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Survey of Digital Food Ordering System Based on Android System for Restaurants

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ABSTRACT: Technology has almost started its journey in each and every field of our life, but still but still in some important areas such as food industry or food serving industries such as hotel, motels and restaurant. Even in the age of technology, the traditional pen paper method is followed by many restaurants for receiving the orders, which in turn wastes a huge amount of time of both, the restaurant and the customer. Various earlier efforts were done to bring the technology in the field of food serving industries. PDA KIOSK and Computer based techniques tried to improve the service with use of technology but faced some issues like wastage of customer time and efficiency of service.Each technique had its own advantages and a set of disadvantages. The proposed paper tries to analyze the various existing systems and determine the drawbacks of each to overcome them in the proposed system.This system improves efficiency and accuracy for restaurants by saving time, eliminating human errors, getting customers feedback. As the system is automated, it becomes economical even from restaurants point of view,as it reduces manpower and it just requires one time investment in installing the devices at tables.

KEYWORDS: Digital food-ordering system, Wireless food ordering system, Android application, Touch based food-ordering system, On site Automated food-ordering system.

I. INTRODUCTION

This Standard of living people has developed with rapid economic and technology. By using of technology our life becomes easier and convenient and almost every field technology has developed. In adopting new technology the food industry still lags behind as compare to other technology especially automation in different processes. After many years restaurants and hotel follow completely manual process of paper and pen system in food ordering. In the model of traditional system paper and pen method, the waiter write the orders from customers, takes these orders to the kitchen, updates them in records, delivers the ordered of food items at the makes the bill. This system is conventional and too sluggish. This system require more manpower and thus is prone to human errors. It consumes a lot of time by apart from this human error. It disturbs the patience of a eating and hangout place and results in clutter.So,this process often leads to dissatisfaction between the customers, as sometimes time taken by waiter for taking order is very long. In recent past, some systems like KIOSK technology, PDA based system and multi touchable restaurants management systems were developed to automate the food ordering system. However, the output of these systems were not up to the expectation as we think. They provided unattractive and uninformative menu details, and they were also very costly to adopt. To overcome these drawbacks of the system, a digital based food ordering using an android application is proposed to automate the food-ordering system. This system provides an affective user interface through the android application system. It also facilitates the prices of all the menu items along with their images so that it becomes very easier for the customer to order.

II.RELATED WORK

A.PEN AND PAPER BASED TRADITIONAL SYSTEM.

First, This is the very easiest and the widely used system today. In this traditional system, every time customers enter into the restaurant and search his table, a waiter comes at customer table and show him a food menu card.Waiter then waits with a notebook and a pen to take the customer's order. The waiter then write down the order of the customer in his notebook and the order is stored in the paper. Finally, the order is forwarded to the chef in the kitchen. Although the food ordering system in this system is very easy. Since, this system is a complete manual system, there is

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a more chance of human errors to note their order due to many reasons such as while taking the orders the waiter may miss some food items to add in the order, the other human error is that the paper of notebook could get damaged by fire, or could get lost or mishandling.The food menu cards having the list of food items are also in a hard paper. So, if the manager wants to change or update the food menu lists or the price of the food items, then it would require him to change the menu details in each and every food menu cards present in the hotel. It is quite evidently cumbersome task to update details in every card. So, eventually it leads to replacement of all the menu cards with the new one, which would make to a great wastage of papers. Mostly in every hotels menu cards might require very minute changes for which it is not at all convenient to replace all the food menu cards with the new menu ones.

Drawbacks:
There are many drawbacks in this system.
1.This system requires storage of lots of paper which does paper wastage.
2.Customers have to wait wherever waiters are busy.
3.Problems to update food items of customers.

B.PERSONAL DIGITAL ASSISTANT (PDA) SYSTEM

There were no. of improvements have already done in the food-ordering process, one among them was Personal Digital Assistant based system.PDAs devices are that which is easy to handle and portable. It is a wireless system. Some examples of PDA based system are I-Menu, WOS, and FIWOS. These food-ordering systems enable waiters or customers to key in order using mobile devices, called PDA (Personal Digital Assistant.When a waiter or customer takes the ordering process, the order details are forward to the server from the PDA. The waiters collect the PDAs used by a customer so that other customers can use it. These PDA system may be a better efforts towards automated food-ordering system over traditional system which is paper and pen based system but it has many limitations too such are discuss below.There is no other way to get a real time feedback from the customers, in PDA based system. Technical information details are required for the restaurant manager to modify or update the food ordering menu list. The User Interface of the PDA system is not so effective. It consists of only textual information of food menu. There are no prices and images of food items. So, it contains uninformative and unattractive details about the menu list.

Drawbacks:
1.This system may increase the restaurant expenditures.
2.Time taking to update food order of customers.
3.It does not contains images of every food-item along with their prices.

C .KIOSK BASED SYSTEM

KIOSK system is a screen that have the complete menu of food list. It is more advanced than previous systems which is already discuss. It is not only cover the textual information of the menu items but also include their prices and images of every food items. KIOSK screen is installed near to the cash counter.Whenever, a customer enters into restaurant he has to check the food menu list at the KIOSK screen system. He searches through the list and selects his food items and completes the order. Payment is also complete through the system of KIOSK screen by a suitable payment option.He receives his order number with their name. His ordered list along with the order number is sent in kitchen. After that order of customers is ready and the order number is displayed or announced on the screen at the cash counter. The customer has to come to the counter and receive his order. This process, although, is more advanced than the previous two systems.

Drawbacks:
1.In peak hours and is crowded with many customers so that customers have to wait to place their order.
2.It becomes very inconvenience to the customers.

D. COMPUTER BASED FOOD ORDERING

This process is same to KIOSK system. In this process, when customer come into the restaurant, he/her has to tell the food orders to the cashier and pay the payment. The person on cash counter makes a bill with order numbers and name. After, order the customer has to wait in his table to their food.The cashier forward the order of the customers to the chef

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in the kitchen. When the order is ready, the waiter serves the customer order at his table. This technology being similar to the KIOSK system has similar limitations as that.If more number of customers come in the restaurant then it would become difficult for the cashier to handle the orders from each customer and forward to the kitchen.

Drawbacks:
1.Whenever customers wants to extra items so in that case customers have to go again to the cashier.
2.Difficult to handle customers if more customers are there.
3.Even customers have to wait after place their order.

III. Proposed Algorithm

The system is designed for Android based smart phones. In that,

- Firstly the restaurant owner will log into the system and update the menu.
- The customer has to login the system so that the system can assign identification number to the ordered menu.
- The customer information and menu choices are sent to the system over wireless network.
- The restaurant owner and the kitchen staff will receive the ordered lists from the system.
- The restaurant owner can update the order status into the system.
- The customer can thus view his order status.
- After having the food customer can make payment and enter feedback regarding restaurant system and services.

The proposed system has various modules mentioned as follows:

1. Customer dining area:
2. Cashier area
3. Kitchen area.

IV. Conclusion And Future Work

we discuss the automated food ordering system for the hotel or restaurant.The system relies on the model of GSM which has got a bandwidth of 900MHz and the communication format is elementary which doesn't need to much channel bandwidth,the number of medium channels increases substantially and hence the efficiency.This system replace the manual process of food ordering system and reduces the no of hotel staffs saving cost of labor charges to a great extent.By the implementing this process only need one time investment in installing the necessary android or other devices in the hotel or restaurant.By using this technology it saves human errors to a great extent as this process is advanced and automated and does not involve manual process like paper and pen methods.The main advantages of this system is to saves our time by making the food items ordering process independent of hotel staffs and waiters. Since this technology makes the food ordering very fast,as compare to traditional systems & it consume our time by forming of a huge queue in front of the counter. And this system helps to the customers, can also give real time feedback through the application that helps manager and cashier to get the dining experience of the customers hand and remove the problems faced by them.This technology provides customers user-friendly,convenient and attractive user interfaces with prices of every food item along with images of food items through which he can easily place an order without any trouble.Thus,the proposed system brings advancement automated in the field of food industry by automating the system through wireless and mobile technology.It has the potential to attract customers to his restaurant and changing their dining experience in efficient way.The idea can be improved to add an extra functionality of accepting payments through debit cards, credit cards or through mobile wallet, in the customer's app.It can also be extended to accept the food items order by customers from outside the restaurant and hotel by making an application that can be used by the customers to place orders from their office and home.

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