

Implementing Customizable Online Food Ordering System Using Web Based Application

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Abstract - Typically in a restaurant food order process involves several steps for ordering the food where firstly customer starting from browsing the paper based menu and then inform to the waiter for ordering items. Usually the process require that the customer has to be seated before starting. An alternative method for the customers is “Food Pre-Order System using Web Based Application” in which customer can be able to create the order before they approach the restaurant. Customer using Smartphone. When the customer approach to the restaurant, the saved order can be confirmed by touching the Smartphone. The list of selected pre-ordered items shall be shown on the kitchen screen, and when confirmed, order slip shall be printed for further order processing. The solution provides easy and convenient way to select pre-order transaction form customers.

Keywords - Smart phone, Android application, Wi-Fi, Android Mobile, Dynamic database.

I. INTRODUCTION

With the online food ordering method , food is ordered online and delivered to the customer. This is made possible through the use of electronic payment system .The payment can be done through the customer’s credit card ,debit card. So, in this project we design a system which will allow customers to go online and place order for their food.

Due to the rapid growth in the use of internet and the technologies associated with it, the

several opportunities are coming up on the web. So many businesses and companies are now undertaking into their business with comfort because of the internet. One of the businesses that the internet introduced is an online food ordering system. In today’s life many restaurants have focus on quick preparation and speedy delivery of orders rather than offering a rich dining experience. Recently, most of this delivery orders were placed over the phone, but there are many drawbacks of this system.

It is possible for everyone to order any goods from anywhere via the internet and have the goods delivered at his/her home. But while trying to discuss the transfer method of the goods and services, attention is focused on the payment mode. In other words, how possible is it to pay for goods and services via the internet? This then leads to the discussion of the economic consequences of digital cash. What are the implementations from the view point of economic? Since the world is fast becoming a global village, the necessary tool for this process is communication of which telecommunication is a key player. A major breakthrough is the wireless 2 telephone system which comes in either fixed wireless telephone lines or the Global System of Mobile communication (GSM).

Online ordering system is originally designed for use in college cafeterias, but just as 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 restaurant. By making entire process of taking orders is automatically the load on restaurants

end is lightened. Once an order is placed on the webpage that will be designed, it is placed into the database and then retrieved, in pretty much real-time, by a desktop application on the restaurants 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 the restaurant employees to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion. The greatest advantage of this system is its FLEXIBILITY.

II. LITERATURE REVIEW

Existing Food Order Process

1)FULL SERVICE RESTAURANT: Tradition food order process used in most full-service restaurants starting when a waiter brought the guests the paper-based menu, and then waiting for the guests to choose items from the menu and inform the waiter the order items. The process typically required the guests to be seated in the restaurant and a waiter to assist the ordering .One of the most widely used food ordering system is the conventional paper based system. In this system all records are stored on paper. The main drawback of this system is papers can get easily lost or damaged. There is also wastage of money, time and paper. Paper-based systems do not provide any form of dynamicity. Even a small change requires the re-print of entire menu-card. Also large amount of human efforts are required, this system is not work properly because it has some error and from a customer's point of view it is time consuming.

2)SELF SERVICE RESTAURANT: This process required the guests to place order at the service counter in the restaurant. The guests shall have decision in advance, before presented at the counter, of which menu items to order. Menu catalog is mostly presented as posters placing behind the order counter.

3)AUTOMATED FOOD ORDERING SYSTEM: In order to reduce service cost and enhance customer experiences, few restaurants have invested in the service automation system. The automation system used to capture the food order from guests ranged in many forms but mostly comprise of an electronic

device with a screen presenting the menu and accept user's input for order placing First waiter takes the order from customer. After taking the order, waiter should enter that order in system where PC was set up. At the kitchen information was displayed on screen. The kitchen staff would then prepare the dishes according to order and after completion of order they would inform to waiter, who collected and delivered the dishes to the respective tables. The system was also informing the waiter about the availability of a dish. If a certain dish was not available then waiter was able to ask for changes or even cancel a customer's order. After serving the order, bill was generated at the cash counter as per customer order. The management had full authority to access all details of the customer which are fed into the system.

With the improvement in the computer and communication technology, various systems were launched in market for the purpose of computerization of the food ordering system. Some of the existing systems are mentioned below:

PERSONAL DIGITAL ASISTANTS(PDA'S) BASED SYSTEM:

A number of wireless systems like WOS, i-menu, FIWOS were developed when new technologies and approaches being introduced to automate the food ordering process. All the above systems were PDA- based. The feature of PDA systems was that customers or waiters key in ordering process. Using wireless technology there was easy communication between the PDA's and server. But PDA based system also had several drawbacks. PDA-based system increased the restaurants expenditures. PDA systems also did not provide any real time feedback from customers. Menu cards in the PDA's were not attractive and uninformative as it did not support images.

MULTITOUCH TECHNOLOGY:

Multi-touch technology is an advance version to the existing touch technology where user has authority to control and perform operations concurrently on the electronic visual displays using multiple fingers inputs. Large displays such as from the tabletop and the wall-screen are deemed to be essentials for information visualization purposes when dealing with multiple users sharing the same display. It is reported that the social interaction is highly improved among users using a shared display and input. But there are certain limitations of the multi-touchable restaurant management systems. Touch screens available in the market are of capacitive, resistive types which are very costly. Limitations of capacitive touch screen are not able to operate with stylus until it is

of conductive material. One more disadvantage of capacitive touch screen is it is expensive, offers less durability and short life. The drawbacks of resistive touch screen include its inability to support multi-touch gestures, its poor visibility in direct sunlight and its less durability. The technology can be susceptible to data-noise, it may be affected by large amounts of dirt and dust in the environment.

RELATED WORK

To overcome the limitations of above system, we propose customizable online food ordering system using web based application. It is a wireless food ordering system which is based on android devices. Android smart phones attract both the general and commercial users. Android devices have gained massive popularity and have innovated use of mobile technology in the automation of routine task in wireless environment. Android is a Linux based operating system for mobile devices such as smart-phones and tablets. Location Based services using Android OS Motivated by the use of Android mobile OS in Health and other applications, we present the use of Android Devices in Business applications, namely the food ordering system in restaurants. Considering the promising future of Android market, it is beneficial and worth to write applications for android that target mob of people.

The Objectives of our proposed system are:

- To combine Wireless technology and Android OS to automate food ordering process.
- To minimize the imperfection in conventional system by reducing the working of a restaurant.
- To make provisions for obtaining feed-back from the customers and provide the restaurant a means of review of their service.
- To automate food ordering system at Madhudeep Restaurant that can eliminate or minimize the current problems in conventional system.
- To utilize wireless communication and smart phone technology in implementing the automated system.
- To make more user interfaces friendly and customization for the restaurant owner to update the menu content on the customer devices.
- To enable real-time feedback between the restaurant owner and customers on the order status.

application is shown in figure 2. The architecture includes the three main areas of restaurant: the *Server*, the *Kitchen*, and the *Cashier counter*. Conceptually this system is built using following components:

- The android application is used to make orders from tablet.
- The restaurant-owner’s laptop/tablet will keep track of customer records and also customize menu using server application.
- The central database is used for restaurant-owner to store updated menu information and order details.
- Three main areas of restaurant are connected using wireless technology.
- The Android application is used to find out the location in restaurant according to its latitude and longitude.

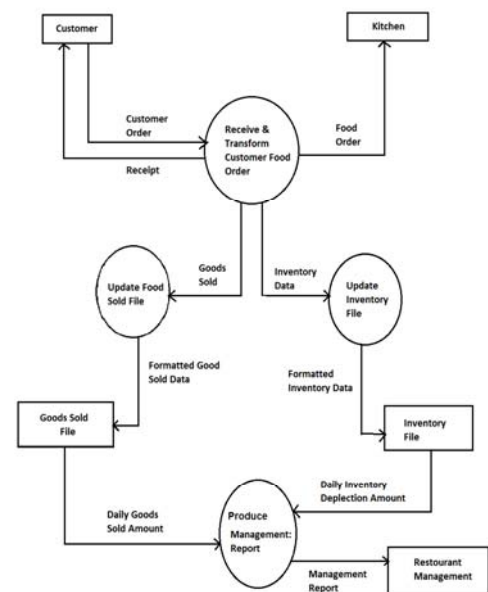


Fig: System Data Flow Diagram

SYSTEM ARCHITETURE

The system architecture of customizable online food ordering system using web based

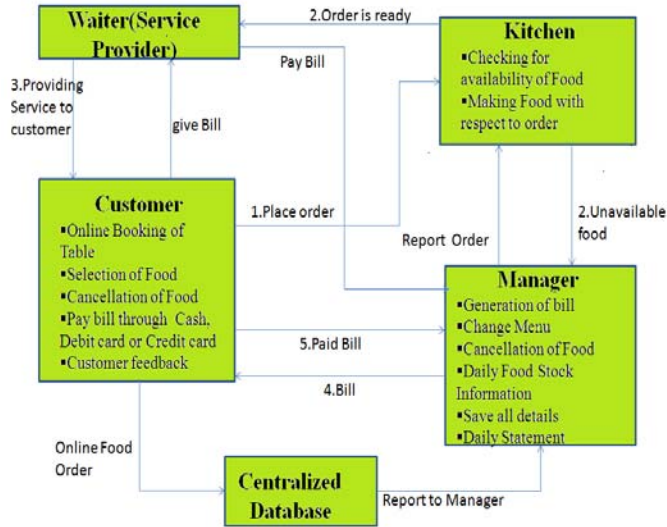


Fig 2: System Architecture

SYSTEM MODULES AND SYSTEM DESIGN

The restaurant owner or manager will have authority to log into the system and update the menu as per the availability of the dishes. The manager will also advertise the various offers of the day. Manager will dynamically add different categories of food. After arrival of customer in restaurant, he or she select the information and menu from tablet then this order is sent to the system over wireless network. The restaurant manager or owner and the kitchen staff will receive the ordered lists from the customer tablet or system. The restaurant owner can update the order status into the system. The customer can also view the order status and he has authority to cancel the order. The whole application will already be installed and kept open on the tablets on the tables. Customer who is outside the restaurant will book table in restaurant or he will give order from his smart phone. The turn-off or shutdown option of the application will remain disabled for the customers i.e. the customers can not be able to turn off the application and do any other work on the tablets. After having the food, customer can make payment by online or by cash and enter feedback regarding to that restaurant system facility and services. Customer contact number will be saved in database for sending message about next offers.

This project consists of 3 main modules as follows:

1) USER TABLET(module 1)

- This type of the tablets are especially made for the normal users coming in the restaurant.
- First customer has to be done registration after registration he/she will get password and user name then he/she can order process. Bill is automatically goes to that particular user

- These tablets will consist of the whole menu of the restaurant. The items in the menu are non -edible for these types of the tablets.
- During registration process customer has to be enter pin code .customer can give order from any city to any branch of restaurant using pin code.

- They will be enabled with the Wi-Fi connectivity.

- Customer from any layer of the society should be able to handle and operate all the functions easily.

2) MANAGER'S TABLET(module 2)

- These desktops are especially for the use of the restaurant manager.

- The manager should be able to control the function of whole restaurant from a single desktop/tablet.

- He can access any tablet and should be able to make changes to the menu.

- Also he can change price of particular item or disable particular item which is not available at that particular time.

3) KITCHEN DISPLAY(module 3)

- These are present at the kitchen near chef so that he should be able to see what a particular has ordered.

- All the ordered items are displayed on the screen giving the table number below.

- They should be sufficiently large to be seen by chef at a reasonable distance.

- Chef should be able to notify when a particular item is ready.

4) SMS INTEGRATION(module 4)

At the time of registration customer has to be enter the contact number & other information, this contact number & other information will saved in database. If there is any offer in restaurant then server will automatically send SMS to the customer.

5) MENU RECOMMENDATION-

We are providing menu recommendation to the customer such as if customer order any menu then our system will shows related menus to that order.

6) CUSTOMER FEEDBACK-

We also provide facility to the customer to give feedback about services of restaurant.

7) REPORT GENERATION-

System generates Daily ,Weekly& Monthly report.

navigate the places or directions in restaurant and also it allows restaurant owners to manage orders from customers immediately whenever he or she logged in into the system. Our experience in developing digital restaurants and inter-restaurant navigation using smart phones shows the capabilities of wireless communication and smart phone technology in fulfilling and improving business management and service delivery. This system is convenient, effective and easy so that it improves the performance of restaurant’s staff.

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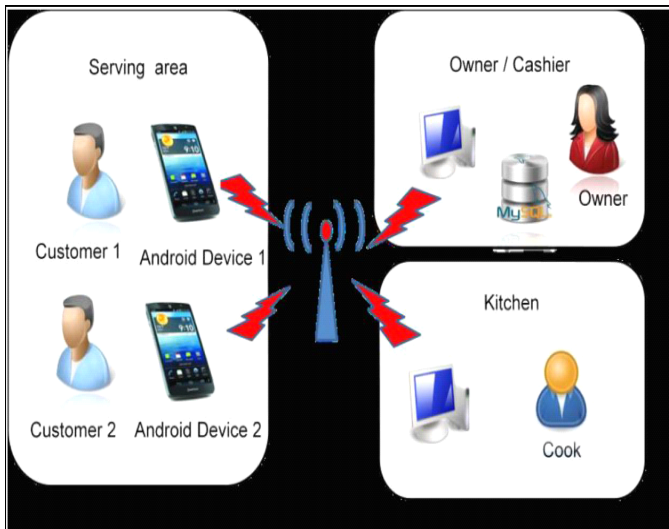


Fig 3:-Modules

B SYSTEM TECHNOLOGY

The technologies which are used to implement the system are:

1. Visual Studio 2010 for developing web application.
2. Android version 2.2 or more for Tablets is required. We have used Android 4.2 Jellybean as the working platform to develop this application.
3. SQL 2008 is a light weight Database which is going to be used for database access from the tablet.

V. CONCLUSION

In this paper, we have presented a digital restaurants and inter-restaurant navigation using smart phones to customers. Instead of using PDAs to interface with customers, we are using smart phones or tablet to provide necessary interfaces for customer to view and order menu. With private login system, customers can view and make order and receive updates in real-time and collect receipts right from the smart phone itself. It allows customers to

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