

**Touch Based Digital Ordering System On Android**Prof. Deeplakshmi Zingade¹, Mrunal Jadhav², Neha Rane³, Bhavana Andhale⁴, Amar Pawar⁵

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Abstract — With the rise within the range of restaurants and population of restaurant-goers, a requirement to boost the operating of cordial reception business is felt. This analysis work aims for this betterment of cordial reception trade by incorporating technology. A recent survey on the usage of technology in cordial reception industries showcased that various applications supported wireless technologies are already in use facultative partial automation of the food ordering method. During this paper, we tend to discuss regarding the look and implementation of digital feeding in restaurants victimization android technology. This technique may be a basic dynamic information utility system that fetches all data from a centralized info. The tablet at the client table contains the android application with all the restaurant and menu details. The client pill, room show and therefore the cashier counter connects directly with one another through Wi-Fi. This wireless application is easy, improves potency and accuracy for restaurants by saving time, reduces human errors and provides client feedback. This technique with success overcomes the drawbacks in earlier automatic food ordering systems and is a smaller amount pricy because it needs a one-time investment for gadgets.

Keywords: Digital Dining; machine-driven food ordering system; mobile application; Wi-Fi, Dynamic info.

I. INTRODUCTION

The rising in communication technology emergence of wireless technology and android devices has created quite a stir within the business transactions. Business within the welcome trade has been greatly influenced and competition has increased as a result of improved food ordering techniques. In earlier days, food ordering was a totally manual method wherever a waiter went to note down orders from the client using pen and paper, take the orders to the room, bring the food and create the bill. Though this technique is easy it needs extensive investment in purchase and storage of paper, massive manpower and is also liable to human errors and larger time consumption.

In order to beat these limitations in manual system, some systems were developed later like personal digital assistant based systems and multi-touchable edifice management systems to alter food ordering method. PDAs (personal digital assistants) are a lot of in use due to their portability feature and talent to speak with personal computers however they too have some limitations. A PDA-based system lacks present communication, is exposed to health hazards, needs training of attendants, the requirement of getting attendants to work, the inefficiency throughout peak hours and tiny screen size.

II. RELATED WORK**PEN AND PAPER BASED TRADITIONAL SYSTEM**

One of the wide used food ordering schemes is the traditional paper primarily based system. During this system all records are kept on paper. The most disadvantage of this technique is papers will get easily lost or broken. There's additionally wastage of cash, time and paper. Paper-based systems don't give any type of dynamicity. Even a small modification needs the complete menu-card to be re-written. Since massive force is needed, this technique is error-prone and is time intense from a customer's point of view.

PERSONAL DIGITAL ASISTANTS:

When new technologies and approaches being introduced to change the food ordering method variety of wireless systems like WOS, i-menu, FIWOS were developed. All these systems were PERSONAL DIGITAL ASISTANT-based. The feature of PDA systems was that customers or waiters key in ordering process. There was simple communication between the PDA's and server because of wireless technology.

But this technique also had many drawbacks. PDA-based system increased the restaurants expenditures as several PDA's were needed during peak hours. PDA systems also didn't give any real time feedback from customers. Menu cards within the PDA's were unattractive and uninformative because it didn't support pictures.

MULTI TOUCH TECHNOLOGY:

Multi touch technology is improvement to the present touch technology wherever users are allowed to manage and perform operations at the same time on the electronic visual displays using multiple fingers or gesture inputs massive displays like from the tabletop and the wall-screen are deemed to be necessities once managing multiple users sharing an equivalent display for information visual image purposes. It's reported that the social interaction is very improved among users employing a shared display and input. However the multi-touchable restaurant management systems even have certain limitations. Touch screen available in the market are of electrical phenomenon, resistive or SAW(Surface Acoustic Wave) sorts that are terribly pricey. Limitations of electrical phenomenon touch screen aren't operative ready with stylus till it's of conductive material. Another disadvantage of electrical phenomenon touch screen is it's expensive, offers less durability thus short life is another disadvantage. The drawbacks of resistive touch screens embody its inability to support multi-touch gestures, its poor visibility in daylight and its lesser durability. A disadvantage of SAW is that the technology can't be sealed; it may be adversely affected by surface contaminants and water, creating it unsuitable for several industrial or business applications. Because of the means the technology works. It may also be prone to data noise, are often suffering from massive amounts of dirt, mud within the atmosphere.

III. PROPOSED SYSTEM

To overcome the restrictions of above system, we tend to planned this digital dinning system supported android technology. it's a wireless food ordering system using android devices. android devices have gained huge popularity and have revolutionized the utilization of mobile technology in the automation of routine task in wireless surroundings. android is a Linux based OS for mobile devices like smart-phones and tablets. Considering the promising way forward for android market, it's useful and worth to write applications for android that concentrate on lots of people.

The Objectives of our planned system are:

- to mix Wireless technology and android OS to modify food ordering method.
- to reduce the issues in standard system by atomizing the operating of a restaurant.
- To make provisions for getting feed-back from the customers and provide the restaurant a way of review of their service.

IV. SYSTEM ARCHITECTURE

The system design of Digital dining in restaurants is shown in figure one. The design covers the 3 main spaces of restaurant: the Serving area, the kitchen, and also the Cashier counter. Conceptually this technique is made using four main components:

- The android application on tablets at the tables to form orders.
- The server application on the restaurant-owner's laptop/tablet to customize menu and keep track of client records.
- The central info for restaurant-owner to store updated menu data and order details.
- Wireless property between the 3 main areas of restaurant.

This design is restricted solely to the restaurant section.

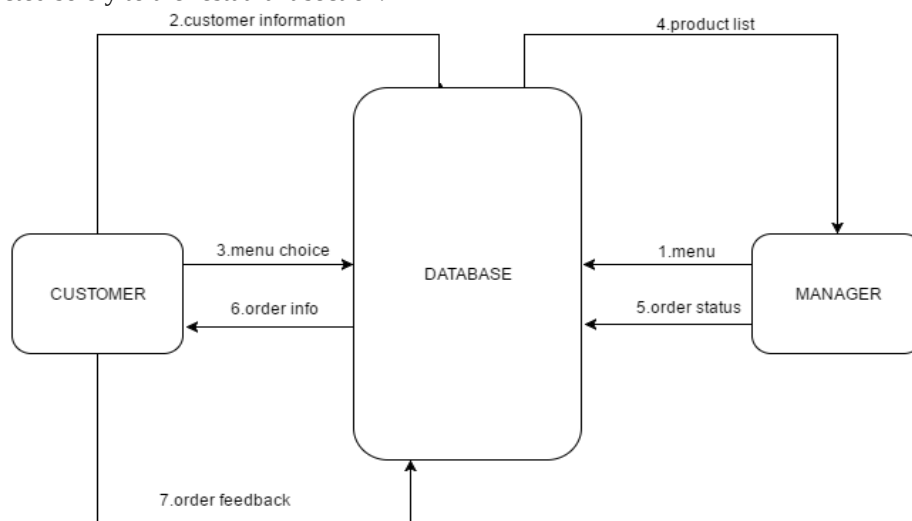


Fig System Architecture

V. ALGORITHMS

➤ Genetic Algorithm

Genetic algorithm was first introduced by John Holland in 1970, it uses the principal of natural evaluation. For finding out better solution genetic algorithm apply three stage processes such as selection, cross over and mutation from candidate solution. It is an iterative process and each iteration is called generation. Here, we evaluate fitness of each individual solution by using objective function and the best individual solution is selected from current population. For new generation each genome is modified which is randomly mutated. Termination condition occurs when satisfactory fitness level has been reached or maximum number of generations have been produced for the population.

For speedup the optimization process initialization phase is used in which we produce a high quality initial population. Next is the selection phase called as fitness based process. It rates the fitness of each solution and preferentially selects the best solutions by calculating the value of fitness function. Crossover takes number of parent solutions and produces a child solution from them. Mutation is applied for preserving and introducing diversity. It avoids local minima by preventing the population of chromosomes from being too similar to each other, hence slowing or even stopping evolution. Crossover and mutation are the genetic operators.

➤ Round Robin Scheduling

RR scheduling is a non preemptive scheduling algorithm. Here, time slice is given to each process called as quantum in a circular manner and handles all processes without considering its priority.

VI. CONCLUSION

This project will consist of an automated food ordering system with touch screen panel on every table. The customers sitting on the table will order the food with the help of the touch screen panel and the order will be placed by the customer. As soon as the order gets confirmed it will be sent to the kitchen of the hotel and all this information will get displayed on kitchen side with the help of wireless RF transmitter at the customer table side and wireless RF receiver at the kitchen side. The orders will be sent directly to the kitchen without waiting for a waiter to take the order. The user can play games till the order is being placed on the table. The billing will be done at the same time and amount will be displayed on the customers touch screen panel. The customer can pay the bill by cash or by credit/debit card. This system is interactive, effective, convenient and thus meant for enhancing the performance for customer satisfaction. This system can be further extended by registering and linking multiple restaurants to enhance the dining experience of the customer.

VII. APPLICATIONS

1. Used in hotels and restaurants
2. Pizza hut
3. Dominos
4. Food ordering system

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