Impact Factor (SJIF): 4.542

International Journal of Advance Research in Engineering, Science & Technology

e-ISSN: 2393-9877, p-ISSN: 2394-2444

Volume 4, Issue 6, June-2017

Automated Food Ordering System for mall using mobile app

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Abstract *— **Relating and taking into consideration of today's Mall systems, the concept of paper provides easy efficient and more reliable way to cope and deal with customer's needs. The idea works over the traditional system which takes too much time of customers and the situation of long queues and billing hassle. The systems an application .i.e. Android Application supported with Wi-Fi network, to facilitate communication between restaurants and their target customers for order management and billing. The system will improve the overall performance of the restaurants. To relatively reduce the time consumption of the systems the CFCMM model is used. Dynamically working of this system/application lets you utilize and save your time(users as well as owners) to serve you their valuable services with no stumbling blocks in between.***

Keywords- ***Mobile Computing, User Authentication, Android Application.Wireless Communication, m-commerce, Shopping cart, Food court management systems, sOnline payment systems.***

1. INTRODUCTION

The framework examined in this paper is for better administration of nourishment requests for the sustenance courts at shopping centers. The principle center of the framework is to spare client's time of requesting and charging. The point of the thought disclosed further is to annihilate disadvantages of the present line frame work utilized for nourishment requesting which prompts loss of profitable customer's time. The framework capacities by utilizing remote correspondence framework at the shopping center for associating eatery application and the versatile application which will be introduced on the clients handheld gadget like portable , PDAs .

Interfacing Food Courts in Mall utilizing Mobile App (CFCMM) which is a versatile application will make it workable for the clients to request sustenance online specifically shopping center. Besides, the rundown of sustenance thing along side the subtle elements of cost and depiction can be seen by the client. The client can utilize the truck choice to add things to the truck or expel things from the truck. This will empower the client to choose which things they need to request and think about menu cards of various sustenance courts. Once the request is put, the client will get the affirmation and can continue for the installment after which the client will get the affirmation message from the server .

Portable have turned out to be a piece of the life for getting to any sort of data. Life in the 21st century is brimming with innovative progression and in this mechanical age it is exceptionally troublesome for any association to make due without using innovation. The World Wide Web contributes incredibly to the formation of a continually expanding worldwide data database. It could likewise be utilized as a system to share data inside a venture.

In today's period of fast food and take-out, numerous eateries have concentrate don brisk arrangement and rapid conveyance of requests instead of offering a rich feasting knowledge. Until as of late, these conveyance requests were put via telephone, however there are numerous drawbacks to this framework, including the burden of the client needing a physical duplicate of the menu, absence of a visual affirmation that the request was set accurately, and the need for the eatery to have are presentative noting the telephone and taking orders. What I propose is an internet requesting framework, which is a procedure of requesting nourishments online pertinent in any sustenance conveyance industry. The primary favorable position of my framework is that it extraordinarily rearranges the requesting procedure for both the client and the eatery. At the point when the client visits the requesting site page, they are given an intelligent and up and coming menu, complete with every single accessible choice and powerfully altering costs in Light of the chose choices. Subsequent to making a determination, the thing is then added to their request, which the client can audit the points of interest of whenever before looking at. This gives moment visual affirmation of what was chosen and guarantees that things in the request are, indeed, what was intended.

2. EASE OF USE

2.1 Background implementation

In the busy schedule of life people used to visit malls on weekends. So there are some possibilities often occurs like crowd on same place. So waste of time, and some inconvenience people as well owners have to face. There is no such current system that enables you to choose the things to eat by sitting on the table at Malls. Time consumption and too much rush in queues.

2.2 Motivation

Maintaining Queues in Food malls from the busy schedules of people is little bit irritating. TO save time of people to service the products properly from the point of owners. More over to avoid the in consistent scheduling of buying and Purchasing this Projects gives better benefits . Interfacing Food Courts in Mall utilizing Mobile App (CFCMM) which is a versatile application will make it workable for the clients to request sustenance online specifically shopping center. Use of android system to ensure an easy, suitable service via wireless connection (just sitting on the single table in a particular mall environment).

3. SYSTEM ARCHITECTURE

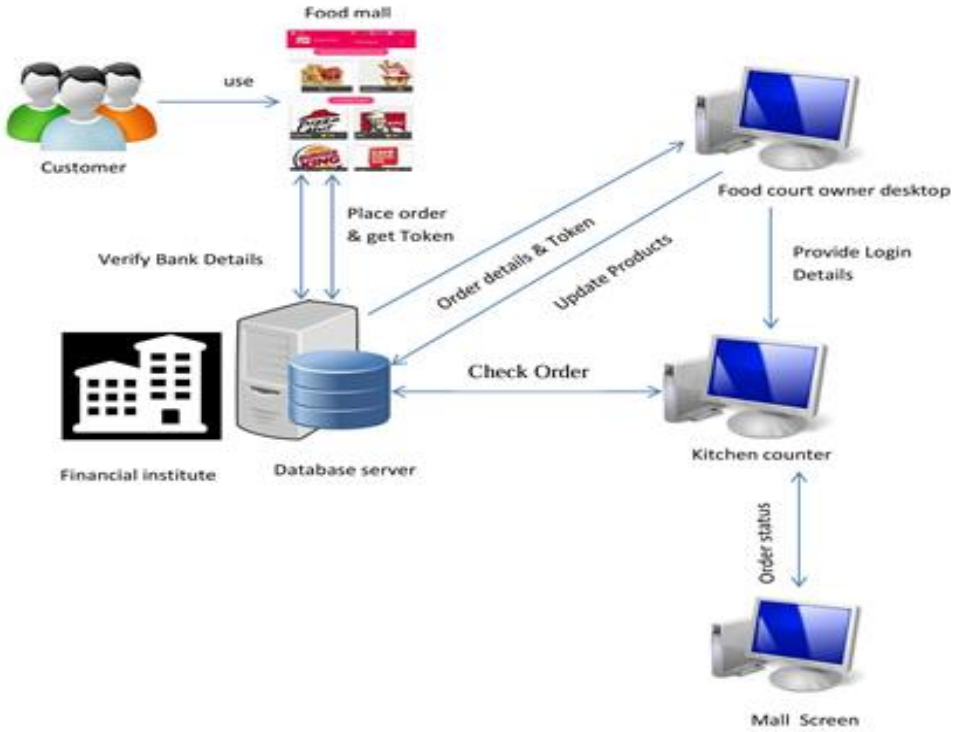


Figure 3.1. System Architectre

In the proposed system, we present some of the system description and which will provide a clear system overview. Firstly owner of the restaurant will create an admin login and logged into the admin system and insert a menu list which is available on the restaurant and also he can update the menu items into the system at every day. Every day he advertise the promotion strategies on to menu which is available. When the customer come to the mall then he/she can connected to the mall network after that customer has to login the various food systems which is available into to the mall. After the login customer can assign a unique identification number to access the ordered menu. In Order menu there are five types of recommendation can given which are newly added product, user mostly buy product in food mall(2), randomly generated product, mostly buy product by customer. This recommendation system will give the customer good choice of food from food mall which make customer happy which is very useful to both. This recommendation is very user friendly to customer. The customer information and menu choices and payment status are sent to the admin and kitchen system over wireless network. The admin and the kitchen staff will receive the ordered lists on their system from the customer system.

Kitchen system categories customer menu and started work on that. After compilation of the customer order kitchen system update the completion status in main admin system. The admin system can update the order status. The customer can thus view his order status on their Smartphone and enter feedback regarding restaurant service and services.

4. PROPOSED DESIGN

Step by step processing of food order

1. Initially, the user has to download the application on his/her android phone and install it.
2. When user launches the application, the first page displayed is for login. Registered user can login the application, unregistered users can register themselves, or user temporarily can skip the login process.
3. Various icons of food courts will appear. User clicks on one particular icon in order to view the menu.
4. Menu page is displayed once a food court is selected. User selects the food item using the "ADD" button.
5. User can select multiple food courts one after another for ordering multiple food items.
6. The next page will display all the items selected by the customer. User can delete selected food items at this stage too.
7. After finalizing the items, if user has logged in, the user can proceed for the payment, or user first needs to login or register.
8. Payment can be done through credit card, debit card or other payment gateway such as Paytm.
9. The payment details will be sent to the respective financial institute and the institute will authorize the user by sending an OTP to user's email address.
10. User will then use the OTP for authenticating himself/herself, and once user is authenticated the order is placed.
11. After the order is ready, a notification will be sent to the user through the app.
12. The user can then collect the food from the respective food counter in the food court.

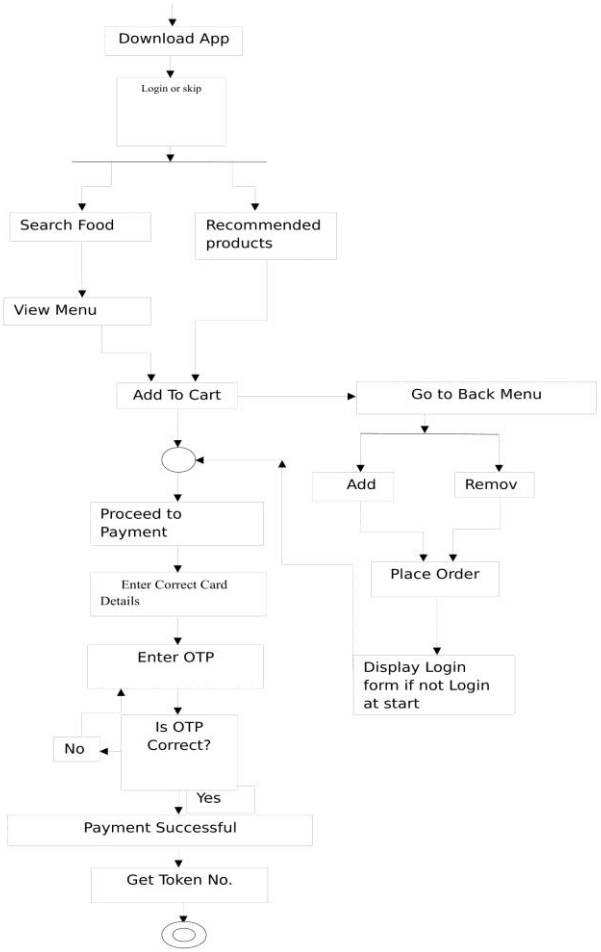


Figure 4.1. Control flow of proposed system

5. IMPLEMENTATION DETAILS

Firstly the owner of the restaurant will create admin login and logged into admin system and add the categories of the menu and insert the menu item for related categories into system every day. Every day he advertise the promotion strategies on to menu which is available. When the user come into mall he will connect to the mall network after that customer has to login the various food systems which is available into to the mall. After the login customer can assign a unique identification number(or Token no) to access the ordered menu. The customer information and menu choices and payment status are sent to the admin and kitchen system over wireless network. The admin and the kitchen staff will receive the ordered lists on their system from the customer system. Kitchen system categories customer menu and started work on that. After compilation of the customer order kitchen system update the completion status in main admin system. The admin system can update the order status. The customer can thus view his order status on their smart phone and enter feedback regarding restaurant service and services.

6. ALGORITHM

For implementing project we will use the two algorithms which are as follows:

6.1 Content-based filtering Algorithm:

Content-based sifting, likewise referred to as subjective separating, suggests things in view of a correlation between the substance of the items and a client profile. The content of every thing is represented to as an arrangement of descriptors or terms, ordinarily the words that happen in an archive. The client profile is spoken to with similar terms and developed by dissecting the content of things which have been seen by the client.

6.2 Collaborative filtering Algorithm:

Collaborative filtering, also referred to as social filtering, filters information by using the recommendations of other people. It is based on the idea that people who agreed in their evaluation of certain items in the past are likely to agree again in the future. A person who wants to see a movie for example, might ask for recommendations from friends. The recommendations of some friends who have similar interests are trusted more than recommendations from others. This information is used in the decision on which movie to see.

7. TECHNOLOGY OVERVIEW

7.1 Android Development Tools (ADT)

Android Development Tools is a platform that provides a framework to develop new interactive applications. With the help of this tool, new developer can build various applications in very efficient way.

7.2 Android

It is a mobile operating system based on Linux kernel. It is low cost, modifiable and readymade operating system which helps the user to develop applications at user level. Main advantage of this system is that it provides default user interface which helps for direct manipulation without any developer interference. It has various functions as ability to create applications, develop and publish new applications as per user expectations.

7.3 Microsoft Visual Studio 2012 (For Web Services):

It is an (IDE) from Microsoft. Visual Basic Express 2012 has lots of new features than earlier version of VB. It is useful to develop the computer program, web application, web sites, web pages, web services and mobile apps. It support for new project templates for building Metro UI apps for multiple devices.

7.4 Windows Server 2008 R2 (For Database):

The back end technology will be SQL server 2008 R2. It is a server operating system produced by Microsoft. It can supports up to 64 physical processors or up to 256 logical processors per system. SQL Server Management Studio is an

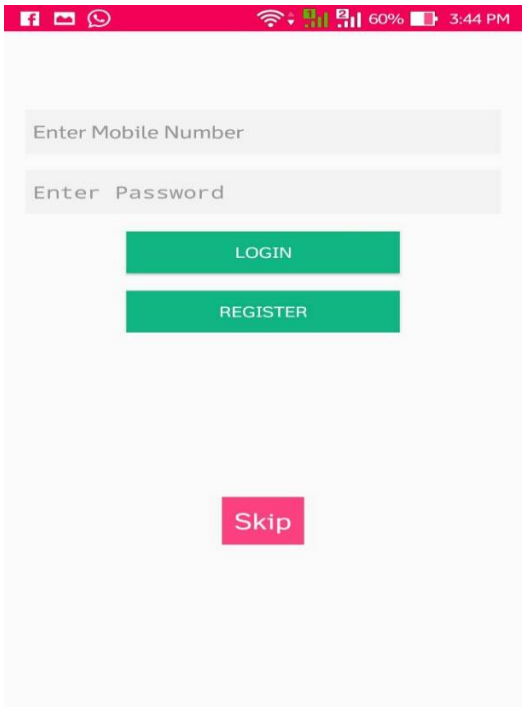
integrated environment for accessing, configuring, managing, and administering all components of SQL Server. Microsoft SQL Server 2008 R2 will provide support for geospatial visualization including mapping, routing, and custom shapes.SQL Server 2008 R2 provides lot many new features and capabilities for Business Intelligence users which can be leveraged by many organizations around the world.

8. MATHEMATICAL MODEL

Mathematical Model for Proposed System

- Let S be a system that describes user product choice S={}
- Identify input as IS = { I,..}Let I = { i1, i2, i3, ..id} The input will be product name and quantity.
- Identify output as O S = I,O, O = The receiver will receive the product name and quantity when he is authenticated.
- Identify the processes as PS = { I,O,P,..} P = {E,D}E = {parameter, product name, quantityg D=parameter, order no, e-token}
- Identify failure cases as FS = { I,O,P,F, .} F=Failure occurs when the data is accessed by an unauthorized user.
- Identify success as s. S = { I,O,P,F,s,} s = When data is accessed by authorized user.
- Identify the initial condition as Ic S= {I,O,P,F,s,Ic,} Ic=Mall network should always be online.

9. RESULTS



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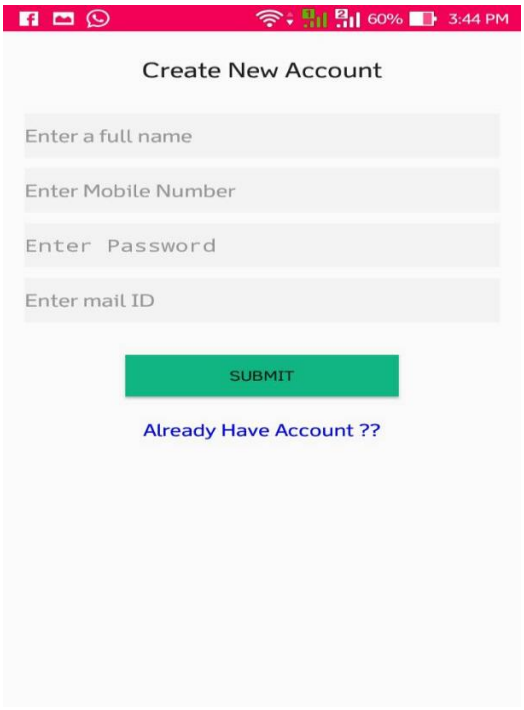

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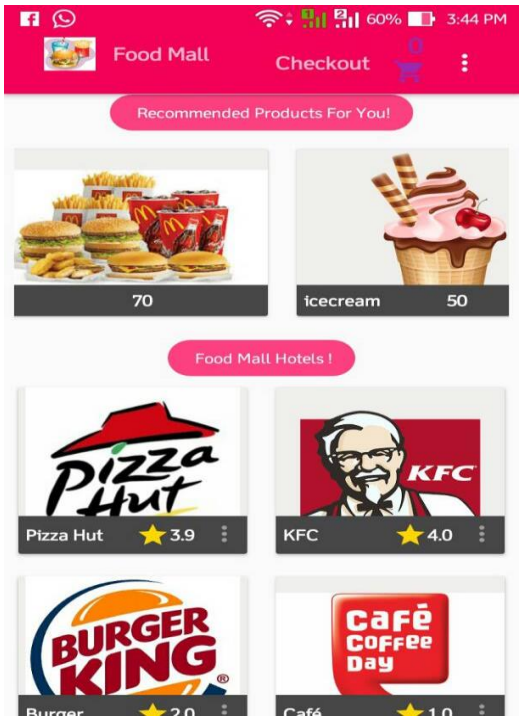

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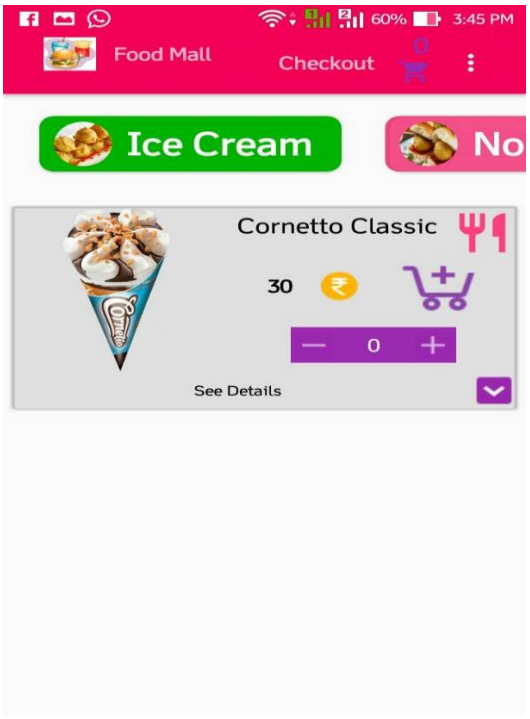

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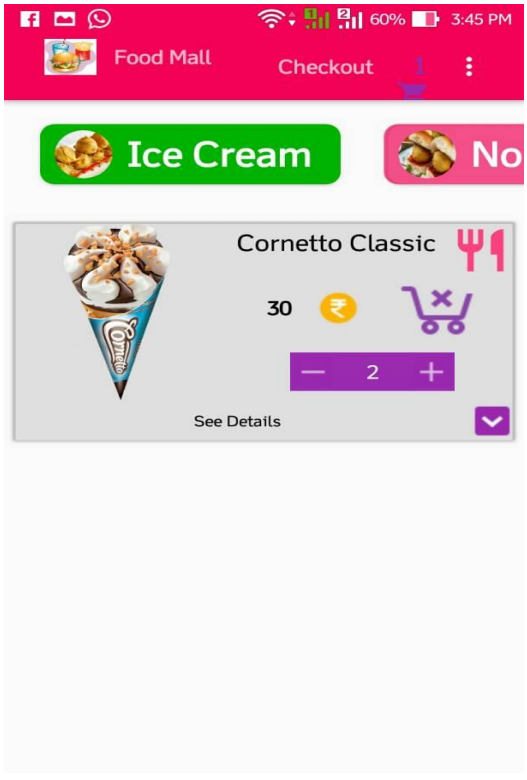

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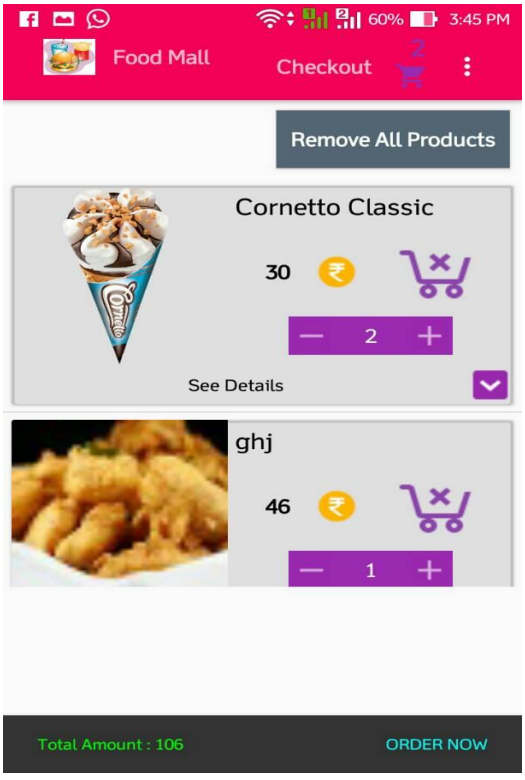

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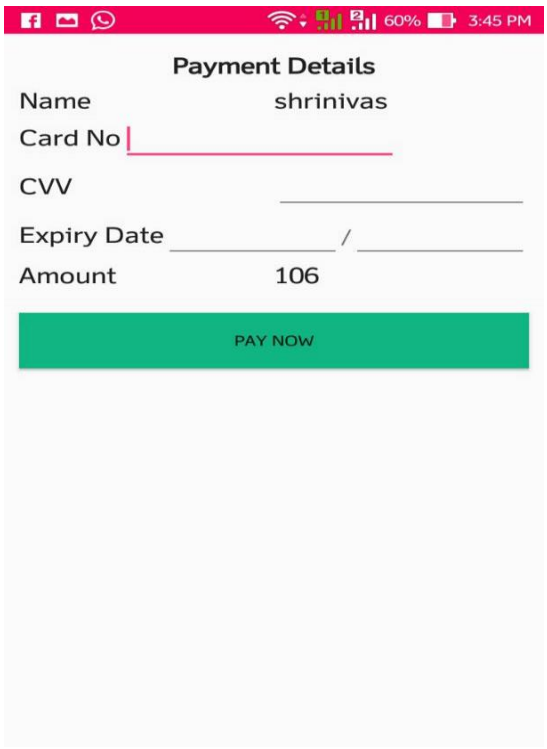

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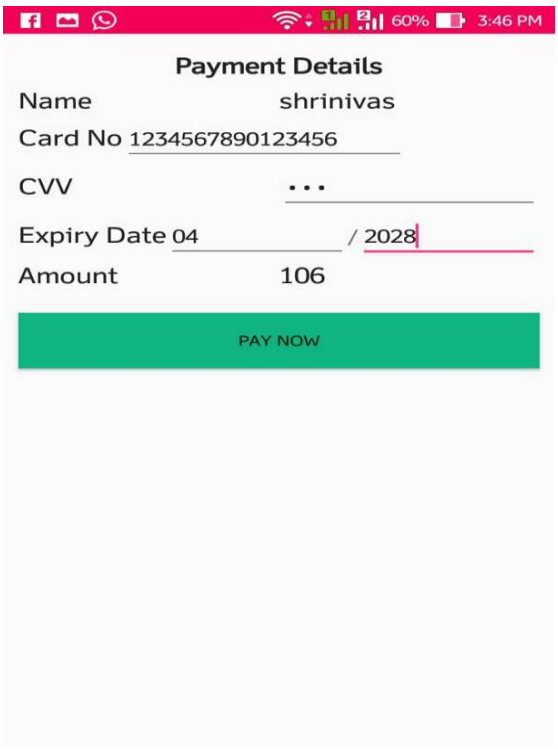

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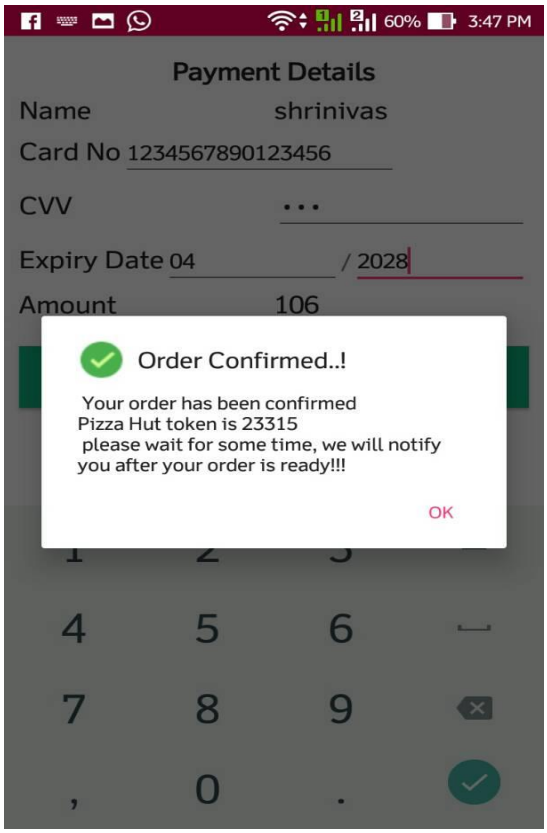

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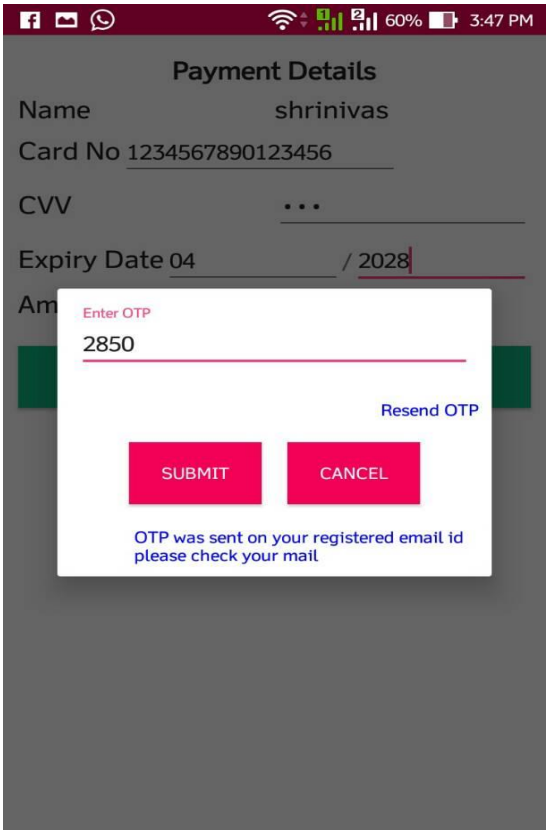

Figure 9.10

Figure 9.11

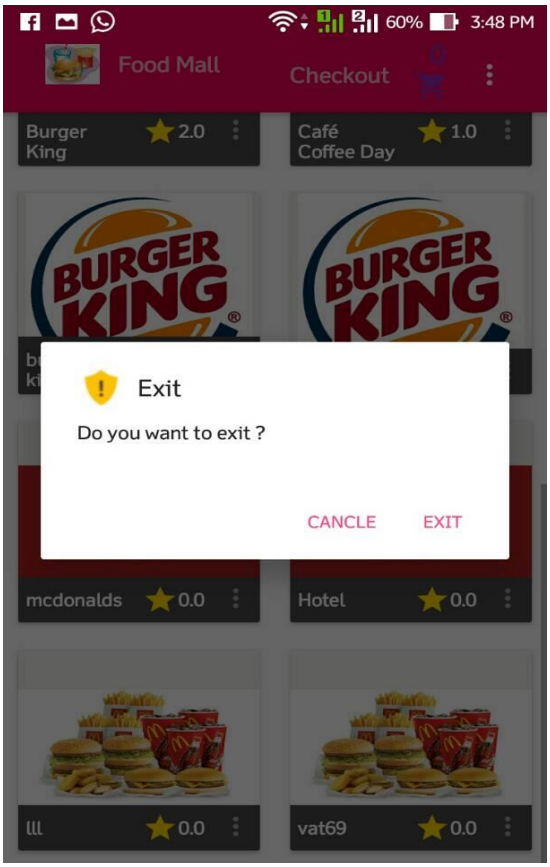

Figure 9.12

10. APPLICATION

Food Ordering System application. The app will essence good service and improves overall food court experience of customer making the poor order management process simple for the counters at the food court.

11. CONCLUSION

By utilizing remote correspondence and versatile application will empower effective requesting and installments framework to lessen lines at nourishment courts in shopping Centre. The framework. Examined in the paper will embodiment great administration and enhances general sustenance court experience of client making the poor request administration handle basic for the counters at the nourishment court. In this Project, we exhibit a robotized sustenance requesting framework with-continuous client input. This framework is advantageous, successful and simple along these lines enhancing the execution of eateries staff. It will likewise give nature of administration also, consumer loyalty. General conclusion is that, this is an astounding sustenance requesting framework for the eatery part, made by consolidating the Android and Wireless innovation. The framework can be further stretched out to enlist and connection numerous eateries to improve the eating background of clients.

12. FUTURE SCOPE

Food courts in shopping malls are a gastronomic destination for foodies alike, enabling the food and beverage industry to gain a competitive edge in the market. Gone are the days when shopping malls were considered as retail centers offering multitudes of retail shopping outlets. In future we can expanded it to maximum vendor which connected through the food mall which can explicitly affordable to customer. They can connected through multiple varites of food which can available in one location.

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