
Self-Served Food Ordering System.

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Abstract: *The state of being wireless technology and the unforeseen occurrence of mobile devices to make able a found large foundation for business application. Some expected work have been made to employ both technology in food system implementations. However, the food ordering systems that have been building earlier to show limitations, primarily in cost effective, allowing customizations and supporting realtime feedback to customers. The developed system increase quality and speed of service. The Wirelessly update order details in central database and correspondingly sent to kitchen and sent to cashier respectively from customers touchpad. The tablet devices have application on that makes for easier life, accuracy for restaurants by saving time and improving property of effect , decrease labour rates and real-time customer feedback. This wireless food ordering system successfully over comes the drawbacks in earlier Personal Digital Assistant (PDA) based food ordering system and more effective than the multi-touchable restaurant management systems and is less expensive.*

The developed system also have Customer Royalty and broad range facilities can be offered the frequency of customer in restaurants so that the and the suitable combinations of menu for useful while ordering food The android based application used on tablet. The proposed system discuss the plan and implementation of a customizable wireless food system with real-time customer feedback for a restaurant (CWOS-RTF)

Keywords: *Wireless Technology ,Restaurant Automation, Clustering, Android Application Recommendation Trust,Wi-Fi.*

1 INTRODUCTION

The basic problem in the food service industry is that restaurants are not realizing efficiencies that would result from better applications of technology in their daily operations. Every fast food has counter where you can place your order and then make the payment. So every fast food needs an employee for taking the

order and processing the payment. Labor rates are increasing every now and then and it is difficult to find employees in the middle of the highway, hence to solve this problem we plan to design a "self served food system."

This self-service fast food restaurant will be equipped with a user-friendly touch screen, a credit/debit card reader, and software for completing the process at the backend. For this system there will be a system administrator who will have the rights to enter the menu with their current prevailing prices. He/she can enter anytime in the system by a secured system password to change the menu contents by adding or deleting an item or changing its price.

Now when the customer enters the restaurant, he will place his order with the help of the touch screen using the intuitive graphical user interface, right from the selection of language till the payment confirmation. He will select from the food options according to his choice and the system will display the payment amount he has to make once he has finished with his order. He will have the option of paying the bill by cash, debit card or a credit card. The user will slide his card and the system will check for the validity of the card and the payment will be made. A receipt will be printed containing the order number and the order will be sent in the kitchen for processing..

2 EXISTING SYSTEM

The existing system is paper based. This system is used mostly in restaurants. In this, menu cards offered to customers in restaurant are 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 customer visits restaurant, occupy his table and selects his menu from available menu on paper menu card. When waiter arrives, he notes down order of customer in his notepad. There is wastage of time, money, and paper.

As menu card is made up of paper, if restaurant management wants to update menu list or

prices, it leads to wastage of paper and it will require reprinting of all the menu cards. Also, in many cases for small change to be made in menu card it is not convenient to print all menu cards again. Simply saying that menu card once printed can't be changed. Moreover, after some days the menu card lost its worthy look. From the customer's point of view, this system is time consuming. As, one has to wait until the waiter comes to take the order, one has to call waiter number of times till he notices it, there can be misinterpretation while the waiter is writing your order on paper, and it might be possible that you are served with a wrong dish.

3 PROPOSED SYSTEM

The proposed system is an application of integration of hotel management systems by web services technology is presented. Digital Hotel Management integrates lots of systems of hotel industry such Billing System, Customer Relationship Management system (CRM) together. This integration solution can add or expand hotel software system in any size of hotel chains environment. This system increases quality and speed of service.. Implementing this system gives a cost-efficient opportunity to give your customers when customer want it – from dining to ordering to payment and feedback. In current formal dining environments, some form of physical static menu is utilized to carry the available food and beverage choices to customers.

Three related concepts are include in the proposed system by the general scope of the Restaurant Menu and Ordering System. The first related to the replacement of paper-based menus using an electronic format, the second relates to a complementary electronic strategy for the front of house handling of a customer's order and the third surrounds the process of transferring said electronic orders to the kitchen for preparation.

4 Mathematical Model

Set Theory:

Our system can be represented as set $X=\{I,O,S,F,C\}$

where,

I=set of inputs

O=set of outputs

S= set of outputs in success

F = set of outputs in failure

C = set of constraints

$I = A, S$

where,

A = set of food order

S = set of food details

Food order = {Dish 1, Dish 2,...Dish n }

Food Details= {Category, Subcategory,Menu Dishes

O = { Bill, Recommendations, offers }

Bill={ BN,BA,LFI,MPT }

R=f R1,R2,...Rn g

Offers= { Offer 1, offer 2, ...offer n

where,

BN=bill number

BA=bill amount

LFI= list of food items

MPT=mode of payment

R=Recommendations

S= PTn, PU_n

where,

G_n = set of generated bill (updated)

Rmd = set of recommendations (updated)

O_s = Set of offers gives (update)

F = PTo,PUo, NULL

where,

Gbo = set of bill not generated (wrongly updated/not updated)

Rmdo = set of recommendation not give (wrongly updated/not updated)

Oso= set of are not give(not update)

NULL represents no output

C = " The table should be present in required range of Wi-Fi"

5 System Architecture:

A description of the program architecture is presented. Block diagram, Package Diagram, Deployment diagram with description is to be presented. When the customer enters the restaurant, he would surf on the tablet to order his menu. He could also surf quickly if he has already decided upon what to order. He would click the item he wants to order and after he is sure he wants each item in the list, he would click confirm. The confirmed order would be displayed on the display screen in the kitchen. After the chef has completed preparing the item, it would be notified to the customer. After the customer has completed eating the food, bill would be directly displayed on his tablet as well as managers system.

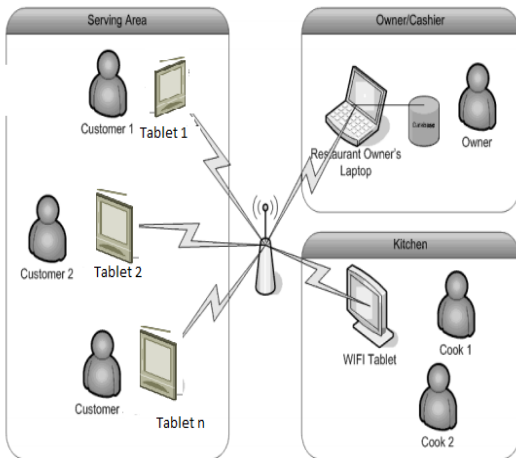


Figure 1: Architecture diagram

6 Algorithm

6.1 K-means algorithm

- Partition object into k nonempty subset.
- Compute seed point as the centroid of the cluster of the current partition. The centroid is the center (mean point) of the cluster.
- Assign each object to the cluster with the nearest seed point.
- Go back to the step 2, stop when no more new assignment.

6.2 Apriori algorithm

- First minimum support is applied to find all frequent itemset in a database.
- Second, these frequent itemsets and the minimum confidence constraint are used to form rules.
- While the second step is straight forward, the first step needs more attention.

7 Goals and objectives

- The system has a user-friendly user interface.
- The system will help to reduce the cost of labour.
- Handles the payment for the user-defined order
- Save customer's time.
- more comfortable ordering environment.
- real-time feedback between the restaurant owner and customers

8 Installation

In this technologies which are used to implement the system and Installation :

1. **Android:** Android version 2.2.3 (Smart Phone) and Android version 2.2 – 4.0 for Tablets is required.
2. **Eclipse Installation:** Eclipse (www.eclipse.org) bills itself as a "universal tool platform." Complete with built-in CVS client, data access tools, webapp testing tools.

There is no executable program used to install Eclipse. The process described below involves unzipping a directory tree of files and placing it in an appropriate location on your hard disk. there is no executable uninstaller either.

- Unzip (or copy) the software (e.g., the downloaded file eclipse-jee-europa-win32.zip) into an appropriate location on your hard disk (e.g., C:\eclipse).
- These instructions are written assuming that you are running eclipse from C:\eclipse; if you are using a different path, adjust accordingly.
- Once the unzipped (copied/ checked-out) files are located on your filesystem, get started using Eclipse:
 - Run Eclipse by running C:\eclipse\eclipse.exe

3. The first time you run Eclipse, you will be ready to identify a location for your Eclipse workspace. This is where local copies of your projects (files you check in and/or out of code repositories) will live on your file system. Do not create the workspace in a directory path that has spaces in it - i.e., **not** in the default C:\Documents and Settings\... directory presented by default on the first startup of Eclipse. Instead, it is recommended that your workspace be located at the root of your machine's hard disk

4. Apache Tomcat

- Apache Tomcat is an open source web server and [servlet container](#) developed by the [Apache Software Foundation](#) (ASF). Tomcat implements the and the [JavaServer Pages\(JSP\)](#) specifications from [Sun Microsystems](#), and

provides a "pure Java" HTTP web server environment for Java code to run in.

- In our project , we have used version 7.0.25 of Apache Tomcat.
- Some of the features of version 7.0.25 are :

- Support for Servlet 3.0, JSP 2.2 & EL 2.2
- requires Java 1.6.
- Web application memory leak detection and prevention
- Improved security for the Manager and Host Manager applications

9 Result

1) Hotel Website:

- When open website of self served food order then we see differed category of food and their menu description we see result in fig 9a. online food order and description of any menu item in fig 9b. food description as below :

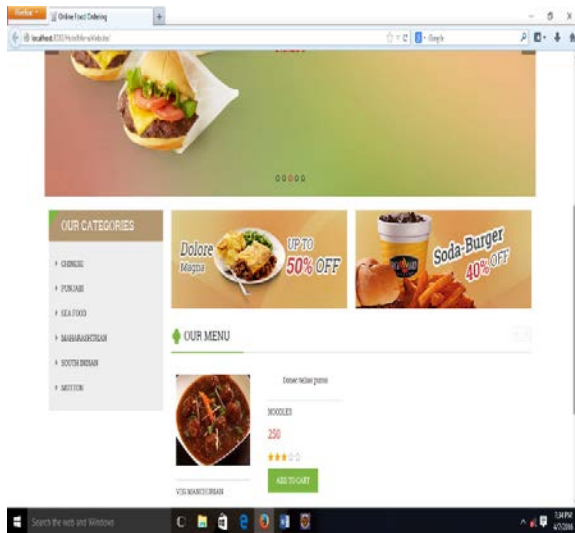


Fig 9a.:Online food order

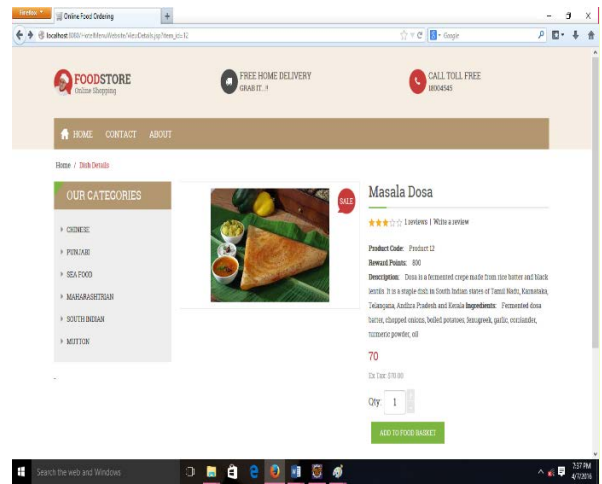


Fig 9b :Food Description

2.Android Application on Tablet :

- When customer enter in hotel he place the order through tablet provided on table and he easily get their order and also provide personal information .

- customer request for generate bill after confirm order fig shows below how customer place her order through android application:

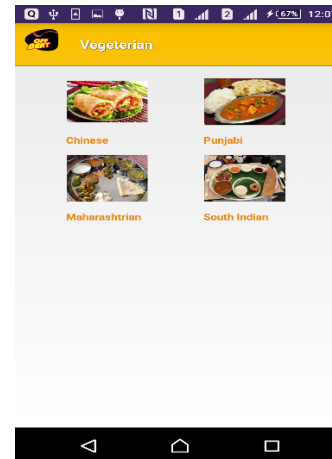


Fig 9c:Menu category

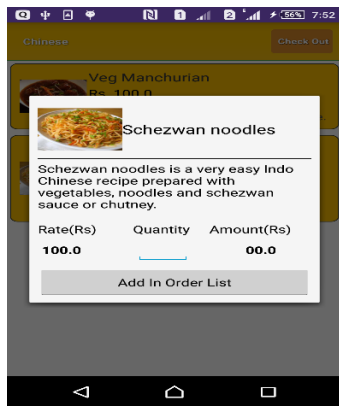


Fig 9d: Selected food

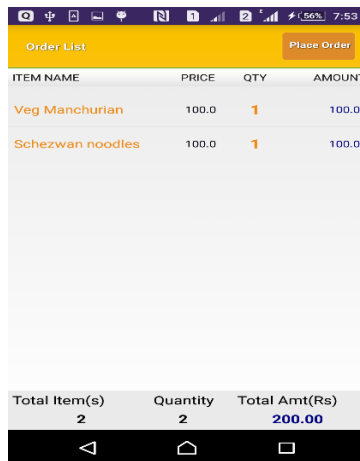


Fig 9e: selected item list

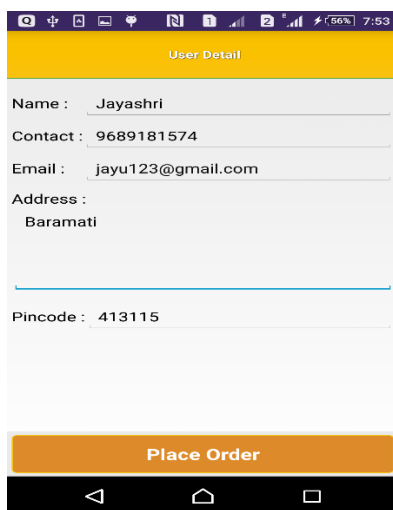


Fig 9f: User detail after placing order

10 Related Work

(a) Reference [1] PERSONAL DIGITAL ASISTANTS(PDA'S) BASED SYSTEM: A number of wireless systems like WOS, i-menu, FIWOS were developed when new technologies and approaches being introduced to automate the food ordering process. All the above systems were PDA- based. The feature of PDA systems

was that customers or waiters key in ordering process.

(b) Reference [2] Enabling Efficient Multi-Keyword Ranked Search

Over Encrypted Mobile Cloud Data Through Blind Storage Paper Based Menu Card: In mobile cloud computing, a fundamental application is to outsource the mobile data to external cloud servers for scalable data storage. The outsourced data, however, need to be encrypted due to the privacy and confidentiality concerns of their owner. This results in the distinguished difficulties on the accurate search over the encrypted mobile cloud data. To tackle this issue, we develop this arch able encryption for multikeyword

Ranked search over the storage data.

(c) Reference [3] ELECTRONICMENU CARD FOR RESTAURANTS

Paper Based Menu Cards: The traditional paper based system is one of the most extensively used systems worldwide. In this system all records are stored on paper. However, this system is plagued with various problems.

(d) Reference [4] Design and Implementation of Digital dining in Restaurants using Android Multitouch Technology: Multi-touch technology is an enhancement to the existing touch technology where users are allowed to control and perform operations simultaneously on the electronic visual displays using multiple fingers

or gesture inputs. Large displays such as from the tabletop and the wall-screen are deemed to be essentials when dealing with multiple users sharing the same display for information visualization purposes. It is reported that the social interaction is highly

11 CONCLUSION

The proposed system would attract customers and also adds to the efficiency of maintaining the restaurants ordering and billing sections. This system successfully over comes the drawbacks in earlier Personal Digital Assistant (PDA) based food ordering system and is less expensive and more effective than the multi-touchable restaurant management systems.

References

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