Canteen Automation System

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Abstract: *Nowadays people don't have much time to spend in canteen by just there and waiting for the waiter to take their order. Many customer visits the canteen in their lunch break and recess so they have limited time to eat and return to their respective office and colleges. So this software helps them to save time and order food whenever they want without calling the waiter again and again.*

Manual system involves paper work in the form of maintaining various files and manuals. Maintaining critical information in the files and manuals is full of risk and a tedious process. Including a framework showing how to apply Internet technology progressively as skills and confidence grow, the project demonstrates the route from adapting materials to developing an online environment.

This Canteen Automation System enables the end users to register online, read and select the food from e-menu card and order food online by just selecting the food that the user want to have using android application. The results after selecting the food from the E-menu card will directly appear in the screen near the Chef who is going to cook the food for you. The system is the combination of Android as well as Web Application.

Key Words: Canteen Automation, POS, Food ordering.

1.Introduction:

Computers have become part of the life for accessing almost any kind of information. Life in the 21st century is full of technological advancement and in this technological age it is very difficult for any organization to survive without utilizing technology. The World Wide Web contributes greatly to the creation of an ever-increasing global information database. It could also be used as a mechanism to share information within an enterprise.

In today's age of fast food and take-out, many canteen have chosen to focus on quick preparation and speedy delivery of orders rather than offering a rich dining experience. Until very recently, all of these delivery orders were placed to the waiters or over the phone, but there are many disadvantages to this system, including the inconvenience of the customer needing to have a physical copy of the menu, lack of a visual confirmation that the order was placed correctly, and the necessity for the canteen to have an employee answering the phone and taking orders. What, we propose is a Canteen Automation System, which is a technique of ordering foods online applicable in any food delivery industry. The main advantage of this system is that it greatly simplifies the ordering process for both the customer and the canteen. When the customer visits the ordering webpage, they are presented with an interactive and up-to-date menu, complete with all available options and dynamically adjusting prices based on the selected options. After making a selection, the item is then added to their order, which the customer can review the details of at any time before checking out.

This provides instant visual confirmation of what was selected and ensures that items in the order are, in fact, what was intended.

This system also greatly lightens the load on the canteen's end, as the entire process of taking orders is automated. Once an order is placed on the webpage, it is entered into the database and then retrieved, in pretty much real-time, by a desktop application on the canteen's end. Within this application, all items in the order are displayed, along with their corresponding options and delivery details, in a concise and easy to read manner. This allows canteen employees to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion.

2. The Objectives of this project is:

    I.   To order food rapidly

    II.   To make it convenient for people who have limited time

    III.   Cost reduction

    IV.   Reduced paper work

    V.   Computerized Oder and billing system

3. Types of Users:

    1. **Admin Login**

- Take Order
- Bill Print
- Add/ Remove Food Items
- Add Offers

- Update Inventory

- Order Forecasting (Predict Items Most Frequently During Specific Hours)

- Sales for each day and month

- Sales of individual item for the day
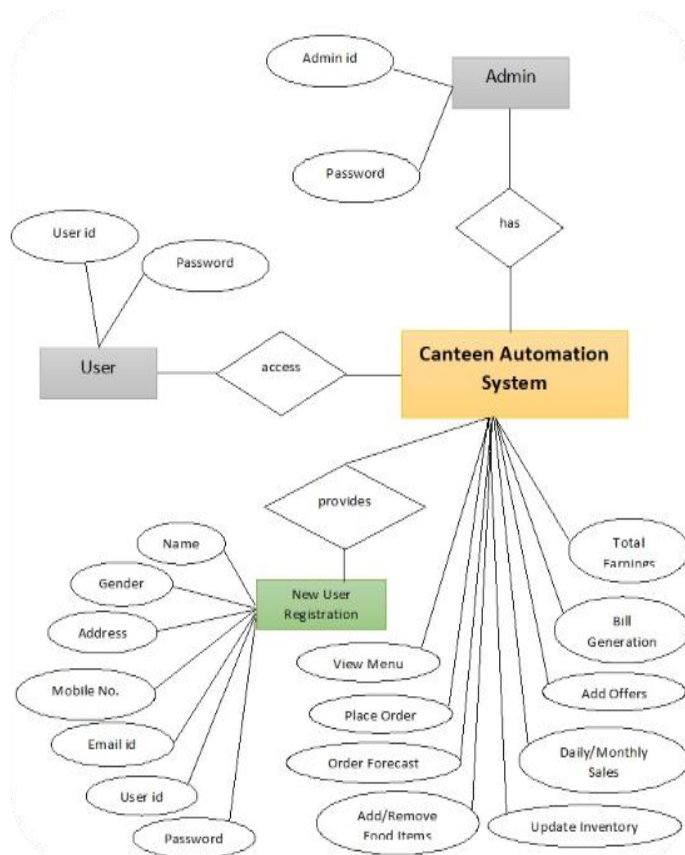
- Total Earnings

2. **Staff Login**
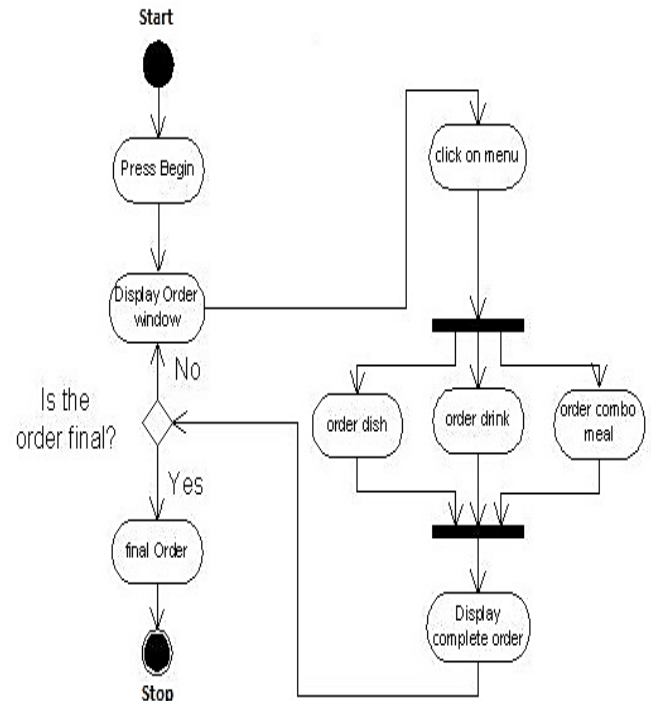
- Order placed by Customer

- Offer

- Order Forecasting

3. **User Login**

- Menu Items

- Place an Order

- Combo Box Selection

- Bill Payment

4. E-R Diagram of system:

5. Activity Diagram for system:

6. Hardware Requirement:

I. i3 Processor Based Computer or higher
II. Memory: 1 GB RAM
III. Hard Drive: 50 GB
IV. Internet Connection

7. Software Requirement:

I. Windows 7 or higher

II. Android Development Toolkit(ADT)

III. Visual Studio 2010

IV. SQL Server 2008

V. Android 4.0 or higher

8. Advantages:

I. Completely automated online ordering of food in a canteen.

II. Order can be placed using personal android phones.

III. Food ordering pages that look and feel exactly the same as the existing restaurant website.

IV. User can also order a Special Combo Box which contains multiple food items.

V. Food ordering pages hosted on secure and special server so no risk of customers getting redirected to servers where competitors' websites are listed.

VI.   Developed using the latest website programming protocols for minimum server loads and ultra-fast loading and processing.

VII.   Simple user-interface Admin Panel for creation and configuration of menu groups, menu items, etc.

VIII.   Built-in facility to set modifiers on different menu items

IX.   Facility to create modifier groups, individual modifier items and assign modifier items into different groups

X.   Single and individual Admin Panel and login for each Canteen

XI.   Detailed summary of orders placed with option to search orders, update order status, print orders, etc.

XII.   Various reports to view total sales, details of registered members with facility to print report.

9. Disadvantages:

I.   Requires an active internet connection.

II.   Requires Android phone if user is ordering.

10.Applications:

This system can also be used in Restaurants, Cafeteria, Etc.

11.Features:

11.1 Load Balancing:

Since the system will be available only the admin logs in the amount of load on server will be limited to time period of admin access.

11.2 Easy Accessibility:

Records can be easily accessed and store and other information respectively.

11.3 User Friendly:

The web application will be giving a very user friendly approach for all user.

11.4 Efficient and reliable:

Maintaining the all secured and database on the server which will be accessible according the user requirement without any maintenance cost will be a very efficient as compared to storing all the customer data on the spreadsheet or in physically in the record books.

11.5 Easy maintenance:

Canteen Automation System is design as easy way. So maintenance is also easy.

12. Conclusion:

The development of Canteen Automation system involved many phases. The approach used is a top-down one concentrating on what first, then how and moving to successive levels of details.

The first phase started with a detailed study of the problems and prospects of ordering in Foods. In the course of this study, many problems were discovered to have hindered the effectiveness of the existing manual system. These problems, information needs and activities were documented and later used as the basis for system design, which immediately followed the first phase. The design phase was concerned primarily with the specification of the system elements in manner that best met the organization's business needs.

During this phase, strict adherence was made on proven software engineering principles and practices. To implement this design, a computer program was then written and tested in Visual Studio .Net environment.

It is hoped that effective implementation of this software product would eliminate many problems discovered during systems investigation.

References:

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[3]   http://www.asp.net/: This is the official Microsoft ASP.NET web site. It has a lot of: tutorials, training videos, and sample projects.

[4]   http://www.isr.umd.edu/Courses/BARAS-ENSE623/secured/Class%20Handouts/Trade-Off-1.pdf