

**Automated Food Ordering System (AFOS)**Shreya Choudhari¹, Ankita Mhatre², Sanju Allamdas³, Rachit Aggarwal⁴^{1,2,3,4} Department of Information Technology, Atharva College of Engineering

Abstract — The two sectors which have experienced a significant growth in past few decades and have an irreplaceable place in our day-to-day life are food and technology. Nowadays web service technology is widely used to integrate heterogeneous systems and develop new applications; our system does the same by integrating web technology in food industry to make the food ordering process much more simple and efficient. Our system uses smart phones, tablets, notes which are connected through WLAN or mobile data to the hotel server using which customers can avail various services and also complete transaction for the same through the software itself. It integrates many systems in hotel management industry such as Ordering System, Kitchen Order Ticket, Billing System, Customer Relationship Management system (CRM) together. This integrated solution can add or expand hotel software system according to hotel chains environment. This system not only increases the quality and speed of service but also aims at giving customers a personalized service experience where they are in control of what they want, when they want it – from dining to ordering to payment.

Keywords- WiFi, cellular data, food ordering system, Android application, Mobile, Tablets, Token.

I. INTRODUCTION

Restaurants are one of the favorite premises. Customer makes orders and waits for the ordered meals. However, it is common that the customers complain about a few things that leave them dissatisfied about the services offered like being entertained late by the waiter, order being misunderstood, speed of service, etc. Keeping these problems in mind, this study initiates an integrated and networked system, which focuses on the ability to solve the above described limitations in order taking.

The restaurants have to provide the best services and maintain relationships with customers so as to create a friendly and likeable ambience. In any restaurant when a waiter takes an order from the customer he notes down the order on a piece of paper and then it is manually forwarded to the kitchen. The current system wastes a lot of time as the waiter keeps going to and from the customer. It also wastes a lot of paper since the order must be written down, printed out for the order to be given to the kitchen, and finally a paper receipt must be given to the customer. Also chances of the restaurant management's records being in danger by accidental damage or poor management are high.

Our system aims at getting rid of the tedious procedure by replacing the age old way to order food by technology. The system uses an Android application which must be installed on the customer's smart phone/tablet/note. The orders can be placed using either the restaurants WiFi or the customer's cellular data network. The customer can pay for the ordered food by credit/debit card, online wallet etc. Once the transaction is successful, a token will be sent to the customer. At the same time, the order will be displayed on the kitchen's PC where the chef will take a note of the order, start assembling the dish together & when he finishes, a notification will be sent to the customer stating that the order is ready and the customer can collect the order.

II. NEED

Nowadays, technology has influenced every aspect of our lives, making our lives easier and hassle free. In the traditional food ordering system there are various system drawbacks which make the ordering process much more time consuming affair than it would be with proper implementation of technology in the system. We needed a system which was convenient and less time consuming, which would save liable resources like manpower and paper. This gave rise to the need to come up with a automated food ordering system (AFOS) which would benefit the customers as well as the hotel management. We have developed an android application on the customer side which enables the customer to browse menu and place their order from their smart phones/tablets thus minimizing the time taken to place order and forward it to the kitchen considerably. Customers can also transact for their order through their smart phones further making the process hassle free as they don't need to carry physical form of currency. For the management side we have a server which stores the menu card of the hotel along with the customer details, in a database, thus making it convenient for the management to modify or go through records. Thus, our automated food ordering system satisfies the needs of current system, by making it more efficient and dealing with the major issues of the system.

Aim of our project is to make food ordering process simple, efficient and less time consuming for the customers as well as the hotel management by making use of web technology. Objectives of our project are:

- Allow customers to browse through the menu & place an order for the same using their mobile / tablet.
- Complete transactions through mobile phones using online wallet.
- Help reduce the cost of labor.

- Avoid long queues at the counter.

III. HARDWARE & SOFTWARE REQUIREMENTS

The system must fulfill all the hardware requirements for memory and space as mentioned below. The system must have:

- For Desktop PC / Laptop

Processor	Pentium, Dual core i3-i7
Processor Speed	Minimum: 600 MHz Recommended : 1 GHz
RAM	At least 192 MB Recommended : 256 MB
Hard Disk	20 GB

Table No. 5.1 Hardware requirements for PC

- For Phones & Tablets

Processor	Dual core
Display	SD(420p)
RAM	Recommended : 512 MB

Table No. 5.2 Hardware requirements for Phone

The system is designed to be platform independent. The system runs on

Operating System	- Windows XP, 7, 8 for desktop pc - Gingerbread & above for phone & tablets
Technology	Android Java, PHP, XHTML & MySQL
IDE	Android Studio 2010
Web Server	WAMP
Database	MS SQL

Table No. 5.3 Software requirements

IV. IMPLEMENTATION

6.1 Application flowchart (Client side)

A flowchart is a type of diagram that represents an algorithm or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows. This diagrammatic representation illustrates a solution to a given problem. Process operations are represented in these boxes, and arrows; rather, they are implied by the sequencing of operations. Flowcharts are used in analyzing, designing, documenting or managing a process or program in various fields.

6.1.1 Customer login

From this activity customer will login to their account or will register themselves & create a new account. This will be the first page of our application, which is shown to the customer. The customer's database will be saved for future use.

6.1.2 View Menu

From here, the customer will get the detail view of the menu and can select items according to their choice. Selected items will get added to the cart and if customer wishes to add more items to the cart, he/she can do so.

6.1.3 Payment gateway

After confirming the food order, a bill is generated and customer will need to make the payment using electronic medium i.e credit card or debit card. After successfully done with the payment customer will get a token.

6.1.4 Track order

In between the preparation of order customer can track the status of the order to know when the current status & how it's going to take to complete the order.

6.1.5 Notification

When the order is successfully prepared, our customer will get a notification to collect the order.

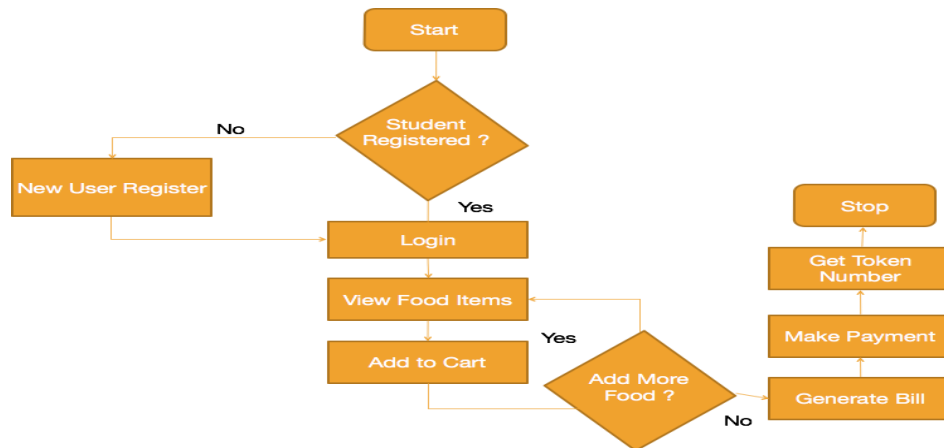


Fig. 6.1 Application flowchart (client side)

6.2 Admin flowchart

6.2.1 Admin Login

The admin will get an access to the restaurants management by logging in to the account. This page is very important from the security point of view, so that unauthorized person will not get the access to the data.

6.2.2 Add/Update/Delete Categories

This is used to add and edit the categories for example dessert, starter, main course etc. Admin can add different categories of food depending on their restaurants cuisine, theme & setup

6.2.3 Add/Update/Delete food items

Here the admin can add the food items in the respected categories. The admin can delete and update the items in a very efficient way.

6.2.4 Add food photograph

Now-a-days visual representations are very important to attract customers, so every food item can be made available in form of pictures so as to make the dish more appealing to the customer.

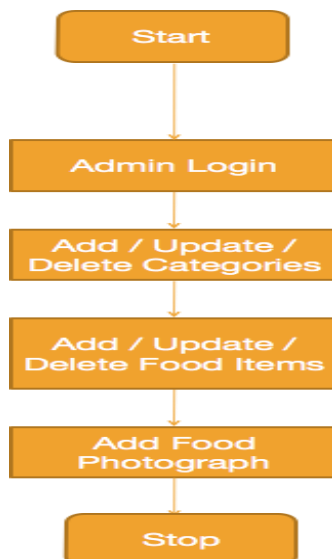


Fig.6.2 Admin flowchart

V. CONCLUSION

As expected, our implemented model of automated food ordering system has been successful in eliminating the drawbacks in the food ordering process and has proved to be effective in managing and handling various order related tasks. By using AFOS the customers independently places their order and completes the transaction without having to depend on a third person such as waiter, thus making the process more customer oriented.

With implementation of our system the efficiency and productivity of the restaurant management has improved considerably as they no longer need to maintain physical menus and records. Also, the restaurant management saves cost of employing a third person for taking orders & serving food.

With this implementation of our project 'Automated Food Ordering System' has been successful. To conclude with this project has a wide future scope which can be developed in later stages of development.

VI. FUTURE SCOPE

Automated Food Ordering System will bring an ease & convenience to the existing food ordering system by introducing technology in form of menu & other features. This system's application currently works on Android but in near future it can expand its horizons to Windows & iOS as well. The application can also be used to get reviews from the customers regarding the quality of the food, the ambience of the restaurant and rating the place accordingly. The customer, if previously had placed an order, can repeat the same order again. A provision for booking/reserving a table online can also be made. The customer's order history can be used for analyzing the most as well as the least ordered food items & accordingly increasing/decreasing their production, thereby, avoiding wastage of food.

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