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Canteen Automation System Using Android

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Abstract: *Smart Canteen project, a method for ordering food items online, applicable to any canteen industry. The key benefit of this technique is that it makes the ordering procedure much easier for both the customer and the canteen staff. When a consumer uses the ordering application, it is interactive and features an up-to-date menu with all available options that is dynamically priced based on the options selected. The item will be added to the order after selection, and the consumer can confirm these details at any time before checking out using the Android app. This system too significantly relaxes the cafeteria and relaxes the entire order reception Automation. When customer's order is confirmed through the android application, it is updated in the database of server and can be retrieved in near real time from the canteen android application end. In the application itself, all items in the order will be displayed along with the item details. Related order options and delivery details, short and easy to understand. The cafeteria staff can process the order as soon as it is placed and can track their records if needed.*

I. INTRODUCTION

Many organizational canteens have made their choice to emphasis on today's age of automation in the canteen, swift order preparation and delivery is essential. All orders were delivered over the phone until recently, but this system has several disadvantages, includes the hassle of requiring a tangible copy of the menu, the absence of visible assurance that purchase orders were placed successfully, and the need for a cafeteria employee to verify the phone and take orders.

An App-based ordering mechanism 's key benefit is, it simplifies both the customer's and the canteen's ordering processes. When a consumer uses the application, they are given an interactive and over-to-date menu that lists all available druthers and stoutly adjusts charges grounded to their choices. After selecting an item and adding it to their cart, before checking out, the consumer has the option to review it anytime. This gives you immediate confirmation via sight of your choice.

This method significantly reduces the workload at the canteen due to the fact that the complete order-taking procedure is online. Once customer's order is confirmed on app, it gets updated into a database and an android app is used to get the information on the cafeteria's end real-time conclusion. Within this program, all of the items in the orders that have been placed, as well as their related options and payment details, are displayed in compact and easy-to-understand way. This will allow cafeteria staff to take the orders as soon as possible and make what is needed with the least amount of delay and confusion.

- 1) **Advantages:** By removing the need to manually take food orders over the phone, Canteen Automation System saves time at the canteen. The canteen's cost effectiveness and productivity improve while requiring less workers by automating the ordering process. It also puts you ahead of your rivals who don't offer online service. It enables canteen administration to easily change the menu, pricing, and other information while still keeping in touch with customers. People nowadays are so preoccupied with their jobs that having the organizational Canteen Automation System available online saves customers time without a doubt. Allowing people to buy food online using a platform for flexible ordering and serving them on time is the goal. Customers can choose meals from online menu items on the canteen application and place orders based on their preferences. In fact, customers can order food while staying within their financial constraints by adding or eliminating food items based on price changes. This Canteen Automation System is beneficial to both the traditional canteens and the customers because it saves time for both the canteen personnel and the customers, as well as manpower.
- 2) **Disadvantages**
 - a) If neither the canteen owner nor the customer has access to the internet, the order will not be fulfilled, and the owner will be unable to receive orders.
 - b) The customer receives no notifications or messages.

A. Existing System

Canteen Automation System's current approach is a method of ordering meals that employs a variety of techniques. We can order food using a web-based application; we must first find and order the food by searching for it on a specific web page of that canteen system; then we must go to the canteen and pay; and finally, the food that we have ordered will be delivered to the customer. It is a more time-consuming and complex system, but we can order food using a web-based application. We may order food, make payments online, and collect food immediately from the canteen using an Android application.

B. Proposed System

People nowadays don't have a lot of time to sit in a cafeteria and wait for the canteen administration to take their order. Clients come to the canteen during the breaks or recess, so they only have a limited amount of time to have food before returning to offices or institutions. As a result, this technology allows users to conserve waiting time and ordering food anytime they want to without having to call the waiter. Automated Canteen System is a system in which consumers order food and collect it without delay in the cafeteria, since they can go straight to the counter and take what they requested without having to wait in line or for a turn. This strategy aims to improve the speed with which staff receive client orders and the customer order system. The system's objective is to create and implement a simple Automated Canteen that will subsequently be used in android-app.

The proposed "Canteen Automation System using Android" is possible from a financial standpoint because:

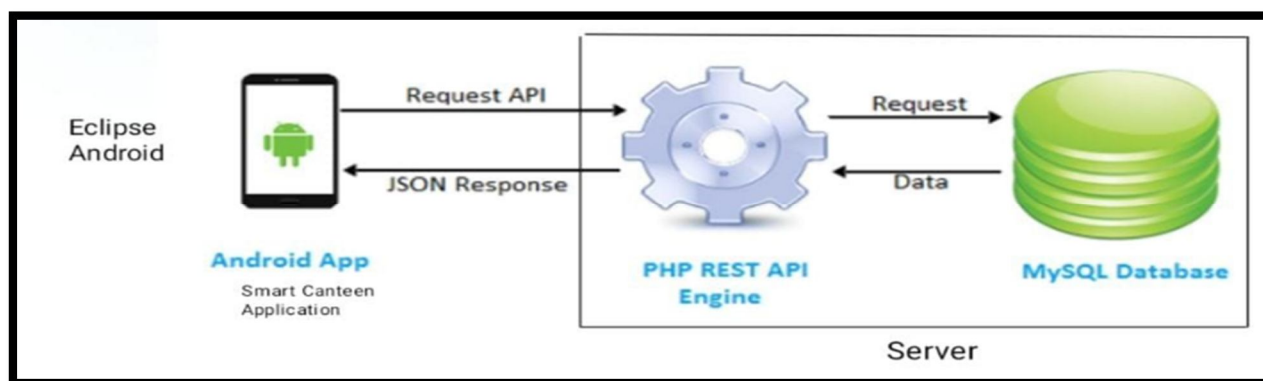
The technique demands significantly less time considerations than a manual system. Rather than time-consuming and error-prone homemade process, the system will deliver a quick and effective terrain, saving both time and labour. A graphical user interface will be included in the system.

II. DESIGN OF THE SYSTEM

A. System Design

System design refers to the process of developing a system's architecture, components, modules, interfaces, and data to satisfy specific requirements. In a word, it is when systems theory is applied to product development. Object-oriented design and analysis processes are progressively gaining popularity as the most frequent methodology for designing computer systems.

B. Architectural Design



III. METHODOLOGY

A. Implementation

Modules

- 1) *Admin Module*: Used to keep track of the canteen's information.
- 2) *Canteen Record Module*: Used to keep track of the canteen's details.
- 3) *Bill Module*: Used to keep track of the details of bill.
- 4) *Meals Module*: Used to keep track of the meals details.
- 5) *Payment Module*: Used to keep track of the payment information.
- 6) *Login Module*: Used to keep track of the login details.
- 7) *User Module*: Used to keep track of the users of the system.

B. Overview Technology

We are all familiar with mobile phones these days, with their potential to link people, as well as their usefulness and flexibility, which makes life easier in any new location. In the corner, user pleasure is the most important factor to consider. As a result, we had to design a project that best suited the surroundings and used well-known and simple-to-use technologies.

C. About Android

Android is the popular smartphone OS in the world. Our product was built on the Android platform, which is open source. We chose Android because we are developing a mobile app and it is well known that Android is the popular smartphone OS worldwide. Android's best feature is its graphical user interface. On-screen elements are controlled via touch controls that loosely simulate real-world movements such as swiping, tapping, as well as a virtual keyboard, in the default user interface for Android. The device is designed to respond to human input instantly, with a fluid touch interface that frequently employs the smartphone's vibrating capabilities to provide haptic feedback to the user.

D. Application Framework

By providing an open development environment, Android allows developers to create highly complex and distinctive applications. The framework APIs are the same as those used by the core apps are available to developers. Any application can publish its capabilities, which can later be used by other apps, thanks to the application architecture (security constraints enforced by the framework). Components can be changed by the user using the same technique.

All apps are supported by a variety of services and systems, including:

- 1) Lists, grids, text boxes, buttons, and even an embeddable web browser are among the Views that may be used to develop an application.
- 2) Applications can use Content Providers to obtain data from other apps (such as Contacts) or to provide their own data.
- 3) A Resource Manager allows you access to non-code resources such as translated text, images, and layout files.
- 4) All apps may show personalized notifications in the status bar thanks to a Notification Manager.
- 5) An activity manager that governs the lifecycle of program and a universal navigation back stack.

E. About MySQL

Modern websites appear to be increasingly reliant on complicated databases. These databases keep all their vital data and, in some situations, makes it easy to maintain. The Structured Query Language (SQL) is a widely used DB language, for data storage, updating, and retrieval a breeze. MySQL is most powerful SQL servers available, and it's also completely free. MySQL has a number of features, including: Handles big databases with over 50 million records. There are no memory leaks. A safe and versatile privilege and is password secured that supports host-based verification. Passwords make the connection secured because the connection is encrypted.

F. Eclipse IDE

Eclipse 3.6 (Helios) or above is required.

Note that the newest version of ADT does not support Eclipse 3.5.

- JDT plug-in for Eclipse (included in most Eclipse IDE).
- You can get Eclipse at <http://www.eclipse.org/downloads/> if you need to install or update it.
- For each platform, there are several sorts of Eclipse packages.

The recommended packages for developing Android applications:

Eclipse IDE for Java Developers

Eclipse Classic

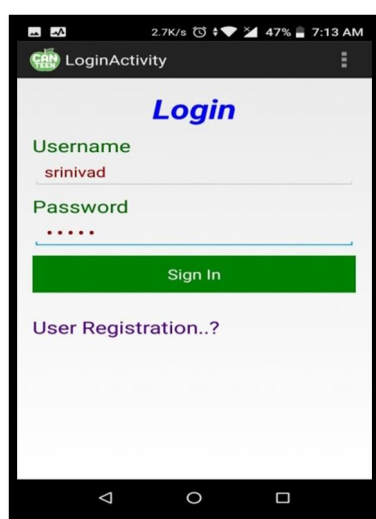
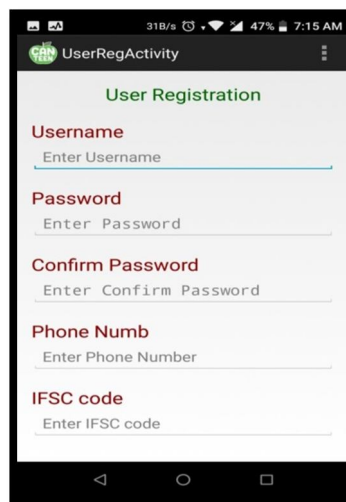
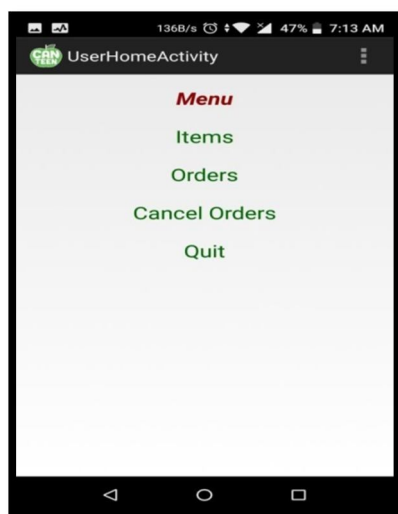
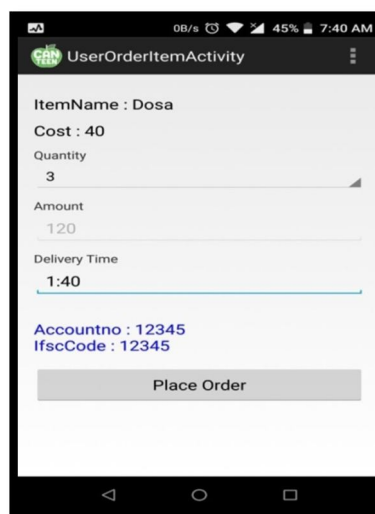
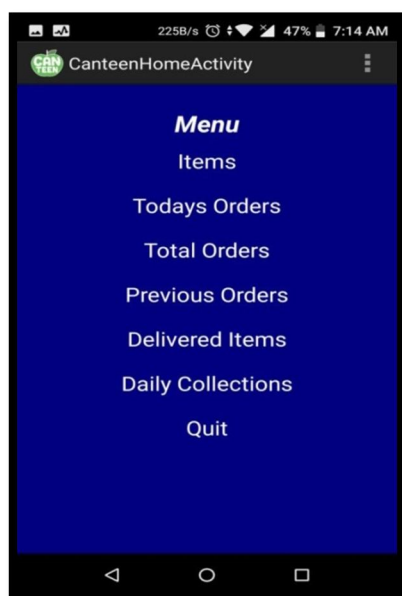
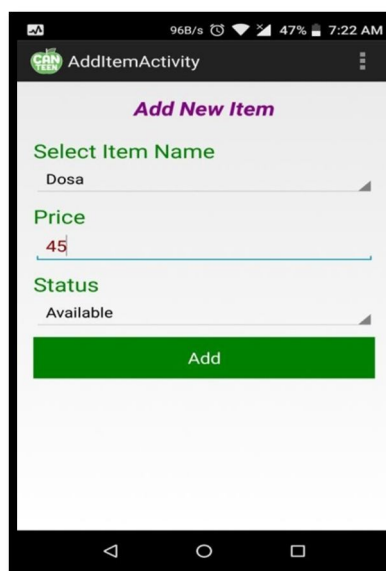
Eclipse IDE for Java EE Developers

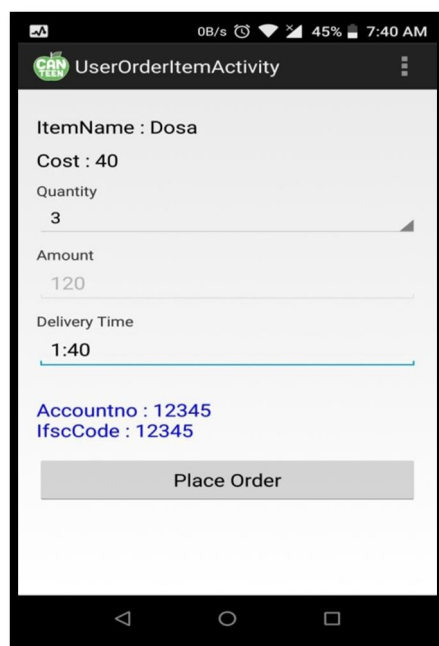
- JDK 5 or JDK 6 (Java Development Kit) (JRE alone is not sufficient)
- Plug-in for ADTs (recommended)

Other IDEs or development environments -

- JDK 5 or JDK 6 (Java Development Kit) (JRE alone is not sufficient)
- Apache Ant 1.8 or later is required.
- Gnu Compiler for Java is not compatible (gcj).

IV. RESULTS



V. CONCLUSION AND FUTURE SCOPE

Our project is only a side project to meet project management requirements. There are also a number of user-friendly coding methods in use. This bundle will cover all of the needs of the campus canteen fairly effectively. At the start of a software project, the purpose of software planning is to construct a framework that allows administrators to generate reasonable estimates in a short amount of time, and it should be updated on a regular basis as the project progresses. A synopsis of the project's background and context, as well as its relationship to past fieldwork. The system's requirement requirements, as well as the actions that can be made in response to them, are described. We go over all of the features and procedures in great depth, including screen layouts. Finally, the system is installed and thoroughly evaluated with test cases.

In a nutshell, the project's future scope is around the upkeep of data related to:

- We can add more online payment methods.

- 1) For the Canteen Automation System, we can provide more powerful software as well as additional functionality.
- 2) The platform will be hosted on the internet and accessible from anywhere in the world.
- 3) Distribute the system's loads across many load balancers.
- 4) To reduce database query overload, create a master and slave database structure.
- 5) Create a backup system that will take regular backups of the codebase and database across several servers.

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