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Real-time Automated Restaurant Management System

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Abstract — ***T****he purpose of the system is to automate the restaurant to carry out tasks more efficiently by implementing a system and enabling customers to make their orders rapidly and smoothly by using asp.net application. Using this system the customer will be able to directly login from the table without the help of anyone and also place the orders through the same.*

The customer can also view the orders along with the rates. The orders placed by customers can be viewed on the server. This will facilitate easy billing and also help reduce human errors in the bill and the customers will be able to view and check the bills from the same application.

Also integral facilities viz. Discount proportionate to no. of visits, suggestions of dishes based on "popular dishes" and "today's special".

Keywords*- 1. Restaurant Automation 2. Android 3. Wireless Food ordering System 4. Apriori influenced Algorithm 5. Association Rule.*

I. INTRODUCTION

The biggest challenge for business is the reduction of operational costs as well as increased productivity. Focus on business process efficiency and minimization human related errors may influence cost and productivity positively. In this scope, automation might lead to faster process execution and to reduce error rate caused by human factor, specially in environments with multiple hops that information or data has to pass from customer to employee and the other way around. Such an environment may be found in restaurants where a need for high customer quality of experience(QOE), low operational costs as well as high turn over is mandatory in order to achieve high degree of customer satisfaction as well as high level of productivity.

In general, people go to restaurants for relaxing, chatting and having food/drinks pleasantly. Usually on weekends the restaurants are fully occupied. At this time, people have to wait for someone(typically a waiter) from the restaurant to place order. In addition waiters are busy when the restaurant is crowded. Sometimes they might forget to take orders from customers, forget the orders, server wrong orders and deliver after long time periods. When the restaurant introduces a new menu or recepies, they do not understand it well by just viewing the menu card printed with food/drink name.

Since manpower is one of the most important cost factors in restaurants and at the same time a key reason for altered performance, an automated order taking process might work as a solution. An automated solution can be assumed to facilitate an increase in overall productivity by decreasing the time and effort involved in this procedure while keeping the customer at same level or in creasing it. Increased customer satisfaction might, for instance be enabled in multi language involvement like big cities, where it is hard to serve customers in their preferred language. Thus existence of a friendly ordering system is essential for many customers. This system aims to design, to implement and evaluate a menu management system for an identified restaurant. The system provides automated order taking and menu management functionalities for the restaurant.

II. LITERATUR SURVEY

Starting from the time when it was realized that hospitality, service and presentation have a great impact on restaurant business transactions, many new ordering and serving schemes have been proposed till now. These ordering systems are as follows-

1. Paper based menu card.
2. Self service food ordering KIOSK technology.
3. QORDER.
4. Computerized ordering system.

The existing system widely used is paper based. This system is used mostly in restaurants wherein menu cards are offered to the customers made of paper, hard board. Waiters use notepad to write the order of customers. The records are stored on paper. The working approach of this system is simple. Every time the customer visits the restaurant, he occupies his table and selects his menu from available menu on paper menu card. When the waiter arrives, he notes the order of customer in notepad. As with anything that is paper based, it is so easy for things to get damaged by

water due to mishandling, or paper being lost due o fire accidents or just generally lost. This leads to wastage of money, time and paper.

III. PROBLEM DEFINITION

In the proposed system, the orders need not be taken manually, instead the orders will be placed by the customers themselves. This will help in reducing the time and increasing the efficiency of working of restaurant. The orders placed will be displayed in the kitchen which will facilitate easy processing of the orders. In addition bills will be displayed on the tabs placed on the table andalso on servers which will be helpful to reduce manual errors in billing.

3.1. Second-order headings

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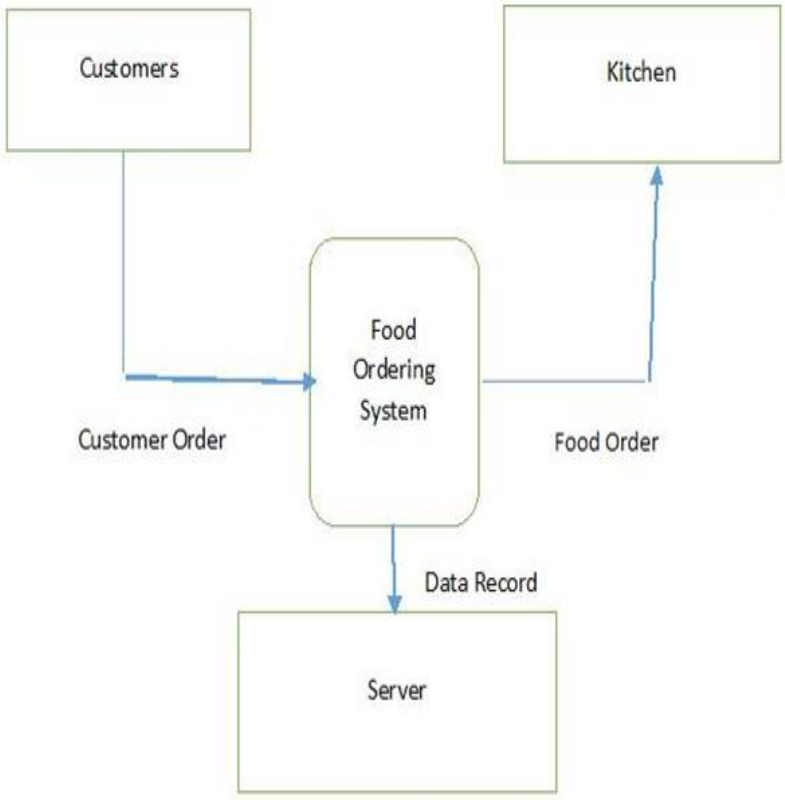
3.1.1. Third-order headings.

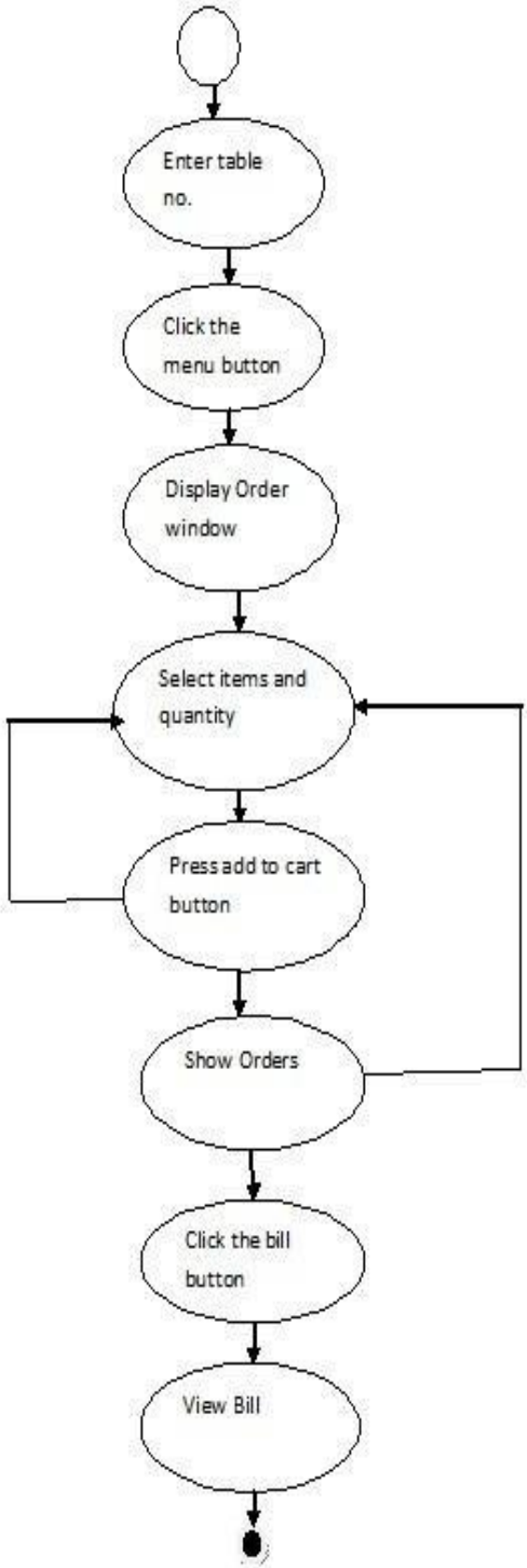
Third-order headings, as in this paragraph, are discouraged. However, if you must use them, use 10-point Times, boldface, initially capitalized, flush left, preceded by one blank line, followed by a period and your text on the same line.

IV. PROPOSED SYSTEM

In the proposed system the work flow is characterized by following activities -
1. Automating the restaurant management process to reduce drawbacks of existing system.
2. Menu card will be displayed on touch screen tabs along with costs to select items. 3.Orders will be sent to kitchen and also servers to generate bill.

4. Orders will be visible to customers anytime during the meal.
5. At the end, when customer pays out, the session for that customer will be closed.





V. ADVANTAGES

wastage of paper is avoided as our system implementation is on tables and thus does not need paper work for tasks like taking orders, menu cards. A customer does not have to wait for waiters to take orders. As soon as he the order is ready it will be notified to customer.

VI. LIMITATIONS VII. FUTURE SCOPE

Tablets would cost us more as they are costly than simple paper. If compared to traditional paper system, more maintenance is required. Some technical assistance would be needed.

VII. FUTURE SCOPE

Provisions can be made to accept different types of payments like checks, credit cards and debit cards. Provisions can also be made to give tip to waiters etc. The system can be extended for lodging. The menu can be made available in different languages.

VIII. CONCLUSION

We have proposed a system for automated restaurant management. The system would attract customers and also add to efficiency of maintaining the restaurant's ordering and billing sections. Using this system, customers can place orders themselves without help from anyone and those orders will be directly displayed in kitchen screen. This also reduces waiting time of the customers.

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