E-Meal

Final Year Project

Fall 2019-2021

A project submitted in partial fulfillment of the degree of

Masters in Information Technology

Department of Information Technology

Faculty of Computer Science & Information Technology

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THE SUPERIOR COLLEGE LAHORE

Faculty of Computer Science & IT

Final Year Project
PROJECT REPORT

E-Meal

Project ID: **FYP-MITM-F20-003**

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LECTURE

E-Meal	[✓] **D**evelopment [ ] **R**esearch [ ] **R**&**D**
Area of specialization	Mobile Application Development

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Plagiarism Free Certificate

This is to certify that, I Majid ur Rehman Son of Habib ur Rehman group leader of FYP under registration no mitm-f19-070 at Information Technology Department, The Superior University, Lahore. I declare that my FYP proposal is checked by my supervisor and the similarity index is 10 that is less than 20%, an acceptable limit by HEC. Report is attached herewith as Appendix D.

Date: Jul-26-2021 Name of Group Leader: Majid Ur Rehman Signature: _____

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Designation: Lecturer

Signature: _____

HoD: Dr. Syed Asad Ali Naqvi

Signature: _____

Project Report E-Meal

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Majid, Agha, Ayesha	1.0	5-oct-20	Project Design	
Majid, Agha, Ayesha	2.0	11-nov-20	<Changes Based on Feedback from Supervisor>	
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Majid, Agha, Ayesha	5.0	20-Jun-21	<Changes Based on Feedback from Supervisor>	

APPROVAL

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Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

This final year project is dedicated to our beloved parents and teachers whose prayers and affection enabled us to be what we are today.

Acknowledgements

I am thankful to all those who have given me constant scholarly and moral support through my FYP. I would like to acknowledge gratitude to my project supervisor SIR IFRASEAB AFZAL for his support during the project. He is a very responsible supervisor with plenty of patience in reading my weekly reports and listening to my presentation. His guidance has been very useful. His significant comments, feedback and encourage me a lot in solving many of the problems in this project. Thank you.

Executive Summary

Nowadays, people are more and more frequent for their meals. It will have a lot of people specially hostilities/ tourists people looking for restaurant that they prefer for the hygienic/homemade meal such as breakfast, lunch and dinner. At this moment, it arises a lot of troublesome to restaurants which are still using traditional food order method as their food order process. Due to great increase in the awareness of internet and the technology associated with it, several opportunities are coming up on the web. So many business and companies now venture into their business with ease because of internet. Most of the people preferred home food over the restaurants and they wish to make money from their home so we are providing them the opportunity as a E-Meal which will automate the major online home-based food orders operations.

So, I am proposing here an online homemade food ordering system, greatly simplifies the ordering process for both user and chef.

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Chapter 1

Introduction

Chapter 1: Introduction

It is known globally that; it is difficult to start a new small-scale business. In fast time when everyone is squeezed for time, most people are busy life, when it comes to making a hygienic food. Now our application E-Meal is used for time saving for everything kind of person and through our E-Meal, we will provide the homemade fresh and healthy food to the users. Mostly people want homemade food who far from their homes. We also provide hygienic food because we are making and delivering homemade food. People come from different cities mostly prefer homemade food rather than restaurants food, There is no availability of homemade food for those hostilities / tourists' people.

So, we are proposing here an online homemade meal ordering system, greatly simplifies the ordering process for both user and chef. System presents an interactive and up-to date menu with all available options in an easy-to-use manner. User can choose one or more items to place an order. If user orders something that is not available in the existing menu list, then user can order whatever he wants to order. Moreover, we're living in an economical country, everyone is in the search of discounts, sale etc. so in this we're also provide a special discount coupons and promotions on the website so that maximum amount of people can use and avail these offers.

1.1. Background

Nowadays, people are more and more frequent for their meals. It will have a lot of people especially hostilities/ tourists people looking for restaurant that they prefer for the hygienic meal such as breakfast, lunch and dinner. At this moment, it arise a lot of troublesome to restaurants which are still using conventional food request technique as their food request measure Due to incredible expansion in the consciousness of web and the innovation related with it, a few open doors are coming up on the web. So numerous business and organizations presently adventure into their business effortlessly considering web. One of such business that the internet introduced is an online food ordering system. In age of food and takeout, many restaurants have chosen to focus on quick preparation and speedy delivery of orders rather

than offering a rich dining experience. Until recently, most of these delivery orders workplace over the phone, but there are many disadvantages to this system.

1.2. Motivations and Challenges

Motivation:

E-Meal will be a better system; we felt it was our obligation to help them in their time of need. Our team has a lot amount of knowledge when it comes to problem solving, programming and communication. Not only we strive to give the home-bases food to the user, but also we will continue to make sure the software is at its very best.

Each one of us will always and will continue to give hundred percentage and more to making the transition a breeze for this mobile application. Our team leader Majid and developer Ayesha brings to the project mass amount of programming. His expertise will coincide with our frontend, backend design and project manager expert Agha Moshsin, whom has experience with databases, web programming. We are having multiple heads working on the programming abilities help in ensuring no errors will implemented and every single detail will put into place.

Challenges:

- **Unreliable**: This is a major problem that every online home-based meal businesses go through and to have a wide view, this problem exists in every business. People order one product through the web and get delivered a different one. This makes the user have trust issues in the organization. Even in food delivery this Often happens, like replacing the orders with different addresses. And the most common complaints are, the food is not hot, by the time the delivery man reaches the appropriate address after getting stuck in traffic for long hours. Users get irritated when they are handed with cold food that is not hot. This brings a total disappointment to the user in the organization, and the company is on the verge of losing its valuable user. If the manpower for delivery is short, then it would take a bad hit. So, maintaining and providing proper training for the staffs will be a wise move.
- **Oscillating User Loyalty**: This is one of the main problems that many of the users face. A thing that is good for one might not be good for the other. Some users look for a variety of food so they can get a lot of options. But on the other hand, this might be the biggest

hurdle for the company and owners and chef because they must keep up with the market trends. This makes the business owners stand them on their toe. This can overcome by focusing on the busines.

- **Retaining Users:** People get bored easily if the food is good. The competition is very high day by day to startup a new business. Retaining users is a big challenge to a company is coming in this field.

1.3. Goals and Objectives

A layout framework for a develop a new system and market for maximum use to create an avenue through the web or app where users can log-in to our system and make a selection of whatever service or food they like and pay via the internet. The following are the goals & objectives this would bring:

- The home page in mobile application interface provide to the users will be able to gather more and reliable information about what the online homemade food.
- In this application we provide the food and services offered the users with all the different categories of available food that they can choose and select from.
- E-meal app will provide a user-friendly environment between the user and chef who make the homemade food thus increasing the efficiency of the food ordering system

1.4. Literature Review/Existing Solutions

Following are the leading companies that they are working this kind of applications.
Food panda
Uber Eats

1.5. Gap Analysis

People mostly like hygienic food and prefer homemade food. As you know restaurant's food is not hygienic, if some restaurants provide hygienic/quality food, then the problem is that those restaurants are far away from their houses. And mostly restaurants are expensive as well that everyone can't afford it. For hostilities/tourists people the most common problem is that owing to variable timetable and hectic routine, it could be more difficult for people to decide when and where to have their lunch and dinner.

Pakistan is an economical country and mostly women are not allowed to go out their houses for work so this system is for the woman's so that they can earn online. They can earn by cooking food.

1.6. Proposed Solution

To solve this problem, we proposed a system which is online food ordering system that consists of four modules chef, user, bike-rider and admin. Through which user can order food from current location with the given time. And the chef will accept the request. Request will be sent to the area wise chef so it will be easy to deliver food. By this application user can also delivered to get homemade food in low price because of coupons. If user have coupon then he/she can get food in discounted price. From this platform woman can also easily earn money.

1.7. Project Plan

This Project planning is done by defining calculating and mile-stone in this calculating the time to deliver each. Firstly we identify the problem into vertical features, many things that make sense to the users of the application.

1.7.1. Work Breakdown Structure

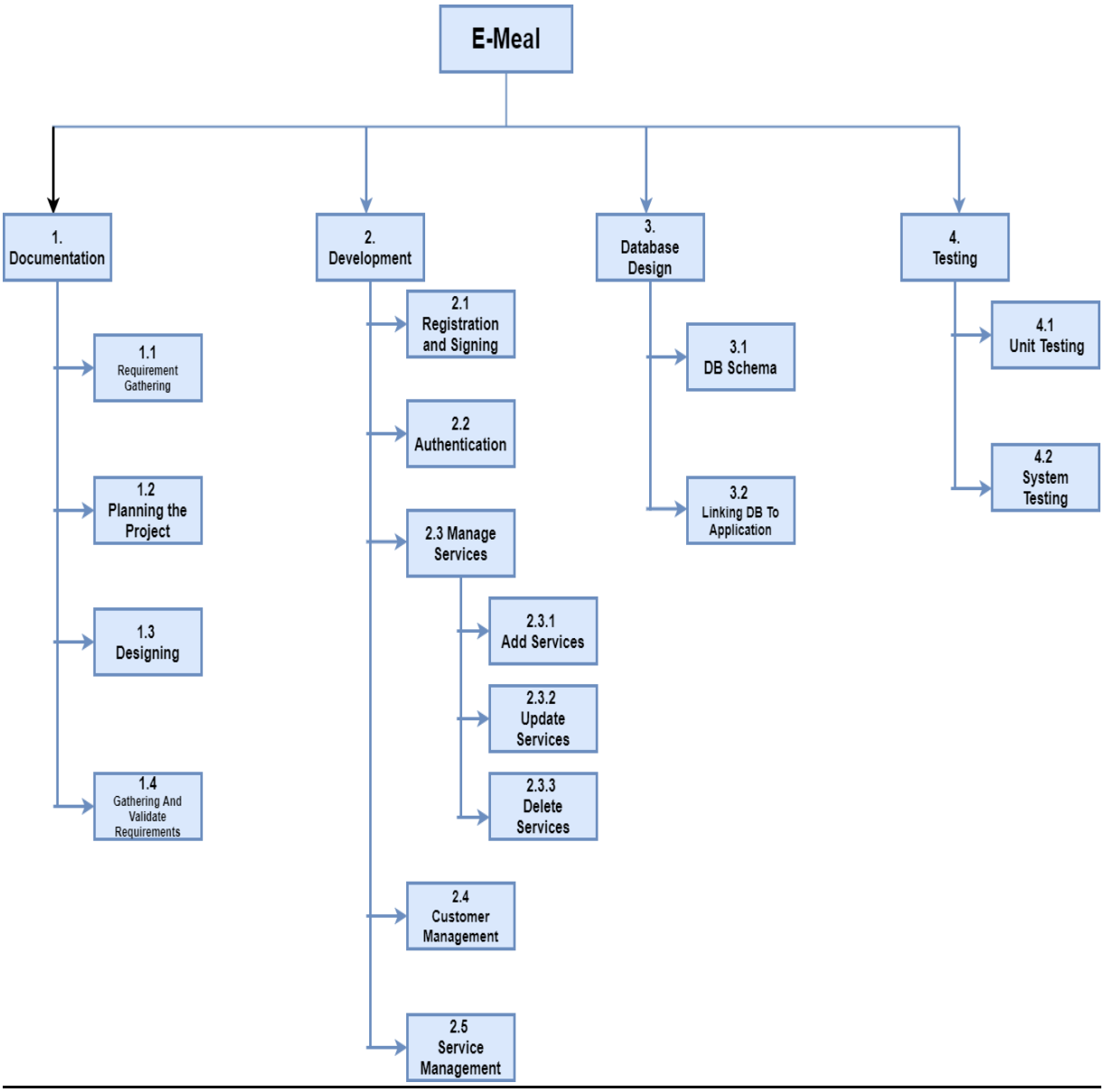


Figure: 1.1 Work Breakdown Structure

1.7.2. Roles & Responsibility Matrix

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1.1	Documentation	1.1.1	Requirement Gethering	5	Majid, Agha, Ayesha
		1.1.2	Planning the project	3	Majid, Agha, Ayesha
		1.1.3	Designing	2	Majid, Agha, Ayesha
		1.1.4	Gathering and Validate	2	Majid, Agha, Ayesha
1.2	Development	1.2.1	Registration and Signing	2	Majid, Agha, Ayesha
		1.2.2	Authentication	2	Majid, Agha, Ayesha
		1.2.3	Manage Services	3	Majid, Agha, Ayesha
1.3	Database Desgin	1.3.1	DB sehema	5	Majid, Agha, Ayesha
1.4	Testing	1.4.1	Testing unit	5	Majid, Agha, Ayesha
		1.4.2	System test	5	Majid, Agha, Ayesha

1.7.3. Gantt Chart

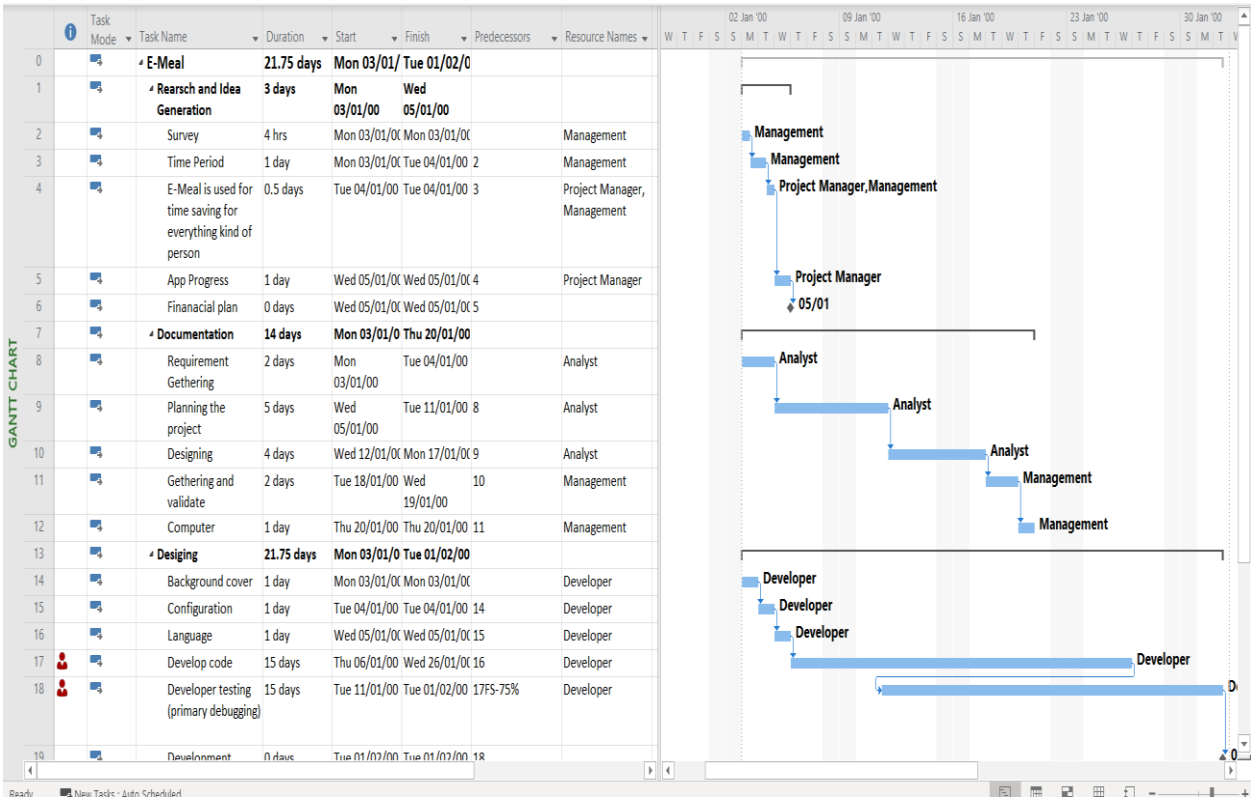


Figure: 1.2 Gantt Chart

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

Nowadays, people are more regular to dine-in at restaurant for their meals. The online food ordering system provides convenience for the users that are nothing special but the general busy people of the society. It conquers the bad marks of the manual lodging or wreck framework and the good old lining framework. This framework upgrades the readymade and clean food to the people. The e-meal application which are provides the menu and the users can easily place the order by just clicking the mouse in laptops and computers or by touching a button on their smart phones. This e-meal application allows the user to select the different categories of food from a list of available menu items, the user can than place the selected order. The payment can be cod which is cash on delivery.

2.1.2. Document Conventions

The document follows Calibri Format and font size 12, bold faced text has been used to emphasize section and sub section heading highlighting is to point out words in the glossary and specialized text is recognize diagrams.

2.1.3. Intended Audience and Reading Suggestions

Audience and Reading Suggestions be read by the development team, manager, project manager, implementation checker, marketing testing team and documentation writers. Our stakeholders and company familiar with the hardware, company provide and embedded the operating who will market finished the product and may review the document to learn about the product so that they can understand the requirement. The developers and the project manager are familiar with Software requirements specification, others can be reviewing them.

2.1.4. Product Scope

Most of the people preferred home food over the restaurants and they wish to make money from their home so we are providing them the opportunity as a E-meal which will automate the major online homemade meals orders operations. It contains the following modules.

- User Module:
    - Register/Login
    - Abort Account
    - Issue Refund
    - Book Order / Cancel Order
    - Provide Contact Details
    - Feedback
    - Pay Cash
    - Select Current Location
    - Request Food
    - Logout
- Chef Module:
    - Register/Login
    - Accept/Reject Order
    - Add Location
    - Abort Account
    - Indicate item Ready
    - Deliver Item
    - Process Cash Payment
    - Logout
- Bike-Rider Module:
    - Register/Login
    - Accept/Reject Food Parcel
    - Add Location
    - Abort Account

- Live location
- Process Cash Payment (COD)
- Logout

- Admin Module:
  - Register/Login
  - Issue Refund
  - Abort Account
  - Add/Update/Delete Food Category
  - View Contact Details Provide Offer/Coupon
  - View Feedback
  - Modify Information
  - Validate Payment
  - Logout

The first module is for user so that user could easily request for his favorite food from any location by entering some information's related to that food. The user first has to select food category and then he will select his location with which he could only see the chefs that are close to his location after that the user will select his favorite chief by reading his description or reviews that are given by other users on his food and then he will proceed to send request to that chef by checking his availability in addition the user could also save its current location or favorites (Add Home ,Add Work) and he could also add his favorite chef to favorites just to have a quick response by using this subsystem user can see the amount paid or his current meal estimation cost .In this system user can also tell the time that after how much time he needs his/her order.

The second module is for the chef who will enter his location of work and then he will provide his short description on each category of food that will be later fetch by the user system from database. The chef could also provide the estimated amount which will be required to cook the food.

The third module is for the bike Rider who will take the food in chef and delivery the user.

The fourth subsystem is a General Management Services and Automated Tasks System which generates reports to audit all operations and allows modification of subsystem information. Those modules could also provide a discount coupon to the user for better a service.

2.1.5. References

Gomez, T.M., Motarjemi, Y., Miyagawa, S., Käferstein, F.K. and Stöhr, K., 2012. Foodborne salmonellosis. World health statistics quarterly. Rapport trimestriel de statistiques sanitaires mondiales.

Adams, M.R. and Motarjemi, Y., 2015. Basic food safety for health workers (No. WHO/SDE/PHE/FOS/99.1). World Health Organization.

2.2. Overall Description

2.2.1. Product Perspective

E-Meal is a new system that replaces the current manual and telephone process of ordering food; moreover, the food is also unhygienic. Mostly people are searching for the homemade food so we are here to make such mobile application from which users can get and enjoy homemade food. The E- meal is complete software described in this SRS. The framework blends different equipment and programming components and further interfaces with outer frameworks. Thus, while the software covers the majority of the system's functionality, it relies on several external interfaces for unhandled tasks, as well as physically interfacing with humans.

2.2.2. Product Functions

- Users **start** from the home page.
    - The home page has two fixed text bars in the center of user and chef. (If the user is user).
- The **second** activity is about to login/register user, after this it proceed to next activity.
- The **third** activity is about the list and the categories of food.

- User can select more than one food for order.
- In this activity there is fix side navigation bar where there is order history, payment, and profile setting.
- There is fixed navigation bar down the page where there is an option of favorites, profile, and bell icon.

- Forth **activity** is about to mention the time of required selected food and select the location, moreover there will be the option of coupon if the user has.
    - After send the request, system will check the chef availability in the given user's location and display cost.
- In the **fifth** activity there will be proceed booking confirmation to the chef
    - After proceeding, chef will accept the offer.
    - In this section user can check the profile and give the rating to the chef.
- The **sixth** activity is about the delivery of food
    - In this activity there is a feedback and the rating for the chef and bike rider after deliver the food.
    - Section also contains the confirmation of payment.

2.2.3. User Classes and Characteristics

- **Admin:**
    - Admin can login to the system.
    - Verify the menu in the database.
    - Generate price strategy.
    - Handle the payment system.
    - Finalize the order.
    - Cancel the order.
- **User:**
    - User can login to the system.
    - User can visit the website.
    - View the menu.
    - User can select more than one dish from the menu.

- user can place the order.
- User can cancel the order.
- User can give time to the Chef.

- **Chef:**
  - Chef can login to the system.
  - Give information to the user about dishes.
  - Chef can update the database by adding dishes in the menu bar on daily basis.
  - Chef can maintain the contact.
- **Bike Rider**
  - Bike Rider can login to the system.
  - Trace the location with help of application.
  - Bike Rider can maintain the contact.

2.2.4. Operating Environment

Android based Operating system is an open-source operating platform with programmers to make it better. Every user's pocket making Android Phone. The Android is one of the fastest growing technology in the market with Android phones. The user brings more refined interface designs to suit in the interaction.

2.2.5. Design and Implementation Constraints

- The app will use xml as name java technologies.
- Serval types of validations make this mobile application a secured one, and firebase database can also be prevented.
- Since a E-Meal is mobile application of online food ordering system, internet connection must be established.
- The E-Meal will be used on app and will function via internet.
- Http and FTP are used as communication protocols. Ftp is used to upload our application in live on Google play store and the client can access it, via these communication protocols.

2.2.6. User Documentation

Application will give an online various leveled framework in our application that describes and illustrate all the framework functionalities. The first time a new user accesses the system and on user to practice ordering food using static tutorial menu in application.

2.2.7. Assumptions and Dependencies

- Each user has account authorized and authenticate by admin.
- Each user has to login itself to present him/her after entry in the application, this will be done automatically. No user can share their username/email and password to each other.
- There is no limitation in the android operating system in which E-meal on work. However, the E-meal and the Firebase database will work on the server that needs to be always online. User can access the system with any internet.

2.3. External Interface Requirements

2.3.1. User Interfaces

All the users will see the same page when they enter in this application. This page asks users a username, email and a password.

After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.

The user interface will be simple using terminology commonly understood by intended users of the system and consistence. The system will have simple interface, consistence with standard interface, to eliminate need for user training of infrequent users.

2.3.2. Hardware Interfaces

The system will use the standard hardware and data communication resources.

Operating system: window

Hard disk :500 GB

RAM: 4 MB

Processor: CORE i5 5Generation

2.3.3. Software Interfaces

software components (Android Studio and 4.1.0), firebase database, android and window, java language, xml interface.

2.3.4. Communications Interfaces

The system will communicate with database that holds all the information of chefs and menu lists. User can contact server side through Http protocol by means of a function that is called http service. This function allows the web to use the data retrieved by server to fulfill the request that came from the user.

2.4. System Features

These are statements of services the system should provide, how the system should react to inputs, and how the system should behave situations. It specifies the application functionality that the developers must build into the product to enable users to accomplish their tasks.

2.4.1. System Feature 1

Restrictions

2.4.1.1. Description and Priority

This System shall run on serval app versions phones and tablets effectively and efficiently to target more audience. These versions include java, xml etc. The priority of this system feature is high.

- Client Side (XML)
- Server Side (JAVA)

2.4.1.2. Stimulus/Response Sequences

User can access the system on different app version. The application script that run the essential part of instructions that are compatible to request to load the application complete.

2.4.1.3. Functional Requirements

This subsection presents the identified functional requirements for E- Meal. Initially, general requirements that certain to the whole system are given. Where possible,b

subsequent requirements have been demarcated based on their relevance to the users of the system that is users, chefs, bike riders and admin.

General Requirements

Table presents the identified functional general requirements that directly relate to the entire subject E-Meal.

- REQ-SF1-1: Priority High

  System provides cross platform compatibility to all users.

- REQ-SF1-2: Priority High

  System is a mobile application built on Java.

Requirement	Description
G01	A server shall host the E-Meal and provide system data processing and storage capability.
G02	A phone/tablet shall provide a user with all user system functionality.
G03	A phone/tablet shall provide a chef with all chef system functionality.
G04	All system functionalities shall be accessible through touch sensitive surface.
G05	A phone/tablet shall be capable of interacting with a database to facilitate the accurate processing.

Figure 2.1 General Requirement

2.4.2. System Feature 2

User

2.4.2.1. Functional Requirements

Table presents the identified user functional requirements that directly relate to the user.

Requirement	Description
U01	A user shall be able to register his self-using username, email, and password and phone number.
U02	A user shall be able to login to the system using their valid username and password.
U03	A user shall be able to select his Current Location
U04	A user shall be able to select his Current Location
U05	A user shall be able to select Chef according to his current location.
U06	A user shall be able to read chef reviews and ratings.
U07	A user shall be able to engage their menu through the available menu.
U08	A user shall be able to place an order.
U09	A user shall be able to send request to the chief.
U10	A user shall be able to see the time and money required to complete its order.
U11	A user shall be able to Add his favorite chef to favorites
U12	A user shall be able to see his previous meals and amount paid.
U13	A user shall be able to cancel his order within 5 minutes.
U14	When 'In bill mode the system shall display a total amount to the user
U15	A user shall be able to give Review and Rating to the chef.
U16	A User shall be able to Logout

Figure 2.2 User Functional Requirement

2.4.3. System Feature 3

Chef

2.4.3.1. Functional Requirements.

Table presents the identified functional chef requirements that directly relate to the chef.

Requirement	Description
C01	A chef shall be able to Register by his self with valid username, password, location and email.
C02	A chef shall be able to Login to the system with registered name and password
C03	A chef shall be able to write description on every category of food
C04	A chef shall be able to accept a user's order.
C05	A chef shall be able to reject a user's order.
C06	A chef shall be able to provide an estimated time to the user.
C07	A chef shall be able to indicate that a user's order is ready to deliver.
C08	A chef shall be able to indicate that he has received the amount.

Figure 2.3 Chef Functional Requirement

2.4.4. System Feature

Bike Rider

2.4.4.1. Functional Requirements

Table presents the identified functional Bike Rider requirements that directly relate to the Bike Rider.

Requirement	Description
B01	A Bike Rider shall be able to Register by his self with valid username, password, location and email.
B02	A Bike Rider shall be able to Login to the system with registered name and password
B03	A Bike Rider shall be able to write description on every address
B04	A Bike Rider shall be able to accept a user's order.
B05	A Bike Rider shall be able to reject a user's order.
B06	A Bike Rider shall be able to provide an estimated time to the user.

B07	A Bike Rider shall be able to indicate that he has received the amount.

Figure 2.3 Bike Rider Functional Requirement

2.4.5. System Feature

Admin

2.4.5.1. Functional Requirements

Requirement	Description
A01	Admin shall modify information in the application
A02	Admin shall provide discount coupon to the users for discounts.
A03	The admin shall see the number of users register
A04	Admin shall be able to Modify/ Delete a chef's order.
A05	Admin shall be able to Modify/ Delete a Bike Rider's order.

Figure 2.4 Admin Functional Requirement

2.5. Other Nonfunctional Requirements

This subsection presents the identified non-functional requirements for the E- Meal; e subcategories of non-functional requirements given are performance, safety and security requirements.

2.5.1. Performance Requirements

- The home page load time shall be near to 3-5 seconds.
- The web will be available 24/7.
- There should not be any latency or lack during application usage.
- The system response time for every instruction conducted by the user must not be exceed more than a minimum of 10 seconds.
- The system should have high performance rate when executing user's input and should be able to provide response within a short time span usually 15 second for highly complicated task and 10 to 15 seconds for less complicated tasks

2.5.2. Safety Requirements

- Once the admin deletes item, categories, or user account the data of that item can't be retrieve. System shall give warning before deletion process.
- If users have problems while using the app so they can contact via mail to application maintainers.
- It is better to keep in checking for the latest updates on the application.

2.5.3. Security Requirements

- System keeps the information of users safe.
- User will register after verification of user data.
- Secure login and signup.
- System provides username and password to prevent the system from unauthorized user
- Our app will prompt the user for upgrading and downloading the new features updated by the developers.

2.5.4. Software Quality Attributes

- Availability:
    - Our system will be available at all the time so that user can facilitate 24/7
    - If there is any maintenance occur in our website, we update the system in background this process will not severely affected
- Reliability:
    - System should be completely defect free.
    - There will be no down time and perform correctly in every scenario.
- Usability:
    - Web interface should be easy to understand.
    - Will guides through the workflow.

2.5.5. Business Rules

- If chef want to post their food than they have to signup first
- Chef and bike rider has to follow the term and condition of the system
- Company will take 5 percent from every delivery.

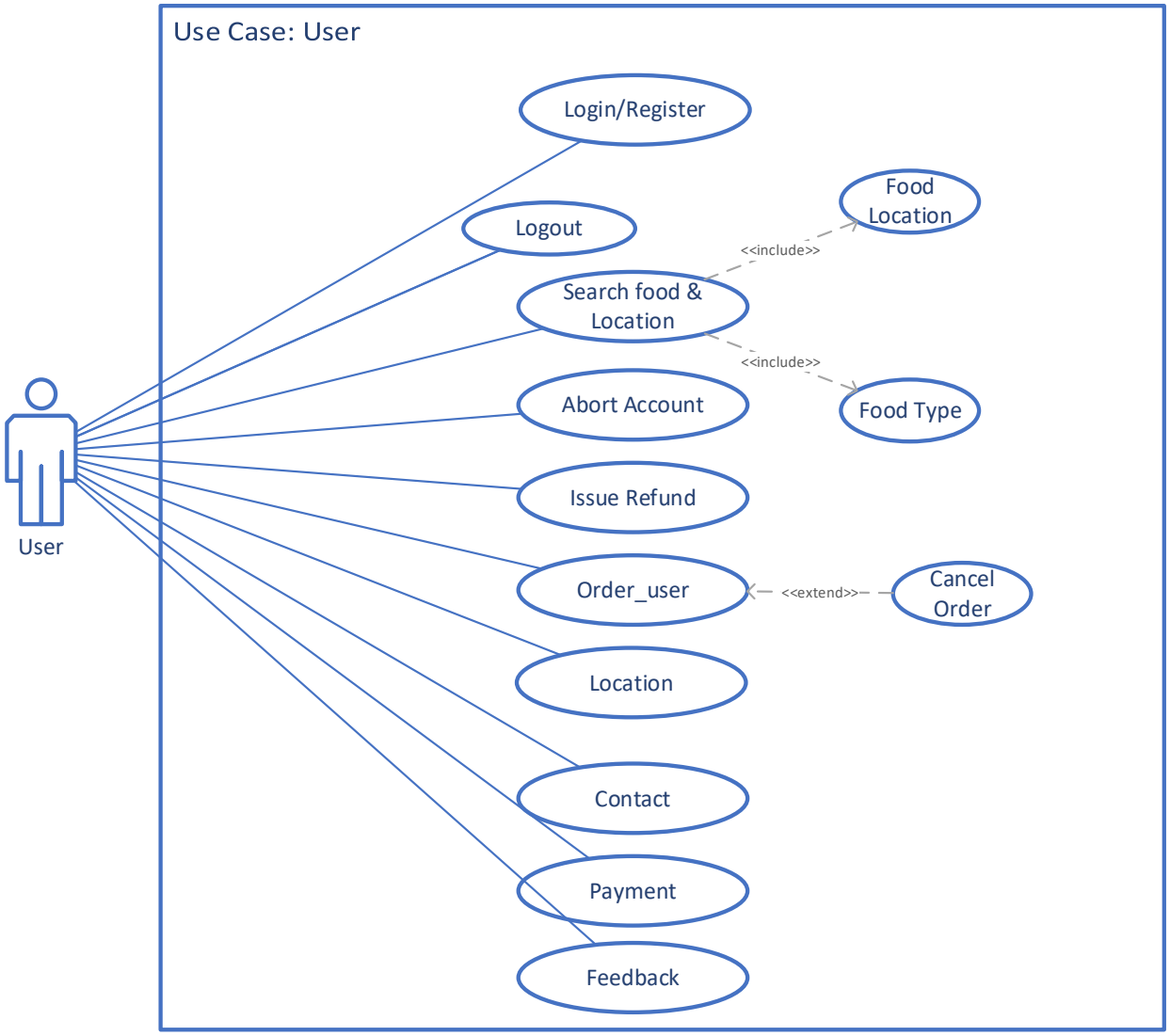
Chapter 3

Use Case Analysis

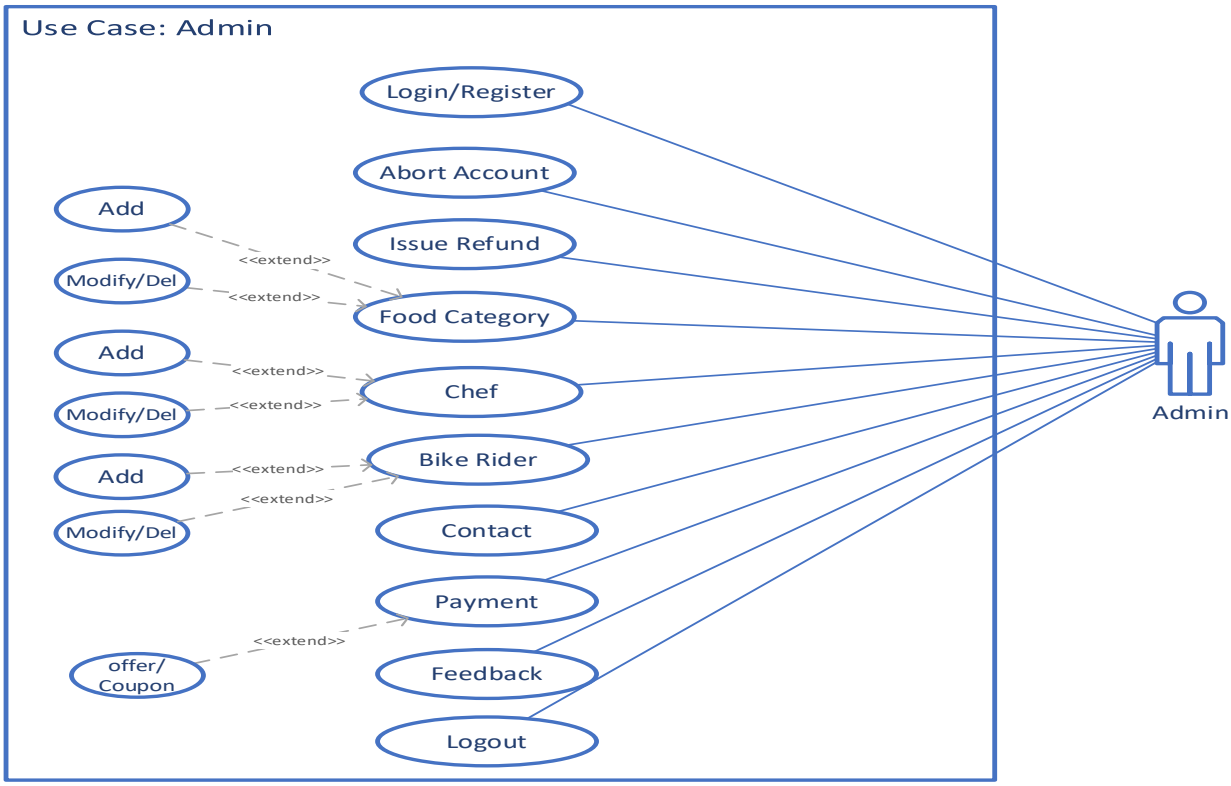
Chapter 3: System Analysis

3.1. Use Case Model

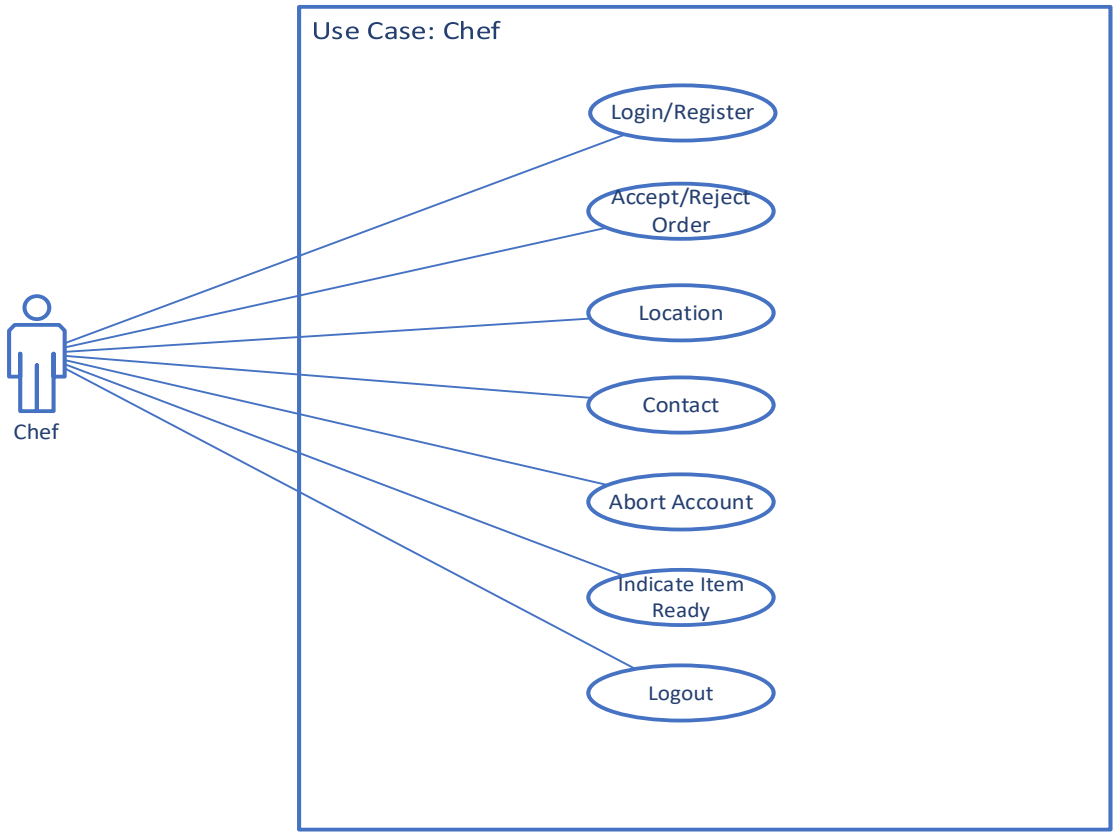
3.1.1.



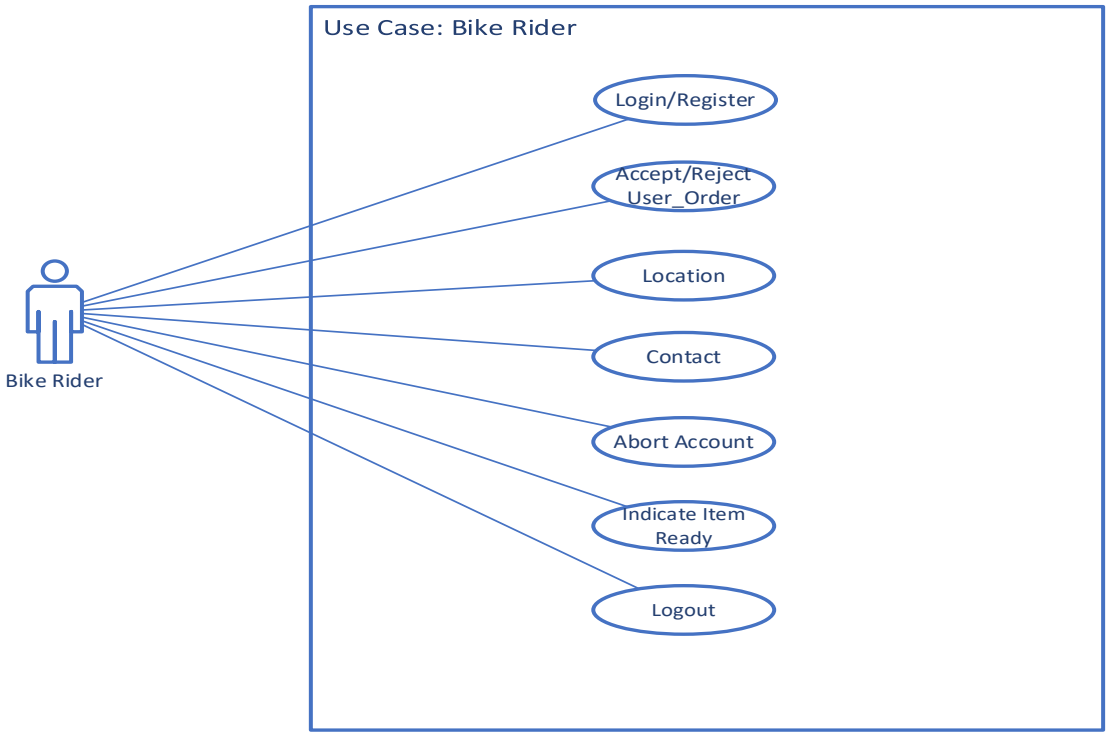
3.1.2.


Use Case: Admin
Login/Register
Abort Account
Add
Issue Refund
Modify/Del
Food Category
Add
Chef
Modify/Del
Add
Bike Rider
Modify/Del
Contact
Payment
offer/ Coupon
Feedback
Logout
<<extend>>
Admin

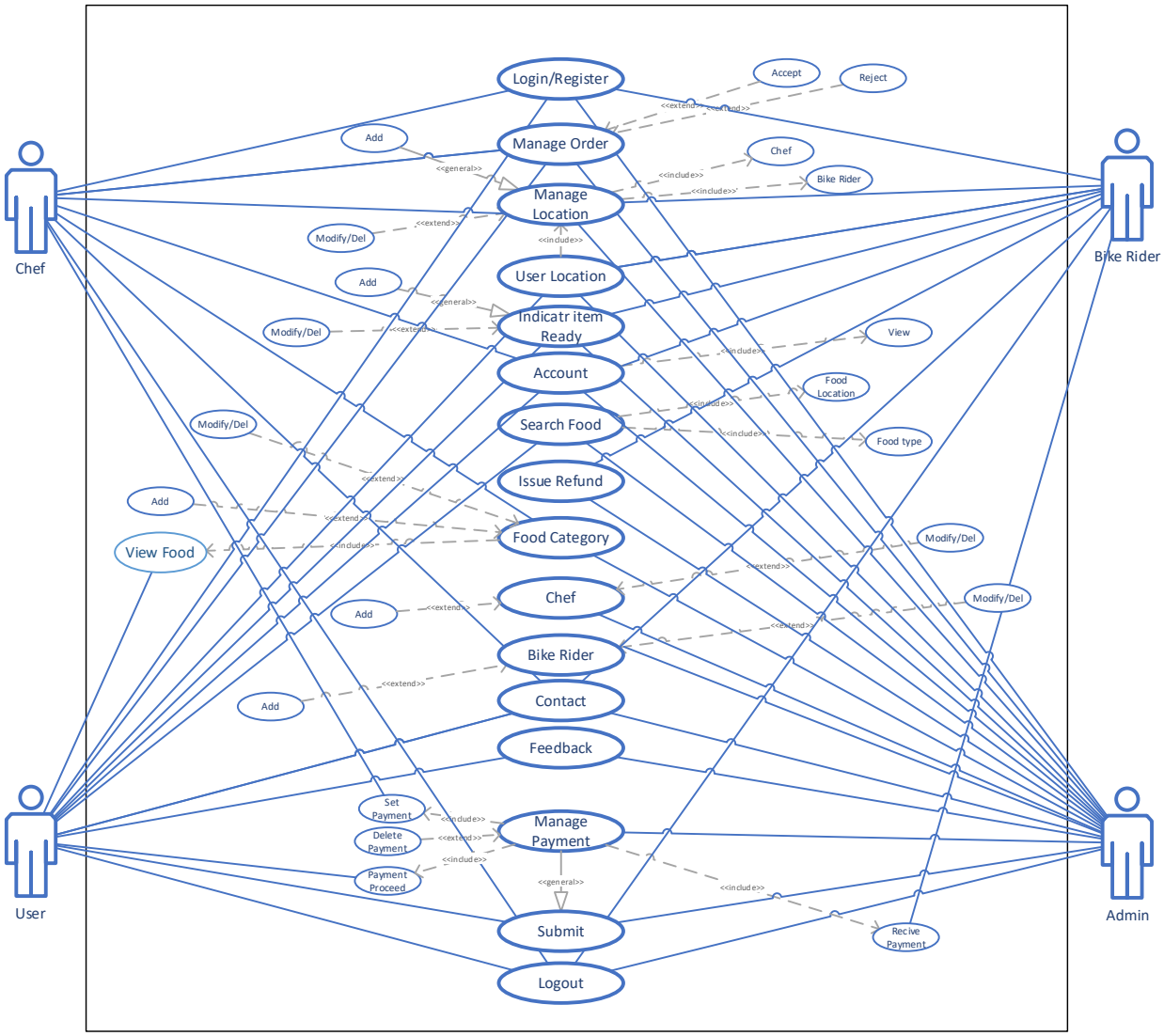
3.1.3.


Use Case: Chef
Login/Register
Accept/Reject Order
Location
Contact
Abort Account
Indicate Item Ready
Logout
Chef

3.1.4.



3.2. Fully Dressed Use Cases



3.3. Use Case Description

Use Case	Log in
Primary' Actor	User
Goal in Context	Enable User access to the system through a tablet
Preconditions	The user has valid username and password is and is not already logged in
Trigger	The user requires access to the system to perform their task
Exceptions	The User enters an invalid username or password

Use Case	Log in
Primary' Actor	Chef
Goal in Context	Enable Chef access to the system through a tablet
Preconditions	The Chef has a valid username and password and is not already logged in
Trigger	The Chef requires access to the system to Perform their Task
Exceptions	The Chef enters an invalid username or password

Use Case	Log in
Primary' Actor	Bike Rider
Goal in Context	Enable Bike Rider access to the system through a tablet
Preconditions	The Bike Rider has a valid username and password and is not already logged in
Trigger	The Bike Rider requires access to the system to Perform their Task
Exceptions	The Bike Rider enters an invalid username or password

Use Case	Indicate Item Ready
Primary' Actor	Chef
Goal in Context	Alert the appropriate waiter that an item is ready to be delivered
Preconditions	The item has been accepted by a chef
Trigger	Item preparation completes
Exceptions	

Use Case	Accept/Reject Item
Primary' Actor	Chef
Goal in Context	Notify User if an item cannot be prepared
Preconditions	The item has not already been accepted or rejected
Trigger	Chef proceeds to action the pending items on a kitchen display
Exceptions	

Use Case	Issue Refund
Primary' Actor	Admin
Goal in Context	Refund a user's payment for a meal
Preconditions	The user paid for a meal in the restaurant
Trigger	Exceptional circumstances arise and the supervisor must refund the payment
Exceptions	

Use Case	Abort Account
Primary' Actor	Admin
Goal in Context	Abort a user's account with avoidance of TOS
Preconditions	The account exists
Trigger	Exceptional circumstances arise and the admin must abort the account
Exceptions	

Use Case	Abort account
Primary' Actor	User (User/Chef/Bike Rider)
Goal in Context	User Abort their account
Preconditions	The account exists
Trigger	Exceptional circumstances arise and the Admin/User must abort the account
Exceptions	

Use Case	Order Food
Primary' Actor	User
Goal in Context	Place an order for meal
Preconditions	The user has been successfully logged In
Trigger	The user wants to order one or more menu items
Exceptions	The user cancels the order by selecting 'Cancel' from the menu

Chapter 4

System Design

Chapter 4: System Design

[System design is a process that defines the system architecture, system component, System modules, interface design, and data to reach the specified requirements mentions in the previous section. This is a bridge between the system's theory and the development stage.

4.1. Architecture Diagram

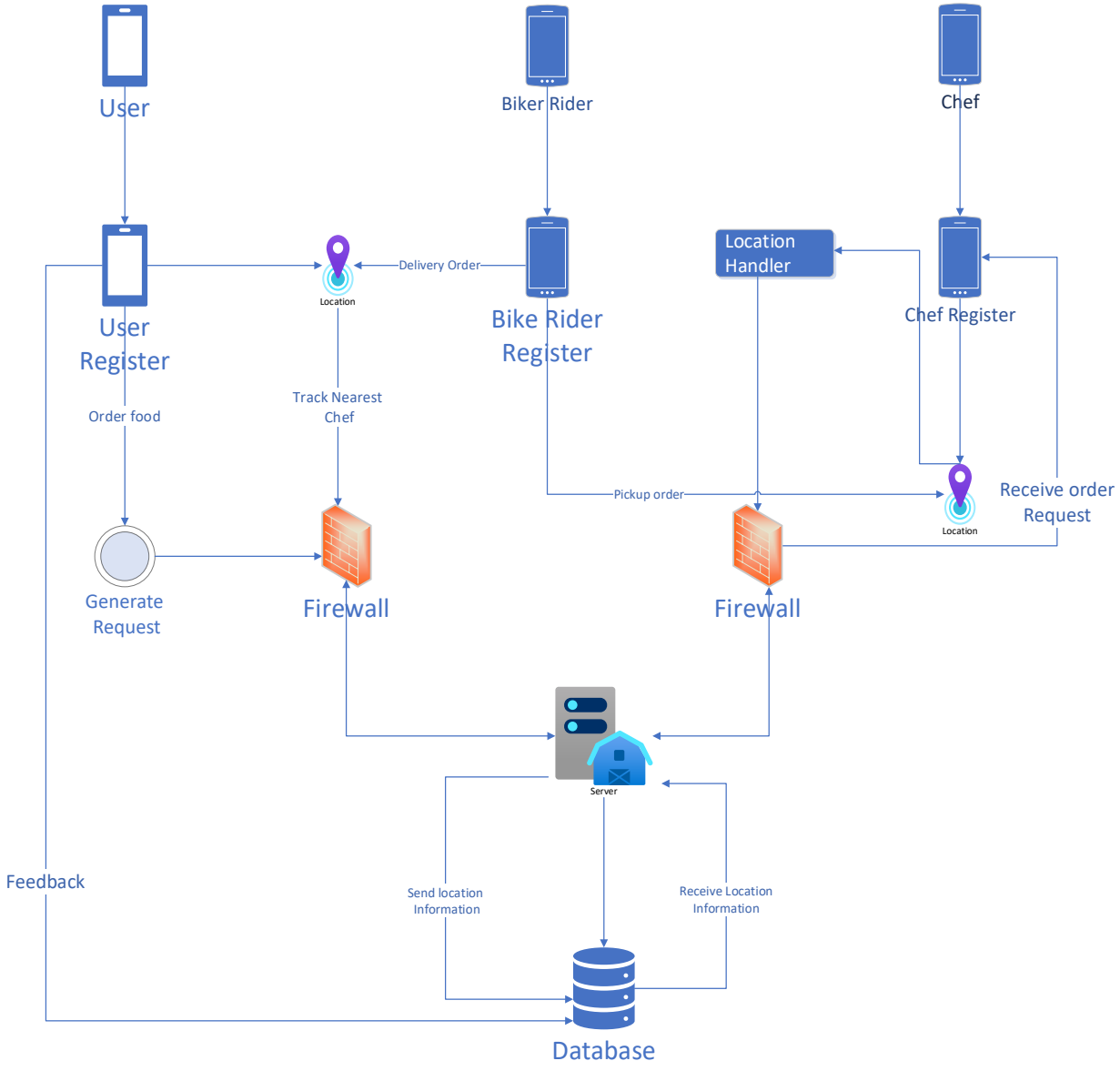


Figure 4.1. Architecture Diagram

4.2. Domain Model

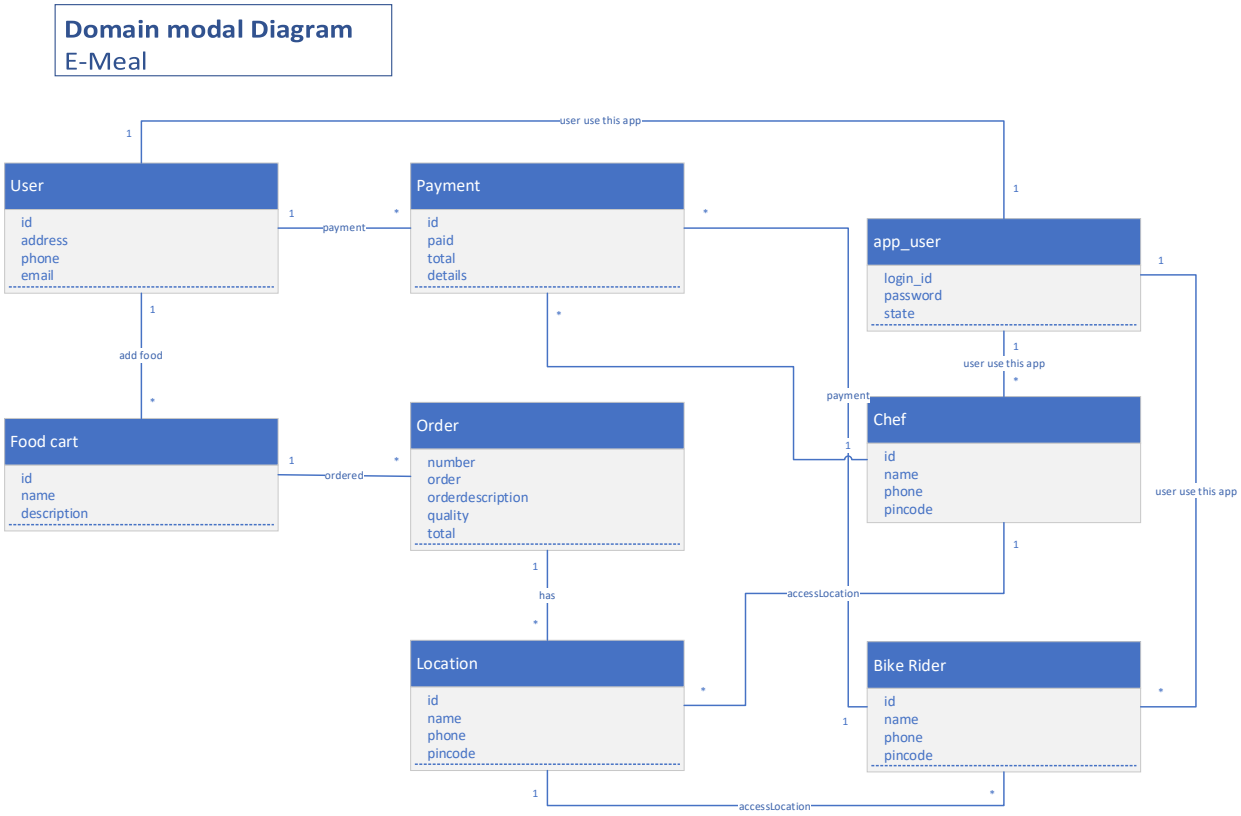


Figure 4.2. Architecture Diagram

4.3. Entity Relationship Diagram with data dictionary

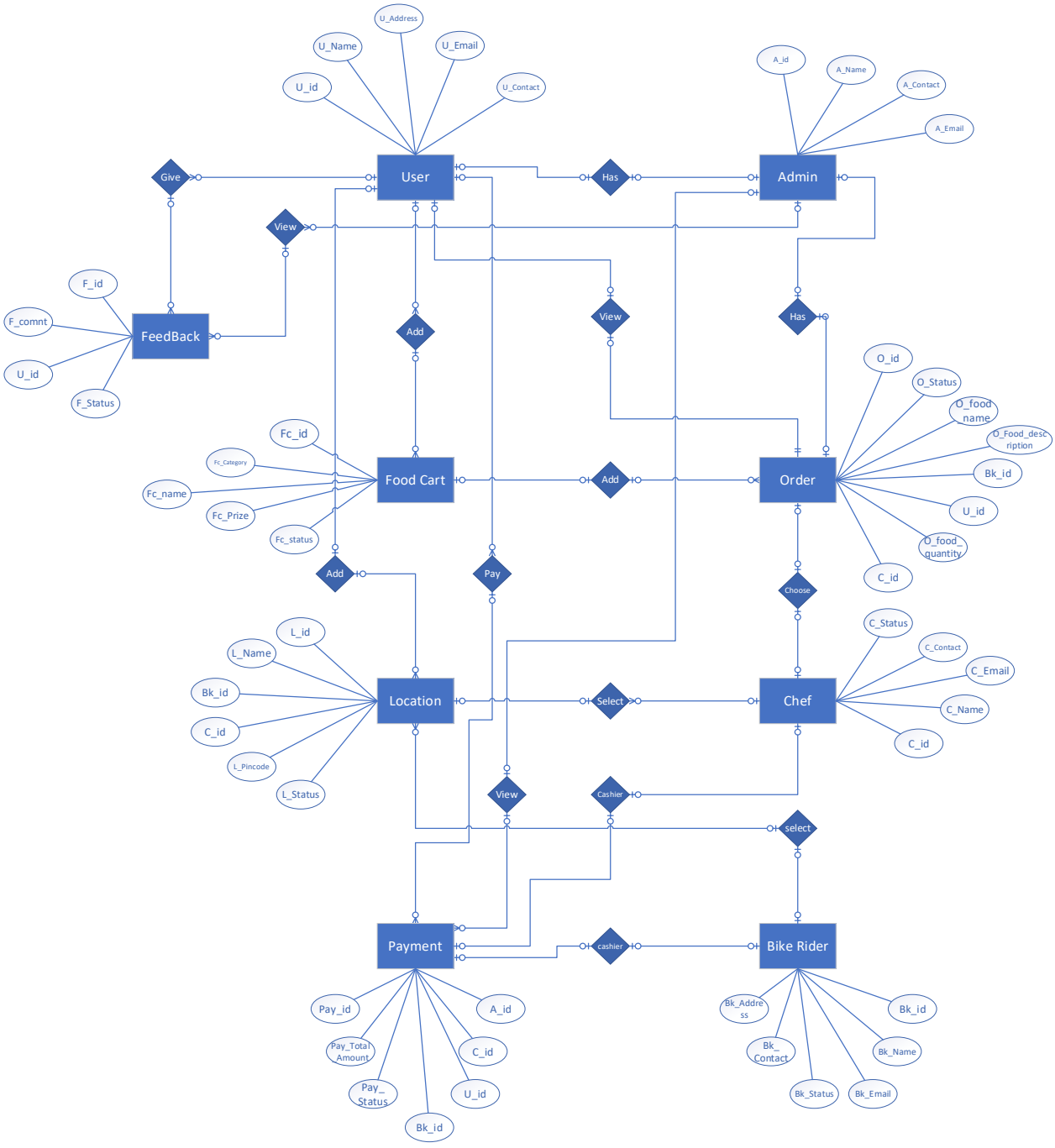


Figure 4.3. Architecture Diagram

4.4. Class Diagram

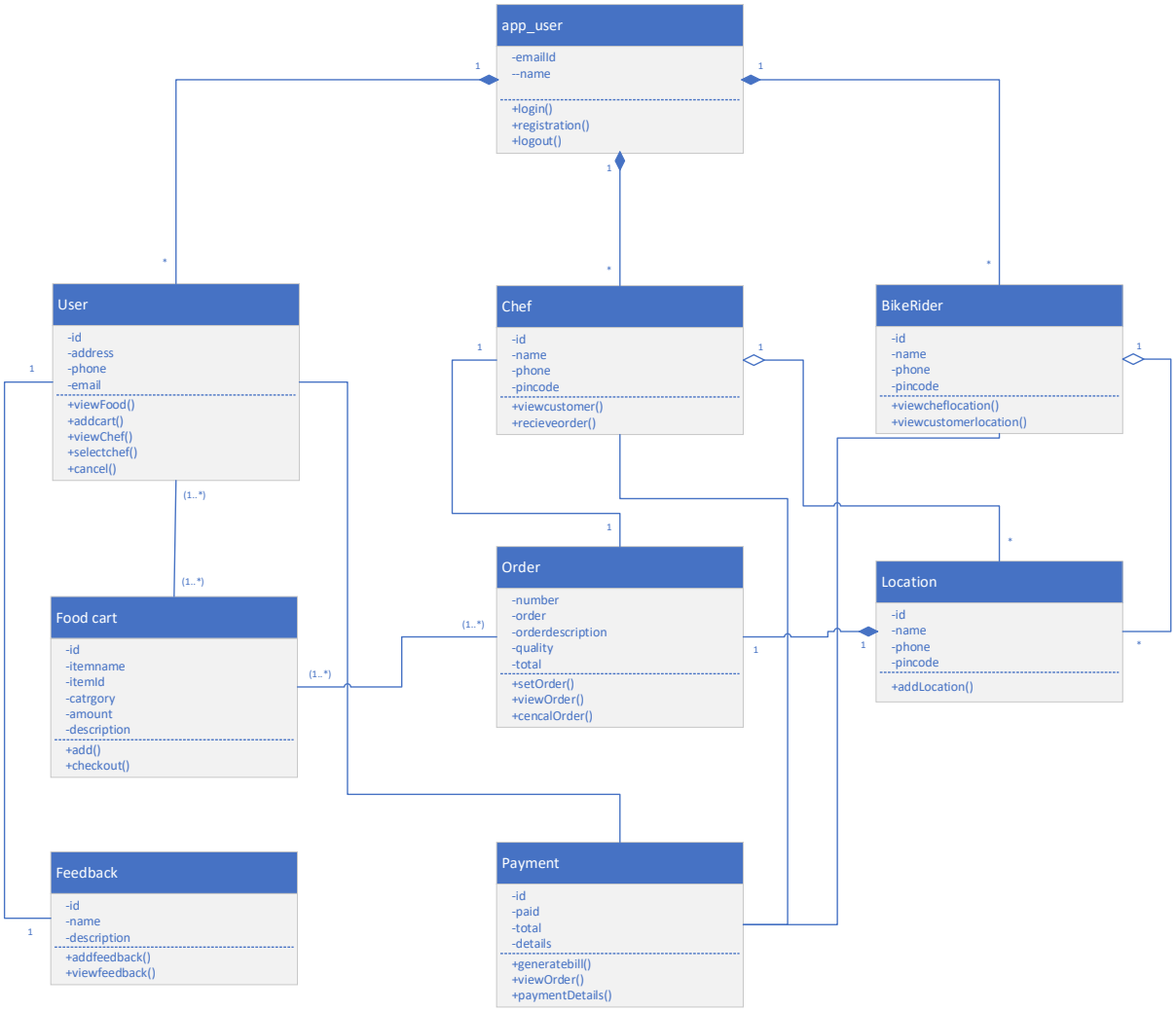


Figure 4.4. Architecture Diagram

4.5. Sequence / Collaboration Diagram

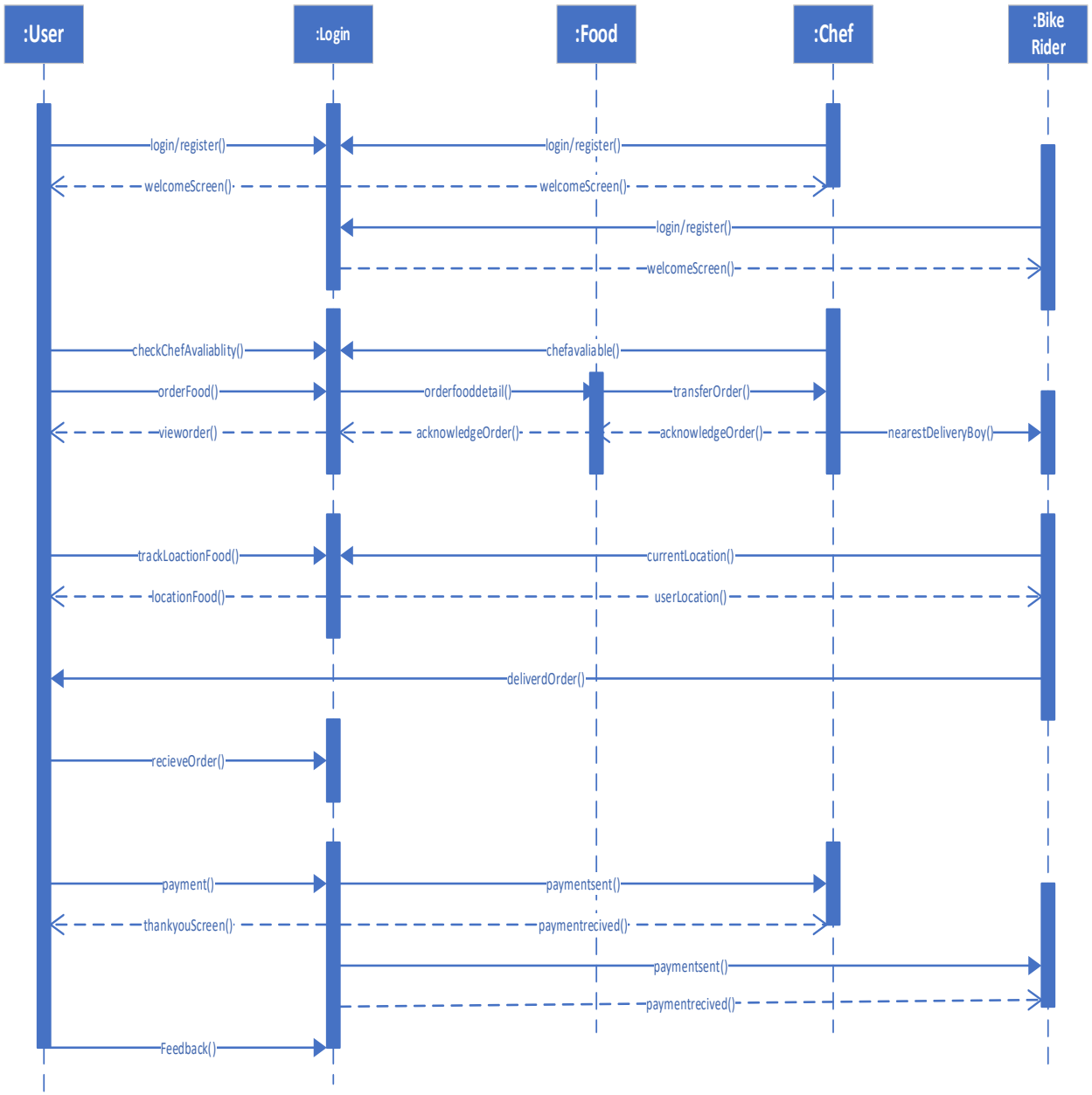


Figure 4.5. Architecture Diagram

4.6. Operation contracts

Operation 1: Register

Pre-Condition: User and Chef has to register and enter the data.

Post conditions: User and Chef registered in the Database.

Operation 2: Login

Pre-condition: User and Chef has login into system for posting the food and check.

post conditions: Make sure User and Chef has login into their account.

Operation 3: Search Food

Pre-Condition: User can search the food from the system database if he/she may not find desire food in the list.

Post conditions: System gives the required search and if there is no food related the search, system will pop up the message.

Operations 4: Refund

Pre-Condition: User may be able to refund if there is any kind of misbehavior or misunderstanding.

Post conditions: System will check the entire problem and will refund amount according to the terms and conditions of the company.

Operations 5: Add Food

Pre-Condition: Chef has to login into system.

Chef can add the food into system database with price, making time and all the related information.

Post conditions: System will verify the food and registered and update into the database.

Operations 6: Payment

Pre-Condition: Cash on delivery or through credit card

Post conditions: System verify the payment.

Operations 7: Feedback

Pre-Condition: User may send the feedback about his/her experience.

Post Condition: Admin will view the report and feedback from the users.

Operations 8: Logout

Pre-Condition: User, chef and bike rider login into the system chef will logout from the system.

Post Condition: User, bike rider and chef will logout from the system

4.7. Activity Diagram

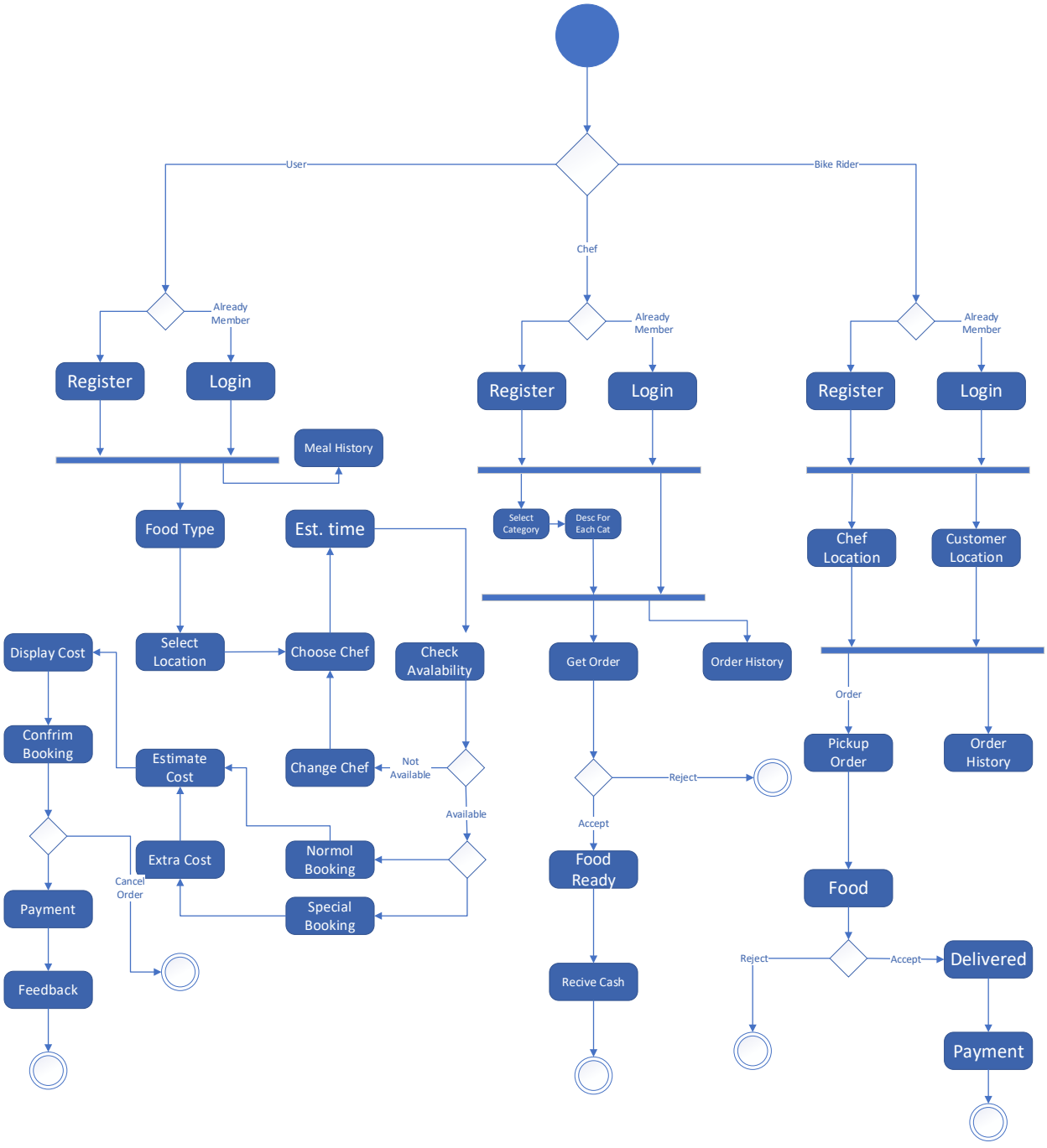
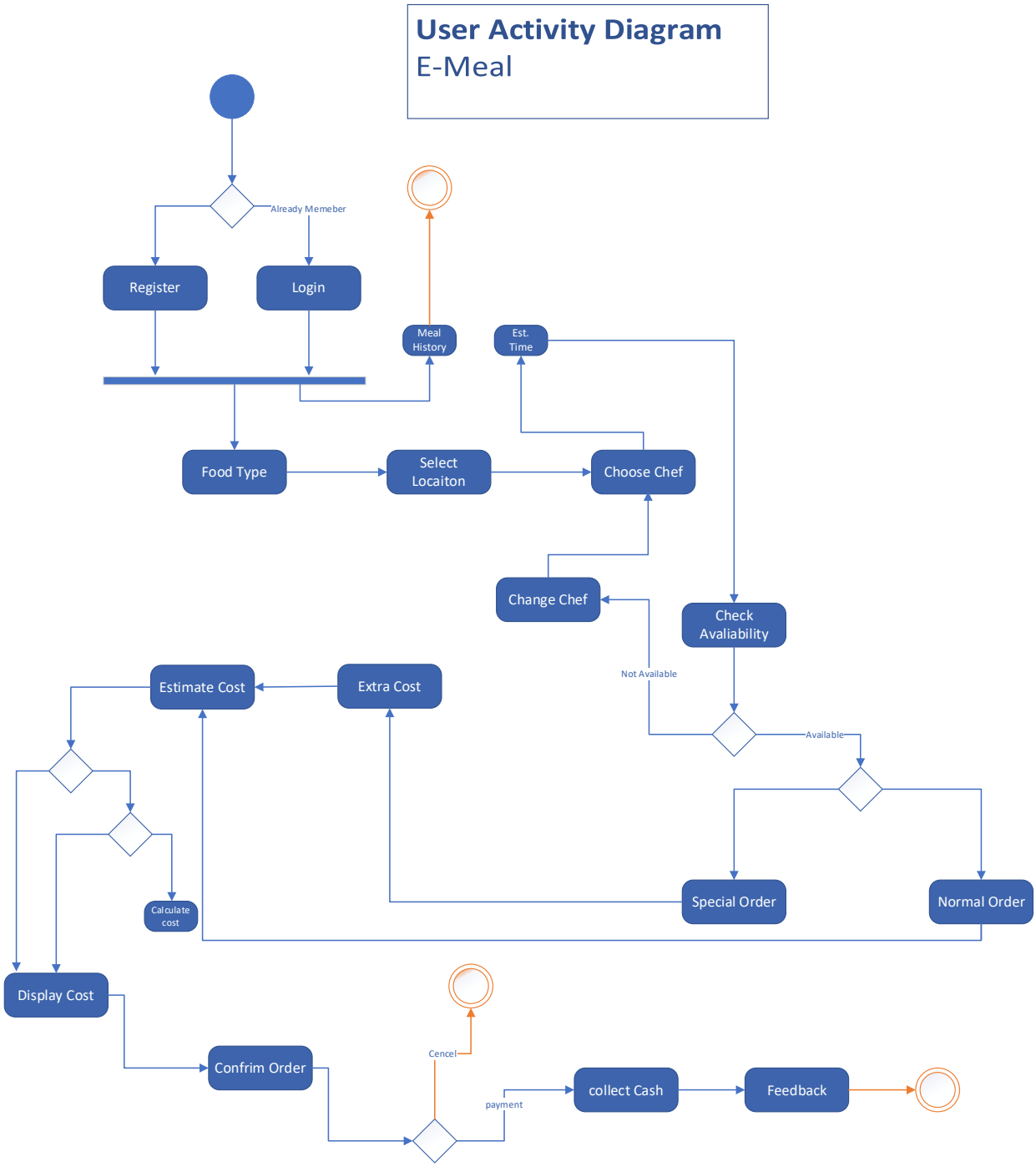
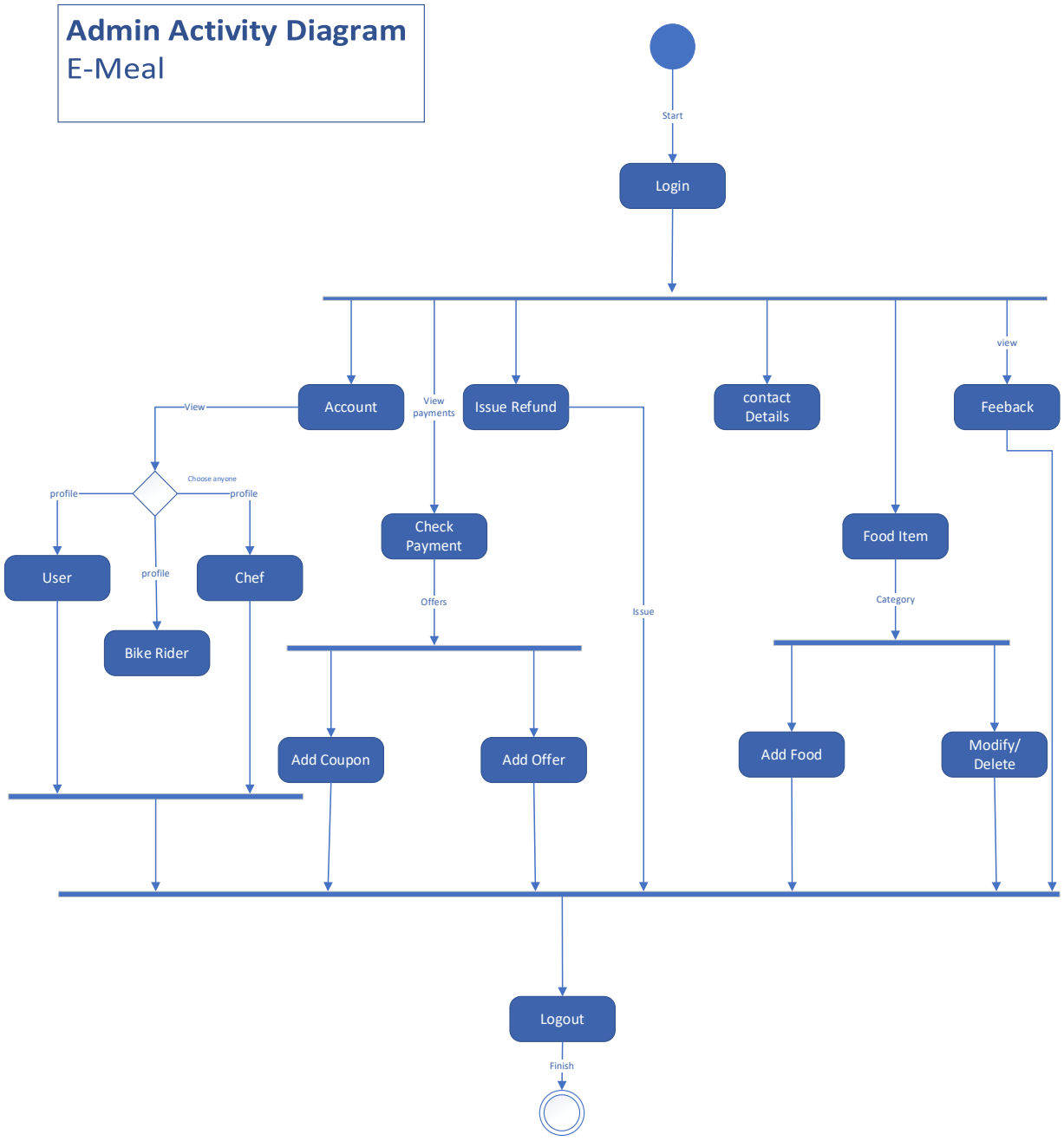
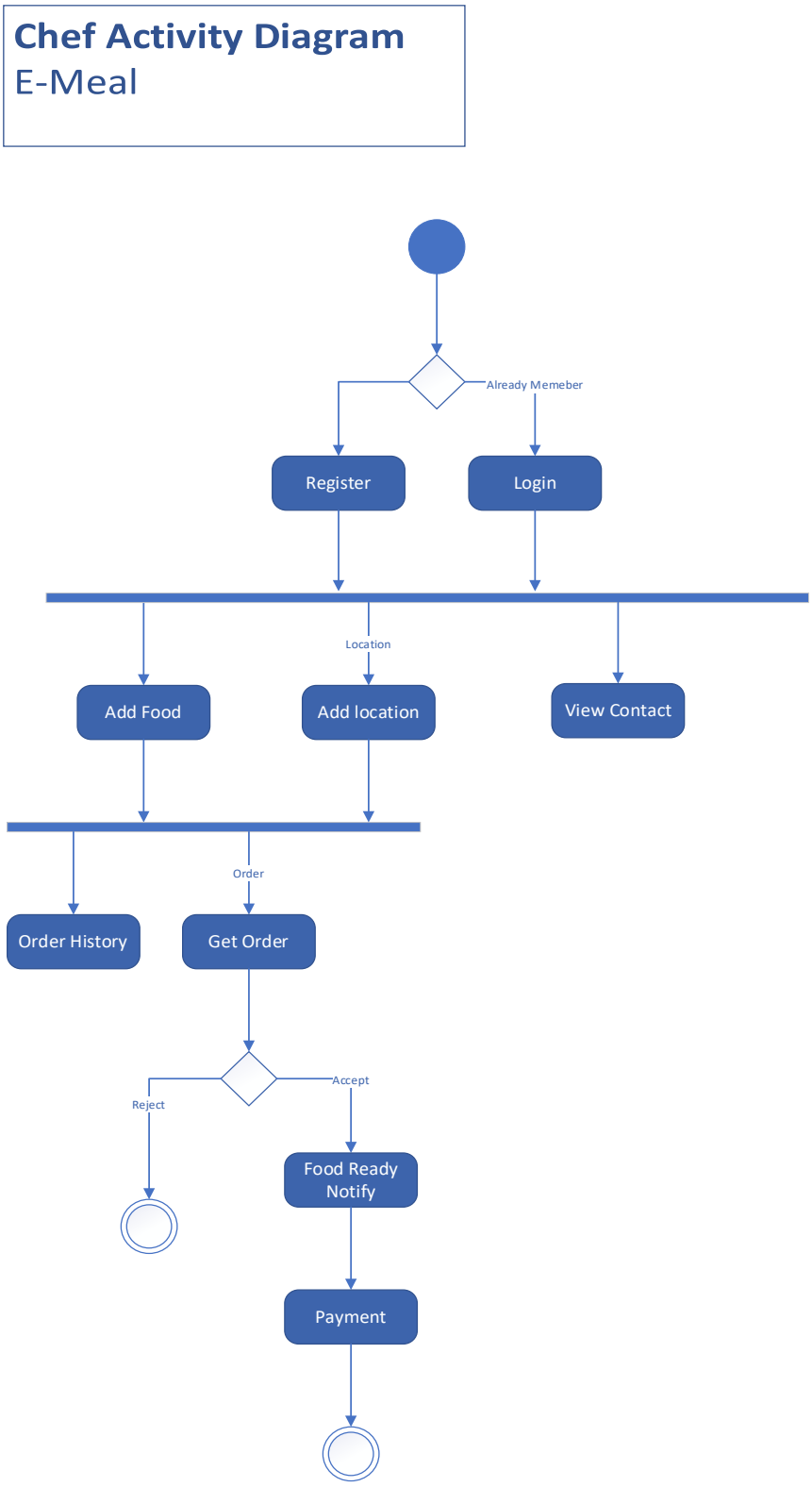
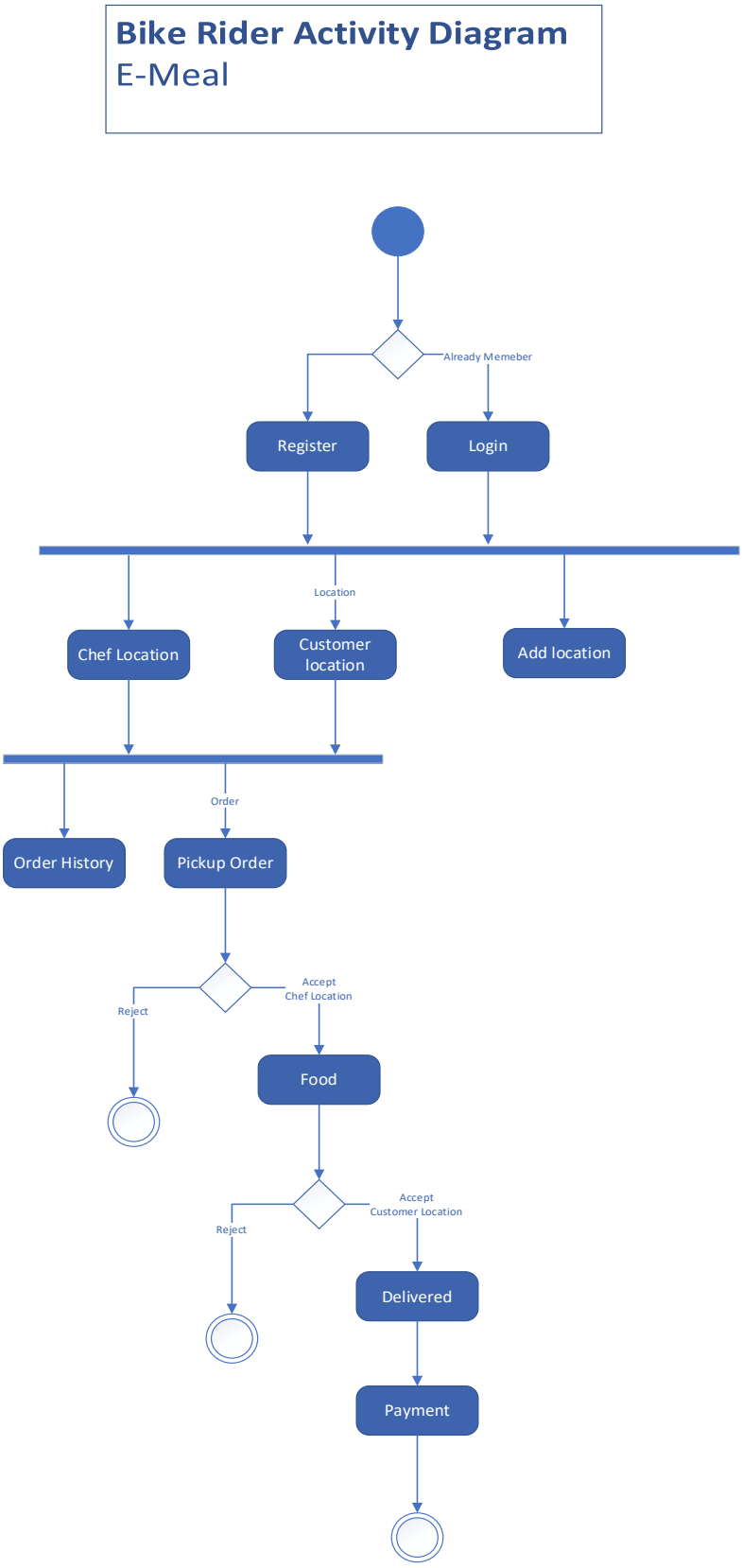


Figure 4.7. Activity Diagram


User Activity Diagram
E-Meal
Already Memeber
Register
Login
Meal History
Est. Time
Food Type
Select Locaiton
Choose Chef
Change Chef
Check Avaliability
Not Available
Available
Estimate Cost
Extra Cost
Calculate cost
Special Order
Normal Order
Display Cost
Confrim Order
Cencel
payment
collect Cash
Feedback


Admin Activity Diagram
E-Meal
Start
Login
Account
View payments
Issue Refund
contact Details
view
Feeback
View
profile
Choose anyone
profile
profile
User
Chef
Bike Rider
Check Payment
Offers
Issue
Food Item
Category
Add Coupon
Add Offer
Add Food
Modify/ Delete
Logout
Finish


Chef Activity Diagram
E-Meal
Already Memeber
Register
Login
Location
Add Food
Add location
View Contact
Order
Order History
Get Order
Accept
Reject
Food Ready Notify
Payment


Bike Rider Activity Diagram
E-Meal
Already Memeber
Register
Login
Location
Chef Location
Customer location
Add location
Order
Order History
Pickup Order
Accept
Chef Location
Reject
Food
Accept
Customer Location
Reject
Delivered
Payment

4.8. State Transition Diagram

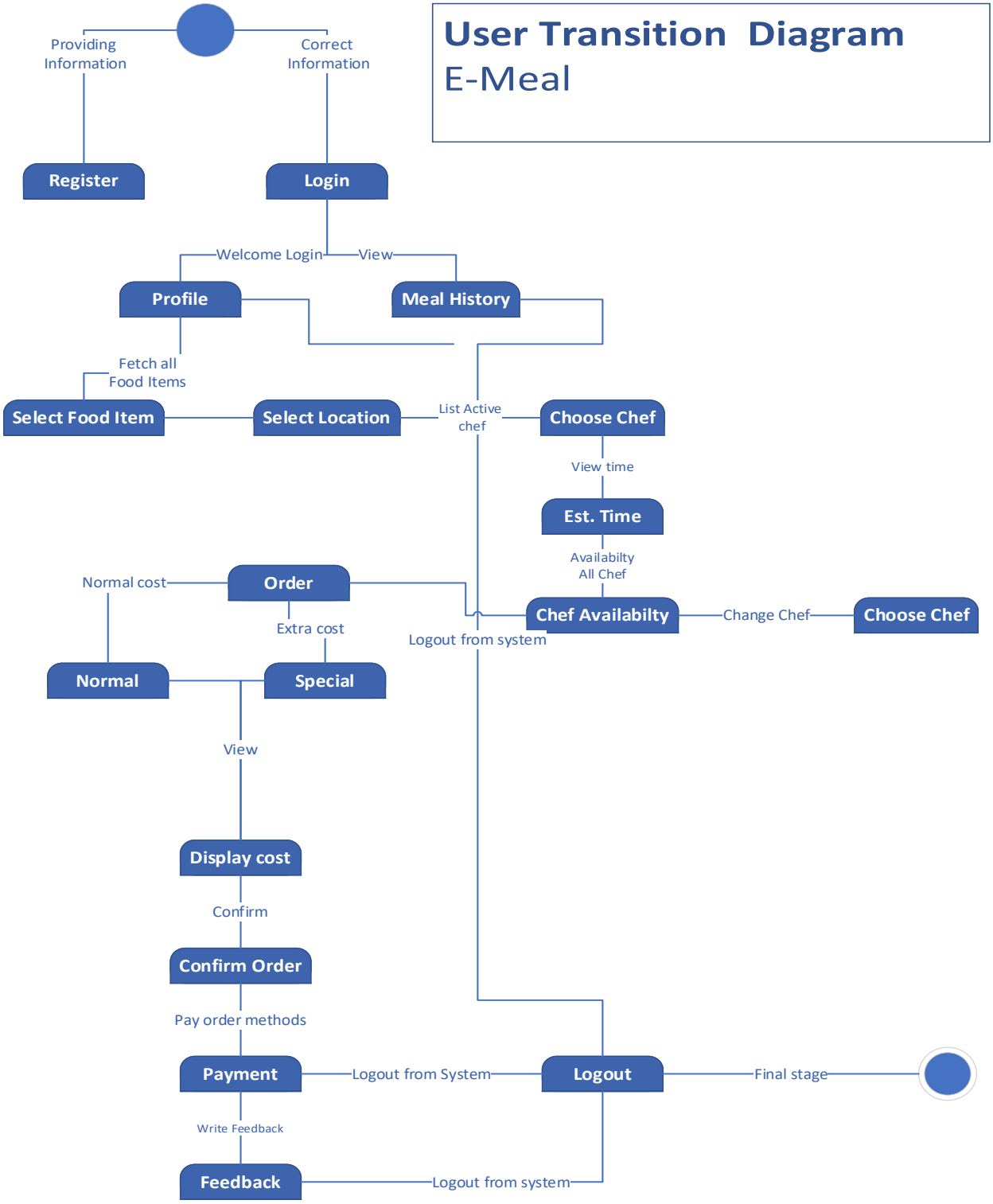
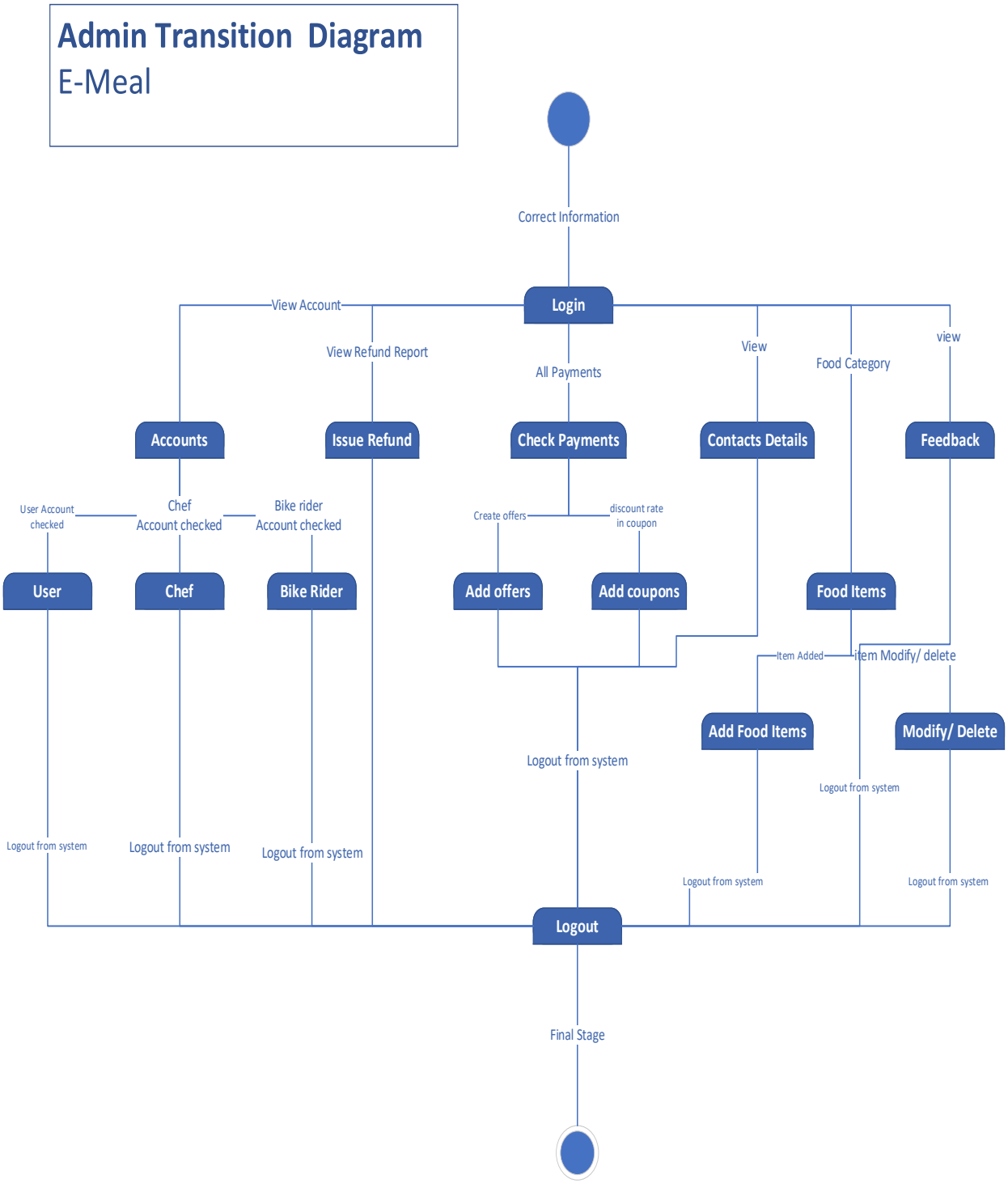
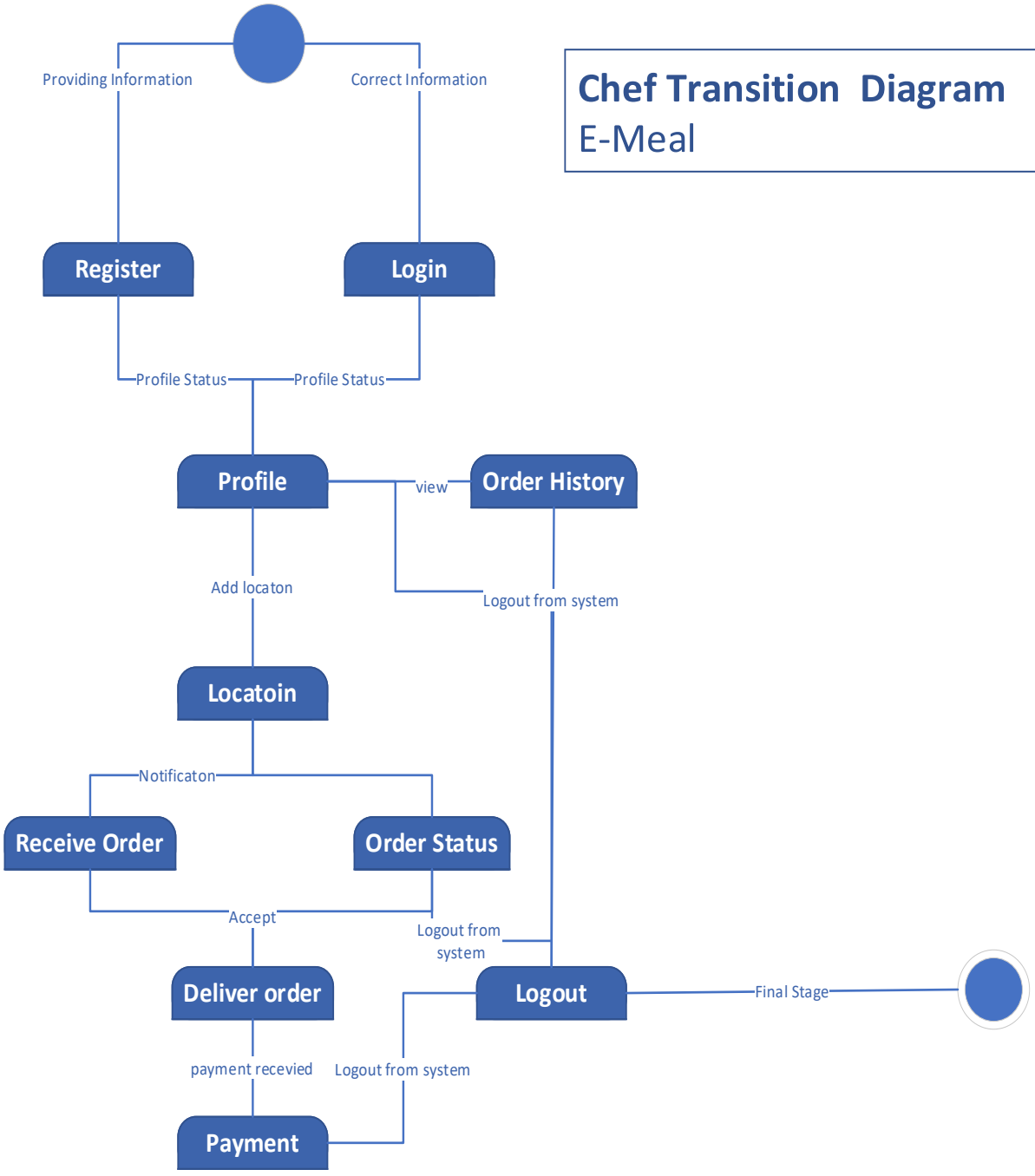
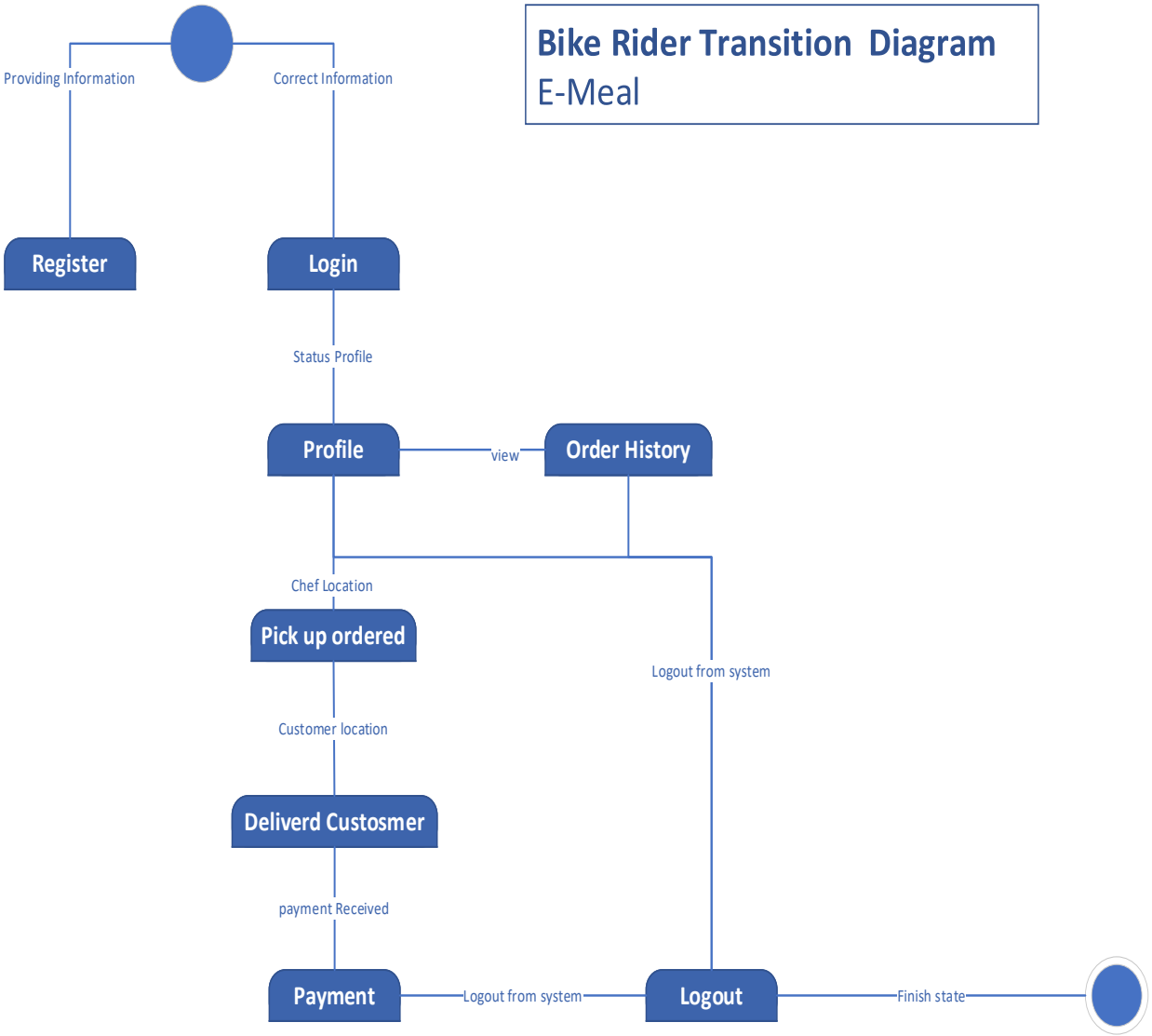


Figure 4.8. State Transition Diagram




Chef Transition Diagram
E-Meal
Providing Information
Correct Information
Register
Login
Profile Status
Profile Status
Profile
view
Order History
Add locaton
Logout from system
Locatoin
Notificaton
Receive Order
Order Status
Accept
Logout from system
Deliver order
Logout
Final Stage
payment recevied
Logout from system
Payment


Bike Rider Transition Diagram
E-Meal
Providing Information
Correct Information
Register
Login
Status Profile
Profile
view
Order History
Chef Location
Pick up ordered
Logout from system
Customer location
Deliverd Custosmer
payment Received
Payment
Logout from system
Logout
Finish state

4.9. Component Diagram

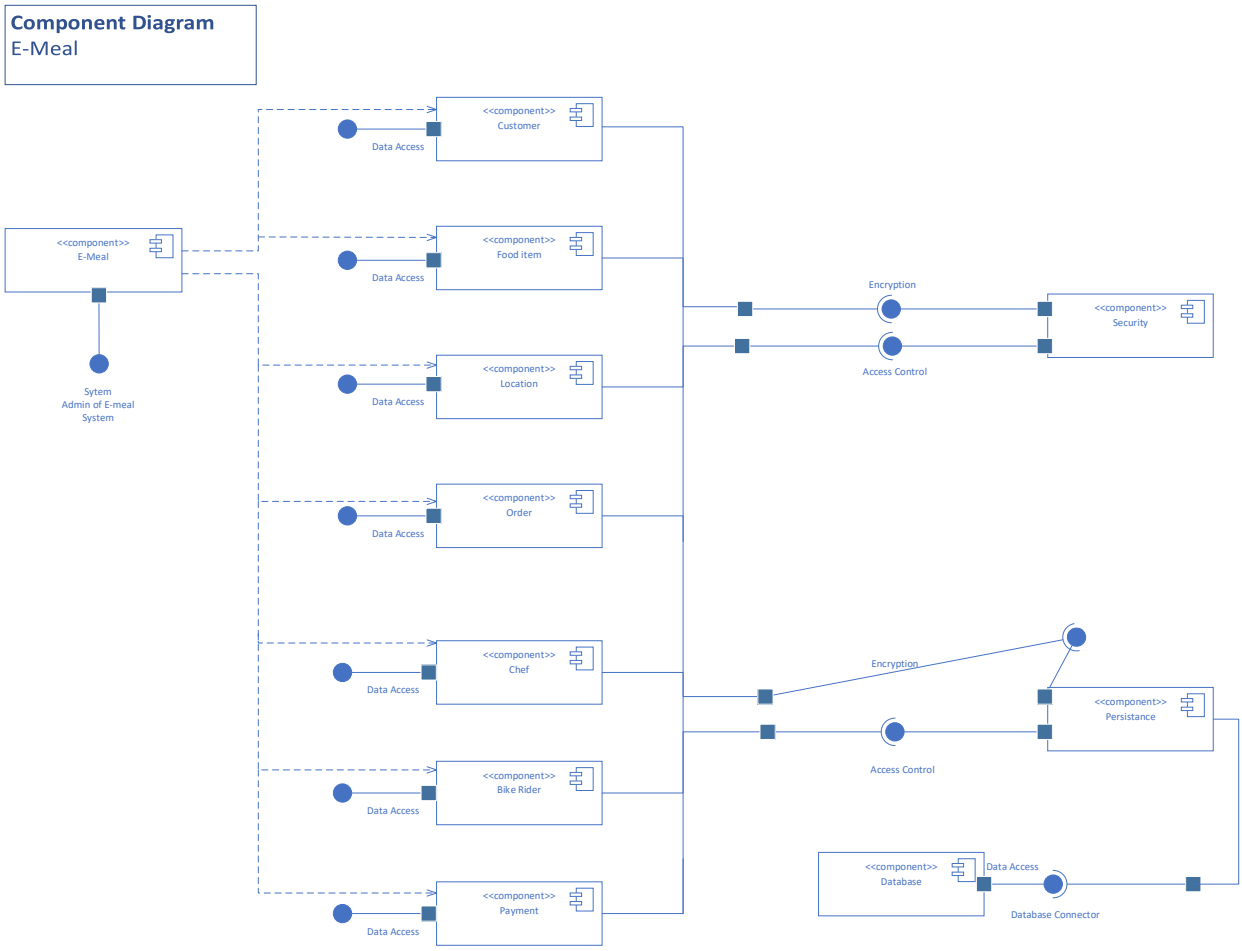


Figure 4.9. Component Diagram

4.10. Deployment Diagram

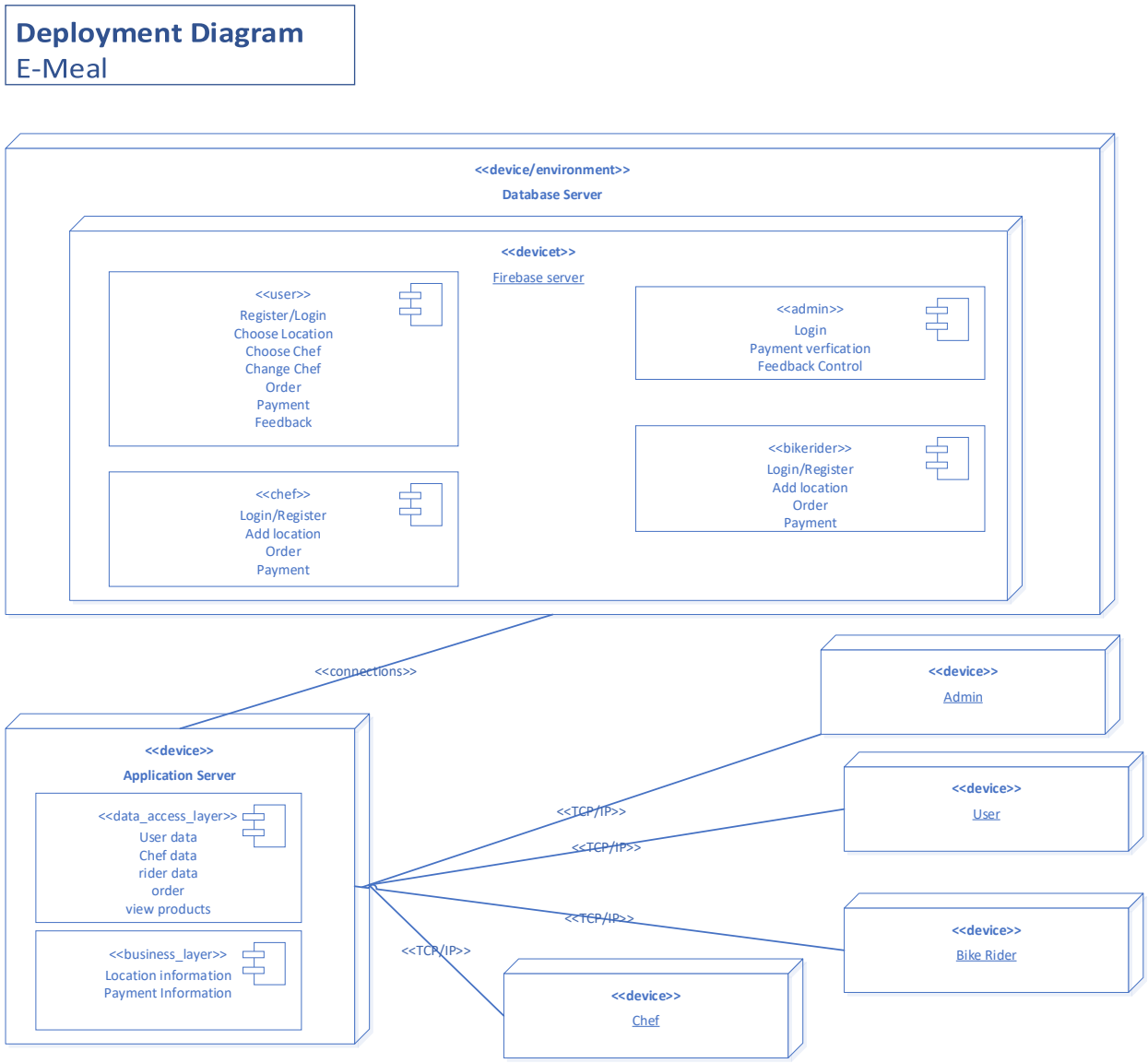


Figure 4.10. Deployment Diagram

4.11. Data Flow diagram [*only if structured approach is used - Level 0 and 1*]

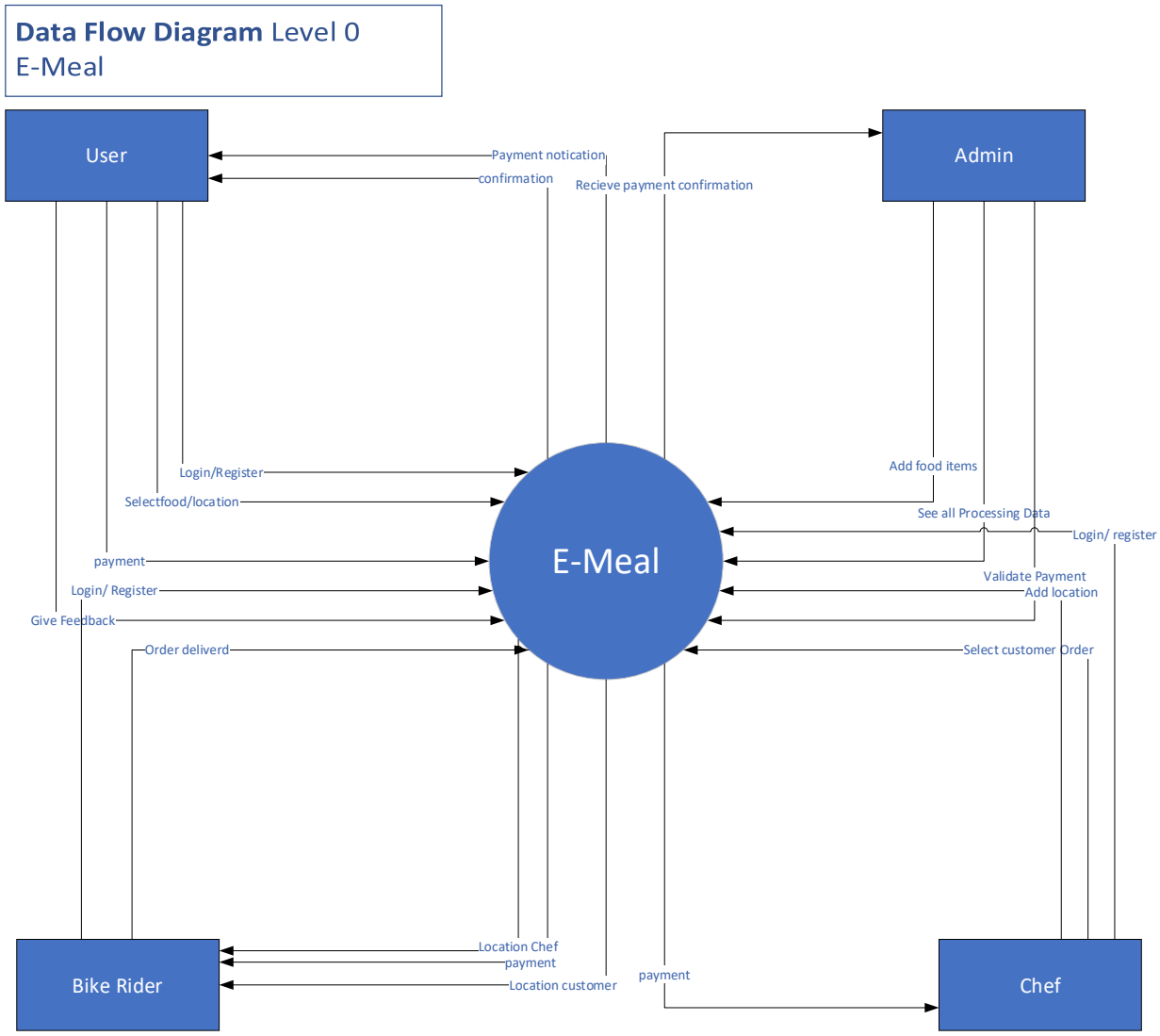


Figure 4.11. Data Flow (Level 0) Diagram

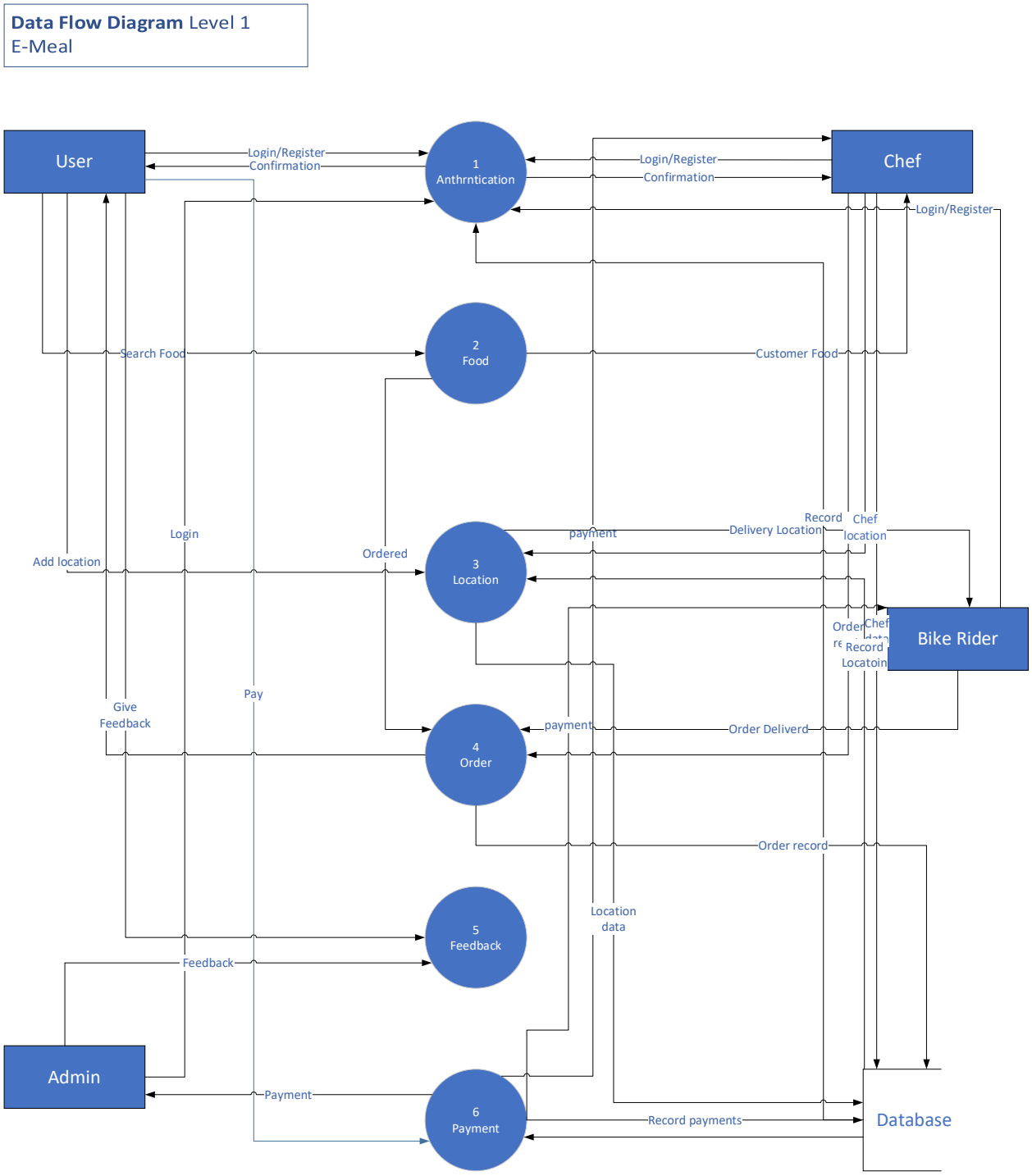


Figure 4.12s. Data Flow (Level 1) Diagram

Chapter 5

Implementation

Chapter 5: Implementation

This section evaluates the programming tools that are used, describes the implementation technique, and illustrates the testing of application.

5.1. Important Flow Control/Pseudo codes

- Users **start** from the home page.
    - The home page has two fixed text bars in the center of user and chef. (If the user is user).
- The **second** activity is about to login/register user, after this it proceed to next activity.
- The **third** activity is about the list and the categories of food.
    - User can select more than one food for order.
    - In this activity there is fix side navigation bar where there is order history, payment, and profile setting.
    - There is fixed navigation bar down the page where there is an option of favorites, profile, and bell icon.
- Forth **activity** is about to mention the time of required selected food and select the location, moreover there will be the option of coupon if the user has.
    - After send the request, system will check the chef availability in the given user's location and display cost.
- In the **fifth** activity there will be proceed booking confirmation to the chef
    - After proceeding, chef will accept the offer.
    - In this section user can check the profile and give the rating to the chef.
- The **sixth** activity is about the delivery of food.
    - In this activity there is a feedback and the rating for the chef and bike rider after deliver the food.
    - Section also contains the confirmation of payment.

5.2. Components, Libraries, Web Services and stubs

5.3. Deployment Environment

Our system is fully web based and it will deploy on web development studio. Web Studio is the official integrated development environment (IDE) for Google's Web operating system, built on Jet Brains' IntelliJ IDEA software and designed specifically for Web development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Web Development Tools (ADT) as primary IDE for native Web application development.

5.4. Tools and Techniques

Techniques:

Google web phone

Web is a mobile operating system uses a modified version of the Linux. Web allows developers to develop code in java language, controlling via Google developed java libraries. Developers take the advantage of the devise to access location information, run background services, set notifications to the status bar, etc. web employs a set of Java libraries used by various components of the web system. These capabilities are performs to developers through web application framework.

Mobile computing

Mobile Computing is a general term used to describe technologies that enable end-users to access network services anyplace, anytime, and anywhere. Information access via a mobile device is plagued by lower available bandwidth, unpredictable network quality, and poor security.

Tools:

Our System will be on applications and following are the app architecture which we used in our system.

System framework:

- Activity manager
- Windows manager
- Content provider
- package manager
- Resource manager
- Location manager

Libraries:

- Constraintlayout
- Cardview
- Recyclerview
- Firebase
- MaterialSearchBar
- hbb20

AVD Manager:

- Emulator
- Core libraries
- Virtual Machines

5.5. Best Practices / Coding Standards

Coding Style for Contributors:

Coding style that you should follow while contributing to app source code.

Project Guidelines:

File naming, parameter ordering in method, class member ordering etc.

5.6. Version Control

The latest version of Android Studio for Windows is 4.2.1 for Windows 64-bit.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Use Case Testing is a functional black box testing technique that helps testers to identify test scenarios that exercise the whole system on each transaction basis from start to finish.

6.1. Use Case Testing

Test Case :

Test Suite ID	**TS001**
Test Case ID	TC001
Test Case Summary	verify that by clicking Signup button username, password, email, phone# and address store in users detail in database.
Related Requirement	RSoo1: User should able to Sign up.
Prerequisites	No
Test Procedure	1. Select fields in Signup form. 2. Enter user data in fields. 3. Click Signup button.
Test Data	Valid username: Majid Valid password: majid1234 Valid email:majid@gmail.comValid phone# :03123456578
Expected Result	1. username, password, email and phone# are valid then store user data by clicking signup button. 2. given inputs are invalid then display error message. 3. fields are empty then show warning message.
Actual Result	1. name is valid, the result is as expected. 2. name is not valid then invalid message displayed. 3.fields are empty then warning massage displayed.
Status	Pass
Remarks	test case is simple and easy.
Created By	Majid
Date of Creation	04/05/21

Executed By	Rabia Saleem
Date of Execution	04/01/19
Text Environment	OS: Android Studio Version 3.4

6.2. Equivalence partitioning

6.3. Boundary value analysis

Sr.		Partition 1	Partition 2	Partition 3
1.	Password	Less than 8 character	1 – 8 character	9 – 12
2.	Phone	<=0	1 - 11	9 – 12

6.4. Data flow testing

In Emeal online food delivery relationship between one entity and another while performing a specific task in during data flow. Such as between the sign up and Sign in process etc.

6.5. Unit testing

In unit testing we have testified our different panel codes individually by performing different tests and by executing them individually, separately on different computers and they were successfully executed and they performed wel

6.6. Integration testing

In performance testing a particular certain situation is given to the website let's just say a 100 users try to register at the same time so how the system recovers back gracefully with complete results. So according to our extracted results, around 100+ people were able to register in our website.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

Nowadays, people are more and more frequent for their meals. It will have a lot of people specially hostilities/ tourists people looking for restaurant that they prefer for the hygienic/homemade meal such as breakfast, lunch and dinner. At this moment, it arises a lot of troublesome to restaurants which are still using traditional food order method as their food order process. Due to great increase in the awareness of internet and the technology associated with it, several opportunities are coming up on the web. So many business and companies now venture into their business with ease because of internet. Most of the people preferred home food over the restaurants and they wish to make money from their home so we are providing them the opportunity as a E-Meal which will automate the major online home-based food orders operations.

So, I am proposing here an online homemade food ordering system, greatly simplifies the ordering process for both user and chef.

7.2. Achievements and Improvements

The biggest achievements here are that we were able to enhance our skills to the professional extend studying and apply it to this project. We learned software architecture design techniques, UML modeling, project management, testing and much more, and were able to apply it all in this project.

The next big achievement is the things we learnt during this project. New languages, frameworks, libraries, different software's for diagrams Database. All that will be useful for us in our futures. We learn Creative thinking.

7.3. Future Enhancements/Recommendations

As it has been already said, there is always room for further improvement. And since we plan to launch this website in web development as our own startup, enhancements will keep coming.

The system has been built on react native, but at some point we work on its efficiency, accessibility, flexibility, we are definitely going to scale it up which we believe ours is eventually going to become. We make it more user friendly interface.

Appendices

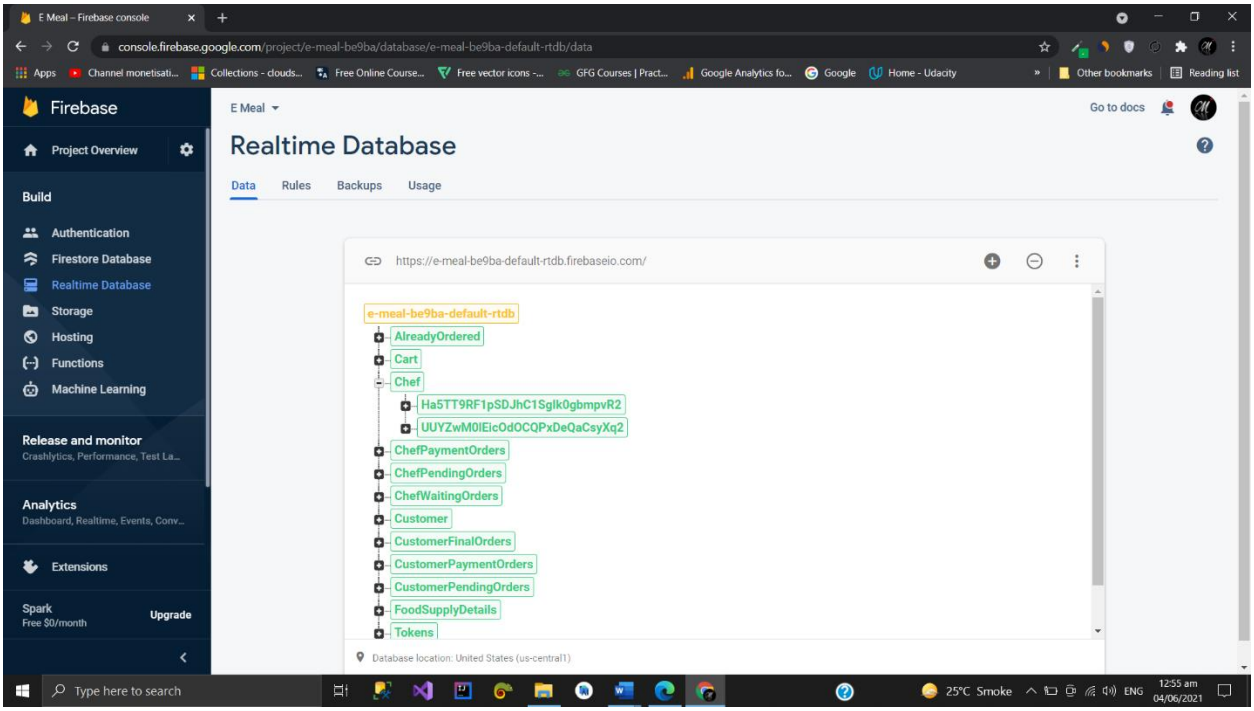
Appendix A: User Manual

Appendix section we describe the different phases of user interface and also describe how user can use our project

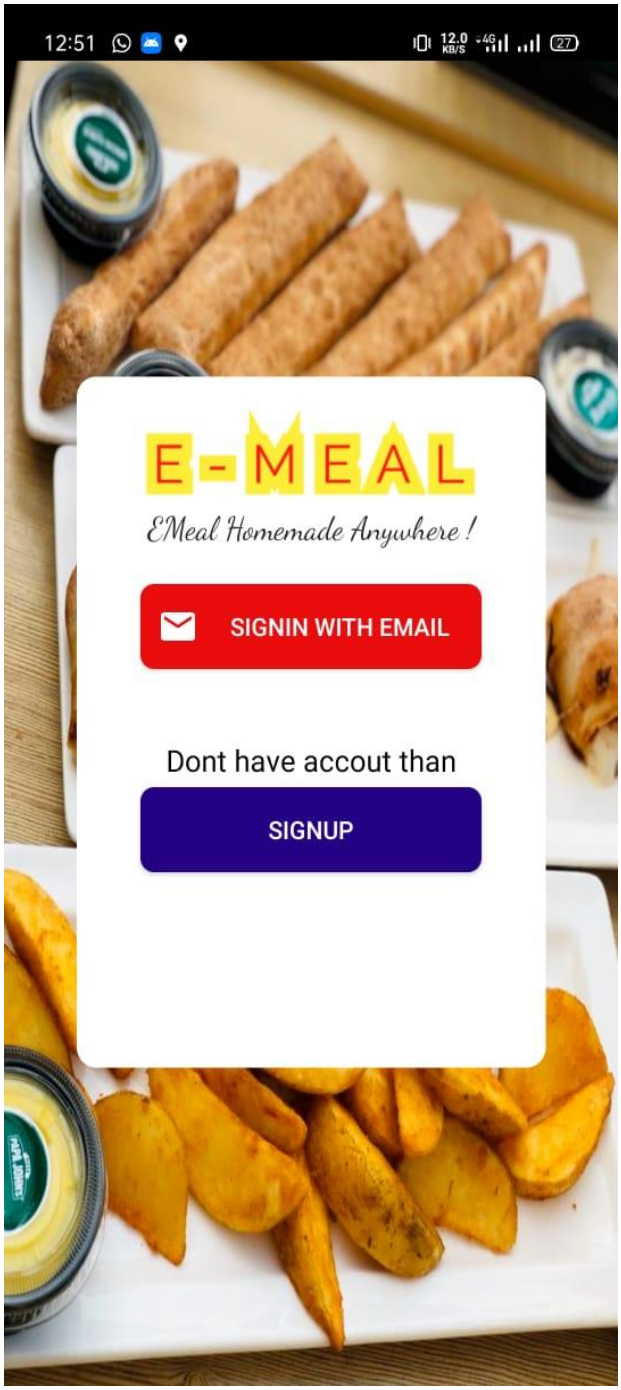
Appendix A: E meal App

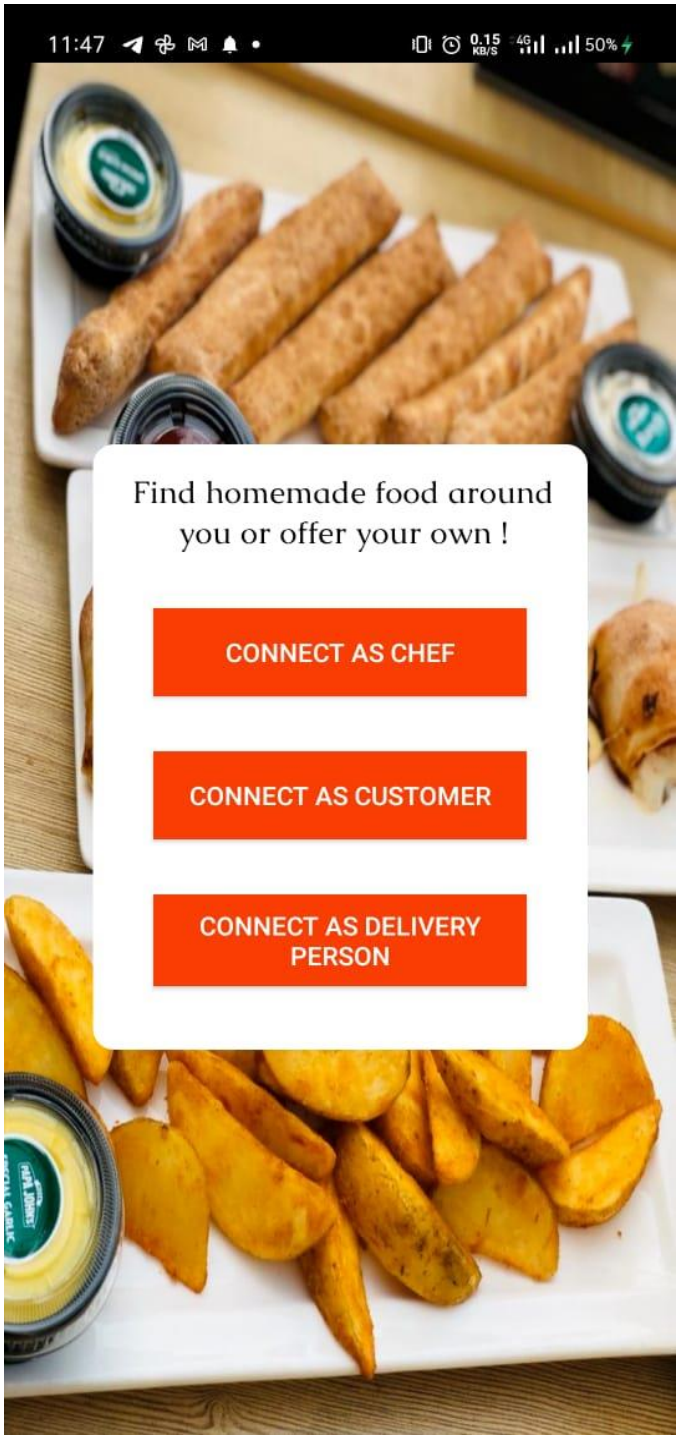
A.1. Splash Screen

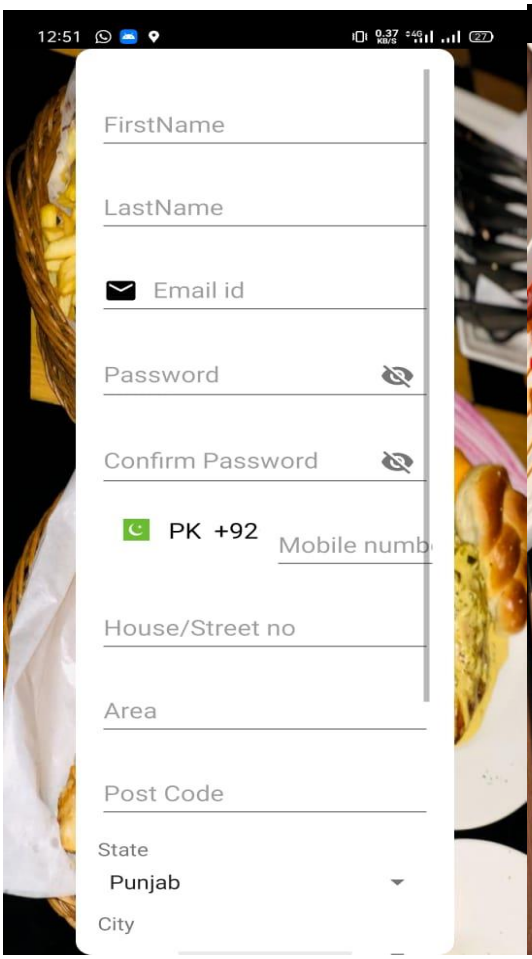
Appendix B: Administrator Manual

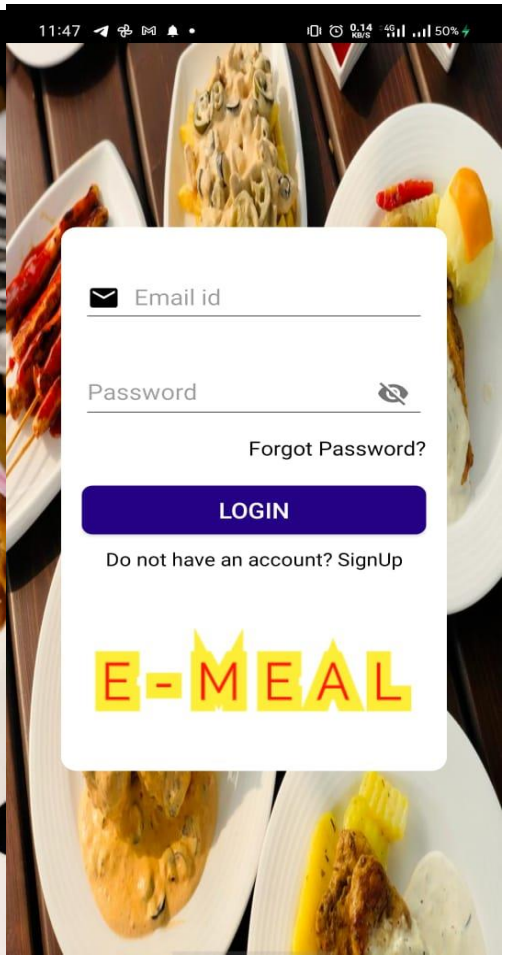


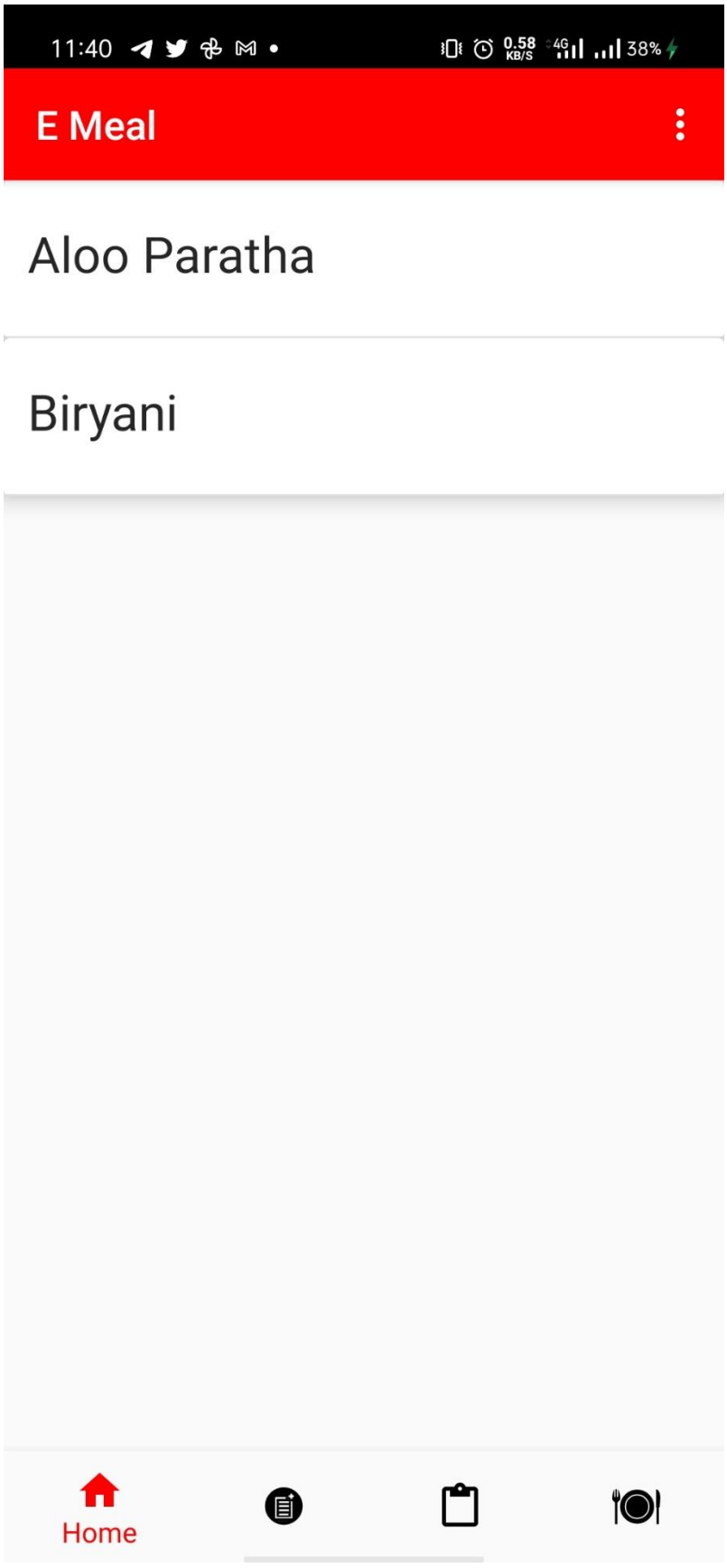
Appendix C:

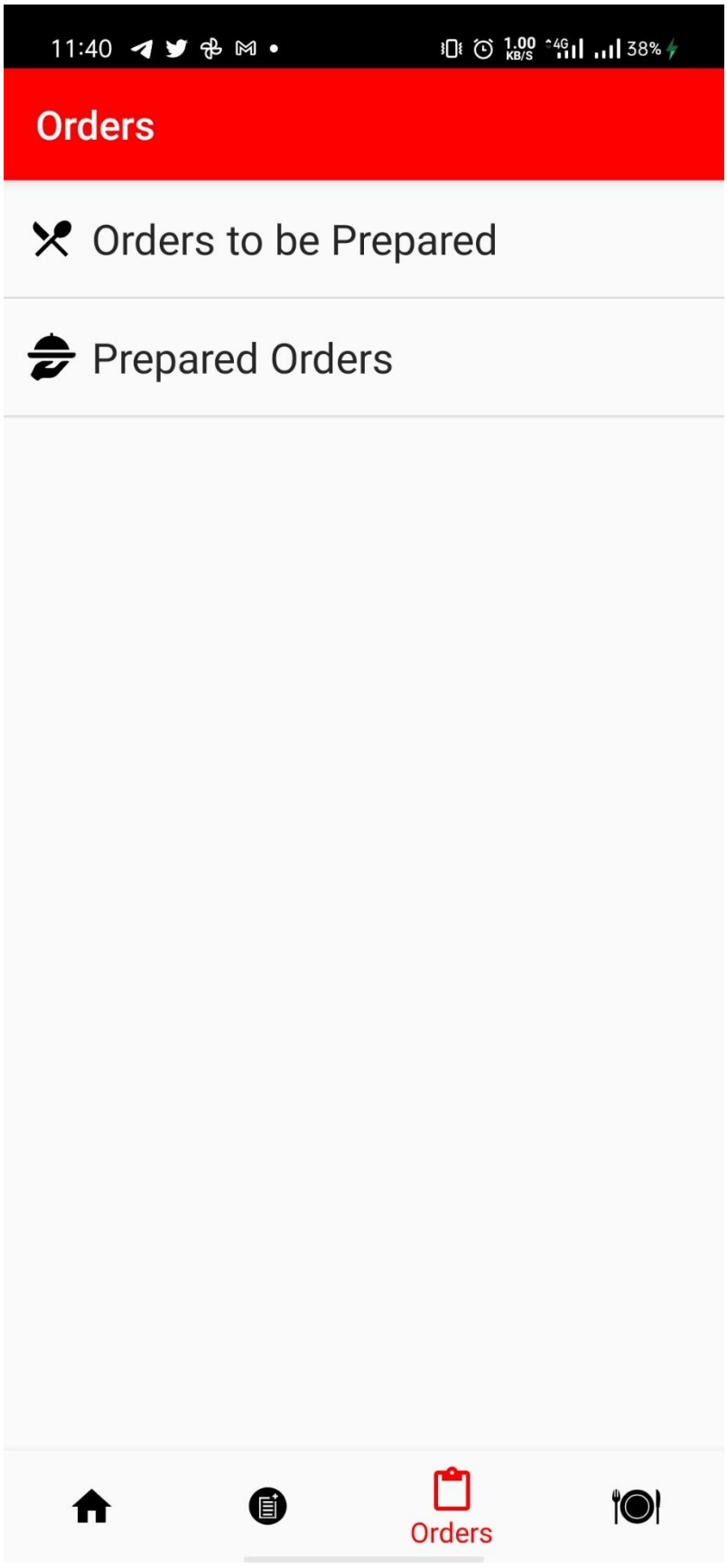

12:51
E-MEAL
EMeal Homemade Anywhere !
SIGNIN WITH EMAIL
Dont have accout than
SIGNUP

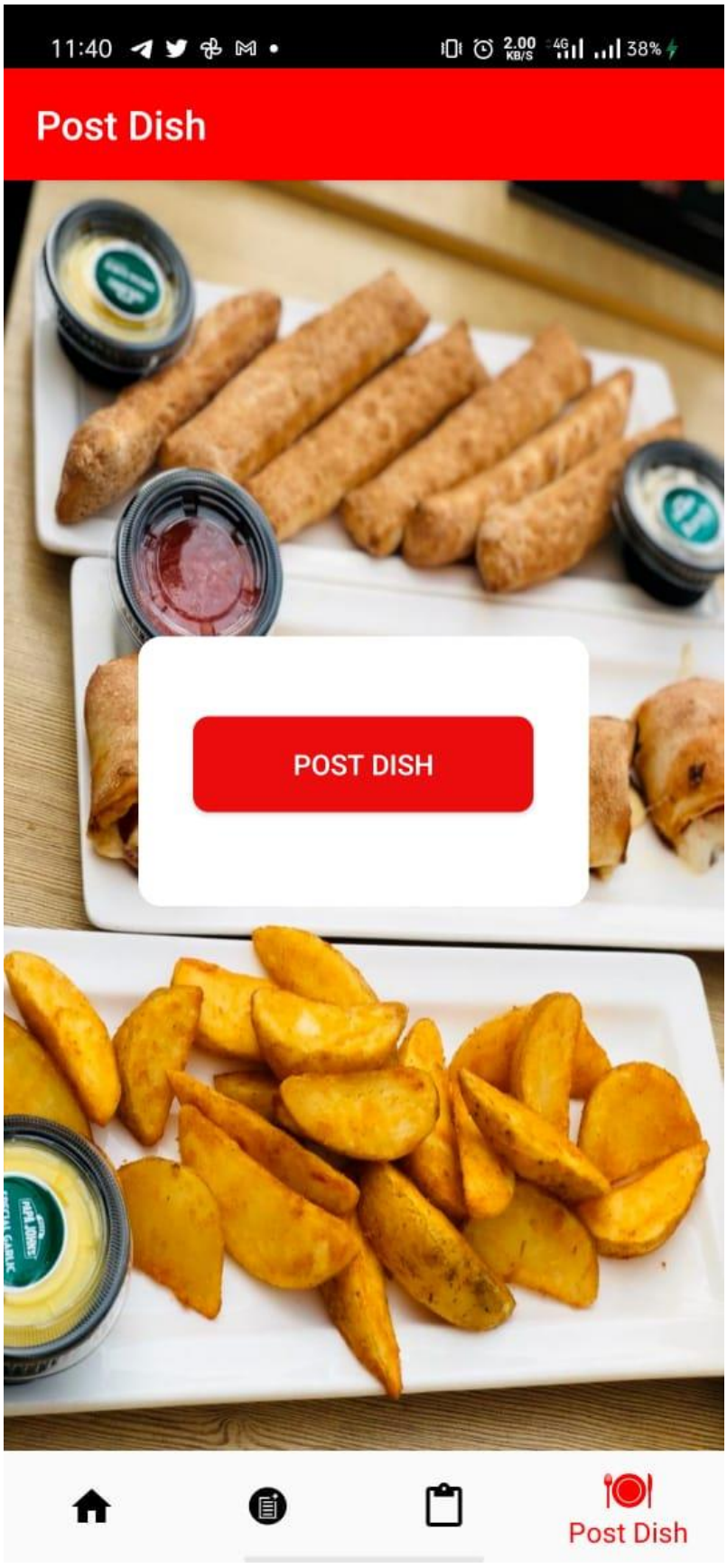

11:47
50%
Find homemade food around you or offer your own !
CONNECT AS CHEF
CONNECT AS CUSTOMER
CONNECT AS DELIVERY PERSON

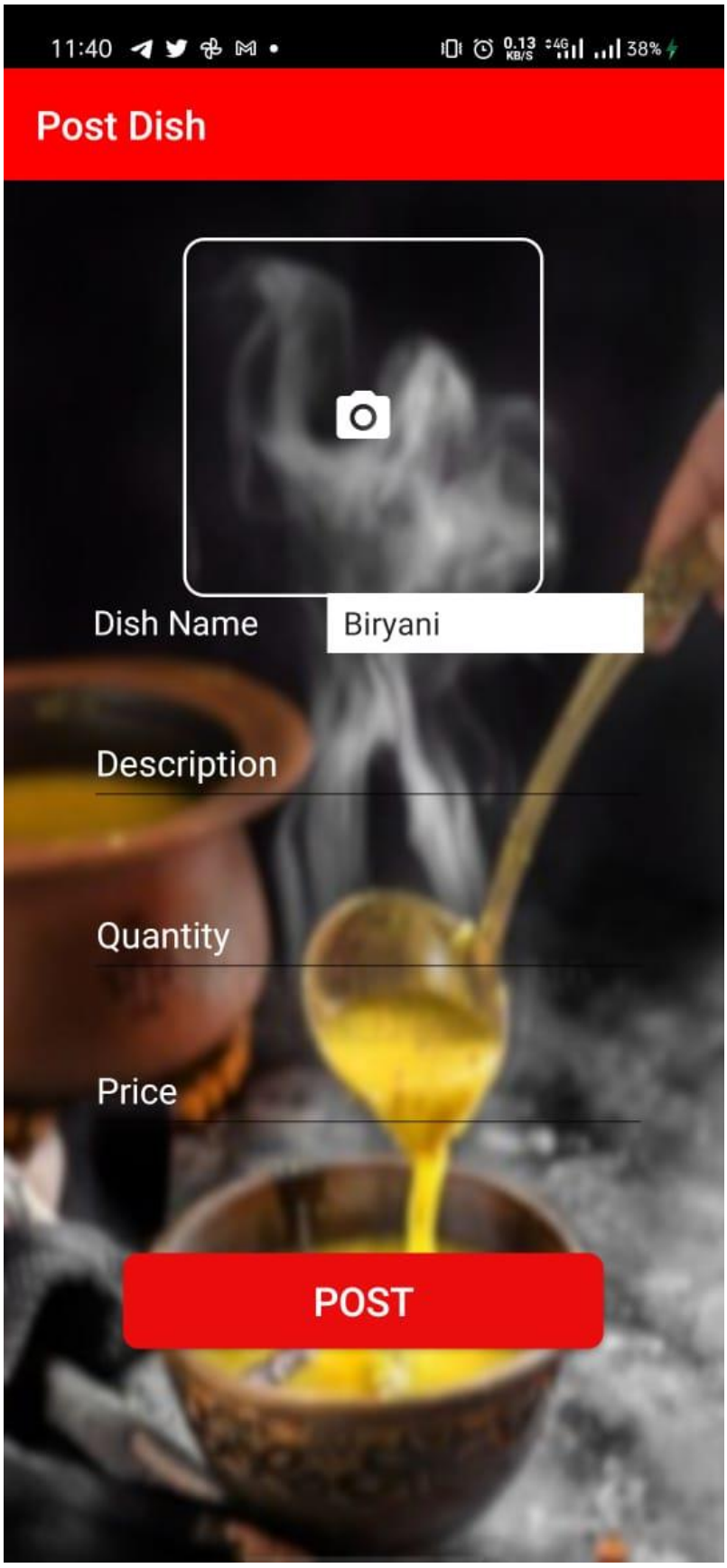

12:51
FirstName
LastName
Email id
Password
Confirm Password
PK +92
Mobile numb
House/Street no
Area
Post Code
State
Punjab
City

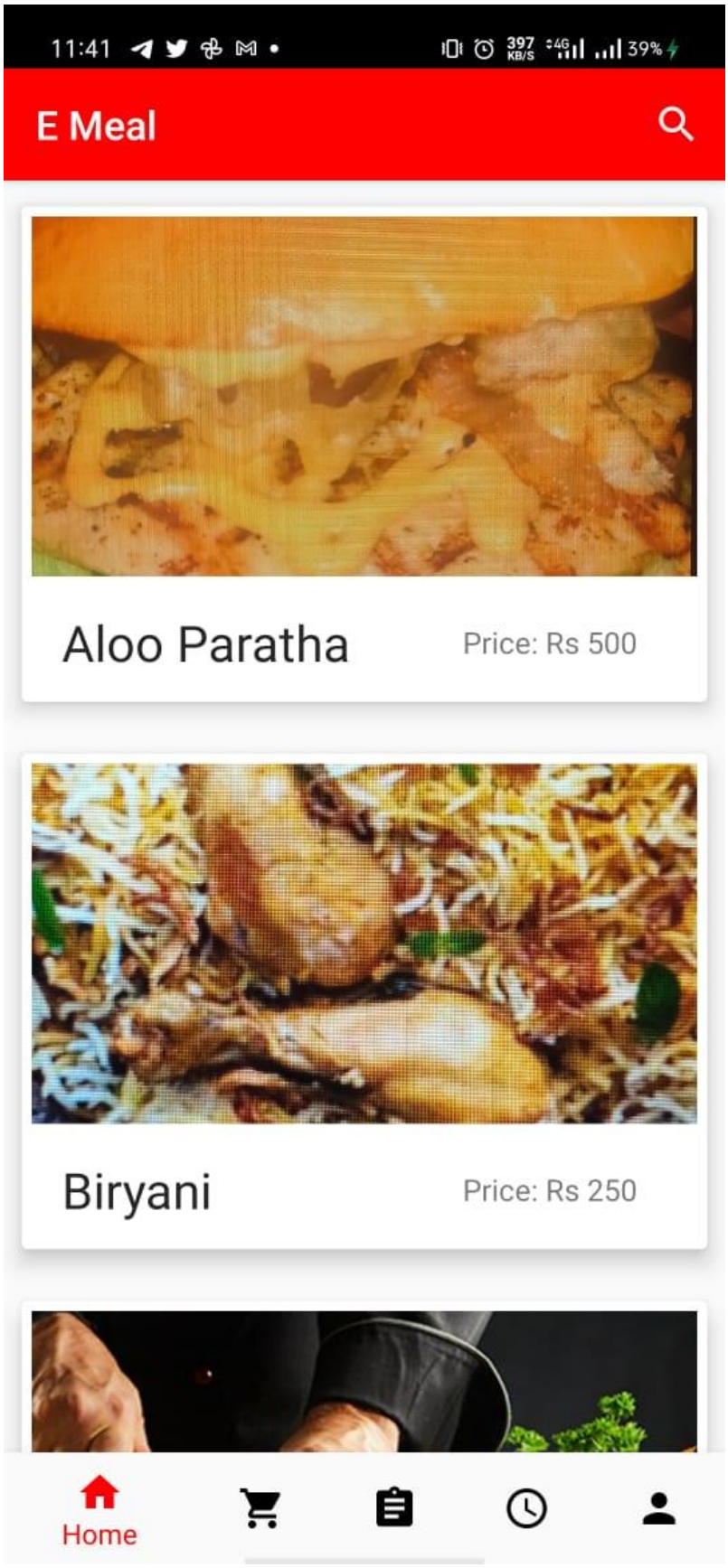

11:47
Email id
Password
Forgot Password?
LOGIN
Do not have an account? SignUp
E-MEAL

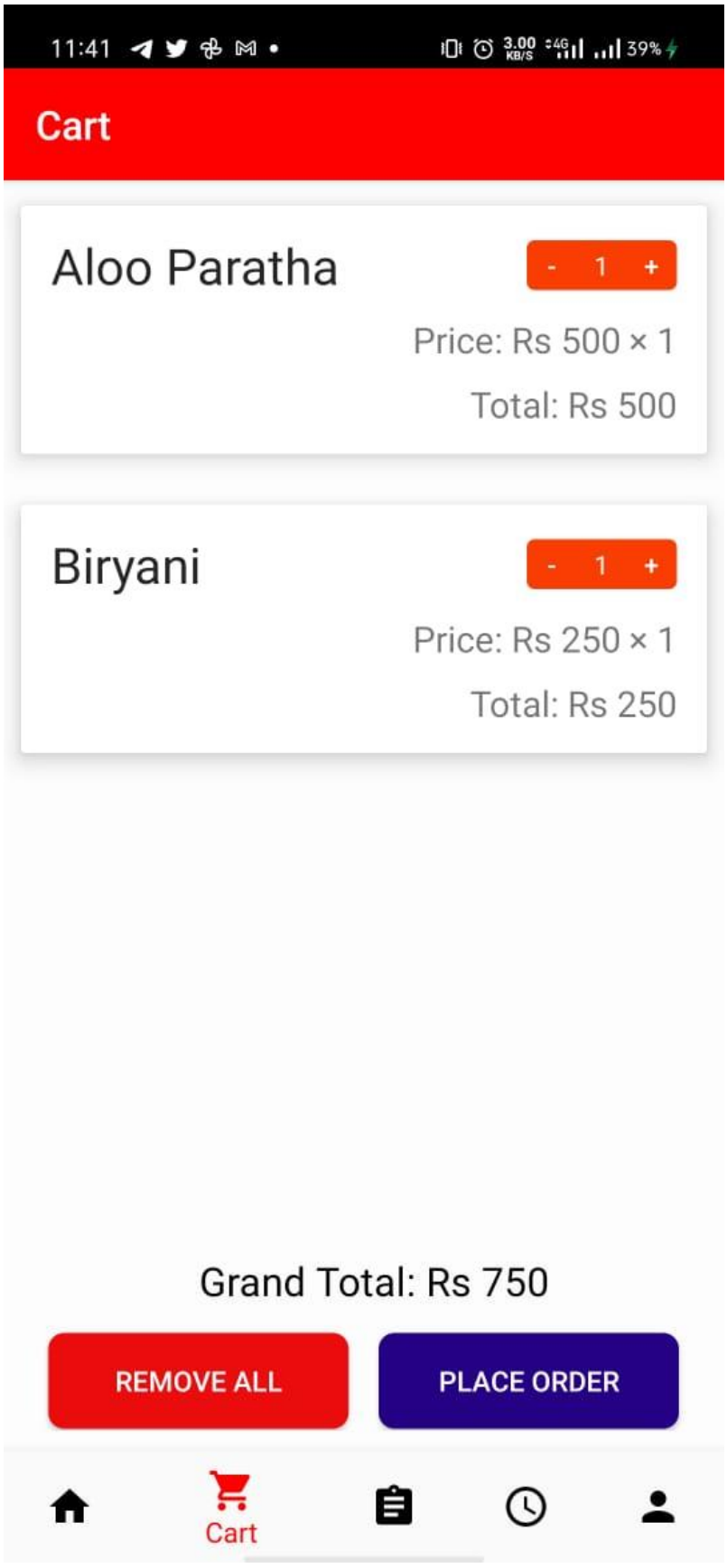

11:40
0.58 KB/S
38%
E Meal
Aloo Paratha
Biryani
Home

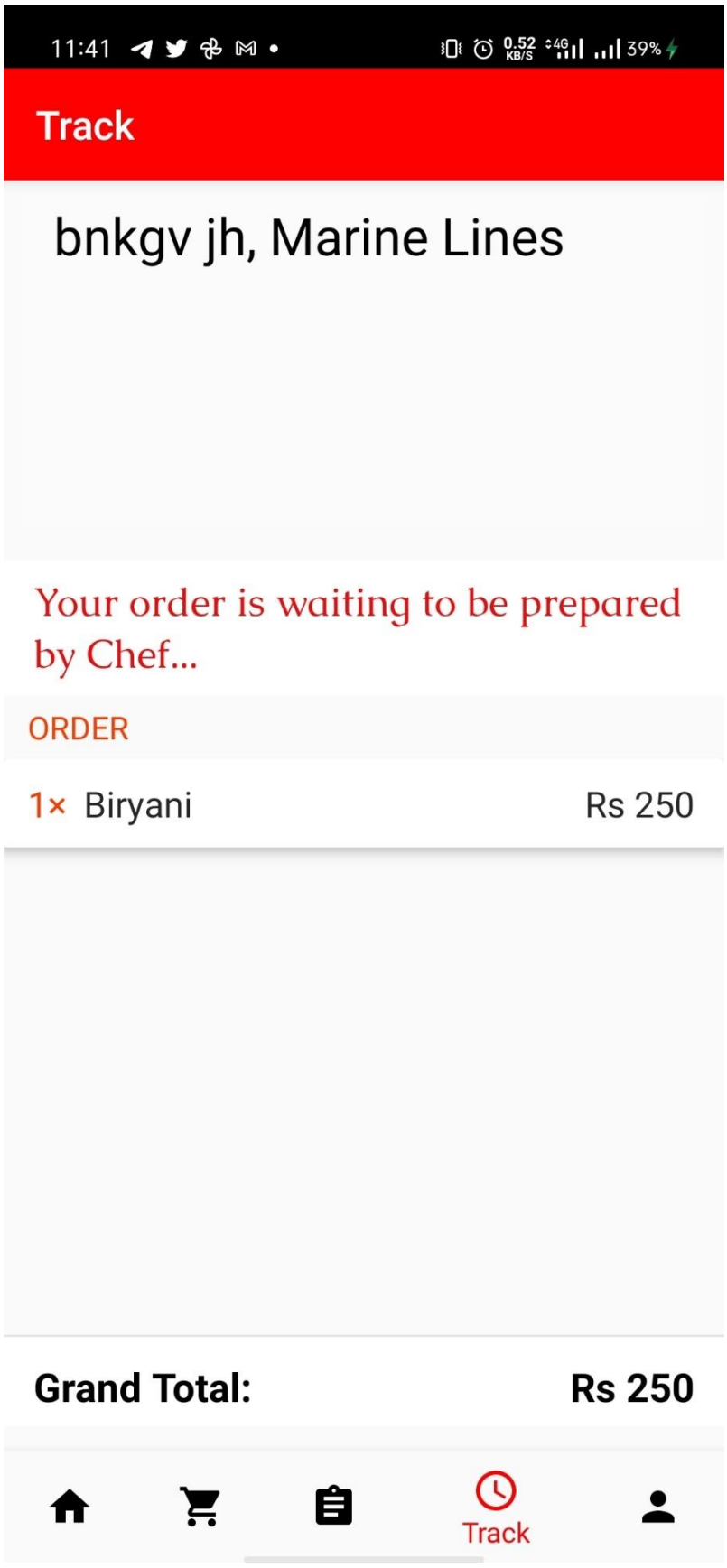

11:40
1.00 KB/S
38%
Orders
Orders to be Prepared
Prepared Orders
Orders

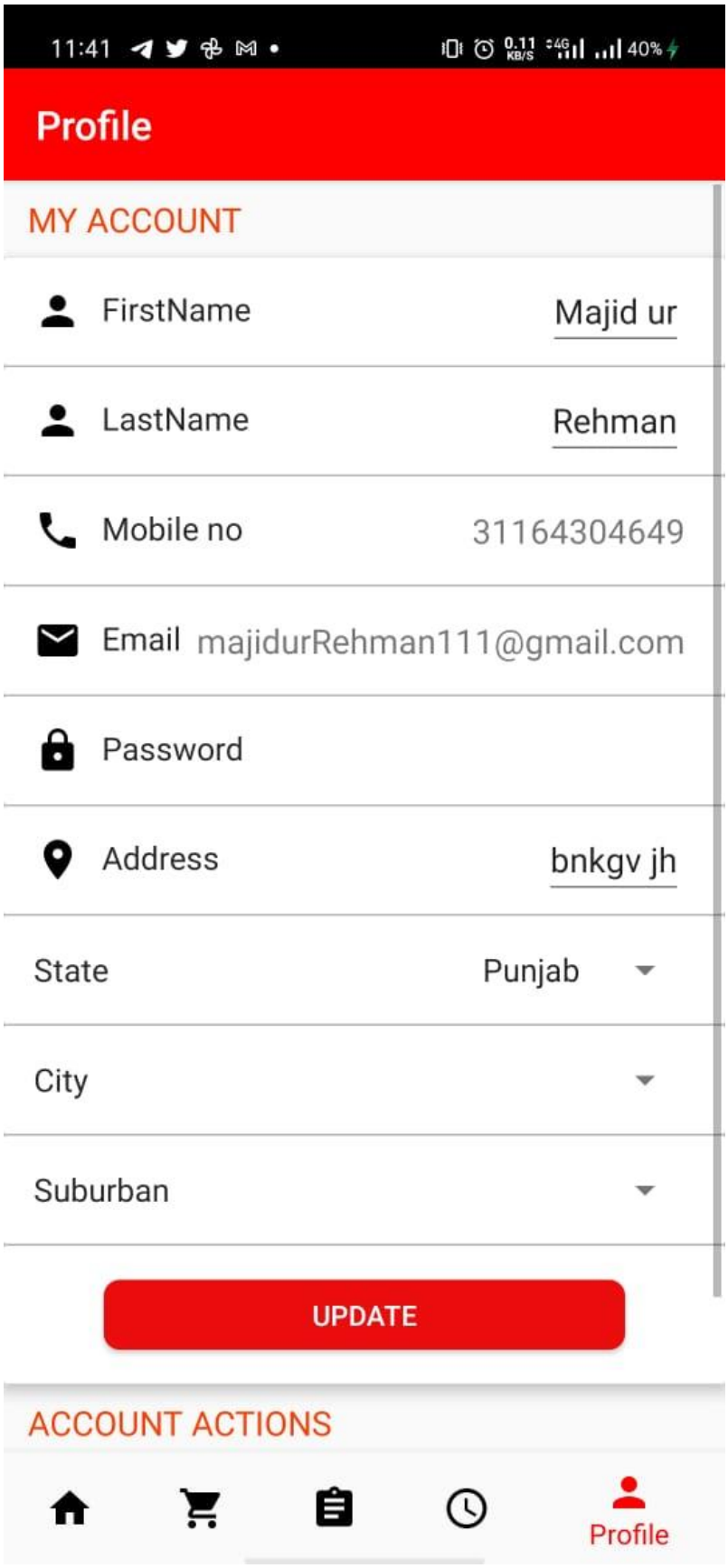

11:40
2.00 KB/S
38%
Post Dish
POST DISH
Post Dish


11:40
38%
Post Dish
Dish Name
Biryani
Description
Quantity
Price
POST

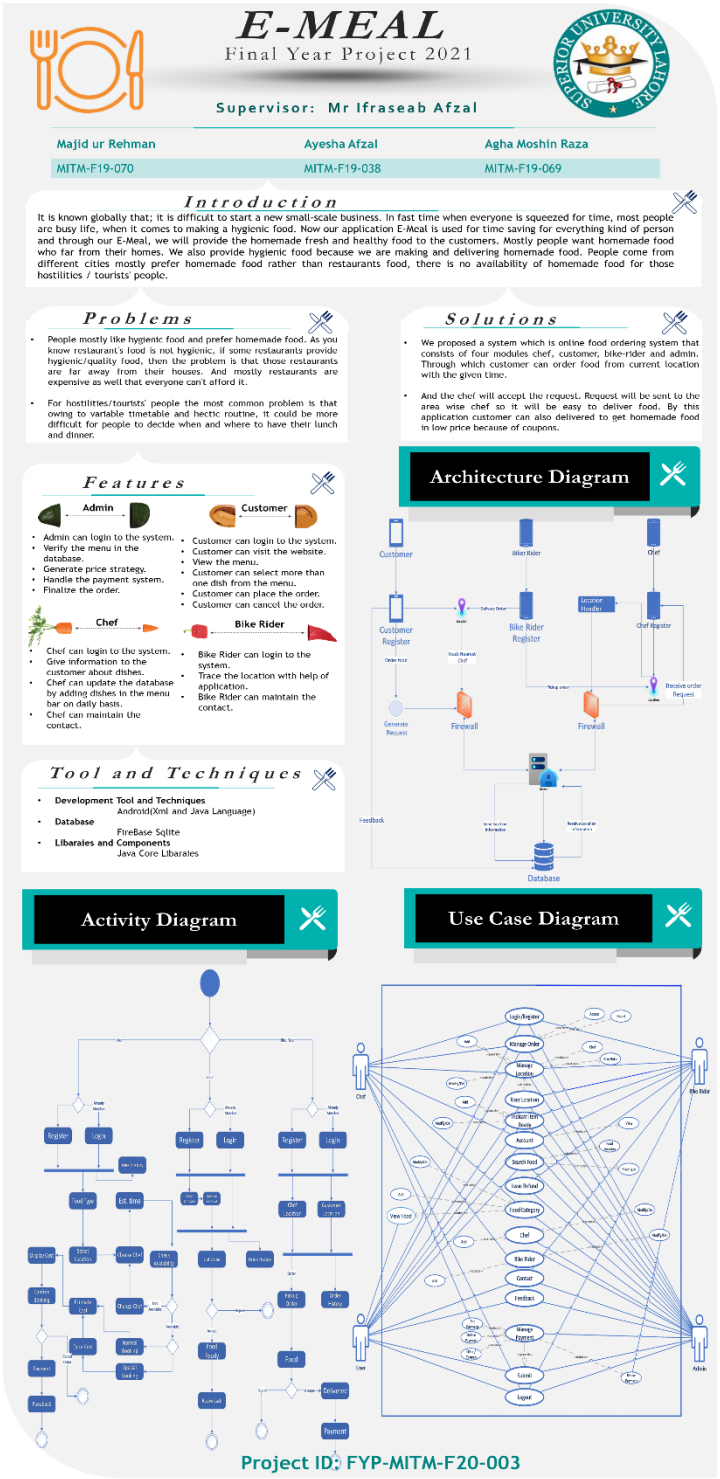

11:41
39%
E Meal
Aloo Paratha
Price: Rs 500
Biryani
Price: Rs 250
Home


11:41
3.00 KB/S
39%
Cart
Aloo Paratha
- 1 +
Price: Rs 500 × 1
Total: Rs 500
Biryani
- 1 +
Price: Rs 250 × 1
Total: Rs 250
Grand Total: Rs 750
REMOVE ALL
PLACE ORDER
Cart


11:41
39%
Track
bnkgv jh, Marine Lines
Your order is waiting to be prepared by Chef...
ORDER
1× Biryani
Rs 250
Grand Total:
Rs 250
Track


11:41
40%
Profile
MY ACCOUNT
FirstName
Majid ur
LastName
Rehman
Mobile no
31164304649
Email
majidurRehman111@gmail.com
Password
Address
bnkgv jh
State
Punjab
City
Suburban
UPDATE
ACCOUNT ACTIONS
Profile

C.1. Standee


E-MEAL
Final Year Project 2021
Supervisor: Mr Ifraseab Afzal
Majid ur Rehman
MITM-F19-070
Ayesha Afzal
MITM-F19-038
Agha Moshin Raza
MITM-F19-069
Introduction
It is known globally that; it is difficult to start a new small-scale business. In fast time when everyone is squeezed for time, most people are busy life, when it comes to making a hygienic food. Now our application E-Meal is used for time saving for everything kind of person and through our E-Meal, we will provide the homemade fresh and healthy food to the customers. Mostly people want homemade food who far from their homes. We also provide hygienic food because we are making and delivering homemade food. People come from different cities mostly prefer homemade food rather than restaurants food, there is no availability of homemade food for those hostilities / tourists' people.
Problems
People mostly like hygienic food and prefer homemade food. As you know restaurant's food is not hygienic, if some restaurants provide hygienic/quality food, then the problem is that those restaurants are far away from their houses. And mostly restaurants are expensive as well that everyone can't afford it.
For hostilities/tourists' people the most common problem is that owing to variable timetable and hectic routine, it could be more difficult for people to decide when and where to have their lunch and dinner.
Solutions
We proposed a system which is online food ordering system that consists of four modules chef, customer, bike-rider and admin. Through which customer can order food from current location with the given time.
And the chef will accept the request. Request will be sent to the area wise chef so it will be easy to deliver food. By this application customer can also delivered to get homemade food in low price because of coupons.
Features
Admin
Admin can login to the system.
Verify the menu in the database.
Generate price strategy.
Handle the payment system.
Finalize the order.
Customer
Customer can login to the system.
Customer can visit the website.
View the menu.
Customer can select more than one dish from the menu.
Customer can place the order.
Customer can cancel the order.
Chef
Chef can login to the system.
Give information to the customer about dishes.
Chef can update the database by adding dishes in the menu bar on daily basis.
Chef can maintain the contact.
Bike Rider
Bike Rider can login to the system.
Trace the location with help of application.
Bike Rider can maintain the contact.
Tool and Techniques
Development Tool and Techniques
Android(Xml and Java Language)
Database
FireBase Sqlite
Libaraies and Components
Java Core Libaraies
Architecture Diagram
Customer
Biker Rider
Chef
Customer Register
Bike Rider Register
Chef Register
Firewall
Firewall
Database
Activity Diagram
Use Case Diagram
Project ID: FYP-MITM-F20-003

Reference and Bibliography

Reference and Bibliography

1. [Online Available] https://developer.android.com
2. K.et el [Online Available] www.annakshetra.org
3. [Online Available] http://developer.android.com/training/basics/firstapp/index.html
4. [Online Available] https://developer.android.com/s/results?q=intent
5. [Online Available] https://material.io/develop/android/docs/getting-started
6. [OnlineAvailable]https://www.google.co.in/?gfe_rd=cr&ei=FRXYVpC0DqnG8AeB_6HIDA&gwsrd=ssl#q=android+tutorial+for+beginners+with+examples