RESTROFUN: 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 canteen staff to take their food order. Many customers visit the canteen in their lunch break so they have limited time to order, eat and return to their respective office and colleges. So this application helps them to save time and order food whenever they want without calling the waiter again and again. The present manual system involves paper-work in the form of maintaining various files and receipts. Maintaining crucial data in the files and receipts is full of risk, messy and a tedious process. Including a framework which shows how to apply Internet technology progressively as skills and confidence grow, this project demonstrates the route from adapting materials to developing an online environment.[9] This Application 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 wants to have used 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. [4].

Keywords: Canteen Automation, POS, Food Order

I. INTRODUCTION
Computers have become part of life for accessing almost any kind of information. Life in this century is full of technological advancement. The WWW contributes greatly to the creation of an ever-increasing global information database and technological growth. It could also be used as a method to share data within an enterprise.

In today’s age of junk food and take-out, many canteens have chosen to focus on quick preparation and speedy delivery of orders rather than offering a rich dining experience to the customers. [12] Until very recently, all of these orders were placed to the canteen staff or over the phone, but there are many disadvantages to this system, including the inconvenience of the customer needs to have a physical copy of the menu, lack of a visual confirmation that the order was placed correctly, receipt assurance and the necessity for the canteen to have an employee answering the phone and taking orders. [13] What, we propose is a Canteen Automation System, which is a mobile application. It is a technique of ordering foods online applicable in any food delivery industry basically for canteens in colleges and schools. The main advantage of this system is that it positively simplifies the ordering process for both the customer and the canteen staff. When the customer visits the ordering page in the application after logging in, 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. [11] After making a selection, the item is then added to their cart order, which the customer can review the details of at any time before checking out as same as any ordering application. This provides instant visual confirmation of what was selected, with the confirmation of canteen staff also and ensures that items in the order are, in fact, what was intended.

This system also lightens the load on the canteen’s end, as the entire process of taking orders, making receipts, etc. is automated. Once an order is placed on the page of the application, it is entered into the database and then retrieved in the page of admin of canteen, in pretty much real-time. Within this mobile application, all items in the order are displayed, along with their corresponding options, prices, quantities and delivery details, in a concise, proper and easy to read manner. This allows canteen staff and employees to quickly go through the orders as they are placed and produce the necessary items with minimal delay and confusion. [4]

II. OBJECTIVES
1) To order food rapidly.
2) To make it convenient for users who have less time.
3) Cost Reduction
4) Computerized Orders and billing system.

III. TYPES OF USERS

A. Admin Login
- Take Order
- Print Bill
- Add/Remove Items
- Add/Remove Users
- Add Offers
- Update Inventory
- Order Forecasting
- Sales for each day and month
- Sales of an individual item for the day
- Total Earnings
- Order placed by Customers

B. User Login
- Menu Items
- Place an Order
- Combo Box Selection
- Bill Payment

IV. HARDWARE REQUIREMENT
- Smartphone with Internet Connectivity
- Location-Enabled
- i3 Processor-Based Computer or higher
- Memory: 4GB RAM or more
- Hard Drive: 50 GB

V. SOFTWARE REQUIREMENT
- Android Development Toolkit(ADT)
- Visual Studio 2010
- SQL Server 2008
- Android 4.0 or higher
VI. E-R DIAGRAM OF SYSTEM

VII. ACTIVITY DIAGRAM OF SYSTEM

VIII. ADVANTAGES
- Completely automated online ordering of food in a canteen using a mobile application.
- The Order can be placed using personal android phones.
- Food ordering pages and other pages that look and feel exactly the same as the existing restaurant website and other trending mobile application.
- The User can also order a Special Combo Box which contains multiple food items.
- Food ordering pages hosted on a secure and special server so no risk of customers getting redirected to servers where competitors' websites are listed.
- Developed using the latest android programming protocols for server loads and ultra-fast loading and processing.
- Simple user interfaces Admin Panel for creation and configuration of menu groups, menu items, etc.
- Built-in facility to set modifiers on different menu items and users.
- Facility to create modifier groups, individual modifier items and assign modifier items into different groups (categories).
- Single and individual Admin Panel and login for each canteen. [10]
- The detailed summary of orders placed with the option to search orders, update order status, print orders, etc.
- Various reports to view total sales, details of registered members with the facility to print the report.

IX. DISADVANTAGES
- Requires an active internet connection.
- Requires Android phone if the user is ordering.

X. APPLICATIONS
This system can also be used in College and Schools Canteens, Restaurants, Cafeteria, Etc.

XI. FEATURES
A. Load Balancing:
Since the system will be available only the admin logs in the amount of load on the server will be limited to the time period of admin access.
B. Easy Accessibility:
Records and receipts can be easily accessed and store and other information respectively.
C. User-Friendly:
The web application will be giving a very user-friendly approach for all users.
D. 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 and files.
E. Easy maintenance:
Canteen Automation System is design as easy way. So maintenance is also easy.

XII. CONCLUSION
The development of Canteen Automation System, Mobile Application 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 organisation’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