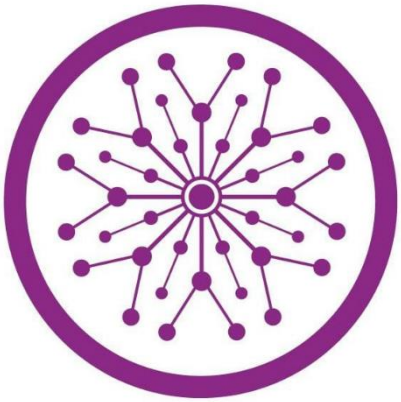
FOD SOLUTIONS

Final Year Project

Session 2020-2022

A project submitted in partial fulfillment of the degree of

Masters in Computer Science



Department of Information Technology

Faculty of Computer Science & Information Technology

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Plagiarism Free Certificate

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Project Report

FOD Solutions

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Saad Umar	1.0	11th Jan, 2021	Original Draft	
Saad Umar Qandil Saleem	2.0	25th Jan, 2021	Changes Based on Feedback from Supervisor	
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Saad Umar Qandil Saleem	6.0	25th Aug., 2021	Changes in the Final Report Based on Feedback from Supervisor	
Saad Umar Qandil Saleem	7.0	25th Nov, 2021	Changes in the Project Based on Feedback from Supervisor	
Saad Umar Qandil Saleem	8.0	25th Dec, 2021	Changes in the Final Report Based on Feedback from Supervisor	

APPROVAL

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Comments: _____

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HEAD OF THE DEPARTMENT

Comments: _____

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Date:_____ Signature:_____

Dedication

Every challenging work, needs self-efforts as well as guidance of elders especially whose and were very close to our hearts. My humble effort we dedicate to my sweet and loving mother,

Whose affection love, encouragement and pray of day and night make me able to get such success and honor, along with all hard working and respected teachers.

Acknowledgements

Above all, we owe much tribute to the Almighty God who gave us a life worth living and I thank Him for giving us the strength to accomplish this project. The success and accomplishment of this project stems from efforts and dedication offered by many individuals whose support was either direct or indirect. I thank all of them for their devotion.

First and foremost, I thank my project advisor, **Mr. Bilal Khan** for his continuous support and dedication towards this project.

Second I would like to thank the **Mr. Javaid Iqbal**, thank you all for the assistance and constructive discussions we had during the entire courses

Finally, I'd like to thank my family for their personal support throughout this project experience. In the last but not the least, special gratitude with the deepest sense of respects to our parents whose love and affections kept us steep fast and enabled us to attain targets and goals of academic life. The authors are extremely indebted to their brothers and sisters whose constant encouragement provides us with the impetus that was necessary for attaining academic initiatives.

Executive Summary

Digital era where everything has been moved or moving towards digitalization, people still face difficulty in finding Agricultural products, Organic food and Dairy products in Pakistan and many other countries. All these problems will have one easy solution because not only agricultural products but also organic food and dairy product will be provided just at one place. Secondly, the farmers have no platform to sale as well as purchase their raw products due to which very few people are handling agricultural products and has caused flour shortage recently. Neither farmers have the direct access to sale their agricultural products nor customer have direct access to purchase organic, dairy and agricultural products.

As response to the growing demand for pure farming products, organic food and dairy products our purpose is to provide perfect vegetables and fruits and to assist consumers at a single online platform from different areas instead of scouring many stores looking for demanded products and to provide all type of organic, dairy and agricultural products where buyer and seller can directly interact with each other without any third party being involved. At this platform farmers can also get their raw products (seeds, pesticides, fertilizers etc.). This will cause the consumers to find pure and healthy products at a single place. Will be an online market that is Application for producers where they can sell their products easily as they want.

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Chapter 1

Introduction

Chapter 1: Introduction

Picking the right customer with desirable prices or best produce with the lowest pesticides levels or purchasing the most sustainable foods at the local farmers market can be a challenge. Here comes our application and website.

This project explored the possibility of building a platform that can be house all the required information for farmers to sell their crops as well as to buy pesticides, seeds and fertilizers and people who want farming, organic and dairy products to bring ease in the lives of farmers who are biggest part of our economy but still being neglected and to give people organic life style and dairy products at ease.

Farmers are struggling to sell their crops on righteous time and with a rational prices along with the problem of fertilizers, seeds and pesticides being provided on time.

People don't have easy access to farming, organic and dairy products altogether. This Application is a one solution for these multiple problems.

1.1. Background

Agriculture contributes 18.9 percent to GDP which is the biggest percentage yet our farmers are struggling to produce crops. Reason is infected Crops and not being sold on time. There are Apps some of which are related to agriculture, some related to organic products and some are of dairy products but in our App farmer can not only sell its crops but also can purchase pesticides for crops. Our focus is to eliminate the hassle of farmer to look for buyer and to make sure the freshness of products.

In Veggie Market app there is very limited variety with no confirmation text and cancellation option our app is not only 4 in 1 app where one can find multiple products at single platform but also to provide solution for shortcoming the other apps like Veggie Market have.

1.2. Motivations and Challenges

Motivation behind this application is providing a single solution to multiple problems. Giving solution to the farmers who are unable to sell their crops on time, resulting delay in producing

new crops on time eventually causing great effect on economy as well as a challenge for farmers their selves and to the people who are ready to pay as much as demanded just to get organic food and dairy products.

1.3. Goals and Objectives

- To eliminate the hassle of waiting for a product prices to sell the crops.
- A platform not only for farmers but for people who love organic food and dairy products.
- Multipurpose application with quick access of products.
- To ensure freshness of products and quick availability with wide range of variety.

1.4. Literature Review/Existing Solutions

I. **Kissan Bazaar online farmer market place [1]**
   - Market for agriculture items
   - It's is user friendly
   - Fresh and cheapest prices

II. **Organize V [2]**
   - Price is competitive and some awesome services
   - Best quality

III. **Milk dairy and dairy Grocery management Calendar**
   - Quality and price

1.5. Gap Analysis

Mobile Application usage is increasing day by day. It can be further be suggested that the growing profits from Mobile Applications can be seen as an indicator of its prominence in the future. This app is being developed regarding the concerns to purchase from the platform.
Secondly, the people with great demand for organic and dairy products. This will be the most dynamic app where quickest time and on only one platform. There are agriculture related apps,

organic application but there is no such application which combines all the features of multiple applications in just one application. People will have to use just one app instead of using three different apps for different purposes.

1.6. Proposed Solution

- People will be able to take on organic life style with ease and reliability with application and website.
- User will save their time and money and mental hassle to going to farmer market place.
- Dairy products lovers will no longer have to worry about limited choices in app as well as website.
- Farmers will no longer have to worry about selling their crops and gathering seeds, pest, fertilizers etc.
-

1.7. Project Plan

The project plan contains WBS and Gantt chart. They are detailed and describe all the milestones throughout the project life cycle:

The purpose of roles & responsibility matrix is to identify who will do what.

1.7.1.

1.7.2.

1.7.3. Roles & Responsibility Matrix

The purpose of roles & responsibility matrix is to identify who will do what.

Table 1- Work Break Down Structure

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	Proposal	1	Documentation	3 days	M. Saad Umar Qandil Saleem
2	Information Gathering	2	Gathered Information by visiting the market	2 days	M. Saad Umar Qandil Saleem
3	Information Analysis	3	Information gathered from the market analyzed	4 days	M. Saad Umar Qandil Saleem
4	Documentation	4	All the gathered and analyzed data documented	3 days	M. Saad Umar Qandil Saleem
5	Architecture Designing	5	A suitable design is selected for the documented data	1 days	M. Saad Umar Qandil Saleem
6	Architecture Development	6	The selected architecture is developed	25 days	M. Saad Umar Qandil Saleem
7	Testing Phase	7	The developed system is tested	15 days	M. Saad Umar Qandil Saleem
8	Documentation	8	All the testing conducted on the system and use cases are documented	30 days	M. Saad Umar Qandil Saleem
9	Implementation	9	The developed system is deployed	20 days	M. Saad Umar Qandil Saleem
10	Training	10	User is trained to use the system	15 days	M. Saad Umar Qandil Saleem

1.7.4. Gantt Chart

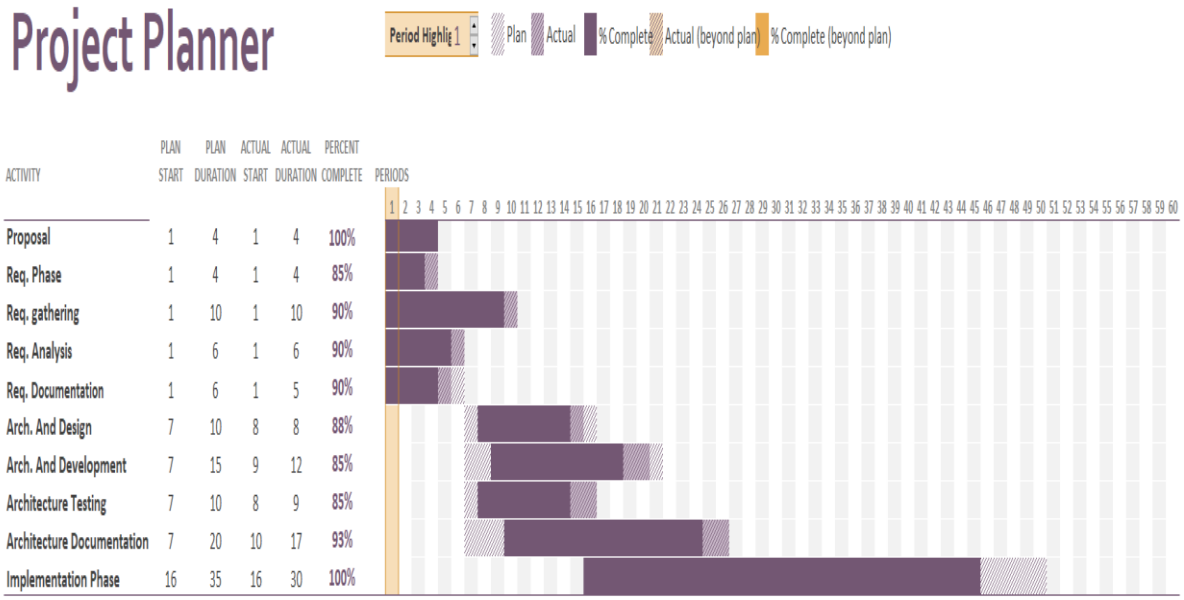


Figure 1- Gant Chart

1.8. Report Outline

- The Requirement was gathered in about 10 Days.
- The Documentation was made in a whole year.
- The coding and data were implanted in almost 4 months.
- The Test were made, and errors were debugged after and through the coding period.
- Validation and finalization is added in golden days.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

Purpose of the documentation is to describe the external behavior of the system. In this document, every kind of documentation will be finalized. It describes the nonfunctional requirements, design requirements and also provide other details which will clear the whole idea about FOD Solutions application.

The purpose of developing the FOD Solutions to inspire the farmers to provide quality goods and sell to buyers without any hassle and to provide a convenient source to those who love organic and products.

2.1.2. Document Conventions

The main purpose of documentation is to tell masses that we are giving official plate form to farmers to easily sell their products and buy for their crops and with the wide range of variety plat form for organic and dairy products lover.

2.1.3. Intended Audience and Reading Suggestions

This Software Requirements document is intended for:

- Developers who can review project's capabilities and more easily understand where their efforts should be targeted to improve or add more features to it (design and code the application – it sets the guidelines for future development).
- Project testers can use this document as a base for their testing strategy as some bugs are easier to find using a requirements document. This way testing becomes more methodically organized.
- End users of this application who wish to read about what this project can do.

2.1.4. Product Scope

FOD Solutions Application will be platform where people of all community can get their raw food such as wheat, rice, milk eggs and many more at a single place. They will get products fully fresh because they will purchase it directly from farmers and producers not from market. Products will cheap in perspective of price because no third party will be involved for getting profit as in traditional manners. Farmers can not only sell their crops and products but also can purchase pesticides, fertilizers, seeds and other raw essential products.

It will cause beneficial for farmer and producers by selling their products directly but also good for consumer's health and pocket because he/she will get suitable and fresh product directly from producers with wide range.

There are some Apps and websites of raw food but no app for producers to sell their products directly and can get their raw products at a single platform. So this app will be for consumers and producers.

2.1.5. References

All the component of this report typed manually and all diagram also draw by our team using Visio. We take help from YouTube and some discussion form. We also took reference from the following Apps and websites.

Olx Pakistan: https://www.olx.com.pk

Daraz.pk: https://www.daraz.pk

YouTube Channel Lucid Chart: https://www.youtube.com/results?search_query=lucidchart

2.2. Overall Description

This system consist of an application. This product is being produced specifically for the farmers to sell their crops on time with rational amount. And people who want to buy organic and dairy products. This system is one platform for multiple purposes. Customer's satisfaction is our first priority.

2.2.1. Product Perspective

FOD Solutions Application will be platform where people of all community can get their raw food such as wheat, rice, milk eggs and many more at a single place. They will get products fully fresh because they will purchase it directly from farmers and producers not from market. Products will cheap in perspective of price because no third party will be involved for getting profit as in traditional manners. Farmers can not only sell their crops and products but also can purchase pesticides, fertilizers, seeds and other raw essential products.

It will cause beneficial for farmer and producers by selling their products directly but also good for consumer's health and pocket because he/she will get suitable and fresh product directly from producers with wide range.

There are some Apps and websites of raw food but no app for producers to sell their products directly and can get their raw products at a single platform. So this app will be for consumers and producers.

2.2.2. Product Functions

3. Registration
4. Login
5. Add products
6. Search products
7. Order products
8. Add product to cart
9. Contact producer through messages in Application
10. Manage profile
11. Rate app
12. Edit current location

2.3 User Classes and Characteristics

We defined different user classes below. Admin not required high level knowledge for interacting with system. Admin should have technical knowledge for interacting with system.

Producer and consumer should know how to communicate on App and website or how to work on FOD Solutions.

Admin/Principal

Admin class user has all the right of this system. He can insert, update, search and display record.

In short of he can perform all require function in this system from back end with the help of database.

Seller/Producer

Producer will upload the product farming products, organic products, and dairy products separately. He has the right to edit or delete the product constraints late on. Products will be save in my Ads function from where he/she can access his product.

Consumer

Consumer can view different kind of products uploaded from producer side. He can search products, may save in cart or can directly order with quantity option given.

Product

Producer will upload products such as farming, organic, dairy products and pesticide/ fertilizers. Consumer can view available products and can search the products by given menu Search Products.

2.4 Operating Environment

Hardware requirement

Server

- Processor 2500MHZ(or above)
- RAM 2 GB (or above)
- HDD 100 GB (or above)

Client

- Processor core 2 (or above)
- RAM 2 GB (or above)
- Hard 16 GB

Software requirement

Operating System

Window XP, 7 or any other

Web Browser

Google chrome

Development Tools

Android Studio, Java Script Development kit, Node Js, Visual Studio

Database

Firebase from Google

2.4.1 Design and Implementation Constraints

Technology

React Native

Tools

Android Studio, Java Script Development kit, Node Js, Visual Studio

Memory

Device will have 2GB internal hard drive. Software and database cannot exceed this amount. Device will have a SD card slot, and the software must be able to read and write to that slot.

Language requirements

Application must be included the English Language.

2.4.2 User Documentation

We provide the documentation for user in hard from also in soft from. And also upload a complete guideline tutorial to understand the application easily. We can provide tutorial in both languages (English & Urdu). And in our FOD Solutions application, we will provide a link of complete description of this product.

2.4.3 Assumptions and Dependencies

Assumptions

There are few assumptions are as follows:

- Producer and consumer must have android phone or computer.
- They have basics knowledge of using mobile phone or computer.

Dependencies

The dependencies of this system as under

- The whole system is dependent on server if server is down then whole system will down.
- Internet connection is also necessary to use this system for user.

2.5 External Interface Requirements

2.5.1 User Interfaces

The FOD Solutions Application will have following user friendly and menu driven interfaces

Login: to allow the entry of only authorized users through valid login id and password

The user interface is simply and easy to use. It has different characteristics like flexibility, reliability, safety and secure.

2.5.2 Hardware Interfaces

Our system will work through internet connectivity. So we will use all those hardware device and configuration that will use to connect with internet. So we need modems, wires, WAN, LAN networks and Ethernet cross cable etc.

Processor: core 2 duo 2.4 GHz (minimum requirement)

2.5.3 Software Interfaces

Software Used	Description
Operating system	We have chosen android operating system for Application due to best support and its friendliness.
Database	For storing database we chose Firebase
Tools	We will use react native for Application

2.5.4 Communications Interfaces

This project supports all types of android phones. Communication will be maintained through internet and FOD Solutions Application.

We can communicate to our customers through their given email address which is taken during the registration process or through their contact number. The customer can communicate with us through our Message service. Through our feedback service our helpline line which built-in questions will be asked. Customers can call the number given on the website.

2.6 System Features

- Registration
- Login
- Add products
- Search products

- Order products
- Add product to cart
- Contact producer through messages in App and Website
- Manage profile
- Rate app
- Edit current location

2.6.1 System Feature 1

1. Simple GUI for the user
2. A menu bar for the complete menu for available functionalities in the system.
3. Search bar to each user to search their desired information.
4. To buy more than one item there must be a care function available for the user which allows the user to add or update the desired product.
5. After adding items into the cart there must be a button to place or cancel their orders.
6. After this process, there are different suitable payment methods for the user to pay like online payments by their bank accounts, credit cards, or cash delivery.
7. At the end there must be a receipt showed up at the screen of the user with complete details like the order number, delivery date, or price etc.Description and Priority

Description and Priority

This feature is used by the user to search for the required information in the database the priority for this feature is very high because the user must have to search to find required products.

2.6.1.1 Stimulus/Response Sequences

The user first registers him or her then login.

2.6.1.2 Functional Requirements

- Sign up
- Login

- Add category
- Add product
- Add to cart
- View cart
- Cancel order
- Search

2.6.2 Add Products

2.6.2.1 Description and Priority

Producer fill all the required fields to add new product and provide correct information

- Product name
- Product price
- Product description
- Product quantity
- Product quality
- Product category

2.6.2.2 Stimulus/Response Sequences

Product is added for the purchaser/consumer service

2.6.2.3 Functional Requirements

- Producer must be login
- Producer must provide correct information
- Producer update and delete product

2.7 Other Nonfunctional Requirements

2.7.1 Performance Requirements

- System must be efficient

- With increase customers
- Response should be same
- Service should not be down while working on system
- The record in the database will correctly save and backup

2.7.2 Safety Requirements

- The system should be closed 24 hours per week for maintenance and elaboration.
- The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost.
- Proper UPS/inverter facility should be there in case of power supply failure.

2.7.3 Security Requirements

- System will have different types of users and every user has access constraints.
- The system should encrypt user's details by using AES-256 encryption system.
- The users should learn how to use the system at most in 2 hours.

2.8 Efficiency Requirement

This product will be efficient in handling its users' data, and the primary purpose of this system is to bridge that gap between the user requirements and the system requirements. The product will be easy to run and secure, and reliable so the user can have a piece of satisfaction about the product.

2.9 Domain Requirement

User should have basic knowledge of operating android phone applications and also can be able to understand English because our product's base language is English.

Chapter 3

Use Case Analysis

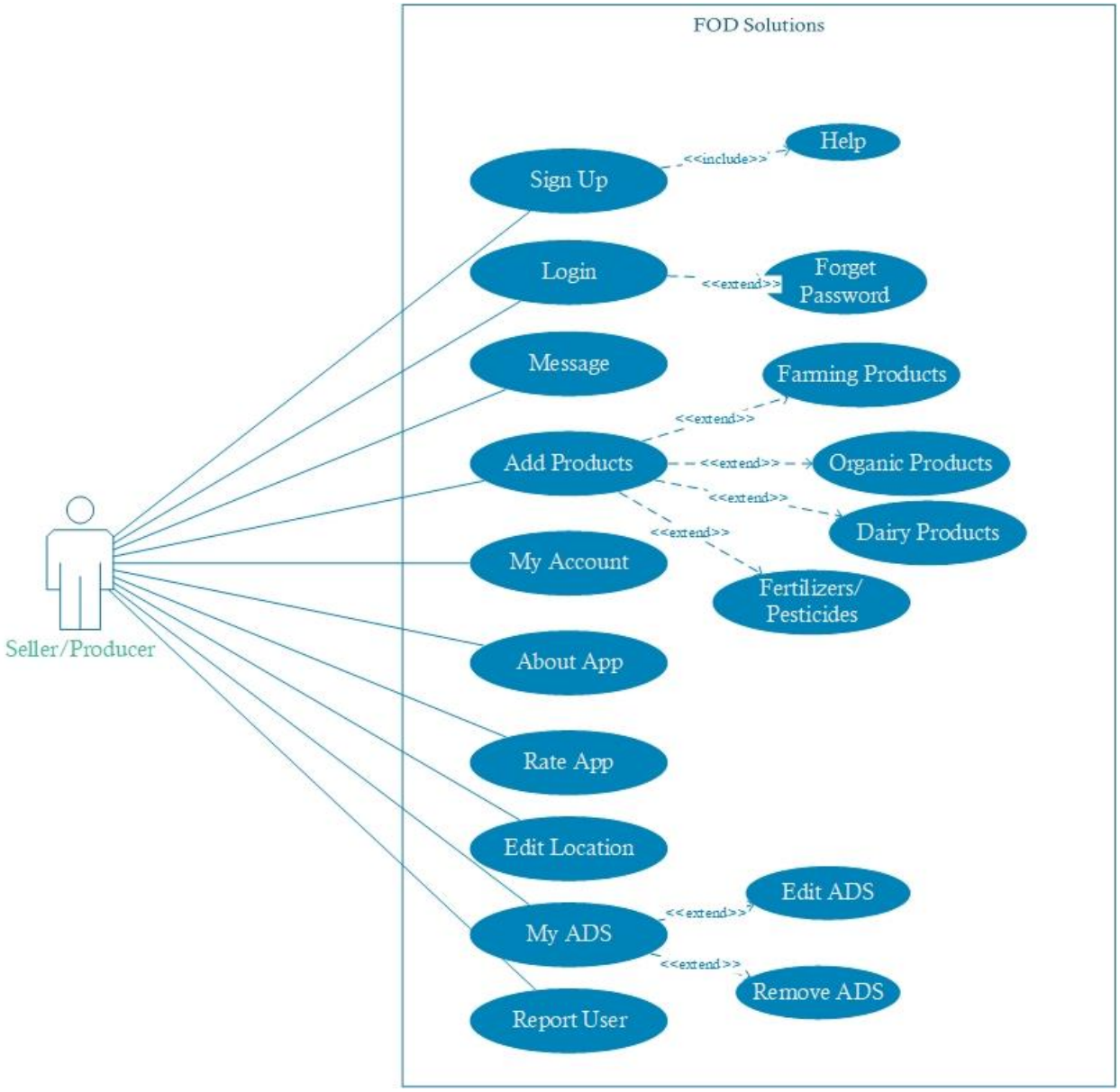
Chapter 3: System Analysis

Analysis involves the requirement determination and specification. Use Case analysis is a problem solving technique that decomposes a system into its component pieces for the purpose of the studying how well those component parts work and interact to accomplish their purpose. According to the Merriam-Webster dictionary, Use Case analysis is the process of studying a procedure or business in order to identify its goals and purposes and create systems and procedures that will achieve them in an efficient way. Analysis and synthesis, as scientific methods, always go hand in hand, they complement one another.

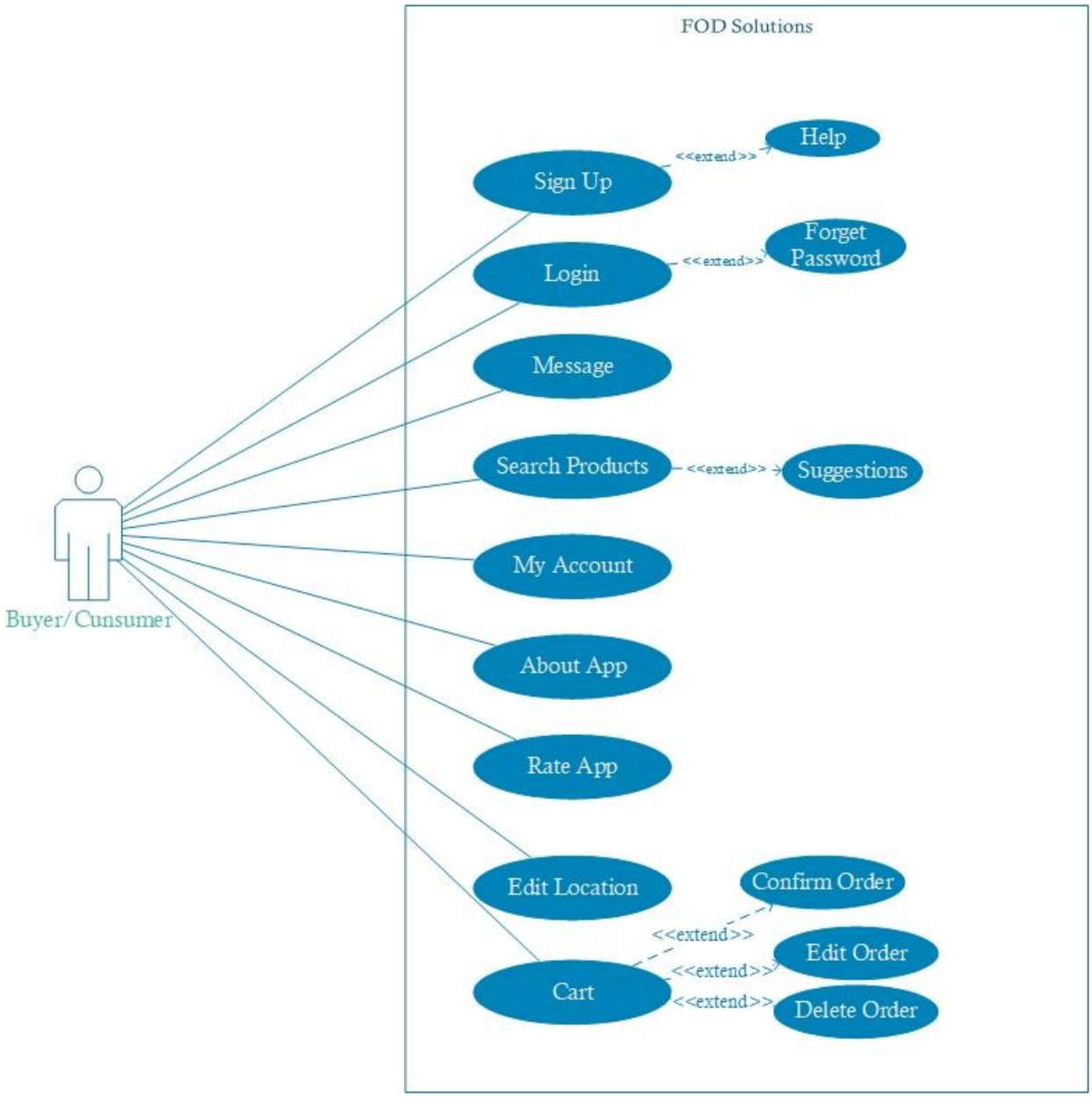
3.1. Use Case Model

3.1.1 Producer Use Case

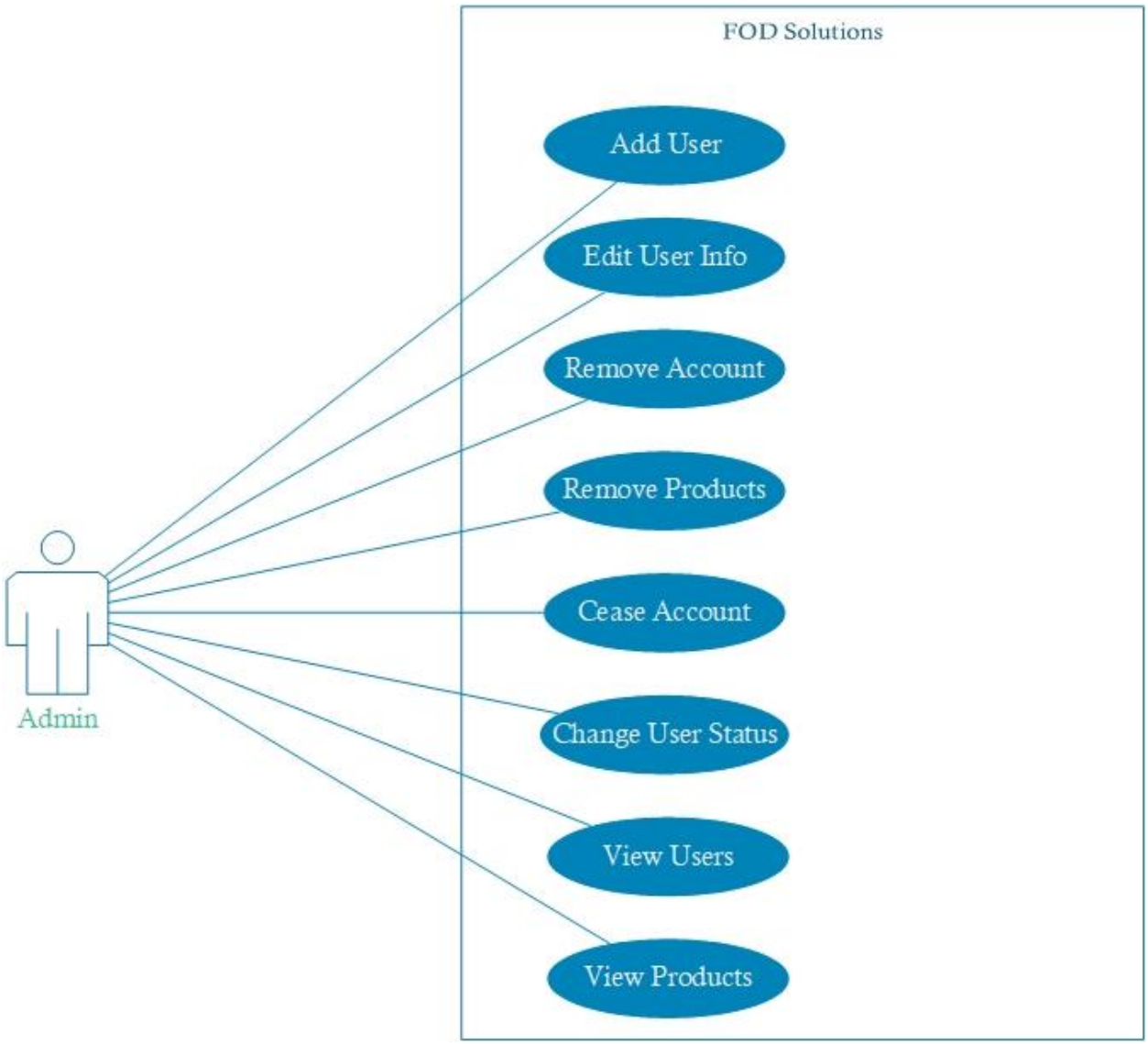
Figure



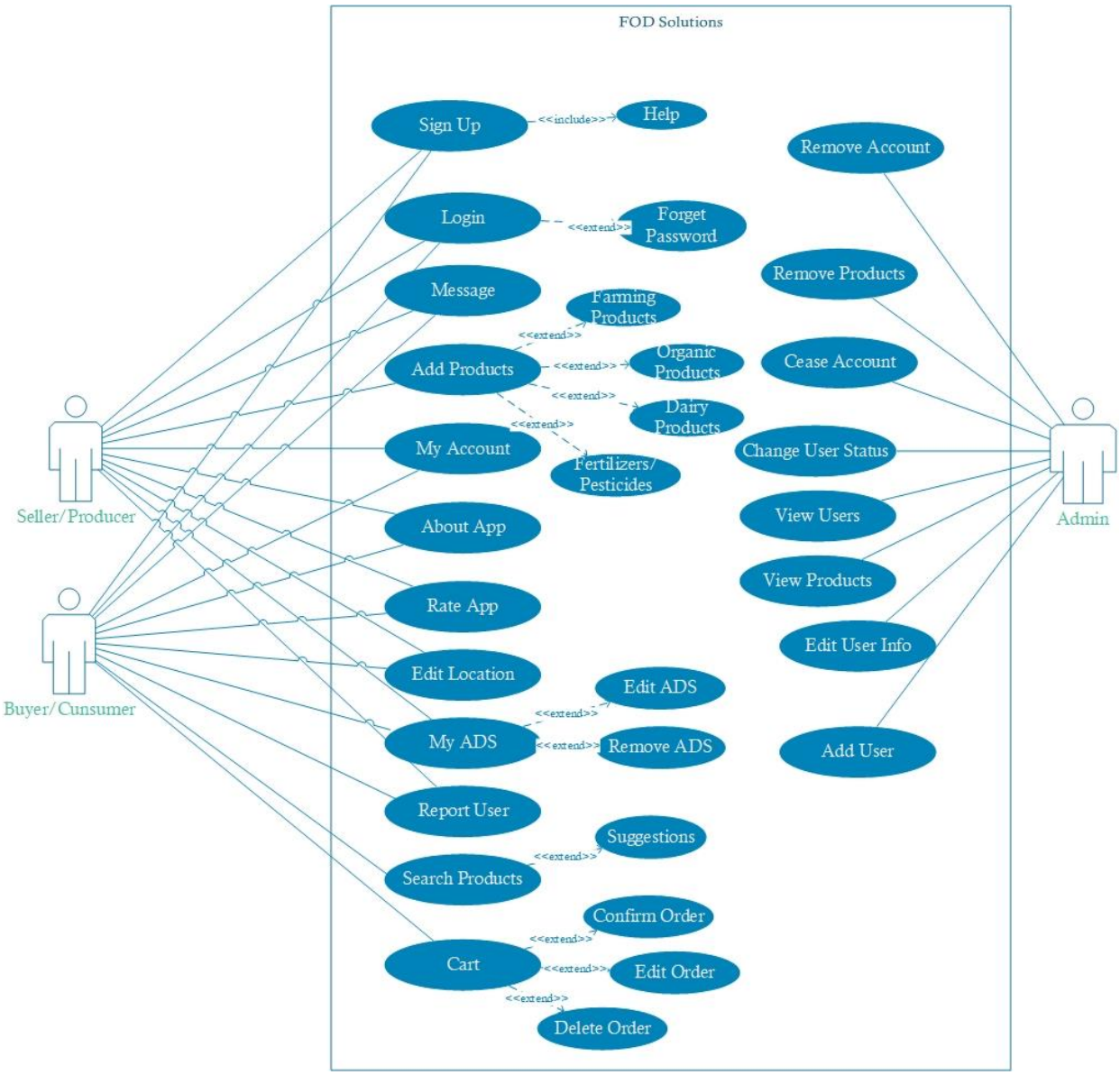
3.1.2 Consumer Use Case



3.1.3 Admin Use Case



3.1.4 Fully Dress Use Case



3.2. Use Case Descriptions

Use Case ID	**UC-1**
Use Case Name	Sign Up
Actors	Producer and consumer
Pre-condition	No.
Post-condition	Successful signup
Alternative	Contact with admin
Goal	Registration
Success scenario	User Account created.

Use Case ID	**UC-2**
Use Case Name	Login
Actors	Producer and consumer
Pre-condition	The user should have login id and password to access account
Post-condition	If successful then the user accesses his/her account.
Alternative	Forgot Password , Sing up
Goal	To access user account
Success scenario	User should open FOD Solutions system and input user ID or password to login account and press login button

Use Case ID	**UC-3**
Use Case Name	Add products
Actors	Producer
Pre-condition	Producer must be login.

Post-condition	Producer have authority to add products.
Alternative	Contact with admin.
Goal	To Add products and make available to consumers.
Success scenario	Admin login and Add products to the system by inserting product required information.

Use Case ID	**UC-4**
Use Case Name	My Ads
Actors	Producer
Pre-condition	Producer must have to login the system
Post-condition	Producer have added product.
Alternative	No Ads available.
Goal	To edit, remove and look after products
Success scenario	Successfully edit, remove and look after products

Use Case ID	**UC-5**
Use Case Name	Edit location
Actors	Producer and consumer.
Pre-condition	Admin must have to login the system.
Post-condition	Current location changes
Alternative	No
Goal	To change the location according to his/her current location.
Success scenario	User have changed the location according to his/her current location.

Use Case ID	**UC-6**
Use Case Name	Report User
Actors	Producer, Consumer
Pre-condition	User must have to login the system
Post-condition	Found violence of rules and inappropriate info or products.
Alternative	No
Goal	Report the user to maintain the effectiveness of System.
Success scenario	User has successfully reported.

Use Case ID	**UC-7**
Use Case Name	My Account
Actors	Producer and consumer
Pre-condition	user must have to sign up or login the system
Post-condition	Profile changed
Alternative	Click on help if any error occurs.
Goal	To keep the profile updated.
Success scenario	Profile updated.

Use Case ID	**UC-8**
Use Case Name	Message
Actors	Producer, consumer
Pre-condition	Products selected by the consumer.
Post-condition	Order confirmation.
Alternative	No.
Goal	To find the more info about product.
Success scenario	Consumer contacted producer to make deal successful.

Use Case ID	**UC-9**
Use Case Name	Search products
Actors	Consumer
Pre-condition	Consumer have must login the system first.
Post-condition	Select products.
Alternative	Given suggestions
Goal	To find specific product.
Success scenario	User will have find his desire product.

Use Case ID	**UC-10**
Use Case Name	Add to cart
Actors	Consumer
Pre-condition	Products selected by the consumer.
Post-condition	Order confirmation.
Alternative	Order directly
Goal	To make order confirmation later.
Success scenario	Product will be save to Cart.

Use Case ID	**UC-11**
Use Case Name	Rate App
Actors	Producer, consumer
Pre-condition	User must have account and login first.
Post-condition	No.
Alternative	Rate through play store.
Goal	Give help to other users.
Success scenario	App rated.

Use Case ID	**UC-12**
Use Case Name	Remove Account
Actors	Admin
Pre-condition	User reported by other user.
Post-condition	User status changed.
Alternative	No
Goal	Remove the user.
Success scenario	User removed.

Use Case ID	**UC-13**
Use Case Name	Remove product
Actors	Admin
Pre-condition	Products reported by the user.
Post-condition	No
Alternative	Send warning to reported product producer.
Goal	Remove product.
Success scenario	Product will be removed.

Use Case ID	**UC-14**
Use Case Name	Change User Status
Actors	Admin
Pre-condition	User reported by user.
Post-condition	User status changed.
Alternative	No
Goal	Edit user info.
Success scenario	User info edited.

Use Case ID	**UC-15**
Use Case Name	View Products
Actors	Admin
Pre-condition	No
Post-condition	No
Alternative	No
Goal	View products status
Success scenario	No

Use Case ID	**UC-16**
Use Case Name	View Users
Actors	Admin
Pre-condition	No
Post-condition	No
Alternative	No
Goal	View Users status
Success scenario	No

Chapter 4

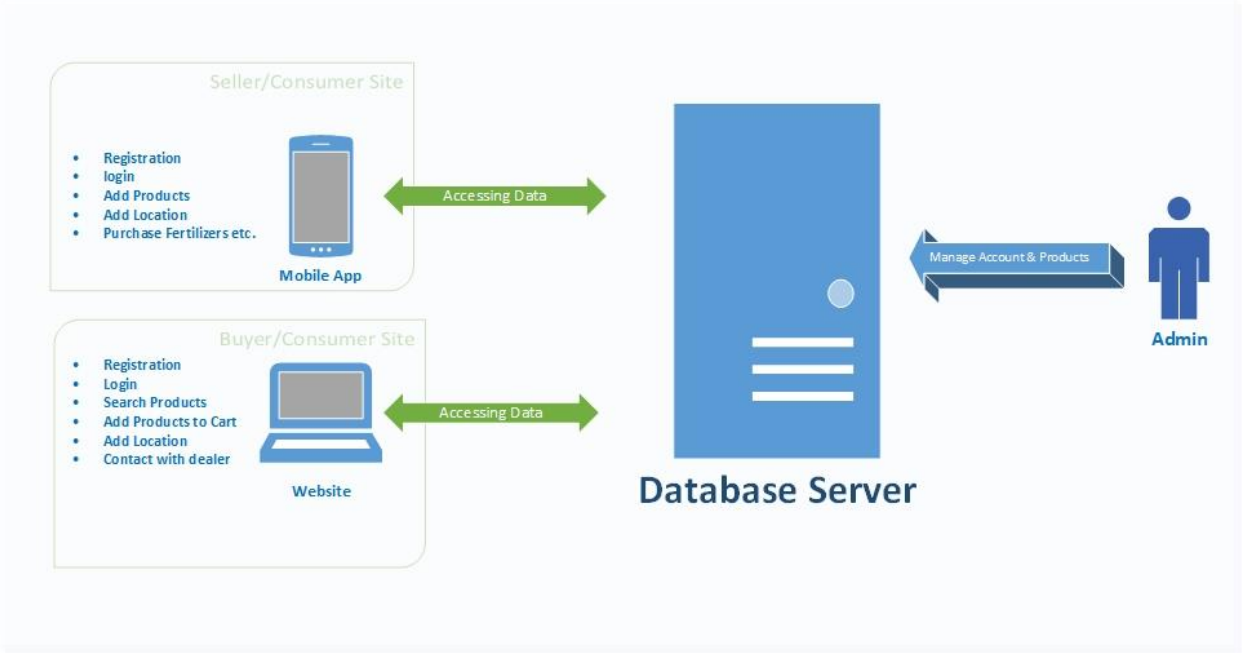
System Design

Chapter 4: System Design

The Chapter is all about how the software is going to work and how will the processes be executed as we see we have several diagrams that shows how really is the system performing and what will be the requirements to perform the operations required tasks as well as the diagrams and data clearly describes the process and shows a great help in understanding the whole process.

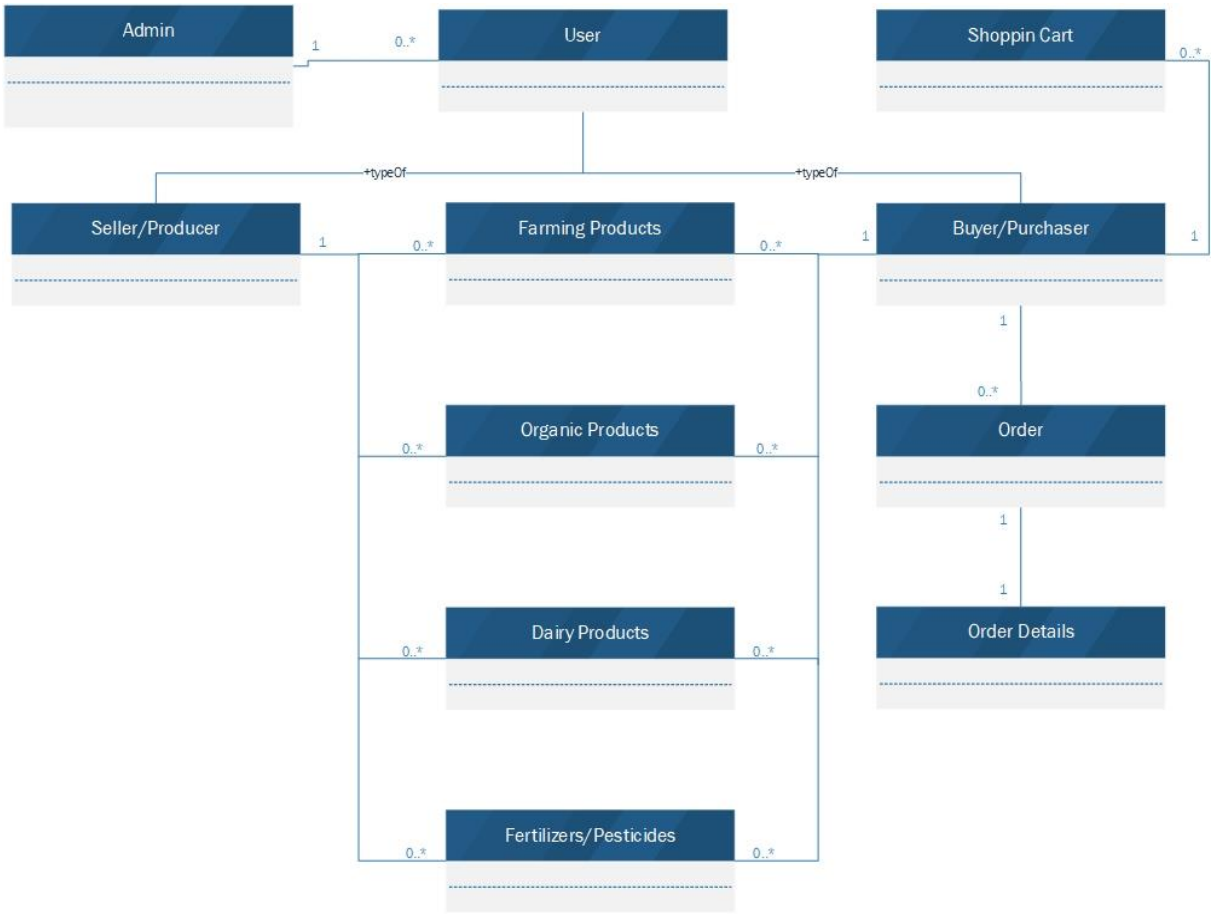
4.1. Architecture Diagram

The following diagram tells how system will work like and how different users are accessing data from server and admin control on database server.

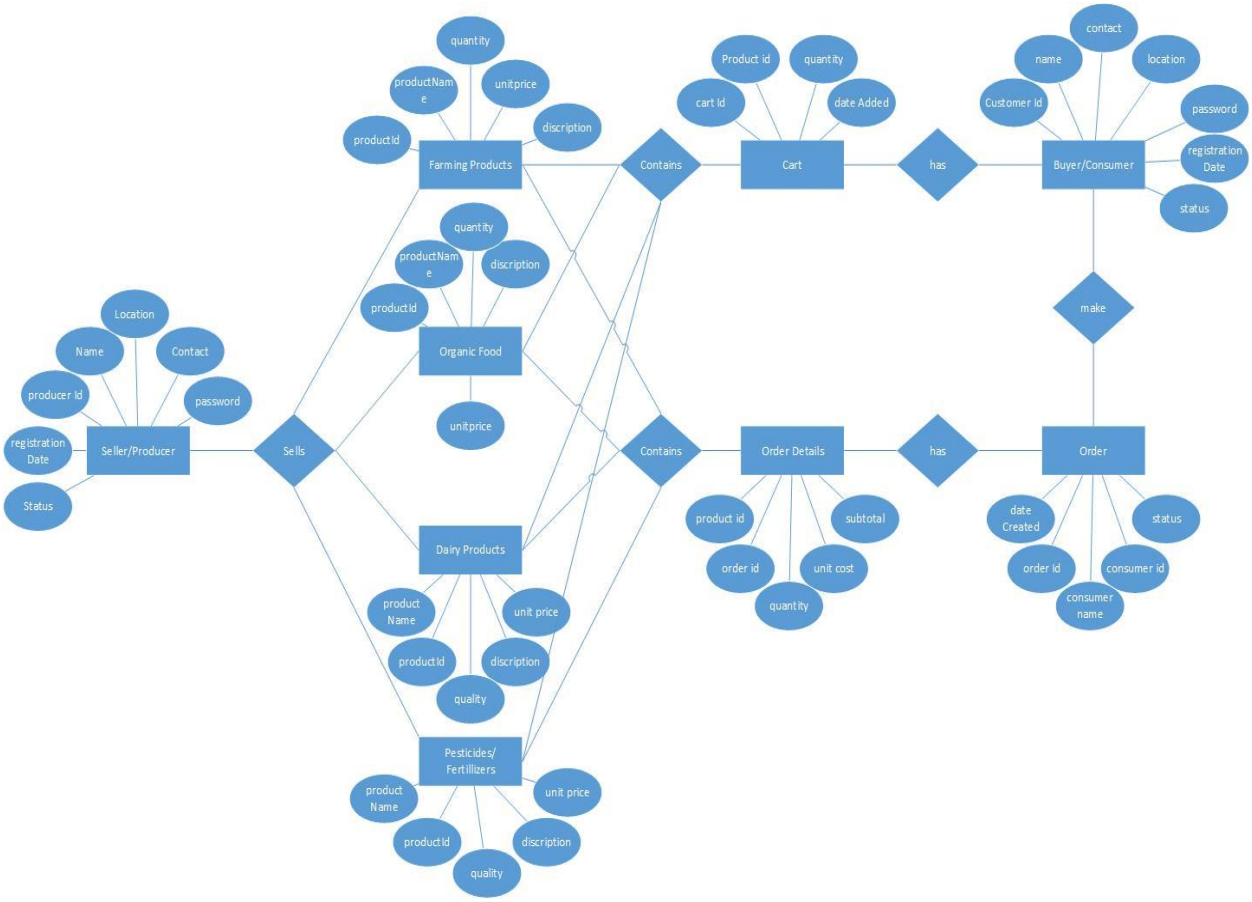


4.2. Domain Model

The conceptual model of a system that describe the various entities in that system and their relationship with each other.

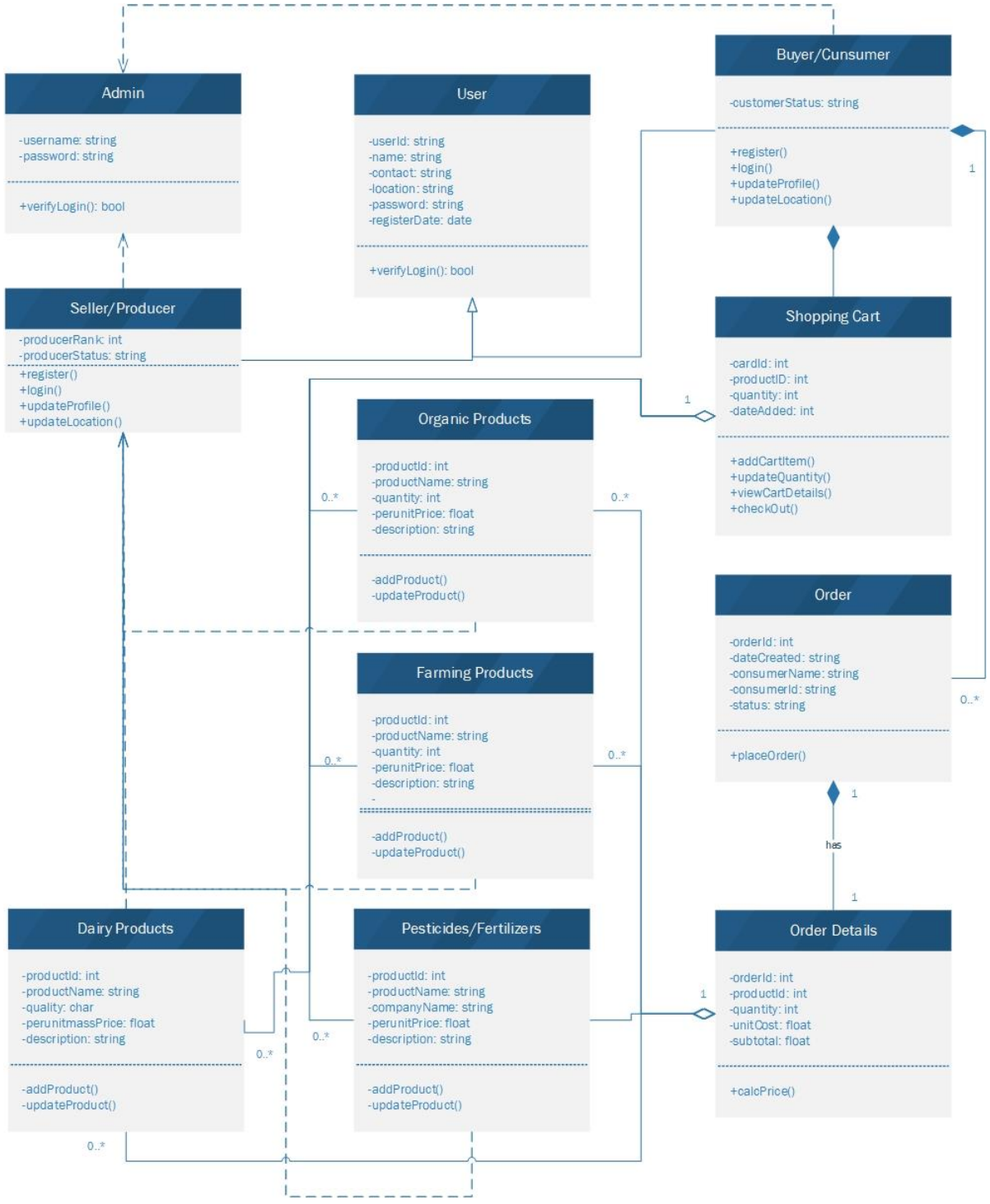


4.3. Entity Relationship Diagram with data dictionary



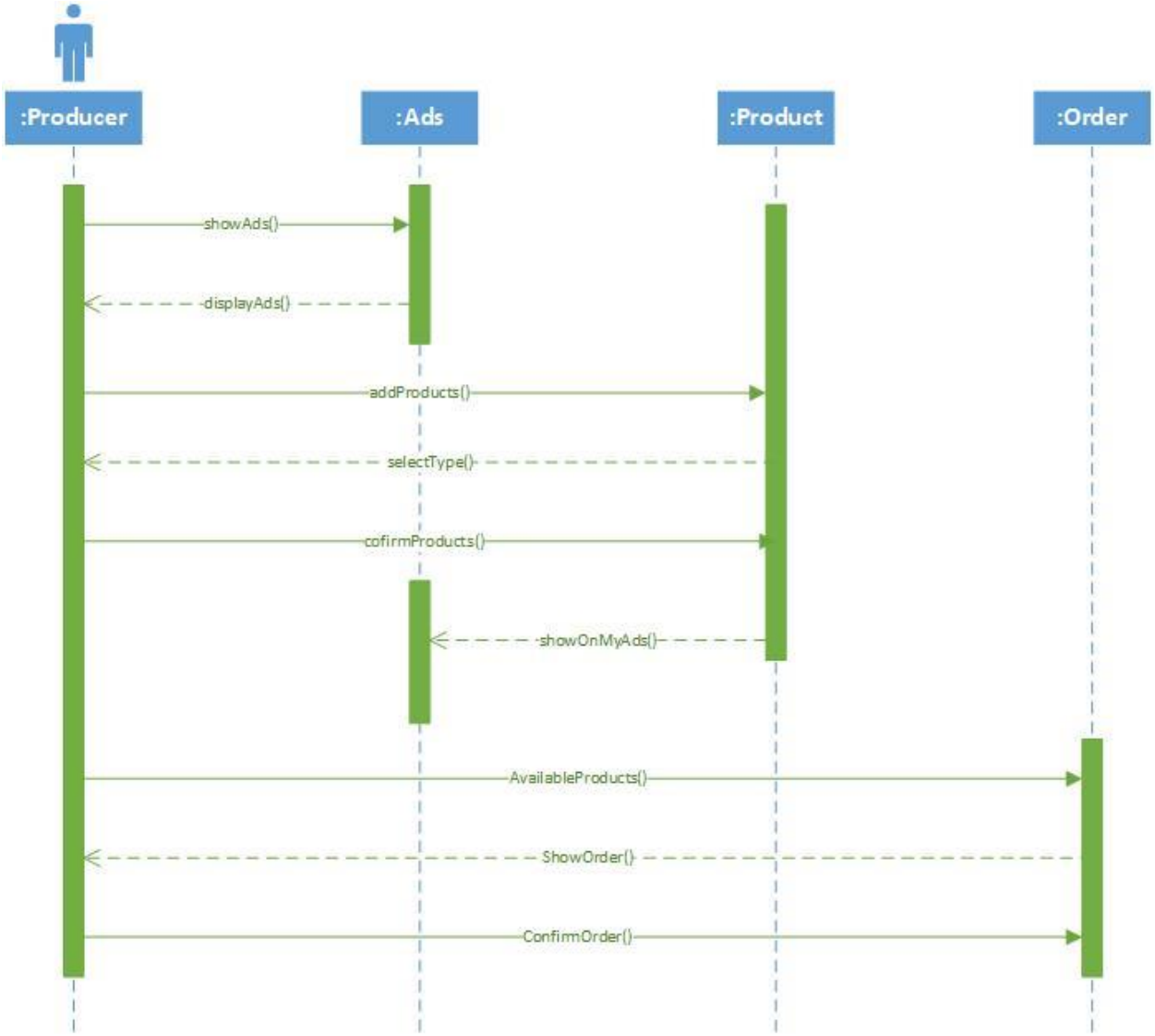
4.4. Class Diagram

A class diagram is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.

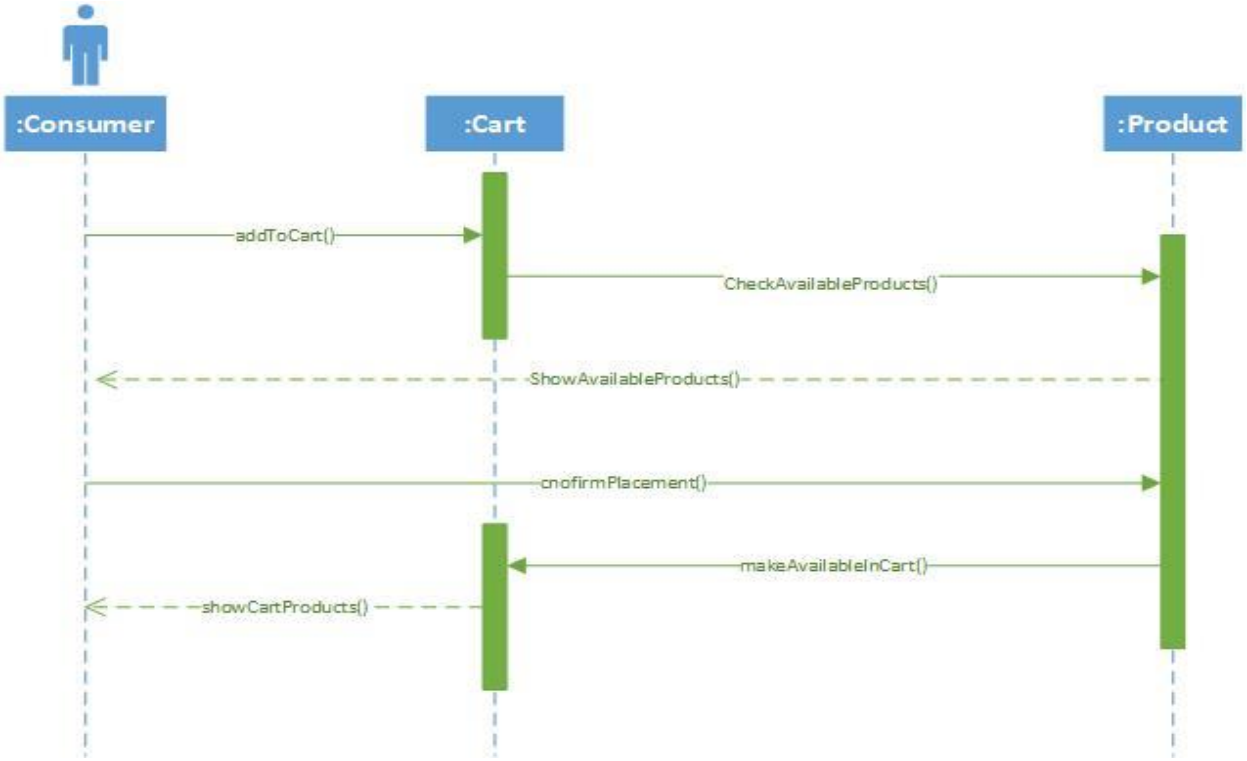


4.5. Sequence Diagram

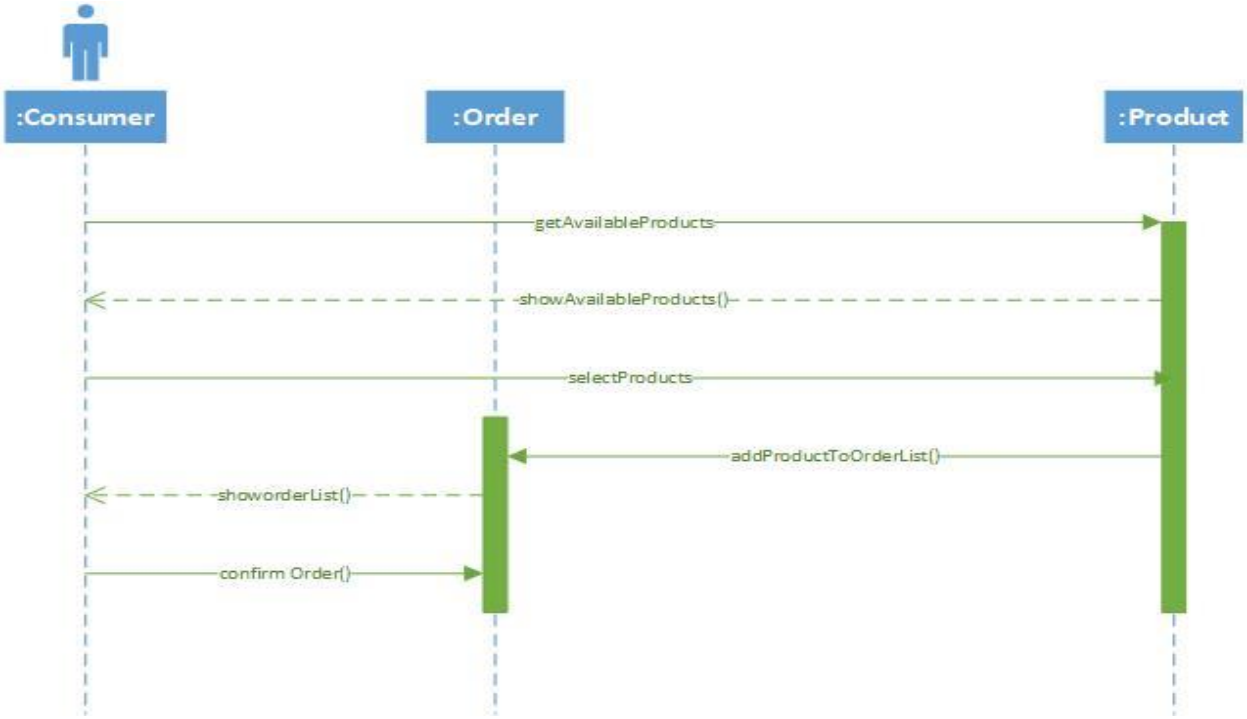
4.5.1. Sequence Diagram for Producer



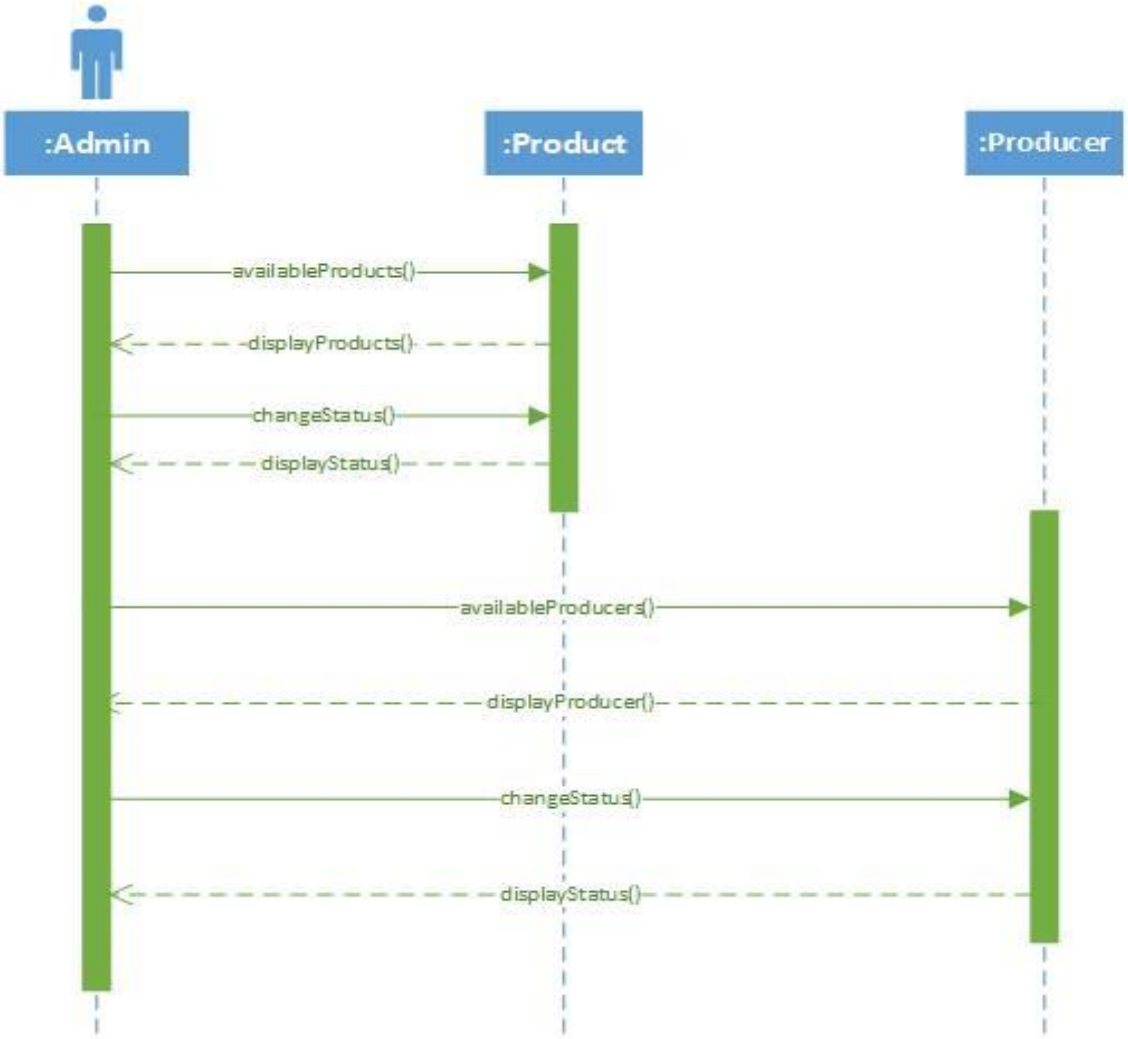
4.5.2. Sequence Diagram of Customer for Cart



4.5.3. Sequence Diagram of Customer for Purchasing



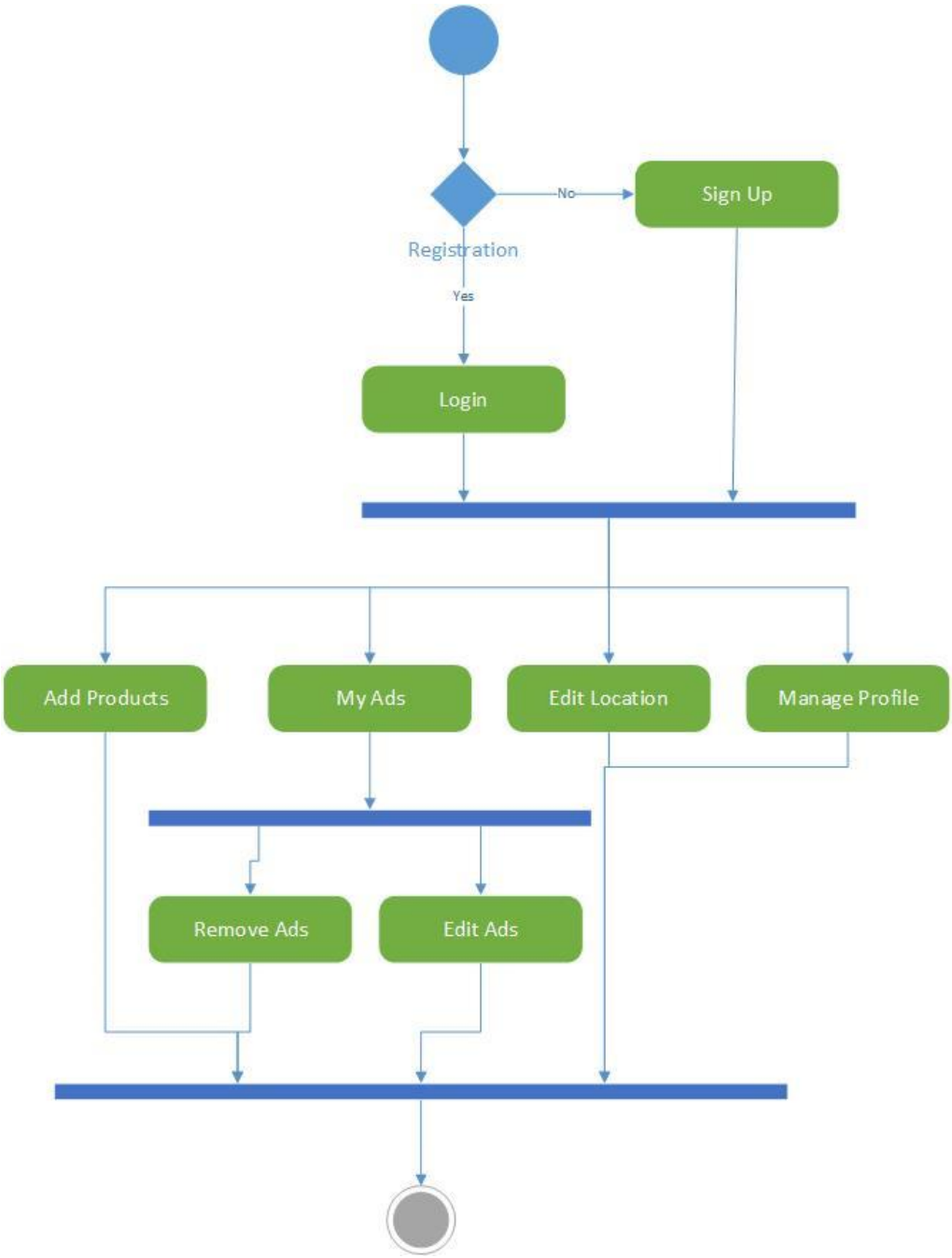
4.5.4 Sequence Diagram for Admin



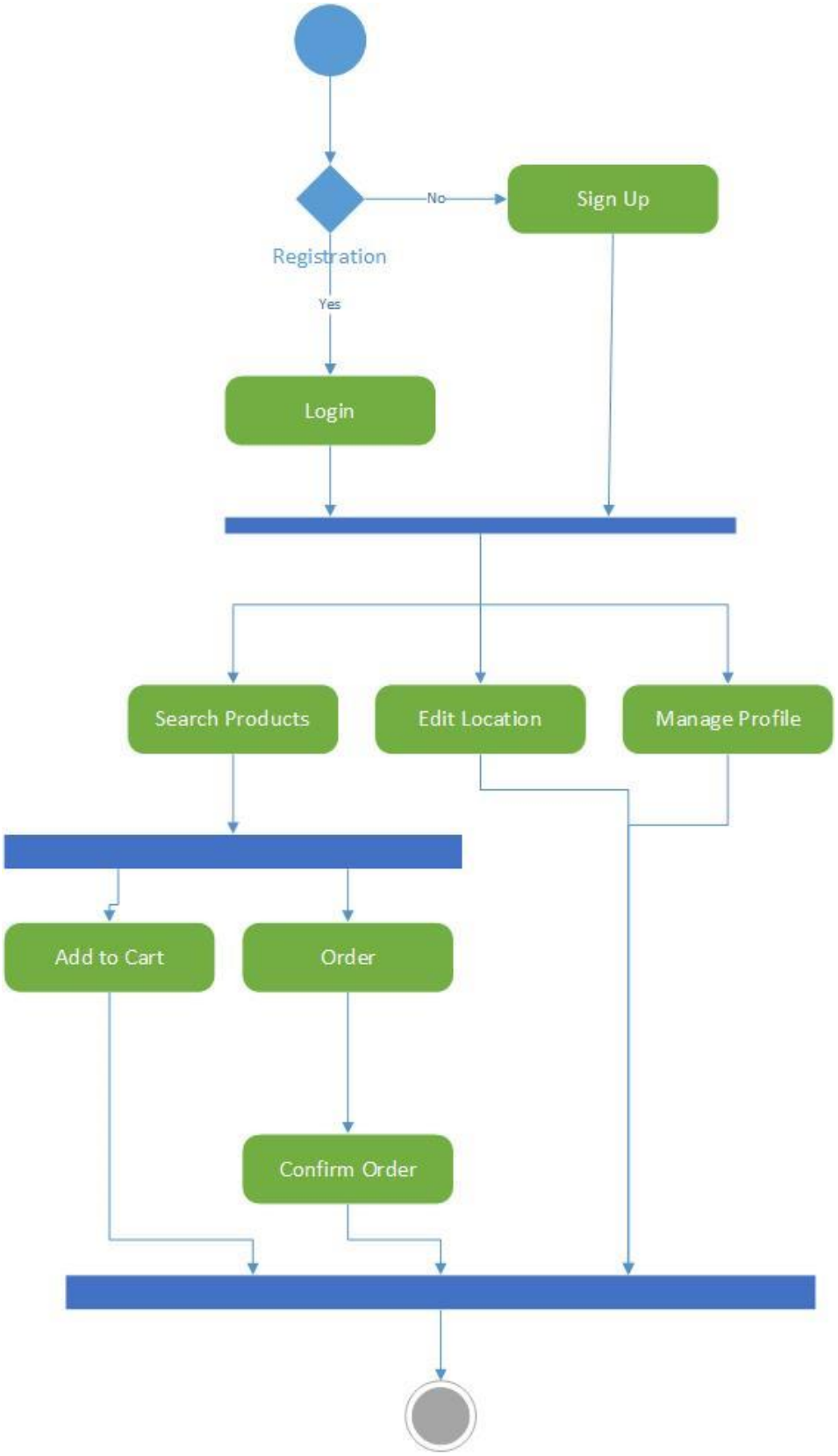
4.6. Activity Diagram

The activity diagram is a flowchart to represent the flow of control among the activities in a system.

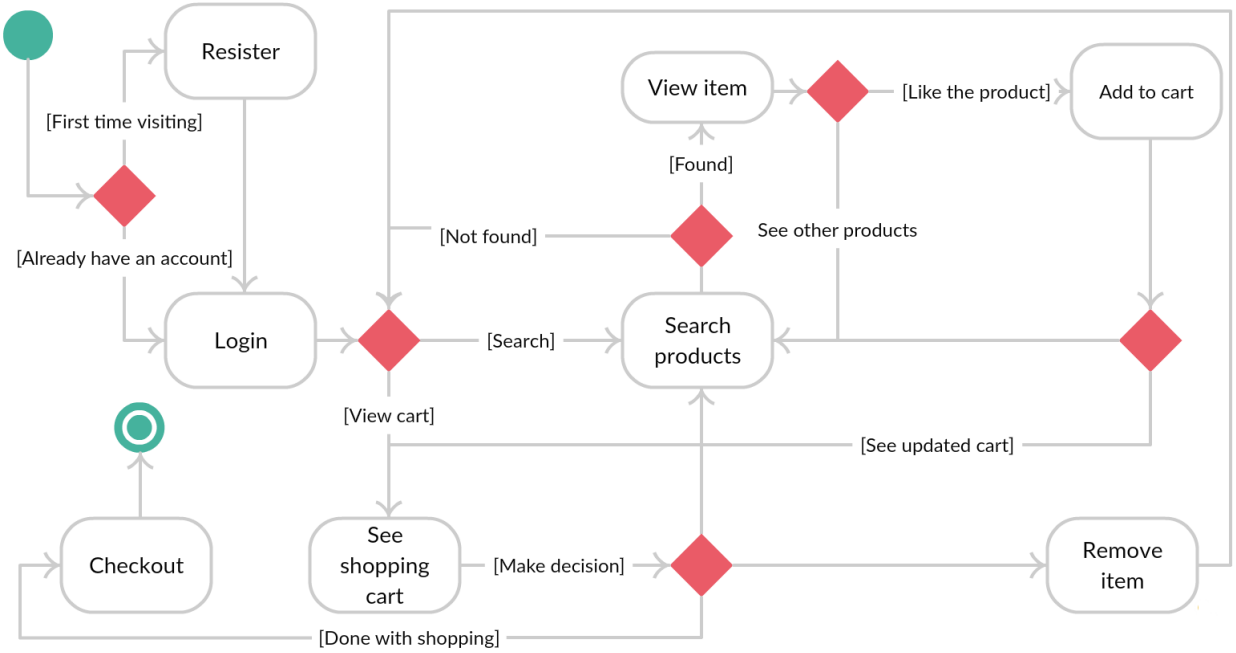
4.6.1. Producer Activity Diagram



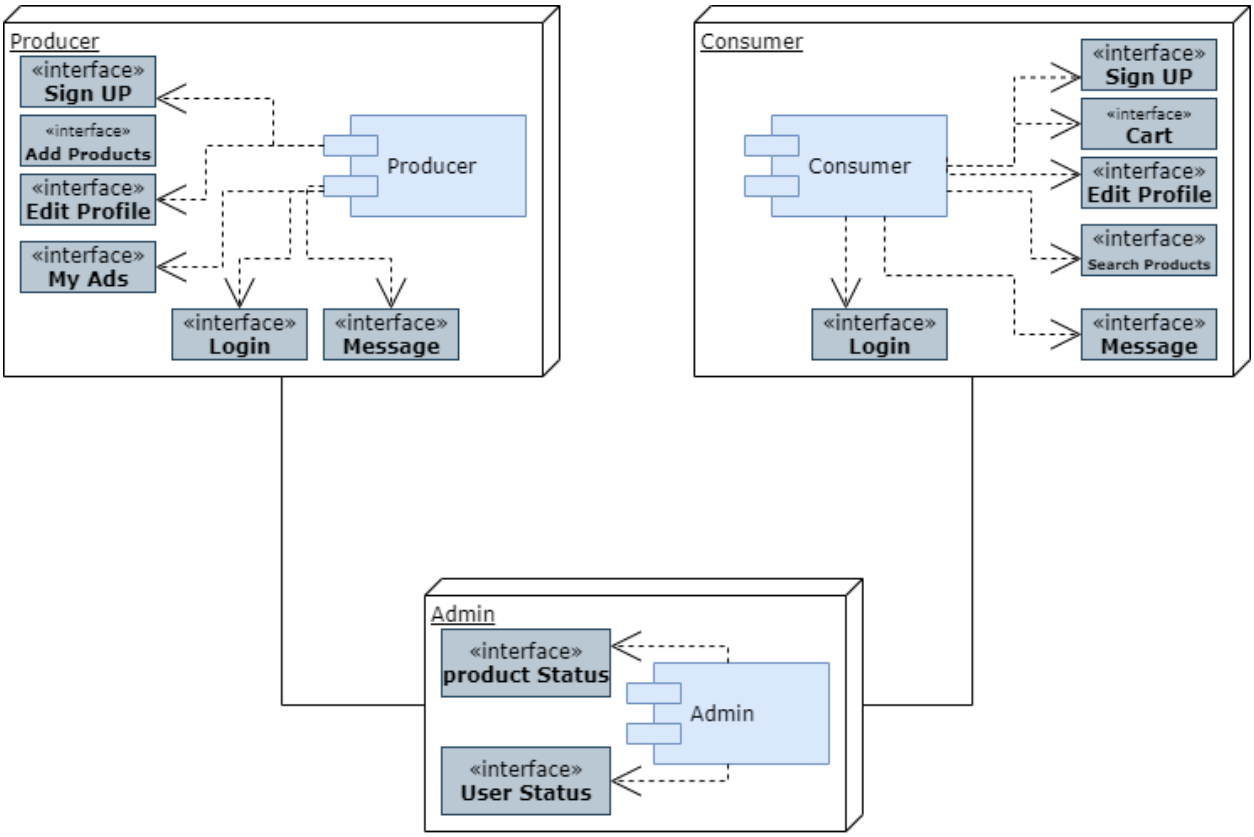
4.6.2. Consumer Activity Diagram



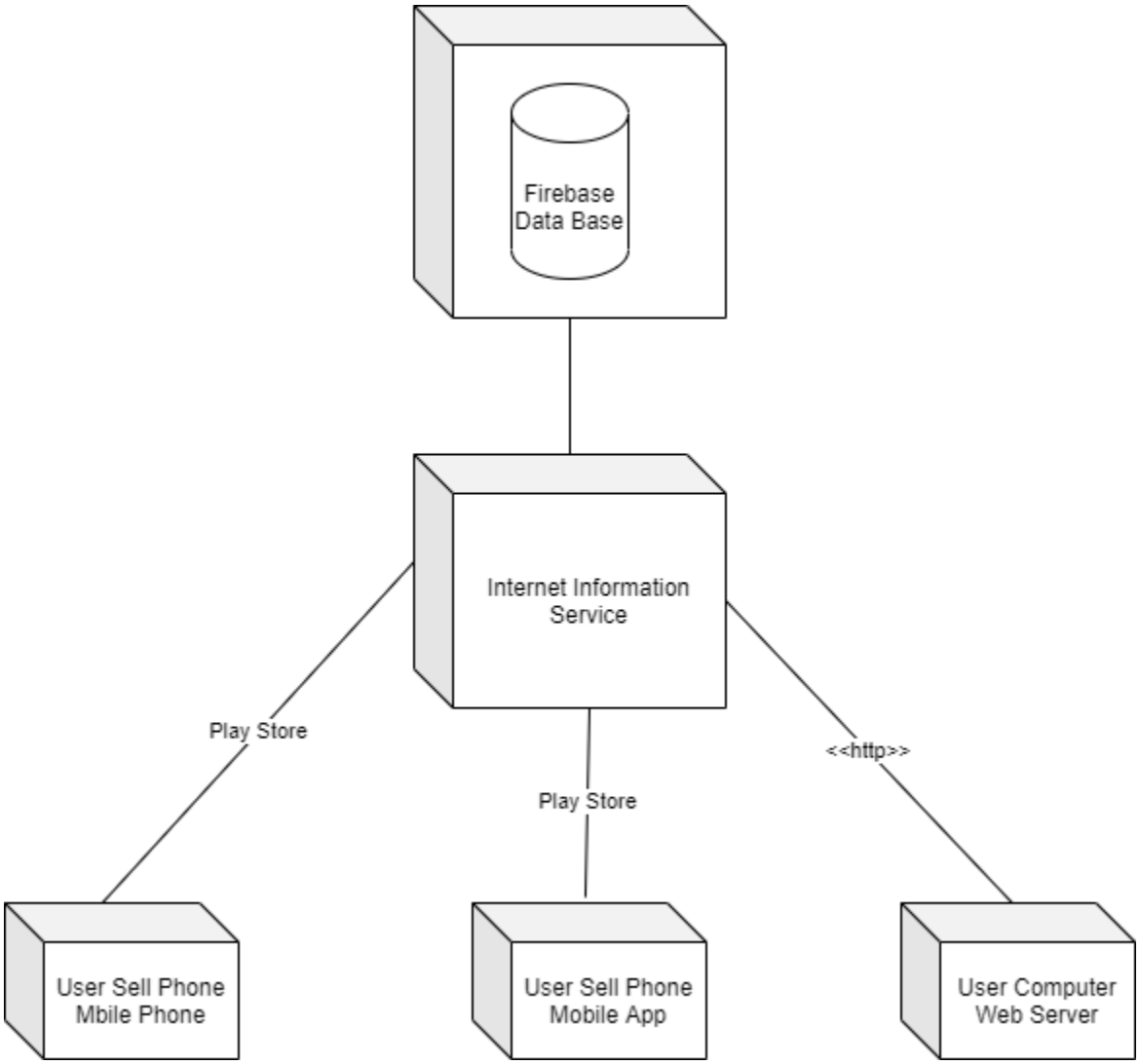
4.7. State Transition Diagram



4.8. Component Diagram

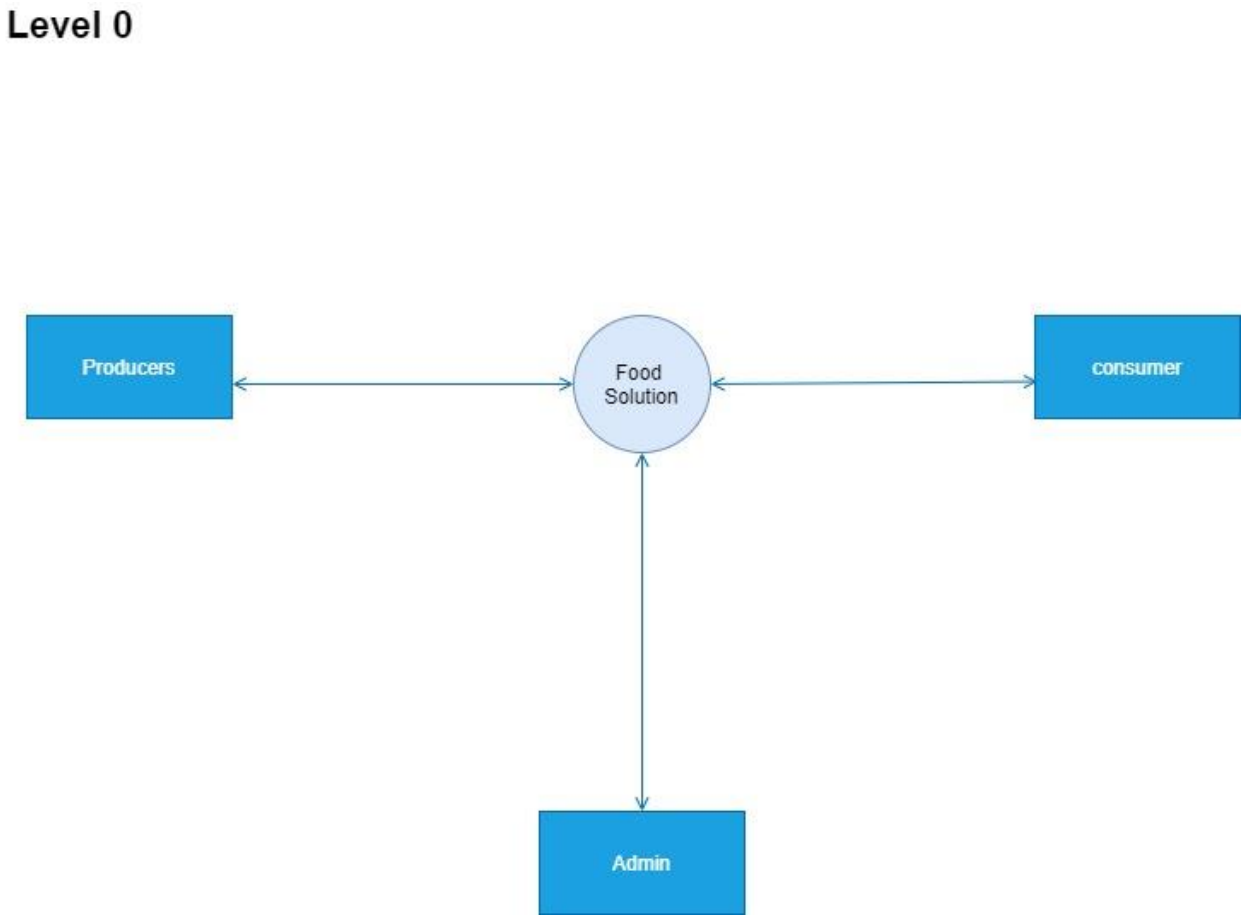


4.9. Deployment Diagram

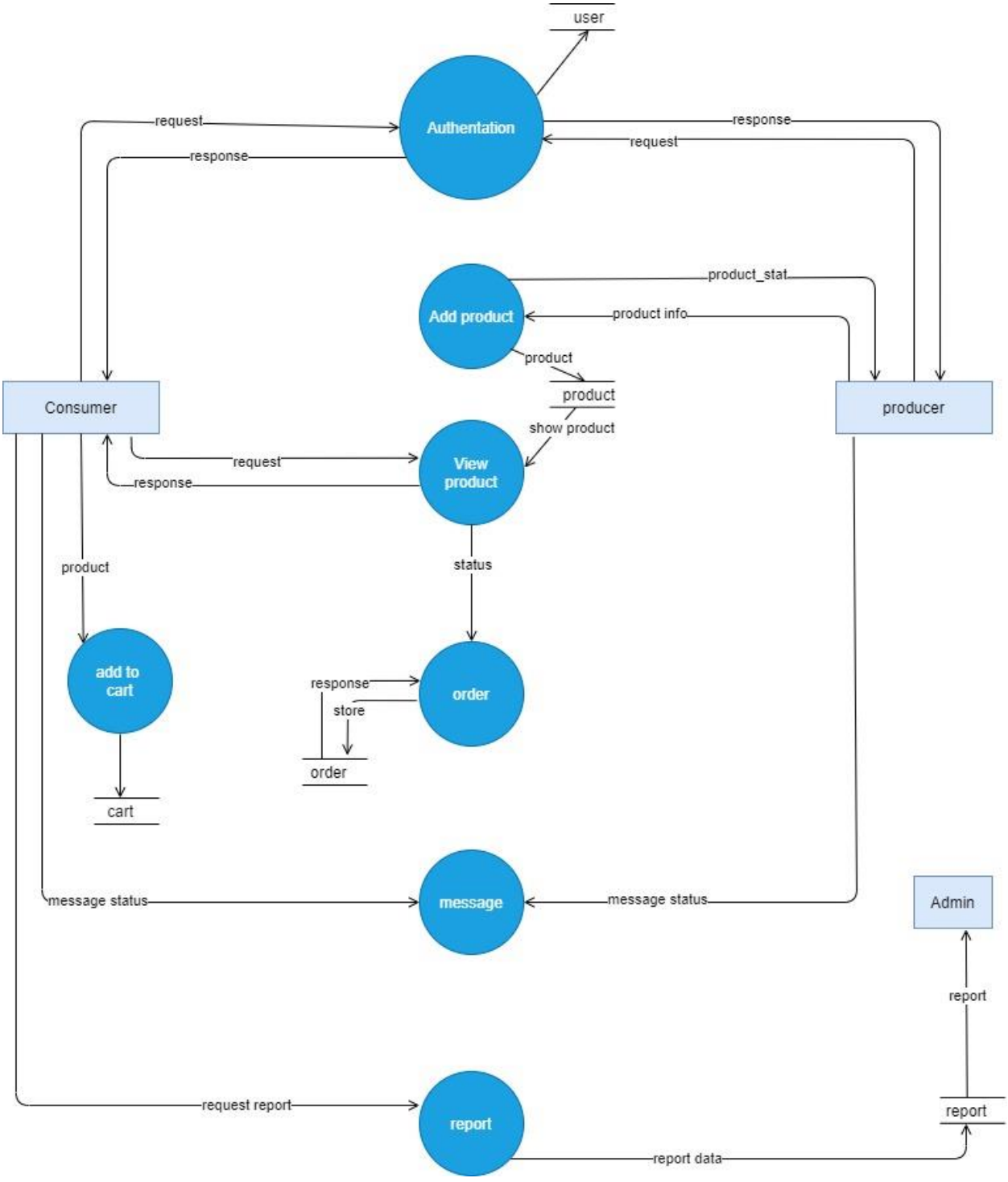


4.10. Data Flow diagram

DFD level 0:



DFD level 1:


user
Authentation
request
response
response
request
product_stat
Add product
product info
product
product
Consumer
producer
show product
request
response
View product
product
status
add to cart
response
store
order
order
cart
message status
message
message status
Admin
report
request report
report
report
report data

Chapter 5
Implementation

Chapter 5: Implementation

5.1. Components, Libraries, Web Services and stubs

```
4.  import React,{useEffect,useState} from 'react';
5.  import {SafeAreaView, ScrollView, StatusBar, StyleSheet, Text, useColorScheme, View,} from 'react-
    native';
6.  import LoginScreen from './screens/LoginScreen';
7.  import { DefaultTheme, Provider as PaperProvider, Title } from 'react-native-paper';
8.  import SignupScreen from './screens/SignupScreen';
9.  import CreateAdsScreen from './screens/CreateAdsScreen';
10. import 'react-native-gesture-handler';
11. import { NavigationContainer } from '@react-navigation/native';
12. import { createStackNavigator } from '@react-navigation/stack';
13. import { createBottomTabNavigator } from '@react-navigation/bottom-tabs';
14. import Ionicons from 'react-native-vector-icons/Ionicons'
15. import Feather from 'react-native-vector-icons/Feather'
16. import MyCartScreen from './screens/MyCartScreen';
17. import MyAdsScreen from './screens/MyAdsScreen';
18. import MessageScreen from './screens/MessageScreen';
19. import COLORS from './assets/consts/Colors';
20. import 'react-native-splash-screen';
21. import ForgorPasswordScreen from './screens/ForgorPasswordScreen';
22. import HomeScreen from './screens/HomeScreen';
23. import itemDetailScreen from './screens/itemDetailScreen';
24. import auth from '@react-native-firebase/auth'
25. import accountScreen from './screens/accountScreen';
26. import myAdsupdationScreen from './screens/myAdsupdationScreen';
27. import  CartProductDetails from './screens/CartProductDetails';
```

5.1. Deployment Environment

React-Native's deployment environment is used for App development

5.2. Tools and Techniques

- React native
- Android Studio
- React.js
- Vysor
- Java script

5.3. Best Practices / Coding Standards

Since using **Java-Script** for the coding of our react-native in Visual Studio, in addition of Unity, following and some coding standards and practices we will follow while implementing our Add-in project:

Naming Conventions and Standards

Following Name Conventions and Standards are used while the coding phase of our application:

- Pascal casing: the first character of all words is upper case and the other characters are lower case.
- Camel casing: the first character of all words, except the first word, is upper case and other characters are lower case.

Good Programming Practices

We have avoid using too large files. If a file has 300-400 lines of code, we must consider refactoring the code into helper classes. We have avoid writing very long methods. A preferred method of our MS word Add-in has been of 1-60 lines of code. If we had a method more than 70 lines of code, we had must consider refactoring it into separate methods.

Comments

Not writing comments for every line of code and every variable declared and only wherever required. Good, readable code will require very few comments and that is what we will do.

Exception Handling

We will never do a "catch exception and do nothing." If we happen to hide an exception, we will never know if the exception happened or not. So, in the case of exceptions, we will give a friendly message to the user, but log the actual error with all possible details about the error, including the time it occurred, the method and class name, etc. We will only catch the specific exception, not generic exceptions.

5.4. Version Control

- Android Studio: 4.1.3
- React-Native: 2

Chapter 6

Testing and Evaluation

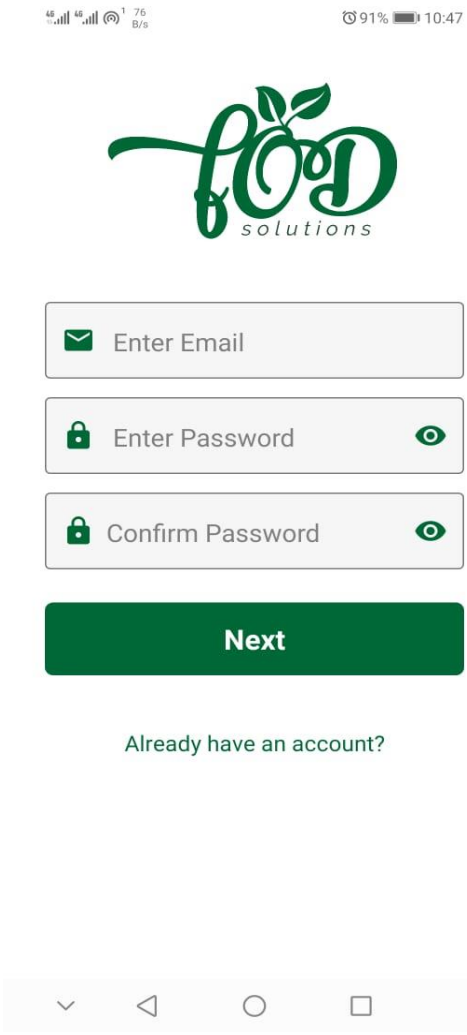
Chapter 6: Testing and Evaluation

This testing phase will use a number of testing techniques. The decision as to which technique(s) to use for any given unit of code will reside with the team leader responsible for signing-off on the Module.

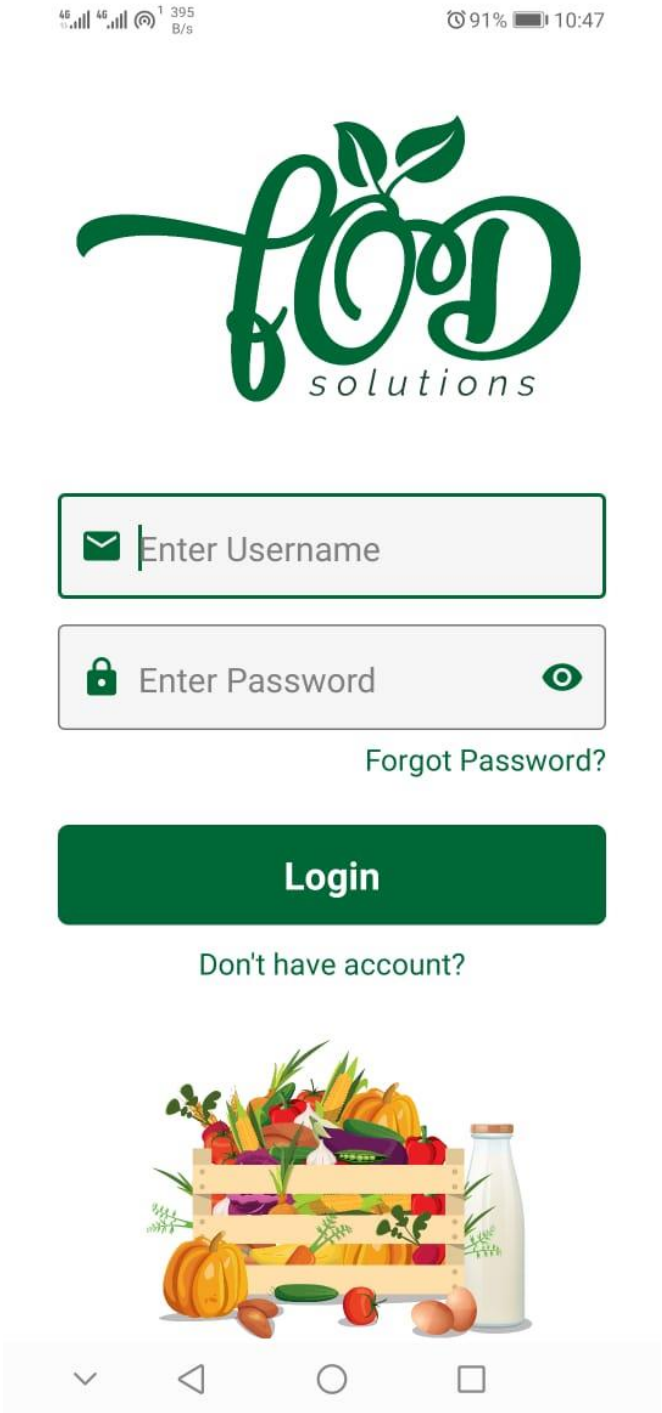
6.1. Use Case Testing

- User can sign up and login.
- User can create ad and upload it to database.
- User can access all ads uploaded by different sellers.
- User can order any specific product given in ads.
- User can add products to its cart that will be save in different database.

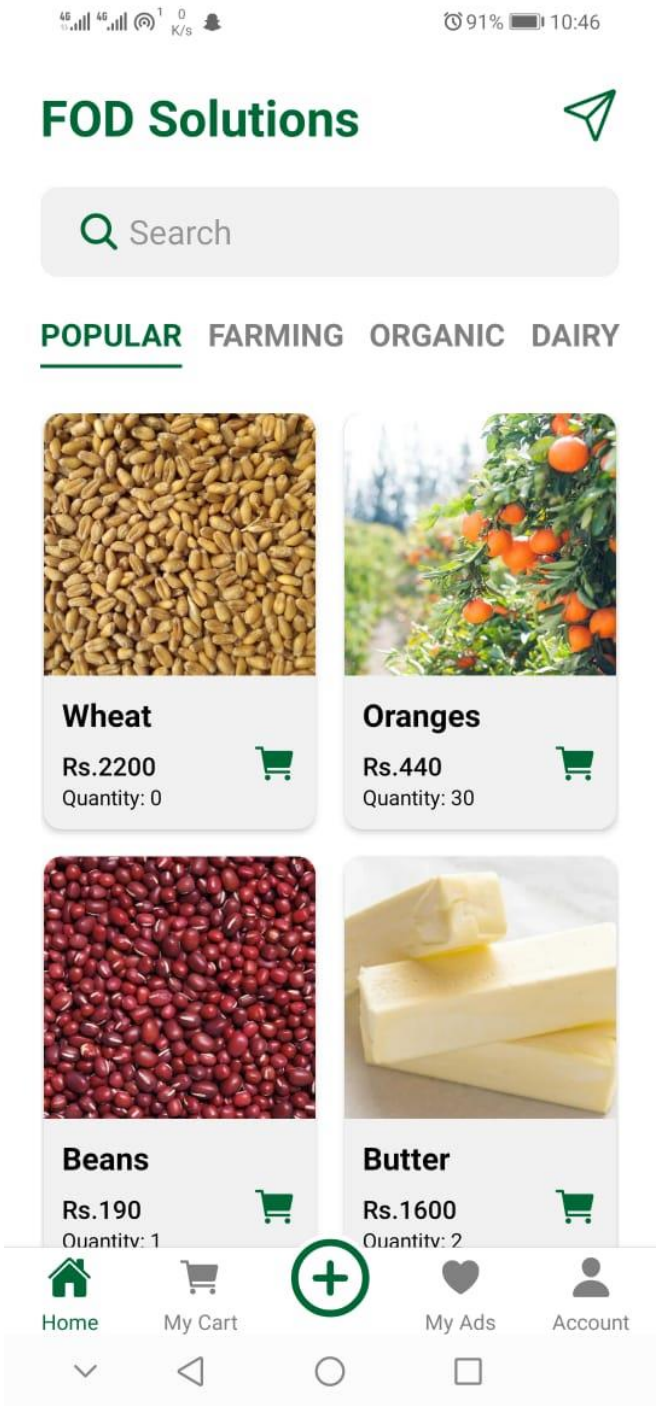
6.1.1 Sign up



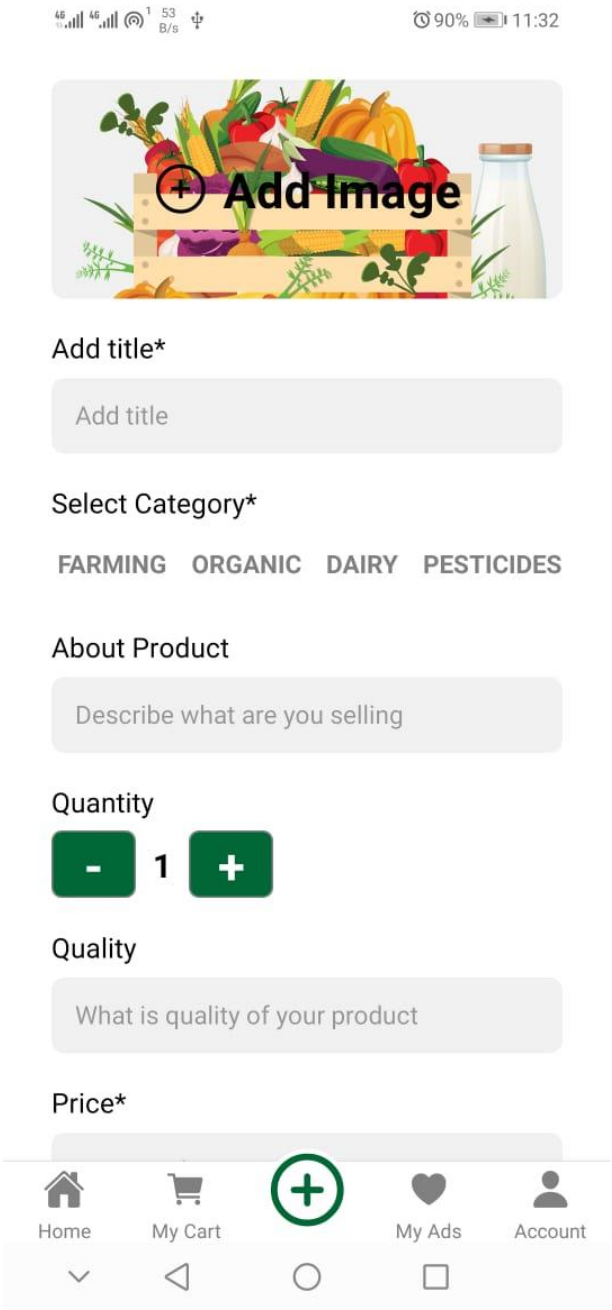
6.1.2 Login


91% 10:47
FOD
solutions
Enter Username
Enter Password
Forgot Password?
Login
Don't have account?

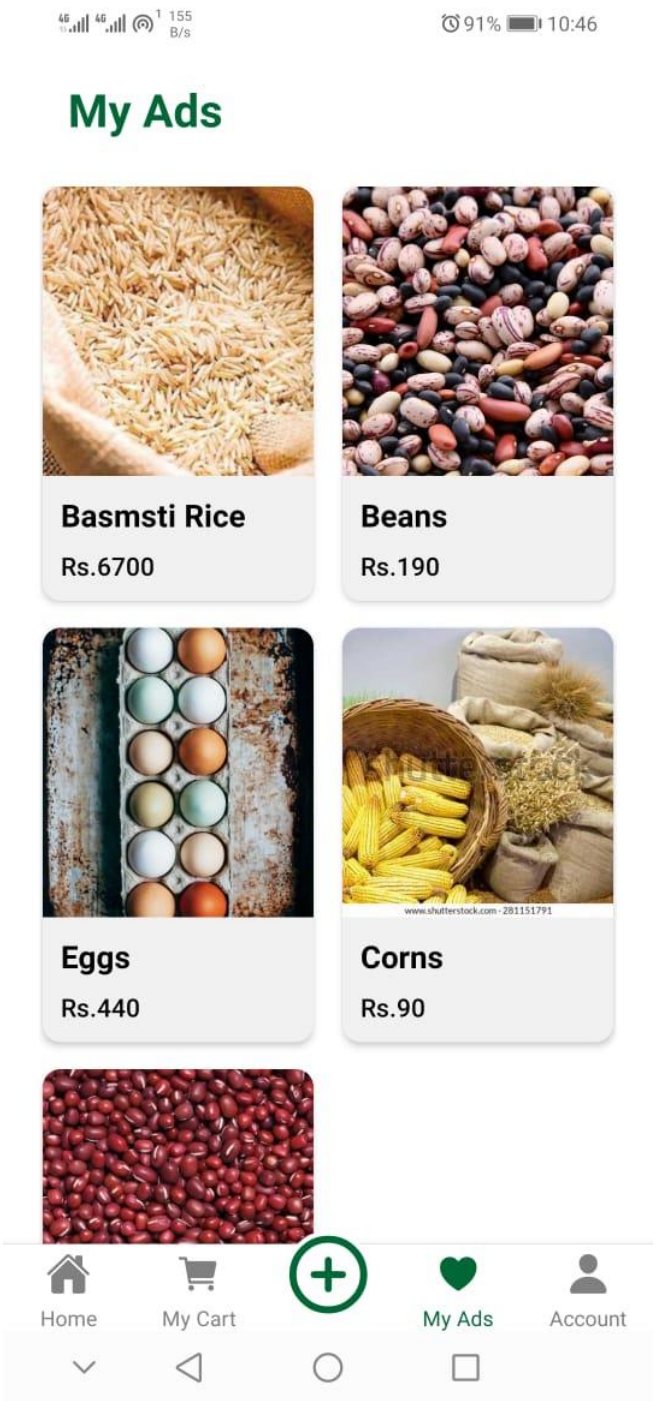
6.1.3 All Products/ Home

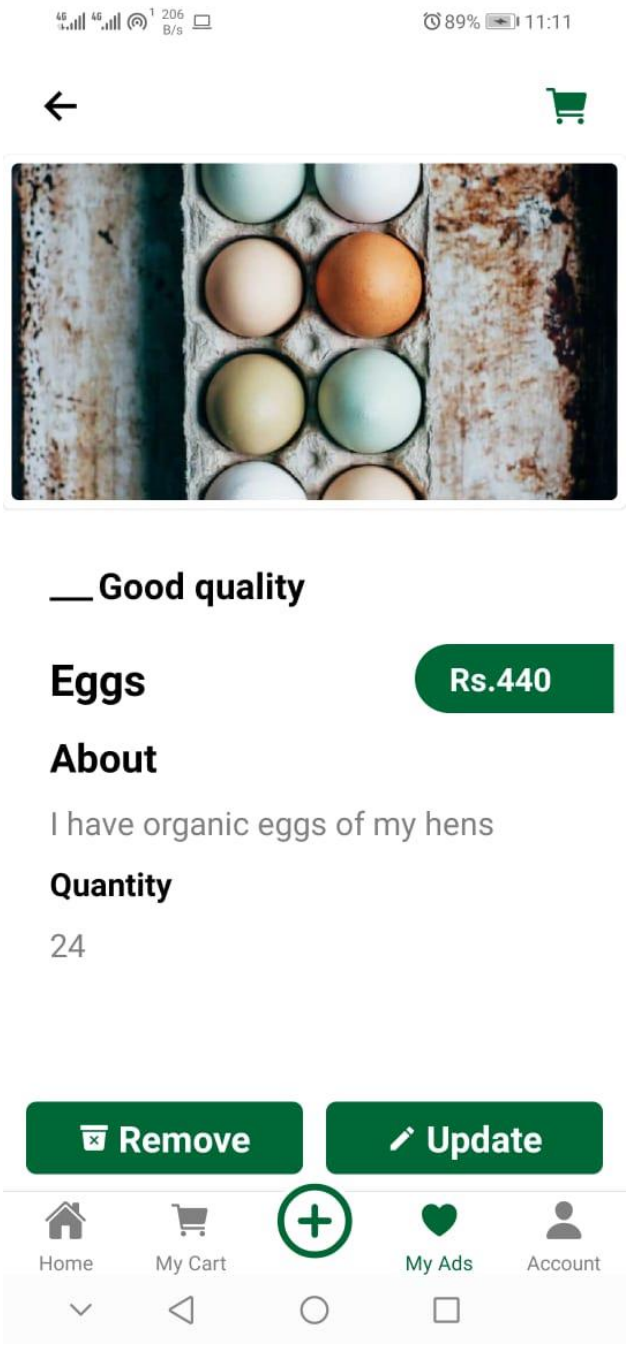


6.1.4 Add Products

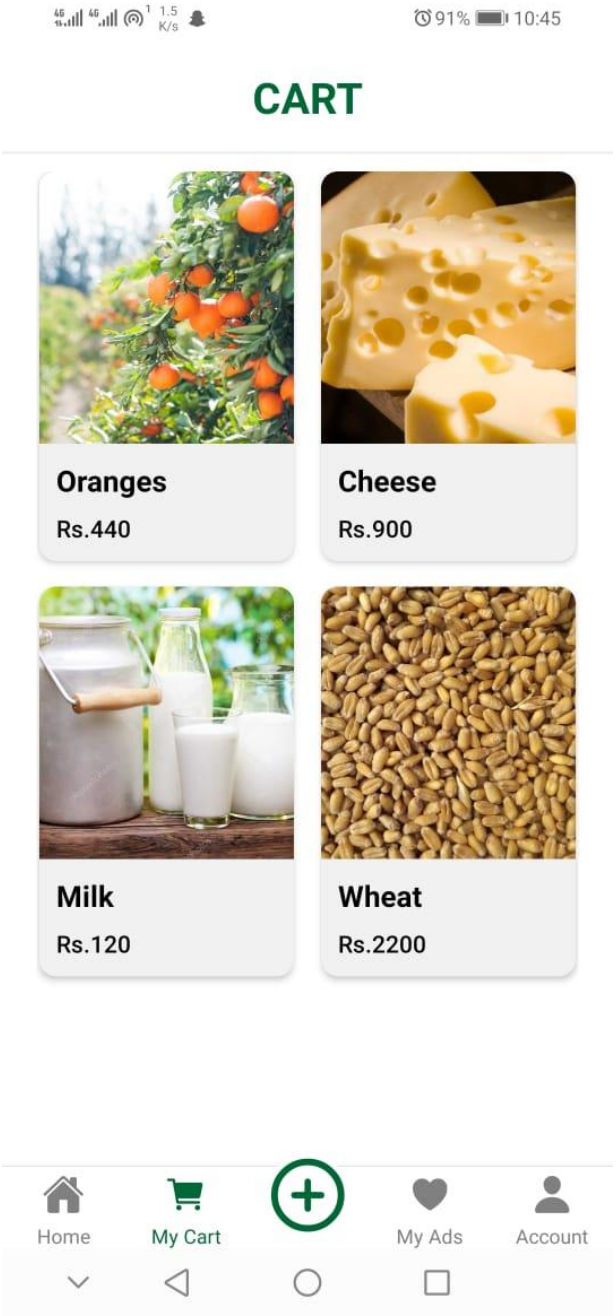


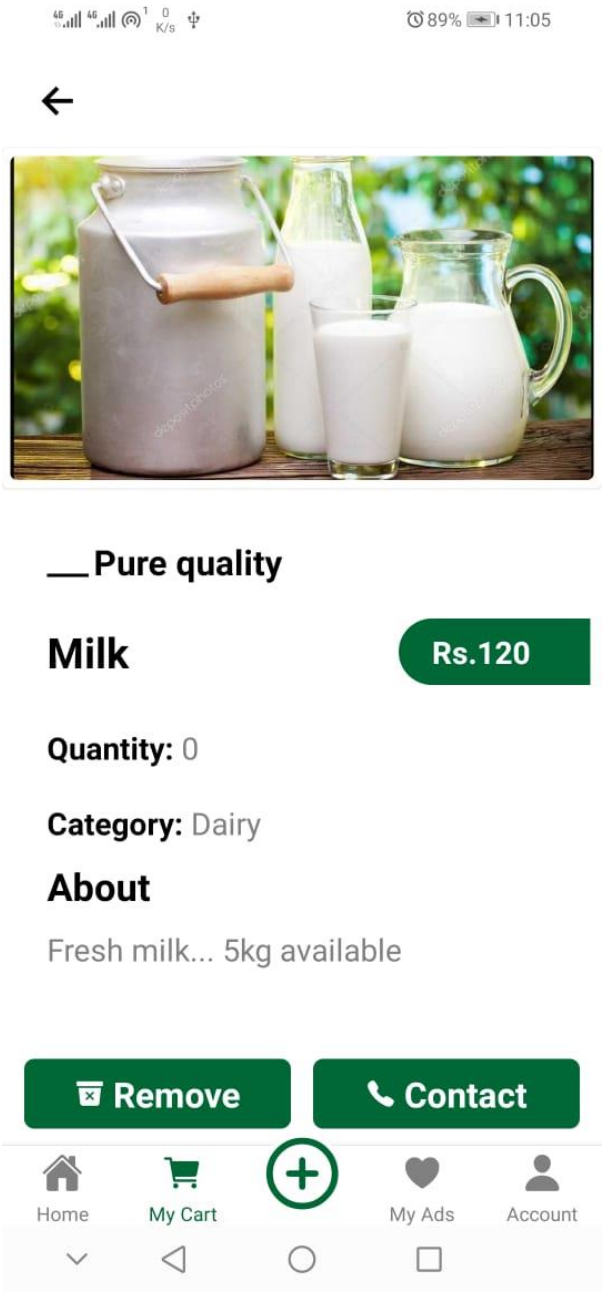
6.1.5 My Ads


155 B/s
91% 10:46
My Ads
Basmsti Rice
Rs.6700
Beans
Rs.190
Eggs
Rs.440
Corns
Rs.90
Home
My Cart
My Ads
Account


89% 11:11
Good quality
Eggs
Rs.440
About
I have organic eggs of my hens
Quantity
24
Remove
Update
Home
My Cart
My Ads
Account

6.1.6 My Cart


91% 10:45
CART
Oranges
Rs.440
Cheese
Rs.900
Milk
Rs.120
Wheat
Rs.2200
Home
My Cart
My Ads
Account


89% 11:05
Pure quality
Milk
Rs.120
Quantity: 0
Category: Dairy
About
Fresh milk... 5kg available
Remove
Contact
Home
My Cart
My Ads
Account

6.2. Equivalence partitioning

Equivalence Partitioning also called as equivalence class partitioning. It is abbreviated as ECP. It is a software testing technique that divides the input test data of the application under test into each partition at least once of equivalent data from which test cases can be derived. An advantage of this approach is it reduces the time required for performing testing of a software due to a smaller number of test cases.

6.3. Boundary value analysis

Boundary value analysis is a software testing technique in which tests are designed to include representatives of boundary values in a range. The idea comes from the boundary. Given that we have a set of test vectors to test the system, a topology can be defined on that set.

6.4. Data flow testing

Data Flow Testing is a specific strategy of software testing that focuses on data variables and their values. It makes use of the control flow graph. When it comes to categorization Data flow testing will can be considered as a type of white box testing and structural types of testing. It keeps a check at the data receiving points by the variables and its usage points. It is done to cover the path testing and branch testing gap.

6.5. Unit testing

Unit testing, a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. It is concerned with functional correctness of the standalone modules. The main aim is to isolate each unit of the system to identify, analyze and fix the defects.

- Reduces Defects in the newly developed features or reduces bugs when changing the existing functionality.
- Reduces Cost of Testing as defects are captured in very early phase

- Improves design and allows better refactoring of code.
- Unit Tests, when integrated with build gives the quality of the build as well.

6.6. Integration testing

Integration testing is the phase in software testing in which individual software modules are combined and tested as a group. Integration testing is conducted to evaluate the compliance of a system or component with specified functional requirements. It occurs after unit testing and before validation testing.

6.7. Performance testing

Performance testing, a non-functional testing technique performed to determine the system parameters in terms of responsiveness and stability under various workload. Performance testing measures the quality attributes of the system, such as scalability, reliability and resource usage.

- **Load testing -**It is the simplest form of testing conducted to understand the behavior of the system under a specific load. Load testing will result in measuring important business critical transactions and load on the database, application server, etc., are also monitored.
- **Stress testing -** It is performed to find the upper limit capacity of the system and also to determine how the system performs if the current load goes well above the expected maximum. **Soak testing -** Soak Testing also known as endurance testing, is performed to determine the system parameters under continuous expected load. During soak tests the parameters such as memory utilization is monitored to detect memory leaks or other performance issues. The main aim is to discover the system's performance under sustained use.
- **Spike testing** - Spike testing is performed by increasing the number of users suddenly by a very large amount and measuring the performance of the system. The main aim is to determine whether the system will be able to sustain the workload.

6.8. Stress Testing

Stress testing a Non-Functional testing technique that is performed as part of performance testing. During stress testing, the system is monitored after subjecting the system to overload to ensure that the system can sustain the stress. The recovery of the system from such phase (after stress) is very critical as it is highly likely to happen in production environment

.

- It allows the test team to monitor system performance during failures.
- To verify if the system has saved the data before crashing or NOT.
- To verify if the system prints meaning error messages while crashing or did it print some random exceptions.
- To verify if unexpected failures do not cause security issues.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

This project is about selling raw farming, organic and dairy products directly by the producer. Producer upload its products on FOD Solutions application from where consumer and pure food lovers can access it and can buy from given contacts provided with product ads.

7.2. Lessons Learnt

- Decision Making
- Program Management
- Project Governance
- Project Planning
- Roles & Responsibilities
- How to add data on database
- How to create table and insert data in database
- How to get all products in flat list
- How to get specific product from data base
- How to edit product in data base
- How to delete product from database

7.3. Future Enhancements/Recommendations

Although this application is properly in working state according to the functions installed in it. Like create user, Create product ads and update and delete specific ads. Also becoming a member of this site to save logs. But there are some enhancements which can be done in future like

- Updating cart according to products ad status
- How many product ads create specific user?

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