

ONLINE FOOD ORDERING MANAGEMENT SYSTEM

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Abstract:

The existence of an online food delivery application can be said to be very helpful for room tenants who are not familiar with their new environment well, especially for children who come from outside the area. Various lists of available restaurants and food provide more efficient information for room tenants without having to go out. Therefore, in this research, we will analyze the effectiveness of using online food delivery applications for room tenants. This study was conducted by obtaining questionnaire respondents to 304 respondents from room tenants in Jakarta, Indonesia who had used an online food ordering application. The purpose of this paper is to identify the effectiveness and assess the driving & inhibiting factors for the use of online food and beverage ordering services for room tenants in Jakarta. Based on our analysis, the five variables are significantly related to the effectiveness variable, so it can be concluded that the quality of information available on applications, promotions, prices, restaurant credibility, and convenience in use are factors that contribute to effectiveness. Online food delivery on the lives of room tenants.

I. INTRODUCTION

In today's global market, starting a new small scale business and surviving the competition from well-established businesses is incredibly challenging. With everyone pressed for time, customers are very particular about placing food orders. They are drawn not only to the convenience of online ordering but also to the visibility of available items, prices, and easy navigation. The online ordering system proposed here significantly simplifies the ordering process for both customers and restaurants. This system features an interactive and up-to-date menu that is easy to use,

allowing customers to select multiple items and place them in their cart. They can review their order details before finalizing their purchase and receive order confirmation once the order is placed. The system records the order in the database in real time, enabling restaurant staff to efficiently process orders with minimal delays and confusion. In today's fast-paced world, many people prefer to order food online rather than cook at home due to their busy schedules and job commitments. Online food ordering allows customers to choose from various restaurants and different cuisines, making it convenient for them to enjoy a variety of foods. This has created a competitive environment where small businesses struggle to compete with long-established ones. The proposed system clearly defines the interactions between the admin, customer, restaurant, and delivery personnel. The website provides regular updates and displays all available options in an easy-to-use format. Customers can select their desired items from the menu, add them to their cart, and proceed to checkout. Once the order is confirmed, all details are entered into the database and retrieved in real time, allowing restaurant staff to promptly process the orders. This system enhances efficiency and ensures successful order fulfillment.

II. LITERATURE REVIEW

Several studies and research works have focused on developing online food ordering platforms to improve restaurant services. Existing platforms such as Swiggy, Zomato, and Uber Eats demonstrate the effectiveness of online ordering systems in simplifying the food delivery process.

Previous research highlights the importance of user-friendly interfaces, secure payment systems, and real-time order management in online food ordering applications. These platforms provide features such as menu browsing, order tracking,

customer feedback, and payment integration.

However, many small-scale restaurants face challenges in implementing complex and expensive systems. Therefore, a simplified Online Food Order Management System is required that can be easily implemented and managed by small and medium-sized restaurants.

The proposed system aims to provide a cost-effective and efficient solution for managing food orders through a simple web-based platform.

III. SYSTEM ARCHITECTURE

The Online Food Order Management System is designed using a **client-server architecture**. In this architecture, users interact with the system through a web interface, while the server processes requests and communicates with the database.

The system consists of three major modules:

A. User Module

The user module allows customers to interact with the system. Customers can create accounts, log in, browse available food items, and place orders.

Key features of the user module include:

- User registration and login
- Viewing restaurant menu
- Adding items to cart
- Placing food orders
- Viewing order history

B. Admin Module

The admin module allows restaurant administrators to manage the system and monitor orders.

Key functions include:

- Adding new food items
- Updating menu details and prices

- Managing customer orders
- Viewing sales reports
- Maintaining database records

C. Database Module

The database stores all the information related to users, food items, and orders. It ensures that the data is stored securely and can be accessed whenever required.

The database contains tables such as:

- User details
- Food menu
- Orders
- Payment records

IV. PROPOSED SYSTEM

The proposed Online Food Order Management System is designed to provide a convenient and efficient platform for customers to order food online and for restaurants to manage orders digitally. The system replaces traditional food ordering methods with a web-based application that automates the ordering and management process.

In this system, customers can access the platform through a web interface where they can register, log in, and browse the available food menu. Each food item is displayed with relevant details such as name, price, and description. Customers can select their preferred items, add them to the cart, and place orders easily.

The system also includes an administrator module that allows restaurant managers to control and maintain the system. The administrator can add new food items, update menu details, modify prices, and remove unavailable items from the menu. In addition, the administrator can view all customer orders and manage them efficiently.

The proposed system uses a centralized database to store information related to users, food items, and orders. This ensures that data is stored securely and can be accessed whenever required.

The database also helps maintain accurate records of transactions and order history.

The system architecture follows a **client-server model**, where the user interface acts as the client and the server processes requests and communicates with the database. When a customer places an order, the request is sent to the server, which processes the order and stores the details in the database. The administrator can then view and manage the order through the admin interface.

The proposed system offers several advantages over traditional methods. It reduces manual work, minimizes human errors in order processing, and improves the overall efficiency of restaurant operations. It also enhances customer convenience by allowing them to place orders anytime and from any location.

Furthermore, the system is designed with a simple and user-friendly interface to ensure easy navigation for both customers and administrators. Security measures such as user authentication and controlled database access are implemented to protect user information.

Overall, the proposed system provides a reliable and scalable solution for managing food orders through an online platform while improving service quality and customer satisfaction.

V. METHODOLOGY

The methodology of the Online Food Order Management System focuses on designing and developing a reliable web-based platform that allows customers to order food online and enables restaurant administrators to manage orders efficiently. The system is developed using a structured approach based on the **Software Development Life Cycle (SDLC)** to ensure proper planning, implementation, and testing.

A. Requirement Analysis

The first stage of the development process is requirement analysis. In this phase, the needs and expectations of users and restaurant administrators are identified. The main requirements include user registration, menu browsing, food selection, order placement, and order management.

Customers require a simple and user-friendly

interface that allows them to easily search for food items and place orders. Restaurant administrators require tools to manage menu items, update prices, monitor incoming orders, and maintain customer records. The system must also ensure secure storage of data and efficient processing of orders.

B. System Design

After identifying the system requirements, the next step is system design. In this phase, the architecture of the system and the structure of the database are planned. The system is designed using a **client-server architecture**, where the client side represents the user interface and the server side manages application logic and database communication.

The design phase includes the development of various diagrams such as system architecture diagrams, data flow diagrams (DFD), and entity relationship diagrams (ERD). These diagrams help in understanding how data flows through the system and how different components interact with each other.

The database design includes creating tables for storing user details, food menu information, order details, and payment records. Each table is designed with appropriate attributes and relationships to ensure efficient data management.

C. System Implementation

The implementation phase involves converting the system design into an actual working application using programming languages and web technologies. The front-end of the system is developed using **HTML, CSS, and JavaScript**, which provide an interactive and responsive user interface.

The backend is implemented using server-side programming languages such as **PHP or Python**, which handle the processing of user requests, order management, and database communication. The database is created using **MySQL**, which stores and manages all system data.

During this phase, different modules of the system are developed, including the user module, admin module, and order management module. Each module is tested individually to ensure proper functionality before integration.

D. Testing and Validation

Testing is an important step in the system development process. The system is tested to identify and remove errors, ensuring that all functionalities work correctly. Various testing methods such as unit testing, integration testing, and system testing are used.

Unit testing focuses on verifying the functionality of individual components, such as user login or order placement. Integration testing ensures that different modules of the system work together properly. System testing verifies the complete system to ensure that it meets the required specifications and performs efficiently under different conditions.

E. Deployment

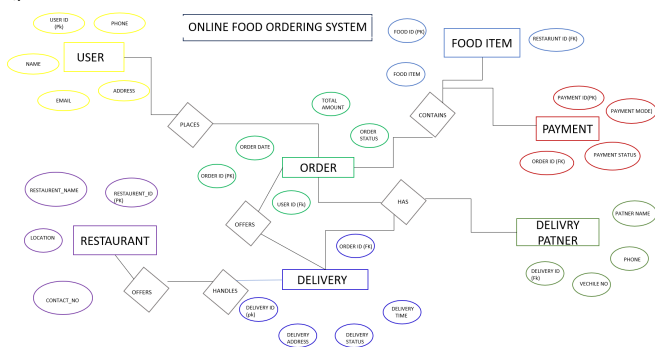
Once the system is successfully tested, it is deployed for practical use. The application is hosted on a web server so that users can access it through internet browsers. The deployment phase also includes configuring the database, setting up server connections, and ensuring system security.

After deployment, the system can be used by customers to place food orders and by administrators to manage restaurant operations.

F. Maintenance and Future Improvements

System maintenance is necessary to ensure continuous operation and performance improvement. Maintenance activities include updating menu items, fixing technical issues, improving system performance, and adding new features.

Future improvements may include integrating online payment systems, implementing mobile applications, and providing real-time order tracking for customers. These enhancements will further improve the efficiency and usability of the system.



VI. RESULTS AND DISCUSSION

The Online Food Order Management System was developed and tested to evaluate its performance, usability, and reliability. The system was implemented using web technologies and connected to a centralized database to manage user data, menu items, and order details. Various test cases were performed to ensure that all functionalities of the system work correctly and efficiently.

A. System Performance

The system was tested under different conditions to measure its performance. The application successfully handled multiple user requests such as registration, login, browsing the menu, and placing food orders. The response time of the system was found to be efficient, allowing users to complete transactions quickly without delays.

The database management system ensured that all customer orders were stored accurately and retrieved whenever required. This improved the overall efficiency of order processing and reduced the chances of data loss or duplication.

B. Functional Testing

Functional testing was performed to verify the working of each module in the system. The user module was tested to ensure that customers could successfully register, log in, browse the food menu, add items to the cart, and place orders. The results confirmed that all these functions operated as expected.

Similarly, the administrator module was tested to confirm that administrators could add new food items, update menu details, modify prices, and view customer orders. The admin interface allowed easy management of restaurant operations.

C. User Interface Evaluation

The user interface of the system was designed to be simple and user-friendly. Users were able to navigate through the system without difficulty. Menu items were displayed clearly with relevant details such as item name, price, and description, which helped customers make quick decisions.

Feedback from users indicated that the system provides a convenient method for ordering food and reduces the need for manual interaction with restaurant staff.

D. System Reliability

The system demonstrated reliable performance during testing. Orders placed by users were accurately recorded in the database and displayed in the administrator panel for processing. The system ensured that no order information was lost during transactions.

Additionally, proper authentication mechanisms were implemented to prevent unauthorized access and protect user data.

E. Discussion

The results show that the Online Food Order Management System effectively automates the traditional food ordering process. By using a web-based platform, the system reduces manual workload, improves order accuracy, and enhances overall operational efficiency.

The system also provides flexibility for customers to place orders from any location using internet-enabled devices. Restaurant administrators benefit from improved order management and better tracking of sales and customer data.

Although the current system provides essential features for online food ordering, further improvements such as payment gateway integration and real-time delivery tracking can enhance the system's functionality in the future.

VII. CONCLUSION

The Smart Donation and Resource Management The Online Food Order Management System provides an efficient and user-friendly platform for managing food ordering processes through a digital environment. The system simplifies the traditional method of ordering food by allowing customers to browse menus, select food items, and place orders through an online interface. This approach reduces the need for manual interaction and minimizes errors that may occur in conventional ordering methods.

The developed system successfully integrates user management, menu management, and order processing into a single platform. Customers can easily access the system, view available food items, and place orders conveniently. At the same

time, administrators are able to monitor orders, update menu details, and manage customer data efficiently through the admin module. The centralized database ensures proper storage and retrieval of information, which improves reliability and accuracy in the ordering process.

The results of the system implementation show that the Online Food Order Management System enhances operational efficiency for restaurants and improves the overall customer experience. By automating order management and maintaining accurate records, the system helps reduce workload and improves service speed.

In conclusion, the proposed system demonstrates how web technologies can be effectively used to modernize restaurant operations. With further enhancements such as mobile application support, online payment integration, and real-time order tracking, the system can be expanded to provide even more advanced and convenient food ordering services in the future.

VIII. REFERENCES

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