FOODI PLUS

BS Information Technology

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Session (2015-2019)

Approval Sheet

This is to certify that **Aisha Roll Number: 157321 and Kayinat Roll Number: 157328** have worked on and completed their Project **"FOODI PLUS**" at, Department of Information Technology, GPGC Mandian Abbottabad affiliated with Abbottabad University of Science & Technology in partial fulfillment of the requirement for the degree of BSIT under the guidance and supervision of Mr. Ibrar Hussain.

In our opinion, it is satisfactory and up to the mark and therefore fulfills the requirements of BS IT degree.

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DECLARATION

We hereby declare that this software, neither as a whole nor as a part of has been copied out from any source. It is further declared that we developed this software and this report entirely on the basis of our personal efforts made under the sincere guidance of our project supervisor Mr. Ibrar Hussain.

If any part of this software is proved to be copied or found to be a report of some other, we shall standby the consequences. No portion of the work presented in this report has been submitted in support of any application from any other degree of qualification of his or any other university or institute of learning. We further declare that this software and all associated documents, reports and records are submitted as partial requirement for the degree of BSIT. We understand and transfer copyrights for these materials to GPGC Mandian Abbottabad.

Aisha

Kayinat

DEDICATION

This project could not have been possible without the support of our family. Our whole success is dedicated to our parents, teachers, all family members and all class fellows for their support and guidance.

ACKNOWLEDGMENT

Al-Hamd-u-Lillah! We are very grateful to Almighty Allah, the most gracious and merciful, who blessed us with strength and mental powers without which we couldn't complete this project and made us able to meet and complete this complex task. The full credit of this software project goes to Almighty Allah because we are unable to do anything without His help.

We are thankful to **Mr. Faheem Ahmed** (Head of the department) for providing lots of courage. Special thanks to our project supervisor **Mr. Ibrar Hussain** whose support and guidance played an important role in our achievements. His guidance and advice, both mentally and technically has been of great importance to the final outcome of this final thesis. We sincerely appreciate his time and efforts which he has been providing from the start of the project. We are also thankful to all teachers and staff members here at the department (IT) and Computer Science. We are extremely thankful to beloved parents and family members whose prayers and continuous encouragement made the successful completion of this project possible.

Aisha

Kayinat

ABSTRACT

Foodi Plus

This paper presents a food recipe android application that helps users to find and view different food recipes of different category. The user can filter the list of recipes based on the ingredient used in the recipe, preparation time and cook time. Food-delivery app has easy and simple features, but now the food-delivery app is no more convenient for students or working staff, the overall is relatively old, not novel enough, cannot attract new users. Based on this feature, we decided to design a system for students and staff named “Foodi Plus”.

The food-delivery should be timely, convenient and comprehensive, many food-delivery systems today, but the function is not comprehensive, and some did not meet the requirements of timely delivery, for international students, not friendly enough. Payment is too simple, the layout is too rigid, and the update of information is not timely enough. While we are developing new systems, we keep the basic on-time features that take-out systems have to offer, along with new, new features specifically for students and staff - delivered on time and more comprehensive recommendations.

There are a number of applications in Android store for Recipes Search but none of them support interface for creating, searching, saving, and sharing recipes all at once. This app provides flexibility to user to search variety of recipes from available recipes in the forum. Also, this is very handy application, which every user can search for recipes, save recipe as favorite, share recipe with others. This app is time saver providing recipes in few clicks. Through title search, this app makes finding recipes easy. With recipes being added daily there will always be something new for user to crave. The project has been implemented using Android Studio, Firebase, and MySQL.

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LIST OF ACRONYMS

SQL	Structured Query Language
DFD	Data Flow Diagram
ERD	Entity Relationship Diagram
GUI	Graphical User Interface
DBMS	Database Management System
MS	Microsoft
DB	Database
CAD	Computer-Aided Drawing
CAM	Computer-Aided Manufacturing
ER	Entity Relationship
UML	Unified Modeling Language
STD	State Transition Diagram

Chapter 1
INTRODUCTION

1.1 Introduction

Cell phone technology nowadays allows innovative applications to be implemented in many forms. In order to satisfy the large number of cell phone customers, the mobile phone industry is making improvements in cell phone hardware as well as software. Hence the science fiction devices of yesteryear have become reality. Cellular telephones today are remarkable in their advancement. Whereas cell phones of yesterday were useful simply as communication devices, for many people today, a cell phone is not only just a tool to communicate with others; it serves also as an alarm clock, calculator, internet browser, notepad, camera, calendar, music player, voice recorder, GPS and computer game. This has been made possible with the advancement of cell phones. Today, cell phones are not just telephones; they are small computers with heavy processing power.

One recent development in cell phone usage is online restaurant reviews. Before deciding what to eat for dinner or stepping into a restaurant, people will often consult restaurant reviews through their smart phones. In order to help people search and order food with their smart phones, our graduate project is to design and implement a food menu search phone application. The food ordering service is a local restaurant and food cooperative website or application for customers to provide more interactive menu so that the ordering process could be carried out. Ordering food online is designed for its more flexibility and performance, some website or application makes sure that the system has enough navigation function through the picture information or significant logo to guide customer like students follow the steps to finish the ordering food process, apart from that it has been constructed to dealing with a large number of orders simultaneously to prevent the food overload. Basically, this online ordering project illustrates how to supervise for good performance and better services for the University users.

All over the worldwide, the food delivery already account for the £83 million, the one percent is form total food market and including the 4 percent restaurant and fast food chains, in many mature countries, this number of growth rate will continue to increase at 3.5percent in the next five years, by far, the traditional category that waiting for the restaurant to bring the food to the customer has stood 90 percent, but almost three-quarters are still using by phone In this astonishing rate of online ordering may still hide some disadvantage or problem need to handle it, such as website costs, infrastructure cost, security and fraud, privacy laws, computer ethics, advertising cost and customer cost. However, all current ordering applications have more or fewer problems that cause different groups of people to encounter some problems when using these applications. In this paper, we will analyze the advantages and disadvantages of some

existing applications, and finally, we will design an application that solves the problems we aim.

1.2 Objective of Project

Cooking is very important to learn for everyone. Cooking is not an easy task as it looks like so anyone needs proper method and amount of material that is used in any specific dish. We are designing an app that easy to use for any person. This project is also for learning purpose. We will use simple ingredients and easy methods so that it will be very most easy to use for beginners of cooking.

1.3 Scope

This era is so fast and technology-based. Peoples need a quick solution for any problem from the internet. Our app will be easy to use and accessible to all. Any user can make good business with this app to make clients. It provides you with a convenient way to sale from your Food shopping app. You can use this app as one big supermarket app to sale product of your store. This app makes easy for a user to buy a product from a store with easy steps and store can get easy order.

1.4 Tools & Languages for Development

- ANDROID STUDIO (app development)
    - Java (back end)
    - Xml (front end)
    - Firebase(database)
    - SQLite (database)
- PHOTOSHOP(designing)

1.4.1 Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on Jet Brain’s IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, Mac operating system and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as primary IDE for native Android application development.

Android Studio was announced on May 16, 2013, at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting

from version 0.8 which was released on June 2014. The first stable build was released on December 2014, starting from version 1.0. The current stable version is 2.3.3, released in June 2017. Next major update, version 3.0, is in preview stage as of
September 2017. New features are expected to be rolled out with each release of Android Studio. The following features are provided in the current stable version.

- Gradle based build support
- Android-specific refactoring and quick fixes
- Lint tools to catch performance, usability, version compatibility, and other problems
- ProGuard integration and app-signing capabilities
- Template-based wizards to create common Android designs and components
- A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations.
- Support for building Android Wear apps
- Built-in support for Google Cloud Platform, enabling integration with Firebase Cloud Messaging (Earlier 'Google Cloud Messaging') and Google App Engine.
- Android Virtual Device (Emulator) to run and debug apps in the Android studio.

1.4.2 Java

Java is a popular programming language, created in 1995. It is owned by Oracle, and more than **3 billion** devices run Java. Java is a programming language that produces software for multiple platforms. When a programmer writes a Java application, the compiled code (known as bytecode) runs on most operating systems (OS), including Windows, Linux, and Mac OS. Java derives much of its syntax from the C and C++ programming languages. Java program development requires a Java software development kit (SDK) that typically includes a compiler, interpreter, documentation generator and other tools used to produce a complete application. Java programs are found in desktops, servers, mobile devices, smart cards and Blu-ray Discs (BD).

1.4.3 Java is used for:

- Mobile applications (especially Android apps)
- Desktop applications
- Web applications

- Web servers and application servers
- Games
- Database connection
- And much, much more!

Why Use Java?

- Java works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc.)
- It is one of the most popular programming languages in the world
- It is easy to learn and simple to use
- It is open-source and free
- It is secure, fast and powerful
- It has huge community support (tens of millions of developers)

1.4.4 XML

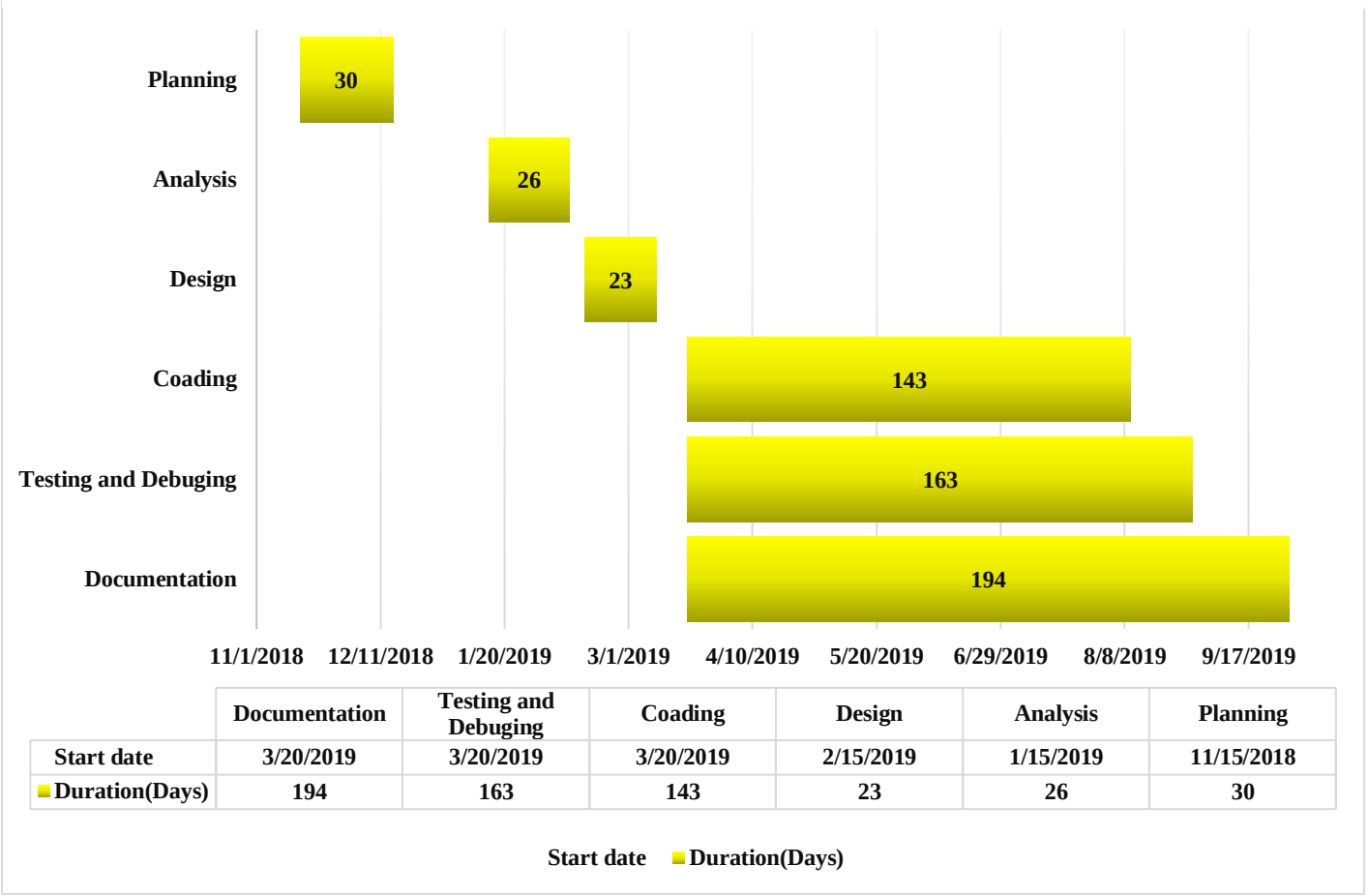
XML stands for extensible Markup Language. XML was designed to store and transport data. XML was designed to be both human- and machine-readable. XML plays an important role in many different IT systems. XML is often used for distributing data over the Internet. It is important (for all types of software developers!) to have a good understanding of XML. The XML language has no predefined tags.

The tags in the example above (like <to> and <from>) are not defined in any XML standard. These tags are "invented" by the author of the XML document. HTML works with predefined tags like <p>, <h1>, <table>, etc.

With XML, the author must define both the tags and the document structure.

1.5 Work Plane

Figure 1.1 Work plane



	Documentation	Testing and Debuging	Coading	Design	Analysis	Planning
Start date	3/20/2019	3/20/2019	3/20/2019	2/15/2019	1/15/2019	11/15/2018
Duration(Days)	194	163	143	23	26	30

1.6 Project Structure

1.6.1 Team structure

The project group is composed of two students, so all work is done as collaboration. The communication and co-ordination issued will be solved by informal interpersonal procedure with the help of project supervisor.

Table 1.1 Team Structure

Project Team	Most Concerned tasks
Aisha	SRS, Design, Coding, Testing & Implementation
Kayinat	SRS, Design, Coding, Testing & Implementation

Chapter 2
EXISTING SYSTEM

2.1 The problem in existing software

In universities, the most common phenomenon is that owing to variable timetable and study pressure during the examination process, it could be more difficult for students to decide when and where to have their lunch. For example, there is just a limit time like 1hour in the lunchtime that students could not finish their lunch on time. The data demonstrate that in New York, three of top 10 universities have a good showing when examination almost coming, and like University of Virginia has increased 25 percent order spike in the finals NO.8 date (Svokos, 2015). Thus, many online foods delivering requirement derive student take consider the quality of delivering food, timeliness, maneuverability and relative accuracy.

To solve this problem, we are going to develop a system, which is designed mainly aim for three groups of people, students and teachers, and staffs in university. Using this system, students could have an option to upload own timetables, the system will automatically recommend suitable choices of different restaurants available in this specific time. And this application will have decreased as much as possible to avoid behavior failure while entering the system, there is no formal knowledge for students to apply it. The main purpose is designed user-friendly Online Food Ordering System.

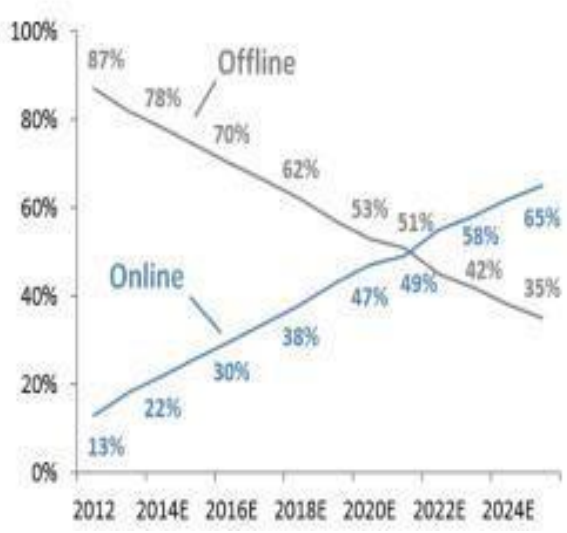
2.2 Literature review

The present online ordering food economy allows users to apply a single tap of their mobile phone to order from a wide array of restaurants, so the team wants to check some literature to understanding in what reason online food delivery is quite important for people in this century. This section should situate the development team, which needs focus on the wider academic community in the online ordering food and to identify the gap within that the literature that the research will need to address. and the main purpose of literature review is that combine with understanding of each work, point that in which way could fulfilling the need for other research, and located the team own design in the background of existing literature is the most significant point (Ridley and Diana, 2012), through the further study of tracing the intellectual progressing, the team could ability to accumulate the methods of research and study in the literature, and it also as a basic step to be contrast consider and analysis the existing system, and give the positive feedback about the problem that existing system could not solve it. Hence, the following parts will through APP design integrity, specification, use requirement, common issues, and emerging technology to analyze the role of online food delivery system in markets.

2.3 App design

Online ordering, as a wonderful platform to provide expanding choices and conveniences over the last decade, it allows increase customer stratification and engagement has a long way since 1999, as well as the use of mobile order, has been rise rapidly.

Figure 2.1 App design



X-axis: year Y-axis: the percent of user adoption

As the growing statistics could reflect the trend of the further online food delivery already make also more convenient and prevalent way than offline, and it could also account for 65%market share, the more straightforward reason is that innovation app design make people life easier and reflect a comfortable or high-tech lifestyle (Prabhu, 2016). So, the more effective design is aim to make sure that the system accurately matches the demands or intention of users, and as the food delivery take their own place through the rapidly spreading around the world. And the next is that communicate value in messaging, which is described system should contain the reminder if the system have some features shift, at the least, those messages may give some value for this open APP, and the exchange between value is crucial to receive the new customers, even sometimes, remaining the existing user is cheaper way. Finally, adjusting inside of app design could as visual sense to affect customer satisfaction, and the main elements are contained about pictures, words, colors, icons and negative space.

Mullany(2016) studies planning ahead for optimal app experience is the first way to understanding which features are most valuable for users to care about, and this step is

aimed to guarantee this mobile application is worth to open. In another study, freemen (2014) state that in most conditions, the user's sense of enjoyment has directly function to trigger the further ordering food impulse. The particularity of visual optimization will play an important role for the user to have a healthy and enjoyable way to use it, this design should be lies in the redesign of the design basis. This means that many data reviews can be obtained from the original version, and the user has the attitude of the current original visual design, or like, or habits, or tired, these are the points to consider when doing optimization of APP.

2.4 Common issues

Worldwide, the online food delivery market stands a t€ 83 million, in the next five years, there is a continuous growth rate at 3.5 percent, by far, the traditional model which is waiting for the restaurants to bring the food to the door, and this traditional category has own 90 percent market share, and almost three-quarters are still by using the phone to order a food. In some case, the online food delivery still has problems.

in recent years, the traditional online food delivery tend to the development direction of Open Table, basically, they are "top-down", starting from the street sweeping, collecting a large amount of catering business resources, improving online service content, and gradually attracting consumers to use online mode to order, However, in the absence of traffic, the lack of existing consumer online ordering habit to develop under the premise of small sales of merchants, some businesses are short-sighted and pay less attention to online ordering and information maintenance, consumer will not come back, since the poor experience.

Sinha (2017) also illustrate psychological customers are not ready to pay for expensive food transportation costs. (DoorDash edits 20% more restaurant listings in the restaurant menu, so customers will not be "starved of stickers").on the contrast, it will also be a problem if spent a lot of money on hiring a delivery driver. These costs continue to grow as the company grows. Lora.S(2016) has proven that remove the rush increase customer loyalty, improve restaurant branding, increase flow of orders and minimizes errors during processing orders are more important technology that the system is desirable to have, in some case, the right direction ordering system software is the solution to allow user apply and enjoy a steady flow of online orders. Also. As the research shows over 50 percent of people just want to use the app roughly once a month. Design simpler and valuable information of app is another problem that could make user-friendly.

2.5 The conclusion of the literature review

This literature review contains a wide range of academic areas of study, app design, user requirement, the negative problem, and the online ordering trends of the markets. And those research could give the team some suggestion to build usability, simple, and more practical app with navigational information, the teams understand the most main ideas are needed to increase the apps memorability, recall how autonomous operate when they open a function and allow users have a better experience to solve inconvenient problems.

Apart that from that simplicity and memorability principles also allow the team to consider the layout of app design, for example, in our design, we decide the new online delivering application should have suitable image contrast rate, special color background, and some special page icon, through understanding about the main elements that affect the app design, the team consider that it may minimize time form app selection.

Whereas, through common issues and the development trend in the markets, the team could learn the mobile screen limitation may illustrate that the small size has a negative effect on users to use it. To overcome this problem, the team want to add the new function to show the different restaurants in the map, ensure that users have their own positions among restaurants, this design may reduce the unnecessary steps during checking restaurants process. And it has also increased user loyalty. and some common issues also reflect some online food ordering with lacking some specification design and personalization, especially, as for university environments, the group of university students have demands than the rest of others, and they may choose online food more diversity and flexible timetable, as busy study pressure, they have higher demands the accurate of system information. And the team could combine the app design integrity and human-based management aspect with a history of emerging technology to build new real-time users feedback ordering food system.

To achieve that, the team learn about how to follow the trend of online ordering system development and use the innovative method to attract customers in the simplicity, usability, memorability, and reduce general app vulnerability. And the team based on some extensive or relevant literature associated with the concept, trends, problem, and feature of the online food delivery of the mobile app, ensure that into the first-generation prototype and second-generation prototype, and minimal the layout and design was kept it consistent for a user to apply its regularity. The next step is that what the team design should focus on which areas are the good design or system in the existing system and in order to take the advantage of the existing system that has a meal plan and preparation system.

2.6 Analysis & Draw Backs of Existing System

Analysis of Existing System

In today's digital era, online food ordering system is considered as the key source for any kind of restaurant business.

Online food ordering knocks out many problems faced by the old traditional call-in-orders. The staff at the restaurant may not be able to understand what exactly the customer's ordered over the phone & also the time may not be enough for the customers to think & give special instructions for the same.

Usually, miscommunication and misunderstanding can lead to order completed incorrectly & that leave the customers dissatisfied. Therefore, customer satisfaction is the key to success but, the repeated mistakes can hamstring the profits.

Draw Backs

There is a number of drawbacks in the existing manual system which decreases the usability of the system. These are:

2.6.1 Time Consumption

The current food ordering system is slower because it requires much time for data proceeding. Activities sometimes it requires a week for finding the exact record about food. The laborious jobs of data entry, processing, and record maintenance are done in a traditional manner.

2.6.2 Inflexible Data

Data stored in the current food ordering system in such a way that it is not in a very useful form and thus cannot be used in many different ways easily.

2.6.3 Difficult To Modify

The data stored in any file can be required to be modified at any time, but in the manual current food ordering system, the data cannot be easily modified. E.g. if the Administration of food ordering system wants to update the information it is not possible in the manual system easily.

2.6.4 Lack of Standards

Current food system does not define any standards for working with data. The same column in one register with the same meaning has another name in another register. This creates confusion and can also lead to inconsistency.

2.6.5 Delayed Information

As data is stored manually, if reports or other sorts of information is needed, it takes a long period of time to process the data and find the desired information.

Chapter 3
PROPOSED SYSTEM

The next and most important phase after the study of the existing system is the designing of the new system. The proposed system is designed/ developed by taking into view all the cited drawbacks/limitations of the existing system, and thus hoped that it will be a versatile and user-friendly system. That will fulfill nearly all the objectives of the existing system in a sound way.

3.1 Functional Requirement

Our app has two main modules:

3.1.1 Recipes

- **Search recipe by name**
  The recipe will be searched by name.
- **Search recipe by the time**
  User can search recipe by time. If a user has a limited time to cook the food they can search for recipes that can be completed in limited time.
- **Search recipe by ingredients**
  The recipe will be searched by ingredients. A person can pick a major ingredient and can get all the recipes in which this ingredient is used.
- **Recipes for kids**
  Nowadays kids are very choosy in their meal so we will add delicious recipes for children.
- **Share your recipes**
  Any user can share their recipe with others through this app.

3.1.2 Home Delivery

- **Cook module**

  This module provides the functionality for the cook to place their requests and supply necessary details.

  - Create an account.
  - Manage their account.
  - Log in to the system.
  - View order placed.
  - Request to deliver the order
  - View requests placed
  - Log out from the system.

- **Customer module**

This module provides the functionality for customers to place their order and supply necessary details. Users of the system, namely customers, must be provided the following functionality:

- Create an account.

- Manage their account.
- Log in to the system.
- Navigate the restaurant's food menu.
- Select an item from the menu.
- Add an item to their current order.
- Review their current order.
- Remove an item/remove all items from their current order.
- Provide a delivery address.
- Place an order.
- Receive order status through SMS notification.
- View order placed.
- Log out from the system.

- **Administration module**

  This module provides functionality for the power user to the Administrator only.

  - Log in to the system
  - Add/update/delete food category to/from the menu.
  - Add /update/delete food item to/from the menu.
  - Add /update/delete banners.
  - Update price for a given food item.
  - Update additional information (description, photo, etc.) for a given food item.
  - Before customers can actually use this system, the functionality provided by this component will have to be configured first.
  - Update order status of the customer.
  - Delete order of the customer.
  - Update request status of the customer.
  - Delete request of the cook.
  - Log out from the system.

3.2 NonFunctional Requirements

Nonfunctional requirements make up a significant part of the specification. They are important as the client and user may well judge the product on its non-functional properties. Provided the product meets its required amount of functionality, the nonfunctional properties how usable,

convenient, inviting and secure it is maybe the difference between an accepted, well-liked product, and an unused one.

A variety of nonfunctional attributes or characteristics were likely considered: security and safety, maintainability (ease of repair), reliability (probability of failure), scalability (ease of expansion), efficiency and performance.

The system has no of other requirement called nonfunctional which are.

Operational Requirements

- The system should operate in a mobile platform environment.
- The system should prompt the user to make a backup at the end of the operational day.

Performance Requirements

- The system should let the user place an order in a short period of time.
- The system should complete performing the function process in a short period of time.

Security Requirements

- The system should validate the username and password in order to log in and make changes to the system.
- The system should request the current password of the user in order to let them change to a new password.

Usability Requirements

- The system should have an easy to understand graphic user interface that deals with the user.
- The system should let the user easy to understand the functionality of each module.

3.2.1 Hardware & Software Requirements

Hardware

- Intel ® Core i3 CPU 3.0 GHz or above
- 8GM RAM
- 500GB Hard Disk Drive (HDD) + 24G
- Solid State Drive (SSD)
- Wireless Access

In this project, a computer with sufficient processing power is needed. The computer is required for the developer to have project development such as coding for the mobile application, database creation, and modification. For the complete system to work, several hardware requirements must be met. First, it requires an android based smartphone in needed to deploy the software application and this smartphone is required to connect to the wireless

access point to perform the request and respond to processes that access to the database. Next, a database is a must for the entire system to store and retrieve the necessary data. Furthermore, a laptop or desktop is required to host the database and manipulate the entire system.

Table 3.1 Hardware requirement for staff computer

Description	**Minimum Requirements**
Processor	1.6GHz or faster processor
RAM	512MB or more
Hard Disk	5GB of disk space available or more
Video Card	DirectX 9

Table 3.2 Hardware requirement for staff computer

Description	**Minimum Requirements**
Processor	1.1 GHz or higher
RAM	512 MB or more
Storage	2GB free or more
Wireless Connection	YES

3.2.2 Timeliness

It is another characteristic of the new system. If somebody needs to access some information, he had to wait for many hours or even days for the result. The new system provides an accurate and instantaneous response to its users. The result and news are announced within no time.

3.2.3 Efficiency

The new system is efficient as it provides the required output more quickly than the manual system. The new system will minimize the dependency on staff.

3.2.4 Reliability

It is the degree with which the system performs its intended functions over time.

3.2.5 Simple Data Input Facility

The proposed system will work in the same way as the present system is working with some minor changes in order to make the process more simple and effective and to avoid double entry of any data as any non-required data.

3.2.6 Editing Function

In the present manual system editing of any document or information is hardly possible. Whereas in the proposed system Admin and customer will do all the editing very easily so that error possibilities can be reduced.

3.2.7 Deletion of Data

There is always a chance of error due to human nature and so unwanted mistakes be removed easily which will reduce the wastage of paper etc and thus information is provided to the Administration in it right shape or form. In the proposed system the admin will be able to view as well as delete data.

3.2.8 Queries and Viewing Facility

One of the advantages of the computerized system is its use in real-time. Queries will also solve the problem of the user to look for particular information at any time on the screen rather than search in the registers of even outdated records. Also, the automated food ordering system can provide updated information whenever needed on the screen automated system.

3.3 Process Model

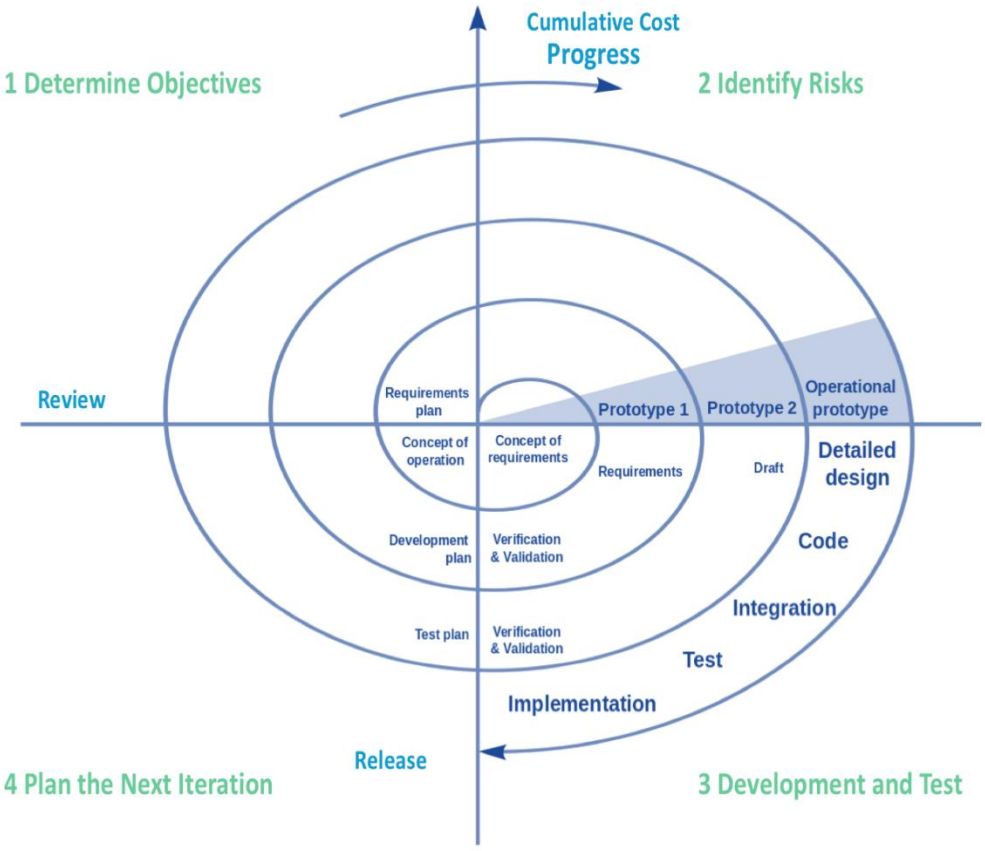
3.3.1 Spiral model

The spiral model is a software development process combining elements of both design and prototyping-in-stages, in an effort to combine advantages of top-down and bottom-up concepts. Also known as the spiral lifecycle model (spiral development), it is a systems development method (SDM) used in information technology (IT). This model of development combines the features of the prototyping model and the waterfall model. The spiral model is intended for large, expensive and complicated projects.

The Spiral Model is widely used in the software industry as it is in sync with the natural development process of any product, i.e. learning with maturity which involves minimum risk for the customer as well as the development firms. The following pointers explain the typical uses of a Spiral Model:

- When there is a budget constraint and risk evaluation is important.
- For medium to high-risk projects.
- Long-term project commitment because of potential changes to economic priorities as the requirements change with time.
- Customer is not sure of their requirements which is usually the case.
- Requirements are complex and need evaluation to get clarity.
- The new product line which should be released in phases to get enough customer feedback.
- Significant changes are expected in the product during the development cycle.

Figure 3.1 Spiral model



Chapter 4
SYSTEM DESIGN

4.1 Introduction of Design

The designing is the basic building block of any software. The design depends upon the study and understanding of the present system and the vision and approach of the software designer for the proposed system. The design can be divided into three parts:

- Database Design
- Input Design
- Output Design

In the designing phase of Web-Based Claim Processing System, the activities included many important designing aspects, such as follows.

4.2 ER (Entity-Relationship) diagram

A diagram that provides a logical model of the database. It shows the various database entities and how they relate to each other.

4.3 Choosing a development tool

Usually considering the various client machines and platforms share the system will be used does this? Access is ideally suited for my project.

4.4 Implementing the functionality in stages

It is important to have various “releases” of the product so users can have a preview of it, and as well as make suggestions about whether it has the features that have been expecting. The designing phase should consider this sequential development and identify the core objects.

4.5 Using a configuration management tool

A configuration management tool should be used to perform various version controls and a backup/recovery strategy should be decided on:

Identifying users and the

- Choosing a consistent user interface
- Determining a testing plan

Implementing a diagnostic plan for troubleshooting the application

4.6 Database management System (DBMS)

Often the terms database and DBMS are used interchangeably, however, a database management system is a software product that manages the database. The DBMS tool used in the development of “Online Furniture Shop” is Accesses, which follows the relational database

model. Several important features are desired from a DBMS and most modern databases provide some mechanisms for these features:

- It should say easy to store and retrieve data
- It should provide security for the data stored
- It should provide some method for concurrent access to the database and control of his concurrency
- There should be some method to recover the database in case of a database crash.
- Data consistency and integrity should be retained

4.7 Database Management System Models

Several database models have been commonly used but they all satisfy, in one way or another, the requirements to be a DBMS. The various database models are not even real databases because they store the data in flat files. Storing data in this model is very cumbersome and makes the data difficult to access.

4.7.1 Network

This model stores data in a network structure. An example of this database model is IDMS.

4.7.2 Hierarchical

This model stores data in a hierarchical structure. An example of his database model is IMS. Many legacy databases used in minicomputers and mainframes still make use of the network and hierarchical database models.

4.7.3 Relational

A data model that represents data in the form of relations or tables. A relation is a named, two-dimensional table of data. Each relation consists of a set of named columns and an arbitrary number of unnamed rows. Different DBMS are currently available in the market which follows the relational model i.e. Access, SQL Server, Oracle and SQL Server, etc.

4.8 Database Design

It means the design of a database model that will support the Online Furniture Shop operations and objectives.

The major aims of the database design are:

- To represent the data and the relationships between data required by all major application areas and user groups.

- To provide a data model that support any transactions required on the data.
- To specify a design that will achieve the stated performance requirements for the system such as response time.

Unfortunately, these aims are not always easy to achieve and sometimes require compromises to be made, particularly to achieve acceptable system performance. The two main approaches to the design of a database system are referred to as the **top-down** and **bottom-up** approaches.

1. Bottom-up approach

The bottom-up approach begins at the fundamental level of attributes, which are grouped into entities and relationships. As the process continues we identify and add new relationships between entities. The process of normalization also represents a bottom-up approach to design. This approach is suitable for simple databases having a small no. of attributes. Normalization involves the identification of the required attributes and their subsequent decomposition into normalized tables.

2. Top-down approach

It is suitable for designing complex databases. It starts with the development of data models that contain a few high-level entities & then identify lower-level entities, attributes & their relationships. It uses the ER model, which shows the entities & their relationships, which are of interest to the department.

In our project, we have used the top-down approach.

The Top-down database design approach is composed of two major phases:

i. Logical database design.

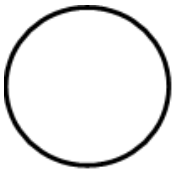
ii. Physical database design.

4.9 Data Flow Diagram

Data Flow Diagrams (DFDs) graphically characterize data process and flows in a business system. Here data flow diagrams have been used to depict the broadest possible overview of system inputs, process, and outputs. Also, a series of layered data flow diagrams have been used to represent and analyze detailed procedures within this large system. Therefore by using combinations of only four symbols, we have created a pictorial depiction of a process that will eventually provide solid system concepts and documentation.

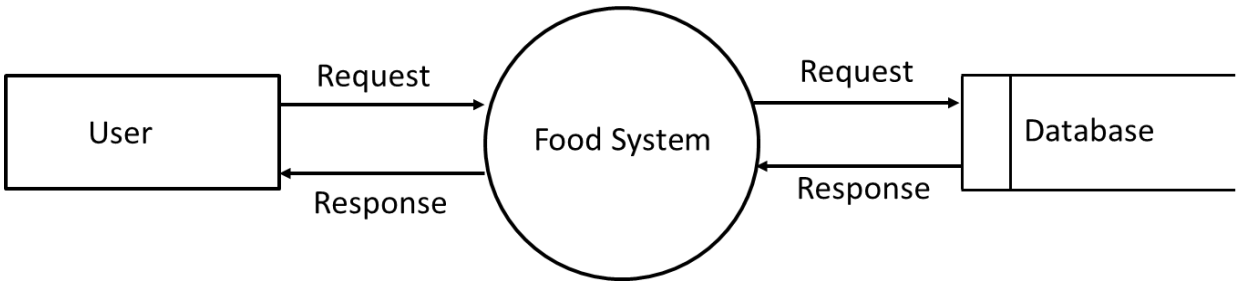
The four basic symbols used in the data flow diagram are as under:

Table 4.1 Symbols of Data flow diagram

Symbol	Description
	**Entity:** Entity is the object of the system. A source or destination data of a system.
	**Data Flow** – Data flow is pipelined through the packets of information flow.
	**Process:** A Process or task performed by the system.
	**Data Store:** A place where data to be stored.

4.9.1 Level 0 DFD

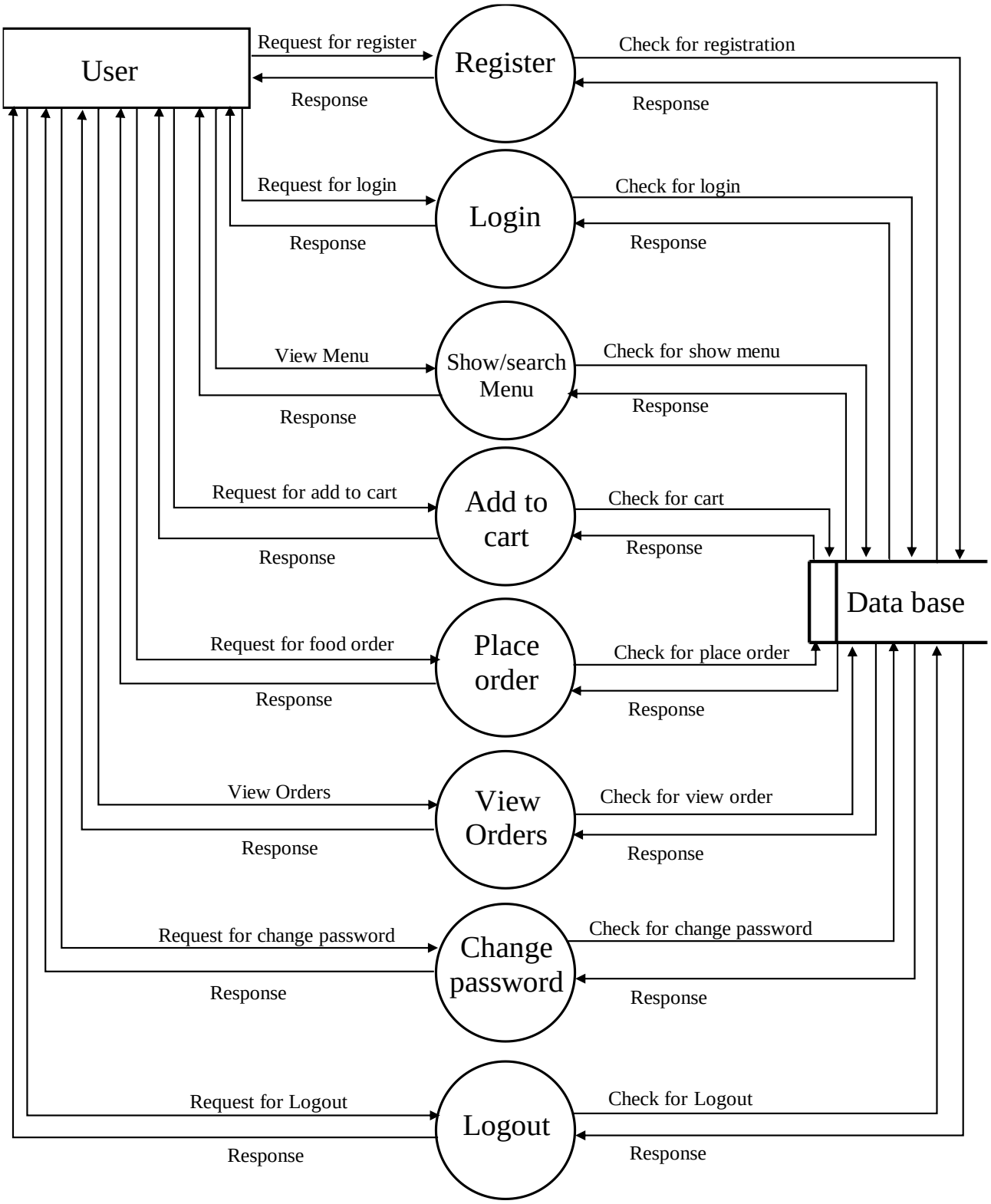
Figure 4.1 DFD level 0



4.9.2 Level 1 DFD

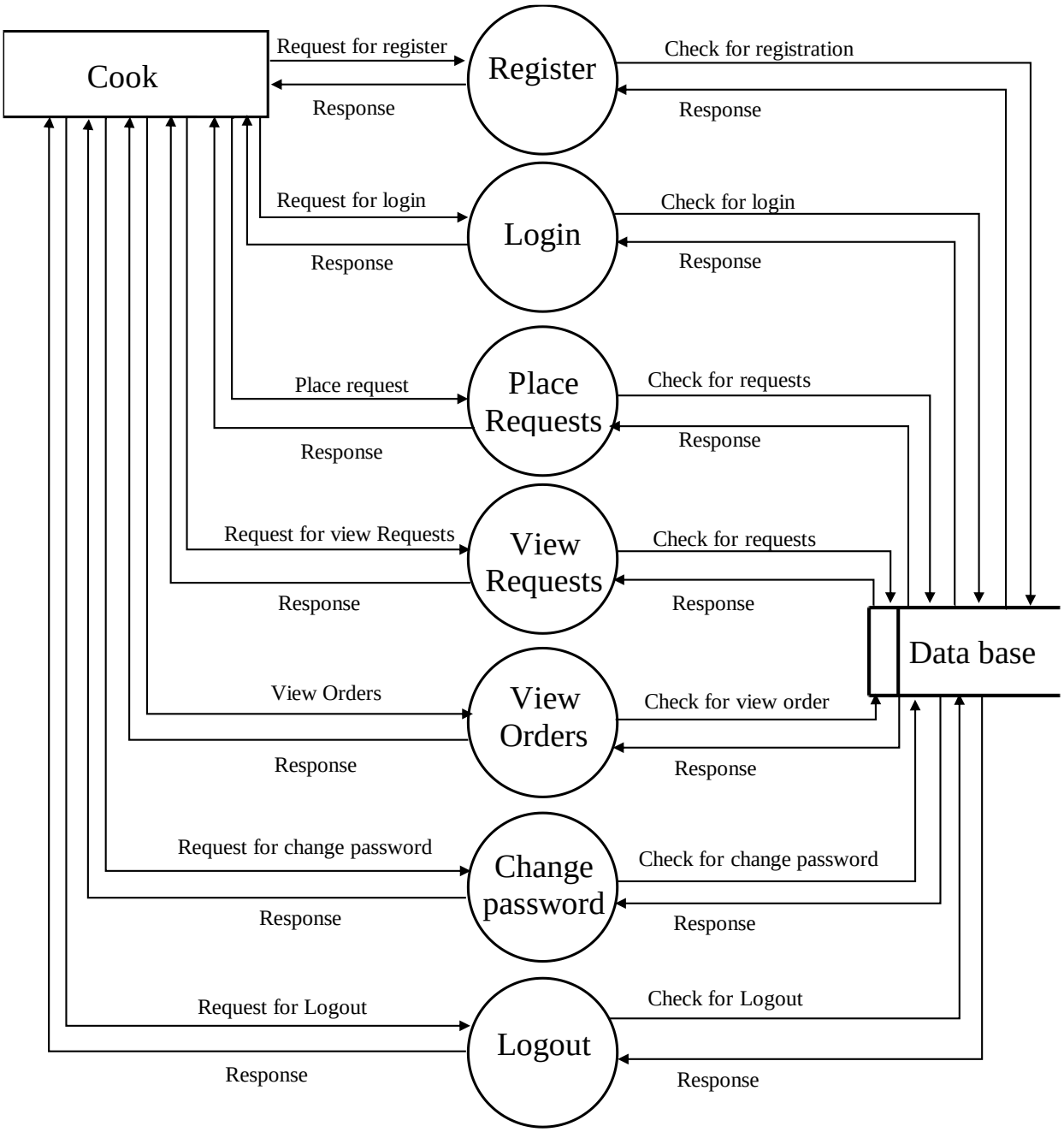
For Customer

Figure 4.2 DFD level 1 (for customer)



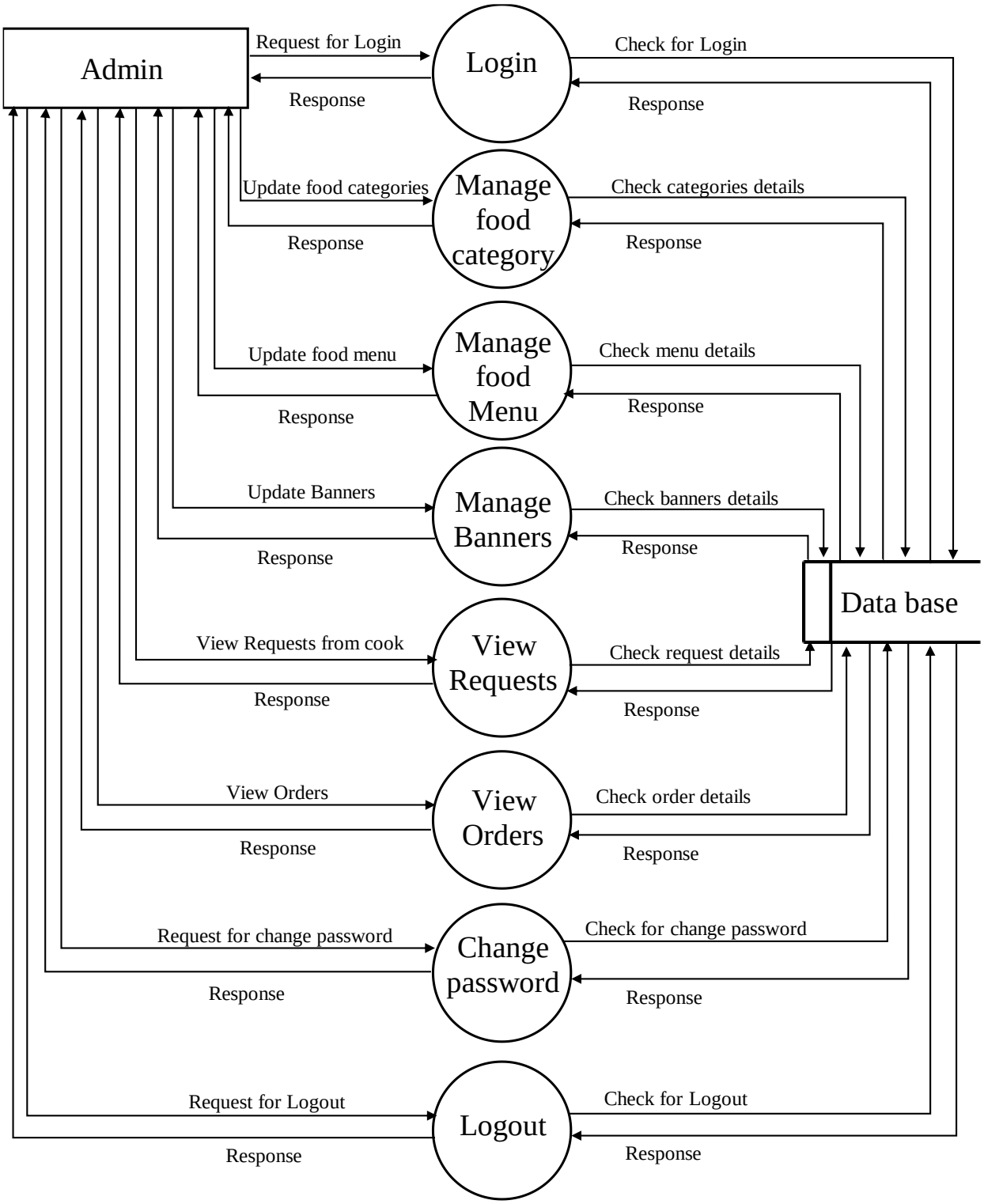
For Cook

Figure 4.3 DFD level 1 (for cook)



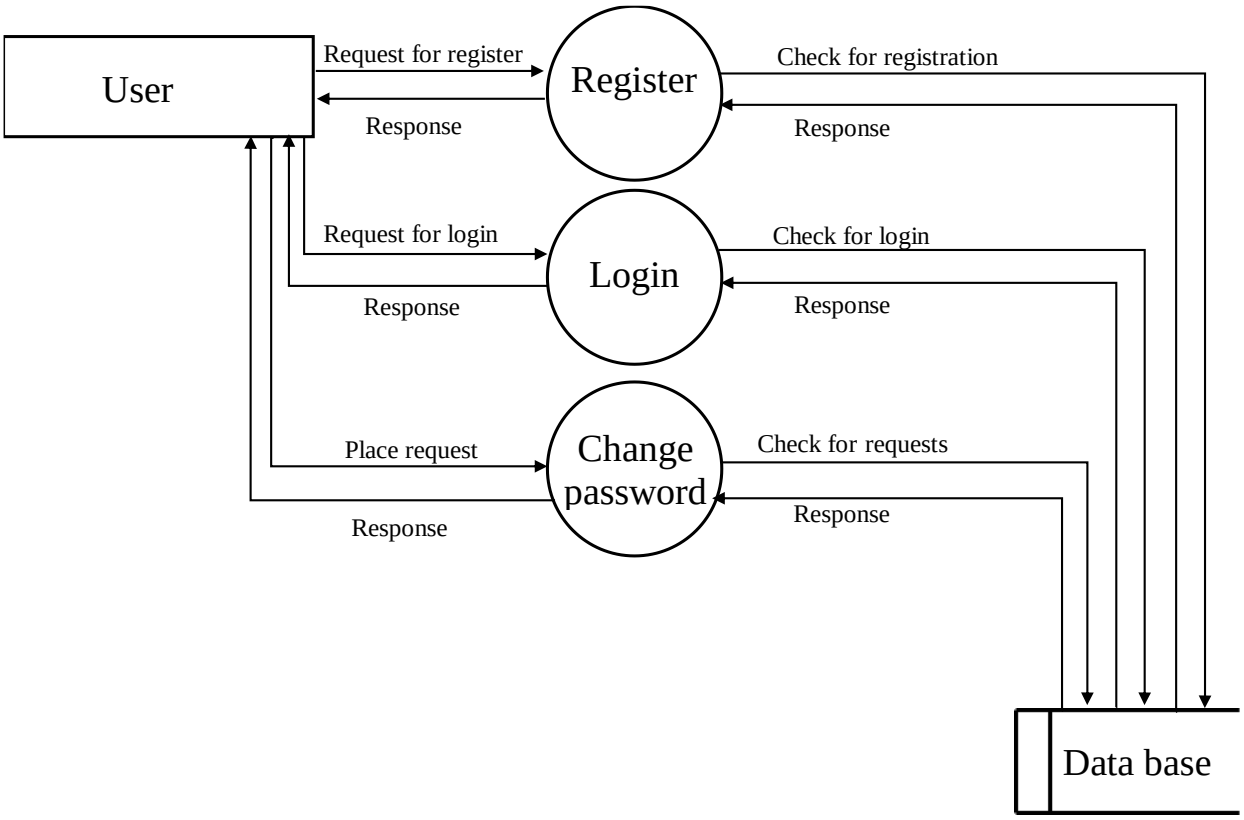
For admin

Figure 4.4 DFD level 1 (for admin)



4.9.3 Level 2 DFD

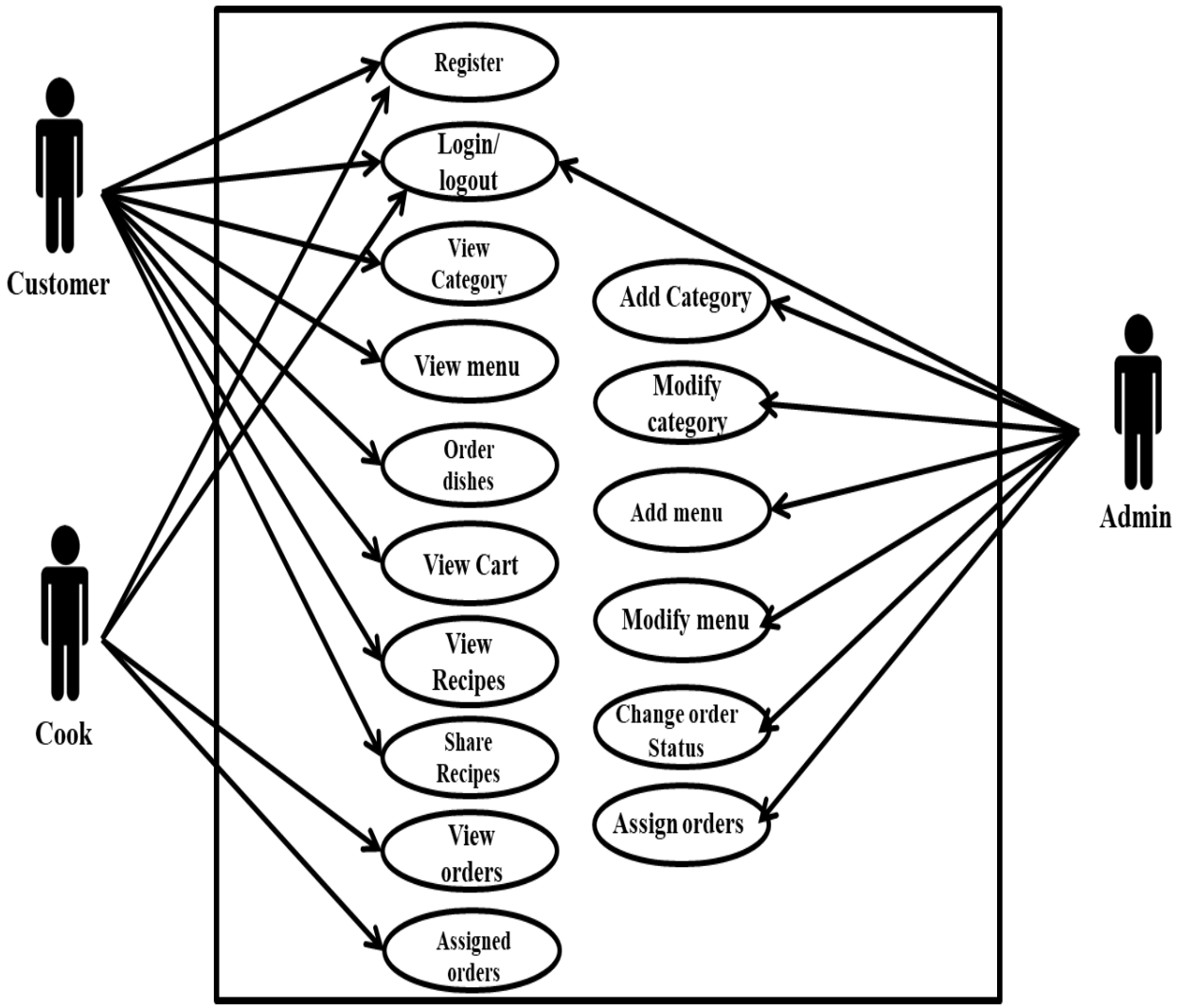
Figure 4.5 DFD level 2



4.10 Use Case Diagram

Below figure shows a use case diagram describing the actors and the activities involved in the proposed solution.

Figure 4.6 Use case diagram



Chapter 5
GRAPHICAL USER INTERFACE

5.1 SPLASH SCREEN

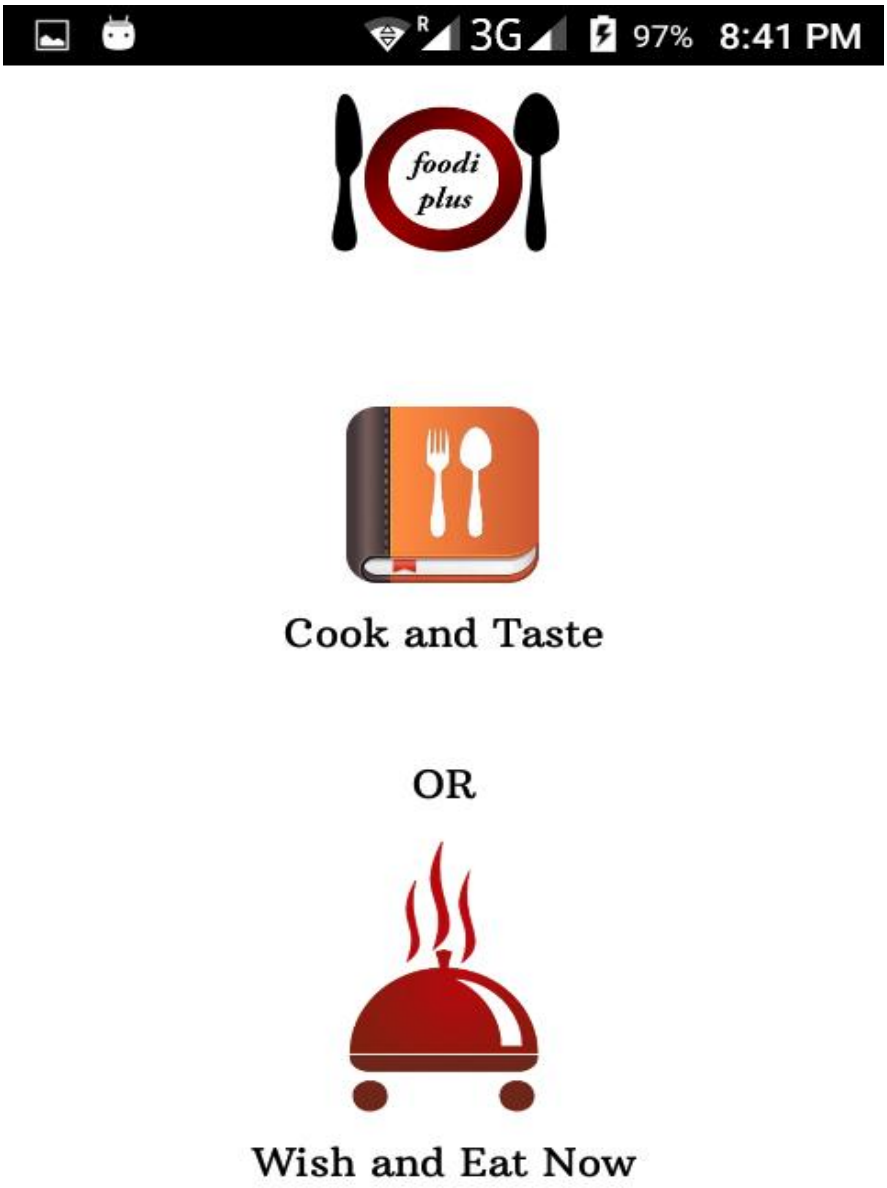
The first startup screen which appears when App is opened.

Figure 5.1 splash screen

5.2 SELECTION SCREEN

This screen shows the options to go with recipes or to order some food or sell their food.

Figure 5.2 selection screen

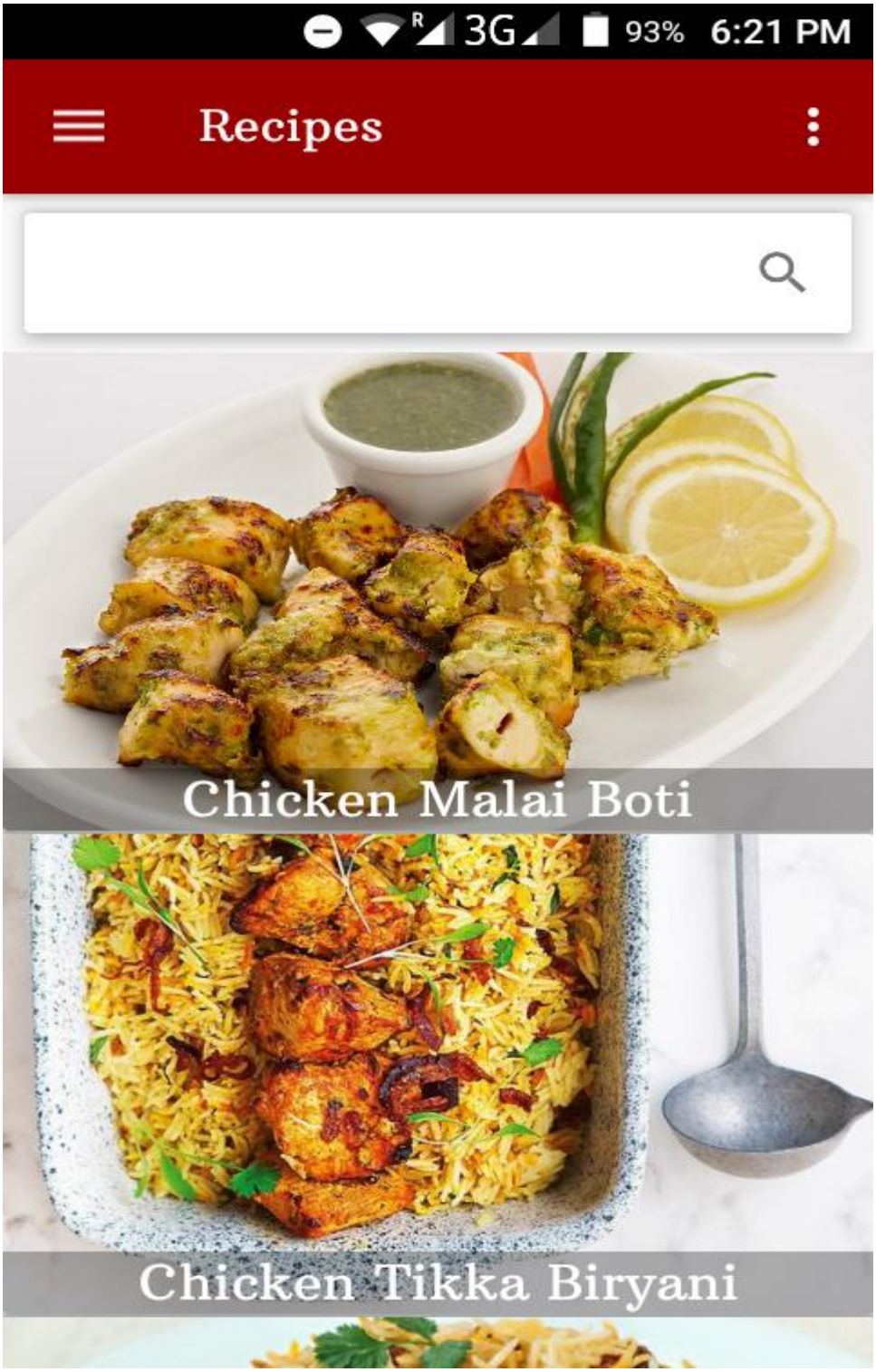


5.3 RECIPES

5.3.1 Recipes Screen

This screen show the list of recipes and also available search bar that helps the user to search recipes directly.

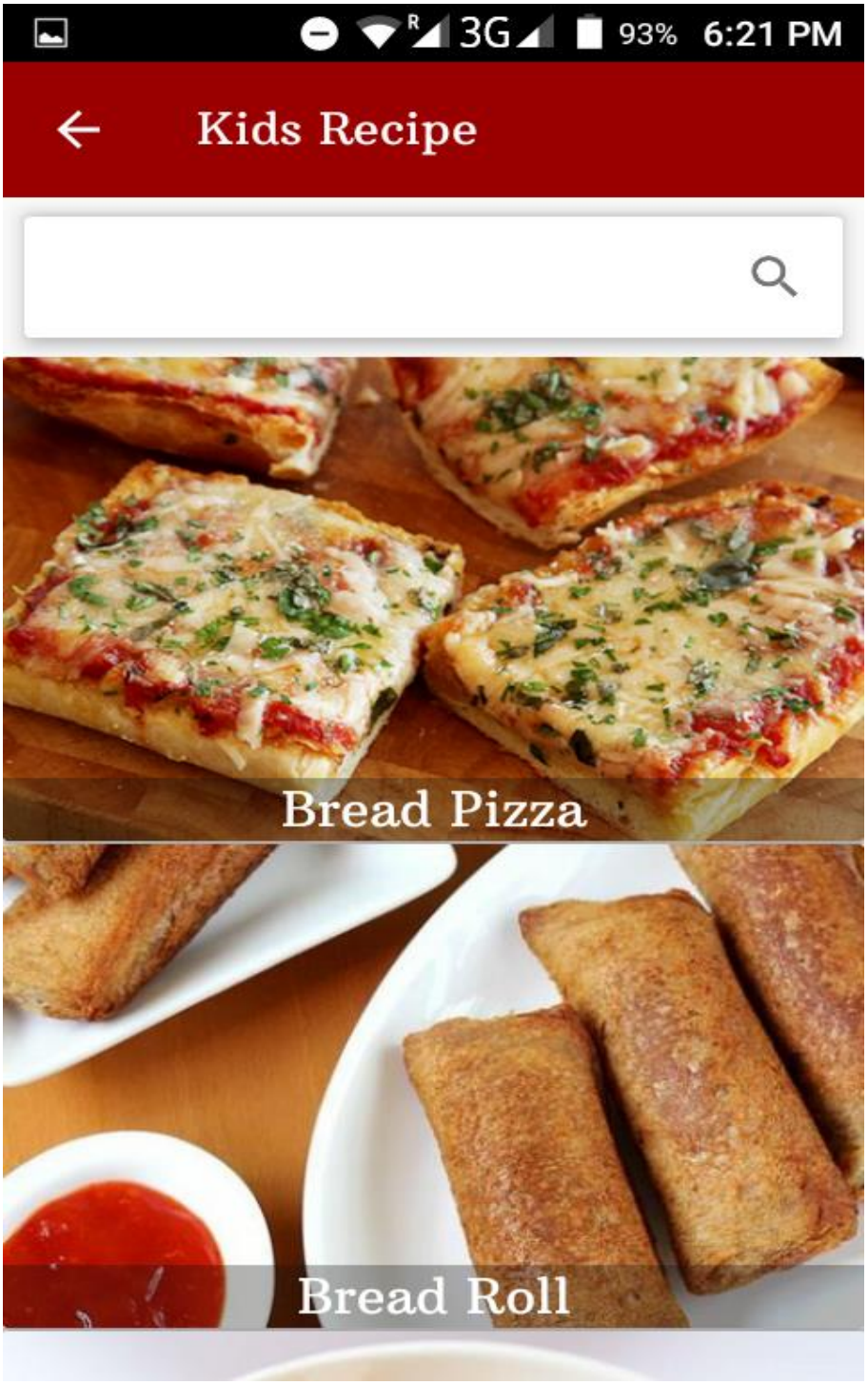
Figure 5.3 Recipe screen



5.3.2 Kids Recipes Screen

This screen show the list of recipes for kids and also available search bar that helps the user to search recipes directly.

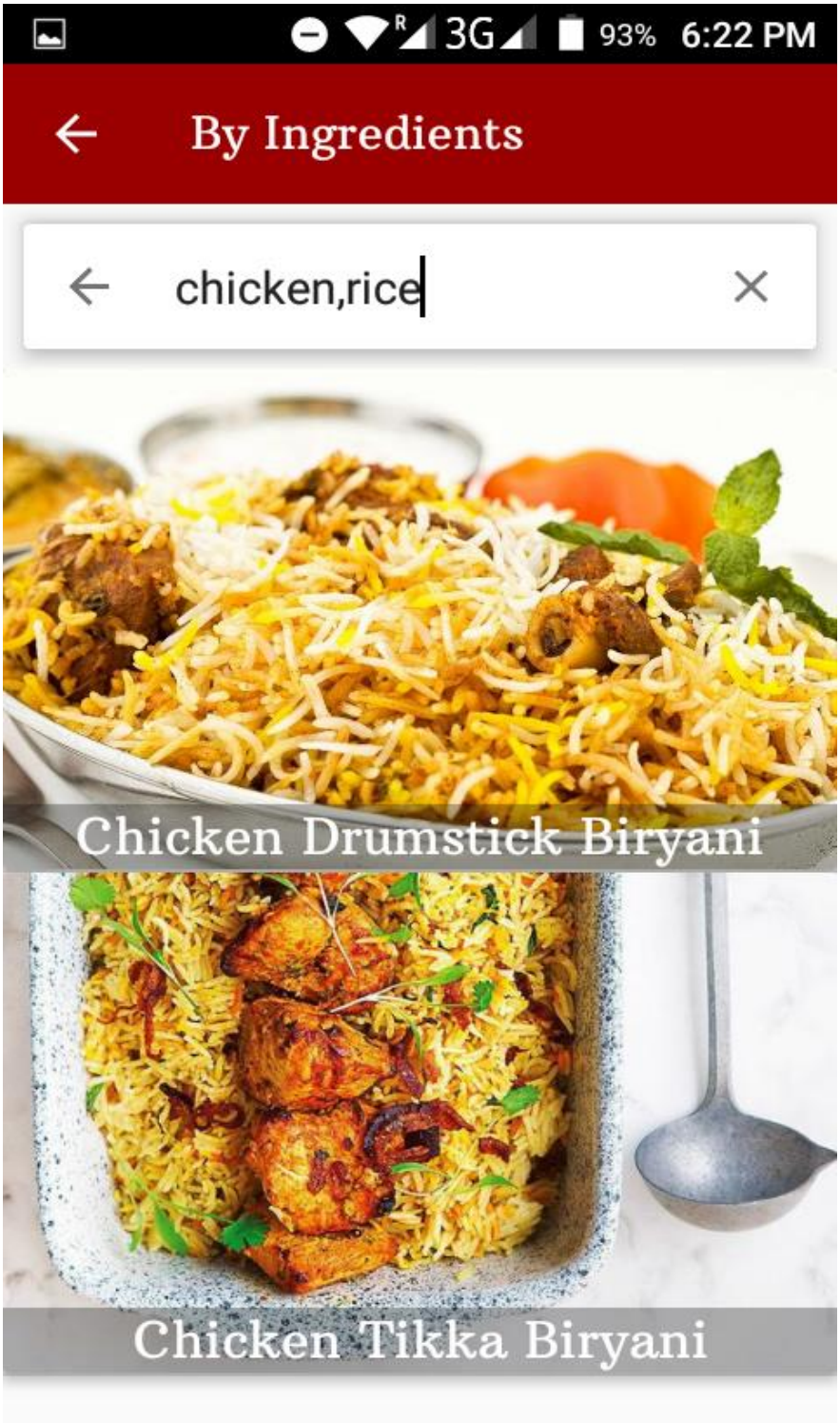
Figure 5.4 Kids recipe screen



5.3.3 Search recipe by ingredients screen

If the user have a some ingredients and he/she wants to make dish using available ingredients then this screen helps to search recipes by ingredients.

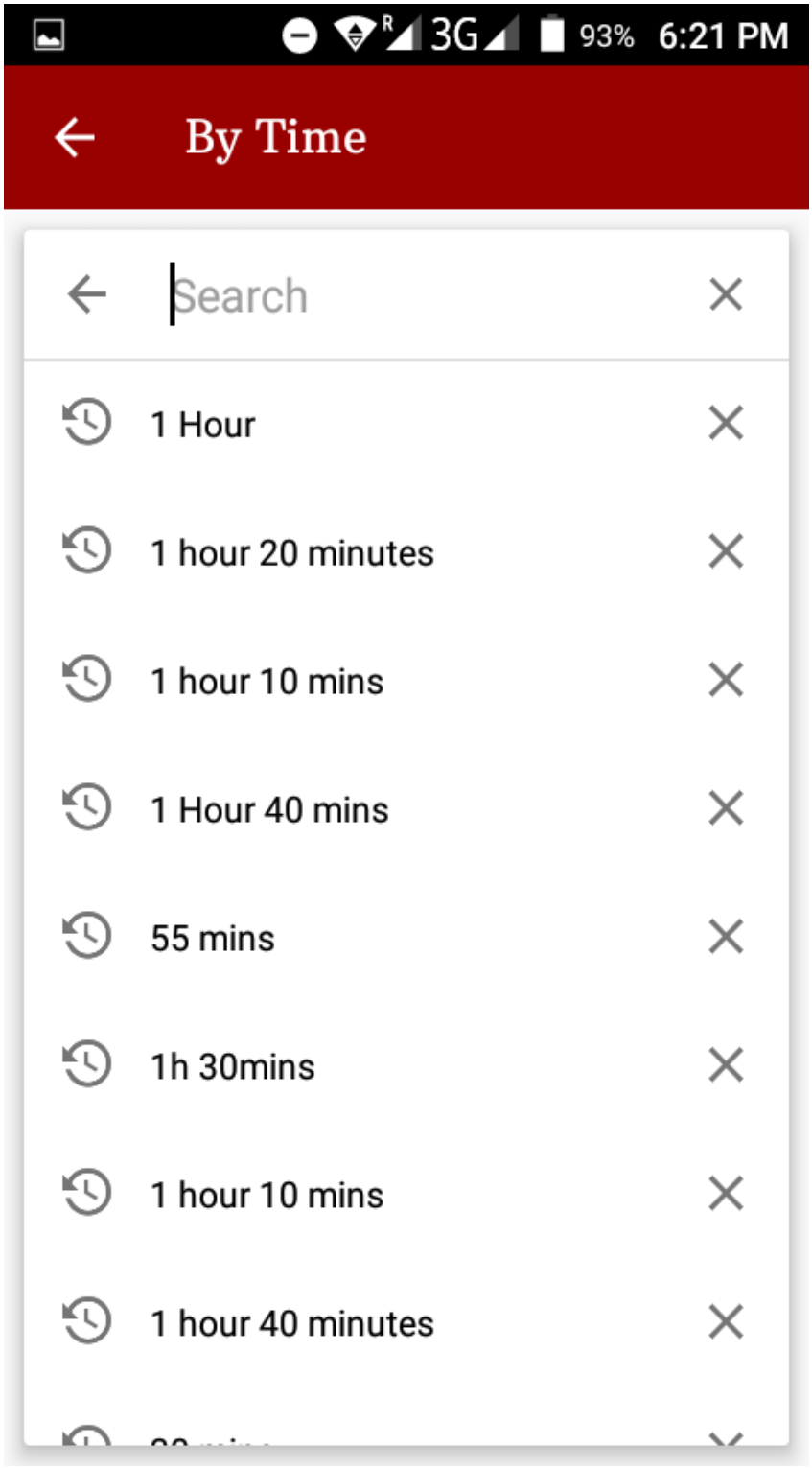
Figure 5.5 Search recipe by ingredients screen



5.3.4 Search Recipes by Time Screen

If user have a limited time to cook something this screen helps to search recipes which can be ready with in a limited time.

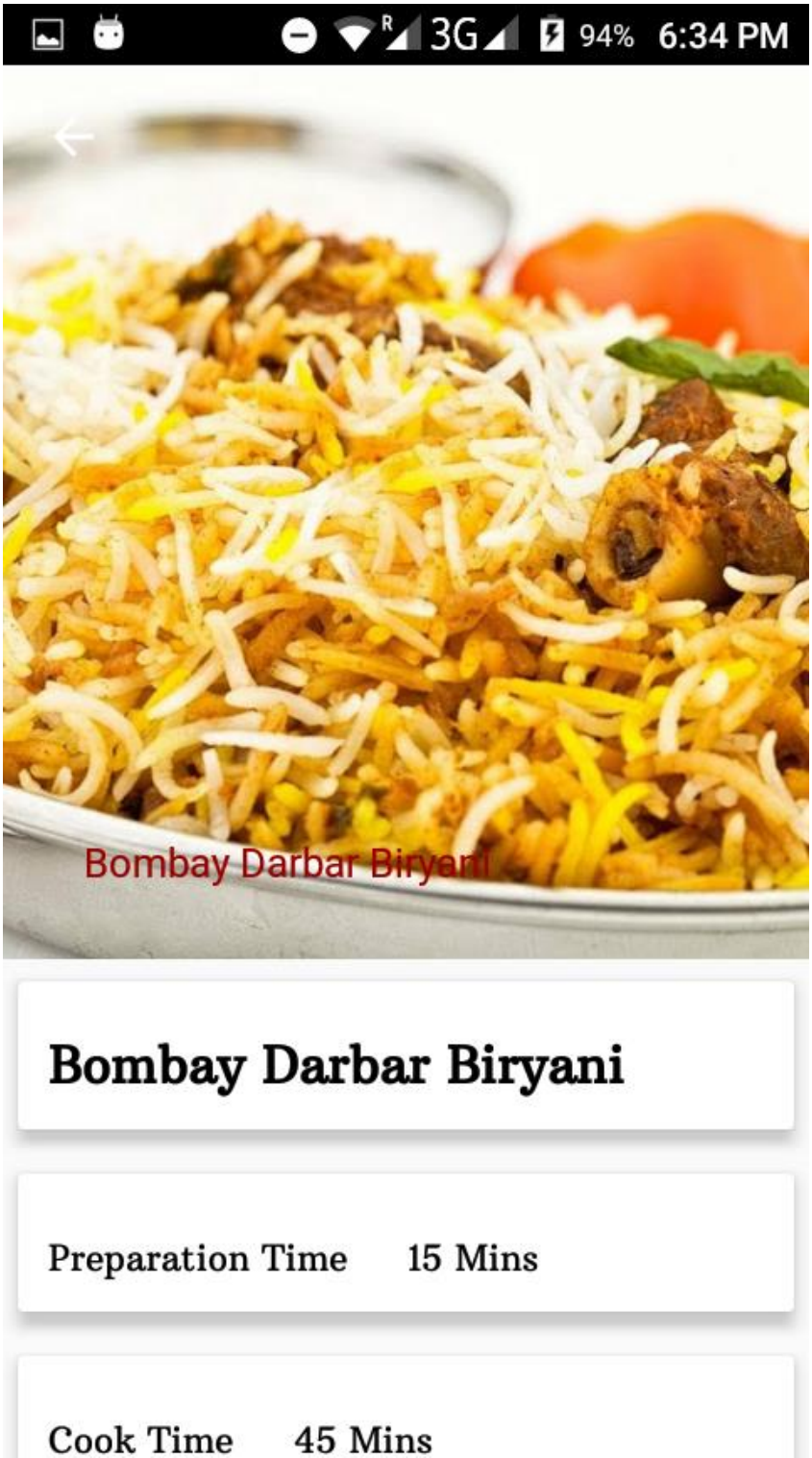
Figure 5.6 Search Recipes by Time Screen



5.3.5 Recipes Detail Screen

This screen show the detail of recipes with their beautiful picture, their name, cooking directions, ingredients , cook time , ready time and preparation time

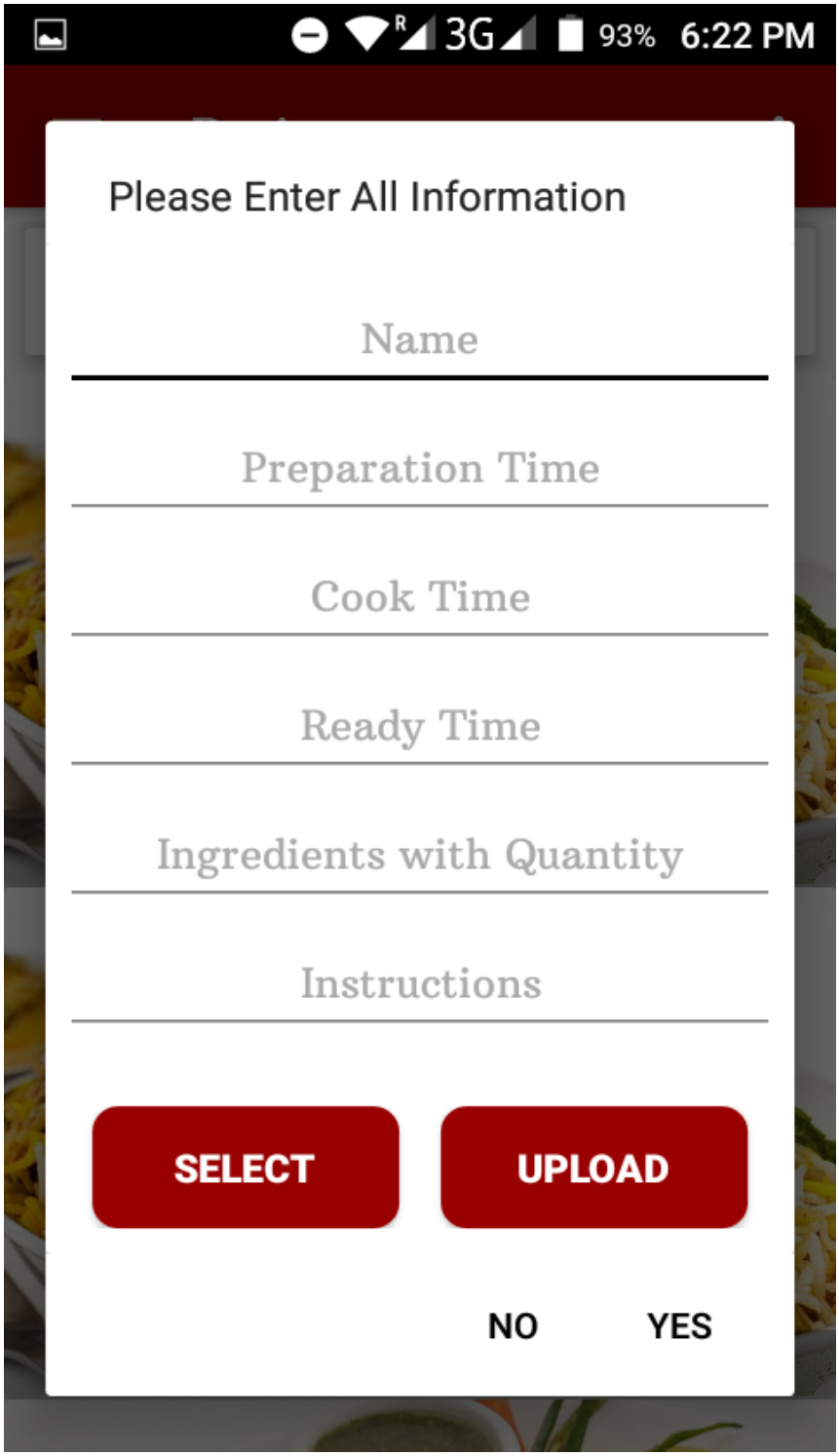
Figure 5.7 Recipe detail screen



5.3.6 Share Recipes Screen

If you have a better and easy recipe and you want to share it with other people then you can do it easily using this screen.

Figure 5.8 Share recipe



5.3.7 Recipes Navigation Screen

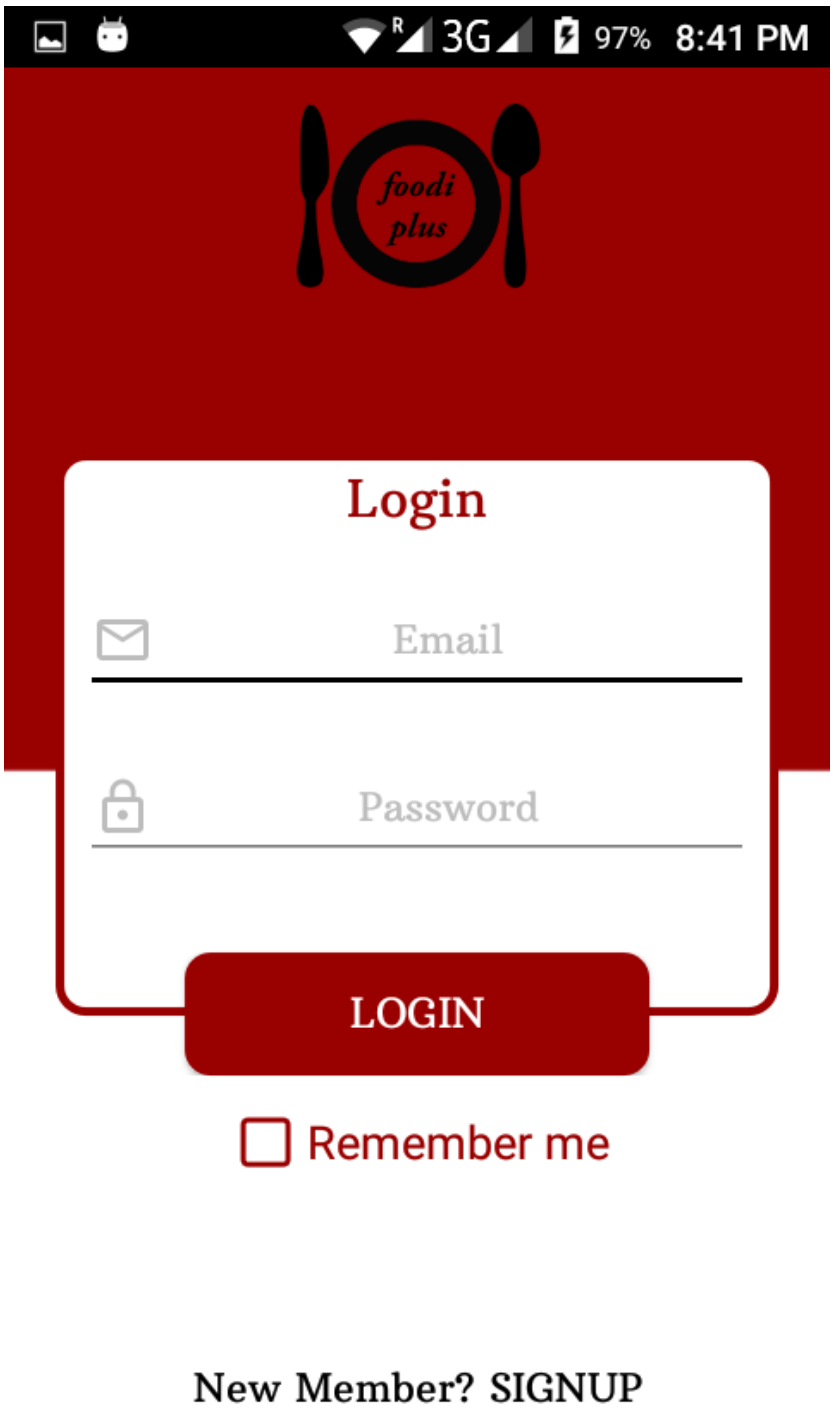
The navigation view shows the list of more options.

Figure 5.9Recipe navigation screen

5.4 Login Screen

This login screen for cook and customer.

Figure 5.10 Login Screen

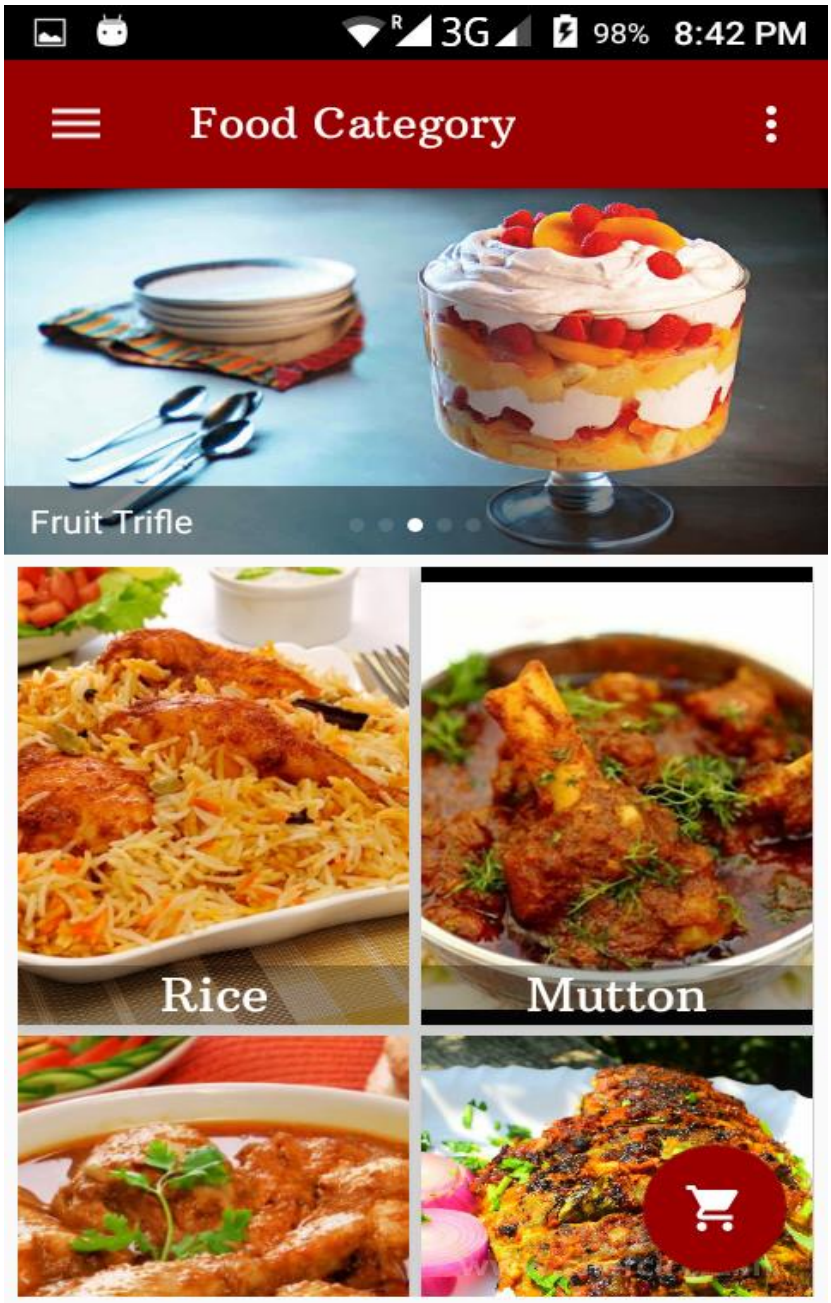


5.5 For customers

5.5.1 Category Screen

This screen shows the list of food categories.

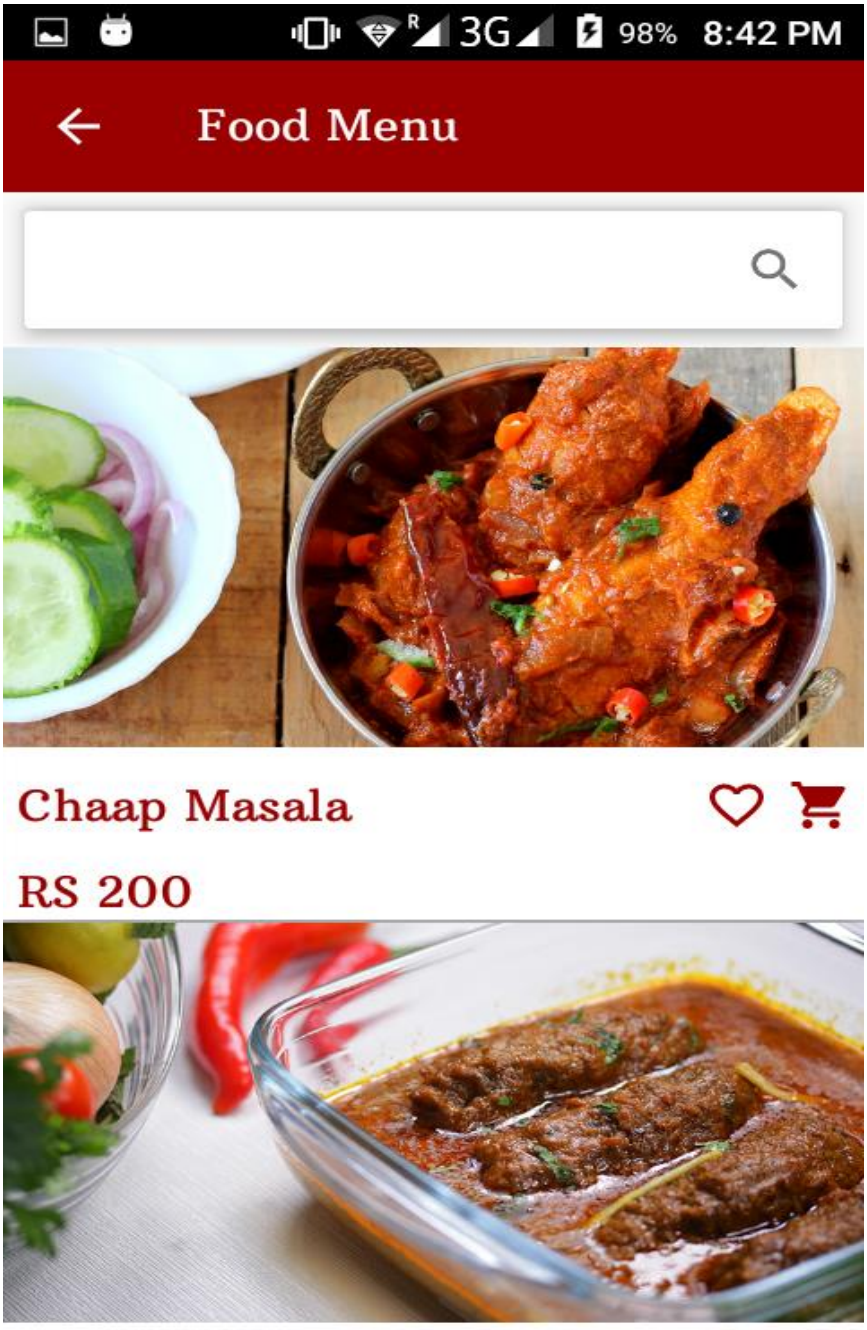
Figure 5.11 Category screen



5.5.2 Menu Screen

This screen shows the list of food menu with food name, picture, price and cart button to order that food.

Figure 5.12 Menu Screen



5.5.3 Menu Detail Screen

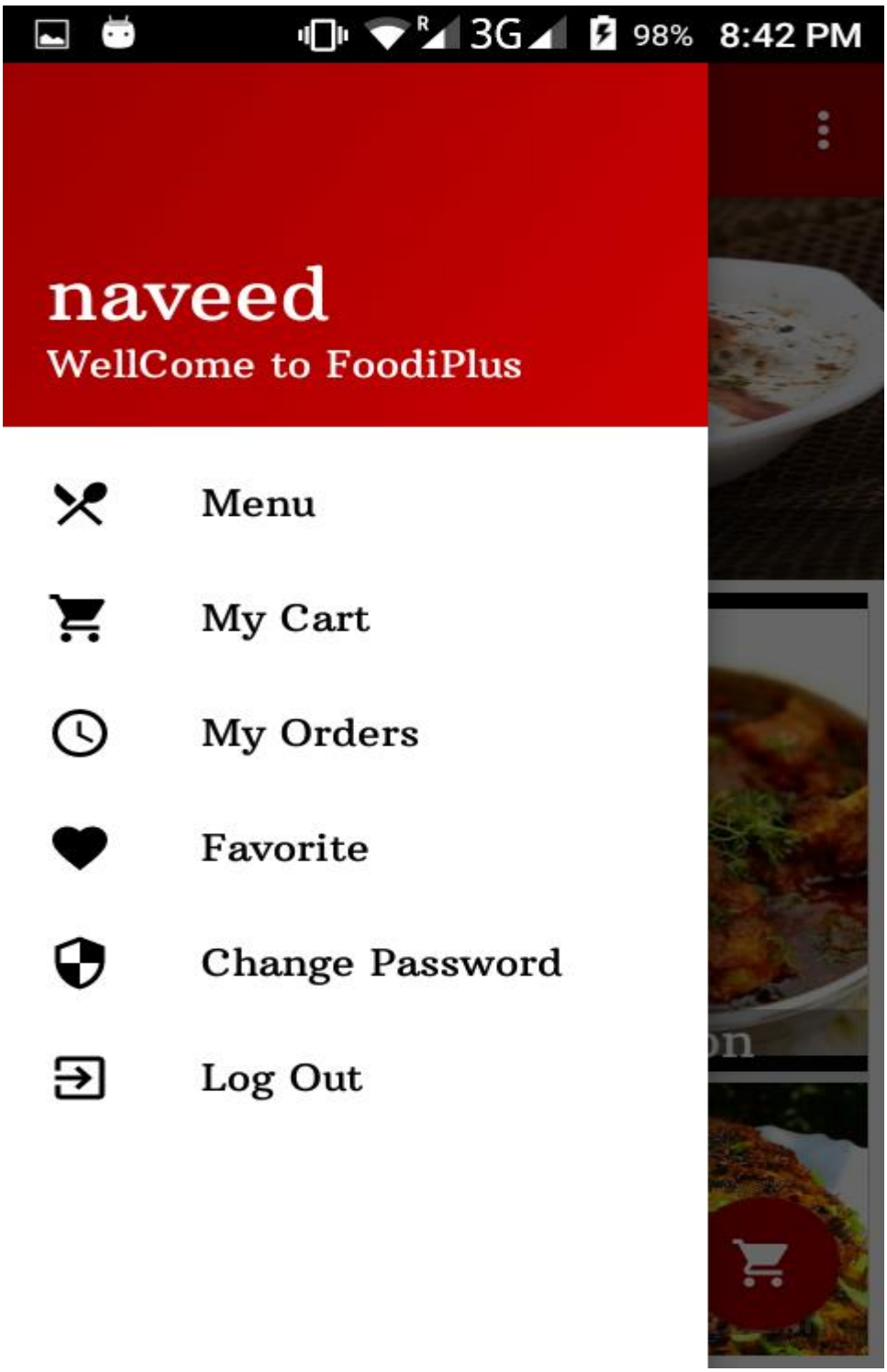
This screen shows the detail of respective food with cart and feedback button.

Figure 5.13 Menu Detail Screen

5.5.4 Navigation view Screen

The navigation view shows the list of more options.

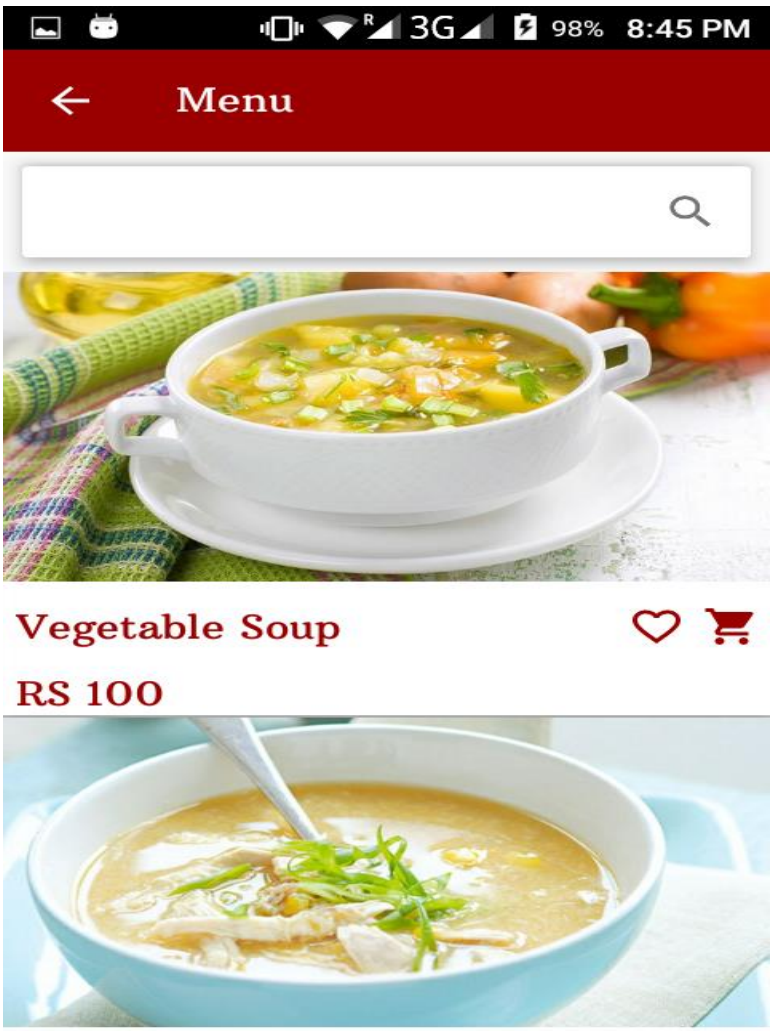
Figure 5.14 Navigation view screen (for customer)



5.5.5 Menu Screen

This screen shows the list of all food menus with search bar.

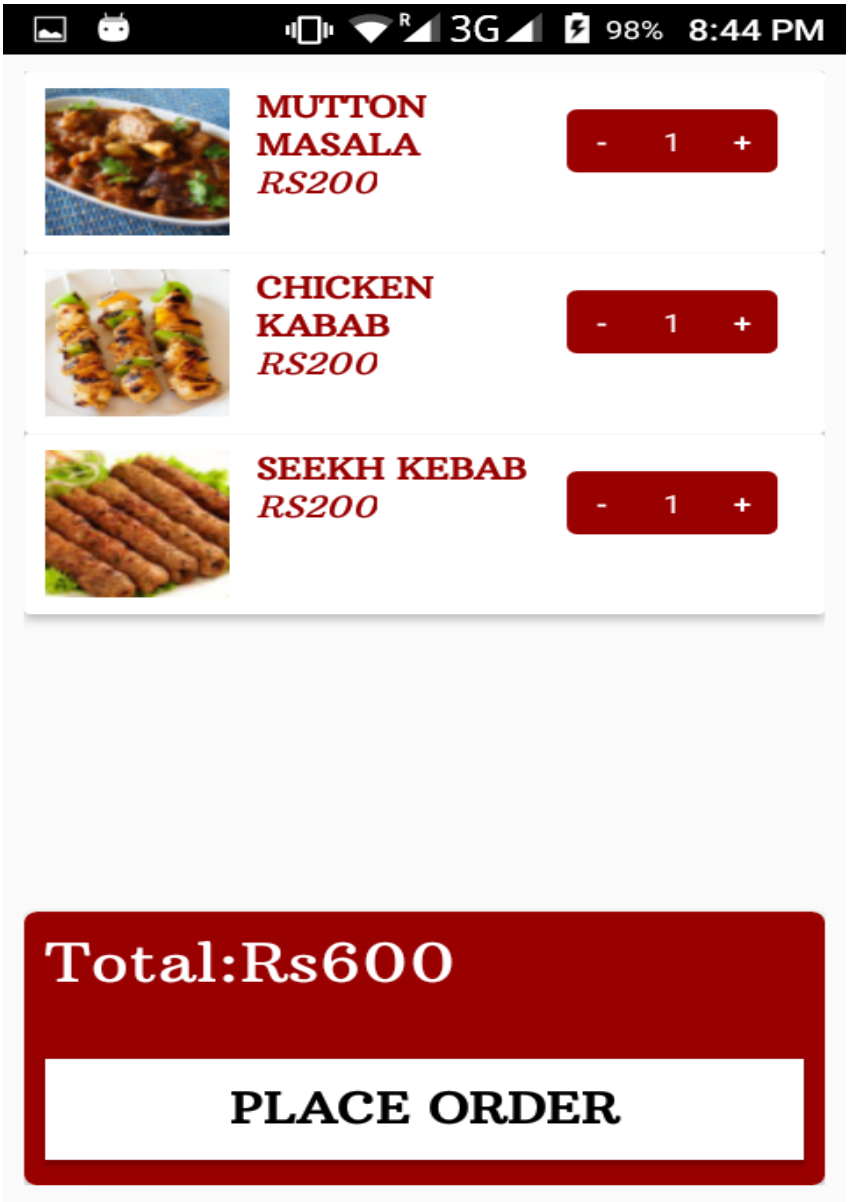
Figure 5.15 Menu Screen



5.5.6 My Cart Screen

This screen shows the list of items added to cart with add to cart button to place order.

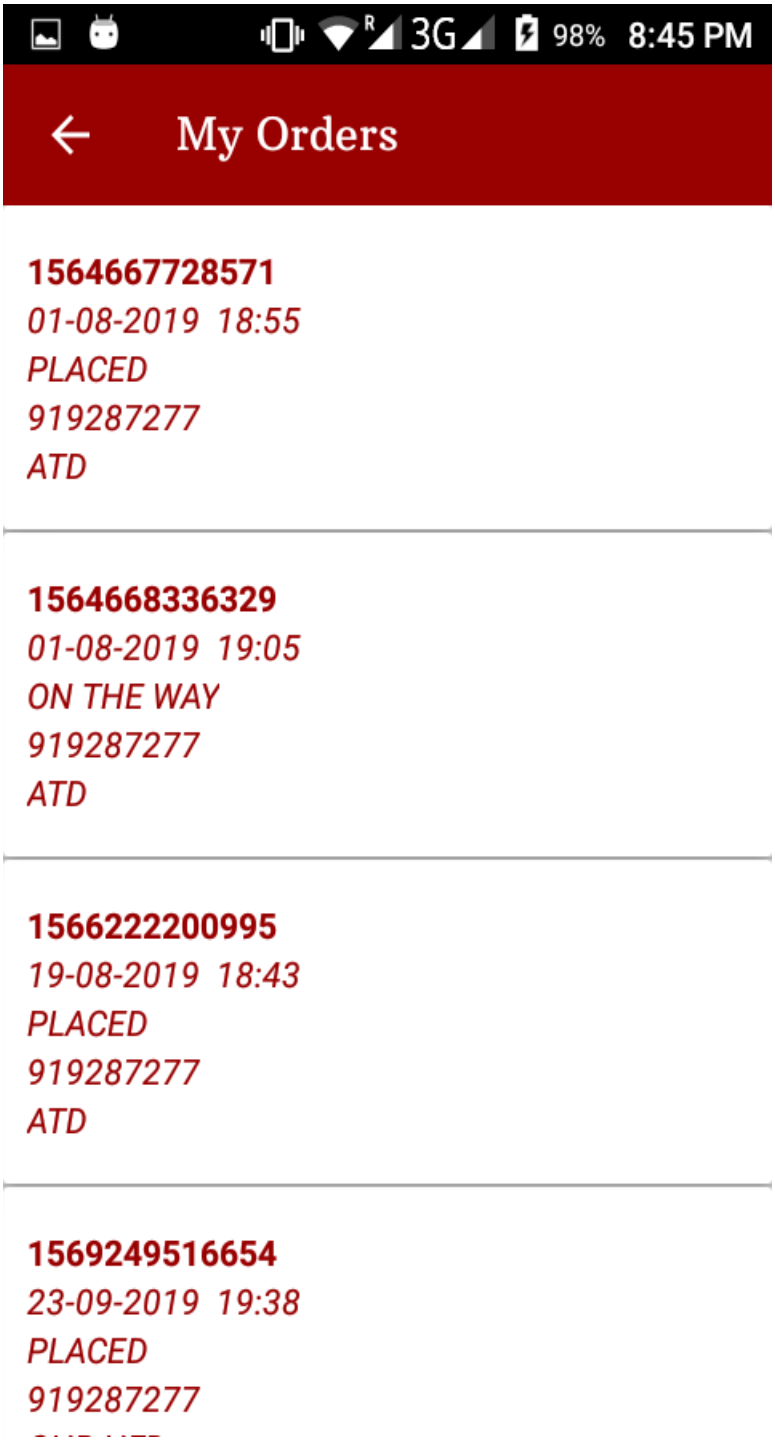
Figure 5.16 My cart screen



5.5.7 My Orders Screen

This shows the history of ordered items.

Figure 5.17 My orders screen



5.5.8 Favorites Screen

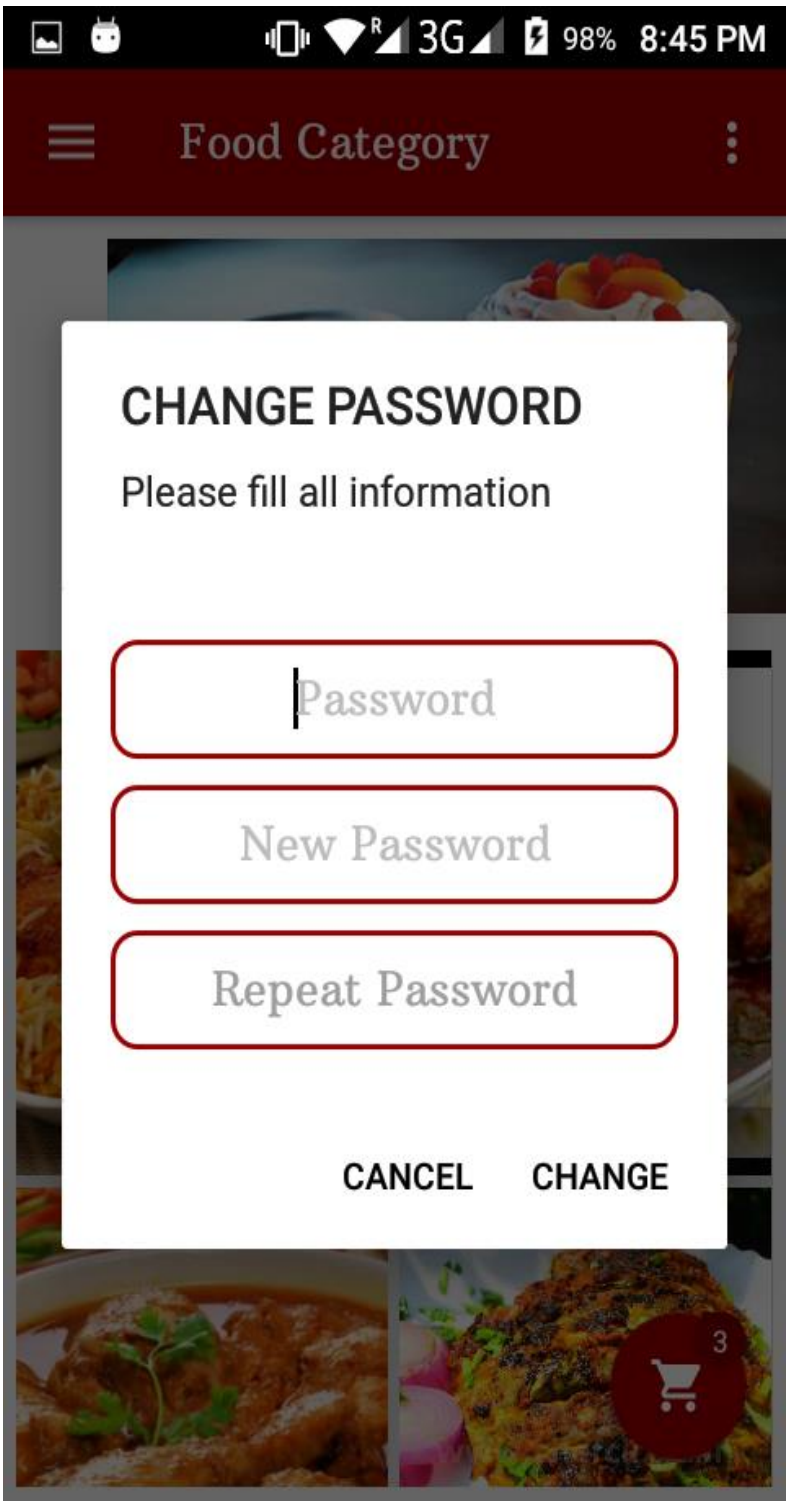
This screen shows the list of favorite items.

Figure 5.18 Favorites Screen

5.5.9 Change Password Screen

This screen helps the user to change the password.

Figure 5.19 Change password screen

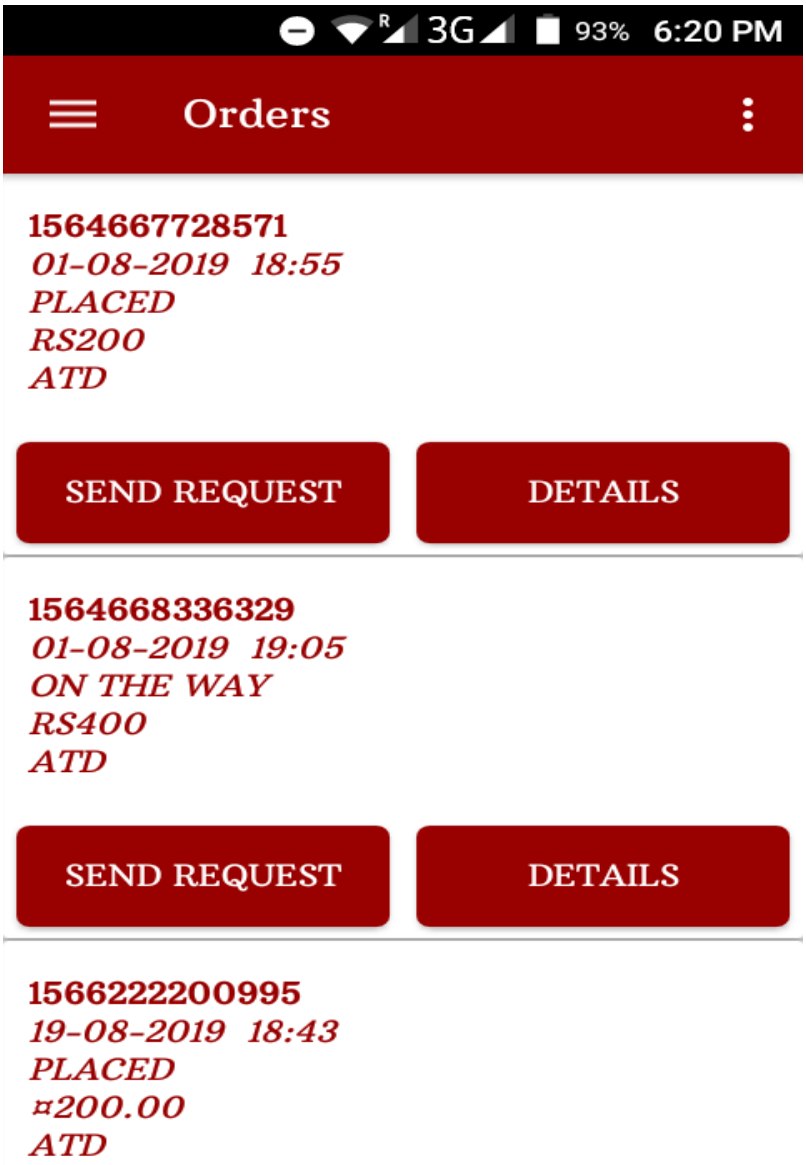


5.6 For Cook

5.6.1 Orders Screen

This screen shows the list of placed orders to the cook.

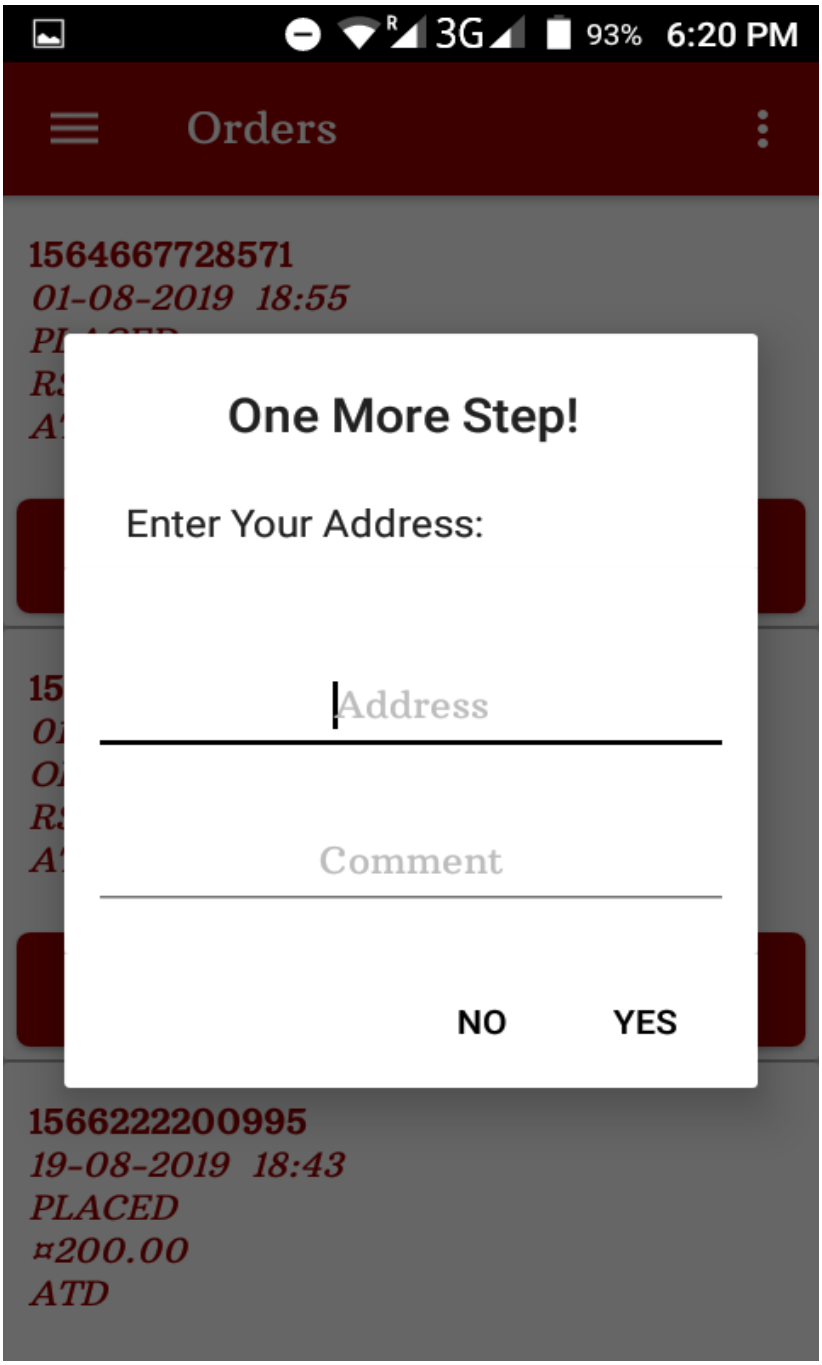
Figure 5.20 Orders screen



5.6.2 Place Request Screen

This screen help the user to place a request with their address from where he/she wants to deliver food.

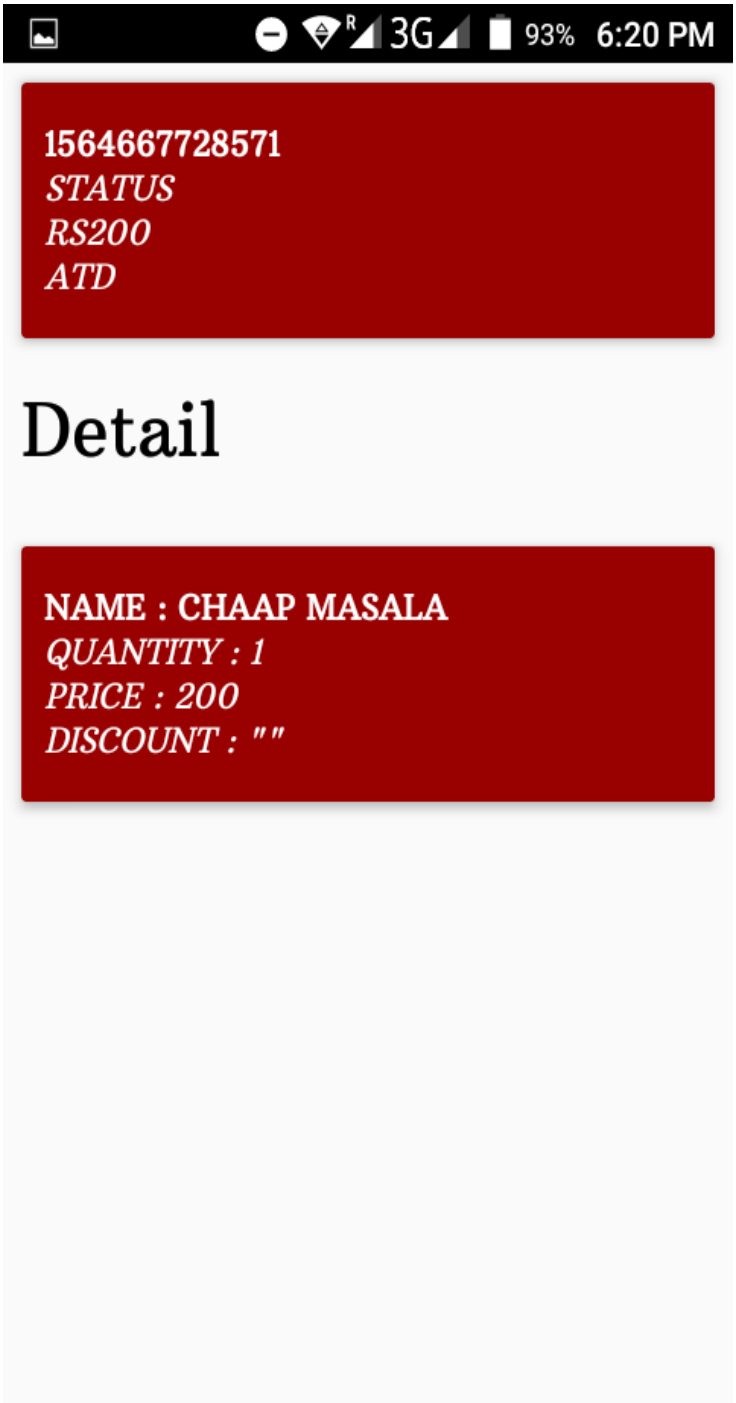
Figure 5.21 Place request screen



5.6.3 Order Detail Screen

This screen shows the details of placed orders.

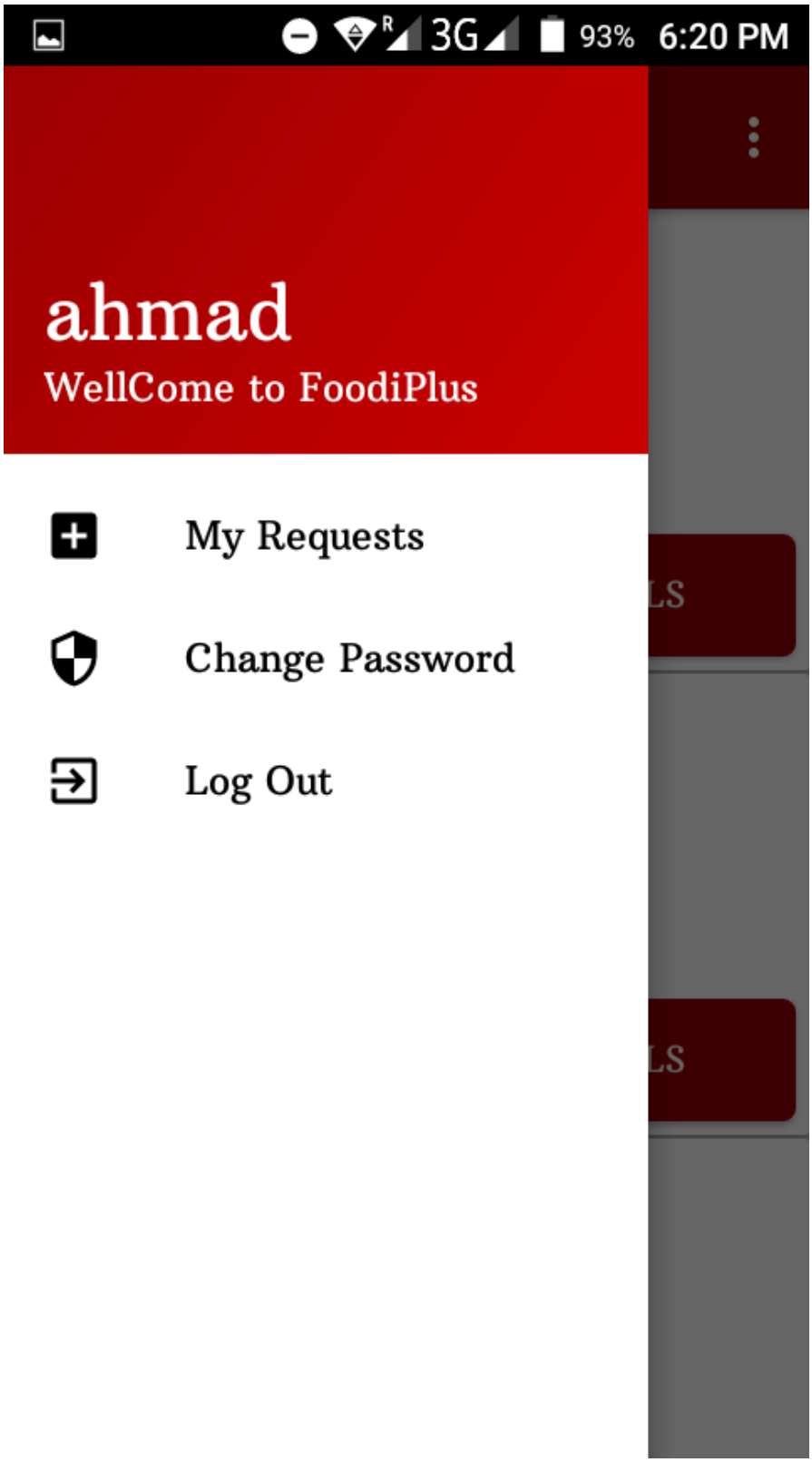
Figure 5.22 Order detail screen



5.6.4 Navigation Screen

The navigation view shows the list of more options for cook.

Figure 5.23 Navigation screen



5.7 ADMIN SIDE DESIGN

5.7.1 Category Management Screen

Using this screen admin can update or delete categories and admin can also create new category.

Figure 5.24 Category management screen

5.7.2 Menu Management Screen

Using this screen admin can update or delete food menu and admin can also create new food menu.

Figure 5.25 Menu management screen

5.7.3 Banner Management Screen

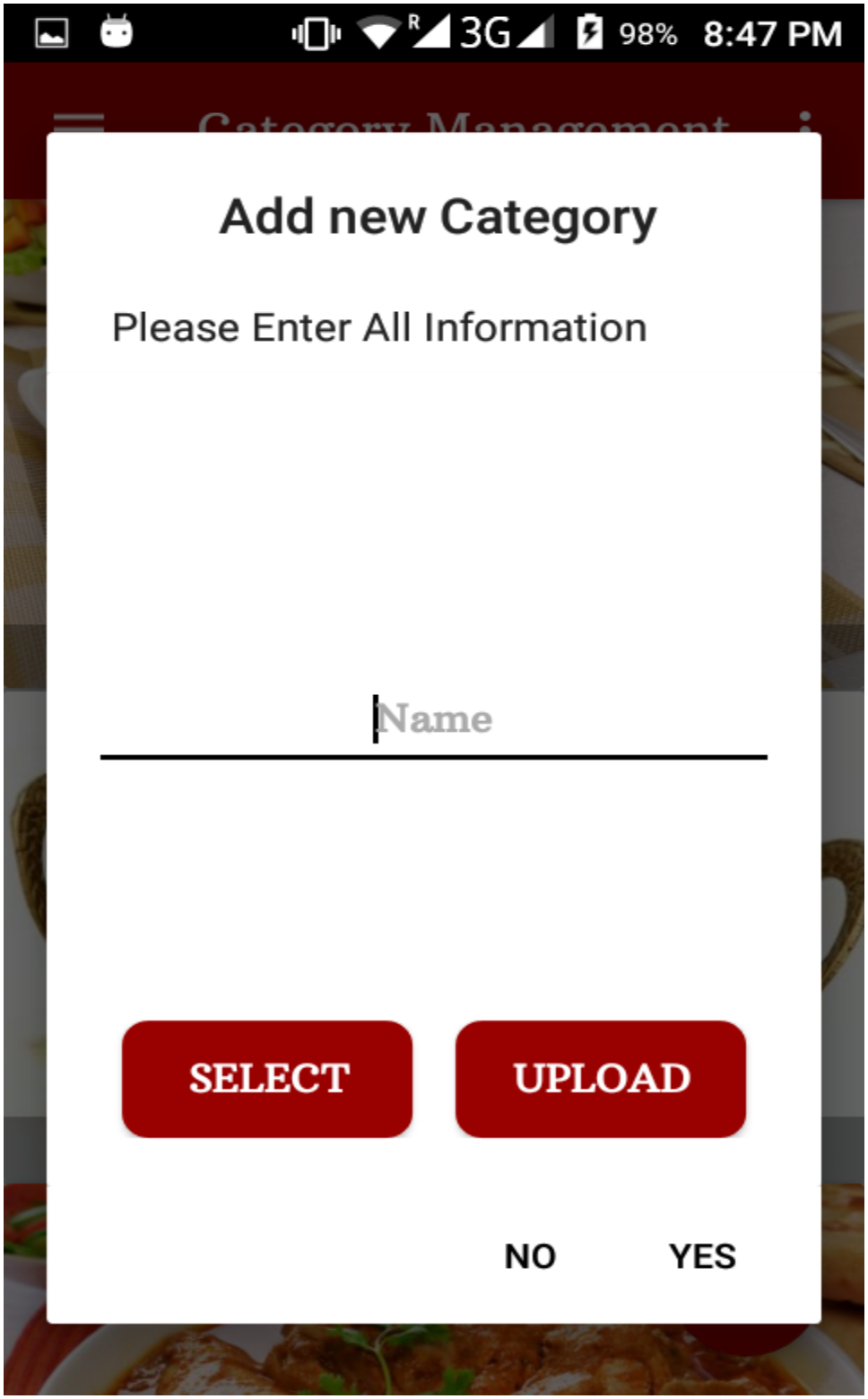
Using this screen admin can update or delete banners and admin can also create new banners.

Figure 5.26 Banner management screen

5.7.4 Add Category screen

This signup interface provides the facility to admin to add new category to list.

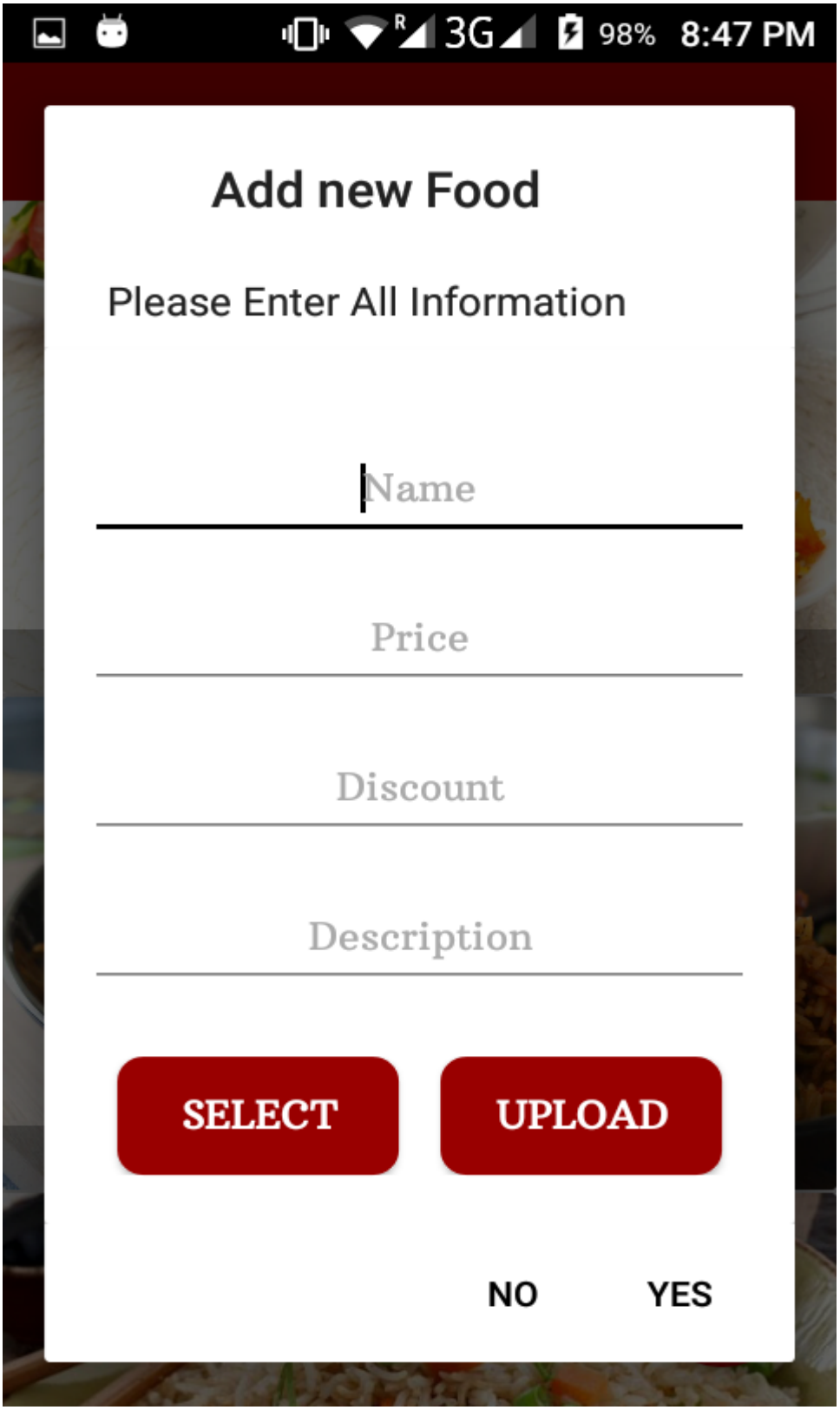
Figure 5.27 Add new category screen



5.7.5 Add Menu

This interface is used to add a new food items like Fast Food, Burger, etc.

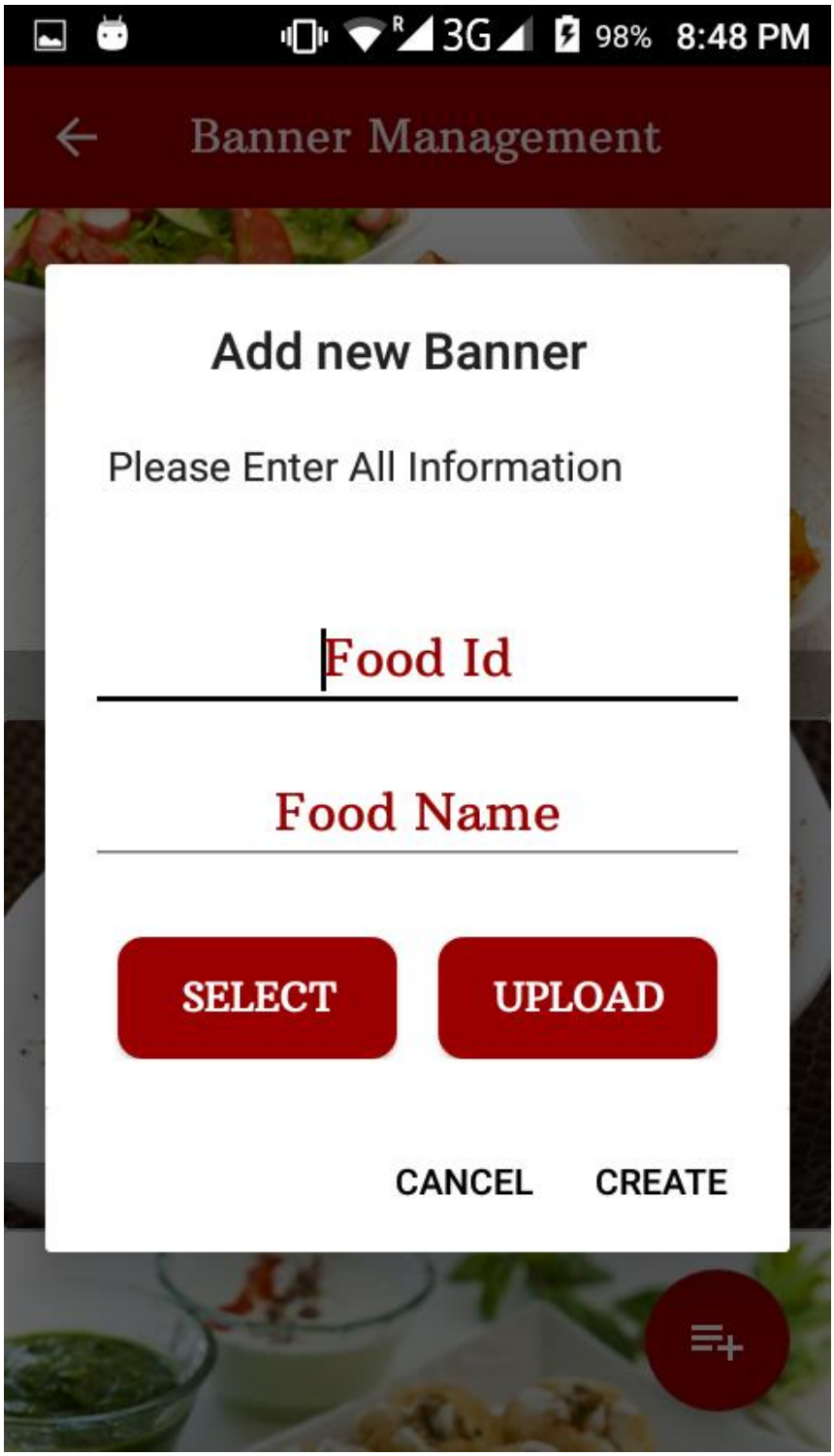
Figure 5.28 Add new menu



5.7.6 Add Banner

This interface is used to add a new food items like Fast Food, Burger, etc.

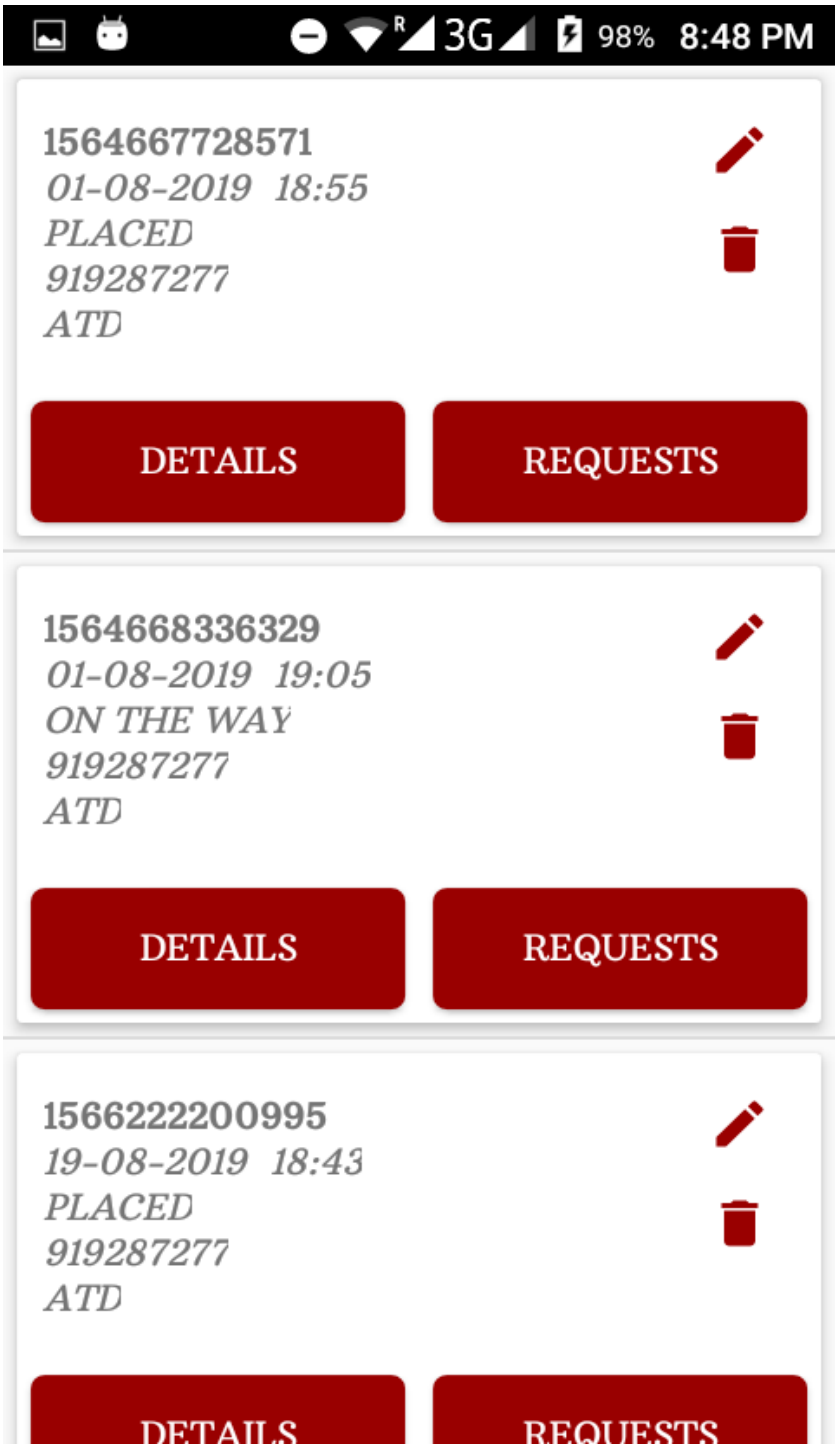
Figure 5.29 Add banner screen



5.7.7 Order Management Screen

This screen shows the details of placed orders.

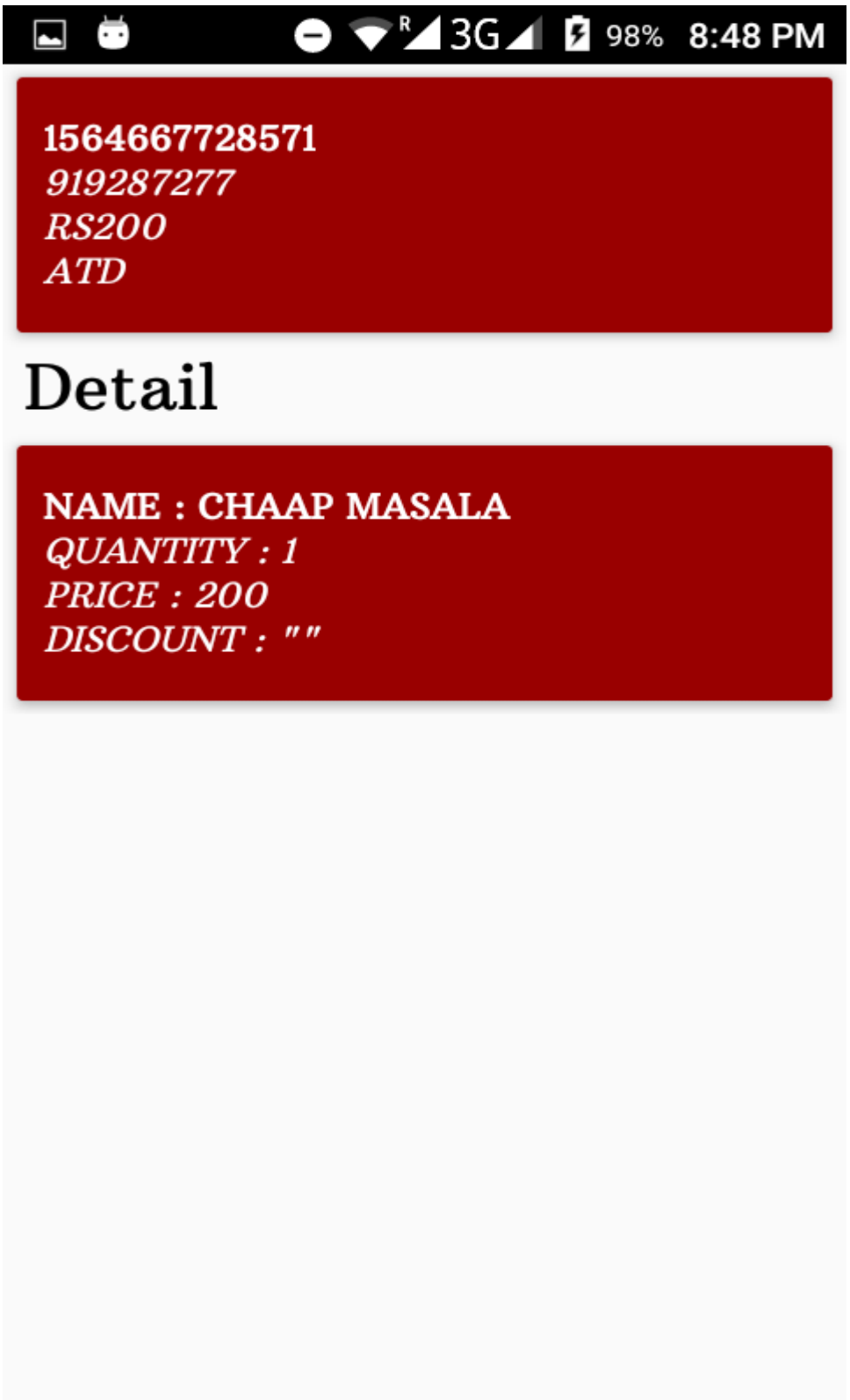
Figure 5.30 Order management screen



5.7.8 Order Details

The screen shows the detail of placed orders.

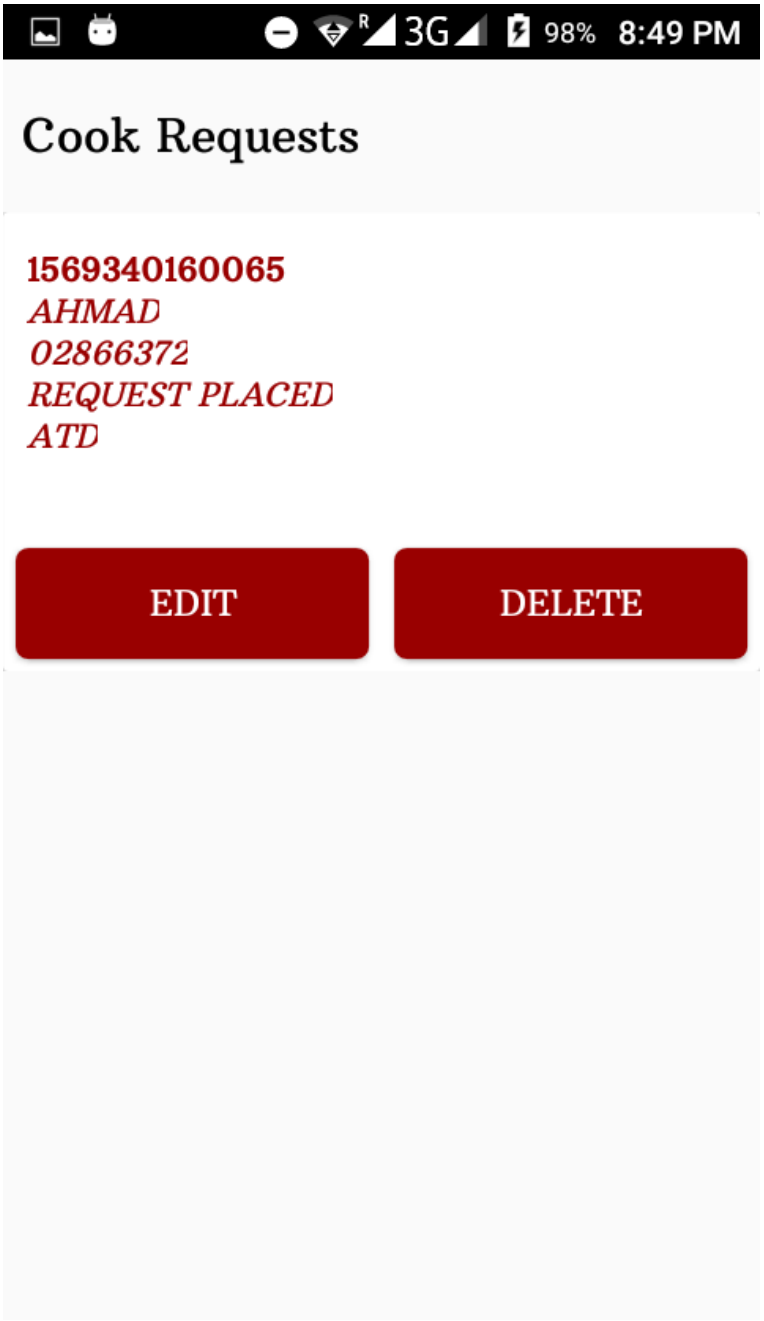
Figure 5.31 Order detail screen



5.7.9 Request Detail

This screen shows the list of placed requests for respective order.

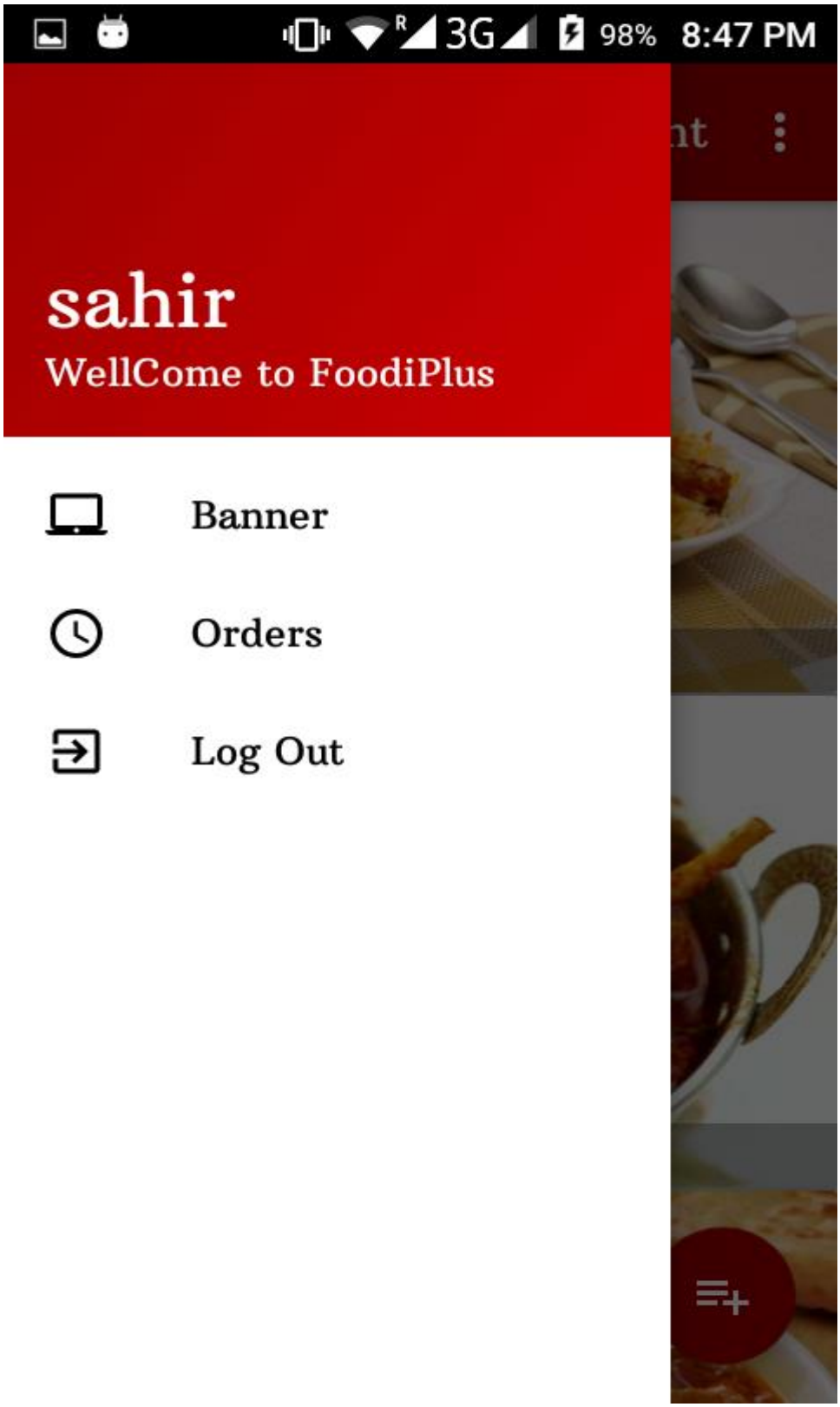
Figure 5.32 Requests detail screen



5.7.10 Navigation Selection

The navigation view shows the list of more options for admin.

Figure 5.33 Navigation screen



Chapter 6
SYSTEM TESTING

Software testing is defined as an activity to check whether the actual results match the expected results and to ensure that the software system is Defect free. It involves the execution of a software component or system component to evaluate one or more properties of interest.
Software testing also helps to identify errors, gaps or missing requirements in contrary to the actual requirements. It can be either done manually or using automated tools. Some prefer saying Software testing as a White Box and Black Box Testing.

6.1 Testing Objective

Testing is a process of executing a program with the intent of finding an error. A good test case is one that has a high probability of finding an as-yet-undiscovered error. Successful testing is one that uncovers an as-yet-undiscovered error. The above objectives are simply a dramatic change in viewpoint. They move counter to the common help view that a successful test is one systematically uncover different classed of errors and do so with a minimum amount of time and effort.
If testing conducted successfully (according to the object stated above), it will uncover the error in the software. As a secondary benefit, testing demonstrates that software functions appear to be working according to specification and that performance requirement appears to have been met. There is one thing that testing shows the absence of errors; it can only show that software errors are present.

6.2 Test Cases

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly.
The process of developing test cases can also help find problems in the requirements or design of an application.

6.2.1 Recipes Test Case

Test Case Title	Recipes
Use Case Id	Use Case 01
Description: A test case for recipes	
Test Case Scenario 1. Verify that the user does not need to login to view recipes. 2. User can view the list of recipes with name and image. 3. Verify that the user can search recipes by different methods like search by ingredients, search by time, and search by name. 4. Verify that user can view the detail of the recipe in which include name, image, ready time, prep time, cook time, ingredients with quantity, and directions.	
Test Cases Result: Pass **Tester Name:**	

6.2.2 Share Recipes Test Case

Test Case Title	Share recipes
Use Case Id	Use Case 02
Description: A test case for share recipes	
Test Case Scenario 1. User can share their recipes easily. 2. Share recipe screen contain all required fields e.g. name, upload image, cook time, ready time, prep time ingredients and directions, etc 3. Verify that the user can data submitted to the database.	
Test Cases Result: Pass **Tester Name:**	

6.2.3 Register Test Case

Test Case Title	Register
Use Case Id	03

Description: A Test case for user registration
Cases 1. Verify that all the specified fields are present on the registration page 2. Verify that for better user interface dropdowns, radio buttons, and checkboxes, etc. Fields are displayed wherever possible instead of just text boxes. 3. Verify the page has both submitted buttons at the end. 4. Verify that clicking submits button after entering all the required fields (name, address, email phone number, etc.), submits the data to the firebase database.
Test Result: Pass **Tested By:**

6.2.4 Login Test Case

Test Case Title	Login
Use Case Id	04
Description: A Test case for user login.	
Cases 1. Verify that the login screen is having the option to enter email and password with the submit button and option of remember me. 2. Verify that the user is able to login with valid email and password. 3. Verify that the user is not able to login with invalid email and password. 4. Verify that the validation message gets displayed in case the user leaves an email or password field as blank. 5. Verify that the validation message is displayed in case the user exceeds the character limit of the password fields.	
Test Result: Pass **Tested By:**	

6.2.5 Change Password Test Case

Use Case Title	Change Password
Use Case Id	Use Case 05

Description: A Test Case for change Password
Post Conditions: 1. Verify that change password screen is having the option to enter the old password, new password and retype password with the submit and cancel button. 2. Verify that the old password must be correct. 3. Verify that the new password and retype password field must be the same. 4. Verify that the old password is replaced by the new password successfully.
Test Result: Pass **Tested By:**

6.2.6 Logout

Test Case Title	Logout
Test Case Id	Use Case 06
Description: A test case for logout from the system.	
Test Scenario 1. Logout link or button is easy to use. 2. Logout link or button is easy to found. 3. Just click on logout and user session should be cleared. 4. After clocking multiple time on the logout button application should not crash.	
Test Result: Pass **Tested By:**	

6.3 For Customer:

6.3.1 View Categories Test Case

Test Case Title	View Food Categories
Use Case Id	Use Case 07
Description: View different categories of dishes	
Test Case Scenario 1. User must be login to the system. 2. User can view different food categories images with their name. 3. User can click on image to view the food menu of a specified category.	
Test Cases Result: Pass **Tester Name:**	

6.3.2 View Menu Test Case

Test Case Title	View Food Menu
Use Case Id	Use Case 08
Description: View different dishes.	
Test Case Scenario 1. User can view the list of food menu with name and image. 2. User can click on image to view the detail of the dish. 3. This page also contains a cart button and add to favorite's button.	
Test Cases Result: Pass **Tester Name:**	

6.3.3 View Dish Detail Test Case

Test Case Title	View Dish Detail
Use Case Id	Use Case 09
Description: A Test Case for view dish detail	

Test Case Scenario 1. User can view the detail of the dish with image, name, price, description, etc. 2. This page can also contain the order button, rating button, elegant number button to select the quantity of dish and comment button to view the comments.
Test Cases Result: Pass **Tester Name:**

6.3.4 Order Dish Test Case

Test Case Title	Order dish
Use Case Id	Use Case 10
Description: A Test Case for order dish	
Test Case Scenario 1. User clicks on a cart button to purchase a dish. 2. Verify that the selected dish added to the cart list. 3. Verify when a user clicks on place order must be submitted to the database.	
Test Cases Result: Pass **Tester Name:**	

6.3.5 View Cart Test Case

Test Case Title	Edit Order
Use Case Id	Use Case 11
Description: A test case for view cart	
Test Case Scenario 1. View cart button easy to find for user. 2. Verify that the order history is shown in my cart list. 3. Verify that the user can see the status of the order.	
Test Cases Result: Pass **Tester Name:**	

6.3.6 Menu Test Case

Test Case Title	Menu
Use Case Id	Use Case 12
Description: A test case for menu	
Test Case Scenario 1. User can search directly from the menu list.	
Test Cases Result: Pass **Tester Name:**	

6.4 For Cook

6.4.1 View Orders Test Case

Test Case Title	View orders
Use Case Id	Use Case 13
Description: A test case for View orders	
Test Case Scenario 1. Cook must be login to the system. 2. Cook can see the list of all orders with details and request button. 3. Cook can see the detail of the order if he/she can complete the order he/she request to the admin to get the order. 4. Verify that If he/she gets the order and ready to deliver it can change the status of the request.	
Test Cases Result: Pass **Tester Name:**	

6.5 For Admin

6.5.1 Add Category/Menu

Test Case Title	Add category/menu
Use Case Id	Use Case 14
Description: A Test case for add category and menu	
Test Case Scenario 1. Verify that admin must be login with correct ID and password. 2. Admin can add new category and menu item. 3. Verify that Admin fills all required fields. 4. Verify that data submitted to database successfully and can be viewed by the customer.	
Test Cases Result: Pass **Tester Name:**	

6.5.2 Update Category/Menu

Test Case Title	Update category/menu
Use Case Id	Use Case 15
Description: A Test case for update category and menu	
Test Case Scenario 1. Verify that admin must be login with correct ID and password. 2. Admin can update new category and menu item. 3. Verify that Admin can change the name and image of the existing dish. 4. Verify that data submitted to database successfully and can be viewed by the customer.	
Test Cases Result: Pass **Tester Name:**	

6.5.3 View Order

Test Case Title	Admin View Order
Use Case Id	Use Case 16
Description: A Test case for Admin view order	
Test Case Scenario 1. Verify that User must be login with correct ID and password. 2. Admin click on the view order list 3. Admin can also delete order, change status and view detail of order	
Test Cases Result: Pass **Tester Name:**	

6.5.4 View Request

Test Case Title	Admin View Order
Use Case Id	Use Case 17
Description: a Test case for Admin view request	
Test Case Scenario 1. Admin click on the view order list 2. The system shows the list of order with button requests which shows the list of requests 3. Admin can assign an order to the cook and change the status of the request.	
Test Cases Result: Pass **Tester Name:**	

Chapter 7
CONCLUSION AND FUTURE WORK

7.1 Conclusions

The software developed is a hypothetical idea, which of course can be implemented as well. The software is flexible enough to be modified easily for further needs. This software will be serving as a product for the information system. Therefore it will be customized for every change in the policy.

Due to the time constraints to the submission of his project, the system could not be fully evaluated but generally, it produces information that possess the properties of accuracy, completeness, timeliness, and conciseness. Some of the measurable human factors that are central in the evaluation are ease of use, speed of performance and rate of errors.

This project is an Android Application. This project contains three parts, Background Management Platform (admin), Recipes and Cook or customer. The Android framework was used in the Android Application.

This project was a typical combination of Recipes and Food ordering system. The aim of the project was to help the peoples to sell their food from their home and meanwhile, help the customer to purchase dishes in different platforms easily.

By now, the core function of this project has been implemented. The admin can manage dishes and handle dish orders and so on. On the public page, there are two type of users one is the cook and other one is customer. Customers can view dish information and purchase dishes. Also, the customer can order dishes from the Android platform. Cook can view order information and sell their dishes using this android platform.

Developing the application made it possible to learn and practice the whole processes of Android framework. The following results have been achieved after completing the system and relate back to the system's objective.

- **Should allow users to browse through different product categories:**
  This is achieved through an easy to use graphical interface menu options.
- **Should allow users to save items to the cart and view detailed information about the order:**

The users can add any number of items to the cart from any of the available food categories by simply clicking the Add to Cart button for each item. Once item is added to the cart, user is presented with detailed order to review or continue shopping.

- **Should allow the user to see Success message after placing an order:**
  This is achieved when user successfully places an order. The user is given the order conformation number along with success message.
- **Should allow the user to see order status notification:**
  This is achieved when admin change the order status and customer received the notification.
- **Should allow the cook to see Success message after placing request:**
  This is achieved when user successfully places a request.
- **Should allow the cook to see request status notification:**
  This is achieved when admin change the request status and cook received the notification.
- **Should allow the user to see recipes:**
  This is achieved when user can see the list of recipes with search facility.
- **Should allow the user to search recipes by ingredients:**
  This is achieved when user can see the list of recipes which have the given ingredients.
- **Should allow the user to search recipes by time:**
  This is achieved when user can see the list of recipes which can be ready within a given time.
- **Should allow the user to see Kids recipes:**
  This is achieved when user can see the list of kid's recipes with search facility.
- **Should allow the user to share their recipes:**
  This is achieved when user can share their own recipes and that can be searched by the search bar.

7.2 Future Work:

The following section describes the work that will be implemented with future releases of the software.

- Enhance User Interface by adding more user interactive features. Provide Deals and promotional Offer details to home page. Provide Recipes of the Week/Day to Home Page.
- Payment Options: Add different payment options such as PayPal, Cash, and Gift Cards etc. Allow to save payment details for future use.
- Add shipper's module to pick food from cook locations and deliver it to the customer's locations.
- Add real time tracking system to track the shipper's locations and estimate the delivery time.

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Keyword

Food-delivery

Innovation

Convenience