"AGRI-CALCULATOR" A WEB BASED APPLICATION
BY

Hirok Kabiraj

Id: 181-15-10677

Md. Touhidul Islam

ID: 172-15-10248

And

Mohema Abedin
Id: 181-15-10957

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

Supervised by:

Mr. Md. Azizul Hakim
Senior Lecturer
Department of CSE
Daffodil International University

Co-Supervised By:

Mr. Riazur Rahman
Senior Lecturer
Department of CSE
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

Dhaka, Bangladesh

04 January 2022

APPROVAL

This Project titled **"Agri-Calculator"**, submitted by Hirok Kabiraj Id:181-15-10677, MD. Touhidul Islam Id: 172-15-10248 and Mohema abedin Id:181-15-10957 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 4 December 2021.

BOARD OF EXAMINERS

Dr. S.M Aminul Haque (SMAH)   **Chairman**
Associate Professor and Associate Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Raja Tariqul Hasan Tusher (THT)   **Internal Examiner**
Senior Lecturer
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Md. Sazzadur Ahamed (SZ)   **Internal Examiner**
Senior Lecturer
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Dr. Shamim H Ripon   **External Examiner**
Professor
Department of Computer Science and Engineering
Faculty of Sciences and Engineering
East West University

DECLARATION

We hereby declare that this project has been done by us under the supervision of Mr. Md. Azizul Hakim, Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.
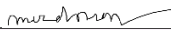
Supervised by:

Mr. Md. Azizul Hakim
Senior Lecturer
Department of Computer Science and Engineering
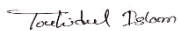Faculty of Science & Information Technology
Daffodil International University

Co-Supervised by:

Mr. Riazur Rahman
Senior Lecturer
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Submitted by:

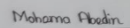**Hirok Kabiraj**
ID: 181-15-10677
Department of CSE
Daffodil International University

MD Tohidul Islam
ID: 172-15-10248
Department of CSE
Daffodil International University

Mohema abedin
ID: 181-15-10957
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First, we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully. We really grateful and wish our profound our indebtedness to **Mr. Md. Azizul Hakim, Senior Lecturer**, Department of CSE Daffodil International University, Dhaka.

Deep Knowledge & keen interest of our supervisor in the field of "Agri-Calculator" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to Daffodil International University Canteen management system, and Head, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University. We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work. Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

The aim of our project is to build such a website which make the agriculture system easier and also comfortable for who are interested in farming. It will increase better interaction space. This website created with the user id and password and information collecting pages. "Agri-calculator" website will help to remove unemployment. This "Agri-calculator" website is a system which is working for the betterment of the agriculture field. It makes farmers life easier and also create interest in an educated person who are job less. people will easily be farming by using this website and also gather more knowledge about farming. "Agri-calculator" website is a website which is easy to understand and also easy to operated. This system doesn't need many executives for maintaining. And people also get satisfaction by using "Agri-calculator" website. We created this application to eliminate unemployment. At the present time we have seen that many people are unemployed despite having educational qualifications. We have created this application for them as if they want to bring success in their farming through this application without any help. Through our application every person will be able to be self-sufficient and will not need any kind of help. Since our application is in Bengali language, anyone can use this application and will he be able to enjoy the company features of this application very easily.

TABLE OF CONTENT

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgement	iii
Abstract	iv
List of Figures	viii-ix

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1
INTRODUCTION

1.1 Introduction

Bangladesh is such a country where agricultural place vital role of our economy. The major crop of our country is Paddy. Agricultural sector plays a vital role to increase the economic growth. Agri-calculator satisfies the needs of users and unemployment people for their betterment. This system is combined with processes. And also connected with producer through this software. At present unemployment problem is acute in Bangladesh. When qualified people do not get any work for earning. Unemployment people can learn about Agriculture through Agri-calculator and they can start their earning way. Paddy production depend on feature of ago-edaphic and ago-climate. The farmer always has worry for their paddy, paddy management system, paddy quantity in every season. Our agricultural system should be developed. Most of the time farmer did not get their valid money for their hard work and for these reasons they face lots of problem. It will express through "Agri-calculator" system. We will provide all information about cultivation of paddy in our system and user will know about disease of paddy. Bangladesh's economic society connect with agriculture sector.

1.2 Motivation

We can see that now a day unemployment rate is increasing day by day. And there are lots of qualified people who cannot job. So, Bangladesh is underdeveloped country. Bangladesh's soil and weather necessary for produce different type of crop. So, our main motive to develop a "Agri-calculator" system   for helping people and also wanted to minimize these problems.

➢ An unemployed people gather more knowledge about Agriculture system by using this website.

➢ The administration can easily check the current situation of our agricultural system. And also, able to change or develop the situation.

- People browsing this application and can see demo video about agriculture related.
- People can easily see the present situation in the dashboard. And they will get more information about farmer's Problem.
- People can create their profile and can update and delete information.
- There is paddy disease related information. User will know about paddy disease.
- For using this system, it is needed to be login both the admin and user. this system will give soil fertility system to know their irrigation process and harvesting process.
- The system will give details about paddy like soil fertility, irrigation process, harvesting process. And it will give final paddy.

1.3 Objectives

Agri-calculator is a system where new farmer gather more knowledge about Agriculture and remove unemployment from our country. And also collect some information about Agriculture in system with a smart way and solve problems which can be faced the new farmer. This Project will track the agriculture system so that there will be all information about Agriculture for upcoming farmer. We are trying to help people who are not expert in Agriculture filed. We want to work towards taking the country forward in the field of Agriculture. Those who are already working in Agriculture field they know how to grow crops but a new farmer does not know. So, our purpose is to teach newcomers. There are so many young people in our country who are unemployed after finishing their studies, many of them want to work in Agricultural field. But most of the people don't get proper chance, they can't be successful without proper training. We want to work for them and eradicate unemployment from our country.

So, the key points are:

- Place selection processes ().
- Crop selection process
- Length of land selection in the System.
- Calculate Soil fertility level

- All information generates about paddy cultivation in the System (Irrigation process, Harvesting process, Seed quality)
- Produce Admin control.

1.4 Expected Outcome

Unemployed people use this system easily. They can effortlessly save their time and also it is more dependable. User can learn it fast. A better version of technology for the unskilled people. If there has some problem Admin can   simply check it out.

expected outcome from this project is:
- New farmer will cultivate paddy easily using the system
- Efficiency easier, reliable, maintainability process in the system
- Admin can control the whole management system.
- Unskilled people will be able to know about Agriculture work easily
- New farmer will get earning source.

1.5 Report Layout

We depict a prepare for arranging, planning, testing, and conveying a stock framework. We create a extend which is "Agri-Calculator". We have completed our extend through time partition of extend with the supervision of our respectable venture administrator. In chapter 01 named Presentation we examine almost Inspiration, Goals, and Anticipated Result. In chapter 02 named "Background" we examine almost the related extend of Savvy Administration Framework of Horticulture and comparative considers almost this extend. In Chapter 03 named "Requirement Specification" we talk about approximately Necessity Collection and Examination, Utilize Case Modeling and Portrayal, Utilize Case Portrayals, Consistent Information Show, Plan Necessities. In Chapter 04 named "Design Specification" we examine almost the Front-end Plan, Back-end Plan, Interaction Plan and UX, Usage Necessities. In Chapter 05 named "Implementation and Testing" we examine around the Execution of Database, Execution of Front-end.

CHAPTER 2
BACKGROUND

2.1 Introduction

Agri-calculator system will play an important role for the well governance of agricultural sector. Different kind of problem will be solved by using this "Agri-calculator". Agri-calculator is a web-based application which will manage all the agricultural system of our country. It also helps to remove unemployment problem. Make sure about unskilled people satisfaction and availability of paddy in the Agri-calculator will give pleasure to the new farmer. As we know that a farmer wants to produce their best quality of paddy but sometimes there can be some miss mass for less knowledge about weather, soil fertility etc. Unemployed people have less knowledge about fertilizer level. That's why they cannot make customer satisfied by selling their product. Unskilled people will able to know about paddy cultivation. It's a place where all information and data will be stored about farmer and also agricultural system. That's why it is behave like a data store. It makes the agricultural system well organized. For storing all data if the authority wants to improve the agricultural system of our country. They can easily change or modify it.

2.2 Related Works

Unskilled people can learn about agriculture through Agri-calculator. Unemployed people can arrange their earning source through Agri-calculator. We collect information from farmers and unemployed people. In this application, we use Django framework for back-end. We have used react for front-end. It combines with HTML and JavaScript. It is open source, efficient, flexible frond-end JavaScript library. It builds reusable user interface. It consists of multiple components which is reusable. It creates virtual DOM in memory We use Django for back-end. It is python framework. We have learned various resources. We have created database to store data. We use Django REST API. REST abbreviation is Representational State transfer. We will get information about structural way to API design from REST. We can create interface for API. We use rest for listing, updating, deleting

data in our server. We need REST interface. It reduces amount of code. This API provide huge usability.

2.3 Comparative Studies

Agri-Calculator System is an online software. It is web-based application. Admin collect data through registration page (Name, username, email, password). Admin will record of all information which data will be collect by user through registration page. User can register this system using valid information. They have to validate themselves by their admin approval. User can go login option through Get Started button. User create their profile. User can login the software with valid information. Admin can know the details record. system can save unexperienced people's time. by using this system people get better facility. It is user friendly. Because every farmer uses this application with a small knowledge. uneducated people also use this application. admin and user both gate the exact information which they want to know.

2.4 Scope of the Problem

Agri-calculator supply the correct statistics about paddy cultivation system to the user whenever they need or want to know it. We want to decrease unemployment rate. Some application provides real time chatting system but we cannot add this system. This is problem. If we can add this chatting system then people can inform us about missing information or their usability. Farmer can use our application through registration system. Old farmer can collect all required information. Old farmer can give information through chatting system if we miss any information. User can know about cultivation if they face any problem to cultivate paddy. On the other hand, we cannot add another crop without paddy. We can inform about paddy to people. But we want to update our system in future and we will try to add another crop. But we use contact system with admin which is helpful. If a lot people use this system, then system became slow.

2.5 Challenges

Gather proper knowledge of web-based application development system is the main challenge. To fulfill user requirements, we have to learn more and collect data. It is big challenges to learn about react. Now it is use for control all those problems. And the authority does this properly. We have to collect all the essential data for our system. Adding soil fertility, preparation of field, irrigation process, harvesting process and the seed quality was also challenges for us. Calculation process was difficult for us. If new farmer cannot get proper idea about fertilizer level, then he cannot cultivate good paddy. They get proper idea through our application. Without knowing about fertilizer level, they cannot protect paddy from disease, insect. Another challenge is to accurate storage of data. And stored data also should be valid. various types of data are used in our Agri calculator system. And this is one of the biggest challenges. Timing of seed sowing is very much important part of cultivation. Farmer can know timing in our application. We use Django REST API framework for database. We have to learn about Django REST API framework.

CHAPTER 3
REQUIREMENT SPECIFICATION

3.1 Requirement Collection and Analysis

3.2.1 District select

Unemployment rate are increasing day by day. We want to reduce unemployment problem. Many unemployed people have interested about paddy. But they do not have proper knowledge about paddy, so they cannot cultivate paddy. User will proper knowledge about paddy cultivation in our application. User will get all information about paddy through our system. We add all division and user can select their own division to calculate their desire data. In this way it's easy to find data of district and provide it to our website and press the calculate button. User can select district and our application will show match area.

3.2.3 Crop selection

We add paddy. As paddy is main food grain so we consider paddy as crop. In future We want add another crop. We collect information from farmer about paddy. We take data about soil fertility, preparation of field, irrigation process, harvesting process and the seed quality. User can see various type of crop. When user select district, land area and press submit button then he/she can see various type of crop which crop is cultivable in this area. User will get information about weeds control, disease management, threshing. Paddy can be attacked different type of disease. User can get information about fertilizer to remove disease through our application. User will know about irrigation process.

3.2.4 Length of Land selection

There is land area selection option. User can select district and land area. Farmer apply different type fertilizer for plant growth. If farmer use extreme level fertilizer, then it is

harmful for plant growth. So new farmer should have knowledge about level of fertilizer. New farmer can get idea about fertilizer in our application. Level of fertilizer will be changeable as length of land. It will be countable in our application.

3.3 Use Case Modeling & Description

Utilize case chart appears interaction between framework and environment. It speaks to a center portion of the framework. The utilize case chart appears how the clients of the framework connected with the computer program. Firstly, unused client who got to enroll at that point they can get to the framework. The client browses the application, and the application has Login alternative. After that the utilize case of the framework appears as it were the most functionalities of the framework. The utilize cases appearing the functionalities are as takes after:

- Sign up process.
- Sign in correctly.
- User create and update profile
- Admin Login.
- Admin observes all activities
- Admin add and update the post or status.
- Add new area of service

3.3.1 Use Case Diagram

In figure 3.3.1, A client can get to the application by login as it were in case, he/she is enlisted some time recently. Client can make an ID for login by giving the require data inquired in enlistment page. At that point they can post a complaint or record a case by giving the data of required areas. Client can see put determination framework and select put. Admin can Login the internet page of the framework. Admin can be able to handle entirety framework like he/she can be able to see the upgrade, erase.
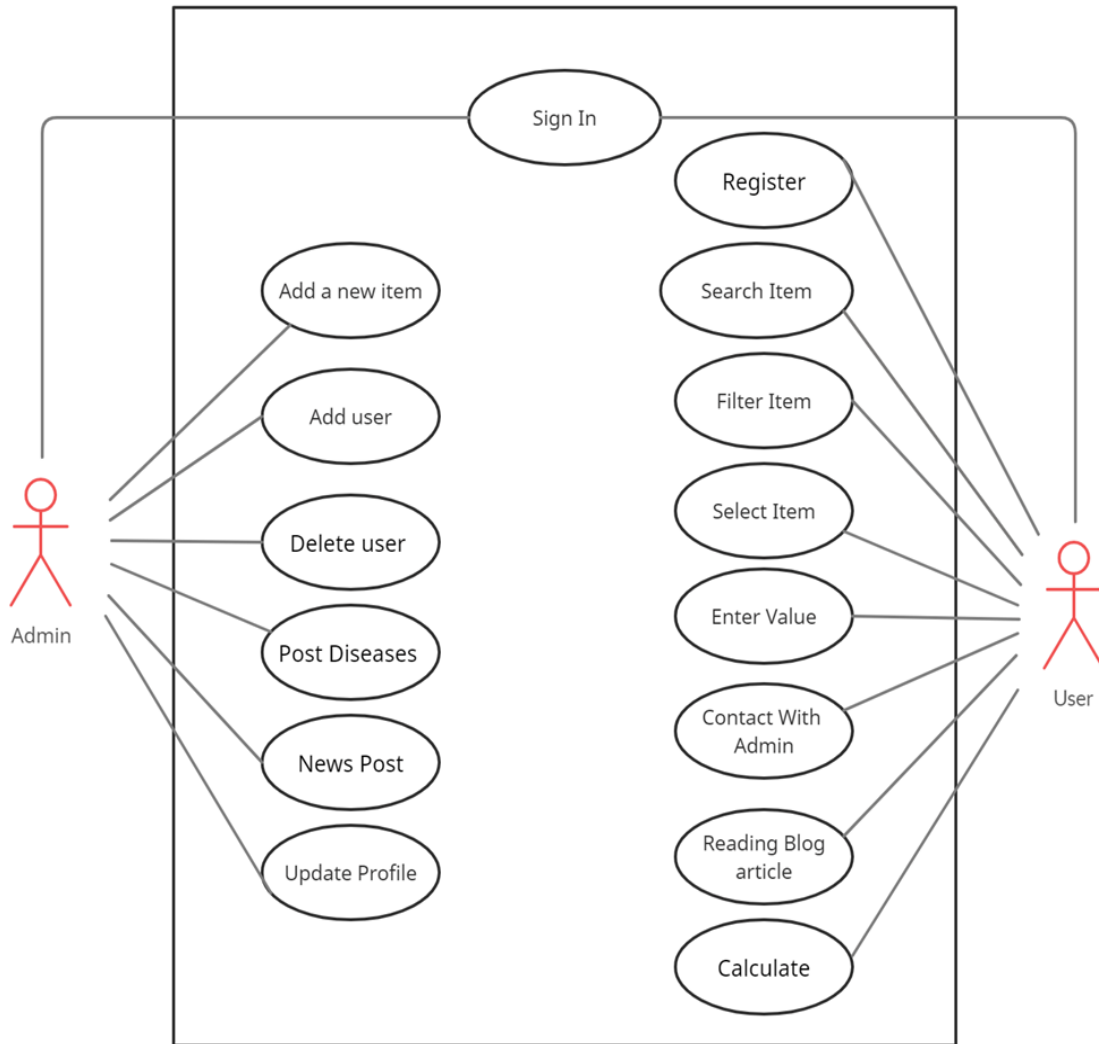
Figure No-3.3.1: Use Case Diagram for User and Admin for web application

3.3.2 Use Case Description

Table 3.3.2: Use case description of search District.

Use Case 1	Search District
Primary Actor	New farmer/ Unemployed people
Secondary Actor	Null
Pre-Condition	Login in the system
Main Success Scenario	Click the icon with a specific keyword and find district.

Exception Scenario	No data found because of internet connection

Table 3.3.2: Use case description of Registration

Use Case 02	Registration
Primary Actor	Unemployed people
Secondary Actor	N/A
Pre-Condition	Must need email account and Internet connection.
Main Success Scenario	User will give their email and provided required information correctly to registration in the system.
Exception Scenario	Email problem, Database problem, Internet problem, server problem

Table 3.3.3: Use case description of Perform Specific Action.

Use Case 03	Perform Specific Action
Primary Actor	Admin
Secondary Actor	Null
Pre-Condition	Login and Internet Connection.
Main Success Scenario	Admin will deliver the e-mail and secret word accurately to login within the entry, then able to some specific action such as delete some data, hide something, update etc. successfully.
Exception Scenario	Database problem

Table 3.3.4: Use case description of get notification

Use Case 04	Get notification
Primary Actor	User/unemployed people
Secondary Actor	System

Pre-Condition	Login in the system and need internet connection.
Main Success Scenario	User will give the email and password correctly to login in the portal and get notification for specific issue.
Exception Scenario	Unsuccessful apply because of internet connection or uploading problem.

Table 3.3.5: Use case description of district selection

Use Case 05	Select district
Primary Actor	Unemployed people
Secondary Actor	Null
Pre-Condition	Login in the system and internet connection.
Main Success Scenario	Admin can create standard and strong district listings and are able to upload those successfully.
Exception Scenario	server problem and submit problem for internet connection.

Table 3.3.6: Use case description of crop selection

Use Case 06	Select crop
Primary Actor	Unemployed people
Secondary Actor	Null
Pre-Condition	Login in the system and internet connection.
Main Success Scenario	Admin can create standard and strong district listings and are able to upload those successfully.
Exception Scenario	server problem and submit problem for internet connection.

Table 3.3.7: Use case description of length of land

Use Case 7	Select length of land
Primary Actor	Unemployed people
Secondary Actor	Null

Pre-Condition	Login in the system and internet connection.
Main Success Scenario	Admin can create standard and strong district listings and are able to upload those successfully.
Exception Scenario	server problem and submit problem for internet connection.

Table 3.3.8: Use case description of follow

Use Case 8	Follow
Primary Actor	Unemployed people
Secondary Actor	N/A
Pre-Condition	Login in the system and internet connection.
Main Success Scenario	Customers will give the email and password correctly to login in the Website, then they can search order and place them.
Exception Scenario	server problem and problem for internet connection.

Table 3.3.9: Use case description of adding new harvest

Use Case 9	Add new harvest
Primary Actor	Admin
Secondary Actor	N/A
Prerequisite	Sign in the system and internet connection.
Main Success Scenario	Customers will give the email and password correctly to login in the Website, then they can search order and place them.
Exception Scenario	server problem and problem for internet connection.

3.4 Logical Data Model

It is utilized to establish prototype structure. We can create model how data will be implemented. We represent characteristic of data element through logical data model. We share physical data, reuse component so development of application is easier, faster. We

correct mistakes, entry missing data easily. Without logical data model, we can face different type of problem. We create this model before database designing.

3.5 Design Requirements

Plan is the step after prerequisite and Detail within the advancement. Aim of application development lifecycle is planning, defining, designing, building, testing, deployment. Designing is main part for building and coding. We make software requirements into software implementation through software design. The output of designing directly works in building and testing. Once the program prerequisites have been analyzed and indicated the program plan includes three specialized exercises- plan, building (coding, usage) and testing that are required to construct and confirm the computer program. The plan exercises are of primary significance in this stage, since, choices eventually influencing the victory of the computer program execution and its ease of support is made. These choices have the ultimate bearing upon unwavering quality and viability of the framework. Plan is the as it were way to precisely decipher the user's necessities into wrapped up program. Plan is the put where quality is cultivated in development. Software plan could be a handle through which necessities are interpreted into a representation of program. We plan this application utilizing diagram

- ▪ Use case Diagram

- ▪ Sequence Diagram

- ▪ The ER Diagram

- ▪ The State Diagram

3.5.1 The E-R Diagram

The E-R Chart portrays inter-related things of intrigued in a particular space. It composed of substance sorts and indicates connections that can exist between occurrences of those substance sorts. This is often E-R chart for this framework.
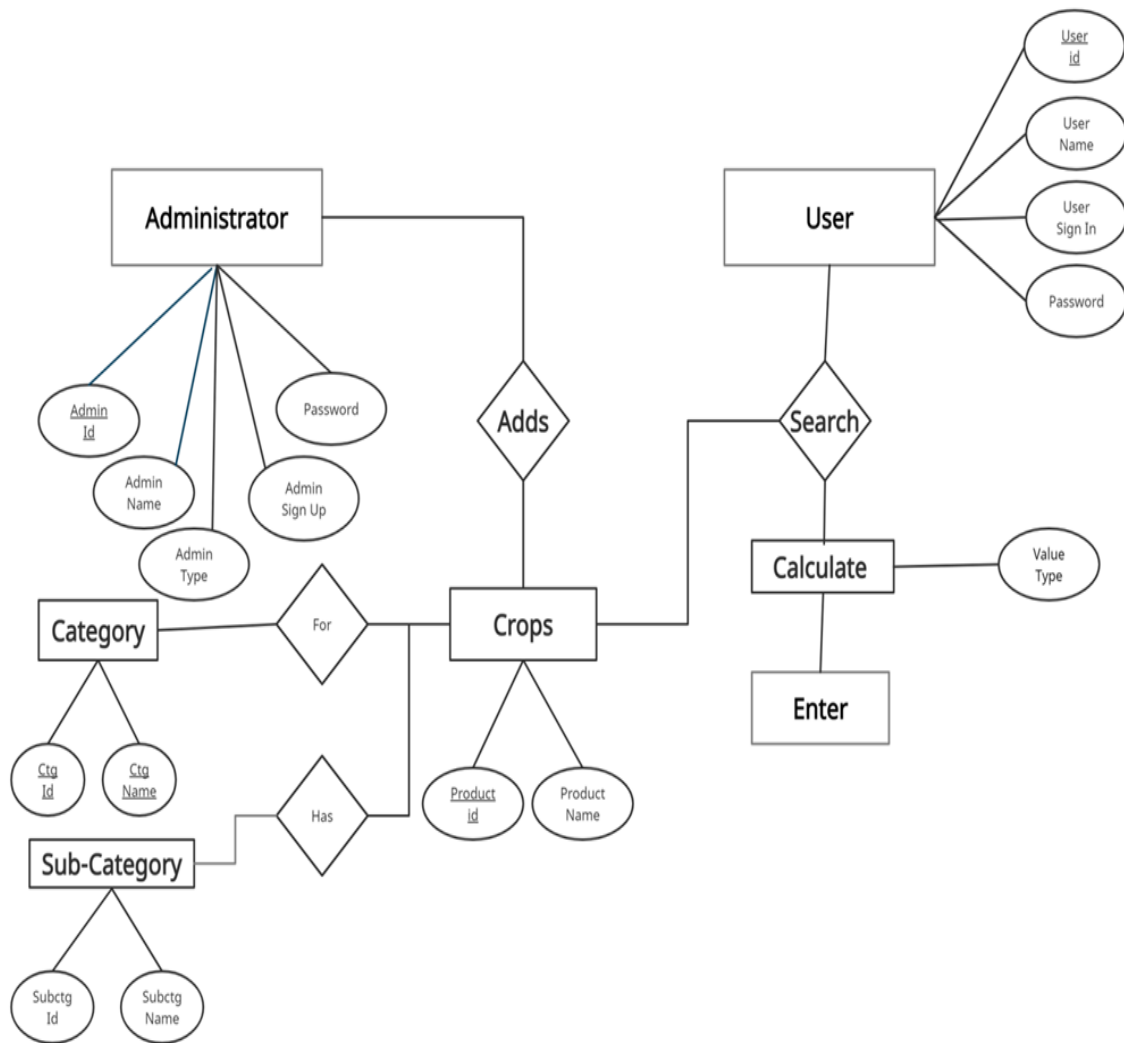

Figure 3.5.1.1: The ERD

3.5.1 Sequence Diagram

Here grouping graph basically delineates interaction between objects in a consecutive arrange i.e., the arrange in which these intelligent takes put. Ready to utilize the terms occasion graphs or occasion scenarios to allude to an arrangement chart. Grouping charts portray how and in what arrange the objects in a framework work. These graphs are broadly utilized by businessmen and computer program designers to record and get it prerequisites for modern and existing frameworks.
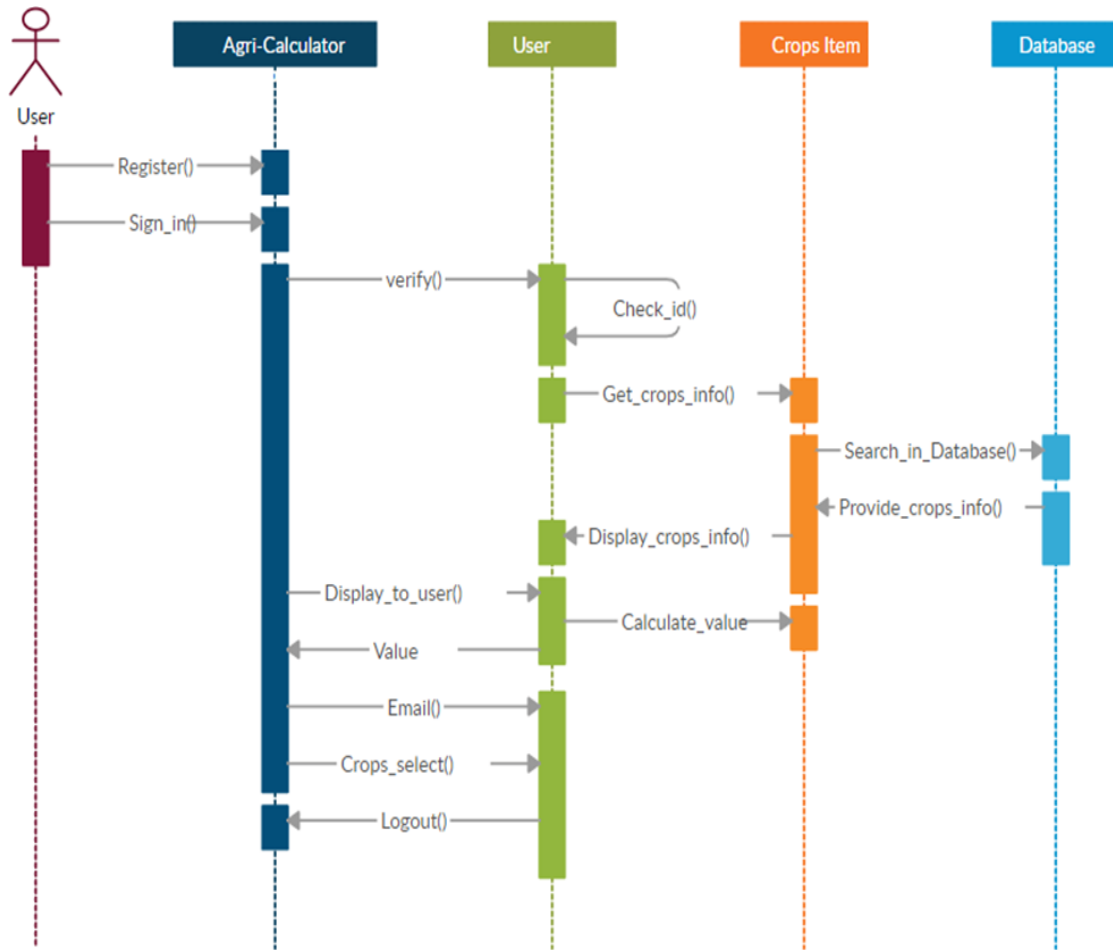

Figure No-3.5.3.1: The sequence diagram

3.5.3 State Diagram

It is behavioral and modeling graph. This chart build usefulness of the framework. It speaks to the condition of framework. It investigates different states of This framework.
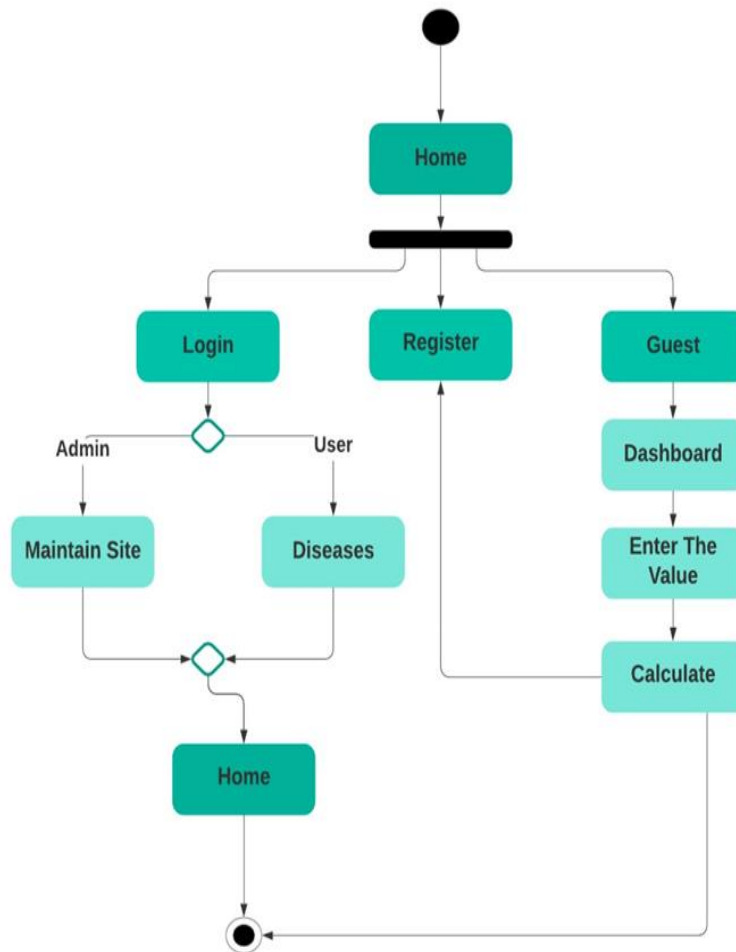

Figure No- 3.5.3.1: The state diagram.

CHAPTER 4
DESIGN SPECIFICATION

4.1 Front-End-Design

User browse frontend site. We have used react.js for front-end. It is open source, efficient, flexible frond-end JavaScript library. It builds reusable user interface. It consists of multiple components which is reusable. Reusable components are main feature of react.js. It creates virtual DOM in memory. It is more friendly UI. User browse website. User interact with front end site. Developer design front end site using button, menu, link, graphics and more options. User enjoy features from front site.Rect.js components are HTML, CSS, JS. We make application through combinations of components. HTML is utilized for make a essential structure of an online site and CSS is utilized for keeping up the format of web page. JavaScript is utilized to client-side behavior. React is a JavaScript library for building user interfaces. The building block of react is components. The main concept of react is component architecture. React helps to make custom components. We design a big webpage with small components. We plan our site as we are web creator additionally did our other front-end works as well.

4.2 Back-end Design

Server side is fundamentally speaking to back-end location. Back conclusion works behind the screen. We got to make an energetic web location. User provide data. In our application, user select location, crop and create their profile. This information is kept in database which resides on server. We provide notification option from back end. Server keep relevant information of web, update. Server update data and present it through front end. Django is python web development framework. It supports multiple language. It supports large set of databases. It needs less code so development is easier. It is maintaining the quality of web application.

4.3 Interaction Design and UX

Interaction Plan is exceptionally vital portion for client involvement. User can achieve their objects in this model. It is very useful model. User interact with system or service. User use this application and can communicate with this application. We can choose crop option. We work with paddy but we will work with another crop in future. We add some diseases image in our application. When we click in image, we get information about diseases. UX meaning Client Encounter plan. UX plan is utilized in front conclusion advancement. Basically, Interaction Plan implies a client Interface Plan of a web page.

4.4 Implementation Requirements
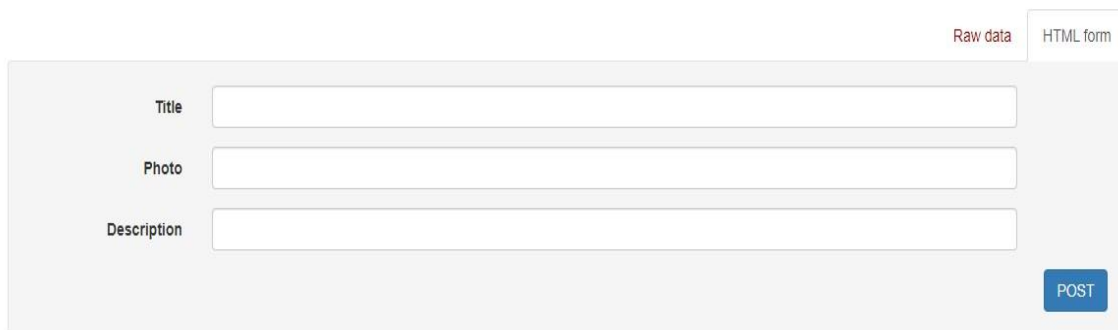
Requirement engineering helps software engineers. They understand the problem which can solve through requirement engineering. It involves activity. It leads to understand what user wants and how user interact with the software. To implement software, we require a supported device. We work in window10 operating system. We are using react.js for front-end. It combines with HTML and JavaScript. It is frond-end JavaScript library. It builds user interface. React application is made up of multiple components. It is reusable for multiple components. React.js is an open source, efficient and flexible JavaScript library. We can create dynamic web application. It becomes easier. It can add, create, update components easily. It has more functionality. We use Django for back-end. It is python framework. We use Django REST API. REST abbreviation is Representational State transfer. We will get information about structural way to API design from REST. We can create interface for API. We use rest for listing, updating, deleting data in our server. We need REST interface. It reduces amount of code. This API provide huge usability.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Here, our web application data collected from unemployed people and farmer. Most of data are collected from Paddy research institute. We collect district information. We add length of land. We use calculation procedure which is main part of our application. When user will provide district information and length of land then he/she will get all information of paddy cultivation. We collect paddy variation, timing of seed showing which information will be stored in database. Data is important part of all applications. So, we try to use accurate data in database. Use will get information about disease. We collect information almost infection and we store information in database. Information capacity may be a basic component of most data systems. Data administration is an imperative portion. Able to store, examined, upgrade and erase information. Information can be included in database. We use Django REST API. REST abbreviation is Representational State transfer. We will get information about structural way to API design from REST. We can create interface for API. We use rest for listing, updating, deleting data in our server. We need REST interface. It reduces amount of code. This API provide huge usability. We add different type of data.

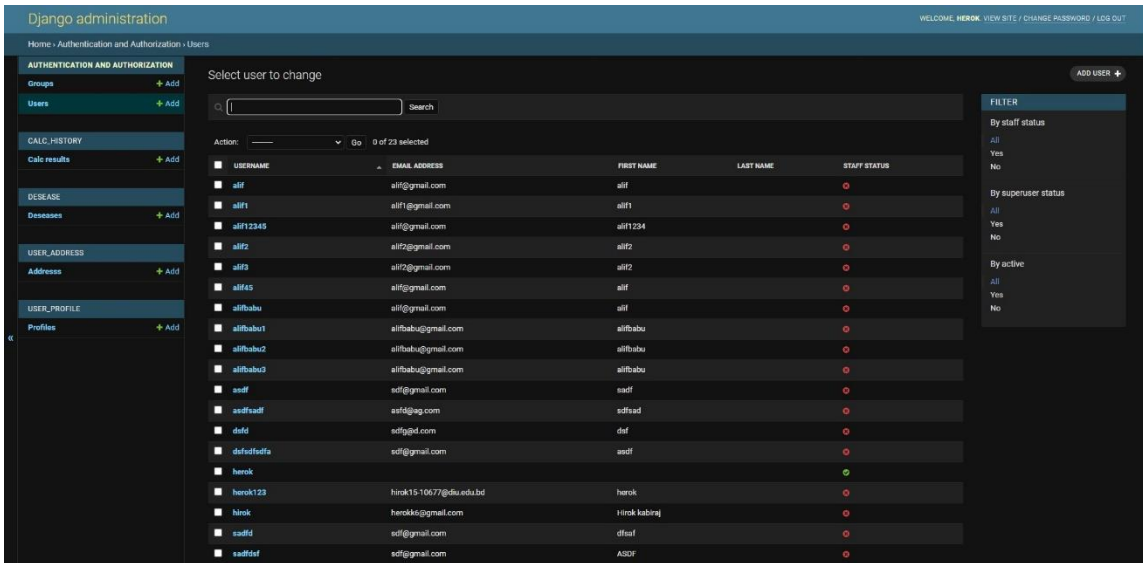Figure: 5.2.1: Disease post form backend
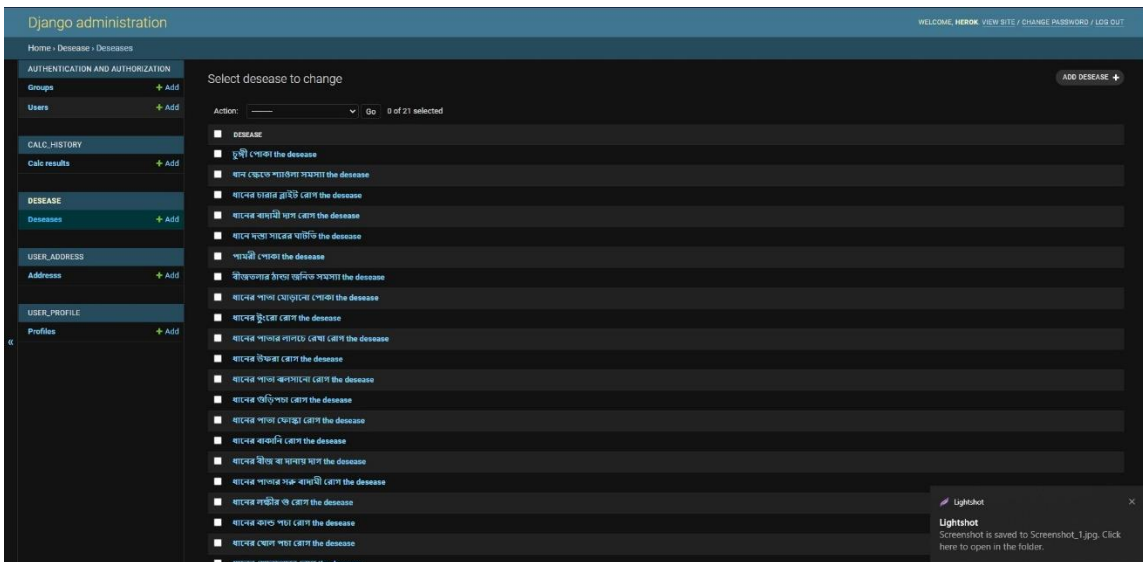
Figure: 5.2.2: Database User list SQlite

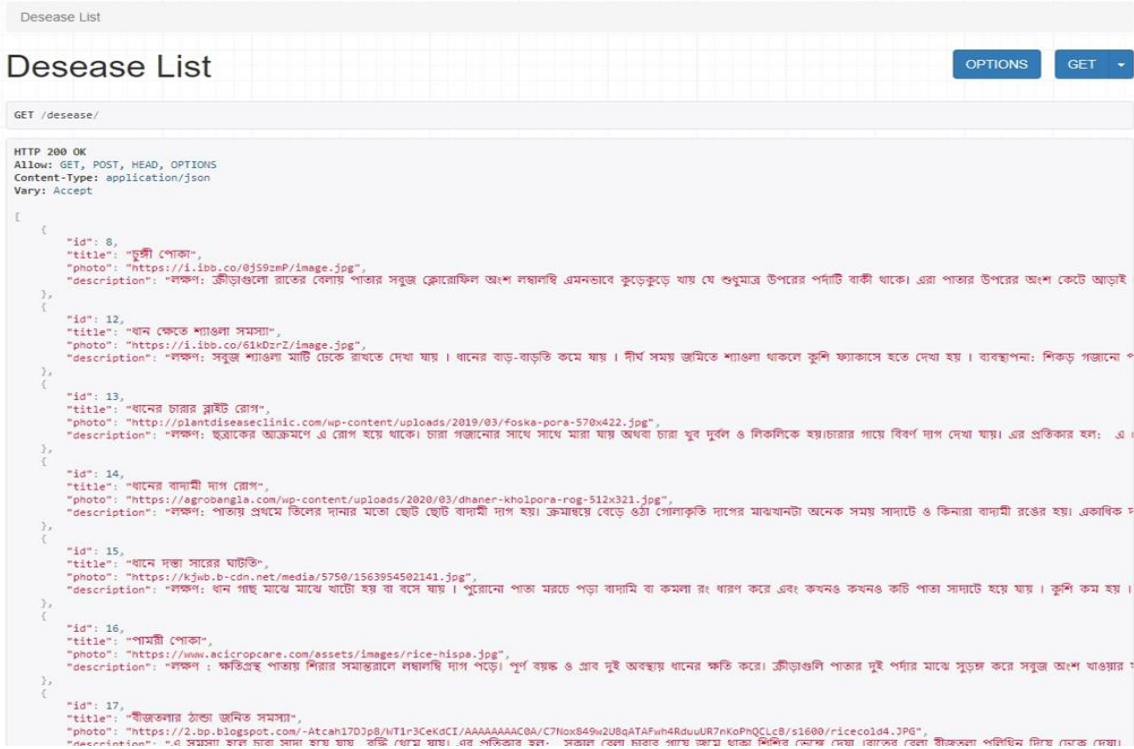Figure: 5.2.2: Database disease list SQlite
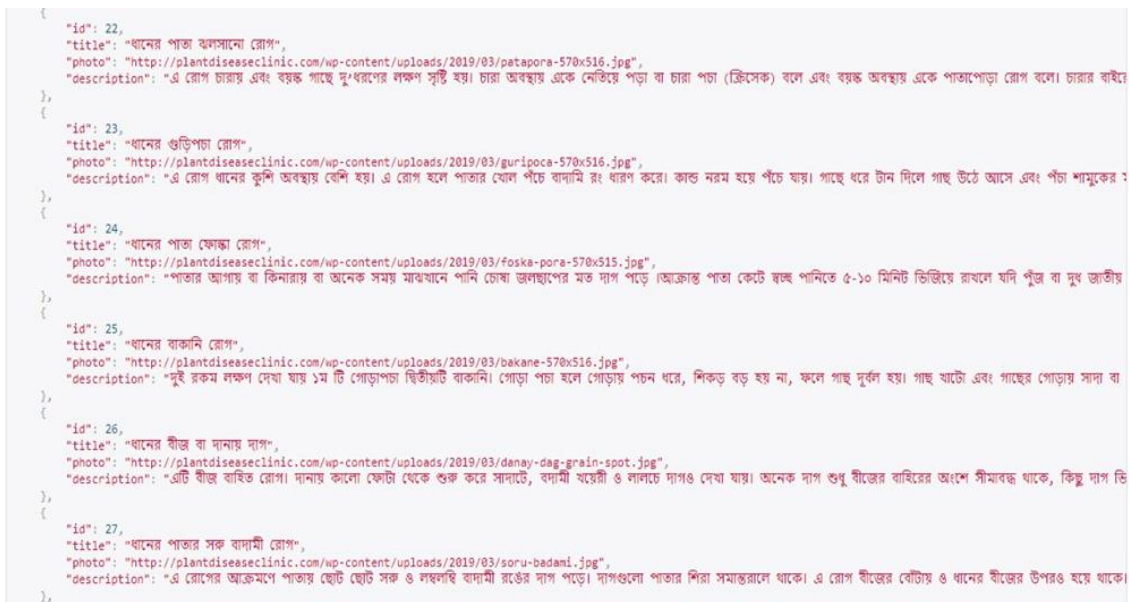
Figure: 5.2.2: Add Disease form backend

Figure: 5.2.3: Add Disease form backend

5.2 Implementation of Front-end Design

Another title of front-end web advancement is client-side advancement. Client- side advancement could be a hone of making Django, respond and JavaScript for an online site or web application. So that a client can realize and relate with them rapidly. The challenge associated with front conclusion improvement is that the instruments and methods used to make the front conclusion of web site and so the engineer should continually be mindful of how the field is creating. The targets of creating site are to ensure that when the users open up the location, they can get the data in a organize that's simple to get it and significant and so far, same for the net pages. Typically advance complicated by the truth that clients presently utilize a large variety of gadgets with shifting screen sizes and resolutions hence driving the architect to require into thought these perspectives when planning a location. They have to be guarantee that their gadgets may be different sorts adaptation and for site, location comes up accurately completely different browse

Step-1:

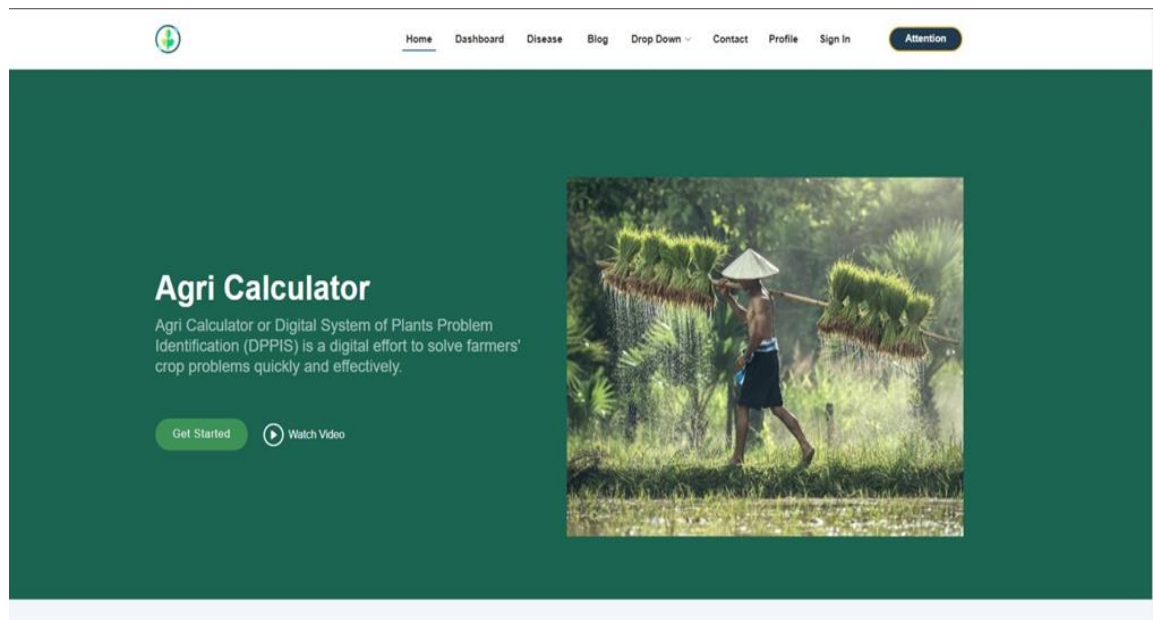➢ In tramp 1, figure no 5.2.1, Here the User can view the welcome page of our Agri Calculator Application.

Figure No- 5.2.1: Home page

Step-2:

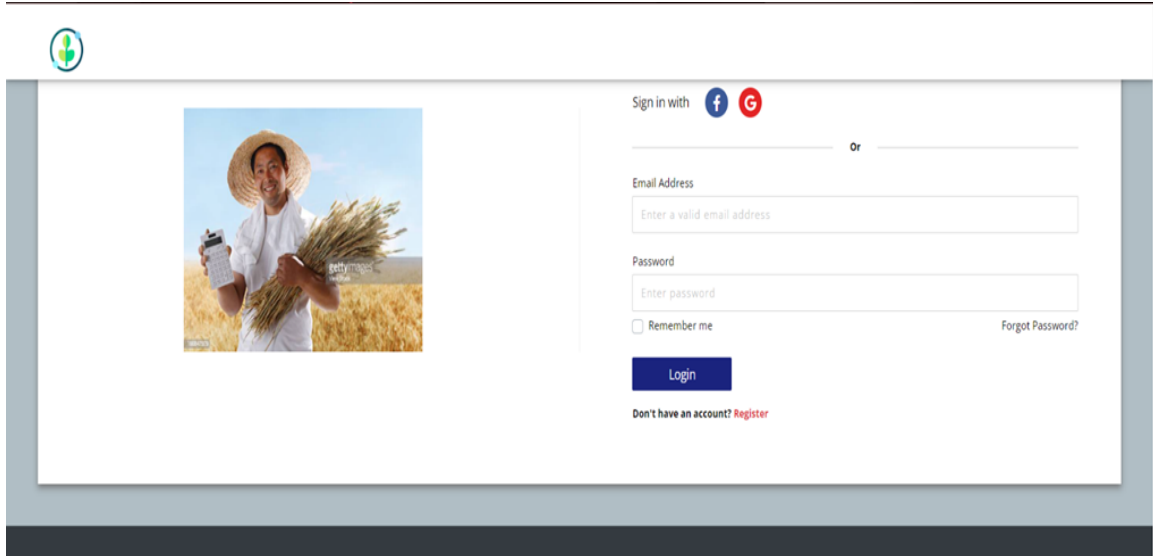> ➢ In tramp 2, figure no 5.2.2, Here the user can login to our Agri Calculator Application.

Figure 5.2.2: Sign in Page

Step-3:

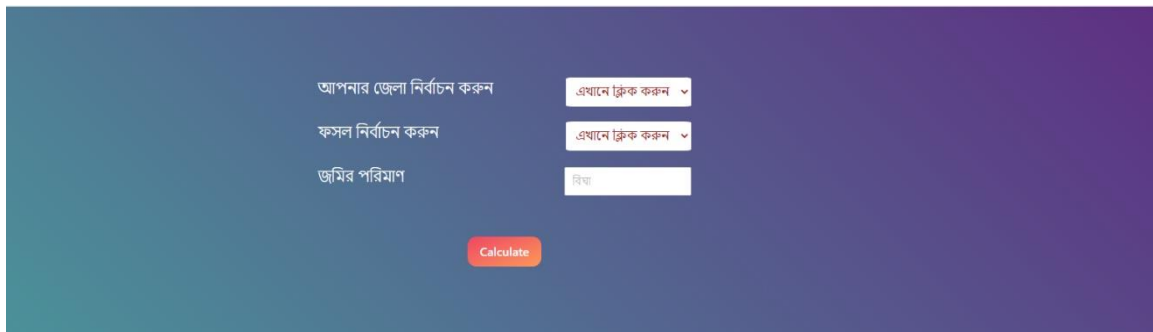> ➢ In tramp 3, figure no 5.2.3, User go to our calculation dashboard. And find their own district to put the value.

Figure No- 5.2.3: Dashboard

Step-4:

> ➢ In tramp 4, figure no 5.2.4.1, In this dashboard user can put the Length of Land.

Figure 5.2.4.1: Land area select

Step-5.1:

In tramp 5.1, figure no: 5.2.5.1 Here we can see the calculation.

Figure 5.2.4.2: Calculation

Step-5.2:

In tramp 5.1, figure no: 5.2.5.2 Here we can see the calculation.

চাষের সময় ১/৩ ভাগ ইউরিয়া ও অন্যান্য সকল সার শেষ চাষের সময় প্রয়োগ করতে হবে, ২য় কিস্তি ইউরিয়া (১/৩ ভাগ) ৪-৫ টি কুশি দেখা দিলে (সাধারণ রোপনের ১৫-১৮ দিন পর) এবং ৩য় কিস্তি (১/৩ ভাগ) ইউরিয়া কাইচথোড় আসার ৫-৭ দিন পূর্বে প্রয়োগ করতে হবে। অন্যদিকে বোনা আউশের ক্ষেত্রে টিএসপি, এমপি, জিপসাম ও জিংক শেষ চাষের সময় প্রয়োগ করতে হবে। ইউরিয়া সমান ২ কিস্তিতে প্রয়োগ করলে গাছের বাড়-বাড়তি ভাল হয় ও ফলন বৃদ্ধি পায়। ১ম কিস্তি শেষ চাষের সময় ও ২য় কিস্তি ধান বপনের ৩০-৪০ দিন পর প্রয়োগ করতে হয়।

আগাছা দমন: সাধারণত হাত দিয়ে, নিড়ানী যন্ত্রের সাহায্যে অথবা আগাছানাশক ব্যবহারের মাধ্যমে ৩০-৩৫ দিন পর্যন্ত আগাছামুক্ত রাখতে হবে। রোপা আউশ ধানের জন্য প্রি ইমার্জেন্স আগাছানাশক হিসাবে বেনসালফিউরান মিথাইল+এসিটাক্লোর, মেফেনেসেট+বেনসালফিউরান মিথাইল ইত্যাদি গ্রুপের আগাছানাশক রোপের ৩ দিনের মধ্যে প্রয়োগ করতে হবে।

সেচ ব্যবস্থাপনা: ধানের চারা লাগানোর সময়বা বীজ বপনের সময় বৃষ্টিপাত না হলে সময়মত চারা রোপন এর জন্য সম্পূরক সেচ দিতে হবে। সরাসরি বীজ বপনের ক্ষেত্রে জমিতে জো অবস্থা বিরাজমান না থাকলে অংকুরিত বীজ জমিতে কাদা করে লাইনে বপন করতে হবে।

রোগ বালাই ব্যবস্থাপনা: আউস মওসুমে সাধারণত খোলপোড়া রোগ, ব্যাকটেরিয়াজনিত পাতা পোড়া রোগ, টুমগ্রো এবং বাকানি রোগের প্রকোপ দেখা দেয়। খোলপোড়া রোগের জন্য জমিতে পানি বের করে দিয়ে বিঘা প্রতি ৫ কেজি পটাস সার প্রয়োগ করতে হবে। টুংরা দেখা দিলে আক্রান্ত গাছ উঠিয়ে মাটিতে পুতে ফেলতে হবে। বাকানি প্রবন এলাকায় রোগ প্রতিরোধে অটিস্টিন ছত্রাকনাশক প্রতি লিটারে ২-৩ গ্রাম ১ কেজি বীজে মিশ্রিত করে শোধন করা যেতে পারে।

পোকামাকড় ব্যবস্থাপনা: আউস মুখ্য পোকা গুলো হল – মাজরা পোকা, পামারি পোকা, থ্রিপস, গান্ধি পোকা, সবুজ পাতা ফড়িং রবং বাদামি গাছফড়িং। পোকা দমনে আলোকফাদ এবং পার্চিং ব্যভার করতে হবে। পোকা দমনের জন্য কার্বোসালফান গ্রুপের কীটনাশক মারসাল-২০ ইসি ব্যবহার করা যেতে পারে।

ফসল কাটা ও মাড়াই: শীষের অগ্রভাগের ৮০ শতাংস ধানের চাউল শক্ত ও সচ্ছ হলে ধান কেটে ফেলতে হবে। তারাতাড়ি মাড়াইয়ের জন্য রি উদ্ভাবিত মাড়াই যন্ত্র ব্যবহার করা যেতে পারে। বাদলা দিনে কোন উপায় না থাকলে ধান মাড়াই করে সাধ্যমত ঝেড়ে বৃষ্টিমুক্ত স্থানে ছড়িয়ে দিয়ে শুকানোর ব্যবস্থা করতে হবে।

Figure 5.2.4.3: Calculation

Step-5.2:

In tramp 5, figure no: 5.2.5 show blog page and user read the blog for their future cultivate.

Figure No-5.2.5: Blog Board

Step-6:

In tramp 6, figure no: 5.2.6, contact page with admin. Contact message send by user.
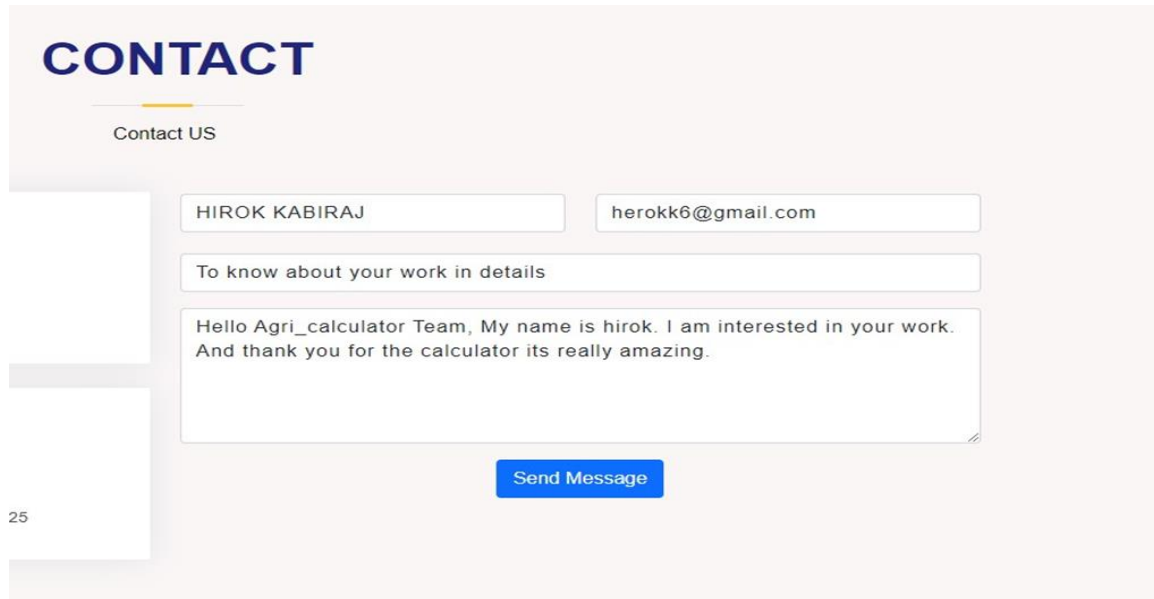

Figure No-5.2.6: Contact Board

Step-7:

➢ In tramp 7, figure 5.2.7, User message directly came admin email.
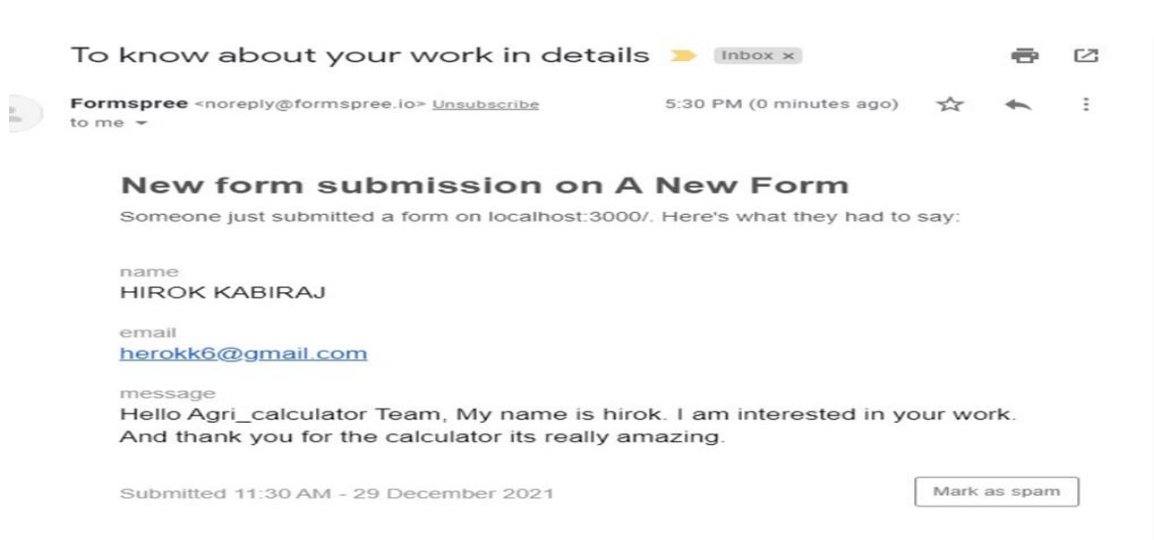
Figure No-5.2.7: Message Board

Step-8:

> ➢ In tramp 08, figure no: -5.2.7.1, disease page. We add different type of disease. If anyone browse our application then he/she can know about disease.
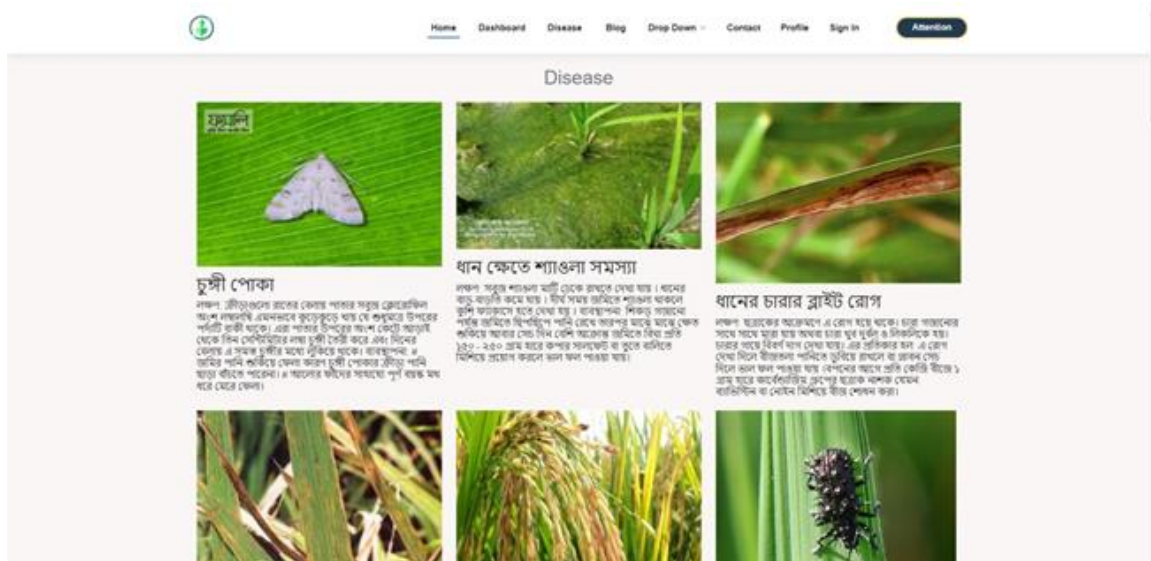
Figure-No 5.2.7.1 Disease page

5.3 Implementation of Interactions

We complete this application through communication, planning, modeling, construction, deployment. We communicate with unemployment people and farmer and collect requirements. We plane with resource, work schedules. We design a model to achieve goals and analysis about model. We construct this application through code and test the application. All of these communicators are considered casual, and are not previewed as seconds, records of record, controlled computer program, or official memoranda. This preparation concludes when the bigger part of people concur that the work is significantly total and it is time to create draft deliverables for formal survey and message.

5.4 Testing Implementation

These errands are carried out when the frameworks are either wrapped up or at the Testing organize as to propose in a few of the administration strategies. Testing and assessment may be done concurrently but are one of a kind from each other in terms of meaning. Web application testing is very much important. We focus on content, performance, security, usability, function and structure for testing. We have to performance testing to simulate real world situation. Web application user are increasing day by day then amount of data increase simultaneously. We use firebase Realtime database and Window10 operating system. This database and operating system support the web application. The projected server configuration supports The Web App without error. This system testing ensures us that it operates without errors. We complete user testing. We test internal structure, detailed information of internal logic, structure of code which is white box testing. We examine the functionality of application, interact with system's user interface. Different device, network connection, browser and operating system are important on Web application operation. User can interact effectively with webapp. The purpose of this application is user's life make easier. Usability reviews are important for us. We test each navigation link to ensure that link is working perfectly. Proper content and function are working. We test that server receive all information from registration form. Any data is not loose in transmission between user and server. We test interface feature to ensure that design rules and visual content are available for user.

Table 5.4.1: Test case assessment

Test case of Agri Calculator	Expected outcome of Agri Calculator	Obtained outcome of Agri Calculator	Pass/ Fail Realti me	Tested on
1. Sign In	Sign In successfully	Login successfully	pass	07-10-21

2. Update information	Information will be updated in the database.	Information have been updated in the database.	pass	20-10-21
3. Calculation	The Output shown in the dashboard	Successfully Output shown in the dashboard	Pass	20-10-21
4. Disease Cheek	They can find their disease picture and overcome procedure	Successfully they will follow the result	pass	21-10-21
5. Interface testing	Each gadget will bolster flawlessly	Upheld in all gadget & browser	Pass	21-11-21
6. Application crashed	No responding is very much rare.	ANR issue apportion is exceptionally much uncommon like 0.01%	Pass	26-10-21

5.4.1 Test Case
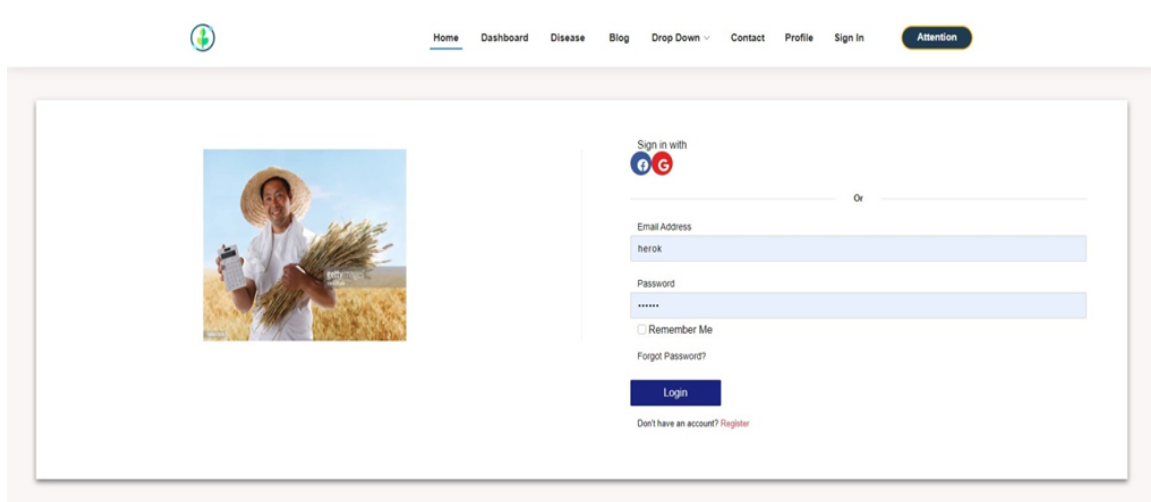
Figure No 5.4.1: Sign In page

5.4.2 New User Registration: Incorrect user ID or Incorrect Input

In the event that client gives any off-base client ID or watchword input esteem amid enrollment at that point it'll not appear the effectively done message to the user. Have to be give the proper client ID and secret word.
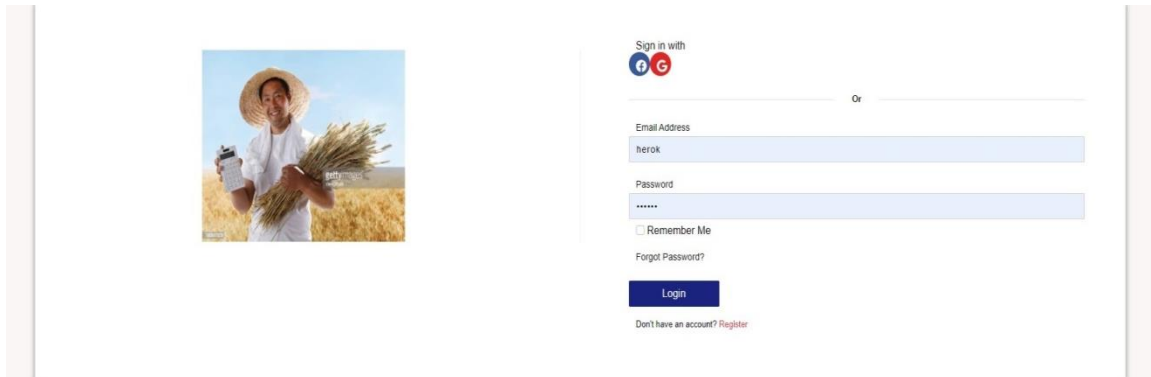
Figure 5.4.2: Login page with wrong data

5.4.3 New User Sign Up: Successful

On the off chance that user gives the correct esteem of mail ID and watchword which as of now saved by the admin through the framework database.
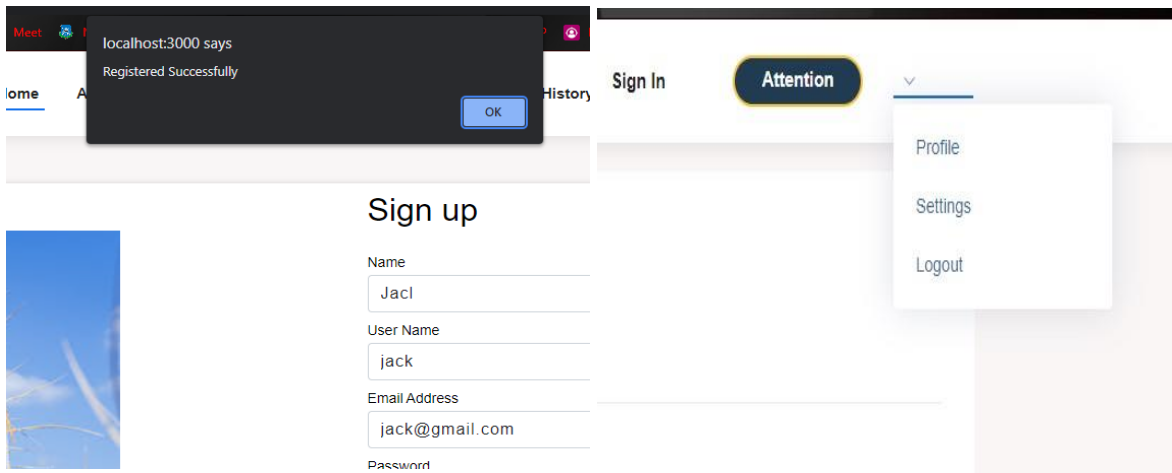
Figure 5.4.2: Login page success

5.4.4 User Sign In: Incorrect User Data

In the event that the user gives off-base esteem, at that point entered into the dashboard, at that point client can't be able to utilize the other exercises.

Figure 5.4.4: Incorrect user value

5.4.5 User Sign In: Success

On the off chance that the admin gives right esteem, at that point entered into the dashboard, at that point Admin Login Effectively

Figure 5.4.5: Sign In successful

5 Development Test

Development testing includes all testing activities. It could be a imperfection testing handle. The reason of testing is to find bug or mistake wit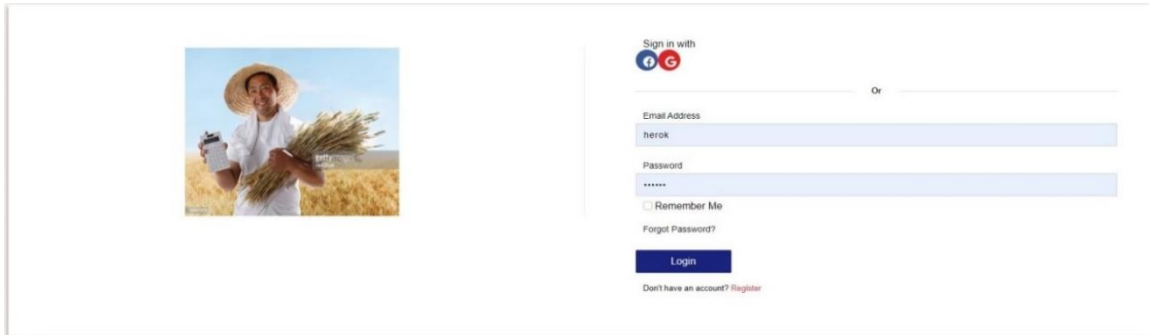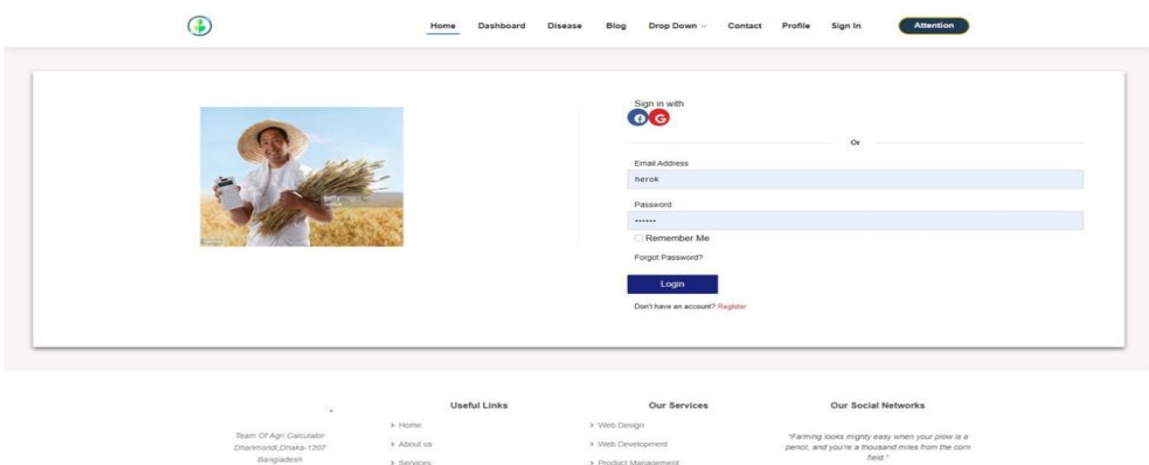hin the computer program. It is interleaves with investigating. It changes the program to settle bug. Amid advancement we utilize three level testing.

- Unit testing

- Component testing

- System testing

5.4.6 Unit Tests

Unit test is the method of testing program components. It centers on the littlest component of program plan. It is fundamental to check each module of the framework is working without bug free or not. We test all operations related with the question. We set and check esteem of all properties. Testing is time devouring and costly. In the event that there have any surrenders within the component, these ought to be uncovered by test cases. We utilize two sorts of test case. We work with ordinary operation of program and take note that component works. At that point we discover common issue.

Component Tests

We test all components. Components are composite. We check user requirements which is related to each component and each component of application are performed correctly. We test the usability of all components. We verify input and output that we give input and get output correctly.

System Test

We check in our system what components are compatible, reusable. We also check that transfer the right data at right time, interaction correctly. Each use case is implemented by several components. Use case based is an effective approach to system testing. We test same menu and check that user provide input which is correct or incorrect

5.4.7 Integration Tests

When we make this application then create the change of requirements, we add new requirements Integration testing necessary for it. There modules are integrated logically. It consists of multiple modules. The purpose of integration testing is when modules are integrated then expose defect. It checks data communication among modules. Integration tests are more often than not acknowledged to check whether a number of modules are working together suitably. There are a few shapes connected to the resource's assignment prepare. It contains shapes together and each shape is working parallel with one another. In other forms, the situation is the same case like some time recently.

5.5 Test Result and Reports

Testing can only show the presence of error. We test our application through artificial data. We test for every requirement. The report of a test is required to reflect testing comes about in a formal way, which gives an opportunity to gauge testing result quickly. Test result could be an archive. It records information gotten from assessment investigate in an organization way, characterize the environment or working conditions, and demonstrates the comparison of the test results with targets. So, at the conclusion able to carry out the comes about as the benefits of ease-of-use testing to the conclusion once we have characterized the common architecture for interaction objects, the issue is at that point how to plan the set of its occurrences to create them accessible to designers of client interfacing. In genuine world, interaction can discover nearly all over. Interaction is the key to form a framework energetic and appealing to client. It's exceptionally fundamental to form a

framework interactive and we also try to. As mentioned in earlier, we also include some unique feature to interact our system.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

In this portion we state around our choice and conclusion. Here we examine around future scope and how it seems have been superior.

6.1 Discussion and Conclusion

In conclusion we would like to tell that Agri-Calculator has accomplished its reason. It has taken a colossal errand for this extend to be completed. It has made a most straightforward operational prepare for modern rancher and unemployed individuals in Farming framework. All the operations will be smoother and proficient by the utilize of this computer program. It has given a tremendous lift to the stock framework and this has empowered the admin control framework to see over to the each and each operation performs all through this framework. This has moreover given a more extensive range of communication to the clients.

6.2 Limitations

- Do not have real time chatting system in this application
- Need to added user feedback
- Need to increase security issue.
- Result is now count in pdf format.
- Only developed in web application.
- Only paddy is added in calculation table

6.3 Scope for Future Developments

This framework encompasses a parcel of future scope to create it more client neighborly. A few future scopes are examined within the underneath:

➢ We want to collect data from all district.

- ➢ We want to give information about all crops
- ➢ We are update technology about all crops time efficient.
- ➢ We want to add real time chat system in our application

REFERENCES

[1] "Bangladesh paddy research institute" Web Browser: https http://www.brri.gov.bd/ [last accessed:10-12-21 at 10.00 am].

[2]"Krisokarjanala" About Agriculture Disease: https://shokherkrishi.com/ [last accessed: 10-11-21 at 01.00 am].

[3] "Farmingfuturebd" Agriculture news: https://farmingfuturebd.com/ [last accessed: 10-11-21 at 01.30 pm].

[4]"Ministry of Agriculture" https://moa.gov.bd/ [last accessed: 11-09-21 at 11.00 pm]

[5]"Wikipedia" For use case at https://en.wikipedia.org/wiki/Use_case_demonestration, [last accessed 05-10-20-21 at 8:30pm].

[6]"ERD" available at https://lucid.app/lucidchart/f83fa252-a193-407f-9346-86ef3418ebb4/edit#, [last accessed on 06-10-2021 at 9:30pm].

[7] "HTML, CSS" available at: https://www.w3schools.com/css/default.asp [last accessed on 12-10-2021 at 11:00pm].

[8]"Font-end Design" available https://bradfrost.com/blog/post/frontend-react-and-a-bridge-over-the-great-divide/ [last accessed on 14-10-2021 at 11:30pm].

[9]"BackendDesign" available at https://www.pluralsight.com/blog/software-development/front-end-vs-back-end [last accessed on 14-12-2021 at 01:30pm].

[10]"BackendDesign" available at https://dribbble.com/tags/backend [last accessed 14-11-2021 at 11:30pm].

[11]"Django restframework" available at https://django-rest-framework-datatables.readthedocs.io/en/latest/ [last accessed 11-12-2021 at 9:00pm].

[12]"Get python" available at https://www.python.org [last accessed 12-10-2021 at 10:00pm].

[13] "Security test" Available: https://sitecheck.sucuri.net/ [last accessed: 22-10-2021].

Plagiarism Report

Document Viewer

Turnitin Originality Report

Processed on: 01-Jan-2022 21:02 +06
ID: 1736757328
Word Count: 5914
Submitted: 1

Agri Calculator By Hirok Kabiraj

Similarity Index	Similarity by Source	
18%	Internet Sources:	6%
	Publications:	0%
	Student Papers:	16%

exclude quoted   exclude bibliography   exclude small matches   mode:

[quickview (classic) report ▾]   Change mode   print   refresh   download

---

12% match (student papers from 23-Jan-2021)
Submitted to Daffodil International University on 2021-01-23   ☒

1% match (student papers from 02-Apr-2019)
Submitted to Daffodil International University on 2019-04-02   ☒

1% match (student papers from 13-Jun-2021)
Submitted to Australian Institute of Higher Education on 2021-06-13   ☒

1% match (student papers from 30-Nov-2020)
Submitted to Pathfinder Enterprises on 2020-11-30   ☒

1% match (Internet from 17-Apr-2018)
http://eprints.utar.edu.my   ☒

<1% match (student papers from 26-Jan-2021)
Submitted to Daffodil International University on 2021-01-26   ☒

<1% match (Internet from 07-Apr-2021)
http://dspace.daffodilvarsity.edu.bd:8080   ☒

<1% match (Internet from 01-Oct-2021)
http://dspace.daffodilvarsity.edu.bd:8080   ☒

<1% match (Internet from 02-Nov-2019)
http://dspace.daffodilvarsity.edu.bd:8080   ☒

<1% match (Internet from 02-Apr-2021)
http://dspace.daffodilvarsity.edu.bd:8080   ☒

<1% match (Internet from 03-Jan-2020)
http://dspace.daffodilvarsity.edu.bd:8080   ☒