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Canteen Management App

Shourya Pradhan
IMS ENGINEERING COLLEGE,GHAZIABAD UTTAR PRADESH

Shubham Jain
IMS ENGINEERING COLLEGE,GHAZIABAD UTTAR PRADESH

Shubhanshu Pratap Singh
IMS ENGINEERING COLLEGE,GHAZIABAD UTTAR PRADESH

Yash Gupta
IMS ENGINEERING COLLEGE,GHAZIABAD UTTAR PRADESH

Abstract- Nowadays people don't have much time to spend in canteen by just there and waiting for the waiter to take their order. Many customer visits the canteen in their lunch break and recess so they have limited time to eat and return to their respective office and colleges. So this software helps them to save time and order food whenever they want without calling the waiter again and again. Manual system involves paper work in the form of maintaining various files and manuals. Maintaining critical information in the files and manuals is full of risk and a tedious process. Including a framework showing how to apply Internet technology progressively as skills and confidence grow, the project demonstrates the route from adapting materials to developing an online environment.

This Canteen Management app enables the end users to register online, read and select the food from e-menu card and order food online by just selecting the food that the user want to have using android application. The results after selecting the food from the E-menu card will directly appear in the screen near the Chef who is going to cook the food for you. The system is the combination of Android as well as Web Application.

Keywords— Canteen Automation, POS, Food ordering, E-wallet, Canteen management app, JSP, HTML, Bootstrap, Ajax, E-wallet security

1.INTRODUCTION

Computers have become part of the life for accessing almost any kind of information. Life in the 21st century is full of technological advancement and in this technological age it is very difficult for any organization to survive without utilizing technology. The World Wide Web contributes greatly to the creation of an ever-increasing global information database. It could also be used as a mechanism to share information within an enterprise.

In today's age of fast food and take-out, many canteen have chosen to focus on quick preparation and speedy delivery of orders rather than offering a rich dining experience. Until very recently, all of these delivery orders were placed to the waiters or over the phone, but there are many disadvantages to this system, including the inconvenience of the customer needing to have a physical copy of the menu, lack of a visual confirmation that the order was placed correctly, and the necessity for the canteen to have an employee answering the phone and taking orders. What, we propose is a Canteen Management app, which is a technique of ordering foods online applicable in any food delivery industry. The main advantage of this system is that it greatly simplifies the ordering process for both the customer and the canteen. When the customer visits the ordering webpage, they are presented with an interactive and up-to-date menu, complete with all available options and dynamically adjusting prices based on the selected options. After making a selection, the item is then added to their order, which the customer can review the details of at any time before checking out.This provides instant visual confirmation of what was selected and ensures that items in the order are, in fact, what was intended.

This system also greatly lightens the load on the canteen's end, as the entire process of taking orders is automated. Once an order is placed on the webpage, it is entered into the database and then retrieved, in pretty much real-time, by a desktop application on the canteen's end. Within this application, all items in the order are displayed, along with their corresponding options and delivery details, in a concise and easy to read manner. This allows canteen employees to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion.

2. USING CMS WITH E-WALLET

The aim of this project is to develop a system which can take orders at the counter and via online application and display them on monitors in the kitchen.
We aim to accomplish this task by creating a web application for managing the canteen menu and orders. The web application would make use of HTML5, Javascript, and BootStrap for frontend and JSP for the backend. Appropriate security features shall be implemented to prevent attacks using 2048 bit El-Gamal encryption scheme. For placing orders in advance we will create a web application.
The orders placed in advance will have an ORDER ID which shall be used to get the order delivered directly to the serving counter. Payments can be made via cash or e-wallet at the counter. Payments for online ordering can be made only via e-wallet. SMS alerts would be sent for events like 'Order Placed','Order Accepted','Order Declined','e-Wallet Payment Successful','e-Wallet Recharge Successful',Wallet Refund Successful' and 'Order Delivered'.

.Usage of ElGamal Asymmetric Encryption Scheme

Elgamal asymmetric encryption scheme also is a public key cryptography algorithm. The security of this algorithm lies in the difficulty of calculating discrete logarithm. In the CMS application, the sensitive data involved in a wallet transaction i.e. Account Number/Mobile Number and amount are stored in the database in encrypted format. A 2048 bit key is used for encryption. When operations like recharge, payment, and refund are to be performed the database values are decrypted and then the operations are performed on the decrypted values. After the operation is completed the values are again encrypted and stored in the database. On the client side, an Ajax call is made for a servlet to get cipher-text in order to encrypt the sensitive data transmission between client and server. An SSL certificate is also installed on the website to ensure further secure transmission of data sent and received by the web application.

3. RELATED WORK

[1] In this paper, the authors have proposed an E-wallet system using El-Gamal Encryption to make it more secure.
[2] In this paper, authors have proposed a whole CMS system which is taken in mind before creating the new system.

4. PLACE ORDER

There are two ways of placing an order, through the online ordering feature or through the canteen counter. The online ordering feature shall be available to users who log in only and have a valid balance in their E-wallet. The counter ordering facility shall be available only to the administrator through administrator login**.**

5. MAKE PAYMENT

There are two modes of payment, E-wallet, and Cash. Online orders can be paid only through E-wallet. The E-wallet payment can be used at the counter also. Cash payment option is also present at the counter. Since the E-wallet is prepaid it needs to be recharged at the counter by paying cash to be able to use. Recharge function is available in administrator login**.**

6. DISPLAY ORDER

The items of a placed order shall be displayed on the screens in the kitchen which indicate the cooks to prepare the items. When the order is delivered its status is updated.When the status of the order is updated to "COMPLETE" it goes off the screen.Corresponding Text Alerts are sent to the customer throughout the process. The whole System is created using JSP as a scripting language.

7. Hardware Requirement:

I. i3 Processor Based Computer or higher
II. Memory: 1 GB RAM
III. Hard Drive: 50 GB
IV .Internet Connection

8. PROPOSED SYSTEM

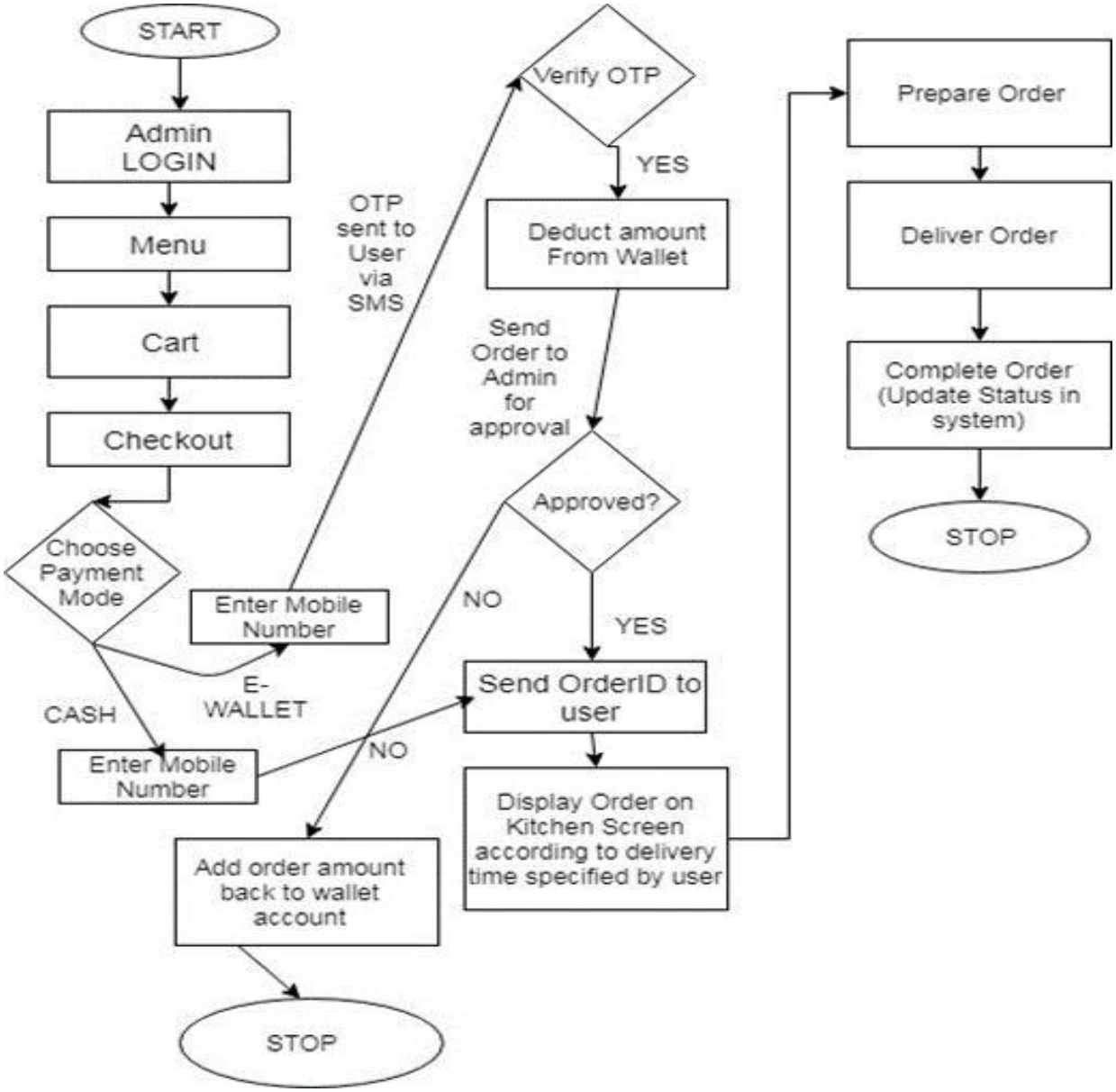

Figure 1: Counter ordering system's working

9. ADVANTAGES

I. Completely automated online ordering of food in a canteen.

II. Order can be placed using personal android phones.

III. Food ordering pages that look and feel exactly the same as the existing restaurant website.

IV. User can also order a Special Combo Box which contains multiple food items.

V. Food ordering pages hosted on secure and special server so no risk of customers getting redirected to servers where competitors' websites are listed.

VI. Developed using the latest website programming protocols for minimum server loads and ultra-fast loading and processing.

VII. Simple user-interface Admin Panel for creation and configuration of menu groups, menu items, etc.

VIII. Built-in facility to set modifiers on different menu items.

IX. Facility to create modifier groups, individual modifier items and assign modifier items into different group.

X. Detailed summary of orders placed with option to search orders, update order status, print orders, etc

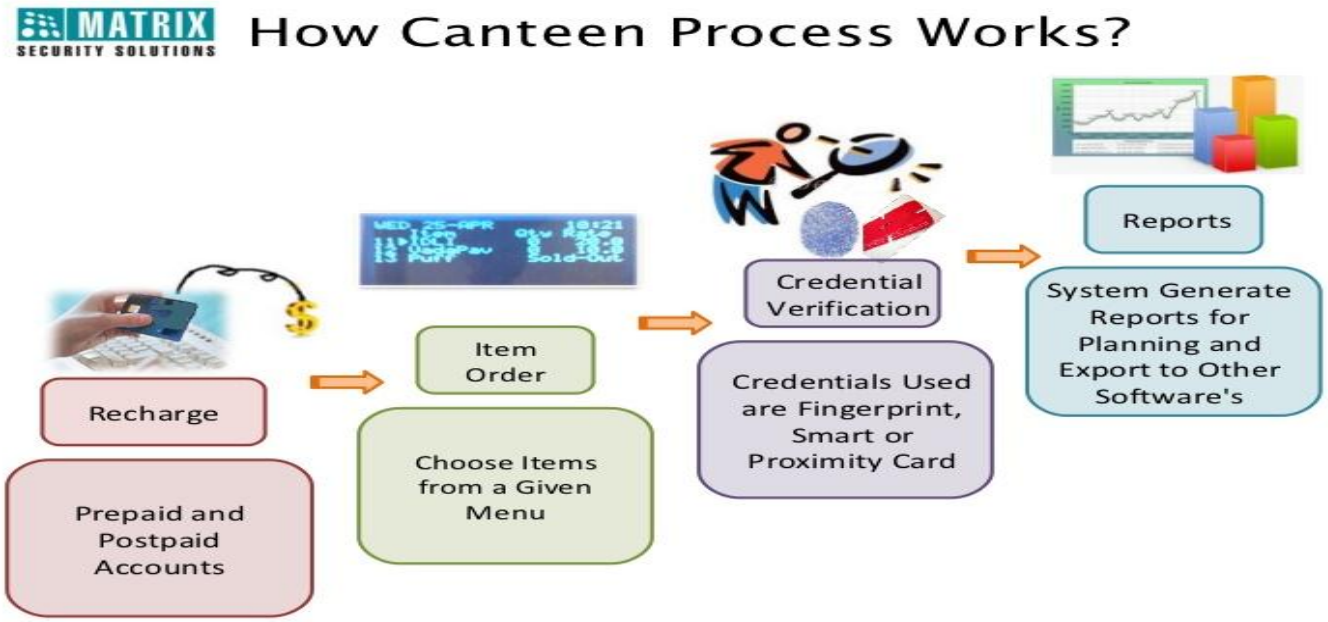

Figure 3 : How It Process Works

10. ALGORITHM

Algorithm for setting the priority of food items

STEP 1:START

STEP 2: Customer order any entity say ”input”

STEP 3: Initialize p=0, c=0, f=0

STEP 4:Applying algebraic sum on quantity of proteins, i.e $\sum$ (p,pi) i=0

STEP 5: Applying algebraic sum on quantity of fats, n i.e $\sum$ (f,fk) k=1

STEP 6: P= 4 * pi

STEP 7:C =4* cj

STEP 8: F=9* fk

STEP 9: Print P, C, F

STEP 10:Stop

11. CONCLUSION

• The development of Canteen Management App involved many phases. The approach used is a top-down one concentrating on what first, then how and moving to successive levels of details.

• The first phase started with a detailed study of the problems and prospects of ordering in Foods. In the course of this study, many problems were discovered to have hindered the effectiveness of the existing manual system.

12. FEATURES

A. Load Balancing:

Since the system will be available only the admin logs in the amount of load on server will be limited to time period of admin access.

B. Easy Accessibility:

Records can be easily accessed and store and other information respectively.

C. User Friendly:

The web application will be giving a very user friendly approach for all user.

D. Efficient and reliable:

Maintaining the all secured and database on the server which will be accessible according the user requirement without any maintenance cost will be a very efficient as compared to storing all the customer data on the spreadsheet or in physically in the record books.

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