

# **Agri Point**

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**DEPARTMENT OF COMPUTER SCIENCES  
COMSATS UNIVERSITY ISLAMABAD,  
ATTOCK CAMPUS – PAKISTAN**

**SESSION 2017-2021**

# **Agri Point**

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A DISSERTATION SUBMITTED AS A PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER  
SCIENCE

**DEPARTMENT OF COMPUTER SCIENCES  
COMSATS UNIVERSITY ISLAMABAD,  
ATTOCK CAMPUS – PAKISTAN**

**SESSION 2017-2021**

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# **CERTIFICATE OF APPROVAL:**

It is to certify that the final year project of BS (CS) “**Agri Point**” was developed by **Mohammad Anas Khan(CIIT/FA17-BCS-003/ATK)** and **Saifur Rehman (CIIT/FA17-BCS-007/ATK)** under the supervision of “**Miss Tahira Sadaf**” and that in his opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Computer Sciences.

*Committee:*

1. External Examiner \_\_\_\_\_
2. Supervisor \_\_\_\_\_
3. Chairperson \_\_\_\_\_
4. Dean/Director \_\_\_\_\_

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All praise is to Almighty Allah who bestowed upon us a minute portion of His boundless knowledge by virtue of which we were able to accomplish this challenging task.

We are greatly indebted to our project supervisor “Miss Tahira Sadaf”. Without his supervision, advice, and valuable guidance, completion of this project would have been doubtful. We are deeply indebted to them for their encouragement and continual help during this work.

And we are also thankful to our parents and family who have been a constant source of encouragement for us and brought us the values of honesty & hard work.

Mohammad Anas Khan

Saif ur Rehman

# **PROJECT BRIEF**

**PROJECT NAME** Agri Point

**ORGANIZATION NAME** CUI Attock

## **OBJECTIVE**

**UNDERTAKEN BY** Mohammad Anas Khan  
Saif Ur Rehman

**SUPERVISED BY** Miss Tahira Sadaf

**STARTED ON** 2020

**COMPLETED ON** 2021

**COMPUTER USED** Laptop

**SOURCE LANGUAGE** PHP, Java Script, Python

**OPERATING SYSTEM** Window

**TOOLS USED** Sublime, VS

## **Abstract**

Being an agricultural country Pakistan has so many opportunities for farmers but along with these opportunities there is a series of problems that needs to be targeted. Farmers are unaware of lots of agricultural information which is major reason for many problems. After seeing these problems we have made a website/platform which will help farmers with various information about agriculture. In this website users will get almost every type of information about agriculture. User can sale or buy crops, agriculture equipment etc. Fertilizer calculator and crop suggestion based on weather and season will be available on website to help farmers to increase their productivity. In this website farmers will get information about new crops and the innovative ideas related to crops, new disease, new scheme etc.

## **Table of Contents**

Chapter 1 .....	1
Introduction .....	1
1.1 Project Background and Introduction: .....	2
1.2 Relevance to course modules:.....	2
1.2.1 Web Technology:.....	2
1.2.2 Machine Learning: .....	2
1.2.3 Report Writing Skills: .....	2
1.2.4 Human-Computer Interaction: .....	3
1.3 Methodology and Software Lifecycle:.....	3
1.3.1 The rationale behind the selected methodology:.....	4
CHAPTER 2 .....	5
Problem Statement.....	5
2.1 Problem statement:.....	6
2.2 Deliverables and Development Requirements:.....	6
2.3 Literature Review.....	6
2.3.1 Existing Apps:.....	7
2.3.1.1 Bakhabar Kissan .....	7
2.3.2 Analysis from Literature Review .....	10
CHAPTER 3 .....	11
REQUIREMENT ANALYSIS.....	11
3.1 Requirement Analysis:.....	12
3.2 Use case Diagram(s): .....	12
3.2.1 Detailed Use Case .....	14
3.3 Functional Requirements: .....	16
3.4 Non-Functional Requirements: .....	18
3.4.1 Performance: .....	18
3.4.2 Portability:.....	18
3.4.3 Usability:.....	18

3.4.4 Compatibility: .....	18
3.4.5 Maintainability:.....	18
Chapter 4 .....	19
System Architecture .....	19
4.1 System Architecture:.....	20
4.1.1 Description:.....	20
4.2 Data Representation: .....	21
4.2.1 Level Zero Diagram.....	21
4.2.2 Level One Diagram:.....	22
4.3 Process Flow Representation: .....	23
4.4 Activity Diagram: .....	24
4.5 Sequence Diagram: .....	26
4.6 Data Representation .....	28
4.7 Class Diagram.....	29
Chapter 5 .....	30
Implementation .....	30
5-Implementation .....	31
5.1-ExternalAPIs.....	31
5.2- User Interface .....	31
5.2.1- Web portals interfaces .....	31
Chapter 6 .....	52
Testing and Evaluation.....	52
6.1- Manual Testing .....	53
6.1.1- Unit Testing .....	53
6.1.2- Functional Testing .....	55
6.1.3- Integration Testing.....	57
Chapter 7 .....	59
Conclusion and Future Work .....	59
7.1 Conclusion .....	60
7.2 Future Work .....	61
Chapter 7 .....	62

References .....	62
References.....	63

# List of Figure

FIGURE 1 ITERATIVE MODEL.....	3
FIGURE 2	
FIGURE 3 .....	7
FIGURE 4 .....	8
FIGURE 5 .....	9
FIGURE 6 USE CASE OF ADMIN	
FIGURE 7 USE CASE OF USER .....	13
FIGURE 8 SDD.....	20
FIGURE 9 LEVEL ZERO DIAGRAM.....	21
<b>4.2.2 LEVEL ONE DIAGRAM:</b> FIGURE 10 USER LEVEL 1.....	22
FIGURE 11 ADMIN LEVEL 1.....	22
FIGURE 12 FLOW DIAGRAM.....	23
FIGURE 13 ADMIN ACTIVITY DIAGRAM.....	24
FIGURE 14 USER ACTIVITY DIAGRAM .....	25
FIGURE 15 USER SEQUENCE DIAGRAM.....	26
FIGURE 16 ADMIN SEQUENCE DIAGRAM.....	27
FIGURE 17 ERD.....	28
FIGURE 18 CLASS DIAGRAM.....	29
FIGURE 19 INDEX INTERFACE.....	32
FIGURE 20 ADD PRODUCT INFORMATION FORM	
FIGURE 21 PRODUCT INFORMATION INTERFACE .....	32
FIGURE 22 FEEDBACK INTERFACE	
FIGURE 23 SHOP INTERFACE.....	33
FIGURE 24 LABORER INTERFACE	
FIGURE 25 FARMER INTERFACE.....	34
FIGURE 26 LOGIN FORM.....	35
FIGURE 27 SIGNUP FORM .....	36
FIGURE 28 INDEX INTERFACE (A)	
FIGURE 29 INDEX INTERFACE (B) .....	36
FIGURE 30 INDEX INTERFACE (C)	
FIGURE 31 INDEX INTERFACE (D).....	37
FIGURE 32 INDEX INTERFACE (E)	
FIGURE 33 CROP SUGGESTION FORM.....	38
FIGURE 34 PRODUCT INTERFACE.....	39
FIGURE 35 LABORER EXPERIENCE FORM.....	40
FIGURE 36 FARMER EXPERIENCE FORM.....	40
FIGURE 37 FERTILIZER CALCULATOR (A) .....	41
FIGURE 38 FERTILIZER CALCULATOR (B) .....	41
FIGURE 39 FERTILIZER CALCULATOR (C) .....	42
FIGURE 40 SALE PRODUCT FORM .....	42
FIGURE 41 USER DATA INTERFACE (A).....	43
FIGURE 42 USER DATA INTERFACE (B).....	43
FIGURE 43 TRANSACTION INTERFACE .....	44
FIGURE 44 LABORER INTERFACE (A) .....	44
FIGURE 45 LABORER INTERFACE (B) .....	45
FIGURE 46 FARMER INTERFACE (A)	
FIGURE 47 FARMER INTERFACE (B) .....	45
FIGURE 48 MESSAGE INTERFACE (A) .....	46
FIGURE 49 MESSAGE INTERFACE (B) .....	47
FIGURE 50 SHOP INTERFACE (A) .....	47
FIGURE 51 SHOP INTERFACE (B) .....	48
FIGURE 52 CART INTERFACE (A) .....	48
FIGURE 53 CART INTERFACE (B).....	49
FIGURE 54 CONTACT US INTERFACE.....	49
FIGURE 55 ABOUT US INTERFACE (A).....	50
FIGURE 56 ABOUT US INTERFACE (B).....	50
FIGURE 57 ABOUT US INTERFACE (C).....	51

## List of Tables

TABLE 1 COMPARISON BETWEEN PROPOSED SYSTEM AND EXISTING SYSTEM .....	10
TABLE 2 – USE CASE DIAGRAM ELEMENTS .....	12
TABLE 3 SHOW THE DETAIL USE CASE FOR REGISTRATION.....	14
TABLE 4 SHOW THE DETAIL USE CASE FOR REGISTRATION.....	14
TABLE 5 SHOW THE DETAIL USE CASE FOR VIEW PRODUCT .....	14
TABLE 6 SHOW THE DETAIL USE CASE FOR SALE PRODUCT .....	14
TABLE 7 SHOW THE DETAIL USE CASE FOR BUY PRODUCT .....	15
TABLE 8 SHOW THE DETAIL USE CASE FOR CALCULATOR.....	15
TABLE 9 SHOW THE DETAIL USE CASE FOR CROP SUGGESTION.....	15
TABLE 10 SHOW THE DETAIL USE CASE FOR FARMER EXPERIENCE.....	15
TABLE 11 SHOW THE DETAIL USE CASE FOR LABORER EXPERIENCE .....	15
TABLE 12 SHOW THE DETAIL USE CASE FOR ADD PRODUCT .....	16
TABLE 13 FR BUY AND SALE .....	16
TABLE 14 FR PRODUCT INFORMATION .....	16
TABLE 15 FR CROP SUGGESTION .....	17
TABLE 16 FR CROP SUGGESTION .....	17
TABLE 17 FR CROP SUGGESTION .....	17
TABLE 18 ACTIVITY DIAGRAM SYMBOLS .....	24
TABLE 19- DETAILS OF APIs USED IN THE PROJECT .....	31
TABLE 20 .....	53
TABLE 21 .....	55
TABLE 22 .....	55
TABLE 23 .....	56
TABLE 24 .....	56
TABLE 25 .....	57

# Chapter 1

## Introduction

## **1.1 Project Background and Introduction:**

Agriculture is said to be the backbone of an agrarian state. In past agriculture contributed more than 50% share in the GDP of Pakistan but now it is contributing less than 20%. Almost 45% of population is directly involved in agriculture while other 30 % is involved indirectly i.e. People working in Agri credit financer/banks, pesticide and fertilizer companies etc. This is quite alarming that 75% of the population is contributing less than 20% in the GDP. There are various reasons which are responsible for bad performance of the agricultural sector which includes lack of awareness of modern technology and procedures, inability to find buyer of their produce, lack of information about different national and international development schemes. Keeping in view the problems faced by farmers, we have developed a website which had brought solutions to these problems on one platform and will ultimately give an opportunity to the farmers and open up before them a new horizon leading them to the brighter future ahead. It will surely help the farmers to improve their productivity. It also helps the farmers to buy and sale the certified seeds and fertilizers etc. On this website farmers can get information about which crop to be grown for particular climate which will surely increase the crop productivity. Farmers can hire the laborers and get information about different products. In addition, farmers can calculate the amount of fertilizer for land.

## **1.2 Relevance to course modules:**

**1.2.1 Web Technology:** In this course, we have studied web development using a web browser and this will help us in developing the interface of our website.

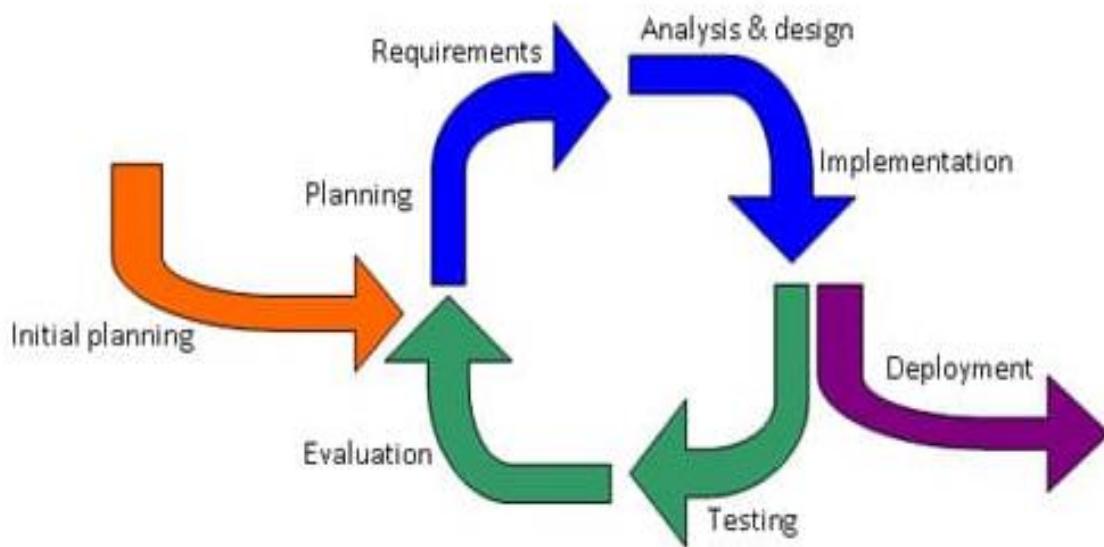
**1.2.2 Machine Learning:** In this course, we have studied different algorithms which are used to train models to perform task automatically after getting the training data.

**1.2.3 Report Writing Skills:** This course is about learning how to write reports and other formal documentation and in our project we need to write our documentation so this course is helping a lot in this task.

**1.2.4 Human-Computer Interaction:** An interactive system is easy and comfortable for the user to use the system and understand it easily and this course is all about designing an interacting system following standard rules.

### 1.3 Methodology and Software Lifecycle:

We use the iterative approach to develop this application. The iterative method is a way to breakdown the development process into small patches so that instead of developing the whole Web at once (which is difficult to develop).



Model 1: Typical iterative development process

### iterative-model

Figure 1 Iterative Model

### **1.3.1 The rationale behind the selected methodology:**

The iterative process is the ways to breakdown the whole process to develop complete software in one go into smaller chunks. The reason behind this approach is that it is easily measurable and small chunks are easy to test and debug as compare to developing the whole software and then testing it, at this point debugging becomes difficult.

## CHAPTER 2

### Problem Statement

## **2.1 Problem statement:**

Digitalization is at the heart of every business activity co temporally but they continue to be a “missing middle” between agriculture and modern day Information technology and this gap is particularly pronounced in the Pakistan. Though few online as well as offline resources in this connection are present but they cannot serve the purpose fully.

## **2.2 Deliverables and Development Requirements:**

Following is the list of deliverables of our project:

- 1) Login Module
- 2) Buy and Sale
- 3) Crop Suggestion
- 4) Calculator
- 5) Farmer and laborer Experiences
- 6) Crops Information

Development requirements include the following Web requirements:

- IDE : Jupyter notebook , VS Code
- Database: MySQL
- Programming Languages: Javascript, Python, php
- Designing: HTML, CSS

## **2.3 Literature Review**

There have been hundreds of applications developed in which mostly involved in the Agriculture management system, smart agriculture prediction etc. There are many software's for management task or only for crops.

When we searched, we found different types of applications for Agriculture management system or only for Farmers guidance or for crops prediction but all are bound for perform specific task.

### 2.3.1 Existing Apps:

#### 2.3.1.1 Bakhabar Kissan:

Bakhabar Kissan is Pakistan's leading AgriTech. Farmers are at the core of our business. BKK takes a holistic approach to enable farmers make data driven decisions.

Features:

- Providing accurate local weather information to allow farmers to make well informed decisions
- Connecting farmers to agricultural experts to improve yield, quality and quantity wise
- Advisory on raising, breeding, and housing livestock using the best farm management practices
- Eliminating middlemen and connecting farmer directly to the consumers.



Figure 2

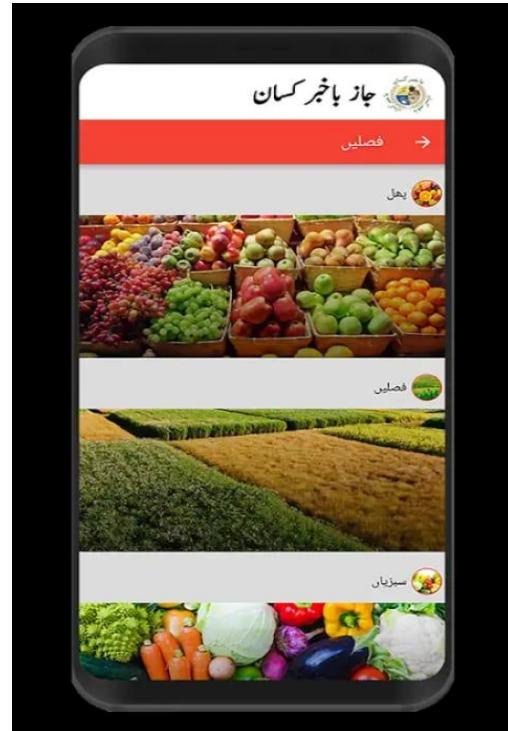


Figure 3

#### 2.3.1.2 Kissan Bazzar:

Kissan Bazaar is an online market place where a farmer can buy and sell agriculture items. The app includes separate sections for fruit, vegetable, poultry, and livestock. It provides an e-commerce facility to the farmer making it easy for the rural farmer to get access to the market directly through his smartphone.

#### Features:

- Farmer can buy and sell agriculture items.
- Includes separate sections for fruit, vegetable, poultry, and livestock.



Figure 4

### 2.3.1.3 Kisan Zar Zameen:

Kisan Zar Zameen is a health analysis app that provides multiple services to farmers which includes the use of multi-spectral imagery from satellites. Soil condition, crop health analysis, and weather updates all are provided through this app making it a one-stop digital solution for farmers. By using this app the user can detect crop stress at an early stage, benchmark crop performance, and monitor crop growth. They can also request drone spraying and mapping service which digitalizes the agriculture sector and helps the farmer to increase yield.



Figure 5

### 2.3.2 Analysis from Literature Review

Table 1Comparison between proposed system and existing system

Requirements	Proposed System	Bakhabar kisan	Kisan bazar	Kisan zar zameen
Crop Suggestion	✓	✗	✗	✗
Calculator	✓	✓	✗	✓
Buy and Sale	✓	✗	✓	✗
Conservation With Farmer	✓	✓	✗	✗
Heir Laborer	✓	✗	✗	✗
Market Price	✗	✓	✗	✓

# CHAPTER 3

# REQUIREMENT ANALYSIS

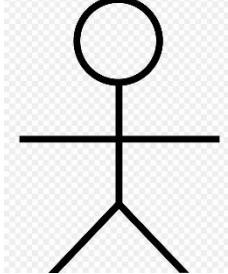
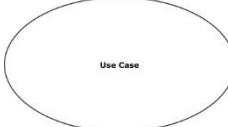
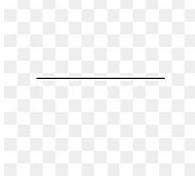
### 3.1 Requirement Analysis:

Software Requirement Analysis (SRS) is not an ordinary document because it provides a basic understanding of functional as well as non-functional requirements. We can consider it as the starting point of the project because it serves as a written contract between the client and organization about the features and the functionalities of the project. With the help of SRS, both clients and organizations make clear to each other about the deliverable project.

### 3.2 Use case Diagram(s):

The use case diagram is the visual representation of the user with the system. It is used to describe the use cases (set of different actions) that can be performed by the actors (external users) by using the system. With the help of the use case, you can visualize the behavior of the system when the user uses it.

Table 2–Use Case Diagram Elements.

No.	Elements Name	Symbols
1	Actor	
2	Use case	
3	Association	

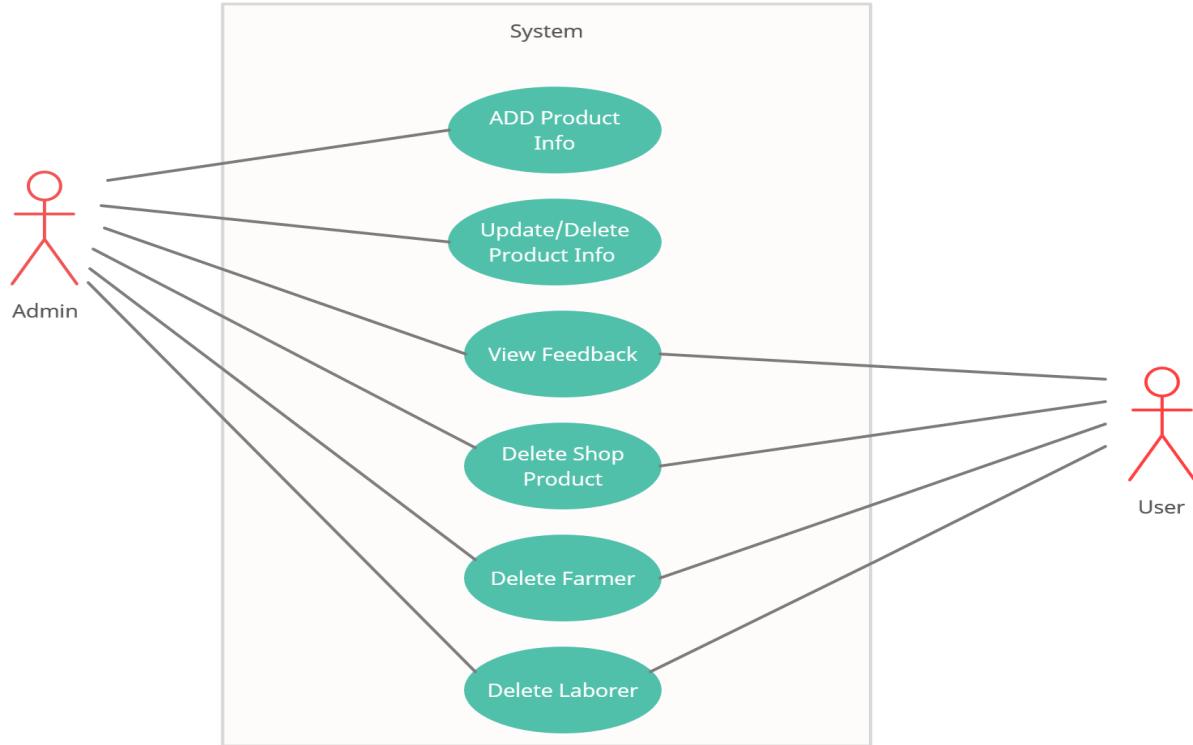


Figure 6 use case of admin



Figure 7 Use case of user

### 3.2.1 Detailed Use Case

Table 3 show the detail use case for registration

Use case Id	UC-1
Use case Name	Registration
Actor	User
Description	After providing personal information users will be able to maintain their records.
Pre-Condition	User must be using the Website for the first time because registration needs to be done the only first time.
Post Condition	The user should get different website functionality.

Table 4 show the detail use case for registration

Use case Id	UC-2
Use case Name	Login
Actor	User
Description	Users provide their login credentials to use this website so that he can maintain his record.
Pre-Condition	To log in to a system user must be registered and should be provided a way to log in.
Post Condition	After giving the login information (if correct) user wills website functionality.

Table 5 show the detail use case for View product

Use case Id	UC-3
Use case Name	View Product
Actor	User
Description	User will get different information about crop. How to cultivate the crop and how to increase the productivity of the crops and get information about new products and schemes
Pre-Condition	Users must use a device.
Post Condition	After this, the user gets important information about various crops.

Table 6 show the detail use case for Sale Product

Use case Id	UC-4
Use case Name	Sale Product
Actor	User

Description	User adds information about product and upload and this information will show in shop page where other user can view and buy.
Pre-Condition	Add information which user wants to sale.
Post Condition	Sale different crops.

Table 7 show the detail use case for Buy Product

Use case Id	UC-5
Use case Name	Buy Product
Actor	User
Description	User can buy product.
Pre-Condition	User open shop page to buy product.
Post Condition	Successfully buy product.

Table 8 show the detail use case for Calculator

Use case Id	UC-6
Use case Name	Calculator
Actor	User
Description	User give input to calculate doze of fertilizer.
Pre-Condition	User open fertilizer calculator modal and give inputs.
Post Condition	Get the fertilizer amount in kg.

Table 9 show the detail use case for Crop Suggestion

Use case Id	UC-7
Use case Name	Crop Suggestion
Actor	User
Description	User give different input to get crop suggestion.
Pre-Condition	User gives inputs to get crop suggestion.
Post Condition	Get suggestion about crop.

Table 10 show the detail use case for Farmer Experience

Use case Id	UC-8
Use case Name	Farmer Experience
Actor	User
Description	Farmer add their experience to help other farmer.
Pre-Condition	Add Information to insert experience
Post Condition	User can get information about crop from farmer

Table 11 show the detail use case for Laborer experience

Use case Id	UC-9
Use case Name	Laborer Experience
Actor	User
Description	Laborer add their experience to get job.
Pre-Condition	Add Information
Post Condition	User can hire laborer

Table 12 show the detail use case for Add Product

Use case Id	UC-10
Use case Name	Add product
Actor	Admin
Description	User will get different information about crop. How to cultivate the crop and how to increase the productivity of the crops and get information about new products and schemes
Pre-Condition	Admin insert information
Post Condition	User gets important information about various crops.

### 3.3 Functional Requirements:

Functional requirements are those functionalities that software must offer. It describes the basic behavior of the software/website. Functional requirements should include the details of functionality or operations provided by each screen. The complete workflow of the software should be made clear.

The following are the functional requirements of this project.

Table 13 FR Buy and Sale

Identifier	FR 1
Title	Buy and Sale
Requirement	If farmer want to sale any product i.e. agricultural produce etc., He can add information (name, quantity and price) about products. And user who wants to buy product can view it and if he like the product He can buy product from owner with the help of website communication feature.
Priority	High

Table 14 FR Product Information

Identifier	FR 2
Title	Product Information
Requirement	Users can get different information about agriculture like modern technologies, crop production technologies and other relevant information in different subsection. User will get national and international news and different development schemes sponsored by NGO'S AND INGO'S.
Priority	High

Table 15 FR Crop Suggestion

Identifier	FR 3
Title	Crop Suggestion
Requirement	User can get information about climate and also get information which crop to be grown for particular climate.
Priority	High

Table 16 FR Crop Suggestion

Identifier	FR 4
Title	Calculator
Requirement	User can calculate the doze of fertilizer for various soil types and crops. It can be calculated by giving type of soil, crop to be grown and previous crop grown on the area.
Priority	High

Table 17 FR Crop Suggestion

Identifier	FR 5
Title	Add Experience
Requirement	Labors can register themselves and farmers can hire labors according to their need. Farmers can share their views and their experience. They can interact with fellow farmers and agricultural expert there.
Priority	High

## **3.4 Non-Functional Requirements:**

Non-functional requirements show that how the system should perform certain functionality. Non-functional requirements generally deal with the quality of the software. Following are the non-functional requirements of this project:

### **3.4.1 Performance:**

Performance defines how efficient is the website. Our project will be good in a performance like it will provide different functionality in quick time.

### **3.4.2 Portability:**

Portability means when using application user is not restricted to use it by sitting on a fixed place or it does not need a different system to operate. It will be on internet which you always can access through mobile or pc if you have internet.

### **3.4.3 Usability:**

By usability of software, you mean that it should be easy to learn. The user should not feel any difficulty in using this system.

### **3.4.4 Compatibility:**

This application is compatible with the browsers. Users can use it like other website on browsers.

### **3.4.5 Maintainability:**

The requirement of maintainability is easily achieved in this website.

## Chapter 4

# System Architecture

## 4.1 System Architecture:

To explain the design and architecture of our project Agri Point, here we used Software Design Description (SDD) to precisely describe its architecture along with its design.

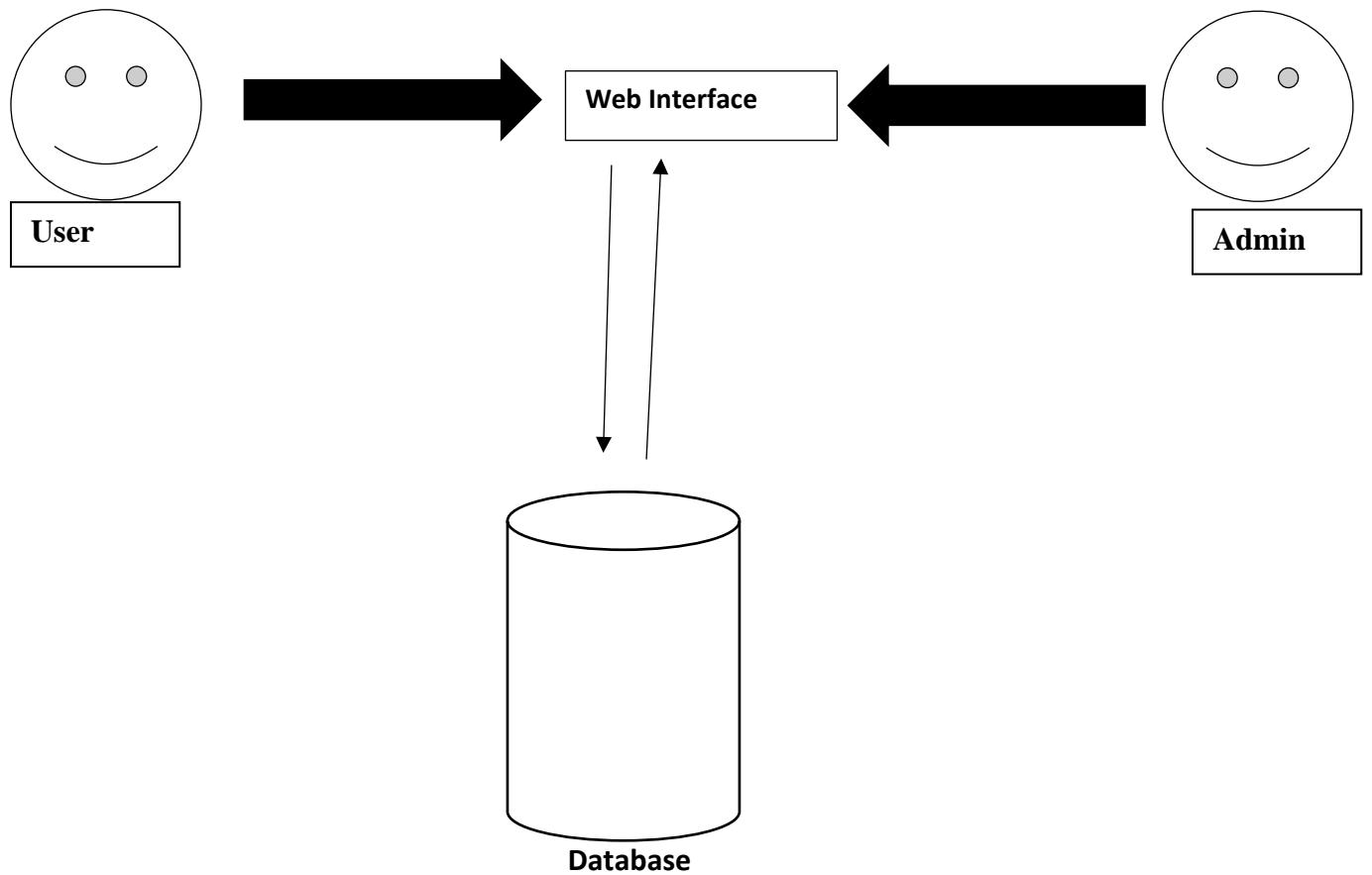


Figure 8 SDD

### 4.1.1 Description:

This diagram explains how the overall interaction between user, admin and website takes place. The user interacts using a Web interface which is used to control the whole process and background

processing. User gets different information about crops and can buy and sale products and get crop suggestion.

## 4.2 Data Representation:

### 4.2.1 Level Zero Diagram

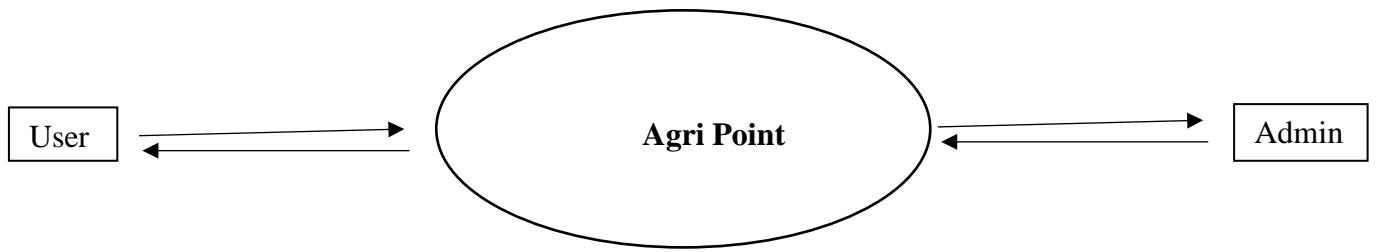


Figure 9 Level Zero Diagram

#### 4.2.1.1 Description:

Our system will respond to the requests of different modules which are:

- Login Module
- Buy and Sale
- Crop Suggestion
- Calculator
- Farmer and labor Experiences
- Crops Information

### 4.2.2 Level One Diagram:

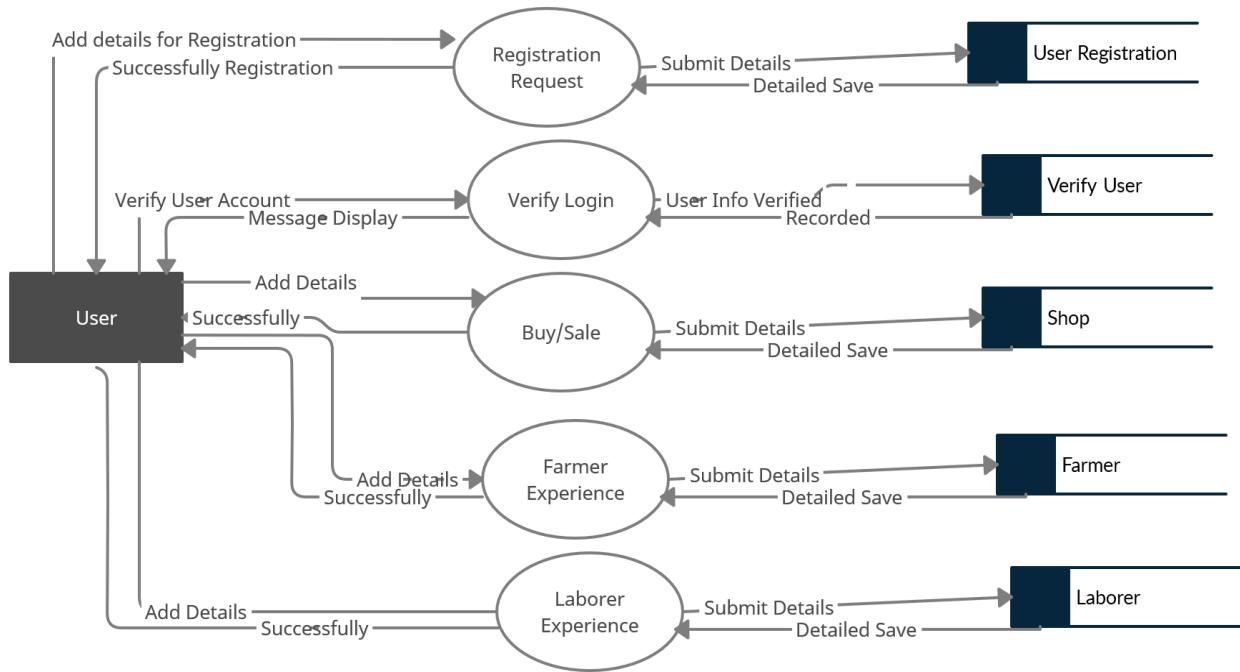


Figure 10 User Level 1

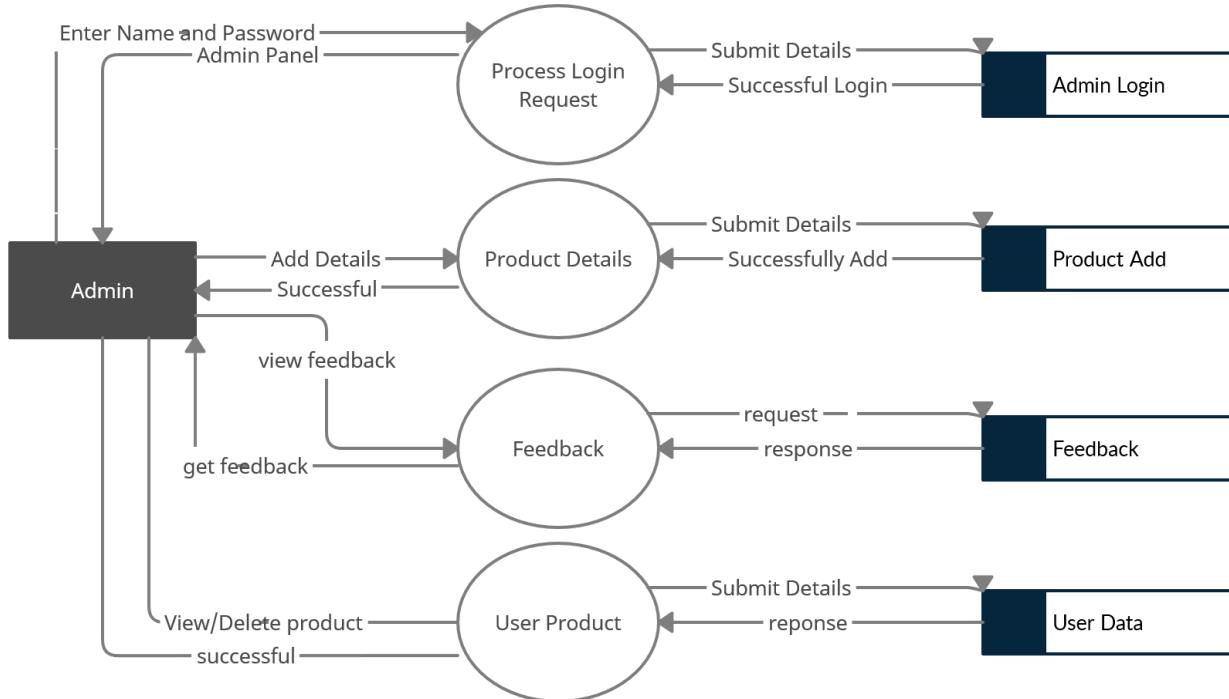


Figure 11 Admin level 1

### 4.3 Process Flow Representation:

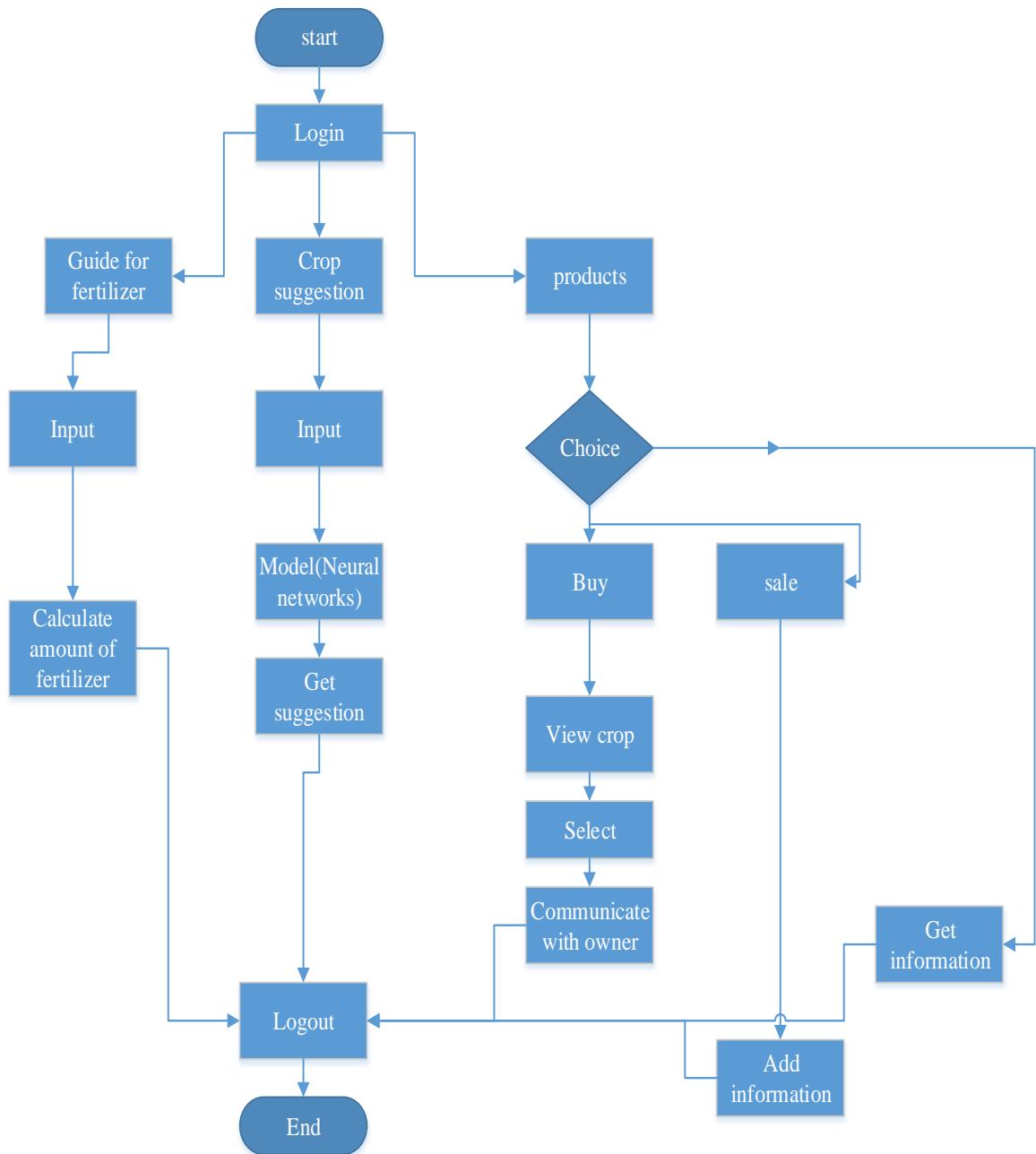


Figure 12 flow diagram

## 4.4 Activity Diagram:

Activity diagram is used for representing the process flow. In this diagram, we check the graphical representation of process flow. Activity diagram is an important diagram in UML which is used to describe the dynamic aspects of the system. Activity diagram is basically a flowchart to represent the flow from one activity to another activity.

Table 18 activity diagram symbols

Starting node	
Action State	
Decision	
Data Flow	
Final Node	

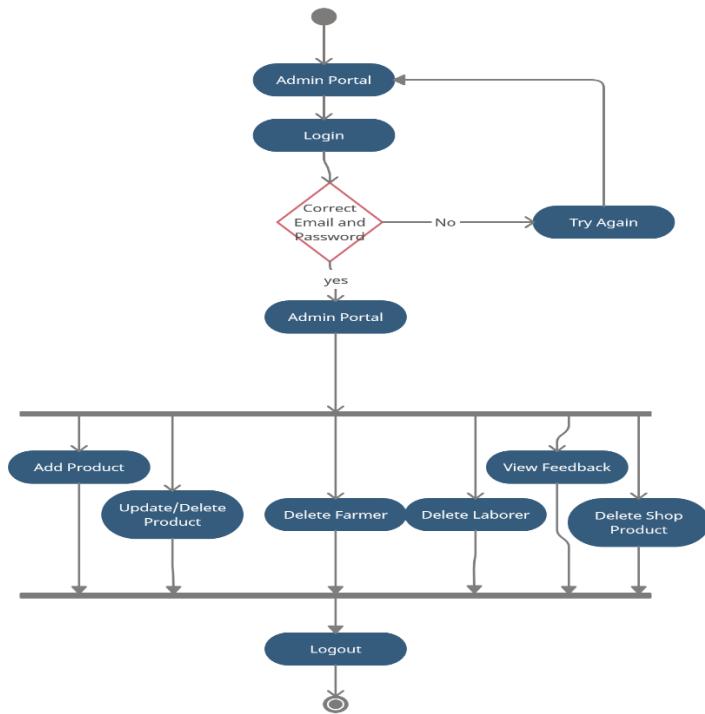


Figure 13 Admin activity diagram

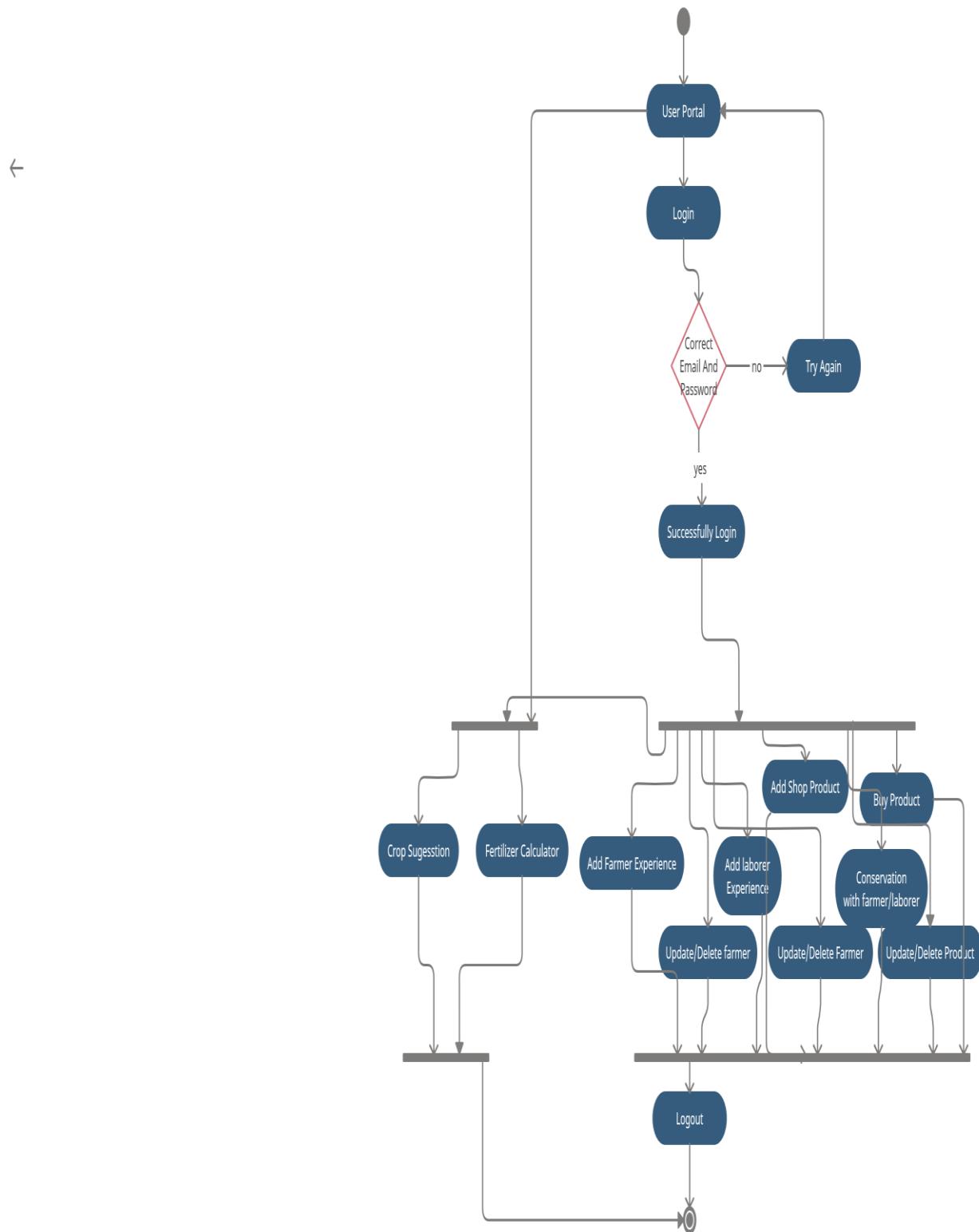


Figure 14 User activity Diagram

## 4.5 Sequence Diagram:

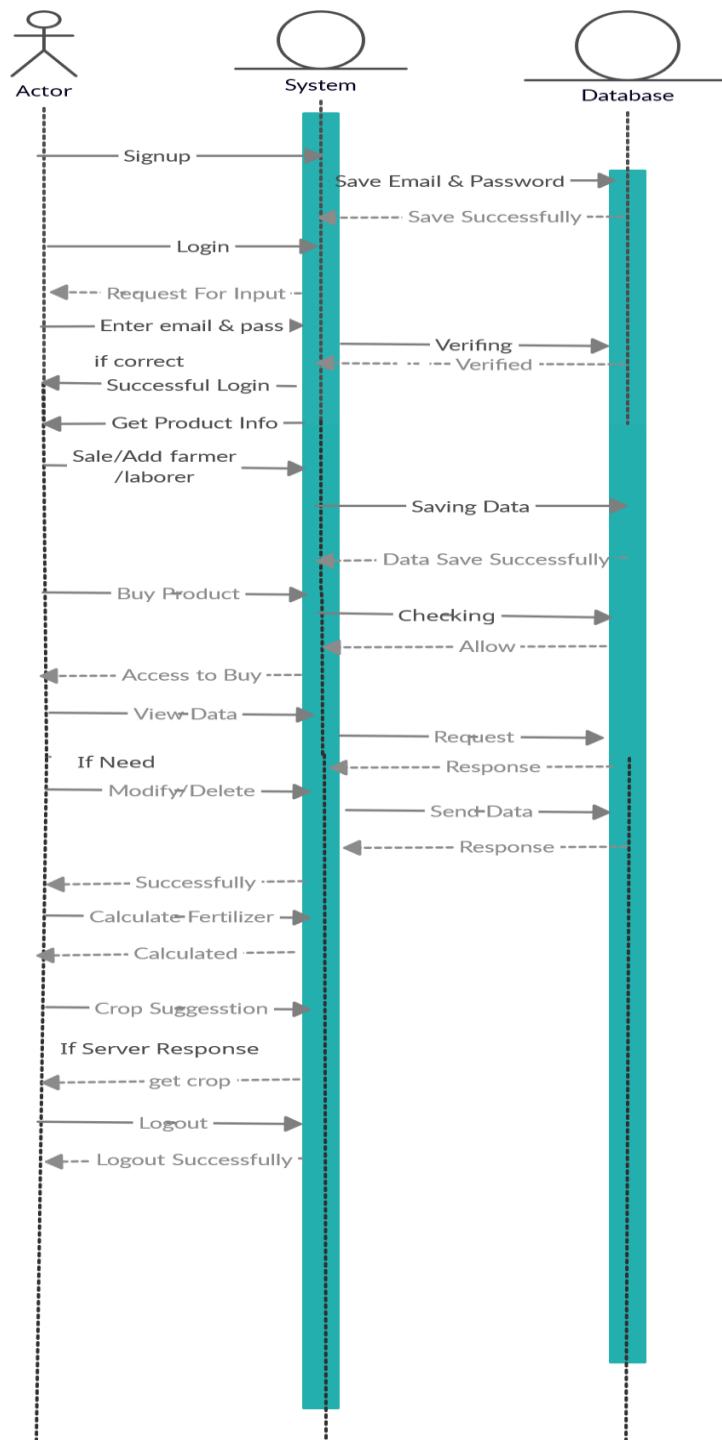


Figure 15 User sequence Diagram

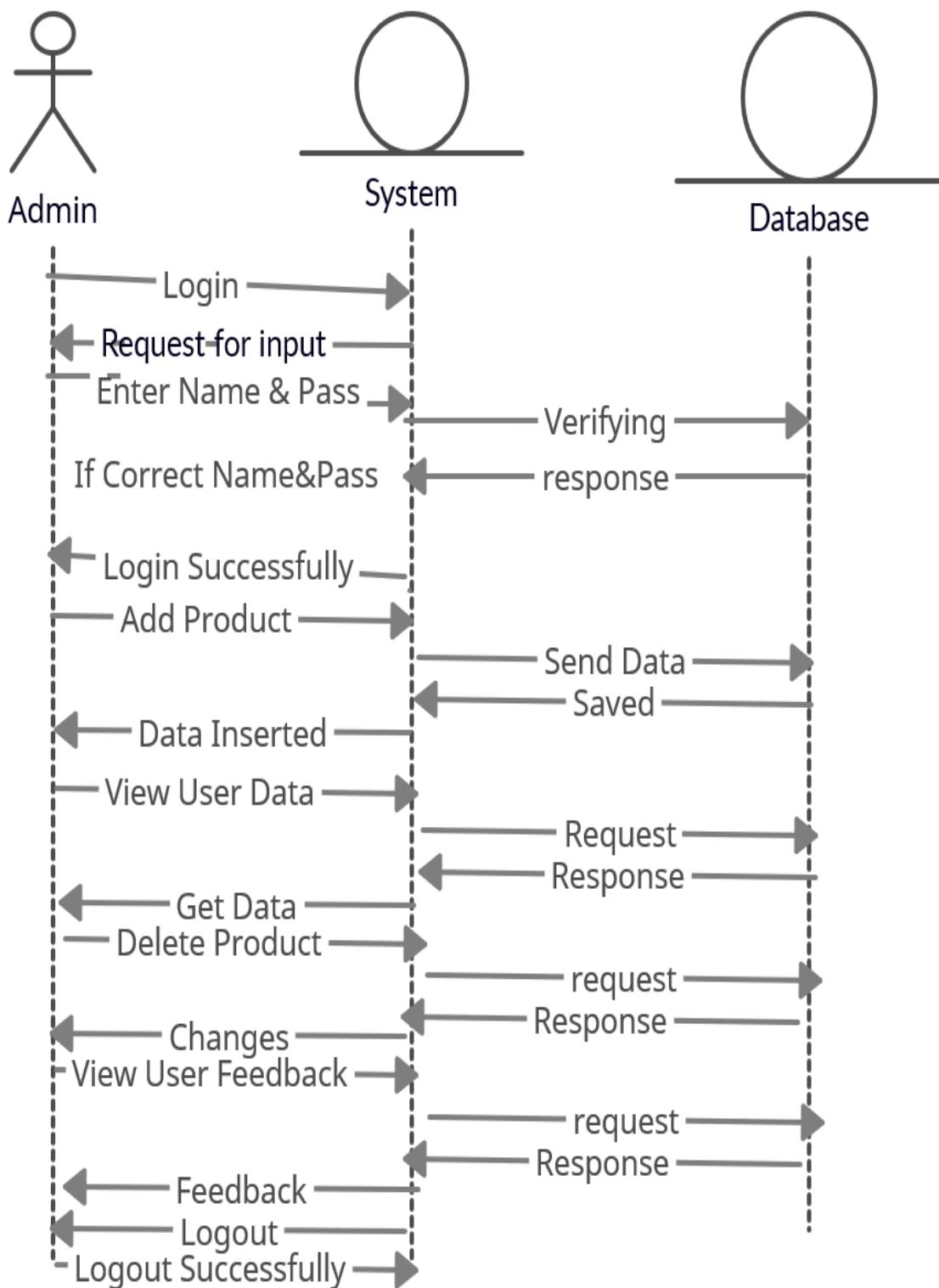


Figure 16 Admin Sequence Diagram

## 4.6 Data Representation

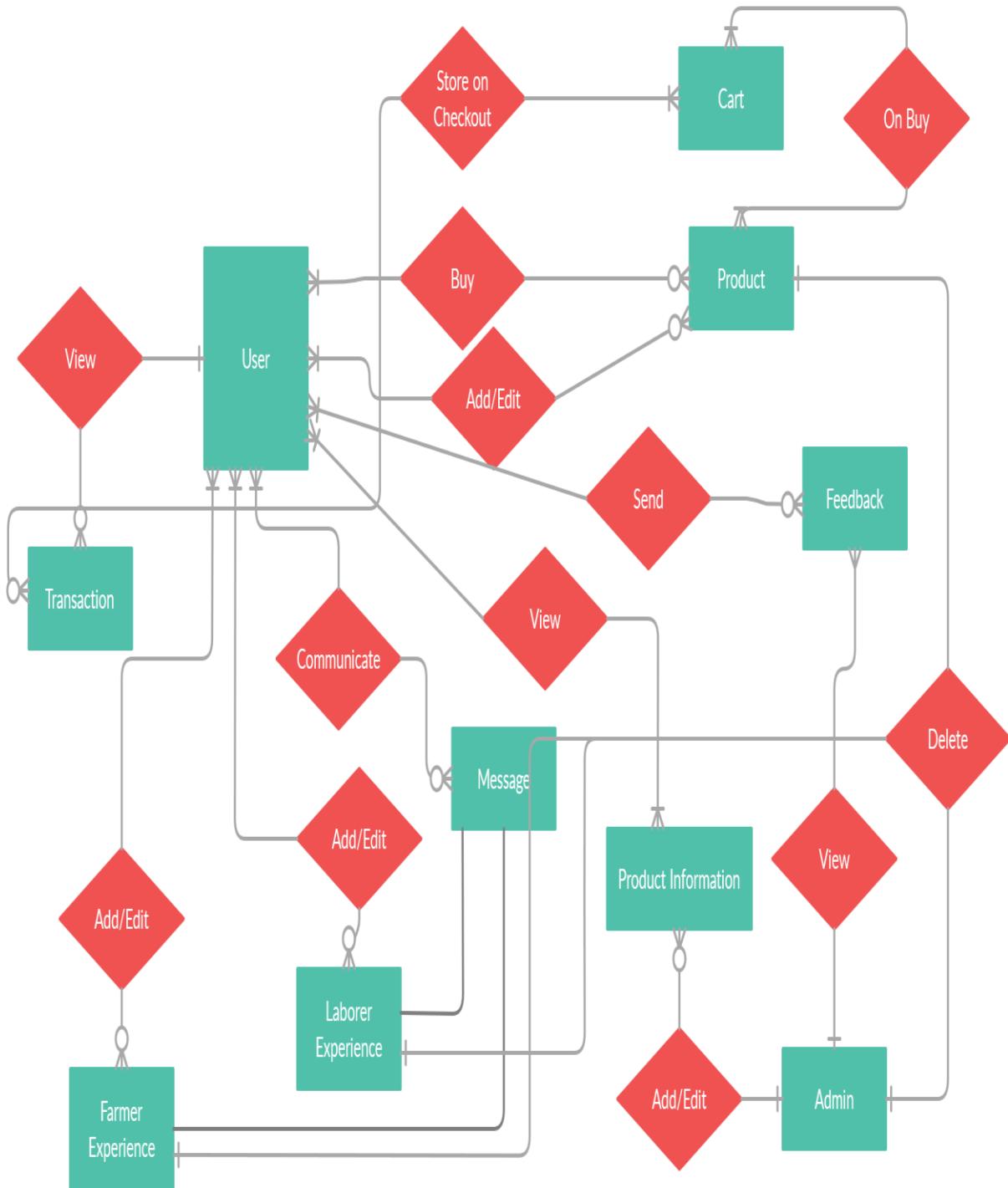


Figure 17 ERD

## 4.7 Class Diagram

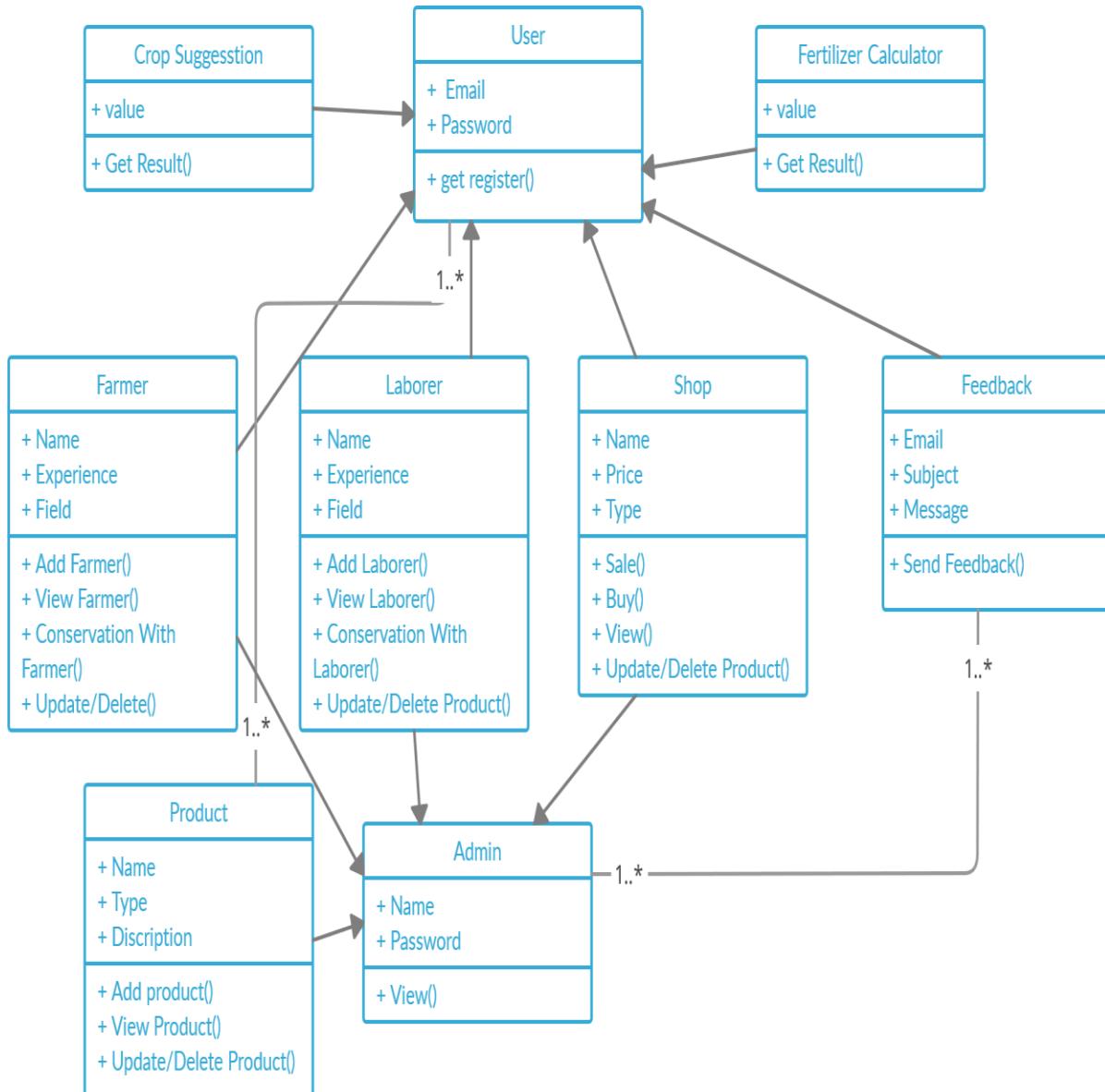


Figure 18 Class Diagram

## Chapter 5

### Implementation

# 5-Implementation

## 5.1-External APIs

Following are API's used in our project:

Table 19- Details of APIs used in the project

Name of API	Description of API	Purpose of usage	List down the function/class name in which it is used
Google Translate API	Google Translate API is use to translate text, documents and websites from one language into another	It is used for translate english language to urdu language.	It is used in python server and it is present in modelServer.py
OpenWeatherMap	OpenWeatherMap is an online service, that provides global weather data via API, including current weather data, forecasts, nowcasts and historical weather data for any geographical location.	It is used to get maximum and minimum temperature and humidity of city.	It is used in python server and it is present in modelServer.py

## 5.2- User Interface

GUI are the visual elements through which a user interacts with the application to perform different tasks and achieve different functionality. Below are given different user interfaces that are being used in our Project.

### 5.2.1- Web portals interfaces

In our Website there are two types of Portals: Admin and User. Following are the interfaces of the Website.

### 5.2.1.1- Admin portal interface

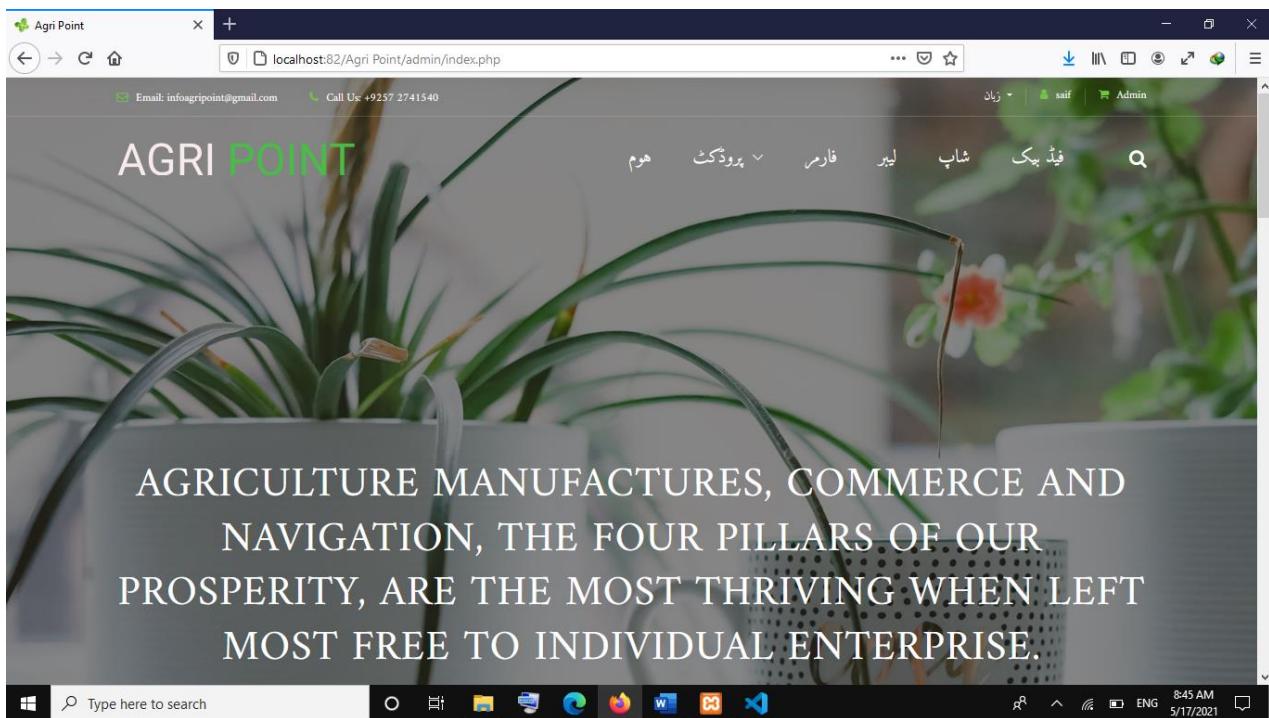


Figure 19 Index Interface

The screenshot shows a modal dialog titled 'Add Product Information'. The form contains four fields: 'Name' (input field containing 'درخت'), 'Description' (input field), 'Browse...' (button) and 'No file selected.' (text), and a large green 'Add Information' button at the bottom. The background is a blurred green gradient.

Figure 20 Add Product Information Form

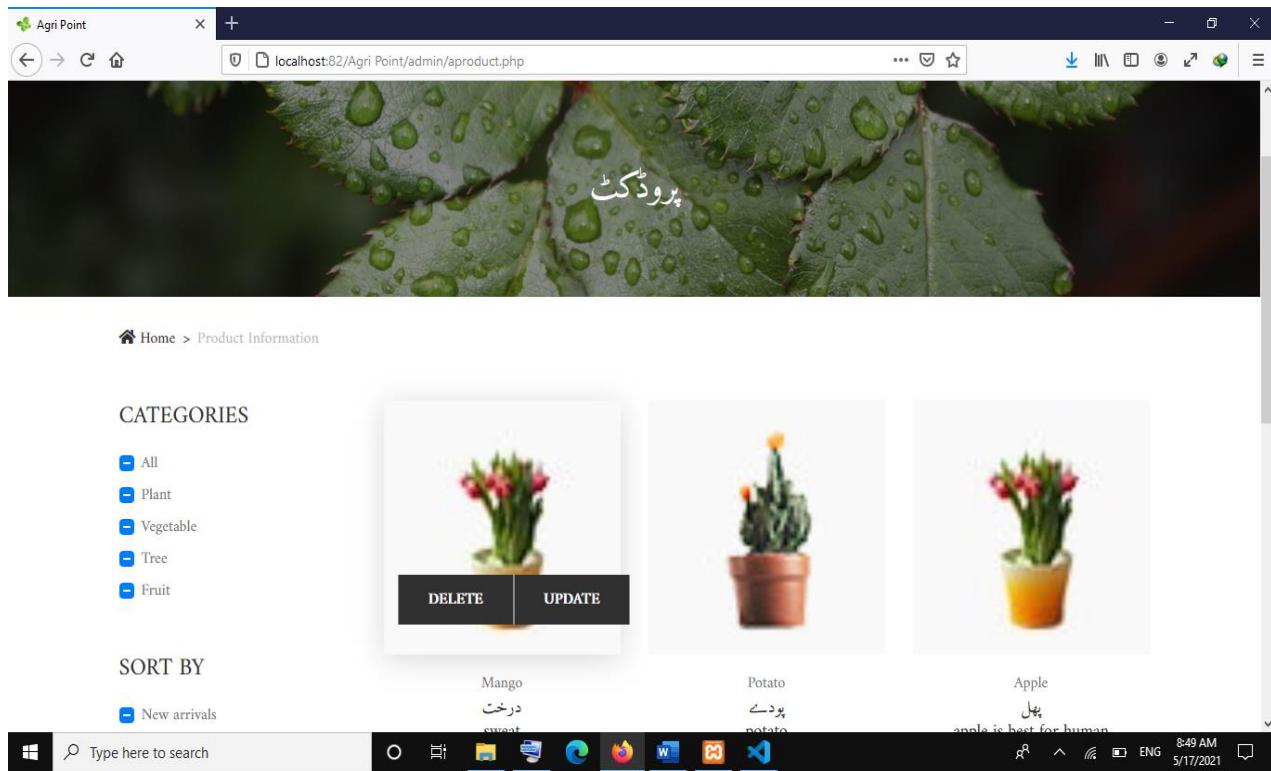


Figure 21 Product Information Interface

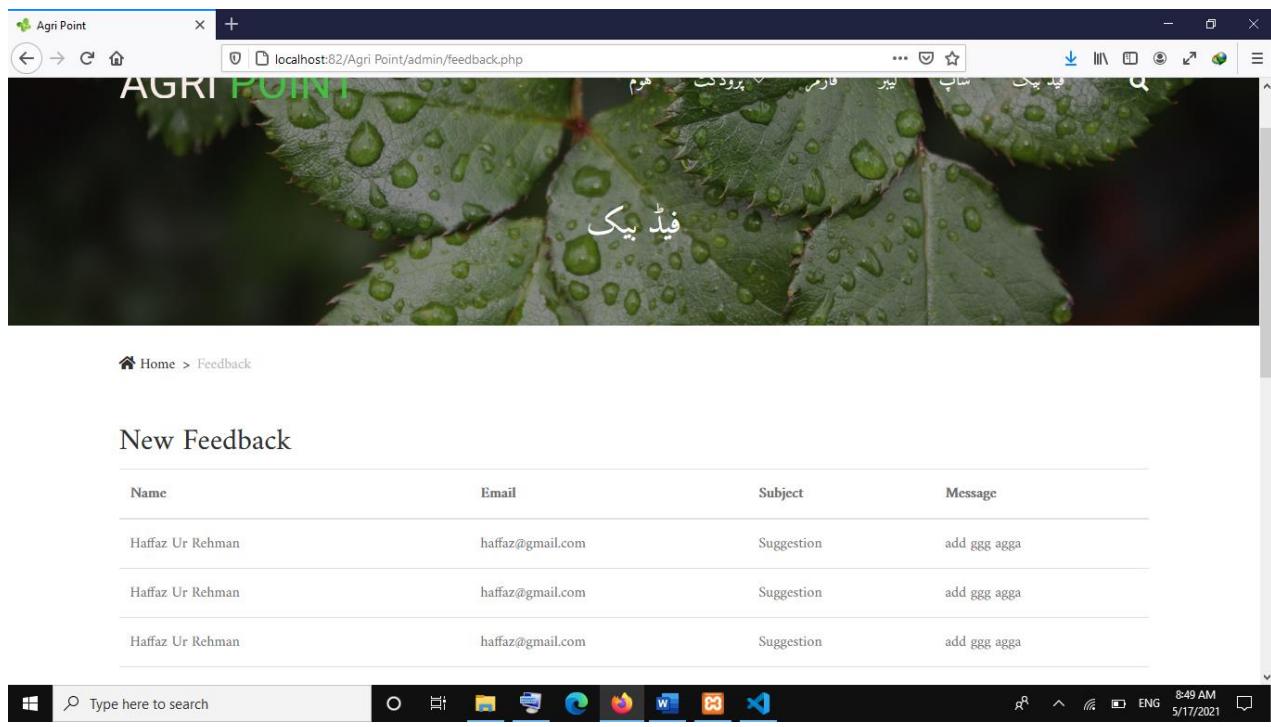


Figure 22 Feedback Interface

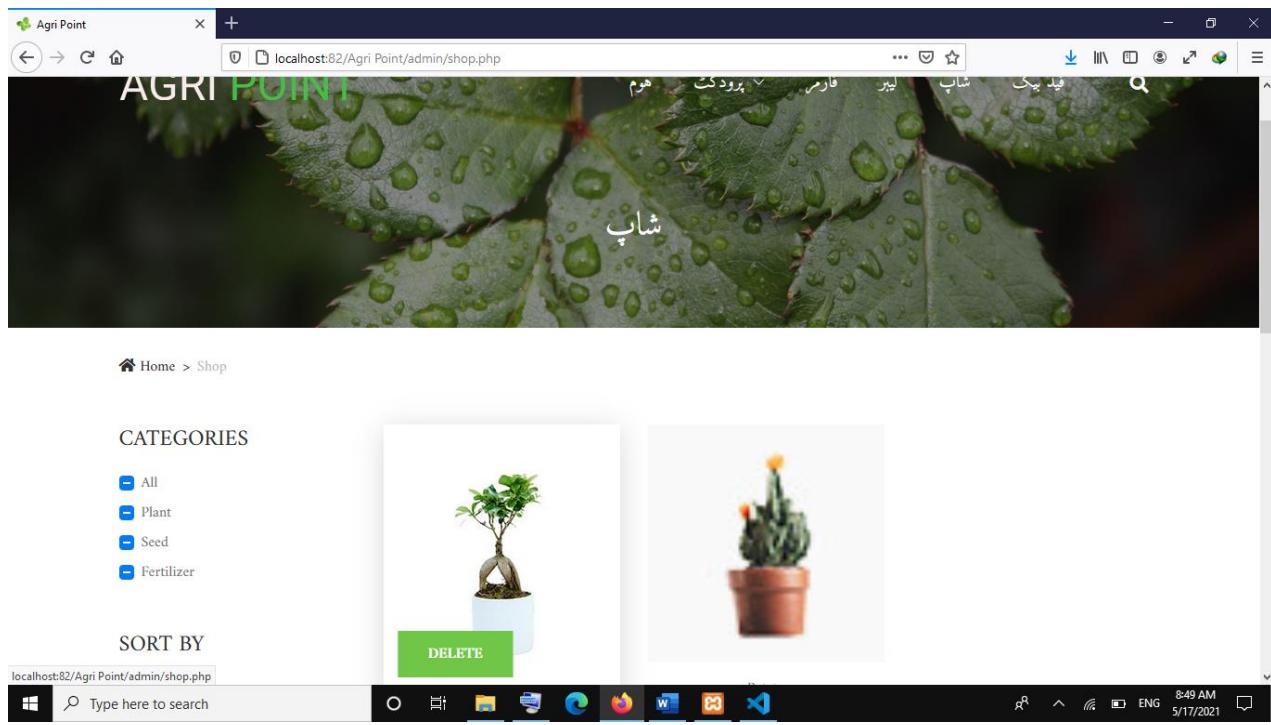


Figure 23 Shop Interface

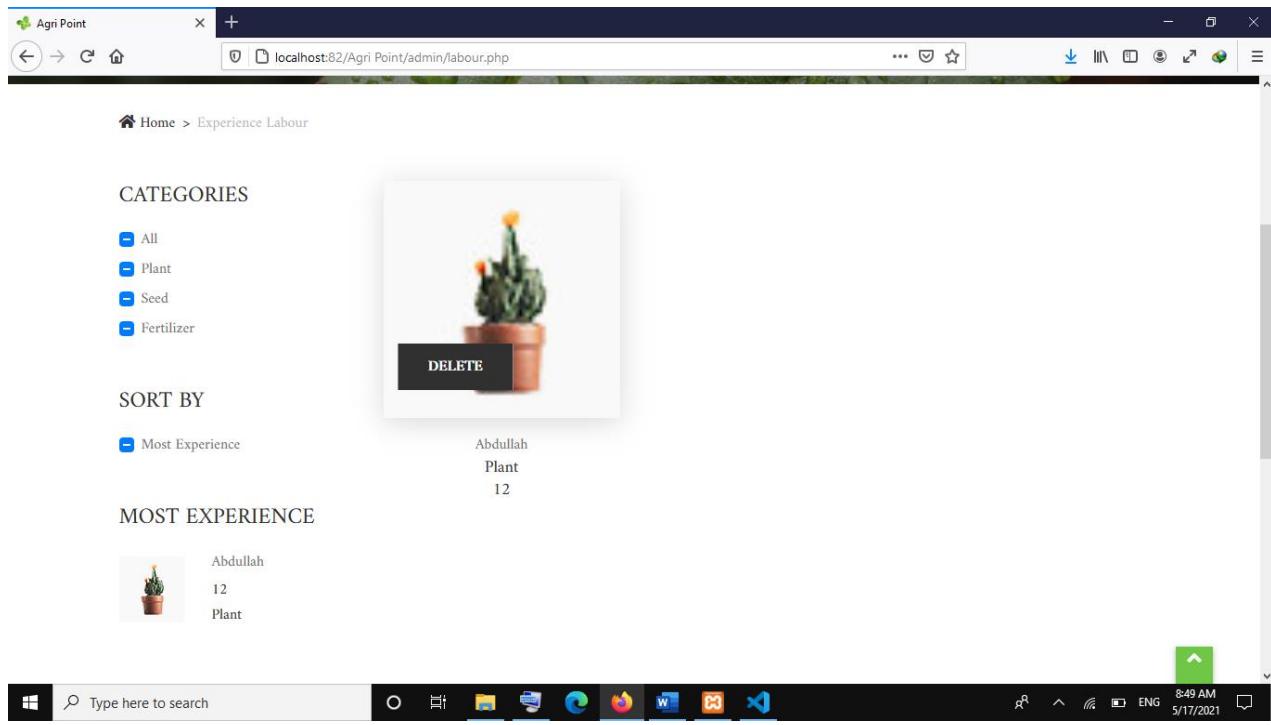


Figure 24 Laborer Interface

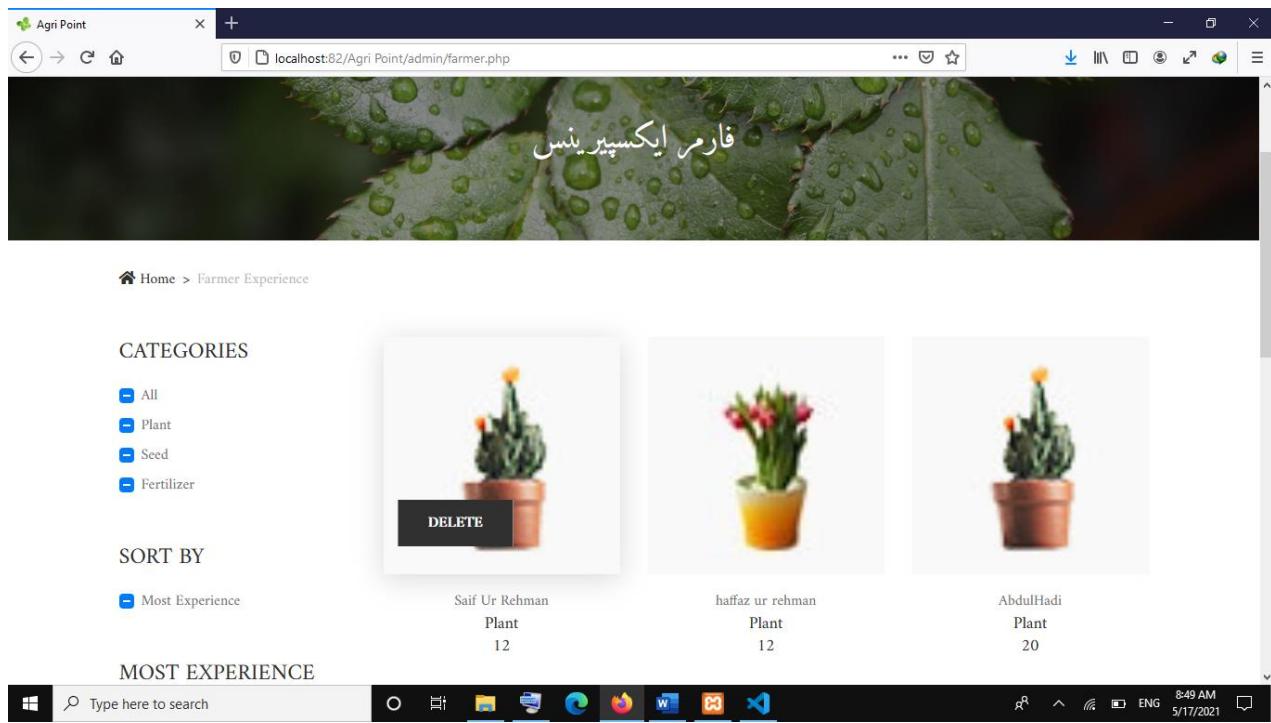


Figure 25 Farmer Interface

### 5.2.1.2- User portal interface

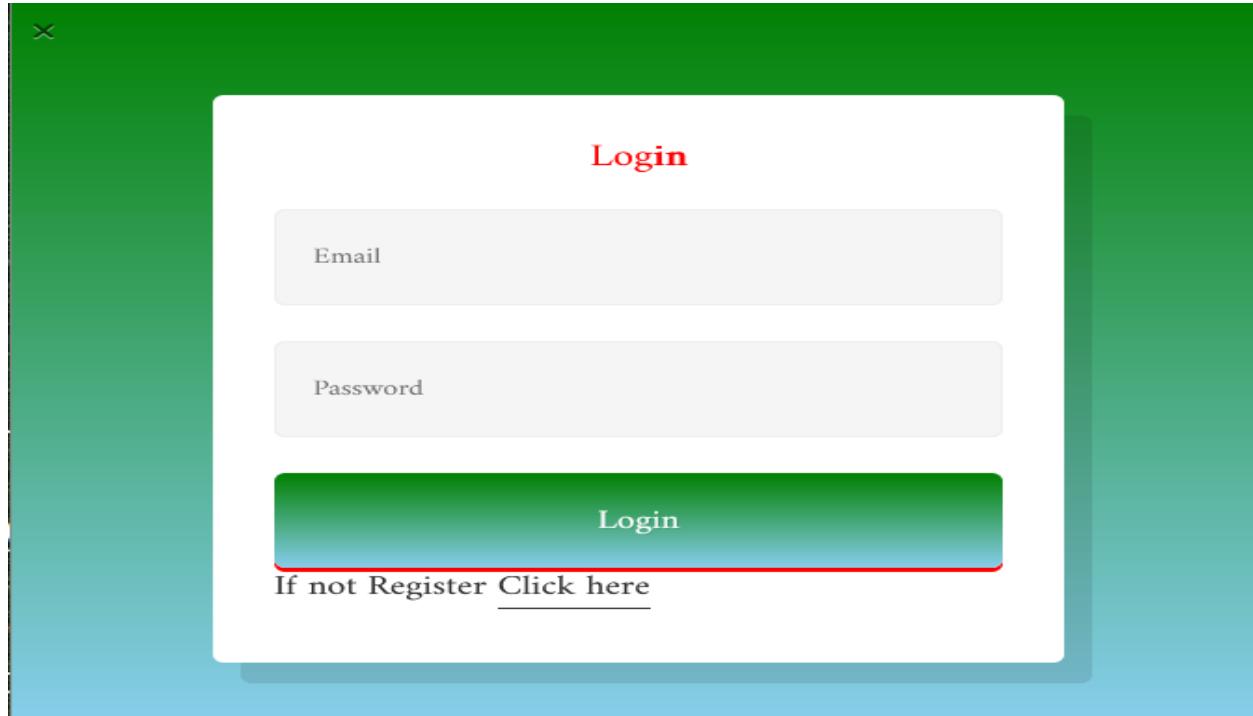


Figure 26 Login Form

The screenshot shows a 'SignUP' form with four input fields: 'Name', 'Email', 'Password', and 'Confirm Password'. A large green 'Signup' button is at the bottom.

Figure 27 Signup Form

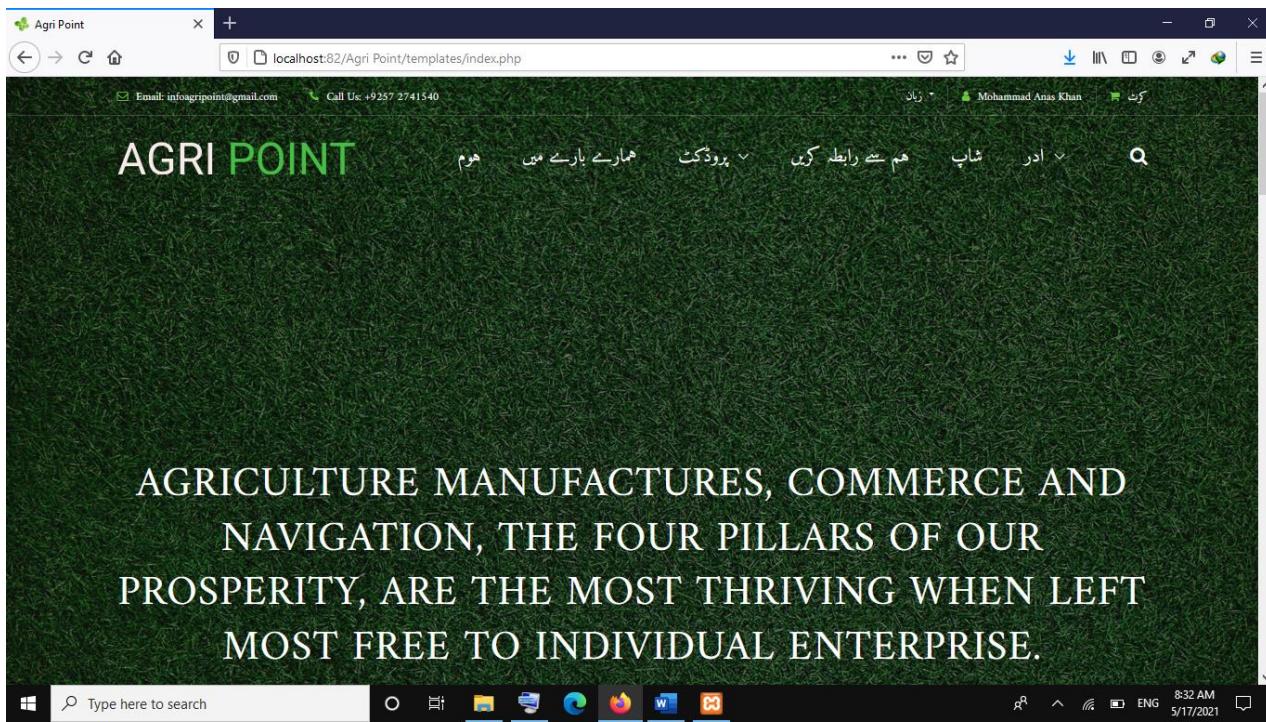


Figure 28 Index Interface (a)

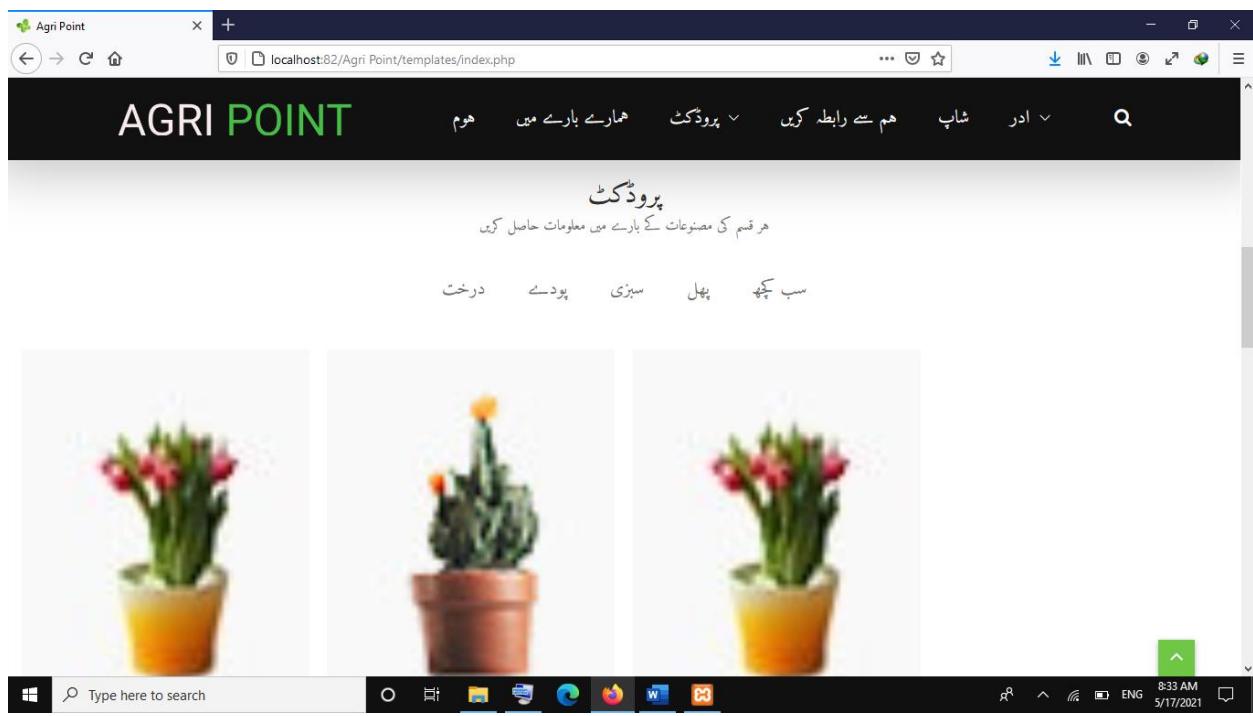


Figure 29 Index Interface (b)

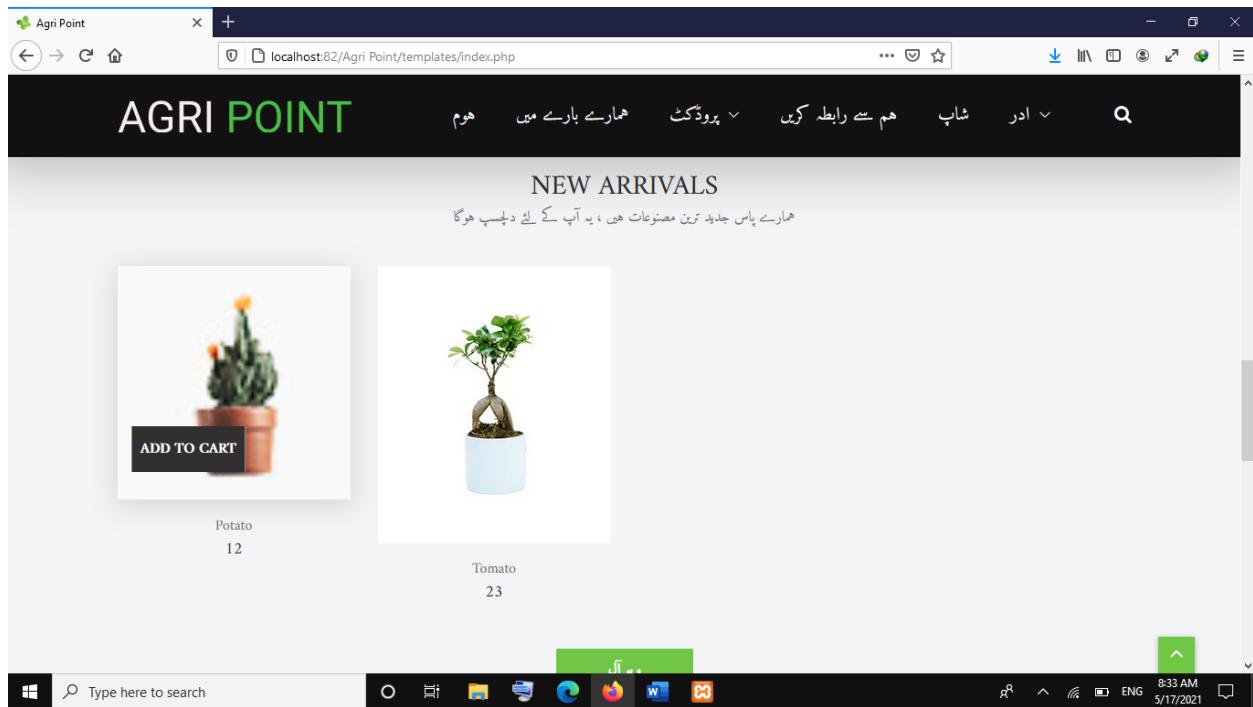


Figure 30 Index Interface (c)

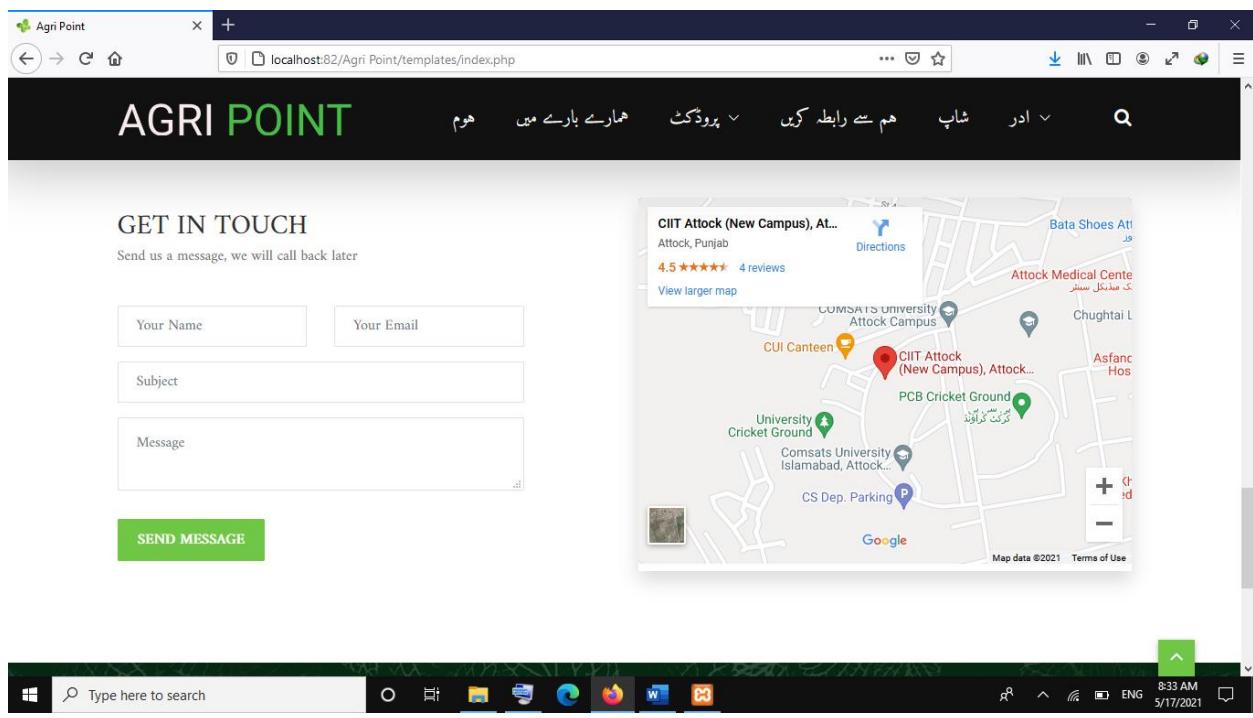


Figure 31 Index Interface (d)

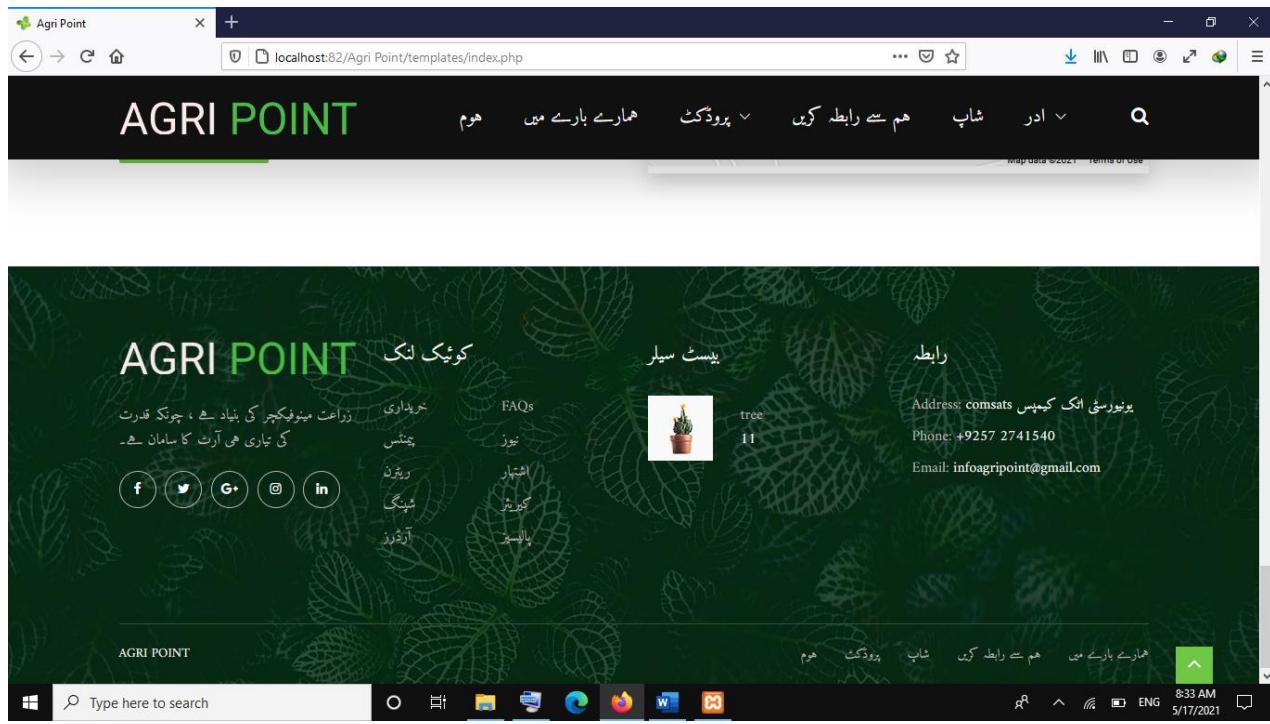


Figure 32 Index Interface (e)

The image shows a 'Crop Suggestion' form. It consists of six input fields with dropdown arrows on the right: 'Starting Month', 'Cultivation Time', 'RainFalls', 'Irrigation', 'Attock' (with a dropdown arrow), and 'Soil'. Below these fields is a large green 'Submit' button.

Figure 33 Crop Suggestion form

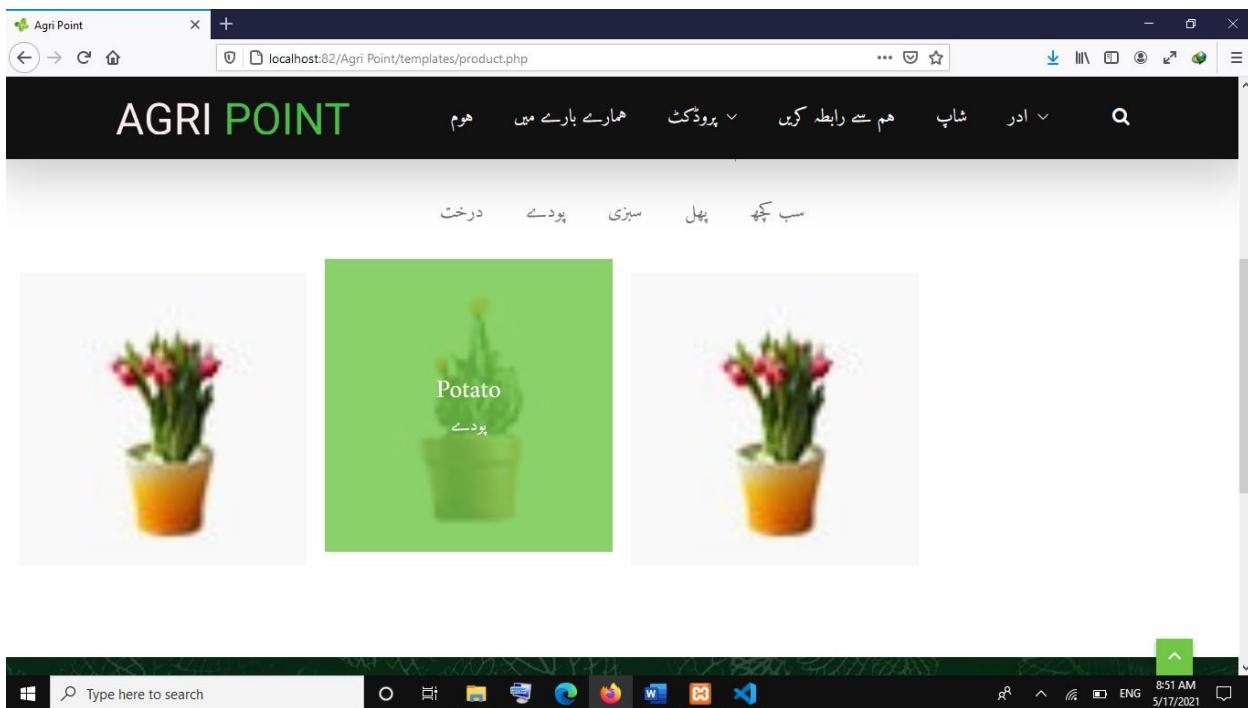
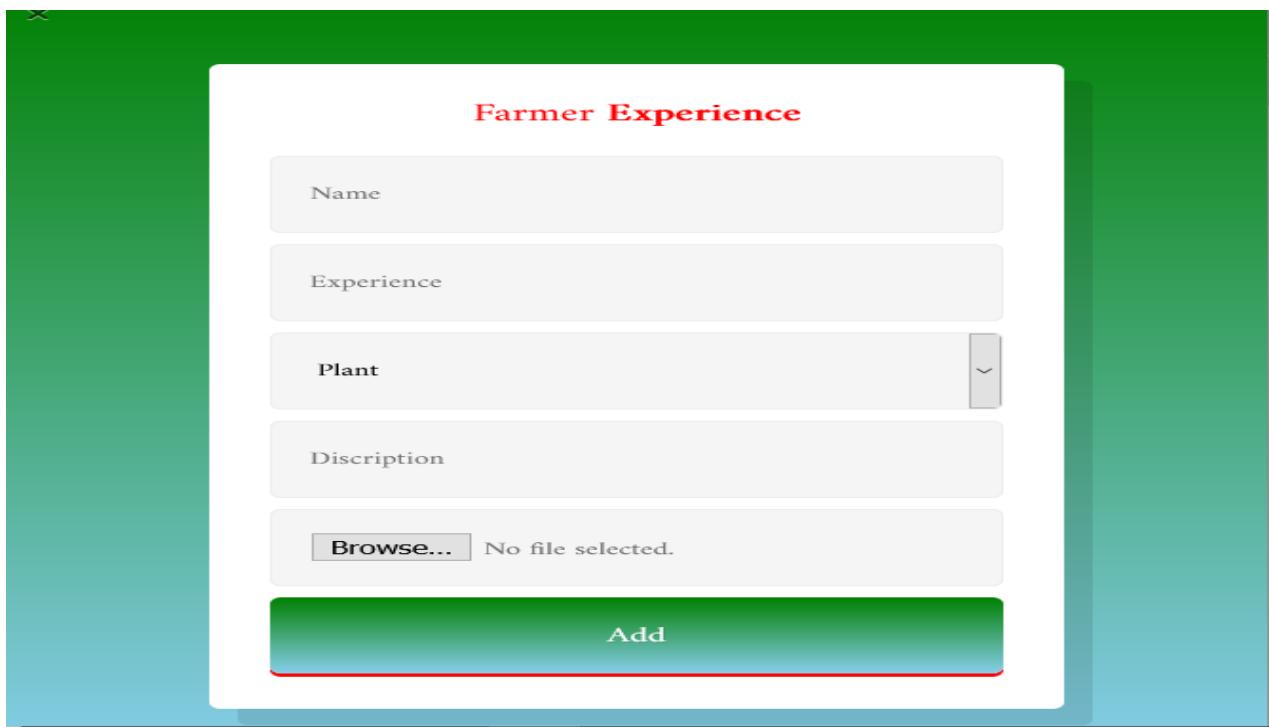


Figure 34 Product Interface



The image shows a user interface for adding laborer experience. The title "Labour Experience" is at the top. The form fields include Name, Email, Experience, Plant (with a dropdown arrow), Description, and a file upload section labeled "Browse..." showing "No file selected." A large green "Add Experience" button is at the bottom.

Figure 35 Laborer experience Form



The image shows a user interface for adding farmer experience. The title "Farmer Experience" is at the top. The form fields include Name, Experience, Plant (with a dropdown arrow), Description, and a file upload section labeled "Browse..." showing "No file selected." A large green "Add" button is at the bottom.

Figure 36 Farmer experience Form



Figure 37 Fertilizer Calculator (a)

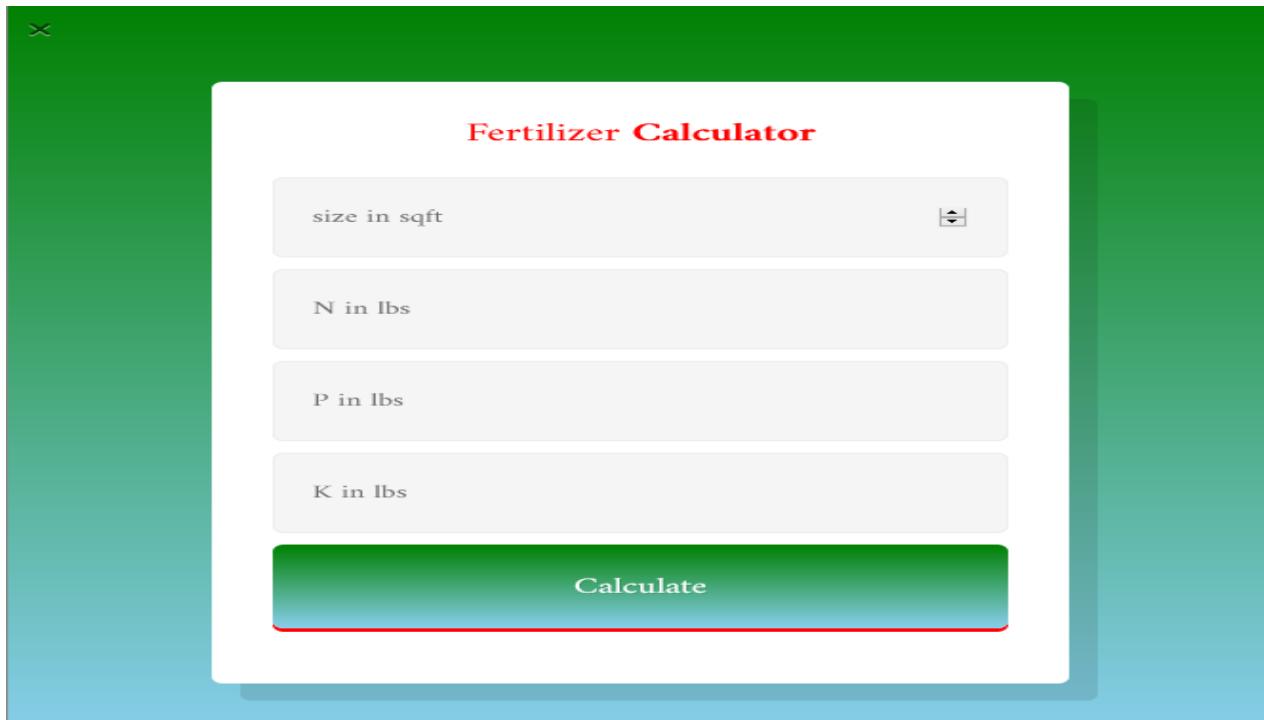


Figure 38 Fertilizer Calculator (b)

The screenshot shows a mobile application window titled "Fertilizer Calculator". Inside, there is a dropdown menu set to "Corn". Below it is an input field labeled "size in sqft" with a numeric keypad overlay. At the bottom is a large blue button with the word "Calculate" in white.

Figure 39 Fertilizer Calculator (c)

The screenshot shows a mobile application window titled "Product Information". It contains several input fields: "Name", "Product Name", "Price", and two dropdown menus for "Plant" and "None". Below these is a file selection area with a "Browse..." button and a message "No file selected.". At the bottom is a large green button with the word "Add" in white.

Figure 40 Sale Product Form

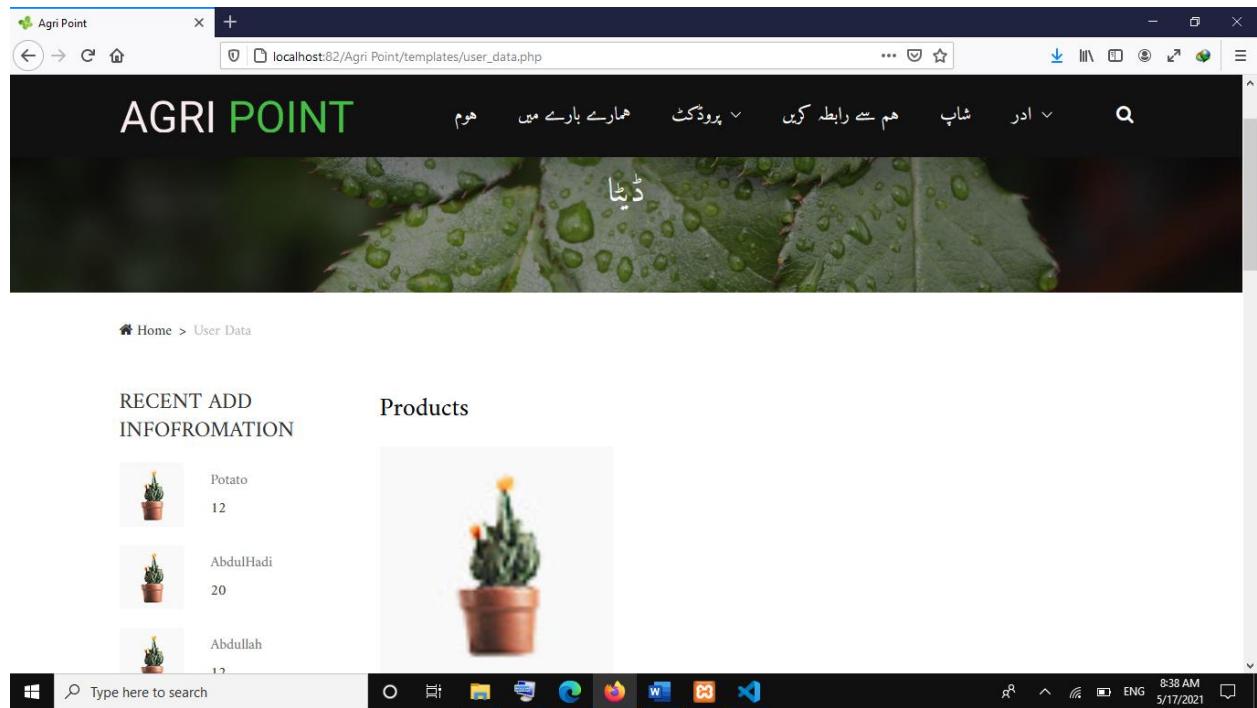


Figure 41 User Data Interface (a)

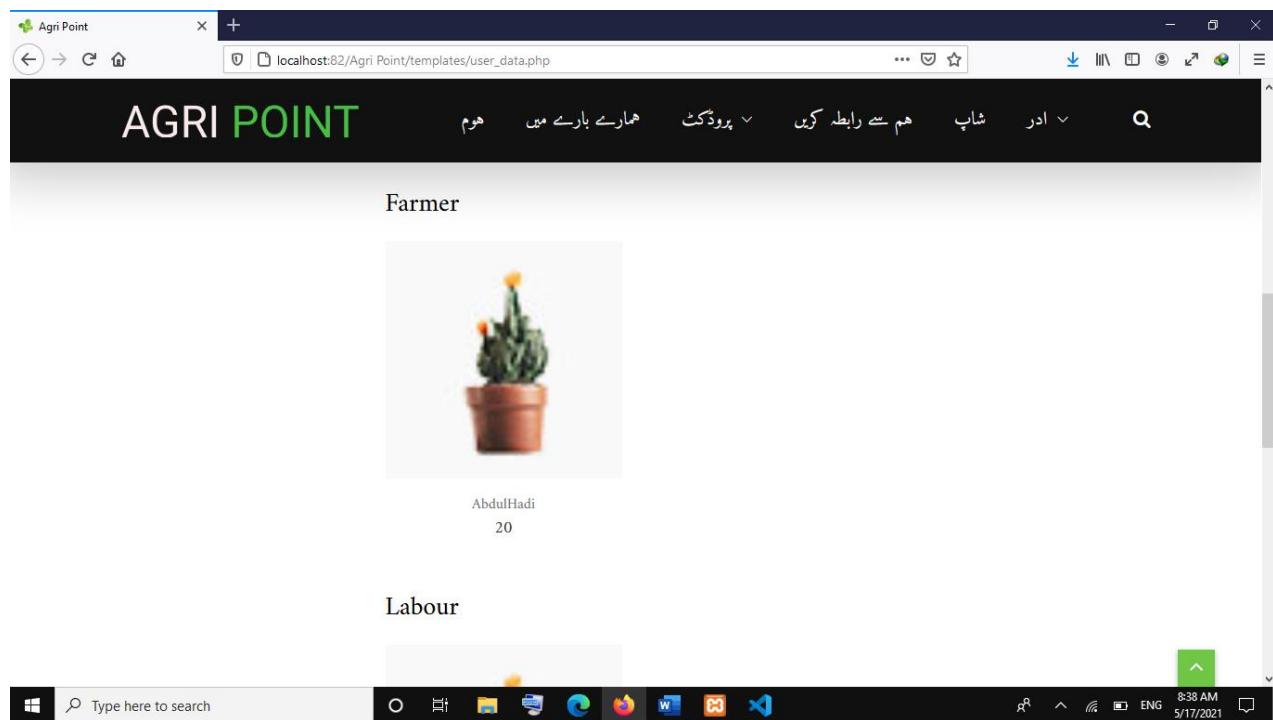


Figure 42 User Data Interface (b)

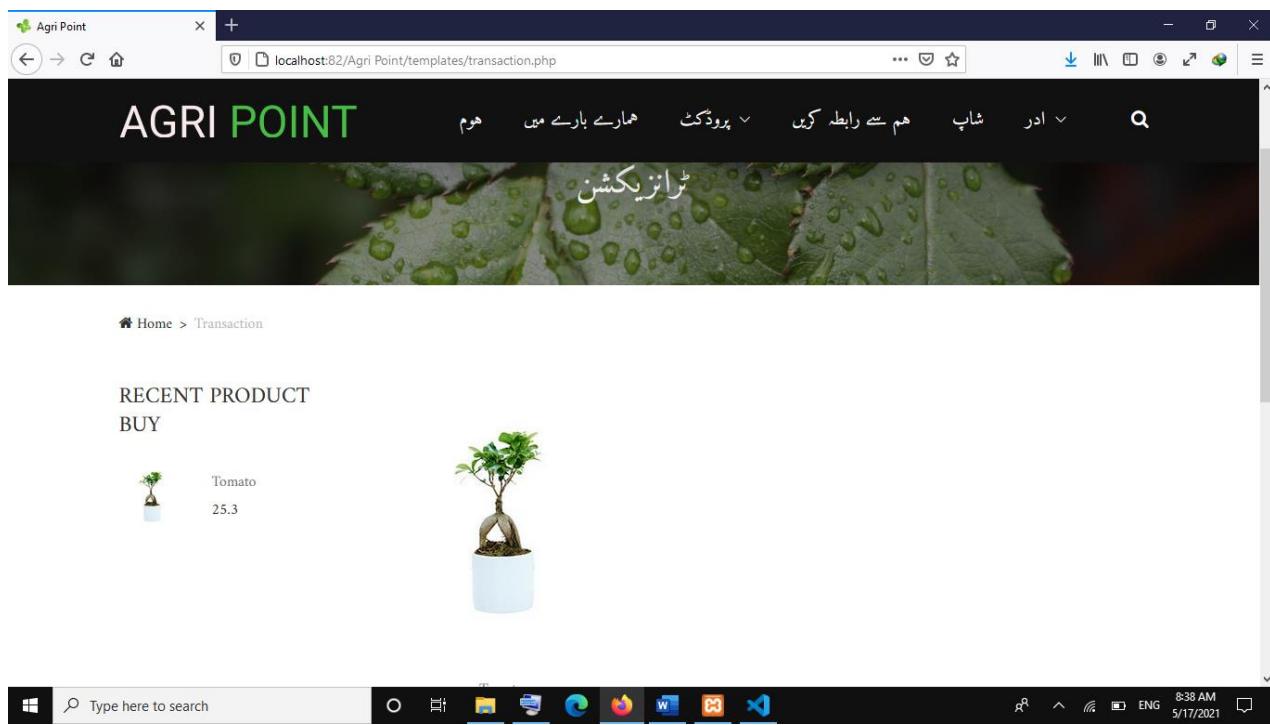


Figure 43 Transaction Interface

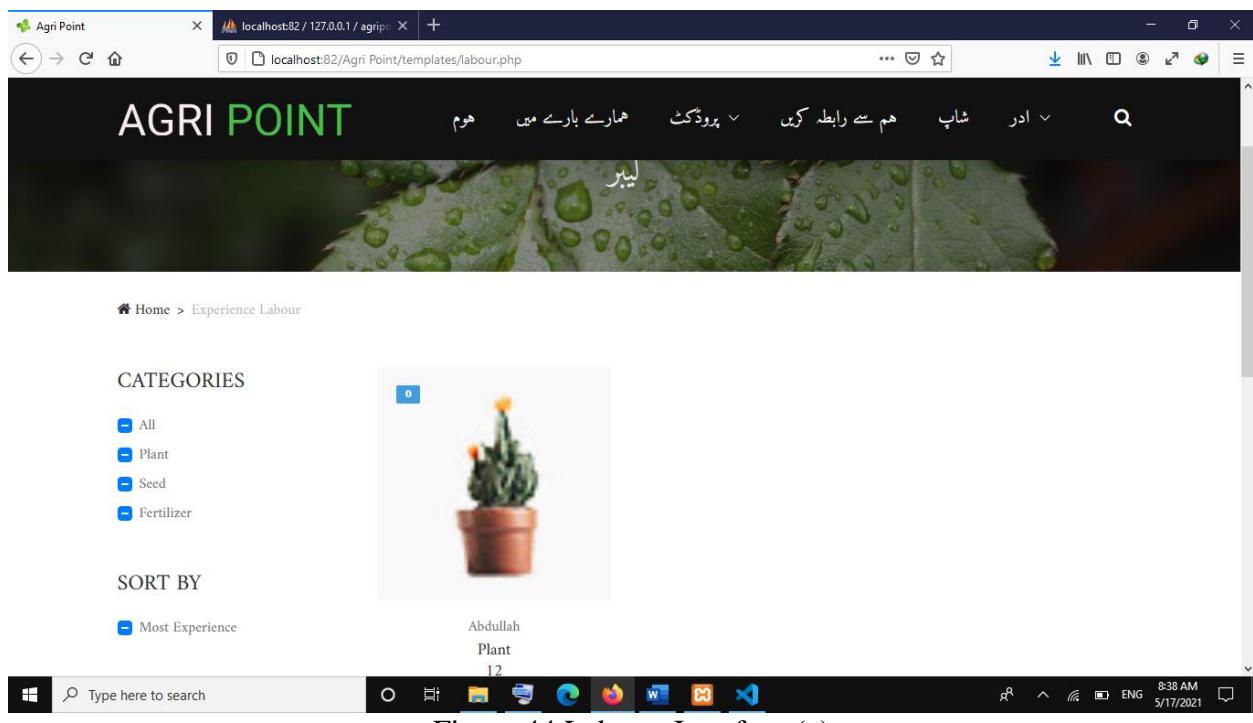


Figure 44 Laborer Interface (a)

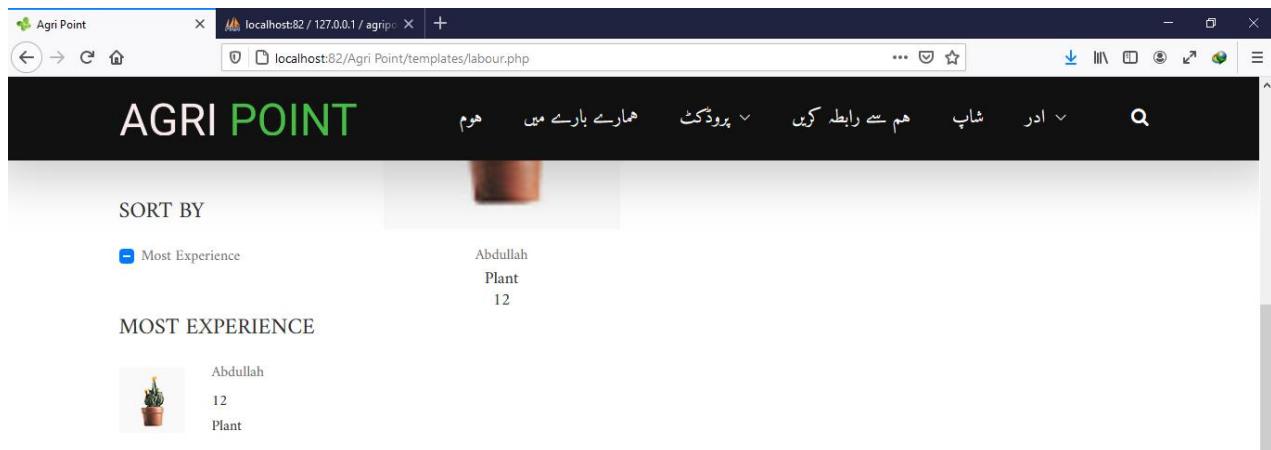


Figure 45 Laborer Interface (b)



Figure 46 Farmer Interface (a)

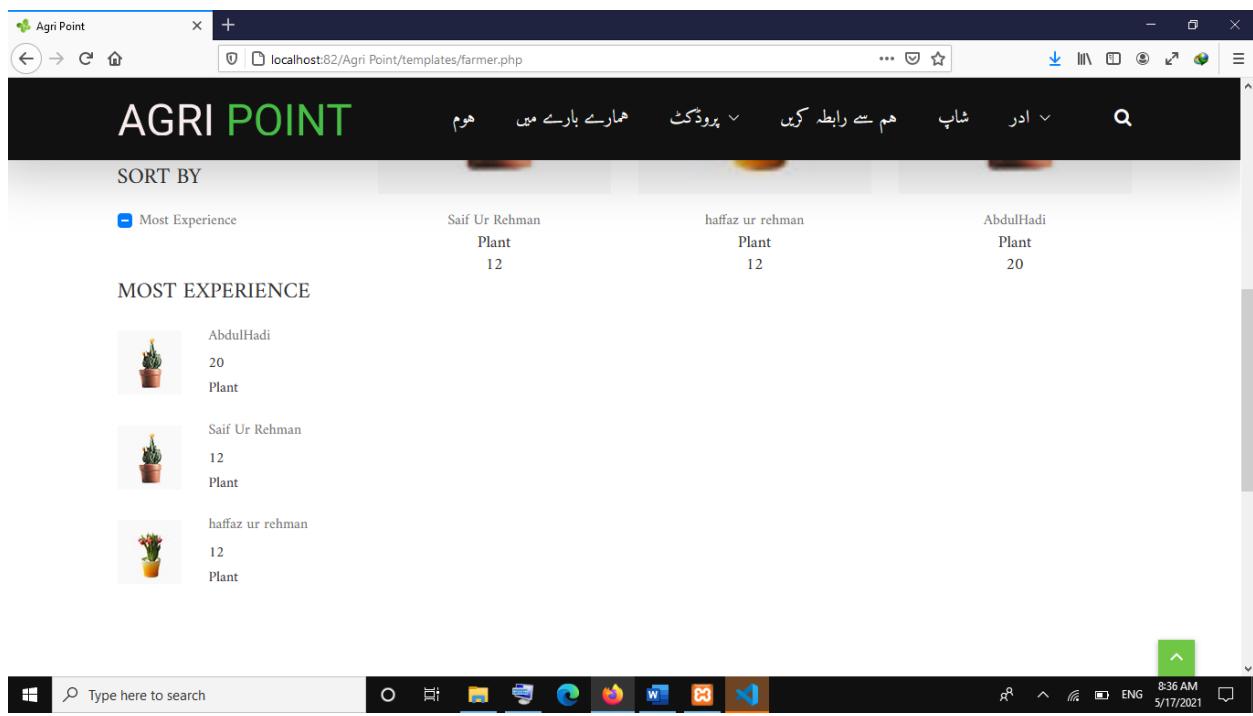


Figure 47 Farmer Interface (b)



Figure 48 Message Interface (a)



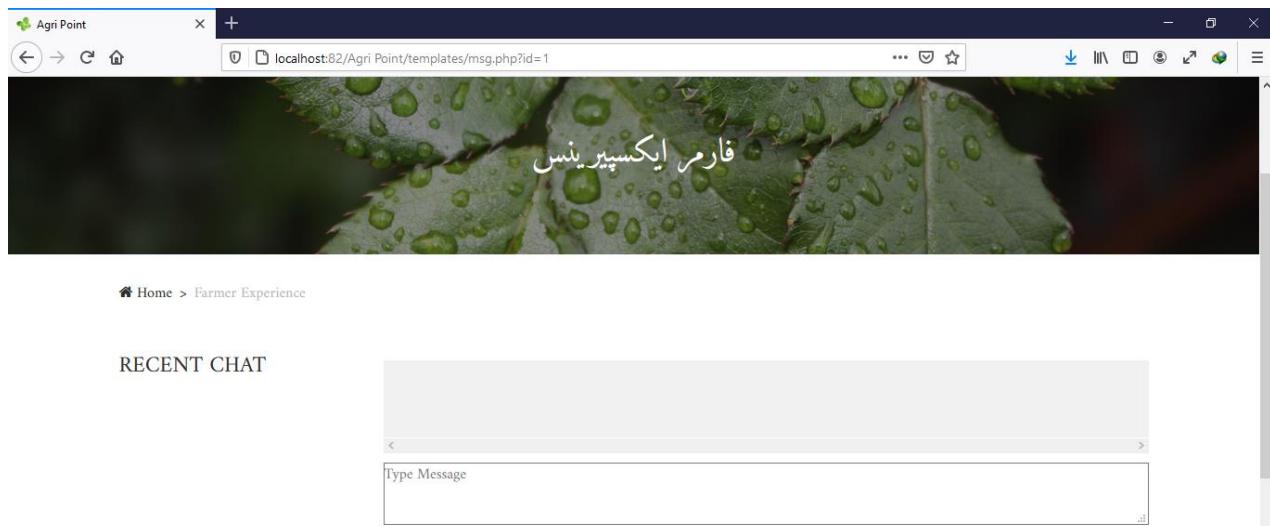


Figure 49 Message Interface (b)

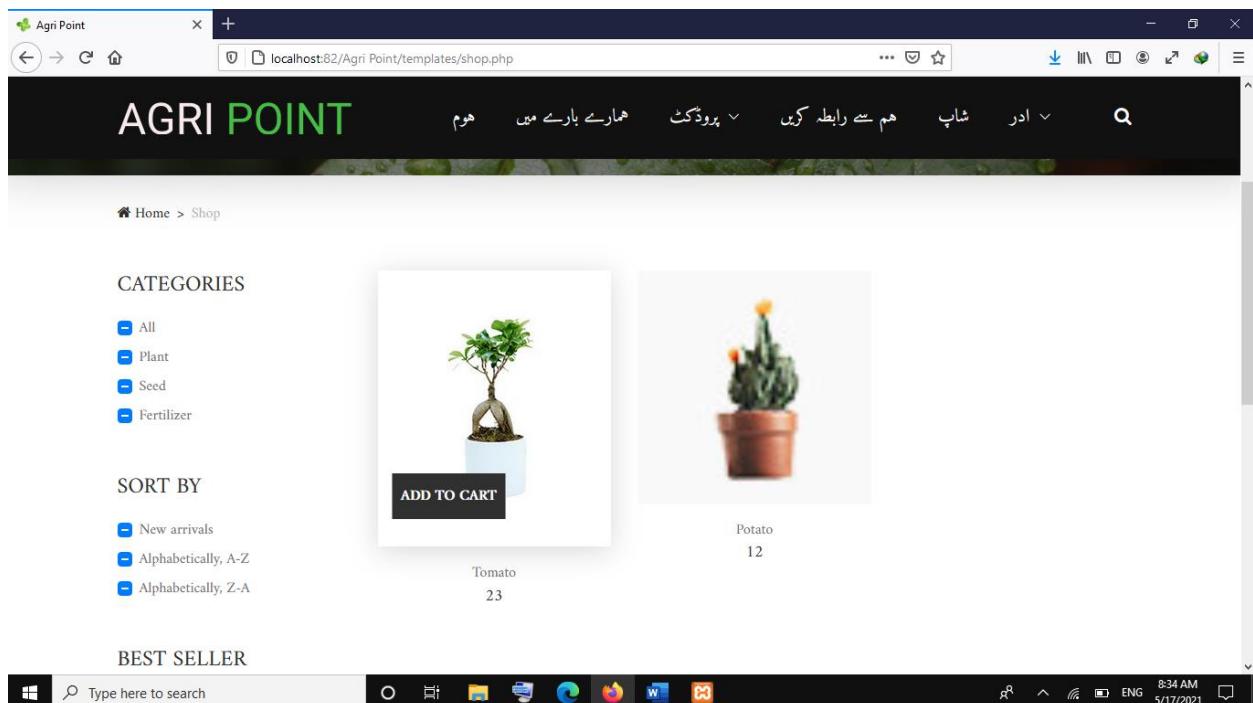


Figure 50 Shop Interface (a)

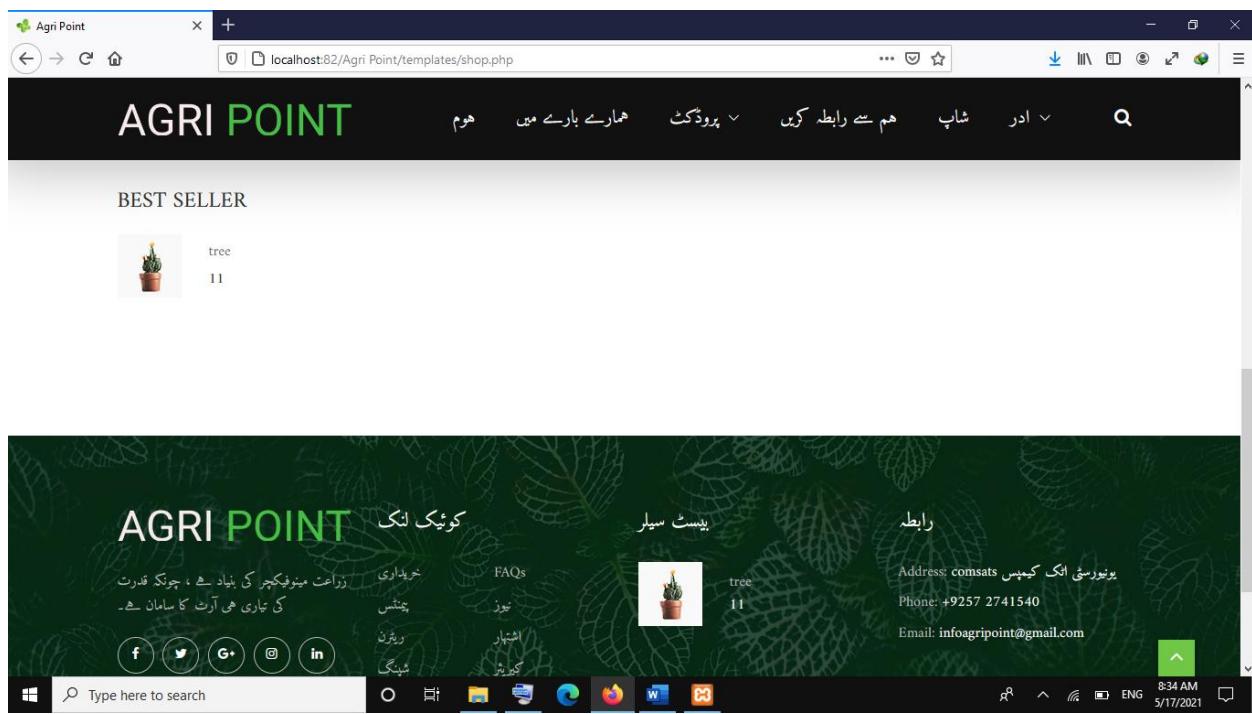


Figure 51 Shop Interface (b)

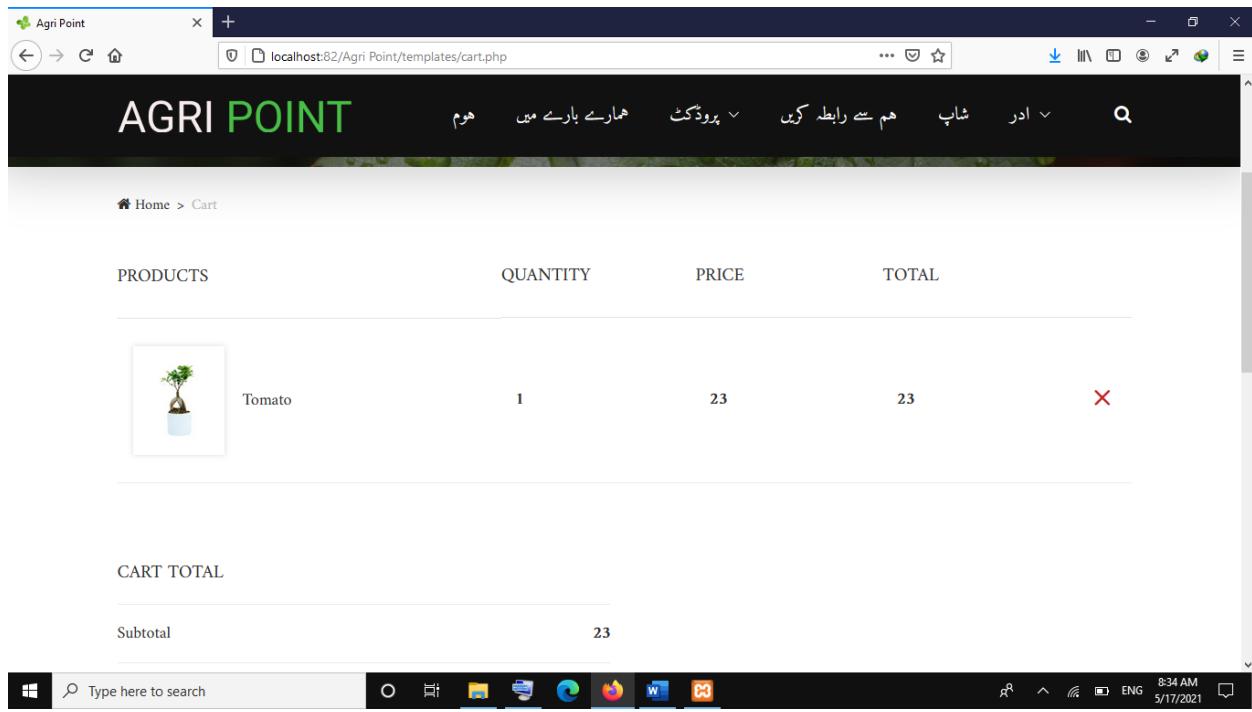


Figure 52 Cart Interface (a)

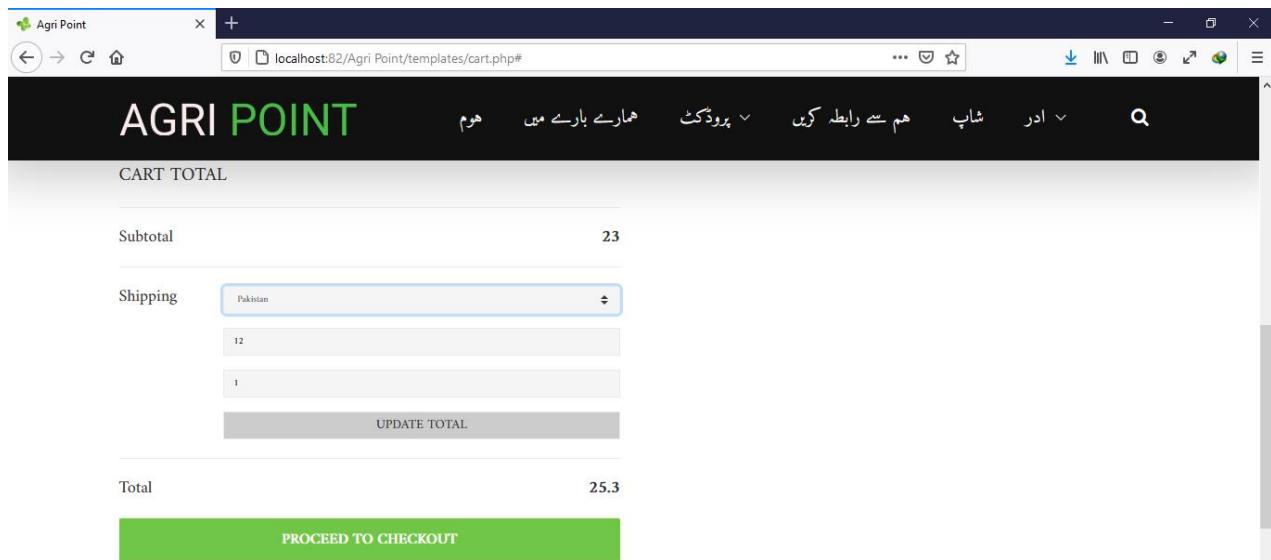


Figure 53 Cart Interface (b)

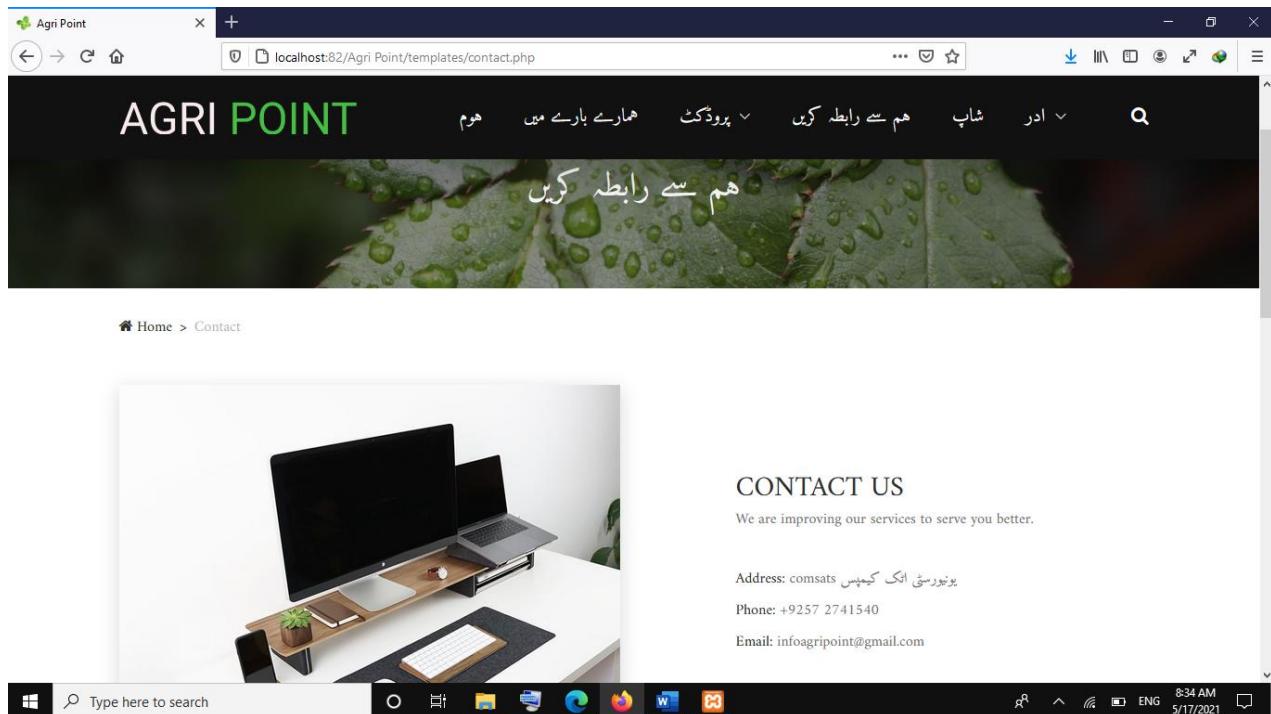


Figure 54 Contact us Interface

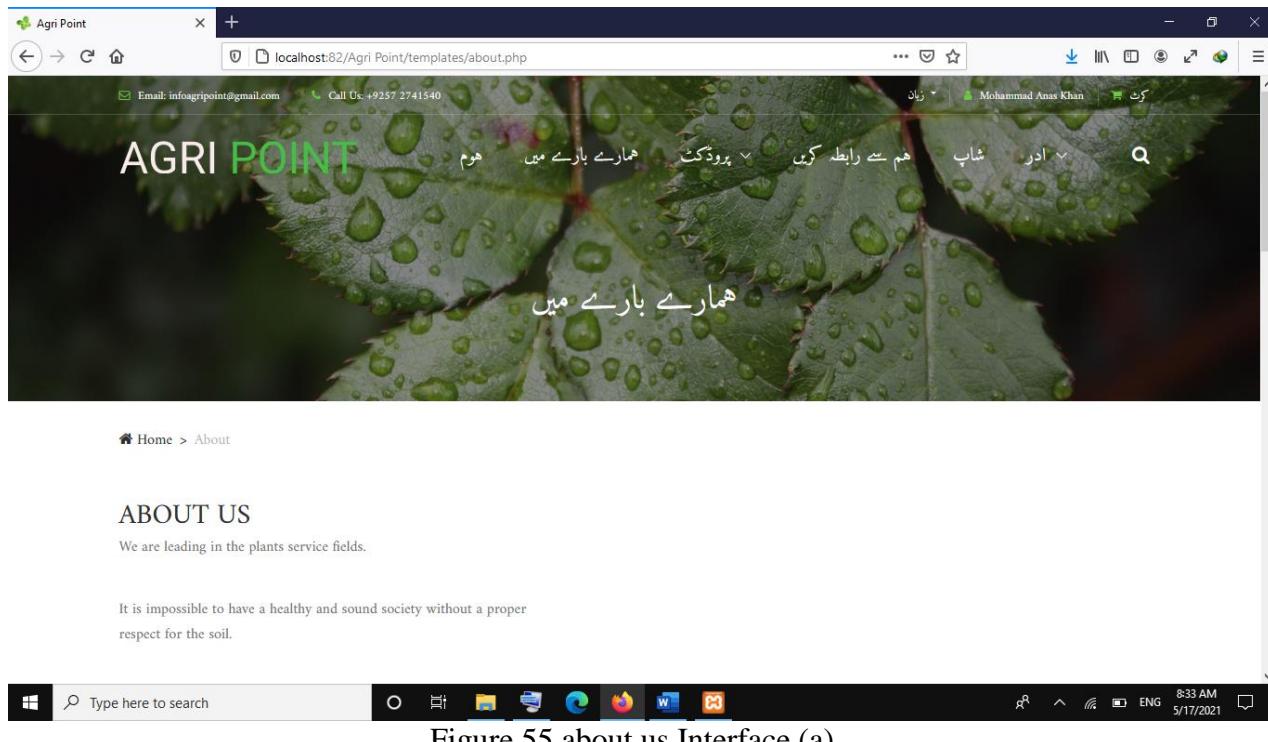


Figure 55 about us Interface (a)

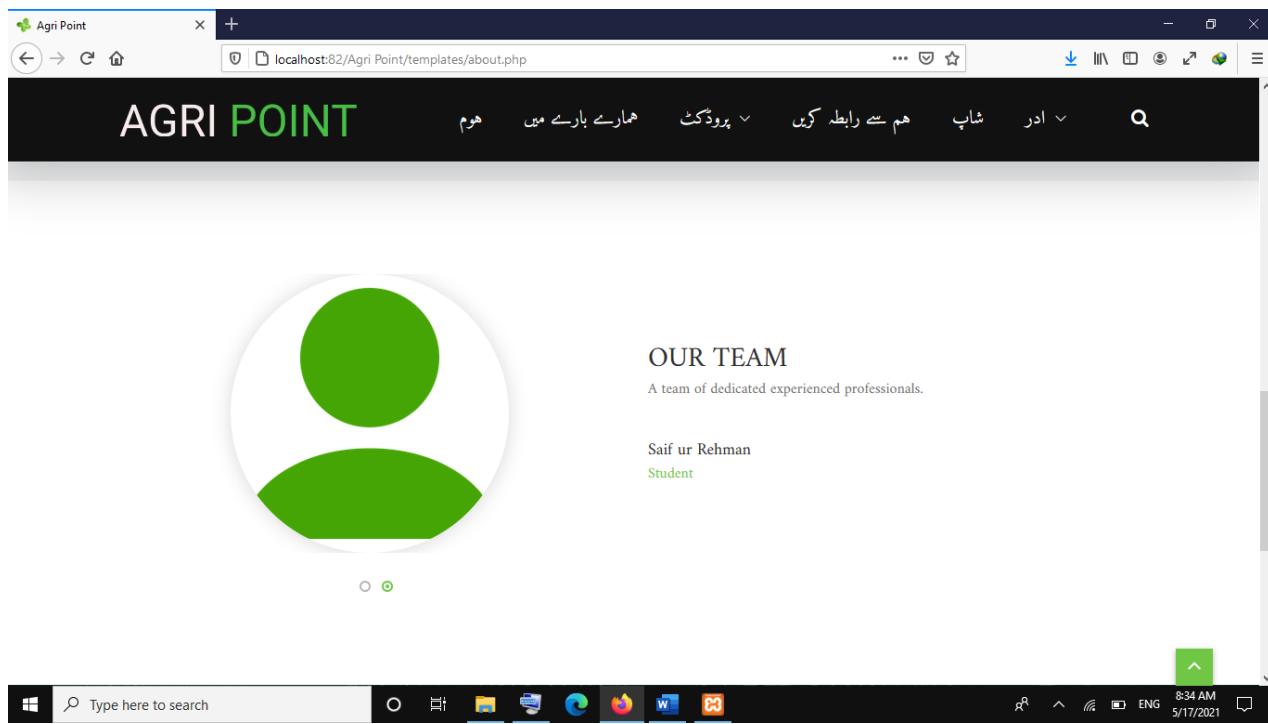


Figure 56 about us Interface (b)

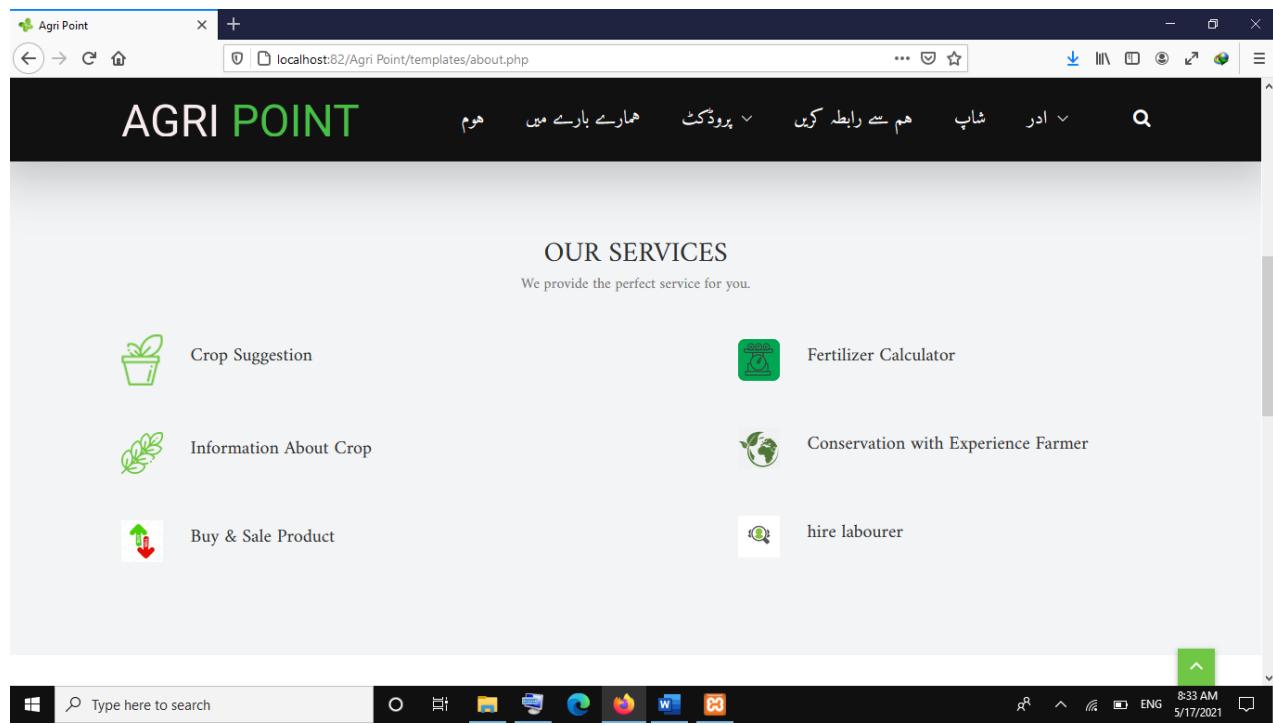


Figure 57 about us Interface (c)

## Chapter 6

# Testing and Evaluation

## 6-Testing and Evaluation

### 6.1- Manual Testing

#### 6.1.1- Unit Testing

In unit testing, we tested each sub-system of our project individually in order to check that each module(i-e subsystem) perform the functionality intended for them. Few of the unit testing's provided below:

##### **Unit Testing 1:** User module testing

**Testing Objective:** To ensure that User module is working correctly

Table 20

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	Verify login of user after clicking on “login” button on login form, by providing correct information	Email: <a href="mailto:mak@gmail.com">mak@gmail.com</a> Password: 1234	Successful login into the main interface of user module showing different information	Pass
2.	View and get different information of product by click on “Product Button”		Different product information inserted by admin showing on the product interface	Pass
3.	View saleable product and buy by click on “Shop Button”		Different product showing on this interface inserted by different users	Pass
4.	Calculate fertilizer doze by click on “Fertilizer Calculator Button”		Get Fertilizer doze amount	Pass
5.	Insert saleable product by click on “Insert Product Button” on product modal, by providing correct information	Id: 16 Owner_Name: usaid Product_name: Potato Price: 12 Image: images/4.jpg Category: Seed SessionId: 13	Alert box shows “successful inserted data”	Pass

		Tag: None		
6.	Get crop Suggestion by click on “Suggest” button on suggest modal by providing correct information		Crop name show on alert box get data from server	Pass
7.	Add Farmer Experience by click on “Add Button” on modal, by providing correct information	Id: 3 Name: AbdulHadi Experience: 12 Field: Plant Discription: Image: images/4.jpg SessionId: 13	Alert box shows “successful inserted data”	Pass
8.	Add Labour Experience by click on “Add Button” on modal, by providing correct information	Id: 2 Name: Abdullah Email: ab@gmail.com Experience: 12 Field: Plant Discription: Image: images/4.jpg SessionId: 13	Alert box shows “successful inserted data”	Pass
9.	View Transaction of product by click on “Transaction Button”		Transaction of different product shown on transaction interface	Pass
10.	Send message to farmer and labour by click on “Message Button” in farmer and labour interface respectively		Farmer or Labour receive Message of user	Pass
11.	Modify or Delete Products, Farmer experience or Labour experience by click on “User Data” Button		“User data” interface showing inserted products, farmers experience and labour experience and can be modify or delete	Pass
12.	Added feedback by click on “send message” button on feedback form	Id: 11 Name: Haffaz Ur Rehman Email: haffaz@gmail.com	Alert box shows “successful inserted data”	Pass

		Subject: Suggestion Message: add Status: 1		
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**Unit Testing 2:** Admin portal testing**Testing Objective:** To ensure that event society admin portal is working correctly

Table 21

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	Verify login of Admin after clicking on “login” button on login form, by providing correct information	Name: saif Password: 1234	Successful login into the main interface of Admin module showing different information	Pass
2.	Insert agriculture product information by click on “Add Product” button on product modal	Id: 13 Name: Apple Type: Fruit Discription: abc Image: ..//admin/images/5.jpg	Alert box shows “successful inserted data”	Pass
3.	View Feedbacks of user by click on “Feedback” button		Feedback interface shown different feedback of users	Pass
4.	View and delete products, farmer and labour by click on product, farmer and labour respectively		Different information added by user shown on this interface and admin can delete wrong information	Pass

**6.1.2- Functional Testing****Functional Testing 1:** Login with different roles**Objective:** To ensure that the correct page is loaded.

Table 22

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	Login as admin	Name: saif Password: 1234	Successful login into the main	Pass

			interface of Admin module	
2.	Login as user	Email: <a href="mailto:mak@gmail.com">mak@gmail.com</a> Password: 1234	Successful login into the main interface of user module	Pass

**Functional Testing 2:** registration testing

**Objective:** To ensure that the registration process is working correctly

Table 23

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	Get registration in user module as users	Id: 13 Name: Mohammad Anas Khan Email: mak@gmail.com Password: 1234	User is successfully registered	Pass
2.	Click on registration button by empty field	Name: abc Email: Password: 12221	Alert as “please fill out empty Field”	Pass

**Functional Testing 3:** Insert Data

**Objective:** To ensure that all insert forms/ Modals are working correctly

Table 24

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	User enter the details of products on Sale product modal and then click on “Add” Button	Id: 16 Owner_Name: usaid Product_name: Potato Price: 12 Image: images/4.jpg Category: Seed SessionId: 13 Tag: None	Product modal is submitted successfully	Pass
2.	User enter the details of farmer experience on	Id: 3 Name: AbdulHadi Experience: 12 Field: Plant	farmer modal is submitted successfully	Pass

	farmer modal and then click on “Add” Button	Discription: Image: images/4.jpg SessionId: 13		
3.	User enter the details of labour experience on labour modal and then click on “Add” Button	Id: 2 Name: Abdullah Email: ab@gmail.com Experience: 12 Field: Plant Discription: Image: images/4.jpg SessionId: 13	labour modal is submitted successfully	Pass

### 6.1.3- Integration Testing

Integration testing is done at the end of project, when whole system is integrated and connected with database. In integration testing, we check the overall functionality of system and also check that web pages are integrated with each other or not. We also checked the connectivity of database with the modules. We checked the functionality of our web.

Table 25

NO.	Test case/Test script	Attribute and value	Expected result	Result
1.	Testing database by “login as user” and entering the valid email and password	Email: <a href="mailto:mak@gmail.com">mak@gmail.com</a> Password: 1234	Successful login and user interface is displayed	Pass
2.	Testing Database connection by saving user information.		Record inserted or saved successfully on database	Pass
3.	Testing Database connection by saving farmer experience.		Record inserted or saved successfully on database	Pass
4.	Testing Database connection by saving labour experience.		Record inserted or saved successfully on database	Pass
5.	Testing Database connection by saving saleable		Record inserted or saved successfully on database	Pass

	product information.			
6.	Testing Database connection by saving feedback.		Record inserted or saved successfully on database	Pass
7.	Testing Database connection by saving product information in admin interface.		Record inserted or saved successfully on database	Pass

## Chapter 7

# Conclusion and Future Work

## 7- Conclusion and Future Work

### 7.1 Conclusion

Farmers came across various problems while performing out their duties, so in order to get them out of this havoc, we had undertaken this very project. In this project, we developed a web based Agricultural system, which will surely help the Farmers to grow crops according to the situation of temperature, soil and will eventually get larger amount of production. It will also help the individual farmers to calculate recommended of fertilizer for each crop. In addition to that this system has an option where farmers can buy inputs i.e. seeds, fertilizers etc. and to sale out their products. Along with that this system also has an information tab where farmers can get information about agriculture from agricultural experts through messaging. Moreover, farmer can hire laborer according to their needs. So by keeping this in mind, we designed the Agri point system with local database. There are two type of users of this system: Admins and User. Admins manage the system. Both have their own portal admin portal and user portal.

**Few features of our system are listed below:**

- If farmer want to sale any product i.e. agricultural product etc., He can add information (name, quantity and price) about products. And user who wants to buy product can view it and if he like the product He can buy product from owner with the help of website communication functionality.
- Users can get different information about agriculture like modern technologies, crop production technologies and other relevant information in different subsection which are added by admin
- User can get information which crop to be grown for particular climate
- User can calculate the doze of fertilizer for various soil types and crops. it can be calculated by giving type of soil, crop to be grown and previous crop grown on the area.
- Labors can register themselves and farmers can hire laborer according to their need.
- Farmers can share their views and their experience. They can interact with fellow farmers and agricultural expert there .Farmers can add there experience where other user get information about crops.

We hope that this project if launched will surely revolutionize the Agricultural sector of Pakistan.

## **7.2 Future Work**

In future this work can be shifted to android application with minimal internet requirement. Another module can be added which can bring in call feature for interaction of farmers and laborer. Crop disease detection and advisory feature can be added by utilizing artificial intelligence.

## Chapter 7

### References

## **References**

- [1]<https://play.google.com/store/apps/details?id=com.switchsolutions.agricultureapplication.mob ilink&hl=en&gl=US>
- [2][https://www.google.com/search?q=kissan+bazar+app&rlz=1C1KNTJ\\_enPK943PK943&oq=k issan+bazar+app&aqs=chrome..69i57l2j69i59l2j0i271j69i60j69i61j69i60.4144j0j7&sourceid=c hrome&ie=UTF-8](https://www.google.com/search?q=kissan+bazar+app&rlz=1C1KNTJ_enPK943PK943&oq=k issan+bazar+app&aqs=chrome..69i57l2j69i59l2j0i271j69i60j69i61j69i60.4144j0j7&sourceid=c hrome&ie=UTF-8)
- [3]<https://play.google.com/store/apps/details?id=pk.com.pakzarzameen.farmerapp&hl=en&gl=U S>