

e-Restaurant Food Ordering System.

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ABSTRACT

While ordering food in restaurant simpler and easier access to menu is main in food ordering system which facilitates user to order. A menu provided to user or customer on tablet totally changes the experience of dining. Current system which is currently in working state that provides an application that restaurant uses to feed their menus in tablet which will help the diners to check the menu provided by restaurant. Items or menu is provided in IOS based tablet. Our aim is to extend this system with an recommendation algorithm which will provide recommended menu to the user which will be based on probability of order this algorithm or extension is not implemented anywhere else. With much more extension we are implementing this system in android based tablets as implementation same on IOS is much more expensive. In this system a cloud based server is used which reduces cost of this project.

Keyword: Recommendation, Tablet, menu, Application, restaurant, Items.

1. Introduction

Many changes are made in restaurant management last few years. Considering all changes in management they are made with consideration to sale. But except this all other area are open for innovation. In Traditional restaurants user or customers are entertained by waiter. Ordering is also taken in traditional format by writing on notepad. But, a intelligent recommendation system will efficiently unify customers. And will also display favorite food or meal with their last expenditure. The e-Menu provides additional information about menu items and drinks than a traditional paper menu. With interactive pictures it gives additional information about the food item. Tablets are said to eliminate order-taking errors from the waiters. In the kitchen, there is less confusion as everything is now written clearly. Developers of similar applications maintain that customers who seat at tables outfitted with tablets spend about 10% more than those at other tables (“people buy more when they can do so instantly, without waiting for service”). With the visuals, you know exactly what you’re going to get in your plate The service goes quicker. Tablets are said to allow cutting the labor expenses. Customers feel more involved in the process. Restaurants can build their e-reputation and customer community in live. The restaurant menu, as we know it, has evolved from its humble beginnings on carte chalkboards and imageless print to today’s detailed, colorful displays. With the emergence of digital tablets 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. The Recommendation algorithm suggests dishes to the patrons based on previous orders. 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. In a study earlier, a preliminary experiment was conducted in a restaurant, and a questionnaire survey was administered to fifteen waiters and forty-five customers. The survey result was encouraging. In addition, extensive interviews with restaurant owners were conducted and the results indicated that the proposed system is useful in reducing running cost, enhancing service quality as well as customer relationship.

2. EXISTING SYSTEMS

Restaurant services such as making reservations, processing orders, and delivering meals generally require waiters to input customer information and then transmit the orders to kitchen for meal preparation. When the customer pays the bill, the amount due is calculated by the cashier. [1] Although this procedure is simple, it may significantly increase the workload of waiters and even cause errors in meal ordering or in prioritizing customers, especially when the number of customers suddenly increases during busy hours, which can seriously degrade the overall service quality.

3. IMPLEMENTATION DETAILS

The following figure (Fig 1), demonstrates the basic architecture of our system. Understanding the other intricacies and details of the system will become a lot easier if one goes through this figure, before diving into the rest of it. The system will consist of the following main components: The backend, which is made up of the web server and the database, and the frontends that include both the patron frontend (delivered as a native mobile application) and the administration or the kitchen frontend (delivered as a web application). This system is based on the very popular Model-View Controller (MVC) architecture. MVC is most commonly used in websites, very popular and tried and tested. None of the frontends directly “talk” to the database. They instead rely on RESTful web services that can be used to perform CRUD operations on the database.

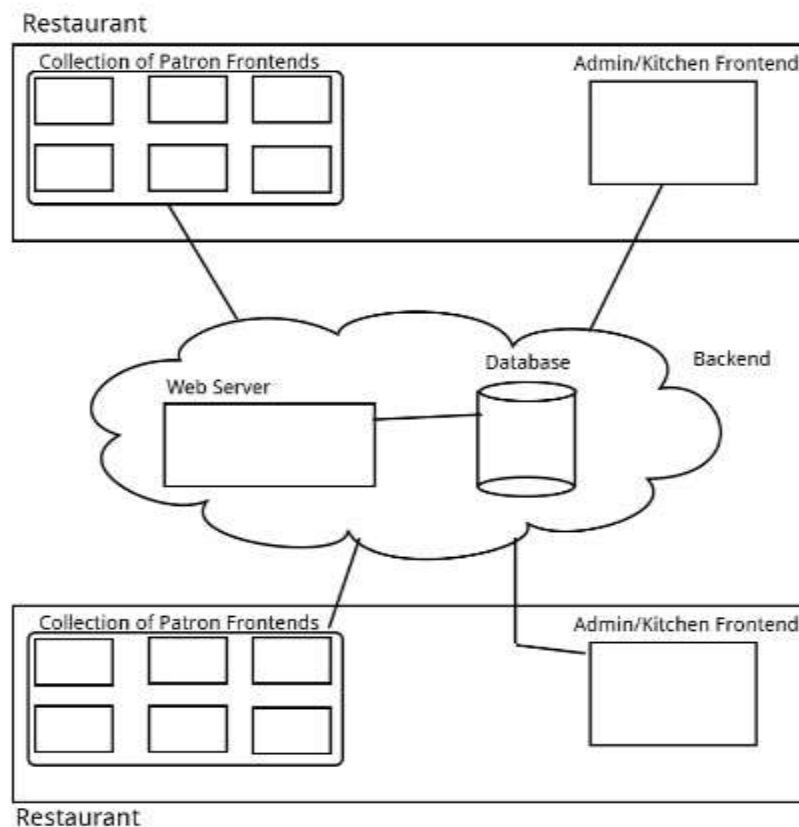


Fig: System Architecture

The menu data, upon synchronization, is stored on locally on the tablets so that the user, i.e. patron, need not wait for the menu to be downloaded from the servers. This will allow faster access to the menu. The user can then browse the menu however they want to, sorting the items on various dimensions like price, popularity, ratings, etc. The user can also click through to view more information about any item like nutritional information, ingredients, trivia and any other content that the restaurant administration may feel like including. The user can also view personalized recommendations for items that they may like. This is one of the most important aspects of our system that not only enhances the customer experience but can also help increase revenue for the business. While browsing through the menu, the customer may add items to his/her order. This process is commonly known as “building the order”. After the order is built and read, the user may go ahead and place the order. The staff will automatically and almost instantly be notified about the new order so that they can act on it. If the establishment allows, the user may even track the status of their order so that the customer may know when to expect their food and drinks to land up on their table.

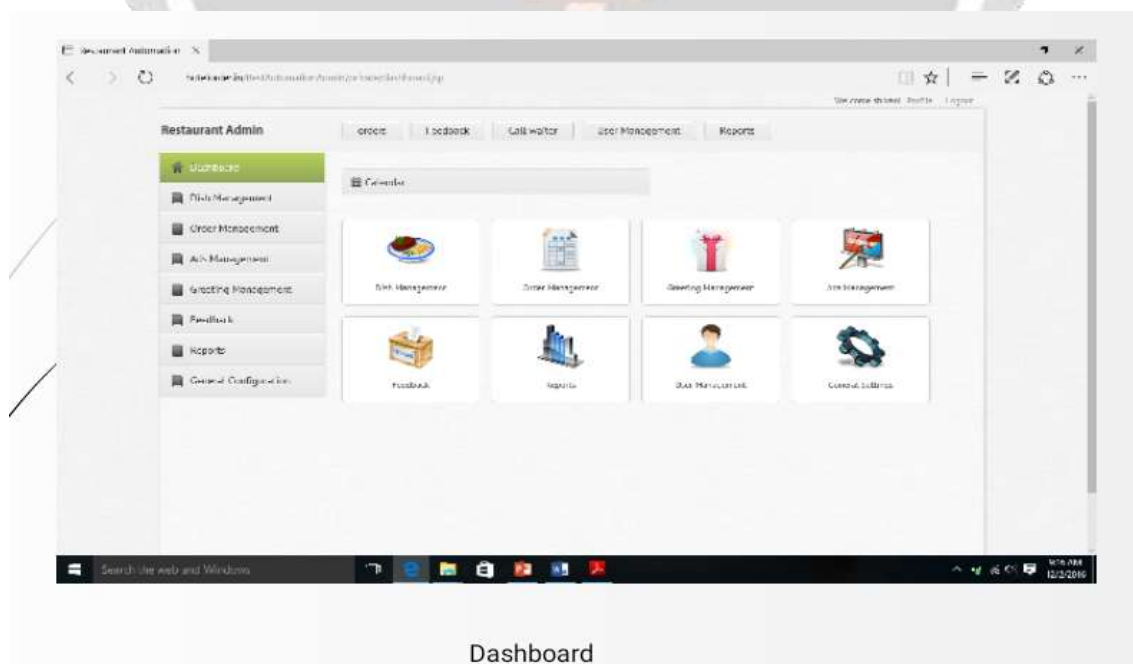
3. Modules

3.1 Administrator module

Administrator is the person who will manage the entire system. This type of user will also do maintenance and control the application of this system. Administrator takes a responsibility to a new customer, new waiter, new menu into database, and etc

- These desktops are especially for the use of the restaurant manager.
- The manager should be able to control the function of whole restaurant from a single desktop/tablet.
- He can access any tablet and should be able to make changes to the menu.

Also he can change price of particular item or disable particular item which is not available at that particular time.



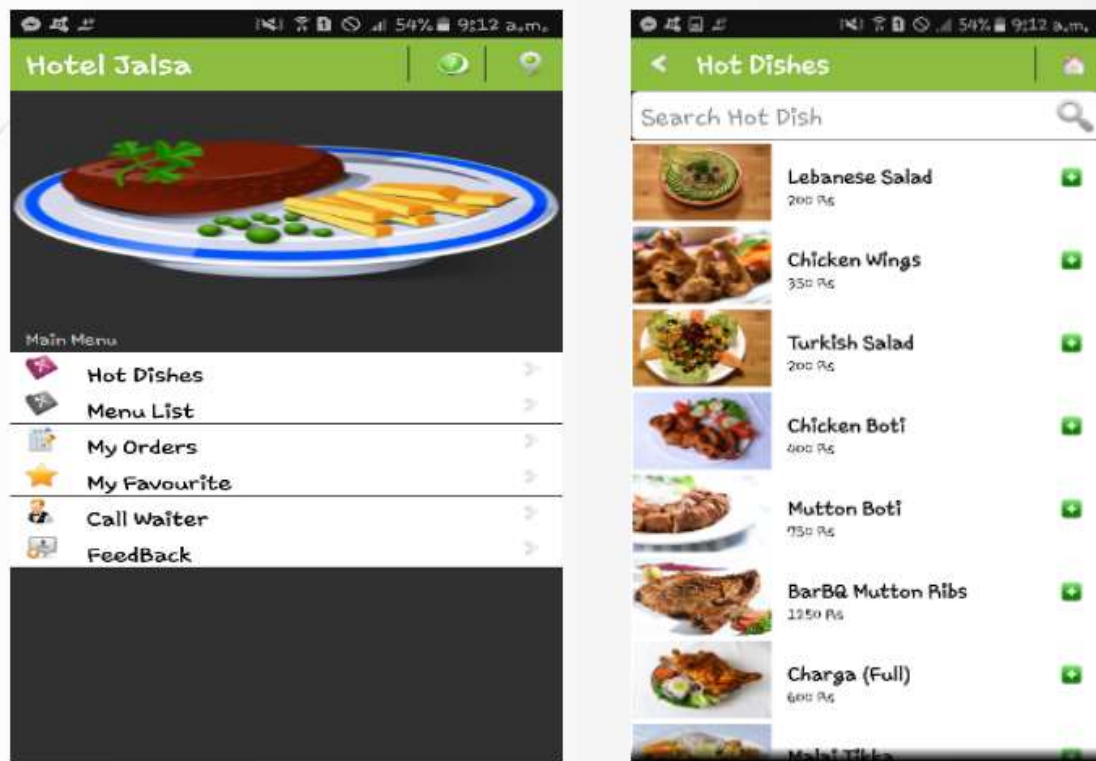
Dashboard

Fig -2 Dashboard

3.2 User module

This project module consists in an Android application that 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. This application, created mainly for proof of proper user-mobile interaction. This tablets is especially for the use of normal users coming in the restaurant.

- These tablets will consist of the whole menu of the restaurant. The items in the menu are non editable for these types of the tablets.
- They will be enabled with the Wi-Fi connectivity.
- Customer from any layer of the society should be able to handle and operate all the functions easily.



Browse Menu

Fig - 2: Browse Menu

3.3 Kitchen module

These are present at the kitchen near chef so that he should be able to see what a particular has ordered. All the ordered items are displayed on the screen giving the table number below. They should be sufficiently large to be seen by chef at a reasonable distance. Chef should be able to denote a particular item that is ready.

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- All the ordered items are displayed on the screen giving the table number below.

- They should be sufficiently large to be seen by chef at a reasonable distance.
- Chef should be able to notify when a particular item is ready

4. FEATURES OVERVIWE

In this section we won't go into the detailed features of the system, but instead take a bird's eye look at the same.

1. Intuitive, Beautiful & User friendly:

The end users, i.e. the restaurant customers, will have maximum interaction with this system. This interaction will mostly occur through the tablet application. Unlike most applications that have a targeted user base, our application will be used by all & sundry. It could be used by an 8 year old or an 80 year old person, from varying cultures and background. This ensures the need for a design that is intuitive, user friendly and beautiful thus making it a pleasure to use.

2. Scalable:

The system has the potential of being used by millions of users at any given time, with possible peaks at various rush hours at the establishments this may be implemented at. Thus, the system will have to be scalable and should be able to accommodate as many users and as much data as required.

3. Secure:

Since private information about so many businesses and individuals will be stored in our database. We will need to ensure that the whole system - the web service, the app, the database as well as the server be secure from external as well as internal threats.

4. CONCLUSIONS

Our project's literature survey has been done and we have done with implementation of the first module of our project i.e. The wireless ordering system has egresses progressively and revolutionized the restaurant business industry and other fields. This system is convenient, easy and effective thereby improving the restaurant staffs works performance besides providing quality of service and customer satisfaction.

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