



# ONLINE CATERING MANAGEMENT SYSTEM

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**Abstract :** An Online Catering Management System is an electronic platform created to ease and enhance catering service management between customers and providers. The system offers a unified platform through which customers can access different menus, order, and book catering services for events such as weddings, parties, or corporate events. It eliminates the need for traditional, time-consuming methods like phone calls or in-person visits, offering convenience and efficiency. For service providers, the system streamlines operations by automating tasks such as inventory management, and event scheduling. It provides detailed reports on orders and customer preferences, enabling better decision-making and resource planning. Functions such as customizable menus and live updates guarantee customer satisfaction, and timely notifications keep both parties updated on order status. The system is simple to operate and does not involve intricate technologies like AI or online payment gateway integration. It instead ensures that simple, easily accessible tools are provided for the operation of catering, which makes it perfect for firms that support simplicity and ease of use. This platform is designed to increase customer satisfaction, decrease the workload manually, and enhance the overall efficiency of catering services

**Index Terms – HTML, CSS, Python, Flask.**

## INTRODUCTION

Catering services play a critical part in planning events, ranging from tiny events to vast celebrations, to ensure that food and service are provided efficiently and to the maximum standards. Historically, catering services have used word-of-mouth processes like phone calls or doorstep visits to handle orders, arrange events, and negotiate with clients. Though these processes have worked for decades, they are susceptible to inefficiencies such as communication breakdowns, delayed order processing, and the inability to control inventory. These issues tend to result in customer dissatisfaction and increased workload for catering companies, especially during peak season or big events. The emergence of digital technologies has created new opportunities for enhancing the efficiency of many industries, including catering. An Online Food Catering Management System is a computer solution intended to improve the limitations of conventional catering operations. The system enables clients to view menus, order, and arrange catering services at their convenience from their devices without having to physically interact with service providers. For companies, it simplifies operations by mechanizing work such as inventory monitoring, order tracking, and event planning, thereby lowering manual labor and error rates. This project seeks to develop and implement an Online Food Catering Management System that provides a smooth experience for customers and service providers alike, ensuring efficiency, reliability, and customer satisfaction. The emergence of digital technologies has created new opportunities for enhancing the efficiency of many industries, including catering. An Online Food Catering Management System is a digital solution that seeks to overcome the limitations of conventional catering processes. This system enables customers to view menus, order, and book catering services easily from their devices without direct contact with service providers. For companies, it simplifies operations by automating processes like inventory management, order management, and event booking, hence cutting down on manual labor and reducing errors. The project will design and develop an Online Food Catering Management System to provide a hassle-free experience to customers as well as service providers, ensuring efficiency, reliability, and customer satisfaction

## I.LITERATURE SURVEY

The creation of online food ordering systems has become more and more necessary for small and medium-sized restaurants looking to keep up with changing consumer demands without having to pay high development fees. These systems allow restaurants to provide customizable, easy-to-use interfaces that permit customers to navigate menus, order, and choose delivery options easily. Real-time information updates, safe payment gateways, and functionalities like order tracking and tailored suggestions are all part of a better user experience and greater customer satisfaction. Restaurant operations benefit from these platforms through tools enabling quick ordering, stock management, and statistical analysis. Moreover, cutting-edge features like AI-based demand forecasting and dynamic menu management enable better resource utilization, cost savings, and overall profitability. This literature mirrors the increasing importance of such systems in modernizing the food service sector while emphasizing both technical deployment and business effect.[4].

The increased intricacy of coordinating mass events has brought into focus the importance of effective catering management systems. Conventional catering business is usually impaired by the shortage of resources, coordination of workers, and efficiency

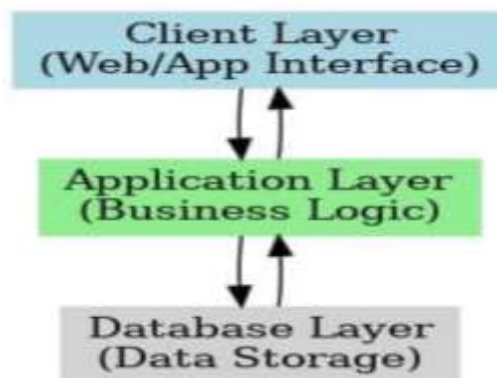
in managing time during peak-demand events like weddings or mass assemblies. To overcome these setbacks, web-based catering management systems have become important resources for simplifying operations. Such systems help manage human resources, inventory monitoring, task scheduling, and timely delivery of service. Digitization of the catering process is done by these platforms, which minimizes human error, increases operational effectiveness, and facilitates smooth service delivery. Whether it is mobile catering, specific event arrangements, or shipboard services, the system provides maximum utilization of available resources as well as personnel. Finally, such solutions play an important role in business scalability, customer satisfaction, and the general success of event catering[6]. The new online food ordering system overcomes the inefficiencies of the conventional queue-based ordering method by providing a simple and effective digital means for food orders. Specifically engineered to serve restaurant and mess services, the system streamlines the ordering process by way of an easy-to-use online menu interface that facilitates customers in viewing, choosing, and monitoring their orders with ease. By adding a feedback component, users can provide ratings for food items, which not only increases user interaction but also facilitates service enhancement by alerting restaurant workers to any quality issues. In addition, the system improves personalization through suggestions of utensils and hotels based on user preferences and ratings. Secure user login via personal accounts provides secure transactions, while varied payment modes add flexibility—online payment or pay-on-delivery—making it more convenient for users. In general, the system shows enormous potential to enhance operational effectiveness, customer satisfaction, and service quality in the food service sector[3].

New automation breakthroughs have added novel ideas like the E-Restaurant that brings robotics to food service in an effort to boost customer experience and efficiency in operations. The system features robot waiters for food delivery, as opposed to human attendants, and has customers ordering via table-top terminals hosting the web interface of the restaurant through a local server. After the food is prepared by the kitchen staff, it is loaded onto robotic trays that are set to move and deliver to specific tables. These robots use Light Dependent Resistors (LDRs) to identify table locations and activate tray mechanisms enabling customers to pick up their food. Trays automatically pull back after a specified time, and the robots proceed to the next location. Additionally, E-Trolleys accompany the robots, carrying essential dining accessories such as knives, spoons, and napkins. This integration of robotics in food service not only reduces labor costs but also introduces a futuristic and hygienic dining experience, paving the way for smart restaurant systems.[12].

## II. METHODOLOGY

The system design phase is crucial for transforming the requirements and objectives of the Online Food Catering Management System into a structured and functional solution. This section covers the architecture diagram, data flow diagram (DFD), and use case diagram, which collectively illustrate how the system operates, processes information, and interacts with users. The development of the Online Catering Management System followed a modular and structured approach using the Flask web framework in Python, with HTML and CSS for frontend development. The final system was deployed locally for demonstration purposes, offering a functional and accessible solution without involving complex technologies like AI or online payments

### 3.1 Architecture diagram



#### A. Architecture diagram

- Client Layer: This is the user-facing interface available to the user through a web browser or mobile app. Customers are able to view menus, order items, and check their order status, while administrators can handle inventory, change menus, and manage orders
- Application Layer: This middle layer contains the business logic and processes customer and admin requests. It handles functionalities such as order processing, inventory updates, and event scheduling.
- Database Layer: This back-end layer stores all the system data, including user details, menus, orders, and inventory. It ensures data integrity and supports efficient retrieval and storage of information.

### 3.2 Data Flow diagram



B. Data Flow Diagram

A Data Flow Diagram (DFD) visually represents the flow of information within the system. Below is an overview of the DFD:

Level 0 DFD: This high-level DFD shows the interaction between the system and its external entities:

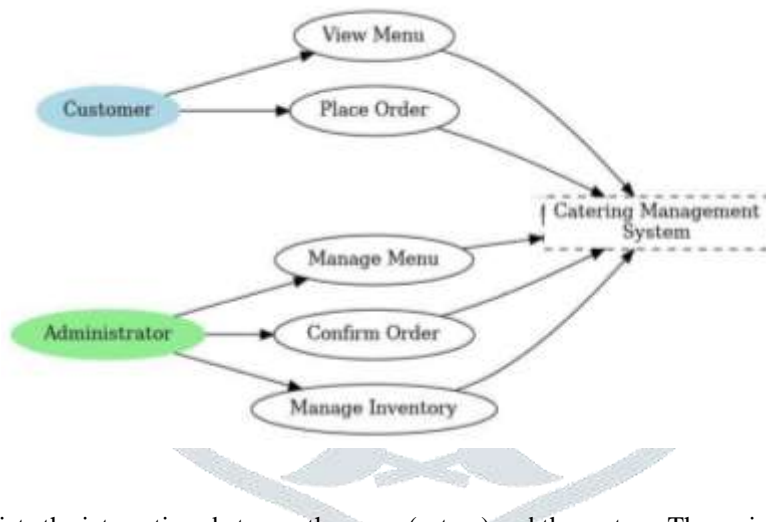
- Entities: Customers, administrators, and the system database.
- Processes: Customers place orders and view menus, while administrators manage orders and inventory.
- Data Flows: Customers send requests for menus and order placements.

The system processes these requests and provides order confirmations. Administrators send inventory updates, and the system reflects these changes in real-time.

Level 1 DFD: This expands the processes in the Level 0 DFD into more detailed components:

- Menu Browsing: Customers request the menu, and the system retrieves and displays the menu from the database.
- Order Placement: The customers place orders, and the system captures details, updates the inventory, and creates an orderID.
- Order Management: Administrators review and approve orders while tracking stock levels.
- Inventory Management: The system dynamically refreshes inventory based on ordered items and notifies admins when inventory is running low.

3.3 Use Case Diagram



C. Use Case Diagram

The Use Case Diagram depicts the interactions between the users (actors) and the system. The main actors are:

Customers: They perform tasks such as viewing menus, placing orders, tracking order status, and scheduling events.

Administrators: They handle tasks such as managing menus, confirming orders, monitoring inventory, and updating the system.

Use Cases for Customers:

1. View Menus: Access the system to browse available catering options.
2. Place Orders: Select items, specify quantities, and schedule delivery or event dates.
3. Confirm Orders: Confirm the of placed orders in real time.

Use Cases for Administrators:

1. Manage Menus: Add, remove, or update menu items based on availability.
2. Confirm Orders: Review customer orders, approve them, and ensure timely delivery.
3. Inventory Management: Track and update stock levels based on order data.



4.1 Home Page



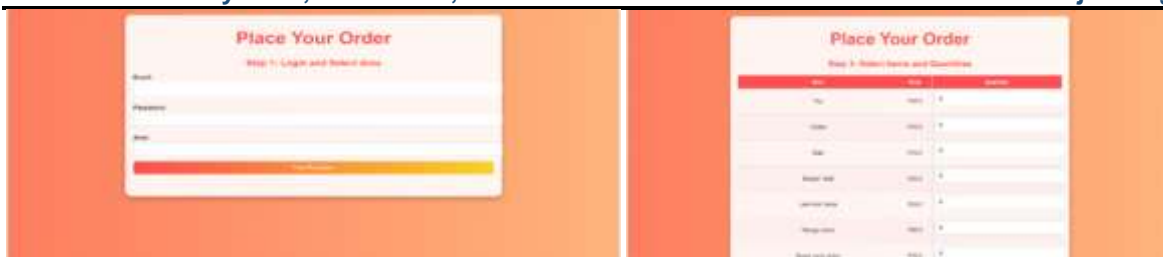
4.2 Service Provider Signup



4.3 Update Item Rates

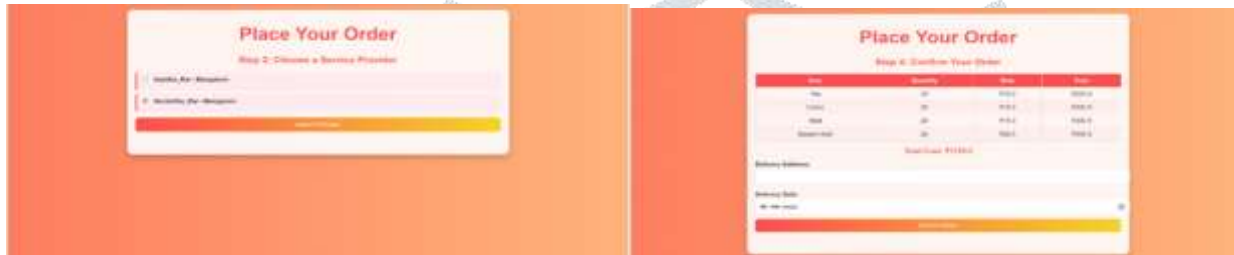


4.4 Customer Signup



4.5 Place your Order

4.6 Items Selection



4.7 Service provider selection

4.8 Order Placed

#### IV. Conclusion

The Online Food Catering Management System has been able to accomplish its objective of automating and minimizing the efforts involved in food order management, menu management, and customer interaction. Through the application of programming languages like Python, HTML, Node.js, and CSV to handle data, the system provides a strong, trustworthy, and intuitive interface for both customers and administrators within the catering business. In a user experience, the system is user-friendly to allow customers to register, view menus, and order with effortless ease. Simple and clean, the interface prevents even new customers from having to struggle with it. The use of HTML to build the interface adds to how responsive the system is, thus enabling users to use it with their various devices seamlessly. Customers are able to easily view menu items, select the dishes they want, and order without a hitch.

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