Smartphone based automated food ordering system in universities and colleges

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Abstract: **The purpose of this project is to provide a cloud based system that will be used to introduce all the information regarding the prevailing canteens in a certain university or colleges on their smart phones. The Admin will have the ability to add information about food item such as name, price, detail etc. Cashier can place order and receives payment from customer. Customer can view his ordered items in the cart and can also pay online.**

Keywords- Automated food ordering system, Smartphone, Firebase, Android

I. INTRODUCTION

Android app of canteen food ordering system will be a modern and interactive way to order food. As per the latest survey, it has been found that there are now 3.5 billion Android phones being activated [1]. Thus, the increasing diversion towards android phones brings up the need of android app for our canteen. Already many popular food ordering systems are there but the idea behind this project is to implement online food ordering system in universities and colleges [5].

It has been observed that a lot of time of students get wasted while going to a canteen, then ordering the food and then waiting for the delivery of their order [2]. Sometimes, students are short of time and fail to eat at canteen due to continuous classes. By using this system, students' time can be saved. They can order food online and order can be delivered to their location. Also many students live in hostel, they can also order food online of their choices. Since there are many online food ordering apps but their entry in educational institutions is restricted so to eliminate this restriction, this project can be implemented within an institution and in the app only it will show the canteens of their own institute only

II. PROPOSED SYSTEM

. The Android app of Canteen Food Ordering System, which we intend to develop, would be a cloud based app. It will support multiple customers, where customers will be able to view information of canteen food items, their orders and get sms on phone after placing order [4]. It will be having a user friendly interactive interface which will help the students in easy and quick ordering of the food, enabling restaurants and hotels to improve business and customer services. The app once installed on the phone will connect them to the canteen. They can view price of food items, order food and pay on their mobile. Having this app in mobile phones, will keep them updated about the food items in canteen and price of those food items.
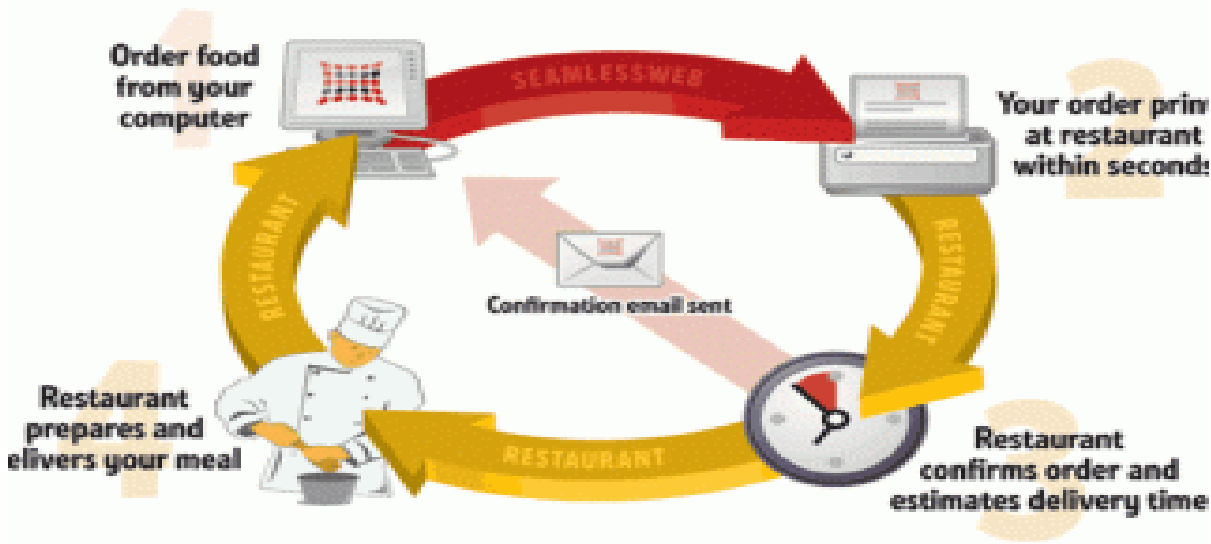
III. ADVANTAGES OF PROPOSED SYSTEM

1. In today's world, while ordering offline, there are chances of mistake. A misunderstanding occurs or a waiter takes down the wrong order. This results in the angry customers, wasted food, and disappointed manager. With online orders, the customer makes everything clear on their end.
2. Simple front-end UI (user interface) allows students to easily order their food.
3. Online ordering allows students to order food at canteen using their mobiles, tablets or other handheld devices.
4. The traditional, canteen management system was cumbersome and offered no guarantee of accuracy. On the other hand, this app, using real-time data from cloud, offers better service. It is smart and hassle-free and also allows you to order food easily.
5. It offers simple interface for canteen owner for adding food items, price and description. Also the owner can view detail of active orders. Thus the Canteen owner is having proper order summary and sales report.

## IV. INTERFACE DESIGN
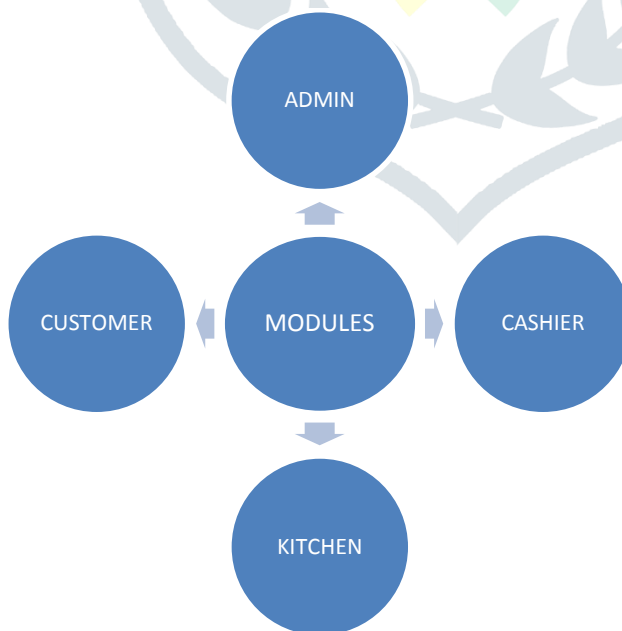
a) **ADMIN INTERFACE FOR CANTEEN OWNER**:

1. *Main screen*: It will be the first screen that will be visible to user while using the app after its installation i.e. a kind of welcome page.

2. *Change/Recover Password*: This option will allow admin to change or recover password.

3. *Managing Cuisines/categories Module***:** It will provide an interface to add various cuisines according to which the menu is divided into sections. Admin will be able to add, edit and delete cuisines.

4. *Managing food items module*: Once cuisines are added, food items can be added under them using this module. Admin will be able to add information about food item such as name, price, detail etc.

5. *View reviews*: Admin will view all the added reviews through this option.

6. *Manage orders*: Admin will view all the placed orders in this section.
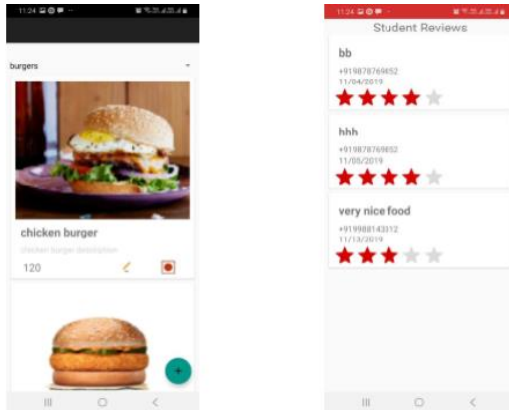
b) **CASHIER INTERFACE**:

1. *Login Module*: Cashier will enter username and password to login into this module.

2. *Change/Recover Password*: This option will allow admin to change or recover password.

3. *Place Order Module*: Cashier will place order by entering mobile number of customer and then selecting food items and their quantity. After placing order, a sms confirmation will be sent.

4. *View Orders*: Cashier will view current orders and edit them.

5. *Print Bill* This option will be used to print the bill after placing order.

6. *Receive Payment*: This option will be used to receive Payment from customer.
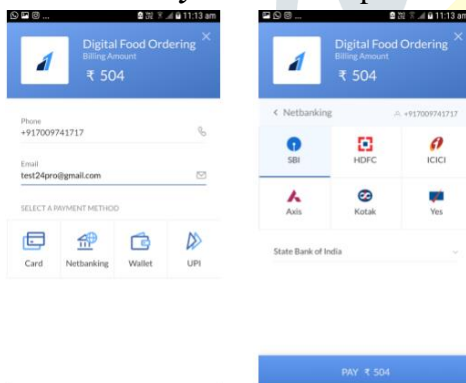
c) **CUSTOMER INTERFACE FOR STUDENTS**:

1. *View menu option*: User will view all items of menu under different categories in this module.

2. *Search Module*: To speed up the process of order, users will use search module to search food items by name.

3. *View details*: Full details of food item with price can be seen under this module.

4. *Place order module*: This module will allow to place the order after selecting food items and their quantity. After placing order, a sms confirmation will be sent.

5. *View Cart*: Customer will view his ordered items in cart. Customer can add and delete items in his order.

6. *Feedback Module*: Feedback Module will be used to add rating by users on food quality.

7. *Payment gateway*: After placing order, user can pay online through payment gateway.
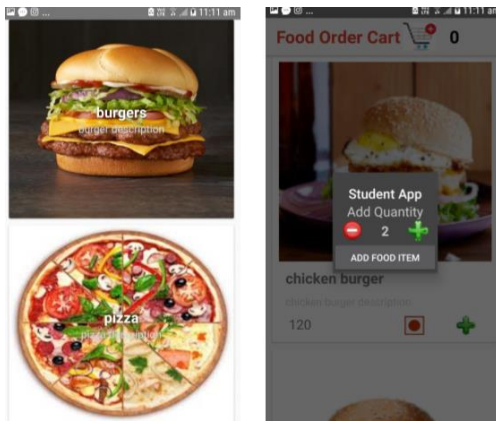
d) **KITCHEN INTERFACE**:

1. *KOT*: Kitchen order ticket will be automatically generated when the order is placed by the customer.
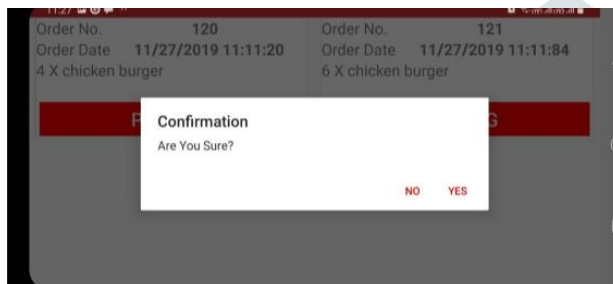
V. IMPLEMENTATION

Once the system has been design the next step is to implement the system. In order to carry out the implementation following hardware and software and information is required to be known:

1. There should be minimum two mobiles.
2. Internet Connectivity is must.

VI. RESOURCES NEEDED

a) *TECHNOLOGY TO BE USED*
   1. Java
   2. Android
   3. Firebase
b) *SOFTWARE REQUIREMENTS*
   1. Any Operating System (Windows, Linux, Mac).
   2. JDK 1.8 – This is java development kit.
   3. Android SDK 3.2 –Android SDK includes development tools, emulator and libraries required to build android applications.
   4. Android Studio – Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.[3]
   5. Java virtual machine: - It is an interpreter for java as the program become class file after development and to execute this we need JVM.
   6. Any Web Browser- It is required for connecting to firebase which is a google mobile platform.
c) *MINIMUM HARDWARE REQUIREMENTS*
   These are the system requirements from the website of Android Studio.
   The Android Emulator only supports 64-bit Windows.[3]
      1. Core i3 Processor or above.

2. 4 GB RAM or more.
3. Nearly 2GB of free disk space.
4. High Speed Internet Connection(DSL/Cable)
5. Android phone with version 7 or above.
6. 1280 x 800 minimum screen resolution.

VII. CONCLUSION AND FUTURE WORK

In this online food ordering system, further the following changes or enhancements can be done:

1. Depending upon the orders' history, orders can be combined or suggested using machine learning.
2. By using GPS technology, weather conditions of the remote area can be evaluated, thus using that information, suggestions of food items can be given to the user. Like if it is raining outside then suggestion for fritters can be made.

VIII. REFERENCES

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