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Farmers' App

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Bachelor of Science in Software Engineering.

APPROVAL

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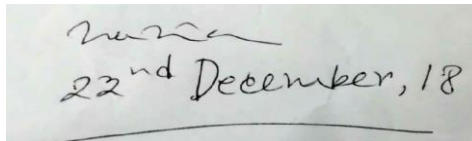
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EXECUTIVE SUMMARY

Farmers App is a non-profit online e-commerce app, through which farmers can sell their products to the dealer. In addition, farmers and dealers can see each other's information, comment on a post, see the current market price, and learn about the methods of cultivation. We used the Firebase database to store the data of this app. Firebase Real-time database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client.

Table of Contents

Chapter 1.....	1
Introduction	1
1.1 Overview	1
1.2 Purpose	1
1.3 Goals of the Project.....	2
1.4 Beneficiaries and Benefits.....	2
1.5 Scope.....	3
1.6 The System is Necessary	3
Chapter 2.....	4
Project Scenario & Planning	4
2.1 Project Scenario	4
2.2 Project Planning	5
2.3 Project Meeting	5
2.4 Find out Stakeholders	5
2.5 Techniques used to collect requirements.....	6
2.6 Analysis on Available Mobile Apps:	8
2.7 Risk Analysis	10
2.7.1 Risk Assessment	10
2.7.2. Risk Management	11
2.7.3. SWOT Analysis.....	12
2.8 Project Schedule	13
2.9 Gantt Chart.....	13
2.10 Milestones/Deliverables	14
Chapter 3.....	16
Requirement Specification & Analysis.....	16
3.1. Functional Requirements.....	16
3.1.1 Phone Authentication	16
3.1.2 Registration	16
3.1.3 Login.....	17
3.1.4 Browse Post	17
3.1.5 Make New Post	18
3.1.6 Current Market Price	18
3.1.7 Information Details	19

3.1.8 Comments	19
3.1.9 Logout	20
3.2 Non-Functional Requirements	20
3.3 Supportability Requirements Specification	21
3.4 Security Requirements	22
3.4.1 Access Requirement.....	22
3.4.2 Integrity Requirement.....	22
3.4.3 Privacy Requirement.....	22
3.5 Use Case Diagram:	23
3.5.1 Use Case Description Phone Number Authentication	24
3.5.2 Use Case Description of Login.....	25
3.5.3 Use Case Description of Registration	26
3.5.4 Use Case Description Make New Post	27
3.5.5 Use Case Description Update Profile	28
3.5.6 Use Case Description Information Details	29
3.5.7 Use Case Description Comments	30
3.5.8 Use Case Description Maintenance System.....	31
3.6 System Sequence Diagram:.....	32
3.6.1 Registered User Perspective Sequence Diagram	32
3.6.2 Admin Perspective Sequence Diagram	32
3.7 Activity Diagram:.....	33
3.8. Data Flow Diagram:.....	34
3.8.1 Context Diagram (Level-0 DFD): User Perspective.....	35
3.8.2 Context Diagram (Level-0 DFD): Admin Perspective	35
3.8.3 Context Diagram (Level-1 DFD): User Perspective.....	36
3.8.4 Context Diagram (Level-1 DFD): Admin Perspective	36
Chapter 4.....	37
System Development	37
4.1 Development Tools and Technology.....	37
4.2 User Interface Technology	37
4.3. Programming Language	37
4.4. Implemented tools and platform.....	37
4.5. IDE	38
4.6. Database Server	38
4.6.1 Class Diagram	38

Chapter 5.....	40
Test Plan.....	40
5.1 Testing Features.....	40
5.1.1 Features to be tested.....	40
5.2 Testing Strategy.....	41
5.2.1 Test Approach.....	41
5.2.2 Black Box Testing.....	41
5.2.3 White Box Testing.....	42
5.3 Testing Environment.....	42
5.4 Test Cases.....	42
5.4.1. Test Case Module-1: Phone Number Verification.....	43
5.4.2. Test Case Module-2: Login.....	45
5.4.3. Test Case Module-3: Registration.....	47
5.4.4. Test Case Module-4: Make New Post.....	49
5.5. Testing Deliverables.....	50
5.5.1. Project Status Report.....	50
Chapter 6.....	52
User Manual.....	52
6.1 Phone Number Authentication.....	52
6.2 Verification Code.....	53
6.3 Browse Existing Post.....	54
6.4 Make New Post.....	55
6.5 Account + Update Profile.....	56
6.6 Information Details.....	58
6.7 Current Market Price.....	59
Chapter 7.....	61
Conclusion.....	61
7.1 Project Summary.....	61
7.2 Limitations.....	61
7.3 Obstacles and Achievements.....	61
7.4 Future Scopes.....	62
References.....	63

List of Figures

Figure 1: Bumper yields don't bring happiness to farmers [1]	4
Figure 2: Mind Map of Overall Plan	7
Figure 3: Available Mobile Applications on farming in Bangladesh.....	9
Figure 4: Analysis Result Mobile Applications on farming in Bangladesh	9
Figure 5: Project Schedule	13
Figure 6: Gantt chart	14
Figure 7: Use Case Model	23
Figure 8: Use case of Phone Number Authentication.....	24
Figure 9: Use case of Login.....	25
Figure 10: Use case of Registration.....	26
Figure 12: Use case of Update Profile.....	28
Figure 13: Use case of Information Details.....	29
Figure 14: Use case of Comments.....	30
Figure 15: Use case of Maintenance System	31
Figure 16: Registered User Sequence Diagram.....	32
Figure 17: Admin Sequence Diagram.....	33
Figure 18: Activity Diagram	34
Figure 19: DFD-0 User Perspective	35
Figure 20: DFD-0 Admin Perspective	35
Figure 23: Database Server	38
Figure 24: Class Diagram.....	39
Figure 25: State Transaction of Verify Phone Number	43
Figure 26: State Transaction of Login	45
Figure 28: State Transaction of Make New Post.....	49
Figure 29: Phone Number Authentication.....	52
Figure 30: Verification Code	53
Figure 31: Browse Existing Post	54
Figure 32: Make New Post.....	55
Figure 33: Account + Update Profile	57
Figure 34: Information Details	58
Figure 35: Current Market Price	59
Figure 36: Cultivation Process.....	60

List of Tables

Table 1: Risk Management.....	11
Table 2: Milestone/Deliverables	15
Table 3: Phone Authentication	16
Table 4: Registration	16
Table 5: Login	17
Table 6: Browse Post.....	17
Table 7: Make New Post	18
Table 8: Current Market Price.....	18
Table 9: Information Details	19
Table 10: Comments	19
Table 11: Logout	20
Table 12: Use case description of Phone Number Authentication.....	24
Table 13: Use case Description of Login	25
Table 14: Use case Description of Registration	26
Table 15: Use case Description of Make New Post.....	27
Table 16: Use case Description of Update Profile.....	28
Table 17: Use case Description of Information Details.....	29
Table 18: Use case Description of Comments	30
Table 19: Use case Description of Maintenance System	31
Table 20: Features to be tested	41
Table 21: Test Case Phone Number Verification	43
Table 22: Test Case Login.....	45
Table 23: Test Case Registration	47
Table 24: Test Case Make New Post	49
Table 25: Project Status Report	51

Chapter 1

Introduction

1.1 Overview

We are going to suggest an application named “farmer’s apps” for helping farmers to sell their crops in right price in right place. The system solves the marketing issue of the farmers from the perspective of Bangladesh. Most of the farmers are not informed enough about market price. That’s why most of our farmer are not aware of how to deal with dealer with current market price. For this reason, they lose a lot of money every year. To solve this problem, our farmers need knowledge about price. If they know exact market price, it would be good for the farmer's financial condition. Thus it could contribute to the economy of Bangladesh.

Farmers are not getting good prices after harvesting, due to which many crops are being damaged in the field and many have lost interest in agricultural work. We have a small effort from our side. By using our application, the Farmers will be able to submit their information, deal with the dealer with prices, know the actual market price of a product and can sell the product in right price to dealer.

1.2 Purpose

- Farmers & Dealers add their information
- They can each other’s information & contract
- They can see current market Price
- Update profile

1.3 Goals of the Project

The basic functionality of this system is making the process user friendly for Framers & Dealers. It helps Framers to know about current market price, Farmers, get the dealer's information. And easily be able to sell their products, by using our apps.

1.4 Beneficiaries and Benefits

This project are mainly beneficiaries for admin and customer. Benefits are:

a) Phone Authentication

Example: Input phone number, get security code & login to the system.

b) Farmers & Dealers Information

Example: Farmers & Dealers able to get each other information

Able to search information

Example: Users can search Farmers- Dealers Information.

c) Market Price

Example: Admin update daily market price & Farmers can know about current market price.

d) Browse Post

Example: Uses can able to browse existing post.

e) Make New Post

Example: Uses can create new post, upload images & properly fill the input fields.

f) Comment

Example: Uses can also able to comments in existing post.

1.5 Scope

The system will be used by the farmers & dealers of Bangladesh. Farmers can sell their crops at good prices. An admin also maintenance the system. Farmers & Dealers must be registered though phone number authentication.

1.6 The System is Necessary

Both Farmers and Dealers will benefit from this system. Do not worry about the Farmer's product. And the dealer can also understand his part. Farmers don't have to sell their products through brokers & Dealers can easily get their desired product through the apps.

Chapter 2

Project Scenario & Planning

2.1 Project Scenario

We want to do this project in such a way that Farmers and Dealers are benefited. Because many times it is seen that despite the good harvest, the farmers do not get fair prices. The farmers became frustrated and many of its crops were wasted. On the other hand, the dealer's crop is bought by brokers. That is why the brokers eat of the farmers and the dealer's profits. If the dealer directly purchases the crop using this app from the Farmer, then they have get their own share. And this app will get them free. If they benefit slightly from it, then we can be successful.



Figure 1: Bumper yields don't bring happiness to farmers [1]

It is a great problem in Bangladesh that:

- ▶ When there is bumper yields farmers become anxious. They know that price will fall when there is a bumper harvest.
- ▶ Experts says farmers lack proper producing and marketing planning.

- ▶ To solve the problem of proper producing and marketing planning we are going to suggest this app.

2.2 Project Planning

For project planning, we first discussed the entire project. Then, talking to the farmers and dealers, we collected the data from them. Reviewing the data and proceeding to the next step. Then we are designing and coding those designs. After that we will upload the app to Play Store.

2.3 Project Meeting

At first time, how we collect requirement. Where we find those requirements. Who are the users of this system. In these step, it may take several time. We have chosen stakeholders based on the nature and complexity of the project and its product deliverable.

2.4 Find out Stakeholders

A stakeholder is a person or organization that has rights, share, claims or interests with respect to the system or its properties meeting their needs and expectations. To put it more simply, the interests of stakeholders have some influence on the project, so their opinion should always be taken into account. If you do not do this and overlook one of the key stakeholders, you can ruin the whole project and it will be much more expensive than just letting a development bug in the project.

Stakeholders provide opportunities and limitations for the system and are the source of requirements. In this Farmers' App, There are Two (2) Stakeholder.

- Farmers
- Dealers

2.5 Techniques used to collect requirements

- **Interviews** - These are an invaluable tool at the beginning of the process for getting background information on the business problems and understanding a current-world perspective of what the system being proposed needs to do. We interviewed farmers and dealers in our village. They told us what they require. They told that they need to know the dealer information and let the dealer know which type of crop they are harvesting and also share the quantity of the crop. Farmers appreciated this kind of approach. Show which thing you have collected from farmers. We need to make sure that our interviews cover a diverse cross-section of different stakeholders, so that the requirements are not skewed towards one particular function or area.
- **Brainstorming** - This is a powerful activity, which can be performed either in the context of a work shop or on its own. By considering different parts of the system and considering 'what-if' scenarios, or 'blue-sky' ideas, we can break out of the context of the current-state and consider visionary ideas for the future. Tools such as whiteboards or mind-mapping software can be very helpful in this phase. We made our own mind map to bring out our ideas:

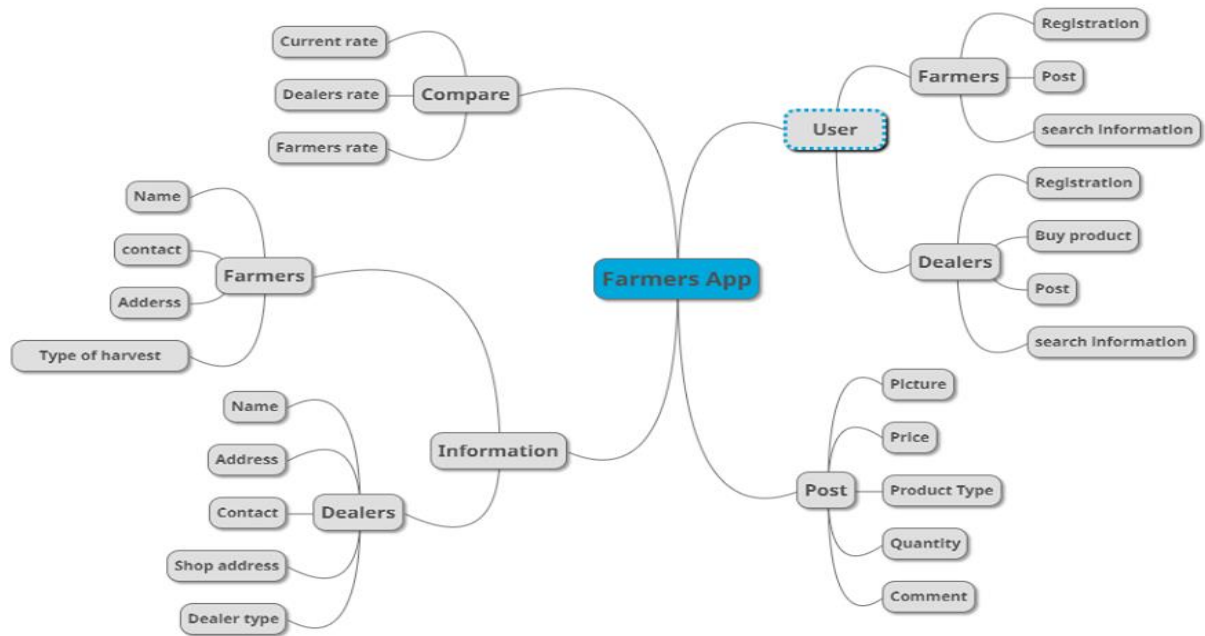


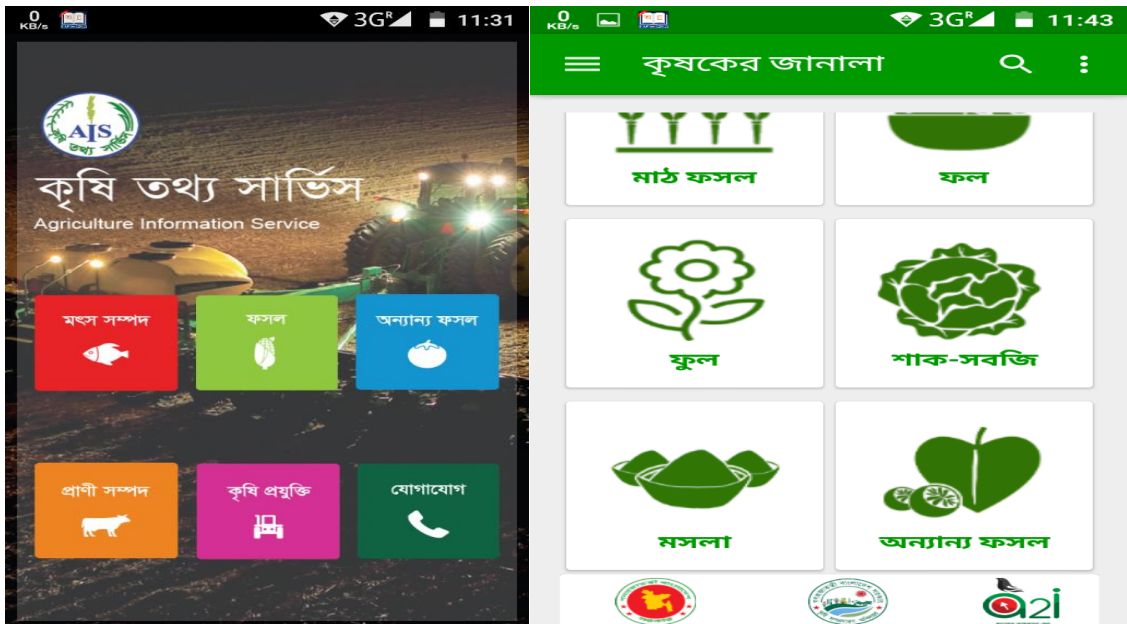
Figure 2: Mind Map of Overall Plan

- **Prototyping** - Stakeholders won't have a clear idea about what the requirements are, but if we put together several different prototypes of what the future could be, they will know which parts they like. We can then synthesize the different favored parts of the prototypes to reverse-engineer the requirements.
- For this purpose we did these things first.
 - a) We analyzed five apps on agriculture from Bangladesh perspective, we found that:
 - b) Approximately all of these mobile applications have worked on:
 - c) Crops diseases and their remedies.
 - d) Cultivation process
 - e) Knowledge on crops

- f) But they did not work on:
- g) How dealer and farmer share the information on farmer price and details (Name, Contact no., quantity, type of crops, location) and dealer price and details).

2.6 Analysis on Available Mobile Apps:

- ▶ কৃষি তথ্য সার্ভিস
- ▶ কৃষকের জানালা
- ▶ কৃষি তথ্য
- ▶ কৃষি সমস্যা ও সমাধান
- ▶ ফসলের রোগ বালাই ও প্রতিকার



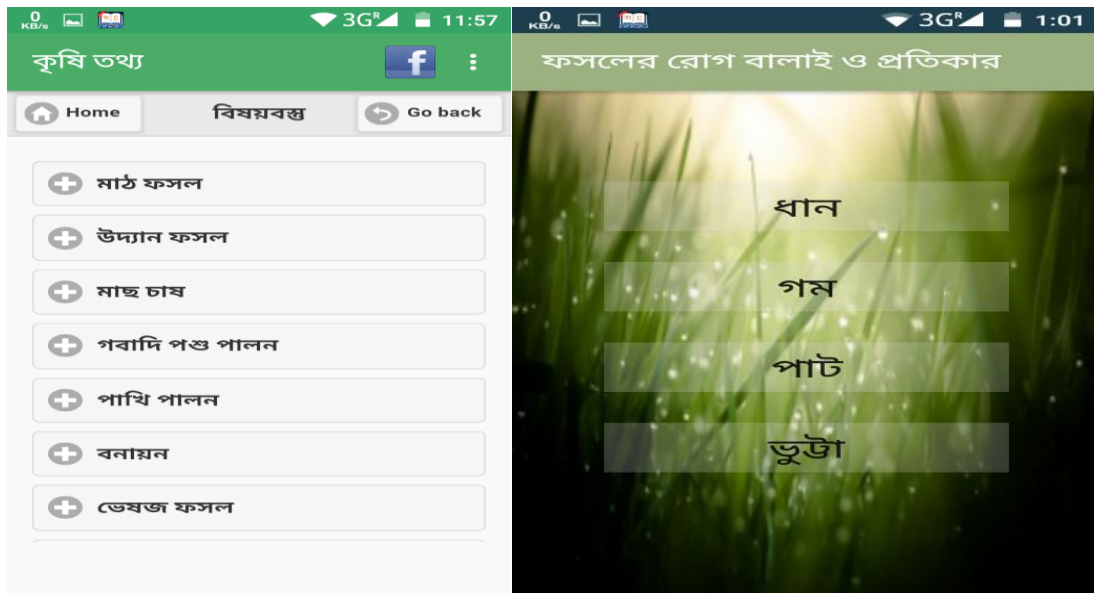


Figure 3: Available Mobile Applications on farming in Bangladesh

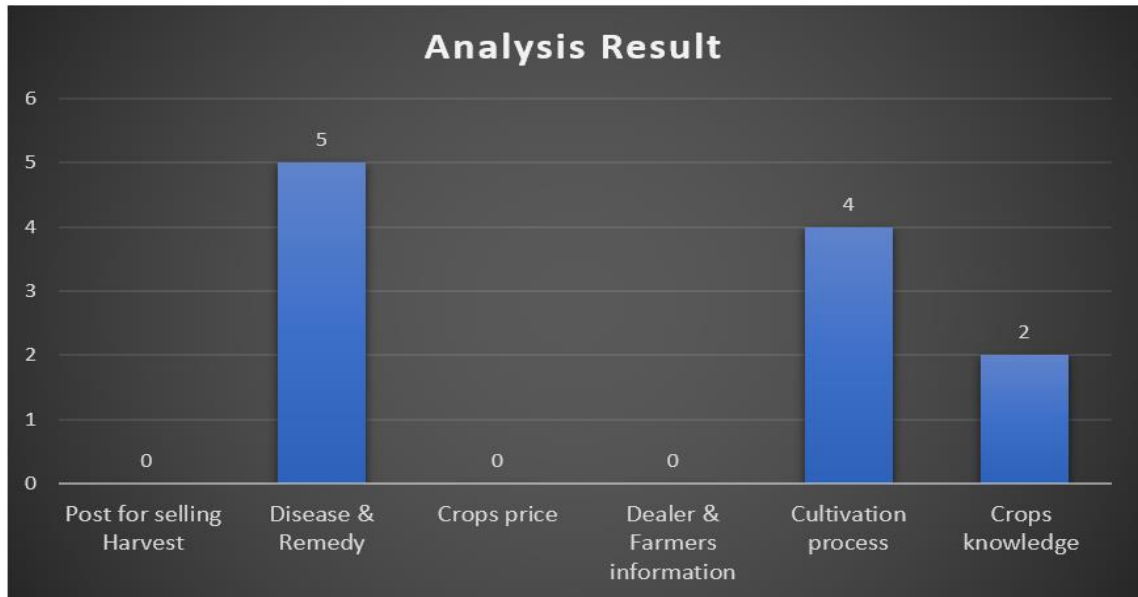


Figure 4: Analysis Result Mobile Applications on farming in Bangladesh

From figure 2 we found that the available applications did not consider these three things:

Post for selling harvest, crops price, dealer and farmer information etc. We may consider these features for our suggested application.

Main Problems Bangladeshi Farmers face

1. Credit related issues
 2. Do not get Proper Support
 3. Marketing related issues
- ▶ We are going to Focus on Marketing Related Issues. [2]

2.7 Risk Analysis

2.7.1 Risk Assessment

Risk assessment is the process of estimating the potential effects or harm of a hazard to determine its risk rating. By determining the level of risk, event organizers can priorities risks to ensure systematic elimination or minimization. In order to determine a risk rating, consider:

- a) The consequence - what will happen, the extent of harm.
- b) The likelihood - chances or possibility of it occurring.

When conducting a risk assessment, include the people who are actually involved in undertaking the task. Experience is as important as a fresh perspective when undertaking risk assessment.

2.7.2. Risk Management

Since risk management is a very important part of android app therefore it should be carried out in a planned and professional manner. Following steps are involved in risk management:

Step 1: Identify those elements or activities which could carry a risk

A list of such elements is already specified above like information management, security, procurement etc.

Step 2: Determine the possibility of occurrence of the risk and the severity of the consequences if the risk does happen.

Elements	Risk	Possibility	Severity
Information Management	Loss of data	Low	Very high
Budget Management	Money	High	High
Security Management	Brawl	Low	Low

Table 1: Risk Management

Step 3: Risk Prioritization

Risks with high severity of the consequences should be handled first.

Step 4: Formulate, prepare and implement strategies to manage risks

2.7.3. SWOT Analysis

The following SWOT analysis captures the key strengths and weaknesses within the company and describes the opportunities and threats facing Corporate Retreat Professionals.

2.7.3.1. Stands for Strengths (internal)

These are the attributes of our project which are helpful in achieving project's objectives. Some examples:

- a) Experienced farmer
- b) Dealers response

2.7.3.2. Stands for Weakness (internal)

These are those attributes of our project which are harmful in achieving project's objectives. Some examples:

- a) Lack security aspect
- b) Lack of funds
- c) Lack of media and corporate contacts

2.7.3.3. Stands for Opportunities (external)

These are those external factors which are helpful in achieving the project's objectives. Some examples:

- a) Little competition
- b) Favorable economic conditions

2.7.3.4. Stands for Threats (external)

These are those external factors which are harmful in achieving the project's objectives. Some examples:

- a) High competition
- b) Little or no support from local authorities

2.8 Project Schedule

For developing project or something else, schedule helps for proper planning. We also make a schedule for developing and executing our project properly.

Task Name	April	May	June	July	August	September	October	November
Project Proposal	█	█						
Requirement Collection & Analysis		█	█					
System Design/ UI				█	█	█		
Coding						█	█	
Testing							█	█
Documentation & Report							█	█

Figure 5: Project Schedule

2.9 Gantt Chart

Stakeholders will get a clear view of this project, about its completion time by seeing the following Gantt chart



Figure 6: Gantt chart

2.10 Milestones/Deliverables

Milestones, a timeline of a project, will clarify the task. This project milestones are as follows:

Task No	Task Name	Time
1	Requirements gathering and analysis	3 week
2	Sketching the overall system	1 week
3	Database design	1 week
4	UI design	2 week
5	Implementing the developing	3 week
6	Testing	1 week
7	Evaluating the project	1 week

Table 2: Milestone/Deliverables

Chapter 3

Requirement Specification & Analysis

3.1. Functional Requirements

3.1.1 Phone Authentication

FR-1	Phone Authentication
Description	To access the system user & admin must be verify phone number. If they already registered, they can browse post, make new post, update account, view current market price & view information details.
Stakeholders	Farmers, Dealers, Admin

Table 3: Phone Authentication

3.1.2 Registration

FR-2	User Registration
Description	If users not verify phone number, they have seen registration page & must be registered. Once a user complete registration process then he/she access the system.
Stakeholders	Farmers & Dealers

Table 4: Registration

3.1.3 Login

FR-3	User Login
Description	If the user already registered, after verify phone number then the user can logged in the system. Can browse post, Make new post, Update profile.
Stakeholders	Farmers & Dealers

Table 5: Login

3.1.4 Browse Post

FR-4	Browse Post
Description	After verify phone number users can browse existing post, can comments, make call to contract each other's.
Stakeholders	Farmers & Dealers

Table 6: Browse Post

3.1.5 Make New Post

FR-5	Make New Post
Description	When users scroll existing post, that time users can see a Plus (+) Button to create new post. In this part users must have fill up all input fields including add images.
Stakeholders	Farmers & Dealers

Table 7: Make New Post

3.1.6 Current Market Price

FR-6	Current Market Price
Description	If users clicks current market price can see a list of current market status & also compare price.
Stakeholders	Farmers & Dealers , Admin

Table 8: Current Market Price

3.1.7 Information Details

FR-7	Information Details
Description	After verify phone number, registered users can see all information details of Farmers & Dealers. Also users can search information.
Stakeholders	Farmers & Dealers

Table 9: Information Details

3.1.8 Comments

FR-8	Comments
Description	After verify phone number, registered users can comments on a post.
Stakeholders	Farmers & Dealers

Table 10: Comments

3.1.9 Logout

FR-9	Logout
Description	If a user click logout, then the user get out of the whole system. If the user again access the system, he/she follow full the process again. Like – phone number verification.
Stakeholders	Farmers ,Dealers & Admin

Table 11: Logout

3.2 Non-Functional Requirements

In systems engineering and requirements engineering, a non-functional requirement is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. They are contrasted with functional requirements that define specific behavior or functions. Here we putted down some non-functional activities according to our project.

- **Dependability** This project some non-functional activities this project also depends with some other facts like to know about the app content you have to internet connection also needs an android phone to connect into the apps.

- **Maintainability:** This app user friendly and according to our project it has a good UI so users are highly impressed about this app. In maintain this app user need to sign up and later every specific matter will notify the user. User can easily maintain it.
- **Security:** The software system needs a robust security mechanism in place so that unauthorized users are not allowed access to parts of the system. All users of the system must be uniquely identified. This could be done by using a user name and associated password scheme that would authenticate and authorize the user access to the system and, if applicable, grant the user access to restricted or controlled parts of the system. In order to monitor all past access to the system, all attempts to access the system must be logged.
- **Reliability:** All content and other information in this app are collected from users. So our content and guide line are secure for user. On that regard we can easily say this project maintain a strong reliability.
- **Usability:** Good UI, User friendly, Step by Step information make this application useable and user friendly.
- **Availability:** The System should be available 99% of the time.

3.3 Supportability Requirements Specification

SRS-1. In order to understand the system's behavior on a technical support required by the system operator.

SRS-2. System malfunction has occurred and the system operator has to find the exact point of time when this happened.

SRS-3. System produces wrong results and the developers must be able to reproduce the data flow through the system.

SRS-4. Hacker tried to breach the system's security mechanisms and the system operator must understand what he did.

3.4 Security Requirements

There are no access requirements beside those that have been outlined in the below:

SR-1. Log in as a Farmer

SR-2. Log in as a Dealer

SR-3. Log in as a Admin

SR-4. Make New Post

To get access to this system user must verify phone number while login to the system.

3.4.1 Access Requirement

For getting benefit of this system all user have to login in the application. But admin / user have a login because only authorized admin/user can view the applicant list. Without login all users are not access the application.

3.4.2 Integrity Requirement

In our project we ensure data integrity requirement. To protect credentials of user from being stolen, all passwords are stored in encrypted form. The Requirements significantly reduces the value of stolen user credentials, it's not easy to decrypt the password.

3.4.3 Privacy Requirement

In this application all data are secure, because we know that farmer post to the app for selling. That's mean we have to secure the user's personal information or problem. Only registered use can know what they post.

3.5 Use Case Diagram:

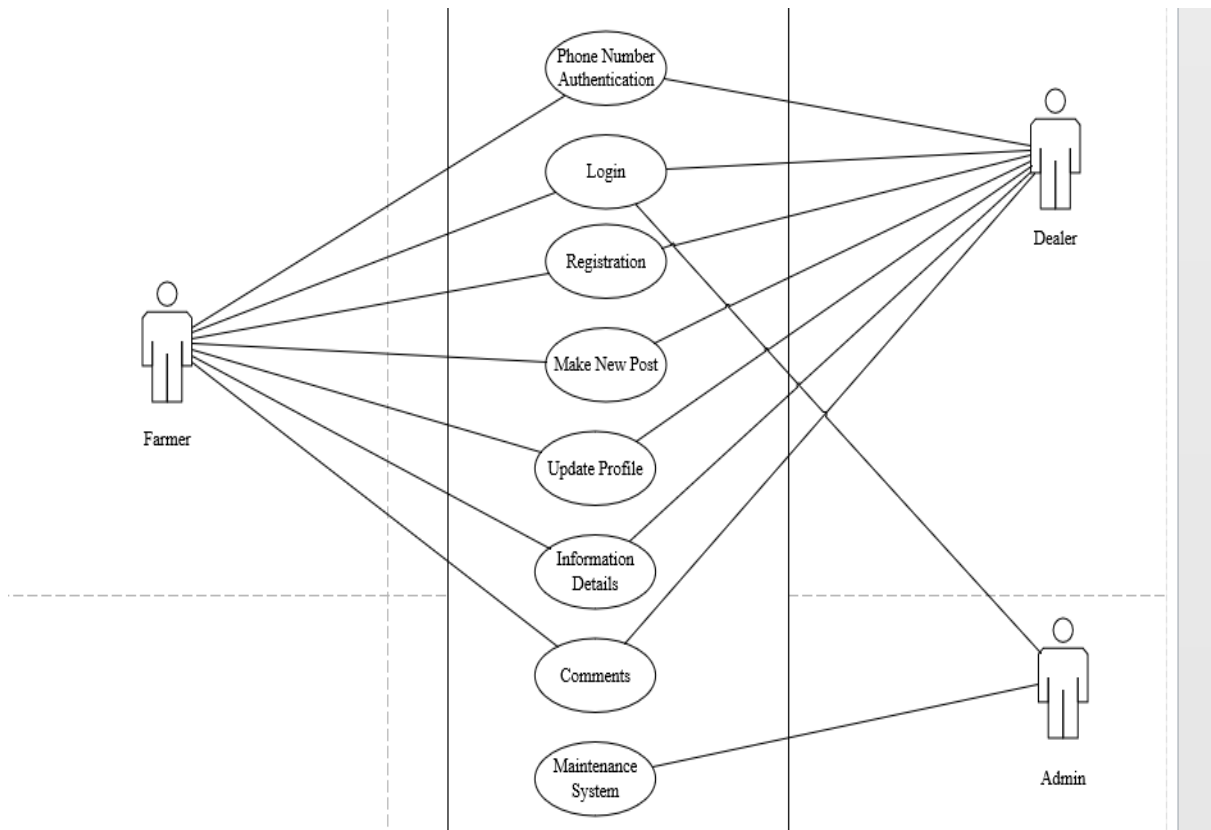


Figure 7: Use Case Model

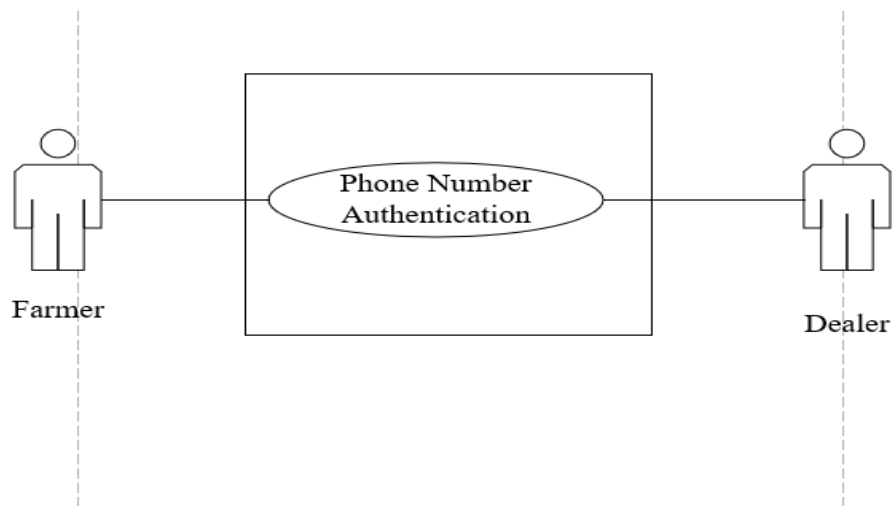


Figure 8: Use case of Phone Number Authentication

3.5.1 Use Case Description Phone Number Authentication

Use Case Name	Phone Number Authentication
Priority	Essential
Trigger	Input Phone Number
Pre-condition	The system has supported with a Database to store Data
Basic Path	The users enters phone number to verify registered user
Alternative Paths	None
Post-condition	Phone number is stored
Possible Enhancement	None

Table 12: Use case description of Phone Number Authentication

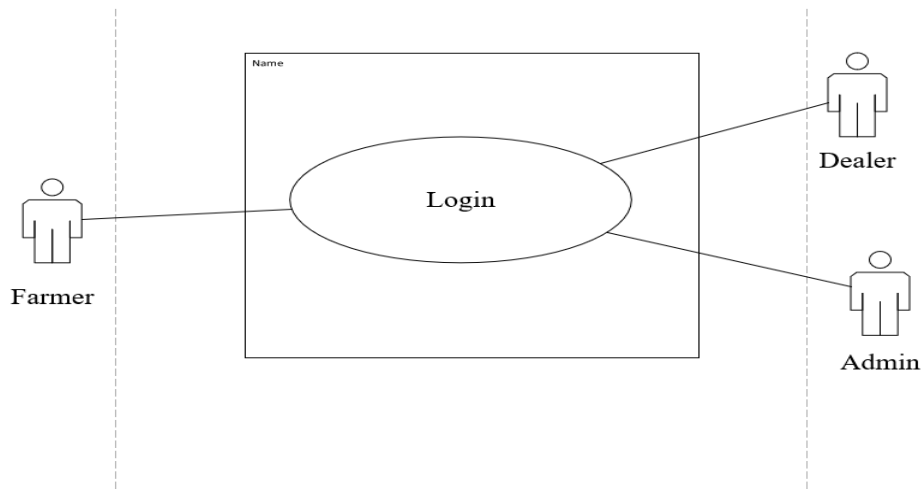


Figure 9: Use case of Login

3.5.2 Use Case Description of Login

Use Case Name	Verify Phone Number to Login
Priority	Essential
Trigger	After Verity Phone Number then Login
Pre-condition	The system has to keep a record about that login
Basic Path	The user enters relevant information. The system matches data with the stored database. The system gives access to users based on Specifications.
Alternative Path	None
Post-condition	Personal information has to be stored before login
Possible Enhancement	None

Table 13: Use case Description of Login

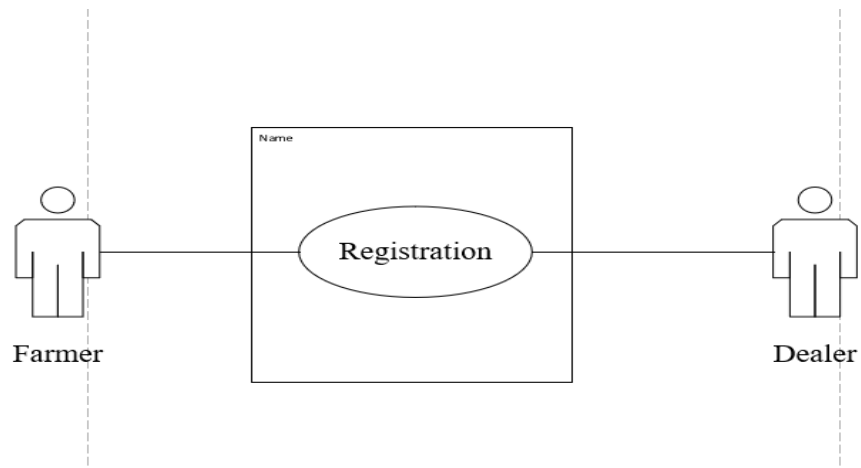


Figure 10: Use case of Registration

3.5.3 Use Case Description of Registration

Use Case Name	Enter Relevant Data to Registration
Priority	Essential
Trigger	Selecting Register
Pre-condition	The system has supported with a Database to store Data
Basic Path	The user enters personal information
Alternative Paths	None
Post-condition	Personal information is stored
Possible Enhancement	None

Table 14: Use case Description of Registration

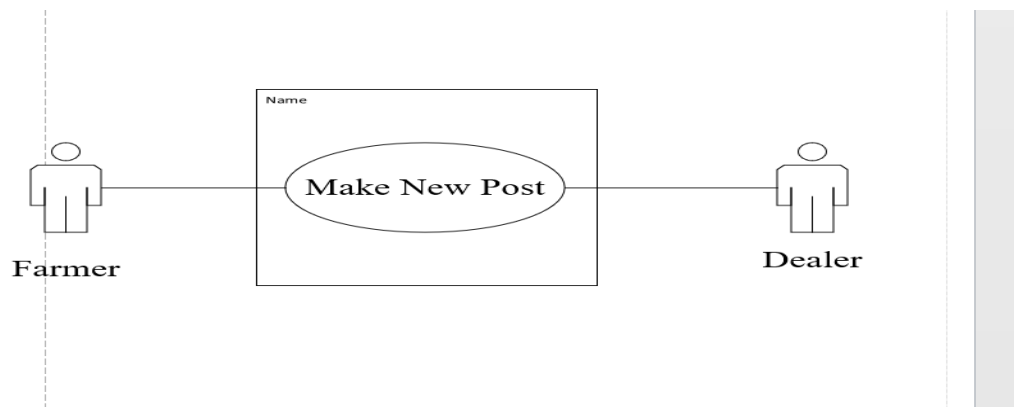


Figure 11: Use case of Make New Post

3.5.4 Use Case Description Make New Post

Use Case Name	Make New Post
Priority	Essential
Trigger	Click Plus(+) Button & Fill All Input Fields
Pre-condition	The system has supported with a Database to store Data
Basic Path	The user must fill all input fields including add images
Alternative Paths	None
Post-condition	Data is stored in Database
Possible Enhancement	None

Table 15: Use case Description of Make New Post

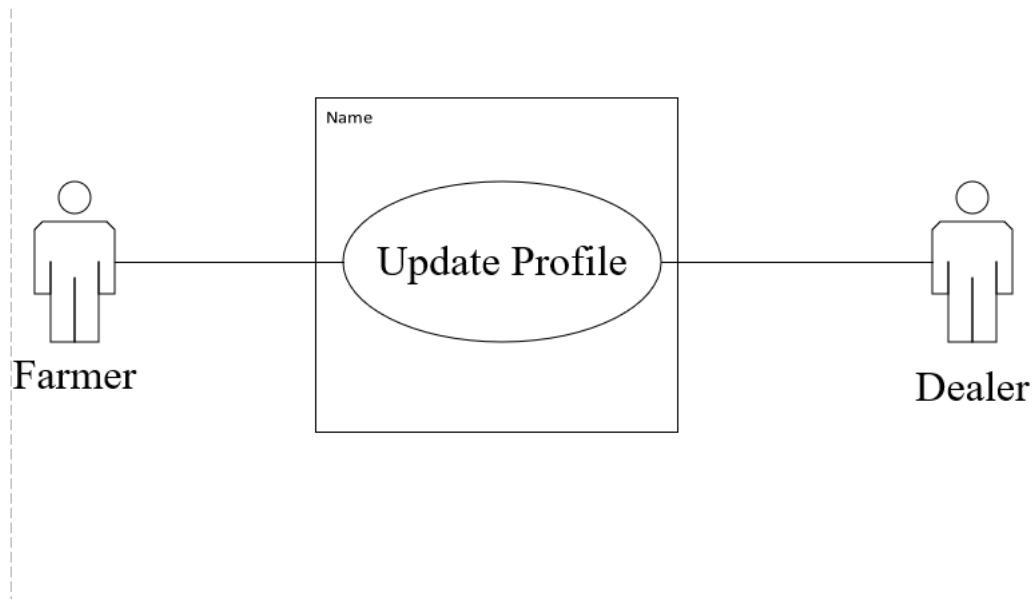


Figure 12: Use case of Update Profile

3.5.5 Use Case Description Update Profile

Use Case Name	Update Profile
Priority	Essential
Trigger	Click Account to Update Profile
Pre-condition	The system has supported with a Database to store Data
Basic Path	The user must fill all input fields including add images
Alternative Paths	None
Post-condition	Data is stored in Database
Possible Enhancement	None

Table 16: Use case Description of Update Profile

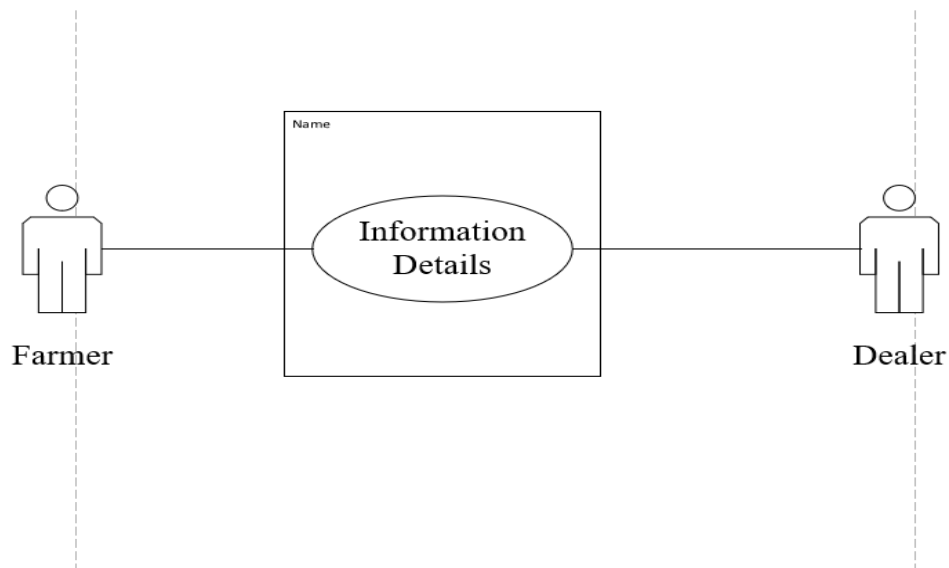


Figure 13: Use case of Information Details

3.5.6 Use Case Description Information Details

Use Case Name	Information Details
Priority	Essential
Trigger	Click Information Details to see all information & search
Pre-condition	The system showed store Data
Basic Path	Click to see Farmers & Dealers information & also Search
Alternative Paths	None
Post-condition	Data is stored in Database
Possible Enhancement	None

Table 17: Use case Description of Information Details

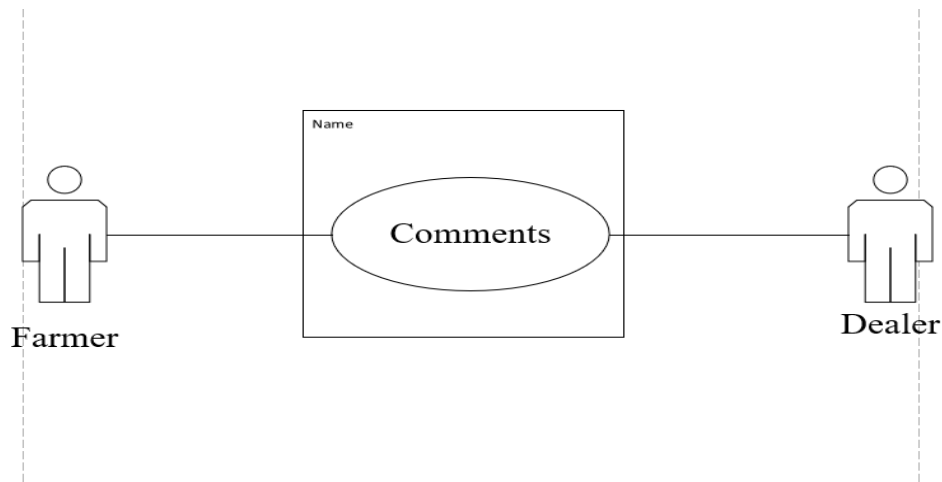


Figure 14: Use case of Comments

3.5.7 Use Case Description Comments

Use Case Name	Comments
Priority	Essential
Trigger	When user scroll existing post can comments on post
Pre-condition	Must be logged in with phone number verification
Basic Path	User can comment one post at a time
Alternative Paths	None
Post-condition	Data is stored in Database
Possible Enhancement	None

Table 18: Use case Description of Comments

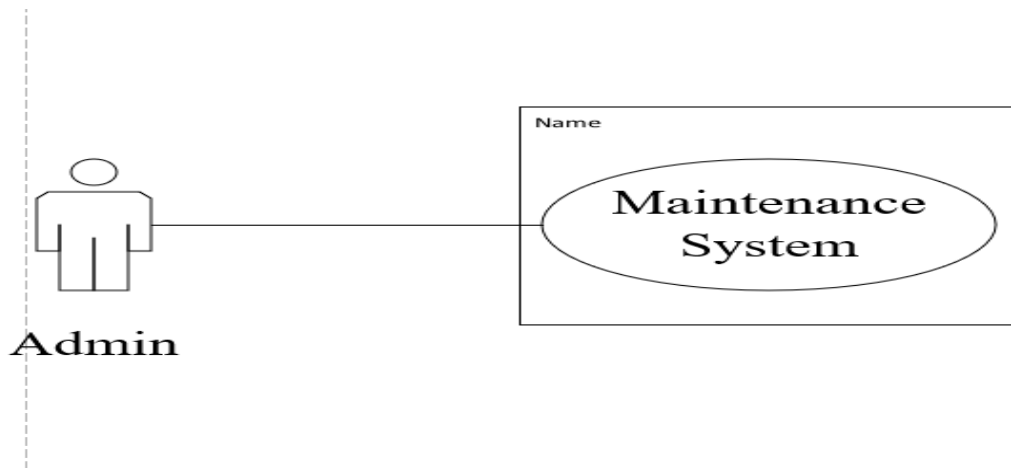


Figure 15: Use case of Maintenance System

3.5.8 Use Case Description Maintenance System

Use Case Name	Maintenance System
Priority	Essential
Trigger	Admin Maintenance the whole system
Pre-condition	Logging as Admin
Basic Path	Can also Edit Current Market Price
Alternative Paths	None
Post-condition	Data is stored in Database
Possible Enhancement	None

Table 19: Use case Description of Maintenance System

3.6 System Sequence Diagram:

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.

3.6.1 Registered User Perspective Sequence Diagram

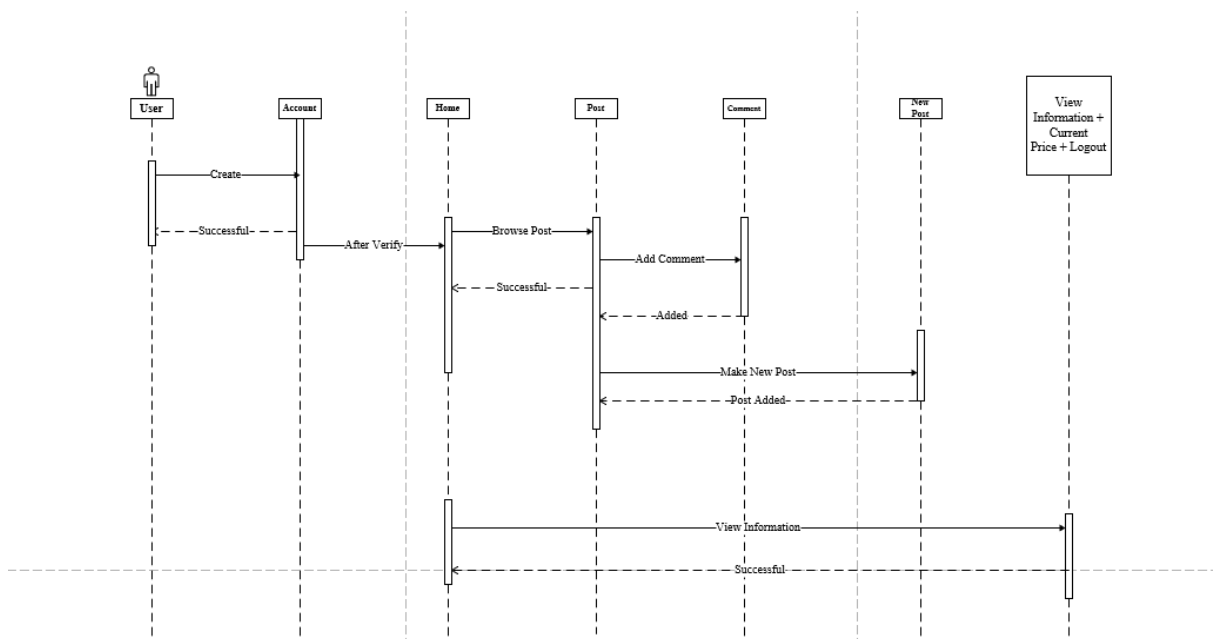


Figure 16: Registered User Sequence Diagram

3.6.2 Admin Perspective Sequence Diagram

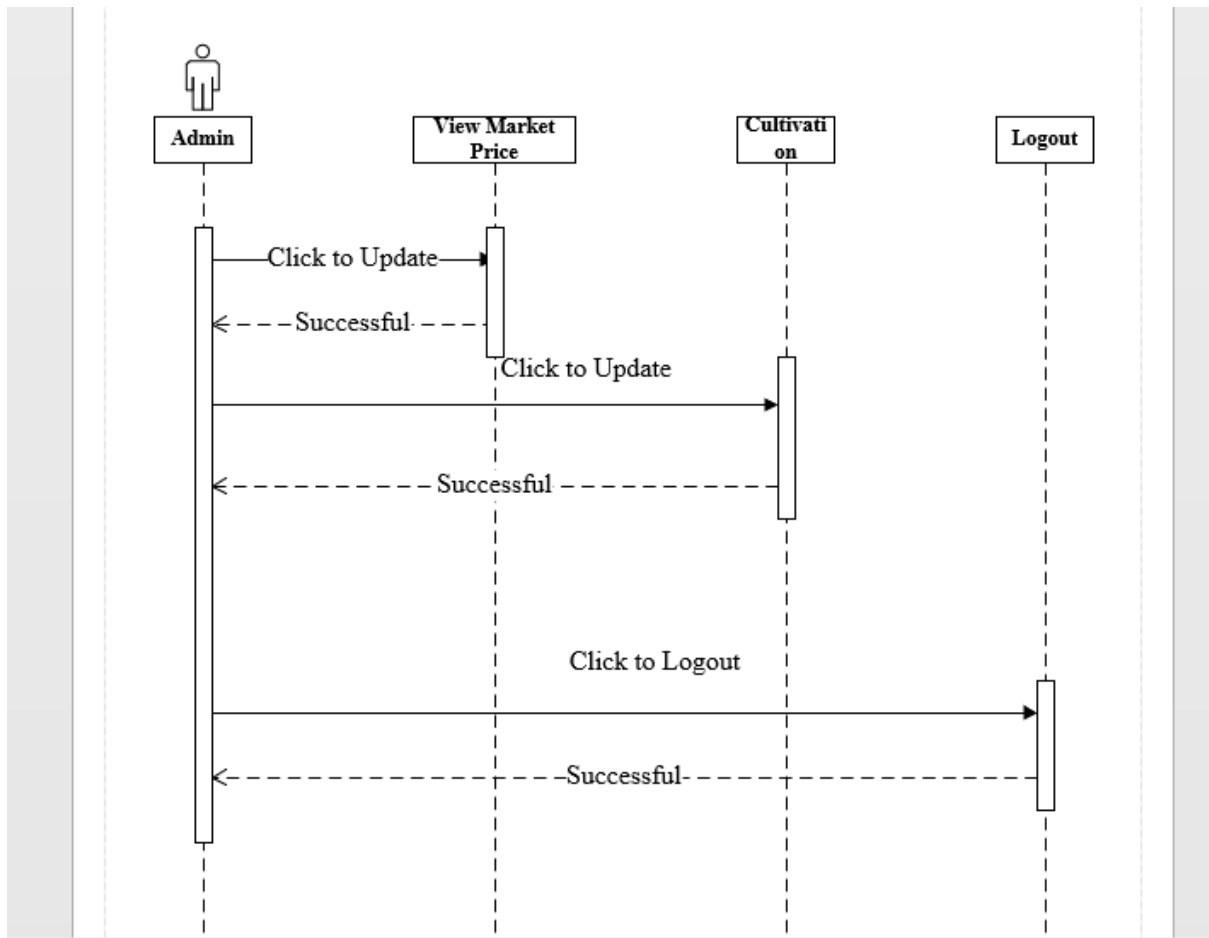


Figure 17: Admin Sequence Diagram

3.7 Activity Diagram:

Activity diagram is another important diagram in UML to describe the dynamic aspects of the system. Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

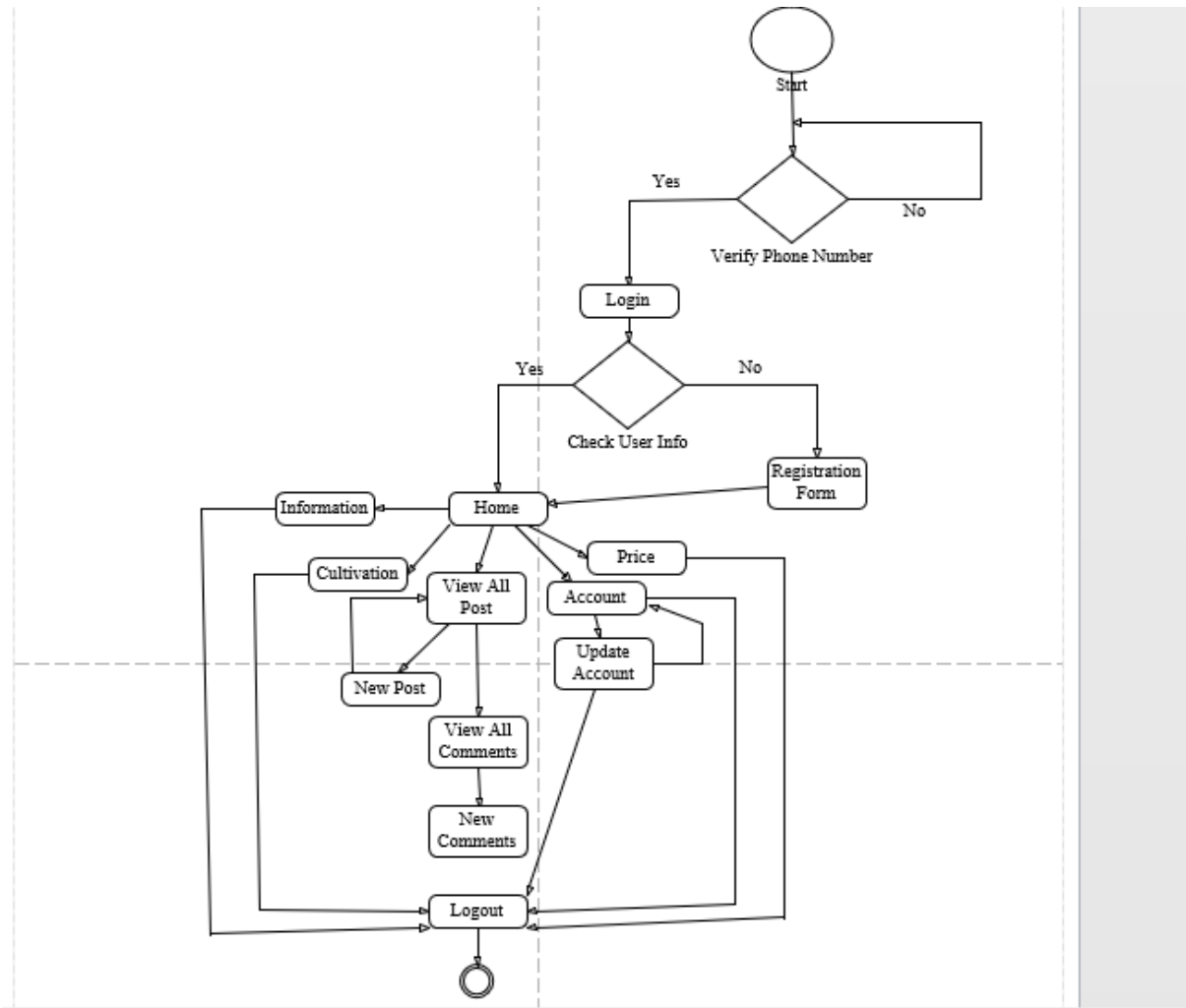


Figure 18: Activity Diagram

3.8. Data Flow Diagram:

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

3.8.1 Context Diagram (Level-0 DFD): User Perspective

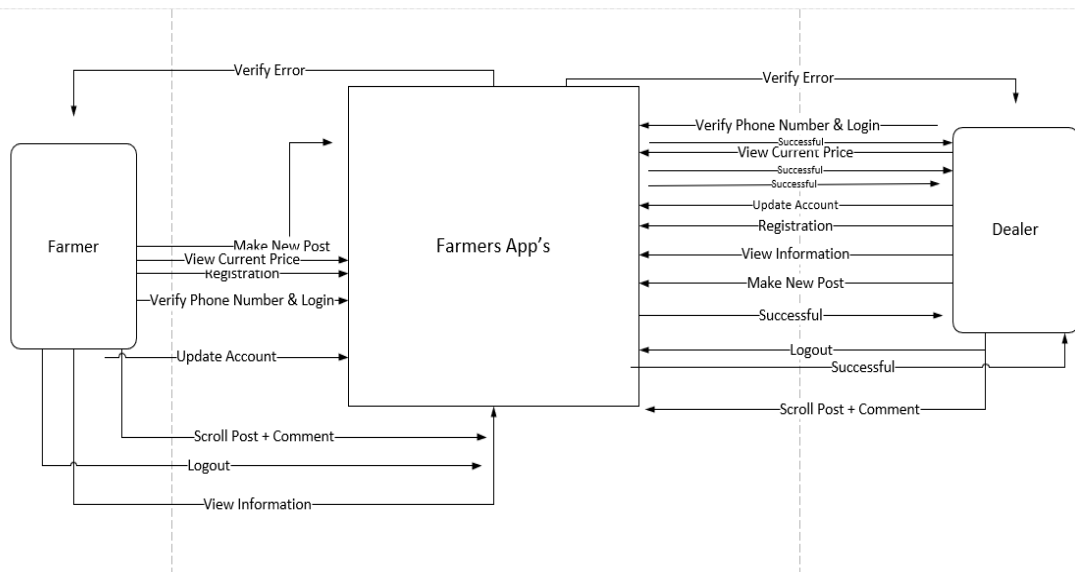


Figure 19: DFD-0 User Perspective

3.8.2 Context Diagram (Level-0 DFD): Admin Perspective

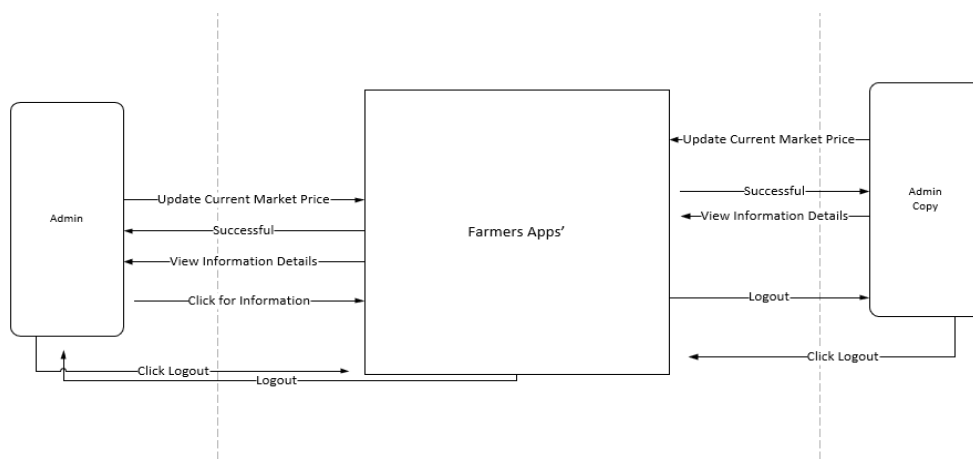


Figure 20: DFD-0 Admin Perspective

3.8.3 Context Diagram (Level-1 DFD): User Perspective

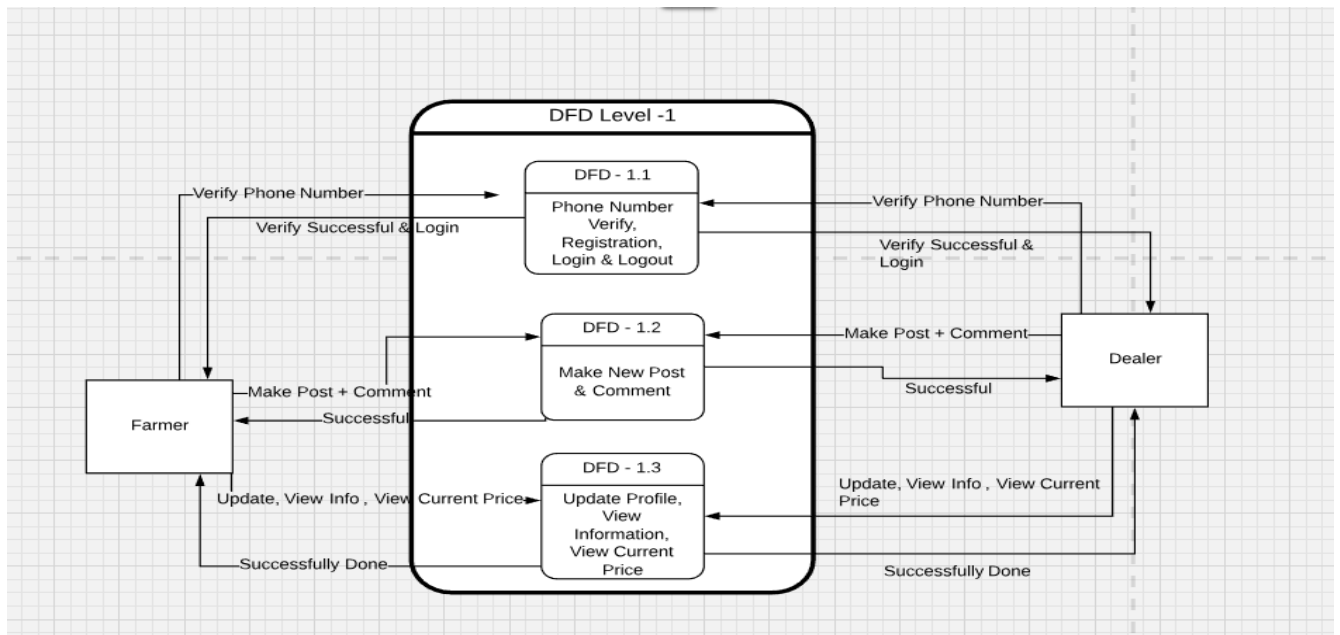


Figure 21: DFD-1 User Perspective

3.8.4 Context Diagram (Level-1 DFD): Admin Perspective

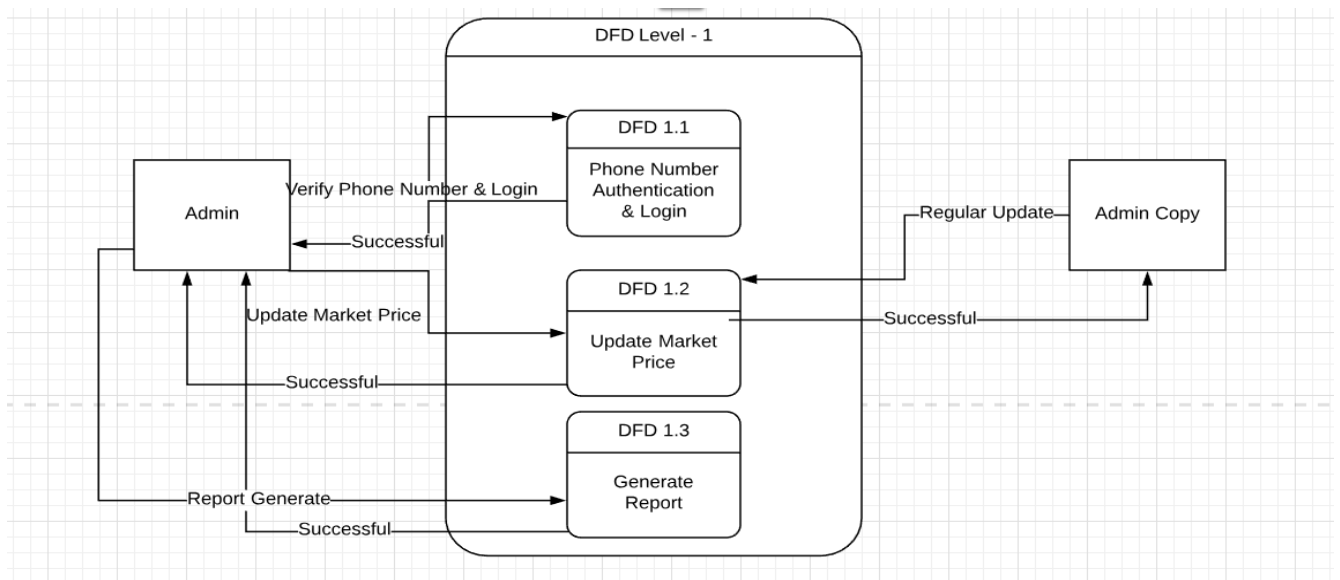


Figure 22: DFD-1 Admin Perspective

Chapter 4

System Development

4.1 Development Tools and Technology

Without using tools, development of software is impossible. There are many tools that we have used to develop this software like – Android, Firebase Cloud Firestore, and Android Phone.

4.2 User Interface Technology

User interface (UI) is everything designed into a system view that which person's associates with this system may like the interface of this system.

4.3. Programming Language

For developing this system we have use Java (Android) as a programming language. Android has its own Framework & it's a powerful tools for making dynamic and interactive Apps.

4.4. Implemented tools and platform

The order of execution may vary depending upon the person developing the plan. Some people do better with looking at lots of tools and asking themselves “How can we use these tools to accomplish our goals and which ones do we use?” While others may look at tactics that have been tried and proven successful and determine which tactics best apply to them and their goals. And, many start with developing a sound strategy, then determine which tactics and tools best suits their needs to accomplish their goals.

4.5. IDE

For developing our software, we use Android Studio as IDE. IntelliJ IDEA is a Java integrated development environment (IDE) for developing computer software. It is developed by JetBrains (formerly known as IntelliJ), and is available as an Apache 2 Licensed community edition.

4.6. Database Server

We have used Firebase database to store data of our projects data. Because this database server provides huge storage and this server is very easy to use. Firebase is a mobile and web application development platform developed by Firebase, Inc. in 2011, then acquired by Google in 2014.

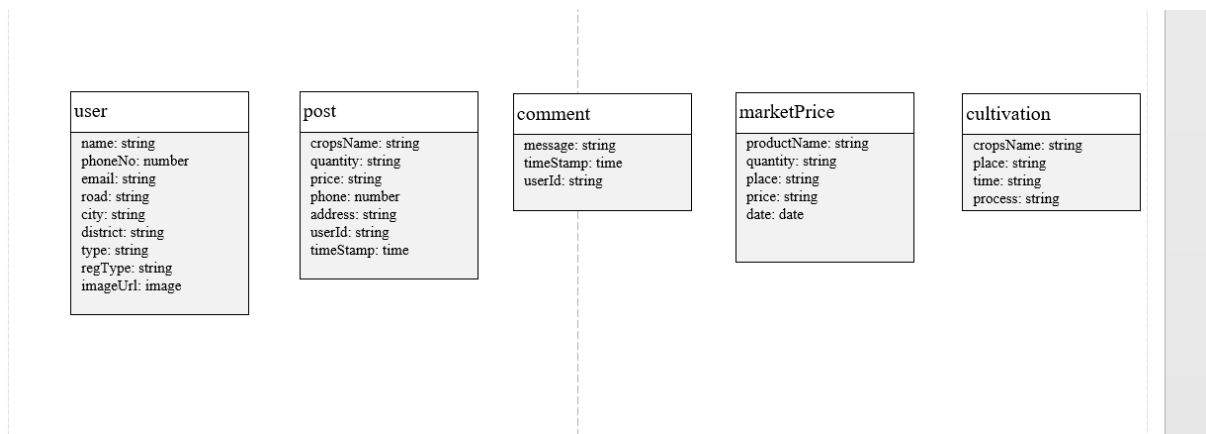


Figure 23: Database Server

4.6.1 Class Diagram

Store and sync data with our NoSQL cloud database. Data is synced across all clients in real-time, and remains available when app goes offline. The Firebase Real-time Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client.

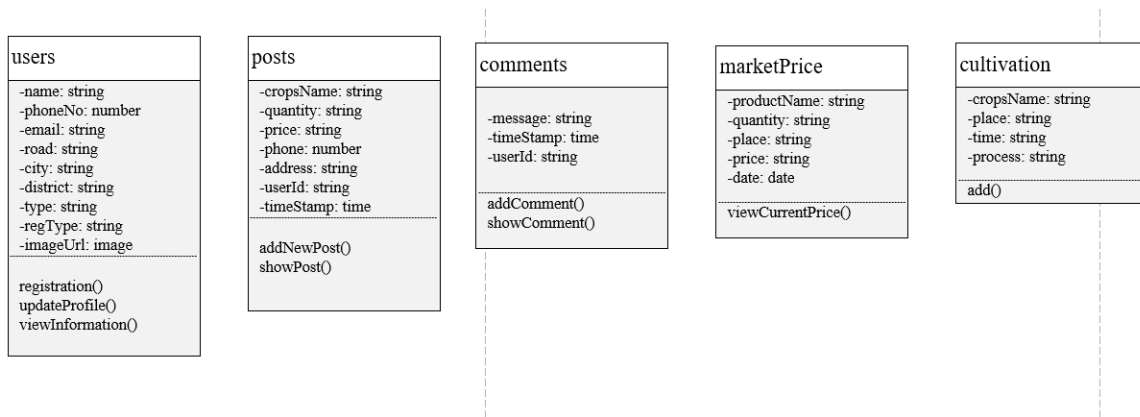


Figure 24: Class Diagram

Chapter 5

Test Plan

5.1 Testing Features

Feature testing is the process of making changes in software system to add one or more new features or to make modifications in the already existing features. Each of these feature is said to have a characteristics that is designed to be useful, intuitive, and effective.

5.1.1 Features to be tested

Features	Priority	Description
Phone Number Authentication	2	Registered user must verify phone number
Login	1	After verifying phone number user logging to the system
Registration	3	To be a user of Farmers' Apps, user must be registration first.
Make New Post	3	After verify phone number & login user can create new post with adding images.
Technological Features		
Firestore Database	3	Firestore Database is not relational database that's why it is real time database & automatically update

Table 20: Features to be tested

Here, 1=Low Priority; 2=Medium Priority; 3=High Priority

5.2 Testing Strategy

A testing strategy is a general approach to the testing process rather than a method of devising particular system or component tests. Different testing strategies may be adopted depending on the type of system to be tested and the development process used.

5.2.1 Test Approach

A test approach is the test strategy implementation of a project, defines how testing would be carried out. Test approach has two techniques:

- **Proactive** - An approach in which the test design process is initiated as early as possible in order to find and fix the defects before the build is created.
- **Reactive** - An approach in which the testing is not started until after design and coding are completed.

5.2.2 Black Box Testing

Black box testing also called functional testing that ignores the internal mechanism of a system or component and focuses on the outputs generated in response to selected inputs and execution conditions. We have decided to perform equivalence partitioning and Boundary value analysis for this system

5.2.3 White Box Testing

White box testing is a software testing method in which the internal structure /implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential.

5.3 Testing Environment

Testing environment is a setup of software and hardware for the testing teams to execute test cases. In other words, it supports test execution with hardware, software and network configured.

For test environment, key area to set up includes

- Application
- Android Device

5.4 Test Cases

It is impossible to build a system without any fault. Sometimes, this fault makes software implementation failure. If we test the system before executing the system it will help us to find the fault of the system. For testing the system, we need to write some test cases.

5.4.1. Test Case Module-1: Phone Number Verification

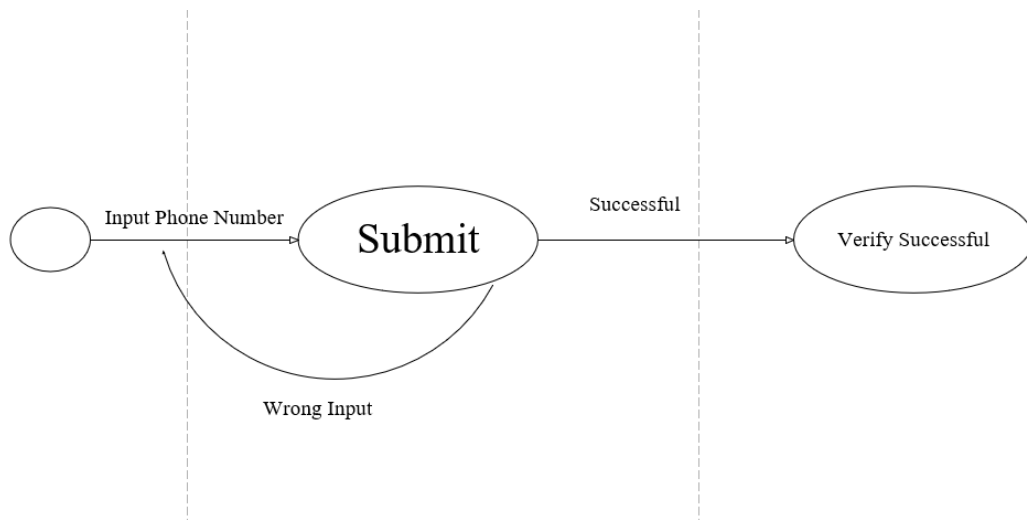


Figure 25: State Transaction of Verify Phone Number

Test Case ID: TC_1	Test Design by: A.H.M. Mahamudul Haque Medul
Test Priority: High	Test Design Date: 20.11.2018
Module Name: Phone Number Verification	Test Execute by: Sazzad Hossain Fahad
Description: This section covers phone number authentication & access to login	Test Execute Date: 21.11.2018

Table 21: Test Case Phone Number Verification

Precondition: User has input phone number

Dependencies: Enter input required information

Step	Test cases	Test data	Expected result	P/f	Actual result
01	Enter Phone Number	0 1 9	Display You have successfully Login	Fail	Display You have successfully Login
02	Enter Valid Bangladeshi Phone Number	01754093050	Don't take non-numerical values	Pass	Login Successful
03	Wait for Verification Code	123456	Display to process to login to the system	Pass	Login Successful

5.4.2. Test Case Module-2: Login

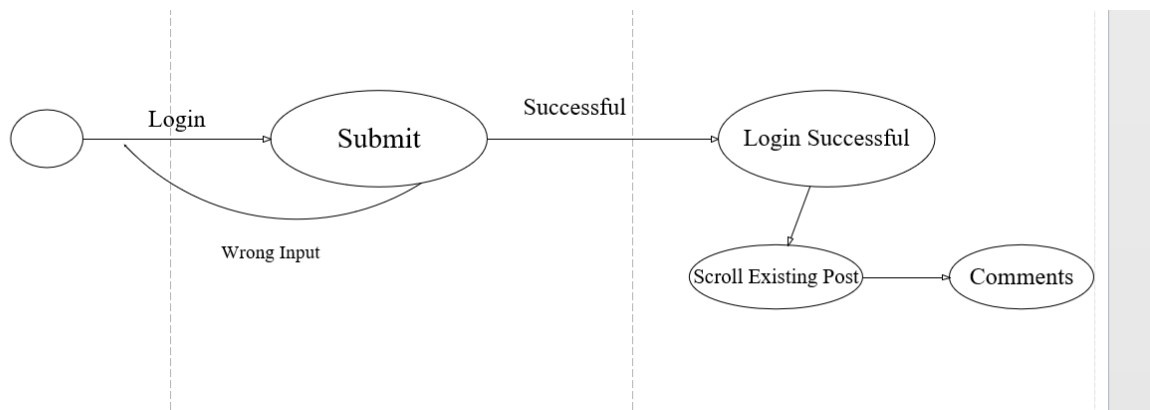


Figure 26: State Transaction of Login

Test Case ID: TC_2	Test Design by: Sazzad Hossain Fahad
Test Priority: High	Test Design Date: 22.11.2018
Module Name: Login	Test Execute by: A.H.M. Mahamudul Haque Medul
Description: After verifying phone number user login to the system & access	Test Execute Date: 22.11.2018

Table 22: Test Case Login

Precondition: After verifying phone number then login

Dependencies: Enter input required information

Step	Test cases	Test data	Expected result	P/f	Actual result
01	After phone verification	Verify	Display You have successfully Login	Pass	Display You have successfully Login
02	User can see browse existing post	Stored Post	User can scroll post	Pass	User can scroll post
03	Comments	One comment on One Post at a time	Display comments under on that specifies post	Pass	Comment Successful

5.4.3. Test Case Module-3: Registration

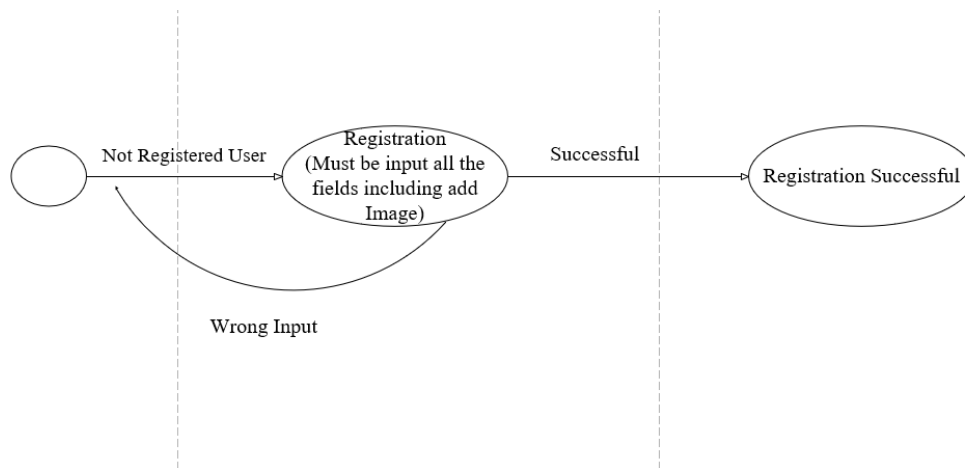


Figure 27: State Transaction of Registration

Test Case ID: TC_3	Test Design by: A.H.M. Mahamudul Haque Medul
Test Priority: High	Test Design Date: 22.11.2018
Module Name: Registration	Test Execute by: Sazzad Hossain Fahad
Description: Must be Input all the fields , also add images	Test Execute Date: 22.11.2018

Table 23: Test Case Registration

Precondition: Must be input all the fields including add images

Dependencies: Enter input required information

Step	Test cases	Test data	Expected result	P/f	Actual result
01	Add Profile Image & other fields	Fill input fields	Add	Pass	Add
02	Press submit button	Stored in database	Successfully Added	Pass	Successfully Added
03	Update Profile	User can update his/her profile	Profile Updated	Pass	Profile Updated

5.4.4. Test Case Module-4: Make New Post

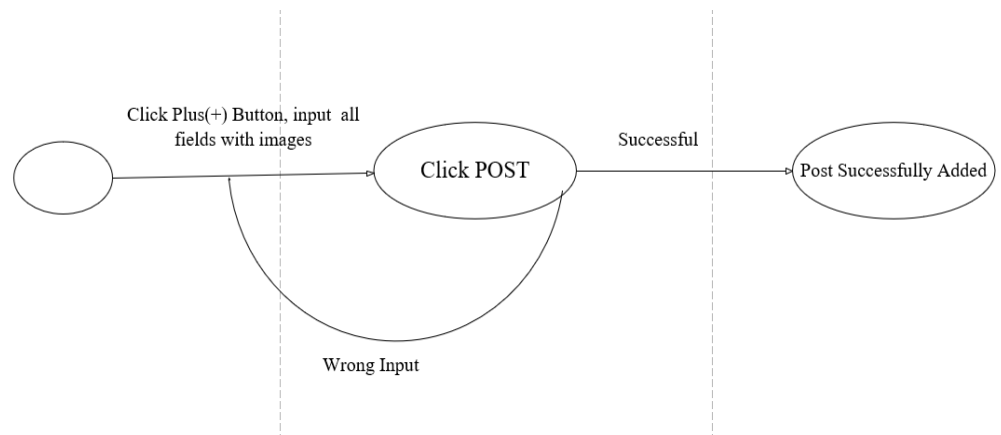


Figure 28: State Transaction of Make New Post

Test Case ID: TC_4	Test Design by: Sazzad Hossain Fahad
Test Priority: High	Test Design Date: 22.11.2018
Module Name: Make New Post	Test Execute by: A.H.M. Mahamudul Haque Medul
Description: Must be Input all the fields , also add images	Test Execute Date: 22.11.2018

Table 24: Test Case Make New Post

Precondition: Must be input all the fields including add images

Dependencies: Enter input required information

Step	Test cases	Test data	Expected result	P/f	Actual result
01	Add Profile Image & other fields	Fill Input Fields	Add	Pass	Add
02	Press Post Button	Stored in database	Successfully Added	Pass	Successfully Added

5.5. Testing Deliverables

5.5.1. Project Status Report

Feature	Test Case	Pass	Fail
Phone Number Authentication	03	03	01
Login	03	03	00
Registration	03	03	00
Make New Post	02	02	00
Images Size	02	02	00

Table 25: Project Status Report

Chapter 6

User Manual

6.1 Phone Number Authentication

In phone number authentication part, user must have enter phone number to verify. After enter phone number & click submit, user have to wait for verification code.

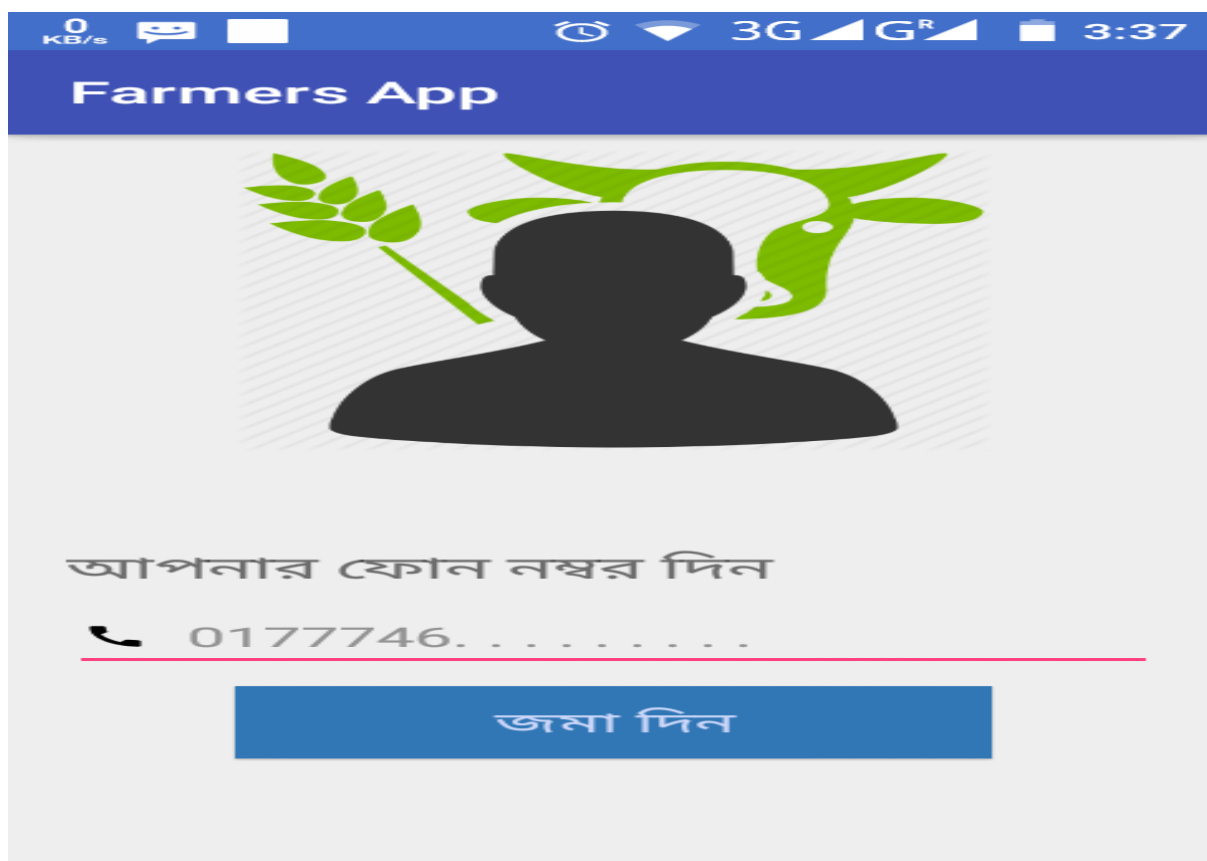


Figure 29: Phone Number Authentication

6.2 Verification Code

After submit phone number, user get verification code & can see all existing posts.

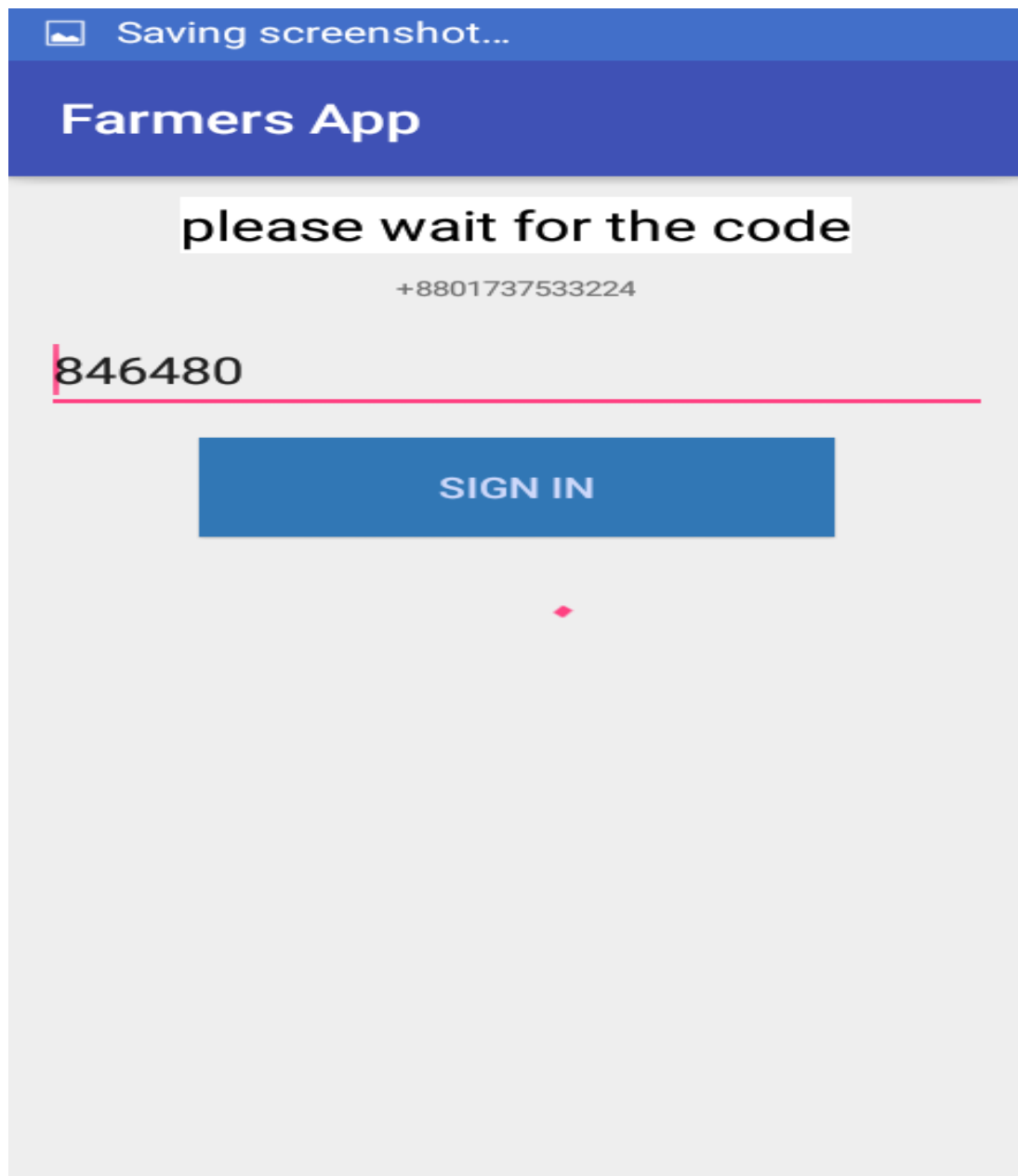


Figure 30: Verification Code

6.3 Browse Existing Post

In this part, verified user can see all existing post, comment on post & other operations.

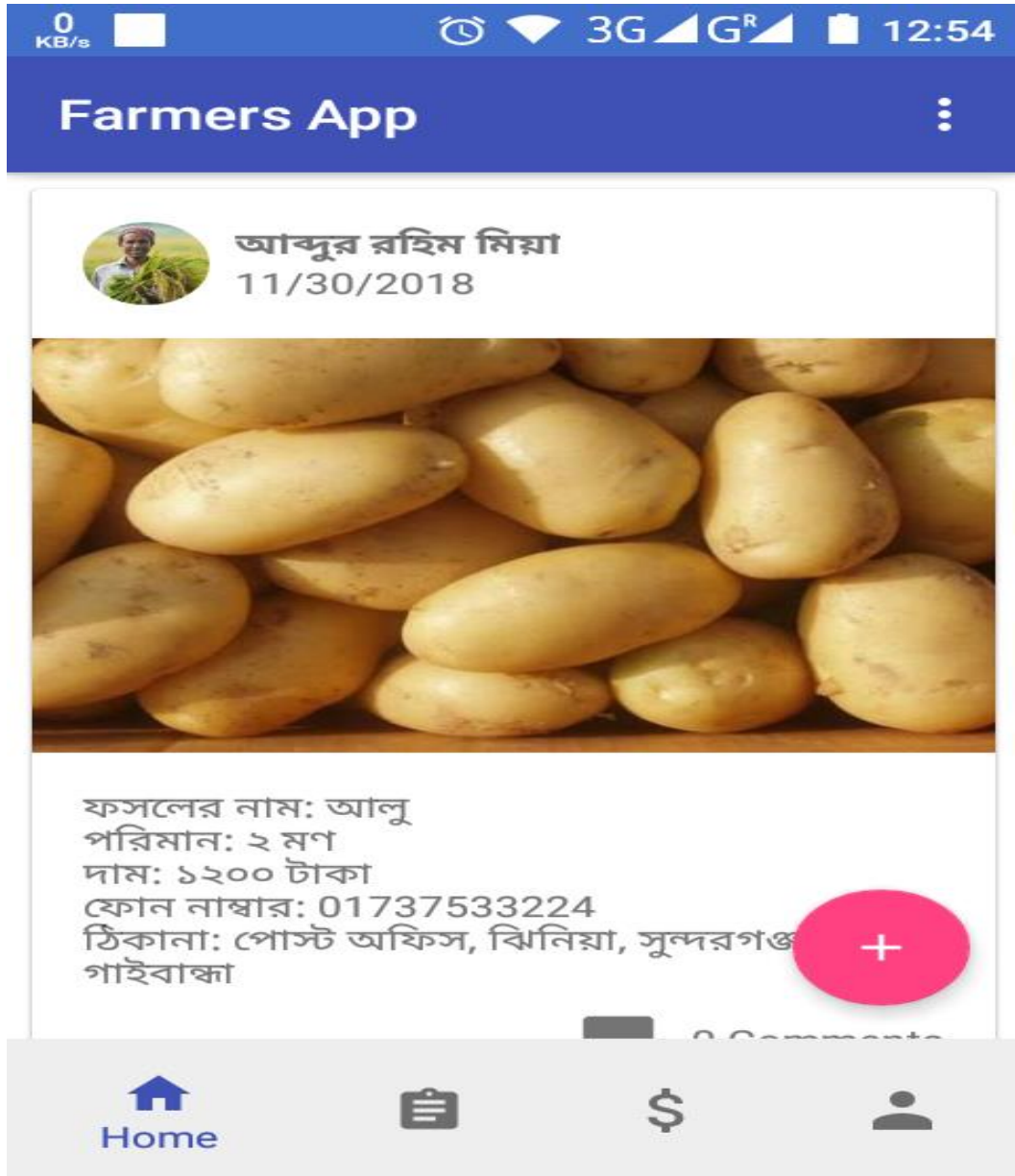


Figure 31: Browse Existing Post

6.4 Make New Post

In make new post part, user have to click plus (+) button, fill up all input fields then click to submit for post.



0 KB/s

3G GR

3:40

+

ফসলের নাম

পরিমাণ

দাম

ফোন নাম্বার

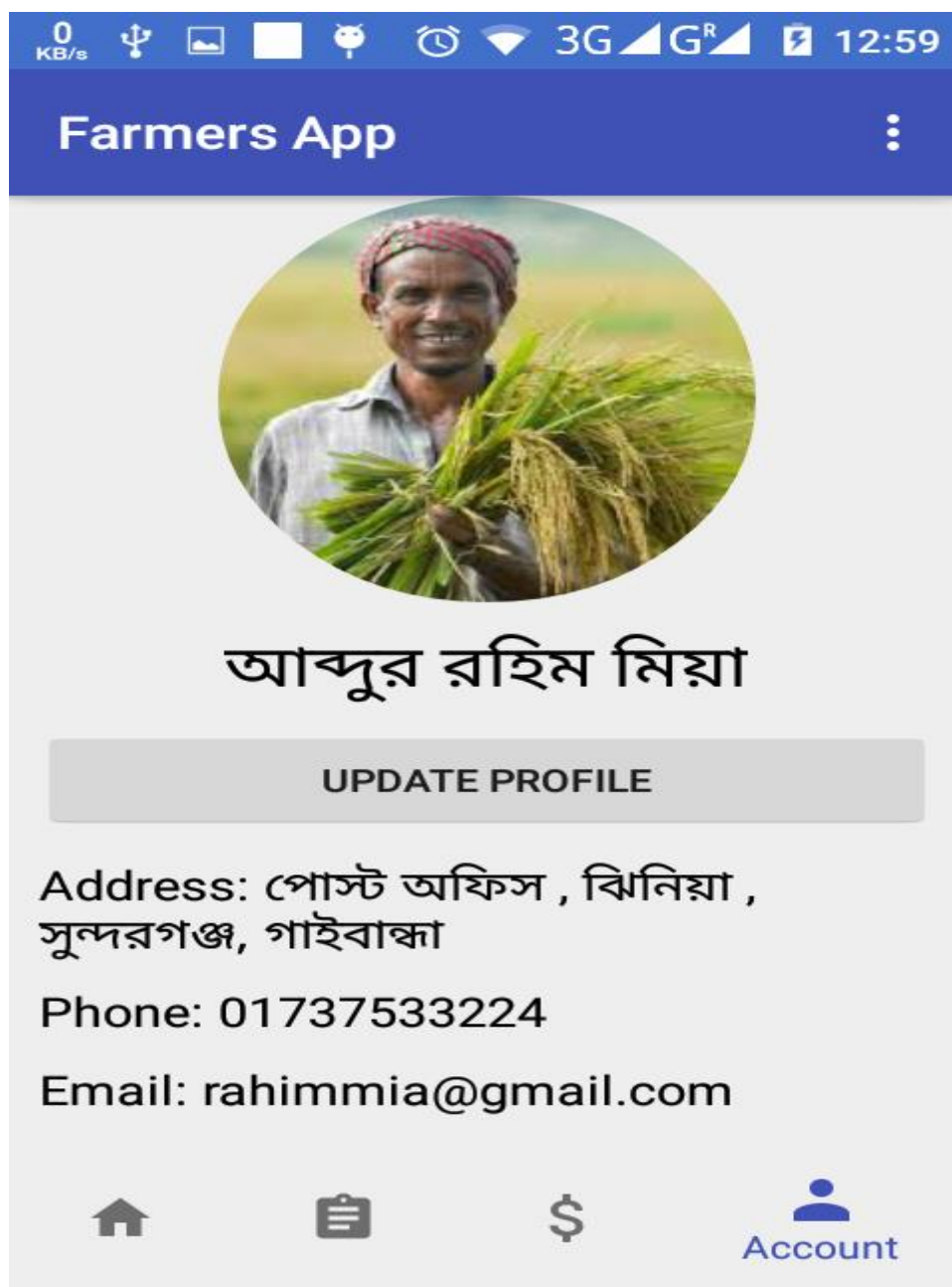
ঠিকানা

পোস্ট করুন

Figure 32: Make New Post


6.5 Account + Update Profile

After verify phone number, a user can update his account. When a user enter phone number for accessing the system, the user have to update profile. For updating profile user have to fill up all the input fields including add profile image.



0 KB/s 3G 3:40

Farmers App



নাম

ফোন নম্বর

ঠিকানা

রাস্তার ঠিকানা

শহর

জেলা

Saving screenshot...

Farmers App

ফোন নম্বর

ঠিকানা

রাস্তার ঠিকানা

শহর

জেলা

কি ধরনের ব্যাপারী

ইমেল দাও

কৃষক

SUBMIT

Figure 33: Account + Update Profile

6.6 Information Details

In this part user can see farmer & dealer information. Can also search.

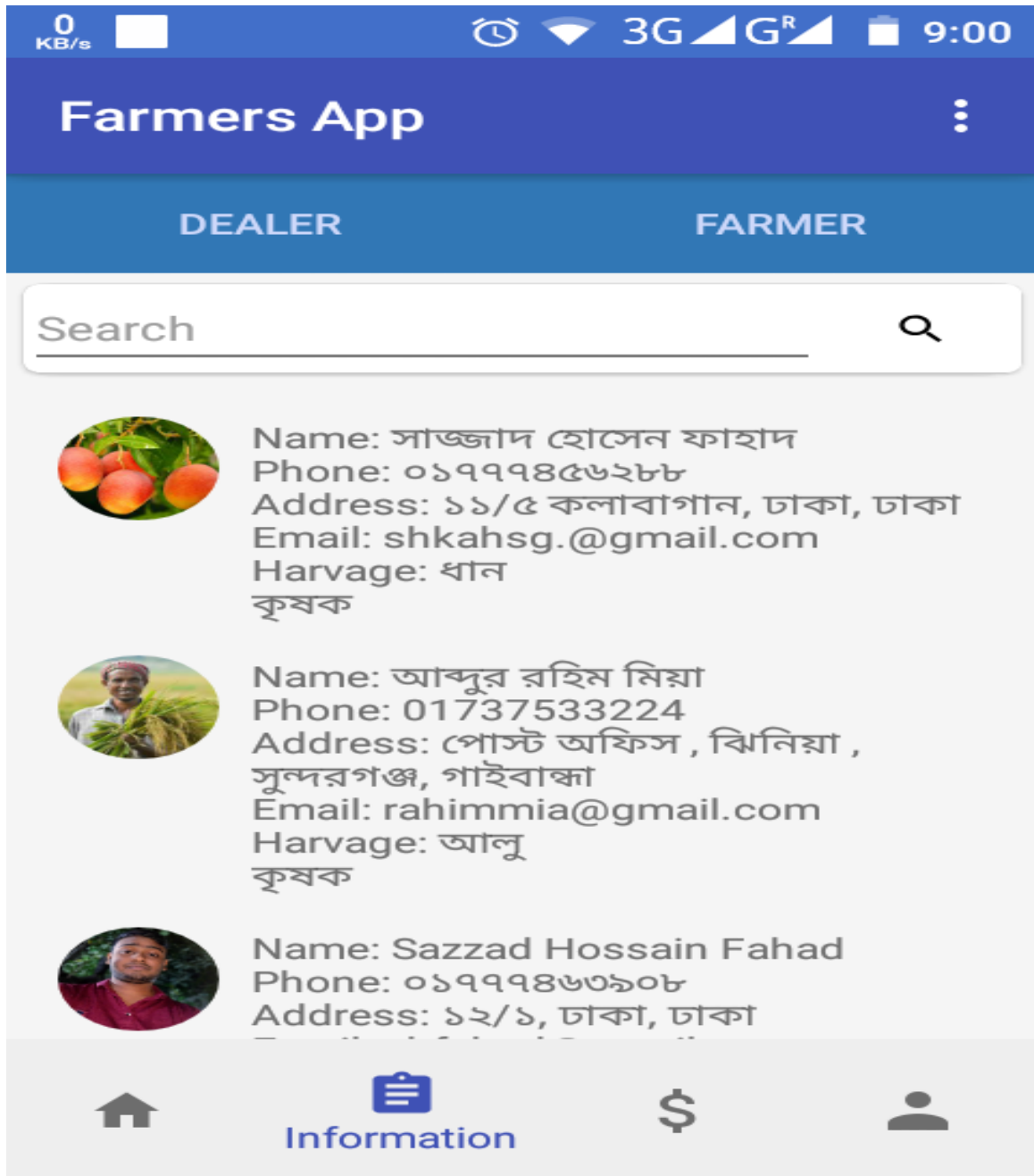



Figure 34: Information Details

6.7 Current Market Price

User can know about current market price from this market price table. It will be helpful for user.



The screenshot shows the 'Farmers App' interface. At the top, there is a status bar with '0 KB/s', signal strength, 3G, and the time '9:01'. Below the status bar is a blue header with the text 'Farmers App' and a three-dot menu icon. The main content is a table with five columns: 'পণ্য' (Product), 'পরিমাণ' (Quantity), 'মূল্য' (Price), 'জায়গা' (Location), and 'তারিখ' (Date). The table contains four rows of data. At the bottom, there is a navigation bar with four icons: a house, a clipboard, a dollar sign with the text 'Current Price', and a person icon.

পণ্য	পরিমাণ	মূল্য	জায়গা	তারিখ
ধান	মন	৬০০	রাজশাহী	20-11-2018
গম	মন	৫০০	বরিশাল	30-11-2018
ভুট্টা	মন	৪০০	রংপুর	30-11-2018
পাঠ	মন	৮০০	ঢাকা	20-11-2018

Figure 35: Current Market Price

6.8 Cultivation Process

In Cultivation Process part, Farmers can get knowledge about crops name, season, which place is best for cultivation & process of cultivation.

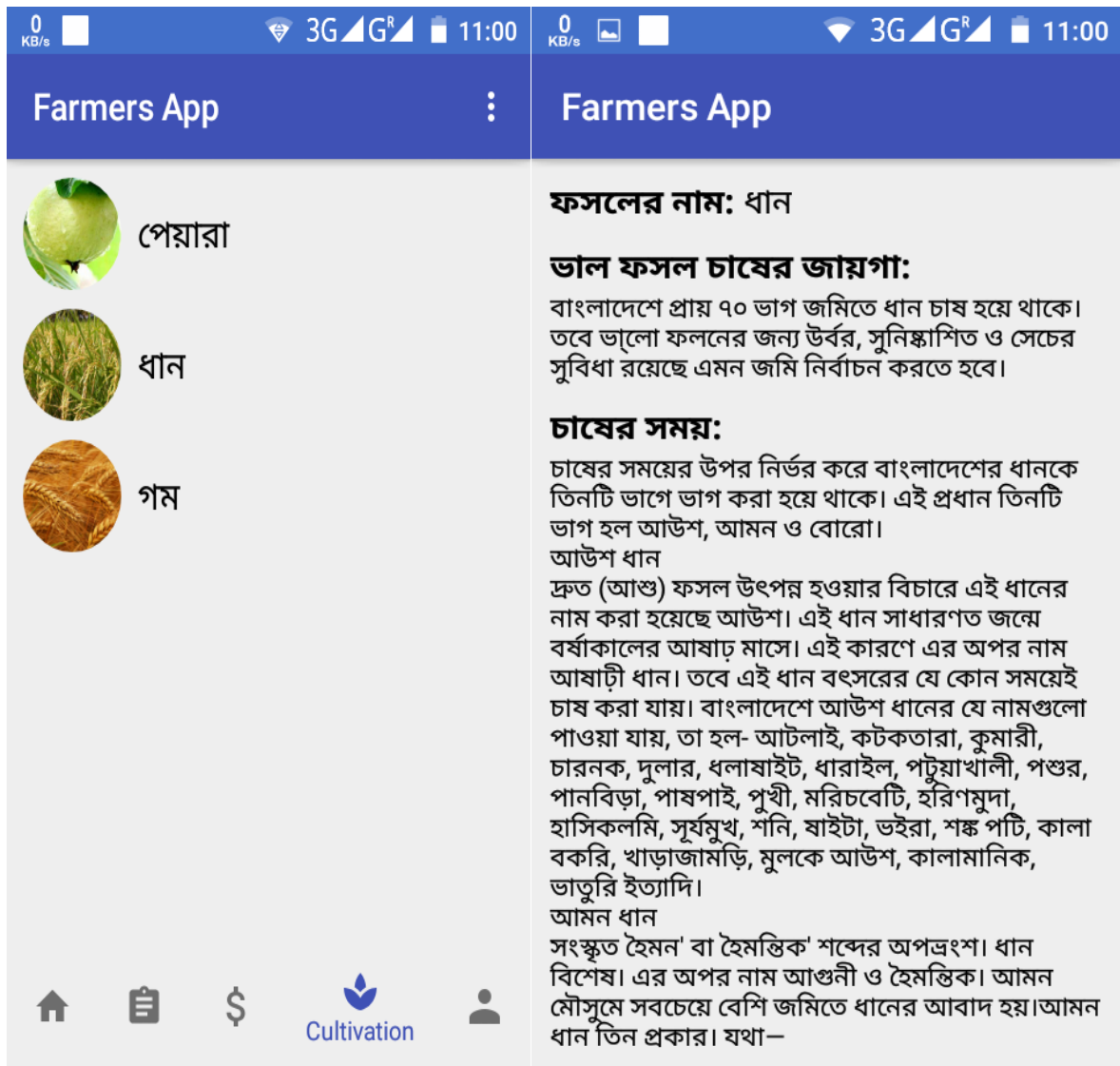


Figure 36: Cultivation Process

Chapter 7

Conclusion

7.1 Project Summary

This project has been started from July. From that beginning time we have to work hard to know the clients requirement clearly. After that we proposed a design to them by help of our supervisor. They appreciated and said to start developing the project. Then we started to develop the project.

7.2 Limitations

It is very hard to develop something without any limitations. This project has some limitations. Limitation are as follows:-

- Not fully responsive
- Not highly secure
- User's password are not encrypted

7.3 Obstacles and Achievements

To walk in the good way one's have to face many obstacles. By facing obstacles one will get some achievements. To store the data with financial year wise and to get the data in a correct format was an obstacle for me. Although I have done it by taking help from my supervisor, friends and by searching the solution from google. Some obstacles and achievement are as follow:

- **Scope Change:** Sometimes we were asked to add some features. Then we had to redesign the system. It made us sometimes hopeless.

- **Resource Deprivation:** In some cases I did not get proper resource to handle that situation.
- **Lack of Stakeholder's Engagement:** This project's stakeholders are Bangladesh Farmers & Dealers. They are not so much educated that's why sometimes we need to talk with for some issue but I did not get them in proper time.

7.4 Future Scopes

By working with this project, we have learnt many things and meet with some great person. This project will give us some opportunity to work with this type of similar project.

References

To complete this application, we have taken help from many places. Some references are given below:-

- [1] Wadud.M,"When bumper yields don't bring happiness to farmers" March, 2018.
<http://en.prothomalo.com/economy/news/172491/When-bumper-yields-don%E2%80%99t-bring-happiness-to> [Accessed on November 29, 2018]
- [2] <https://krishokerbazar.blogspot.com/2013/11/farmers-problem-in-bangladesh-is-social.html>
- [3] Software Engineering – R.S. Pressman
- [4] DFD Level -1 User: [30-11-18]
<https://www.lucidchart.com/documents/edit/bdfad994-0542-4c81-8d77-e7b0d1c03411/0>
- [5] DFD Level -1 Admin: [28-11-18]
<https://www.lucidchart.com/documents/edit/0aac7559-8436-42d3-8f10-5365ebf82253/0>
- [6] For Diagrams – Microsoft Visio Professional 2016
- [7] Get concept logic & example of code
<https://stackoverflow.com/>
- [8] Get android conception & code example
<https://developer.android.com/>
- [9] Firebase database server
<https://firebase.google.com/?>
- [10] Project Github Link
<https://github.com/sazzad765/farmersApp?fbclid=IwAR1VODjhcmgQlaguvckJub6tFFBPQ7sHXNJ66hYDvPlg5PmG1B0gbwO9dyg>