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Smart Restaurant Management System using Android, iOS, Web Application

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ABSTRACT: The system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order. This App has been made in a user-friendly interface. So that Customer can add and delete the food items easily. The menu card consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. The messaging module tells the supplier to supply the particular food. Also tracking module track the order. The billing system prepares the bill according to the delivered food. This system entirely reduces the unnecessary time. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time.

KEYWORDS: Interactive User Interface, Intelligent Restaurant Systems, Digital Menu, Smart Phone, Wireless food ordering system, Mobile application.

I. INDRODUCTION

Over the years, technology has tremendously revolutionized the restaurant industry. Much of the innovation has been with point-of-sale (POS) operations. There is a famous saying that "People eat with their eyes". The
e-menu provides additional information about menu items and drinks than a traditional paper menu. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant.
The service goes quicker. Restaurants can build their e-reputation and customer community in live. The restaurant menu has evolved from its humble beginnings on carte chalkboards and imageless print to today's detailed, colourful displays. With the emergence of digital trends and user-friendly touch screen technology menus can move to a whole new surface. With this electronic menu, orders can be taken correctly the first time. There is no need to run back and forth to a distant terminal, because the terminal is always with the server. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. It makes it easier for the customer to build his/her order and also view the most popular dishes. Moreover, various dimension filters can be used according to individual preferences e.g., Price, taste, quantity, etc.

II. OBJECTIVES

- To develop android, iOS and Web application for smart restaurant management system and provides facility to update the menu.
- To develop android, iOS and Web application at kitchen and cashier to receive order from server.
- To establish network for kitchen, cashier and android, iOS and Web application and print the bill at customer side.
- Customer should be able to enter the feedback about the service and the food served by e-restaurant android, iOS and Web application.
- It is used to reduce the manpower.
- It can be used to save money.

II. EXISTING SYSTEM

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 are wasted. As traditionalmenu cards arepaperbased, 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. For placing any orders customers have to visit hotels or restaurants to know about food items and then place order and pay. In this method time and manual work is required. While placing an order over the phone, customer lacks the physical copy of the menu item, lack of visual confirmation that the order was placed correctly. Every restaurant needs certain employees to take the order over phone or in-person, to offer a rich dining experience and process the payment. In today's market, labour rates are increasing day by day making it difficult to find employees when needed.

III. PROPOSED SYSTEM

A Digital menu completely revolutionizes the dining experience. Existing programs provide an app that restaurants can use to feed their menus into iOS& Android based digital trends and make it easier for the diners to flip, swipe & tap through the menu. We aim in providing and advanced menu display using android, iOS and Web platform. We use a Firebase for storing the database which makes it inexpensive and also secured. Developers of similar applications maintain that customers who seat at tables outfitted with digital trends spend about 10% more than those at other tables ("people buy more when they can do so instantly, without waiting for service").

IV. WORKING

Our main aim is to increase the efficiency of the food ordering and reduce man power and to provide high quality services to the customers of the restaurants. Firstly, the customer or visitor will open the application and searches for food item menus from restaurant. The customer sees the categorized menu card on the android, iOS and Web application. If condition satisfies then admin transmits data about order to the particular restaurant. If there is a need for modification in the food menu, the admin modifies the menu. The menu gets changed in the database. The changed menu then gets updated on the customer's android/iOS application. When menu food items are selected then you can review in the cart section. After that, in the cart section you can scan the table no/ QR code for the payment of order. The customer can pay the payment via cash or Online payment. Then the order will display in the Admin dashboard in order section. The admin can further proceed the process of order.

a) USER MODULE

- **Module 1:** Place Order Module
  The activity is performed by customer itself whose registration is already done. Once the verification is done by application, the order gets confirmed and delivery will be given to the dedicated customer.
- **Module 2:** Carting Module
  This is additional feature given to add the food items in customer's virtual basket just like pending orders or the orders which customer wants to do later. But if the customer is first time visiting then he/she will be unable to place order until he/she do registration on our application.
- **Module 3**: Payment Module
  User can complete payment by choosing online payment or cash option.
- **Module 4:** Logout Module

Fig.1 Flowchart for User

b) **ADMIN MODULE**

- **Module 1:** Login Module
  In login module the customer and restaurants login will be taken while they already   registered on the application. Every manager/user will have login id and password to login to the application.
- **Module 2:** Add/Update/remove Menu
  This module is for admin. Admin have rights to insert, update (modify) and delete the data in database as per his/her necessary requirements.
- **Module 3:** Account Management Module
  There will be an account manager who will manage all the online order transaction and he/she will be responsible for issuing printed copy of customer payment receipts.
- **Module 4:** Order Status Module
  The admin can set progress status of order like order is accepted or not, is food ready or not.

Fig.2 Flowchart for Admin

V. CONCLUSION

This achieved through an easy-to-use graphical interface menu option. The users can add any number of items to the cart from any of the available food categories by simply clicking the Add to cart button for each item. Once item is added to the cart, user is presented with detailed order to review or continue shopping.

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