

Food Ordering System For Restaurants Using Android

¹Prof. Pravin Adivarekar, ²Amogh Dalvi, ³Nisha Yadav

¹Asst. Professor, ^{2,3}BE Student, ^{1,2,3}Comp. Engg. Dept, SSJCET, Asangaon, India.

¹engineerpravin2008@gmail.com, ²amoghd7@gmail.com, ³yadavnisha1495@gmail.com

Abstract - The popularity of restaurants is ever increasing. Accordingly, the number of restaurant-goers has increased too. Taking advantage of the advancement in technology, this project aims to apply a digital touch to the way restaurants function, in order to increase its popularity among customers. This paper aims at replacing the traditional food ordering system in restaurants with tablet food ordering. The customer, on entering the restaurant and occupying his desired table, will be welcomed with a tablet fixed at his table. He will then select his desired meal and his confirmed order will be sent directly to the kitchen. Once his meal is ready, it will be delivered by the waiters to the corresponding table. The customer can post his feedback depending upon his experience. The customer's login credentials and order history are saved in a central database. This solution speeds up the food ordering process and is also an attractive, error free method thanks to the digital aspects involved.

Keywords —: android, feedback, LED, login, offers, tablet.

I. INTRODUCTION

Popularity of restaurants has increased in recent years. The general practice in a restaurant involves the customer making his order and waiting for the ordered meal. However, the complaints received from customers regarding services offered in restaurants has increased too. This feeling of dissatisfaction is caused by many reasons, namely, delay in delivering customer's order. Advancement in communication technologies can be used to resolve these issues. Accordingly, this study aims at removing the limitations in the food ordering process, with the help of an integrated and networked system. This study involves the use of tablets for undertaking the food ordering process in restaurants. In definition, it is an integrated system, developed to help customers make their orders more easily and efficiently. It also aims at speeding up the meal serving process. The customer will first enter the restaurant. The table he shall occupy will have a tablet fixed to it. The tablet will include the overall facilities provided by the particular restaurant namely menu, offers, modes of payment, etc. The customer can choose between the varieties of meals available at the restaurant. His choice will be sent to an LED screen placed in the kitchen making the cooks aware of the customer's choices. The cooks thereby prepare the

requested meal which is served to the customer by the waiters. Once the customer finishes his meal, he will be shown his total bill amount which he can pay via cash or card. The manager keeps record of the table's total bill. He also acts as an admin. This project deals with tablet food ordering system for restaurants. This topic includes scope of the project, existing environment, proposed environment and design and implementation constraints. Scope of the project includes features that can be implemented.

II. LITERATURE SURVEY

The current system is paper based. Papers are used in restaurants for displaying the traditional menu cards, writing down the orders of customers, storing the records of customers. The disadvantages of paper based system are that papers can get easily damaged by stain marks, they can be lost due to fire or accidents or can get lost in general. Hence, time and money is wasted. As traditional menu cards are paper based, any changes that need to be made in the menu will require reprinting of the entire menu card, leading to wastage. For small changes, reprinting the entire menu card is impossible. Changes in the menu card cannot be made dynamically. It is inefficient to access a particular record from the stack of papers. This system is time consuming. One has to call a waiter number of times till he notices it, and wait for him to arrive at their table to take their order. Also the waiter can misinterpret the customer's order since he is writing the order on paper, and the case of serving a wrong dish is possible.

The management of restaurants has improved with time. Each waiter is assigned a group of tables, and after taking orders for a table, the waiter enters the order (list of meals, drinks ordered by the customer or a group of customers) into the system at the PC. The waiter usually has an idea of the dishes that are unavailable before taking an order. The system must confirm the availability of dishes. If a food item is not available, the system must allow the waiter to modify (change or even delete) a customer's order. Meals to be prepared are sent to the kitchen, drink orders are sent to the bar. Starters and main course orders are generally taken together. Drinks and dessert orders can be taken separately. The chefs in the kitchen can view the dish orders on their screen, prepare them in an appropriate order and confirm preparation to the system when complete, similarly with the bar. When a waiter sees the completion indication on his terminal, he collects the meals/drinks/desserts and takes them to the table. The waiter can also check on the status of dish and drink orders. At the end of the meal, the waiter orders the system to print the total bill and he enters the payment details for it. The management has the choice of giving discounts. The system keeps records of the numbers of customers served by each waiter and the amount of money taken by them. These statistics can be viewed by the management.

The next advancement was "QORDER". It is a portable ordering system for Android devices. Here the waiter approaches the customer's table with the QOrder, a hand held device, rather than the traditional notepad. He uses the touch screen to enter the order information and then sends it to the kitchen in real time for processing. Simultaneously, the POS system receives the sales information for the purpose of billing. QOrder uses WIFI to easily access every corner of the restaurant, encompassing all the tables establishes within. Once the customer wishes to leave, the waiter uses his belt printer to print the receipt and processes payment with the handheld unit much like he would on the POS system. But there are still many areas which require serious attention. Like, making dynamic changes in the menu card, to get rid of the heap of paper based records, to assure the customer that he'll be served with what he has ordered, to record the customer feedback.

Some of the existing systems are mentioned below:

- PixelPoint

PAR PixelPoint Company uses this software for restaurant management. The system consists of the company's hardware and software. This network system is TCP/IP

compatible, enabling sending of information through both wireless and conventional networks.

- LRS Restaurant Server Pager Starter Kit

This system reduces the waiting time of clients and improves the food-ordering service quality in restaurants. The on-site paging system for sending the order data is used at UHF frequency or the frequency range of 467 MHz.

- Implementation of Network-based Smart Order

System The Smart Order System in Restaurants (SOSIR) has been modified to take order from the client's table through RS-232 signal, which is sent to the cashier counter. The cashier counter system is connected to a database. When the clients' orders are sent the cashier counter system will screen and prioritize the orders before sending the information to the kitchen for the chef to cook.

Personal Digital Assistant (PDA) based systems

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.

III. AIMS AND OBJECTIVES

This system aims at increasing the quality and speed of service. This system also aims at increasing attraction of place for large range of customers. In current formal dining environments, some form of physical static menu is utilized to convey the available food and beverage choices to customers. Said menus are generally paper based and hence impose restrictions on the textual real estate available and the ability a restaurateur has to update them. This document specifies the requirements for a restaurant paper menu and ordering replacement strategy to alleviate the problems associated with the current archaic method. Implementing this system gives a cost-efficient opportunity to give the

customers a personalized service experience where they are in control choosing what they want, when they want it – from dining to ordering to payment and feedback.

Objectives

Tablet on table:-

- There should be a tablet on each table.
- This will allow the customers to browse the food items for the time they wish.

Customer feedback:-

- Customer should be able to enter the feedback about the service and the food served.
- This helps the Restaurant owner to analyse the service and make necessary changes if needed.
- This also helps the Customers to decide a particular food item with a positive feedback.

Searching Item:-

- Customer should be able to search a particular food item according to name, price, category etc.
- This saves a lot of time of customer to order an item.

Offers for Customer:-

- The Restaurant owner can post various offers on tablet.
- This will help the customer as well as the restaurant owners.

Attractive Presentation:-

- The Menu should be organized in an attractive way with suitable imagery.

Sorting an Item:-

- The food items should be sorted according to price, season and user ratings.
- This helps the customer to find or select a food item which has a good rating and which is liked by a many customers.
- This also helps the Restaurant owner to make changes in a particular food item if it has low ratings which improves the quality of food.
- The menu can be modified by the Kitchen manager.

IV. PROPOSED SYSTEM

- This document specifies the requirements for a restaurant paper menu and ordering replacement strategy to alleviate the problems associated with the current archaic method, by replacing paper menu with an electronic medium i.e. a digital tablet.
- Due to a digitalized system, the risk of manual errors is eliminated, thus eliminating the communication barrier.
- The tablet displays all the information the customer needs to know about the order he has placed

- The Manager is the admin of the overall digital system. Hence, he can update the menu from time to time since he has access to all the tablets placed in the restaurants.
- In tablet food ordering system, the tablet has ample space to accommodate numerous advertisements in an appealing fashion, thus contributing to the income received the restaurants.
- One-time investment in tablets eliminates the need of waiters in the order placing procedure.
- Valuable customer feedback regarding overall quality of the restaurant can be obtained.
- Knowledge of offers available in a particular restaurant can be known by any customer around the world due to access to project website.
- Tablet food ordering system gives complete description of the respective food item like image content, ingredient description etc.

V. SYSTEM ARCHITECTURE

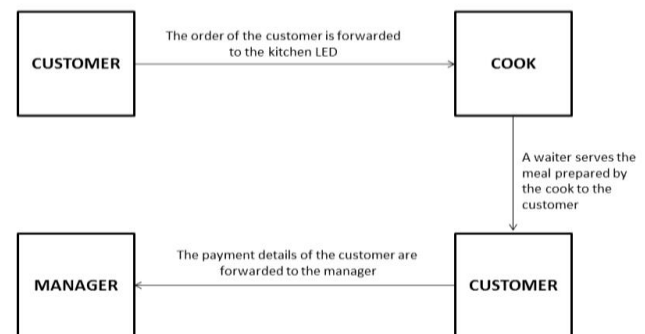


Figure. 1: Architecture

- The customer first enters the restaurant. He occupies the desired table. Every table has a tablet fixed to it. The tablet consists of android software which assists the customer in his food ordering procedure. It has various sections like offers, menu, modes of payment, feedback etc.
- The customer is greeted with a welcome screen on the tablet. He can use the tablet as a guest or can login into his account.
- Once he has logged in, he can view his previous transactions in the restaurant. He can then browse through the offers section, if any, and select any desired offer he wants to.
- The customer can browse through the menu and select his desired food items. Once he's done, he can confirm his order.
- His order is transferred directly to the LED screen placed in the chef's kitchen. The LED monitor consists of grid structure, wherein each section of the grid represents the

table in the restaurant. Once the order is confirmed by the customer, it appears in that particular grid on the LED monitor.

- The chef then cooks the meal and sends a confirmation signal to the waiter. The waiter then collects the meal and dispatches it to the corresponding table.
- Once the customer finishes his meal, he has the option of providing feedback. The feedback of one customer helps the new customers to decide their orders.
- On completion of the above procedure, the customer is then shown his total bill in the 'Payment' tab. The Payment tab consists of two choices, Cash or Card. If the customer wishes to pay via cash, he is required to provide the respective amount to the waiter. If he wishes to pay via Card, he is required to complete his transaction at the manager's table by swiping his card.

VI. ALGORITHM

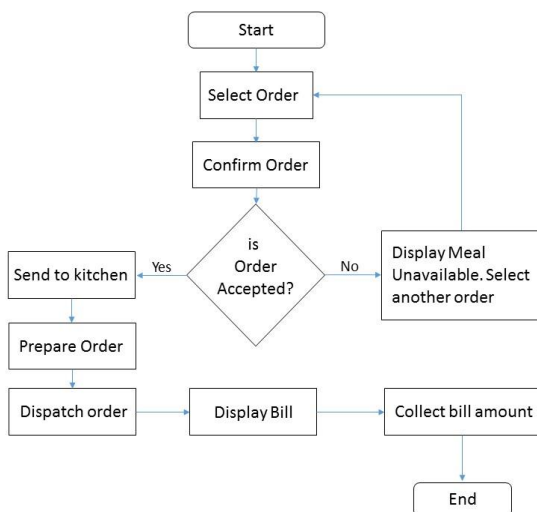


Figure. 2: Proposed Algorithm

VII. CONCLUSION

Thus the need for tablet food ordering is analyzed and its advantages over the traditional food ordering system in restaurants are studied.

It is concluded that the proposed tablet food ordering system is time saving and error free as compared to the traditional system.

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