



College E-Canteen Management System

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ABSTRACT

The purpose of this study is to implement electronic equipment and computer software to automate the existing manual system of a college canteen. By utilizing the proposed system, the canteen will be able to store valuable data securely and for an extended period with easy accessibility and manipulation. The current manual system has long queues, resulting in a waste of time. Hence, the proposed application aims to reduce the time wasted in queues by allowing customers to place their orders beforehand, sending the orders directly to the kitchen, and offering a post-paid e-wallet facility to save time in tendering and change-giving. This saved time can be utilized for other productive purposes. To ensure data safety, the proposed application's e-wallet uses a 2,048-bit encryption scheme. The primary objective of this project is to manage the canteen details, including meals and their types. This project is designed for administrative use only, with the administrator having exclusive access to it. The aim of this project is to reduce the manual workload in managing the canteen by tracking all the details related to the canteen meals and their types.

Keywords: : E-wallet, Electronic ordering system, Canteen management system

1. Introduction

The current system in schools/college canteens involves waiting in line to pay for food during a designated break time. However, this creates issues as all students rush to the canteen simultaneously, causing inconvenience for both the canteen staff and students. Additionally, due to time constraints, some students may not be able to eat or may end up wasting their food. To address these challenges, the E-Canteen Management system has been developed to streamline the process. Through this system, students can order their food via their phones in advance from a website. Users must enter their college email ID to access the e-menu and make payments. This method allows the college to monitor canteen transactions and detect any fraudulent activities. As soon as an order is placed, the kitchen staff receives an alert to begin preparing the food. This digitalization of the canteen system improves service delivery and reduces waiting time. The e-menu card contains detailed information about the food items available, and customers can select and pay for their desired items. The canteen staff receives information about the order immediately, allowing them to prepare the food in advance. Customers can collect their food

without waiting in queues. The online system allows for easy updates and deletions of menu items. Regular customers can be recognized and their data stored in the database. The security of data is ensured through encryption and server databases of the institution. Ultimately, the Canteen Management System revolutionizes the traditional approach to canteen management, making the process more efficient and user-friendly.

2. Literature Survey

[1] Cashless Management System

The advantage of the use of this system is that the scale or size of the business does no longer make any difference to the system. This platform can be enforced on both small and large-scale businesses. Due to the user-friendly interface of the application, the particular viewer of the program doesn't have to be educated exclusively and can use the application easily. Admin can monitor and maintain of track of the entirety going on in his business which gives him a better manage over his busine ss. The fully automated system eliminates the need to manipulate details in terms of the amount of food items sold on a regular basis, items available in the store. This study addresses the large-scale institution canteen business issue and ultimately suggests a working solution to the same.

[2] Automation System with Payment Gateway

Automation is the technology by which a process or procedure is performed with minimal human assistance. Automation or automatic control is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching on telephone networks, steering and stabilization of ships, aircraft and other applications and vehicles with minimal or reduced human intervention. In the current scenario we have implemented a system which works by reducing manual error wherever possible. The user will first register on the website and make

an account. After completing the registration procedure they will navigate through the website, select the food item they wish to buy and order it. After which they will be taken to the payment gateway to make the payment. All the shortcomings of the current canteen system are all surpassed in our proposed system. Online payments made are stored in a database to keep track of records.

[3] Food Automation System

This Project enables the end users to register online, read and select the food from e-menu cards and order food online by just selecting the food using the application. The results after booking the food from the E-menu card will directly appear on the screen near the Chef who is going to cook the food for you (user). The system is built using Mongo DB, Express, NodeJS, ReactJS. By using this application, the work of the waiter is reduced and he/she can also say that the work is nullified. The benefit of this is that, if there is a rush in the Canteen then there will be chances that the waiters will be unavailable and the users can directly order the food to the chef online by using this application. The user will have a username and a password, by using which they can login into the system. This implies that the customer is the regular user of the Canteen. The system also involves secure payment gateway and handles cancellation of the order. It also has a teacher/professor section where they can order food directly to their cabins. The chef or the admin who has access to handle the application can edit/add and update the E-menu as per their schedule. They can accept or decline the order received and if accepted must keep the order ready at the stipulated time. They'll receive feedback on their order which helps them to improve if required.

[4] Online Food Ordering System for College

An online food ordering system for the college canteen has been established to override the problems active manual system. This code is supported to eliminate, and in some cases, decreases the hardships two-faced by this existing system. Moreover, this technique is supposed for the particular needs of the faculty to hold out operations throughout a graceful and effective manner. The application is reduced the most quantity as potential to avoid errors whereas returning into the knowledge. It conjointly provides error message whereas coming into invalid information. No formal data is required for the customer to use this technique. Thus, by this all it proves it's simple. Online food ordering system for the college canteen as represented on highest of, will cause error-free, safe, reliable, and quick management systems. It will assist the user to target their different actions rather focus on record-keeping. Thus, it will help the organization in higher consumption of resources.

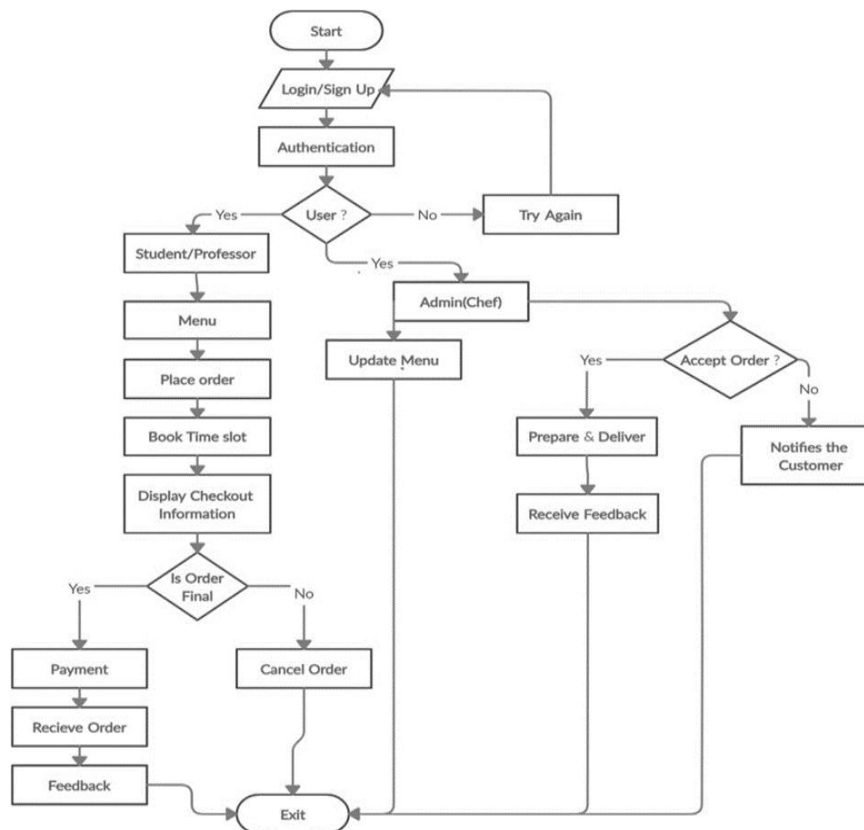
[5] Automation System Using Android

The purpose of Canteen Management System is to automate the existing manual system by the help of computerized equipment's and full-fledged computer software, fulfilling the requirements, so that their valuable data can be stored for a longer period with easy accessing and manipulation of the same. The required hardware and software are freely available and easy to work with. Canteen Automation System using Android, as described above, can lead to error free, secure, reliable and faster to manage the system. It can assist the user to focus on their other activities rather than focusing on the record keeping. Thus it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by data that is not relevant, while being able to reach the data. The aim is to automate its existing system by the help of computerized equipment s and full-fledged computer software, fulfilling their requirements, so that their valuable data can be stored for a longer period with easy accessing and manipulation of the same. Basically the project describes how to manage for good performance and better services for the clients.

3. Proposed Methodology

This system offers numerous advantages in terms of efficient queue management by enabling users to place orders directly to the kitchen, eliminating unnecessary waiting time. Additionally, it facilitates the scheduling of orders in advance, further enhancing convenience. A card payment option is implemented, significantly reducing the time spent at the payment counter for bill settlement and making adjustments. This system not only saves time but also ensures ease of use. The proposed Canteen Management System is a highly capable solution designed to address the challenges faced in college canteens. Leveraging cloud technology, it incorporates features such as auto-scaling, load balancing, and pay-as-you-go, which greatly enhance the system's performance and effectively fulfill its intended purpose.

3.1. User Flow Diagram



3.2. Features

- Order meals from the canteen menu to be picked up or delivered in advance
- make payments in advance
- Access to students with their IDs
- Access to staff

4. IMPLEMENTATION

4.1 Software used

- Android Studio
- Xampp Server (for local)
- My SQL
- Php Myadmin

4.2 Android Studio

Android Studio, an integrated development environment (IDE) tailored for Android platform development, made its debut during the Google I/O conference on May 16, 2013. The introduction was led by Google's Product Manager, Katherine Chou. This powerful tool, operating under the Apache License 2.0, empowers developers to create exceptional Android applications freely.

4.3 Xamp server

XAMPP, a cross-platform web server solution stack, is an open-source and free bundle created by Apache Friends. It primarily consists of the Apache HTTP Server, MariaDB database, and mediators for scripts written in PHP and Perl programming languages.

4.4 My Sql

The MySQL database server is renowned for its exceptional versatility, enabling it to seamlessly handle a wide range of applications. Whether it's a small-scale application requiring a mere 1MB footprint or a colossal data centre housing terabytes of information, MySQL effortlessly accommodates diverse needs. Its adaptability knows no bounds.

4.5 Php Myadmin

PhpMyAdmin is an open-source software application developed in PHP that serves as a web-based administration tool for managing MySQL databases. With its user-friendly interface, PhpMyAdmin facilitates various operations and tasks related to MySQL and MariaDB, making it an indispensable tool for efficient database administration.

5. CONCLUSION

The utilization of a cloud-based application accessible via a browser has significantly enhanced the canteen business process, reducing the inefficiencies associated with the old, time-consuming paper-based method. Customers can conveniently place orders prior to leaving their classrooms or staff rooms, and complete their payments effortlessly through online payment methods. The canteen management team benefits from the elimination of paper usage, negating the need for additional personnel at the billing counter. Additionally, managing historical data is made easier, thereby ensuring its usability for future purposes.

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