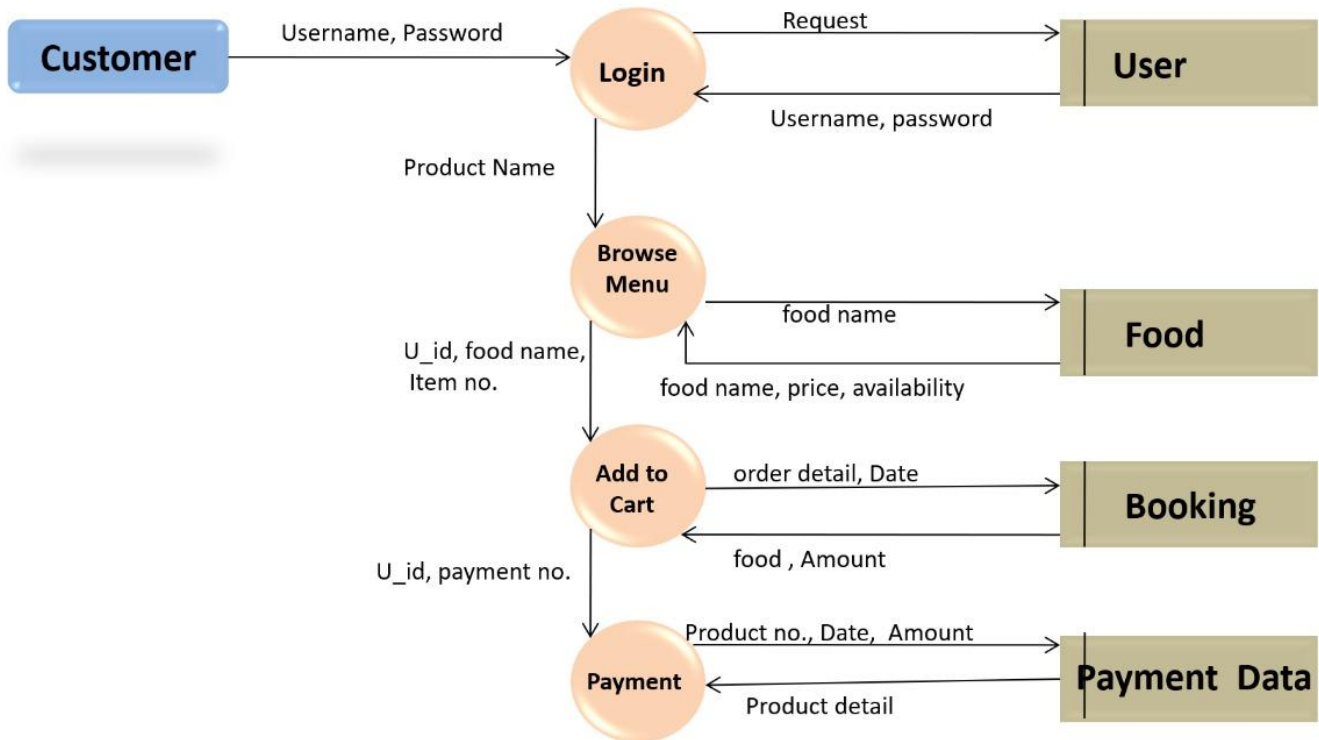


Level 1: Expanded DFD

1 Level (Admin side)



1 Level (User side)



Processes Explained:

View Menu: Input: Customer (external entity) requests to view the available food menu. Output: Menu items (food, prices, descriptions) displayed on the user interface.

Select Item: Input: Customer selects food items to add to the order (can specify quantity). Output: Selected food items and quantity passed to the Order process.

Place Order: Input: Customer submits the order request, including selected items, delivery address, and payment method. Output: Order details passed to the Payment Process for payment processing.

Payment System: Input: Order details passed for payment processing (via external payment gateway such as PayPal, Credit Card, UPI). Output: Payment confirmation or failure information returned to the system.

Manage Menu: Input: Admin adds, edits, or removes food items from the menu (includes price and description). Output: Updated menu data stored in the Menu Data Store.

Manage Orders: Input: Admin views and manages orders, including confirming, canceling, or updating orders. Output: Order status updated in the Order Data Store.

Assign Delivery: Input: Delivery details (driver assignment, delivery address, order info) passed to the Delivery process. Output: Delivery instructions sent to the assigned delivery driver.

Track Delivery: Input: Delivery status (in transit, delivered) is updated by the delivery driver. Output: Updated delivery status sent to the system and displayed to the customer.

Generate Reports: Input: Admin requests reports on orders, sales, customer data, etc. Output: Reports generated and displayed to the admin.

Notifications: Input: Notification of order status (confirmation, delivery updates, etc.) sent to the customer via email/SMS. Output: Customer receives confirmation or delivery updates.

Order History: Input: Customer can view past orders, including details such as food items, prices, and delivery status. Output: Order history displayed on the customer interface.

Data Stores:

Order Data (Data Store): Stores all order-related details, including customer information, food items, delivery address, payment status, and delivery status.

User Data (Data Store): Contains customer profiles (name, contact details, address, order history) and admin details.

Menu Data (Data Store): Stores all food items available for order, including name, description, price, and category (e.g., appetizers, main courses, desserts).

Payment Data (Data Store): Stores payment details related to each order, including the payment method, payment status (successful/failed), and transaction details.

Delivery Data (Data Store): Stores delivery status and driver assignment details, including delivery address, delivery status, and delivery updates.

Data Flow:

Customer to Place Order: Order Information (Selected items, quantity, address, payment details).

Place Order to Order Data: Order Details (Order ID, Customer ID, Menu items, payment status).

Order Data to Payment System: Payment Details (Order ID, Amount, Payment Method).

Payment System to Payment Data: Payment Status (Successful/Failed), Transaction ID.

Payment System to Order Data: Payment Confirmation or Failure.

Order Data to Manage Orders: Order Status (Confirmed, Canceled).

Manage Orders to Admin: Order Management Updates (Order status changes).

Admin to Menu Data: Menu Item Updates (Add/Edit/Delete Items).

Menu Data to Customer: Menu Display (Food items and descriptions).

Order Data to Track Delivery: Delivery Information (Order ID, Address).

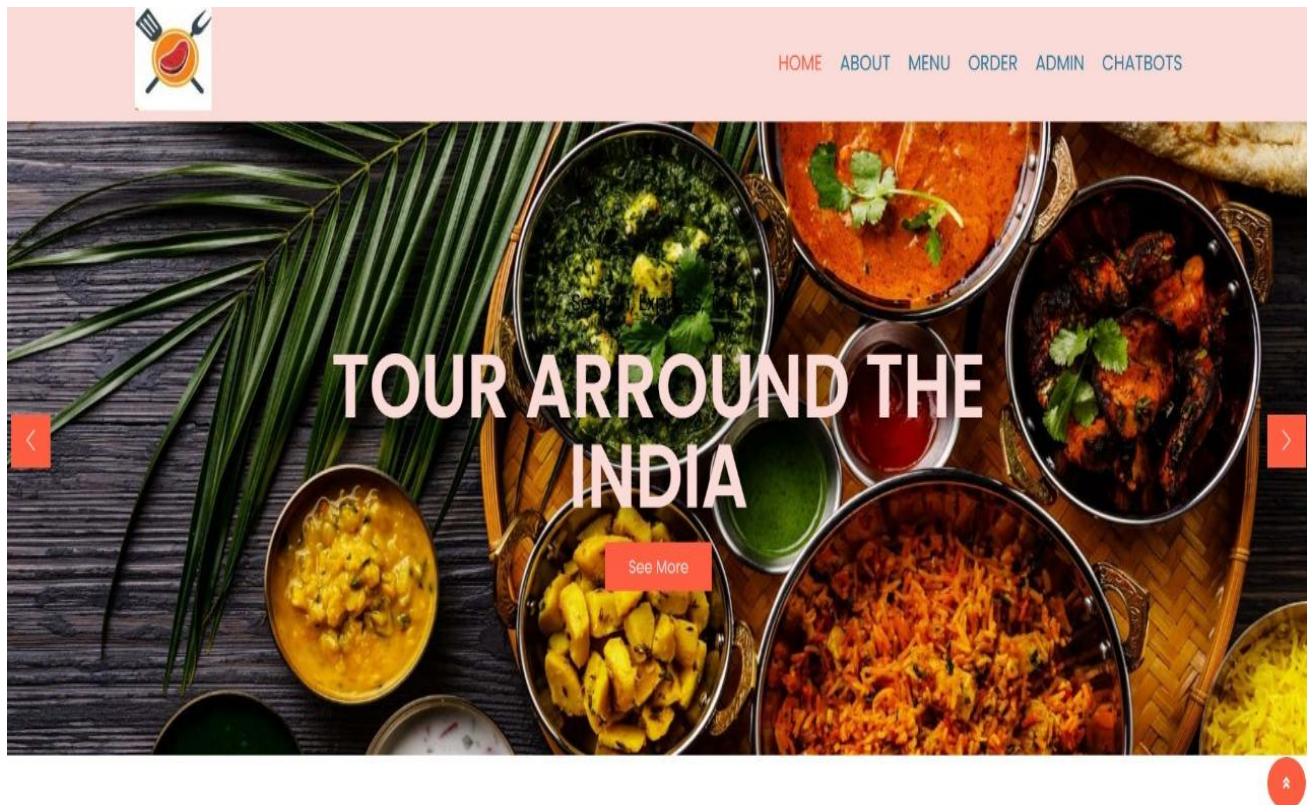
Delivery Data to Delivery Driver: Delivery Instructions (Order ID, Customer Address, Assigned Driver).

Delivery Driver to Delivery Data: Delivery Status Updates (Delivered/In Transit).


Project Outcome


The **Smart Food Ordering System** simplifies the process of ordering and managing food delivery, providing customers with a seamless, efficient, and personalized dining experience. Through a user-friendly interface, customers can browse menus, customize their orders, and make secure payments for their meals. Restaurants and food providers benefit from easy order management, real-time tracking, and inventory oversight, ensuring smooth operations and reducing errors. The system enhances customer satisfaction by offering features such as order history, real-time updates, and personalized food recommendations based on preferences. By integrating payment gateways, loyalty programs, and customer feedback systems, the platform delivers a scalable solution that adapts to growing user demand. Ultimately, the system improves operational efficiency, increases customer engagement, and drives revenue growth for restaurants, while offering a convenient and enjoyable food ordering experience.

Home Page




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ABOUT US



Why Choose Us?

We Believe Food Isn't Just About Taste — It's About Moments Shared 🍷, Memories Created ❤️, And Happiness Served Fresh Every Day 🍴. Every Dish We Craft Is Packed With Love, Flavors, And A Pinch Of Magic ✨. Whether You're Here For A Quick Bite 🍽️, A Cozy Meal With Family 👨‍👩‍👧, Or A Celebration With Friends 🎉, We Promise To Make Every Visit Unforgettable. Great Food 🍲, Warm Vibes ☺️, And Endless Smiles 😊 — That's What We Bring To Your Table. Choose Us And Be Part Of Our Delicious Journey! 🍷

*We Don't Just Make Food; We Create Memories, Spread Smiles, And Turn Every Meal



Chatbot

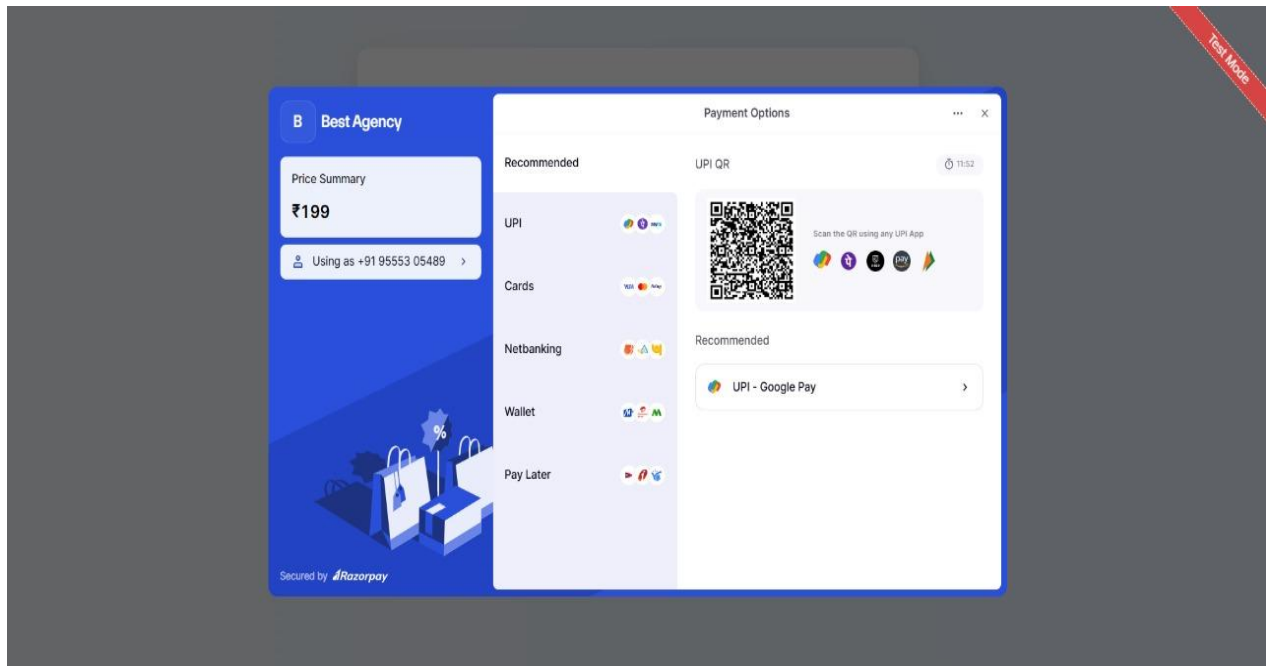
**ASK YOUR QUERIES
WITH ME....**

Welcome To Yummy Bites! Type Show Questions Or Click Show Questions To Get Started.


Type Your Question...



Payment Gateway



Admin Login



HOME ABOUT PACKAGE BOOK ADMIN CHATBOTS

Customer Food Orders

ID	Name	Email	Phone	Address	Restaurant	Food Items	Quantity	Delivery Time
1	Manish Kumar Singhmeihul	Mana@Gmail.Com	09555305489	Varanasi	Dhicholia	Jshkjas	1	0000-00-00 00:00:00
2	Manish Kumar Singhmeihul	Mana@Gmail.Com	09555305489	Varanasi	Dhicholia	Jshkjas	1	0000-00-00 00:00:00
3	Manish Kumar Singhmeihul	Mana@Gmail.Com	09555305489	Varanasi	Dhicholia	Jshkjas	1	0000-00-00 00:00:00
4	Manish Kumar Singhmeihul	Mana@Gmail.Com	09555305489	Varanasi	Eede	Ewefehw	1	0000-00-00 00:00:00
5	Manish Kumar Singhmeihul	Mana@Gmail.Com	09555305489	Varanasi	Dhicholia	Ewefehw	1	0000-00-00 00:00:00
6	Bamp	Mana@Gmail.Com	97366481438	Varanasi	We	Zzz	-13	0000-00-00 00:00:00

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Menu

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TOP SERVINGS



Cheesy Aloo Tikki Burger

A Crispy Aloo Tikki Layered With Oozing Cheese, Fresh Veggies, And Zesty Sauces, All Packed Inside A Soft, Toasted Bun. Desi Crunch Meets Cheesy Goodness In Every Bite! 🍔💯!

₹ 199

[Order Now](#)



Honey Chili Potato

Crispy Potato Fingers Tossed In A Sweet & Spicy Honey-Chili Glaze, Garnished With Sesame Seeds And Spring Onions. A Perfect Indo-Chinese Snack That Hits All The Right Notes! 🍟🌶️💯!

₹ 229

[Order Now](#)



Mexican Corn Salad Bowl

Sweet Corn, Crunchy Veggies, And Lime Dressing With Mexican Spices — A Fresh, Flavorful, And Guilt-Free Salad Bowl

₹ 359

[Order Now](#)



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