

Creating Application For Canteen Management System

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Abstract- The Android-Based Canteen Management System (CMS) stands as an innovative solution tailored for the efficient administration of educational institution canteens. This mobile application offers a user-centric interface designed to streamline operations, ensuring seamless interaction between canteen managers, faculty, and students. As an Android platform, it facilitates an intuitive experience, empowering users to access and manage canteen functionalities from their handheld devices. The system encompasses robust features, including real-time inventory monitoring, order processing, transaction tracking, and diversified payment options, ensuring convenience and efficiency in every transaction. Through its integration with Android device capabilities, the CMS app harnesses push notifications to keep users informed about order status updates and important announcements. We have used Kotlin and JavaScript for an application, and android studio have been used for developing of this site. In this application information about the college canteen.

INTRODUCTION

The way the college canteen is currently functioning is that you must pay for the meals then wait for the food in the queue, but the challenge is that each student at a campus gets the same break time, so everyone pours to the cafeteria at the same time creating a lot of difficulties for the canteen staff members and the students, and given that there isn't sufficient time, some students end up squandering or not consuming their food. This is where the canteen management system applies; it simplifies the process to ensure that students can order their food beforehand via their phones from the website, where users must first enter the email addresses they use before they are prepared to place an e-menu order. The website will alert the kitchen staff as soon as a user place an order so they can start cooking it. In the end, Canteen Management System is going to help in simplifying this entire laborious procedure by changing the conventional ways of doing things. All data is stored on SQL servers managed by the college. The system features a logging system to track all users access and ensure to increase the efficiency of the colleges canteen management The advent of technology has paved the way for innovative solutions to streamline canteen operations, enhance user experience, and optimize resource utilization. The Canteen Management System (CMS) is one such solution designed to revolutionize the way canteens are managed and operated.

OVERVIEW OF THE PROJECT:

1. User Authentication:

- Secure login for users, including both staffs and Students Registration: Users create an account by providing necessary information such as name, email, and password.
- Login: Users authenticate themselves by entering their credentials (username/email and password).

2. Menu Management:

Ability to manage and update the menu, including adding new items, updating prices, and removing items.

3. Ordering System:

Users should be able to browse the menu, select items, and place orders. This could include features like adding special instructions or dietary restrictions.

4. Inventory Management:

Keep track of available stock and alert staff when items are running low or out of stock.

5. Reporting and Analytics:

Generate reports on sales, popular items, peak hours, etc., to help with decision-making and optimization.

6. Admin Dashboard:

An interface for administrators to manage users, view orders, update menus, and access other administrative features.

7. Mobile Compatibility:

Ensure the system is accessible and user-friendly on mobile devices since many users will likely be accessing it from their smartphones.

SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS:

The system requirements for a canteen management system lay the foundation for its development, ensuring it meets the needs of both students and staff efficiently. Here's an introduction to the system requirements. In the modern dining landscape, efficient management systems are indispensable for ensuring seamless operations in canteens and food service establishments

Mobile : Android

RAM Capacity : 2GM

Storage capacity : 16GB

SOFTWARE REQUIREMENTS:

Front End : Kotlin, JAVA Script.

Back End : MYSQL (DB light, Room DB)

Control End : Angular Java Script

ANDROID TOOLS:

IDE : Android Studio (version 2023.1.1.28)

EXISTING SYSTEM

1. Manual Ordering:

Customers place orders manually by filling out paper order forms or verbally communicating with canteen staff. Order accuracy depends on the clear communication between customers and staff, which can lead to errors and misunderstandings.

2. Cash Transactions:

Payments are made in cash, requiring customers to carry physical currency. Handling cash transactions may lead to errors in change calculation and increases the risk of theft. Asset

3. Limited Menu Visibility:

Customers may have limited access to the canteen menu, often relying on physical menu boards or printed menus that may not be up-to-date.

4. Queue and Waiting Times:

Manual processing of orders and payments can result in long queues during peak hours, leading to increased waiting times for customers.

DISADVANTAGES:

- Manual Processes.
- Limited Accessibility.
- Data Inaccuracy.
- Security Concerns.
- Limited Reporting and Analytics.

PROPOSED SYSTEM

The proposed Canteen Food Ordering System Mobile Application aims to address these issues by introducing a user-friendly mobile application that facilitates digital ordering, cashless transactions, real-time menu updates, and order tracking. This system leverages modern technology to streamline the canteen food ordering process, enhance customer experience, and improve overall operational efficiency. The subsequent phase of this project will delve into the design and implementation details of the mobile application, ensuring a seamless transition from the existing system to the proposed solution.

ADVANTAGES

- Automation.
- Convenience.
- Scalability.
- Advanced Reporting and Analytics.
- Efficiency.

MODULES USED

INPUT DESIGN

Registration Module:

The registration module serves as the gateway for users to create accounts and gain access to the canteen management system. Its primary function is to collect and store essential information from users, enabling them to interact with the system's functionalities. The introduction of the registration module typically includes.

Fields:

Name: First name

Mobile number: Required.

DOB: Required date

Role: Student, staff, coordinator

Department (if applicable): Dropdown menu for faculty/staff to select their department.

Password: Secure password

User Registration Form:

Fields: Name, email, contact number, role (student/faculty/staff), department (for faculty/staff), student ID/employee ID, password.

Validation: Email format validation, unique ID verification, password strength requirements.

User Login Form:

Fields: Email/ID, password.

Validation: Authentication against registered credentials, password encryption.

Menu Item Addition Form:

Fields: Item name, description, category, price, availability status.

Validation: Ensure unique item names, validate price format, provide options for categories.

Order Placement Form:

Fields: Select items from the menu, quantity, special instructions.

Validation: Check availability of selected items, ensure minimum and maximum order limits, provide real-time price calculation.

Menu Management:

Add Menu Items: Admins can add new menu items with details such as name, description, category, price, and availability status.

Edit Menu Items: Ability to modify existing menu items, including updating details or changing availability status.

Delete Menu Items: Admins can remove menu items that are no longer offered.

Categorization: Menu items can be categorized for easier navigation, such as breakfast, lunch, snacks, beverages, etc.

Sales Reports:

Order Analysis Reports:

Overview of order volume, frequency, and average order value. Breakdown of orders by user type (students, faculty, staff). Analysis of peak ordering times and popular menu items during specific periods. Comparison of order trends between weekdays and weekends.

Financial Reports:

Summary of revenue generated from food sales, broken down by payment method. Analysis of discounts, promotions, and revenue from special offers. Calculation of total expenses, including food costs, labor costs, and overhead expenses. Profitability analysis and financial performance indicators (e.g., gross margin, net profit). Operational Efficiency.

Reports:

Assessment of order processing times, from placement to delivery. Analysis of staff productivity and efficiency in food preparation and service. Identification of bottlenecks or inefficiencies in the ordering and fulfillment process. Recommendations for streamlining operations and improving service quality.

OUTPUT DESIGN

The report is the final stage in this project. The report can be generated for various details. The reports for the stock of the produced goods can be generated for verification that the delivery can be done or not.

Output: Output is the term denoting either an exit or changes which exit a system and which activate/modify a process. It is an abstract concept, used in the modeling, system(s) design and system(s) exploitation.

Login Page



Welcome To N.G.P Food Management

Student Login

Login

Already you haven't account Sign Up

METHODOLOGY

1. Requirement Gathering and Analysis:

- Meet with stakeholders, including professors, students, and administrators, to understand their needs and requirements.
- Define the scope of the project, including variety of menu item.
- Document functional and non-functional requirements.

2. Design Phase:

- Create wireframes and mockups to visualize the user interface and user experience.

- Design the database schema to store user data, food item, placing of order and report.
 - Plan the architecture of the application, including frontend, backend, and database components.
- 3. Technology Selection:**
- Choose appropriate technologies and frameworks based on the requirements and expertise of the development team.
 - Consider using frontend frameworks like React.js, Angular, or Vue.js, and backend frameworks like Django, Flask, Node.js, or Ruby on Rails.
 - Select a database management system such as MySQL, Room DB.
- 4. Development:**
- Develop the frontend of the application, including UI components, using JAVA Script and Kotlin.
 - Implement backend logic for user authentication canteen management, and report analyzing.
 - Integrate the frontend and backend components to create a seamless user experience.
- 5. Testing:**
- Conduct thorough testing of the application, including unit tests, integration tests, and end-to-end tests.
 - Test the application across different browsers and devices to ensure compatibility.
 - Perform usability testing to identify any user experience issues.
 - Address and fix any bugs or issues found during testing.
- 6. Deployment:**
- Choose a reliable hosting provider for deploying the application, considering factors like scalability, performance, and security.
 - Set up the production environment and configure the server and database.
 - Deploy the application to the production server and configure domain settings and SSL certificates for security. Monitor the application post-deployment for performance and stability.
- 7. Training and Documentation:**
- Provide training sessions for professors, students, and administrators on how to use the application.
 - Create user documentation and guides for reference.
 - Offer technical support to address any issues encountered during usage.

CONCLUTON

The management of a canteen or other food establishment's operations requires the use of a canteen management system. Customers and workers can both gain from a well-designed canteen management system, which can increase productivity, decrease errors and inconsistencies, and improve customer satisfaction. Additionally, it can aid in optimizing canteen management, allowing owners and managers to concentrate on other areas of their business. Canteen owners and managers may improve operations, cut expenses, and maintain competitiveness in a crowded market by taking advantage of technology.

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