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## DESIGN AND DEVELOPMENT OF SMART CAFETERIA TO MANAGE THE PROCESS FLOW OF A RESTAURANT

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### ABSTRACT

Restaurant management face lot of problems on Managing the stock in their self stores like what amount of stock is present, what stock is being highly consumed, what stock is out of store, updates about stock available etc., and number of orders that had to be completed, what is the current sales, printing bills etc.,. The overall work flow of the restaurant needs to be handled properly to run the business efficiently. To answer all the questions above an android application was designed and developed so that the waiter can book the order by this in his mobile, cook can receives orders and after completion sent the final order to billing to waiter and receptionist i.e., this provide an interface to book, edit order and automate the bill. Stock manager will get notifications about the stock when there is change of stock. This paper presents an application to model the overall workflow in the restaurant.

### INTRODUCTION

Nowadays, many restaurants manage their business by manual especially take customer ordering. In traditional booking system, a customer has to go to restaurant or make a phone call in order to get his meal reserved. Today, restaurant waiter takes the customer ordering by manual system with using paper. Customer does some formal conversation like hello, hi, etc. Then he demands for today's menu and do some discussion over menu items then he orders. It takes 5 to 10 minutes to book the order and waiter book the order on paper so there is probability of lost and duplication of customer information. Restaurant management system puts the order in a queue with specific priority according to time and quantity, and then a

cook is assigned for the specific order to complete it. Besides, the restaurant waiter information also by manual system kept use paper and this is difficult for restaurant administrator to find waiter information, probably missing the paper and difficult to arrange the schedule. Initial problem is that the customer has to get connected over the phone; it would be harder if the restaurant is very popular and busy. Sometimes, waiter information and customer information is important to restaurant administrator for reference in the future. The chances of committing mistakes at the restaurant side in providing a menu list for a specific time would be more.

Many people have experienced going to a restaurant where the service is poor and there is a lack of attention from the wait staff. The paper menus can be flimsy, hard to navigate, and outdated. To leverage the growing mobile industry, the on-line restaurant proffers solution. This paper presents a restaurant menu and management system will replace the paper waste, is more maintainable, and allows for greater customer engagement. The problem confronting the research is to determine the Documentation for online restaurant management system.

### **EXISTING SYSTEM:**

In the existing system as the owner of a restaurant business, it is important that you provide the best customer service if you're going to become successful. It's natural to ask how, exactly, you can deliver the best customer service and the steps of the food service process. A good place to start is to have a clear definition of what customer service is by having a communication channel among morale of restaurant which replaces the archaic ways of ordering , serving , bill generation , stock management .

"Online Restaurant Management System" is a web application. This system is developed to automate day to day activity of a restaurant. Restaurant is a kind of business that serves people all over world with ready-made food. This system is developed to provide service facility to restaurant and also to the customer. This restaurant management system can be used by employees in a restaurant to handle the clients, their orders and can help them easily find free tables or place orders. The services that are provided is food ordering and reservation table management by the

customer through the system online, customer information management and waiter information management, menu information management and report. The restaurant menu is organized by categories (appetizers, soups, salads, entrees, sides and drinks) of menu items. Main objective of the system this is to provide ordering and reservation service by online to the customer. Each menu item has a name, price and associated recipe. A recipe for a menu item has a chef, preparation instruction sand associated ingredients. With this system online, ordering and reservation management will become easier and systematic to replace traditional system is still using paper. To resister a meal online, the customer has to become a member first then he can access the later part of the site. The system is to facilitate customer for make online ordering and reservation. The option of becoming member was only an attempt to avoid (to some extent) placing the fake bookings. Online Restaurant management system is the system for managing the restaurant business. After successful login the customer can access the menu page with the items listed according to the desired time. The main point of developing this system is to help restaurant administrator manage the restaurant business and help customer for online ordering and reserve table.

Rahim, Hosain, Islam, Anjum, and Rana (2011) designed an intelligent hotel management system that seeks to automate hotel customers' interaction with hotel facilities in a zero touch using voice processing. The model incorporated the automatic control of lighting, cooling, and so on. Unfortunately, the reservation

module of the system was still the same rigid module that is found in all available hotel reservation systems.

Managing hotel service is very complex, hence it involves job of dealing with customers directly, purchases made by customers and room reservation. The manual hotel management is subdivided into section with each section having specific tasks. These tasks will however from time to time interact operationally to achieve organizational objectives. The mode of interaction consists of all characteristics of a typical manual system i.e. communication through verbal means, documents etc. This now leads to computerization of hotel management.

### BACKGROUND STUDY:

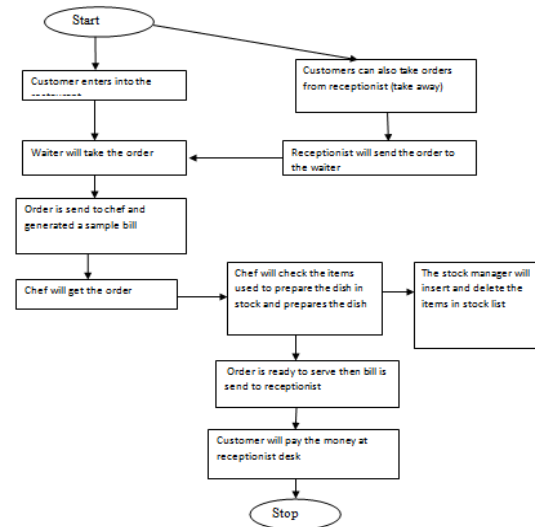
The project is developing because; many restaurants have a lot difficult to manage the business such as customer ordering and reservation table. If the customer book an order and later wants to cancel the order, he is permitted to do this only within a specific time period. By using manual customer ordering it is difficult for the waiter to keep the correct customer information and may lose the customer information. The customer is also given the facility to view the status of the order to determine if it is ready.

### PROPOSED SYSTEM:

The proposed system SMART CAFETERIA deals with the process that have been carried in restaurants from a long time which is ineffective and time consuming by new and software oriented application. This application involves in taking order from customers and passing the message to chef with simultaneous bill generation . The main feature of this

application is stock management which takes care of pantry concentration .

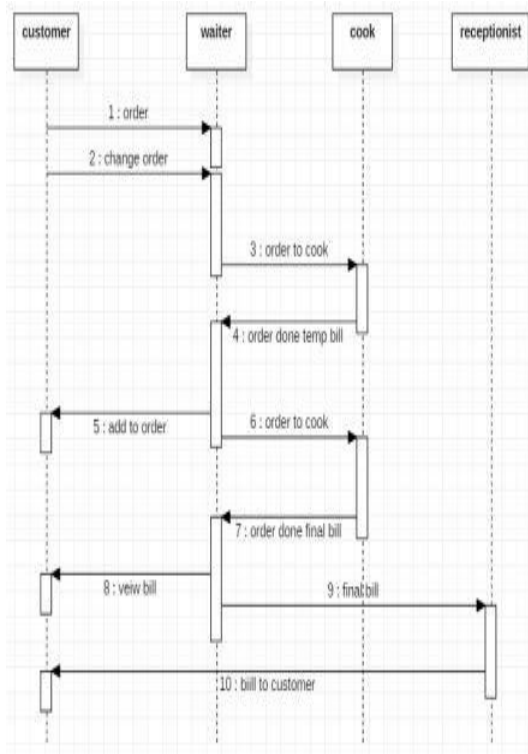
### PROCESS FLOW



As the customer enters to the restaurant, the waiter with a tablet which is have our website in it is carried with him. The waiter will take the order from the customer. There will be changes in the order due to human's mindset, so we have provided an option to re-change the order in terms of dishes, quantity , quality, other specifications given by the customer.

When the waiter had took the order then the order is send to the chef and generates a temporary bill. The chef will receive the data which holds the order of dishes and the tablet number from the order has been taken. Then the chef will search the items available currently in the stock or not. Then he will start preparing the dishes, once the dishes are completed then the waiter will get a notification that the dishes are ready to sever. The waiter will come to take the dishes from the cooking section and serves it to the customer. After the dish is served to the customer, the automatic bill is generated

and send to the receptionist. The customers need to pay the amount to the receptionist. The other way is takeaways. Here the customer will enter the restaurant and then he will give the order to the receptionist. Then the receptionist will send the order to the waiter. The waiter will send it to the chef. After the dish is prepared then the waiter will give the dish to the customer and an automatic bill is generated at receptionist. The customer need to pay the money to the receptionist.



Our proposed system is a combination of both order placement and stock managing. Actually at existing we have stock managing software and order placement software as two different software to make a restaurant smart. Here we are combining both the software's to be one. This system will take the order from the customer and passes the order to the chef, the chef will search for the items available to make the

dish, the stock manager will update the stock data in the stock list every time, an automatic bill is generated at the receptionist. As we have both the works going in one software it is easy to complete the task and the time will be saved.

We have four blocks in our system they are as follows :

**Stock manager** - Here the stock list is available and can be modified by the stock managed when every there is a entry of items. As the chef takes the raw items to prepare the dish, the quantity will be automatically reduced accordingly. Here the admin is given to the stock manager, he need to update the data about the stock they are using.

**Receptionist** - Here the receptionist block is for the receptionist to check whether all the tasks are going well or not and will get an automated bill generated by the waiter. Here the admin is to the receptionist, he will monitor the billing section.

**Waiter** - Here in this block, the waiter will take the order from the customer. He will have the list of items available currently in the restaurant on the screen and the tablet with their numbers. First the waiter will click on the table number in which the customer are settled. Then he will place the order and gets a temporary bill. Then he will send the order to the chef with all the specifications. Here the admin is waiter.

**Chef**- Here in this block ,the chef will receive ordered data from the waiter.

He will take the items from the stock list that are need to prepared the dishes and he will start preparing the dishes. After the dishes had been prepared a notification is send to the waiter as the dishes are

ready. Then the waiter will come and takes the dishes . At last he will serve the dishes to the customer.

## Inventory management system using Java language:

There are various modules and features that make up this project. The system module begins with the login page; here, the admin logs into the system by entering the valid username and password. The admin can control the following features:

1. Enter stock
2. View stock
3. Dispatch stock
4. Shift stock

The information that can be added into the system are category, customer details, purchase, sales print, stock details, stock entries, stock entries payments, stock sales payments, stock sales, supplier details, UOM, and more. The system also allows the admin to check customer details, sales details, stock details, supplier details, and more.

Stock Management System also includes functions to print payment receipt, and view purchase reports, sales reports, sales stock report. The admin can delete stock entry and stock sales, edit purchase and stock sales.

Through the system, customer details, payments, stock availability, stock details, stock entries payments, stock sales payments, and supplier details can be viewed. Updating can be done on customer details, stock details, stock entries, stock sales and supplier details.

## INTERFACE SCREENS



### Description:

Home page.



Description: waiter taking order.

Description: cook received order.



**View Inventory**

**+ Add New Inventory**

**\* Update Inventory**

**- Delete Inventory**

Description: Manager operates data .

## **CONCLUSION**

The system which is designed will address all the basic needs of the restaurant. Each and every user of the restaurant will have the app installed in their mobiles. The overall process flow is managed using SMART CATERIA. This will reduce manual intervention which is likely to be error prone and also reduces fraud in the process flow.

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