An Online Food Court Ordering System

Sainath Reddy K*, Chaitanya KGK, Abhinav M and Feiroz Khan TH

Department of Computer Science and Engineering, SRM University, Chennai, India

*Corresponding author:** Sainath Reddy K, Department of Computer Science and Engineering, SRM University, Chennai, India, Tel: 04447437500; E-mail: sainathreddykodiganti@gmail.com

Abstract

Increased demand of restaurant-goers generated the need for much attention for the hospitality industry. Providing much option with ease of ordering and delivering is the need of the hours. Technological interference has become mandatory to improve the quality of the service and business in this industry. Evidences are already existed for partial automation of food ordering process in the country; most of these technologies implemented are based on wireless technologies.

This manuscript reports implementation and integration of web based technology for restaurants. A dynamic database utility system was designed to fetch all the information from a centralised database. User utility was given importance during the development of this interface and efficiency, accuracy was the priority for better results and services and to reduce the majority of the human error. It was observed that this system was successful in overcoming the shortcomings found in the previously developed similar systems. Moreover, this system was very cost effective in development as well as during use.

Introduction

Developing an Online Food Court Ordering system to promote a greater count of food lovers to splurge into the field of Restaurant was the objective of this study. This particular system provide the benefit of the easy ordering process online from anywhere along with ample choices for the customers in less time and less expenditures. This latest effort will definitely usher an edge in the existing manual platform used so far for such an important aspect along with greater flexibility and sophistication in the use of the technology. The system also aided E-ordering option for the customers with multiple other benefits [1-5].

The user should register in the system to avail the utility. Users will be able to select their preferable food items from the existing E-menu card and order their requirement online. User will receive an onscreen presence of the selected items immediately after item selection. Application of this system will reduce the additional service associated manpower used in the hospitality industry, thus may provide financial benefits to the owners of such industry. Moreover, this system will be useful during the rush hours in the food courts when waiters or other service providers remain busy and unavailable to all the customers at a time. The user will have a username and a password for their regular use and personalised account maintenance.

Food Ordering System

So far, the traditional service system in the restaurant industry follows huge paper work and human labour which may not be sufficient with the ever-growing demand in quick service in the industry. On the other hand, manual maintenance of the crucial information in papers are tedious and risky certain times. This system is developed as a complete framework which demonstrates stage by stage information from procuring materials to preparing an online environment [6].

Due to enormous busy schedule and concentration on professional and personal work, the present generation is not willing to waste time in a queue of a restaurant, be it for occupying a place or receiving the ordered menu. Working and student community gathers in restaurants during their break time which is limited, therefore, they do not prefer to wait in a queue for any reason. This tool will help such kind of customer to save their valuable time by ordering their food without any manual interference and delay. The following objectives were considered while designing the project:

- Ordering food within limited span of time without any interference.
- Providing more convenience and choices to the customers.
- Automated order and billing system.

Review of Food Ordering Systems

The following sections review the current food ordering systems available in the market.

Manual food ordering system

Manual Food Ordering System uses waiter to take order from customers. During peak hour, customers may be too many to be served by waiters. The quality of the service may drop thus causing dissatisfactory of customers. However, if there are too many waiters are hired, it may be a waste of resources during non-peak hour.

Waiter paging system

The Waiter Paging System allows customers to call for a waiter. Through this system, the waiter is notified by the pager unit with a

vibrator or buzzer for all the incoming requests from the customers. The waiter will be able to categorise all the requests through the display system and prioritize the work accordingly.

Touch screen ordering system

Manual Food Ordering System uses waiter to take order from customers. During peak hour, customers may be too many to be served by waiters. The quality of the service may drop thus causing dissatisfactory of customers. However, if there are too many waiters are hired, it may be a waste of resources during non-peak hour.

Touch-Pad Projection System

The Touch Pad-Projection System also allows customers to send food orders directly to the kitchen. Each table has its own image projector, projecting the menu on the table allowing customers to make an order by touching the table surface instead of monitor screen .While waiting for food to arrive, a kitchen camera can be clicked to see food being prepared, play different types of computer board games. Even though the ordering experience is pretty much automated, every table does have a waiter that brings over the meal and answers questions about the system [7,8].

New Automated Food Ordering System

The new online Food Ordering System consists of a monitor screen to allow customers to choose their desired food via the menu shown on the screen. The choices made will be sent to a kitchen assistant. Computer screen will be placed on each table for customers to make their orders. Customers will be prompted to choose their desired language and the language can be reselected anytime. The system also allows customers to look at their food preparation process.
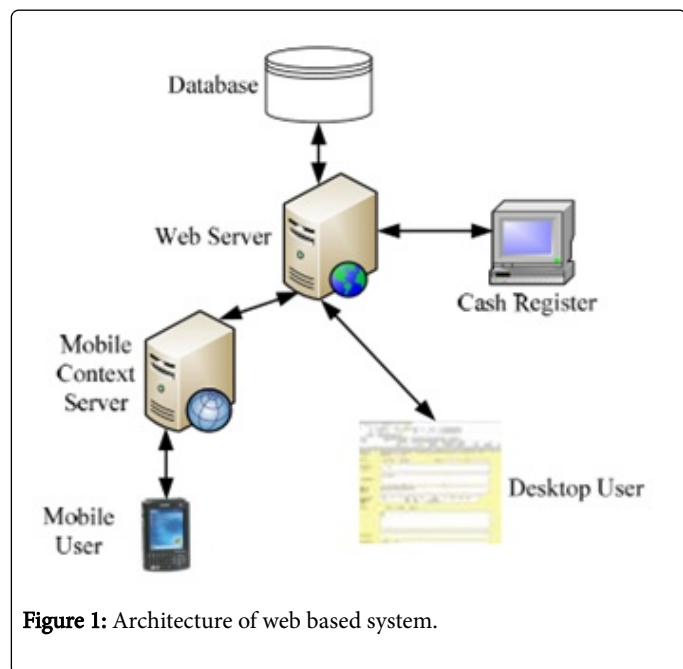

Figure 1: Architecture of web based system.

An Interactive User Interface is integrated with the system which allows customers to get real time assistant from a kitchen assistant by using video conference system. With this approach, the time needed for customers to get assistance from a kitchen assistant can be reduced greatly [5]. To confirm their order, customers need to press the confirm order button and the order will be sent to the kitchen assistant. When the kitchen computer (act as a server) received an order, it will send a confirmation message to the customers' computer so that the customers know that their orders are being prepared. The server will notify the kitchen assistant of customers' order (Figure 1).

The kitchen assistant will gives the order to the chef to cook. After the food are prepared, the kitchen assistant will place the food on a robot and choose the location the robot needs to deliver.

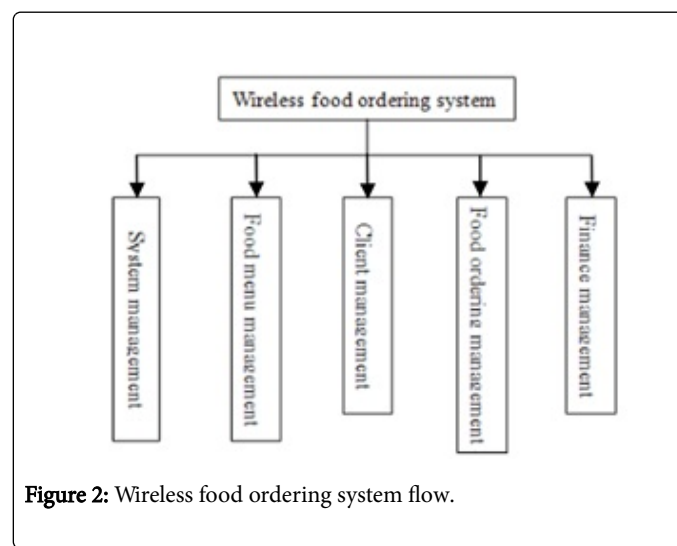### Software architecture for online food ordering system

Figure 2: Wireless food ordering system flow.

The flow of system architecture at the user end begins with the user interaction via opening the webpage. The user can witness the login page and connects to the local host/ online server. After the user logs in he can check the Time Slot Availability and place an order by seeing the E-menu card. Unique order Id is generated by the server for can particular order (Figure 2).

After Generation of unique order id then the user is followed by payment method. The payment is facilitated by a Payment Gateway. After successful payment an Conformation Status is generated.

Data Flow of Online Ordering System

The process flow of the online food ordering system begins when the user is needed to login the website. When the user gets Logged he can be able to view the E-menu card. Then the user can be able to add items to the cart and select the Particular time slot. After selection of Time Slot and unique order Id is generated. Then based upon the user the delivery options are provided i.e., For Teacher both Take Away and Delivery and for students only Take Away is provided. After Selecting the Delivery process the User can moves for payment section & Select's payment method (Figure 3). Then a conformation Receipt is generated states that order is placed successfully [8].
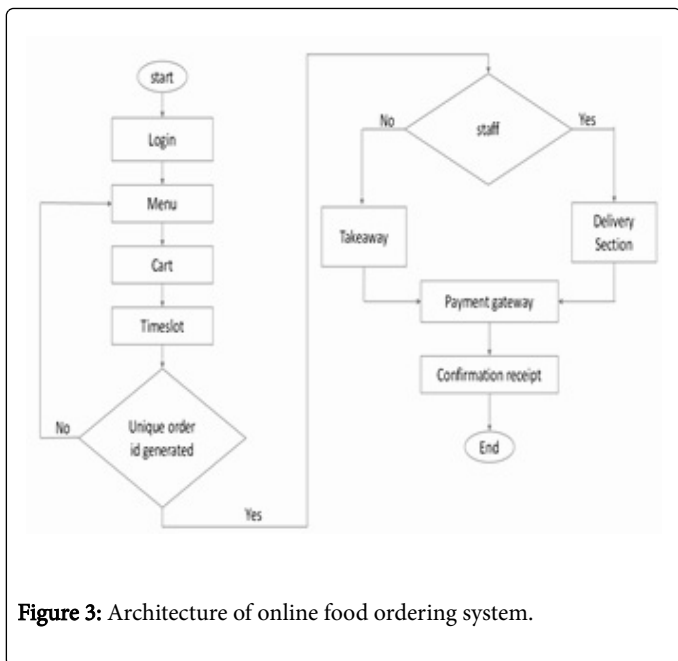
Figure 3: Architecture of online food ordering system.

Conclusion

This article reports about an online system for ordering foods with a real-time feedback system from the customers. The ultimate objective of developing this system is to increase the performance of the regular employees in a restaurant. This approach will definitely give positive impact on the service quality provided in a restaurant as well as customer satisfaction. This novel approach with implementation of simple and effective technology along with merging android based and wireless technology will definitely yield the core objectives of the study. In future, additional provisions might be given for acceptance of various payment types including credit cards, checks, debit cards, extra tips etc. Possibilities are there for upgrading the system with registration and linking multiple restaurants and food courts and provide an excellent dining experience to the connoisseurs.

References

1. Kamarudin V, Ayob J, Helmy AM, Ayob ME, Ayob MA et al. (2009) The Application of Wireless Food Ordering System. MASAUM Journal of Computing 1: 178-184.

2. Liang TP, Huang CW, Yeh YH, Lin B (2007) Adoption of mobile technology in business: a fit viability model. Industrial Management & Data Systems 107: 1154-1169.

3. Patel KJ, Patel U, Obersnel A (2007) PDA-based Wireless Food Ordering System for Hospitality Industry - A Case Study of Box Hill Institute. Wireless Telecommunications Symposium 2007, Pomona, CA.

4. Xiang Y, Zhou W, Chowdhury M (2004) Toward pervasive computing in restaurant. First International Conference on E-Business and Telecommunication Networks (ICETE 2004), Setubal, Portugal.

5. Yuen SC, Yuen PK (2003) PDAs as Educational Power Tools. Tech Directions 62: 14-17.

6. Zhao D (2006) Generating mobile device user interfaces for diagram based modelling tools. Seventh Australasian User Interface Conference, Hobart, Australia 91-98.

7. Zheng P, Ni LM (2006) Smart phone & next generation mobile computing. San Francisco, CA: Morgan Kaufmann.

8. Holocaine A, Galbiati F, Voutilainen K (2007) Use of smart phone technologies to offer easy-to use and cost-effective telemedicine services. Proceedings of the First International Conference on the Digital Society (ICDS'07).