

GROW FARM- AGRICULTURAL BUSINESS MANAGEMENT SYSTEM

BY

Name: Nafila Ferdous

ID: 213-25-981

This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Master's of Science in Computer Science and Engineering

Supervised By

Dr. Md Zahid Hasan

Associate Professor

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

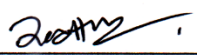
This Project titled GROW FARM- AGRICULTURAL BUSINESS MANAGEMENT SYSTEM submitted by Nafila Ferdous ID No:213-25-981 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 19-01-2021.

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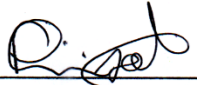
Dr. Touhid Bhuiyan, PhD
Head and Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



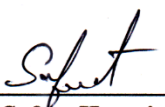
Dr. Md. Zahid Hasan
Associate Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Mr. Fahad Faisal
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

External Examiner



Md. Safaet Hossain
Associate Professor & Head
Department of Computer Science and Engineering
City University

DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Dr. Md Zahid Hasan, Associate professor, Department of CSE, Daffodil International University**. I 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:



Dr. Md Zahid Hasan
Associate Professor
Department of CSE
Daffodil International University

Submitted by:



Nafila Ferdous
ID: 213-25-981
Department of CSE
Daffodil International University

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Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

Grow Farm is an online solution for farming that is created to remove the gap of communication between farmers and buyers. It is web-based and offers remote services for both the farmers and the buyers. There are three stake-holders in this system—Farmer, Buyer and the Admin. The system is all about bringing buyers and farmers together to make smooth communication by creating a platform where they can respectively buy and sell crops and express their grievance.

Admin can both add and remove the other two parties. Admin also stores all the related data of the farmers and the buyers. Here, farmers will be able to sell their crops and the buyers will be able to buy them. They both have the benefit of expressing their complaints, grievance etc. Farmers will be able to receive useful farming tips too. In order to ensure the secure payment, payment gateways are integrated here like SSLcommerz.

Backend is developed with Node js, GraphQL API, database with no SQL - mongodb and the frontend with React js, CSS, Bootstrap.

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CHAPTER 1

Introduction

1.1 Introduction

Grow Farm is a web project that aims to help farmers increase their profits through direct communication between farmers and buyers.

This service improves business communication and system transparency with a separate complaint page, and authorities will have regular access to that page using their username and password. Farmers and agents will be given a unique ID to use when logging into their account, leading to secure access.

1.2 Features

1. Part login area with appropriate functionality for farmers, administrators and structures.
2. A section page where only farmers can post complaints and only political figures can admin
3. Page where searchers can post their ads
4. An effective GUI so that rural people can use people's government.
5. The player may run out of information to communicate and deal with.

1.3 Resource allocation

This contains three more study areas. First, it addresses the difficulties Technology adoption guideline and issues Chrome extension service, particularly in Bangladesh and around the world in general. Second, it identifies the factors influencing extension services through correct use of ICT for determining the factors of technology transfer. In doing so, this chapter contributes to the development of basic concepts of ICT and decision making at all tiers of the agricultural decision making process. Finally, it provides a detailed overview of prior research models employed in aiding the information content concerned with farmers in driving the information idiot in the process of decision-making.

1.4 Motivation

Role of middlemen in the marketing of Agricultural conditions which leads continuous losses of farmers.

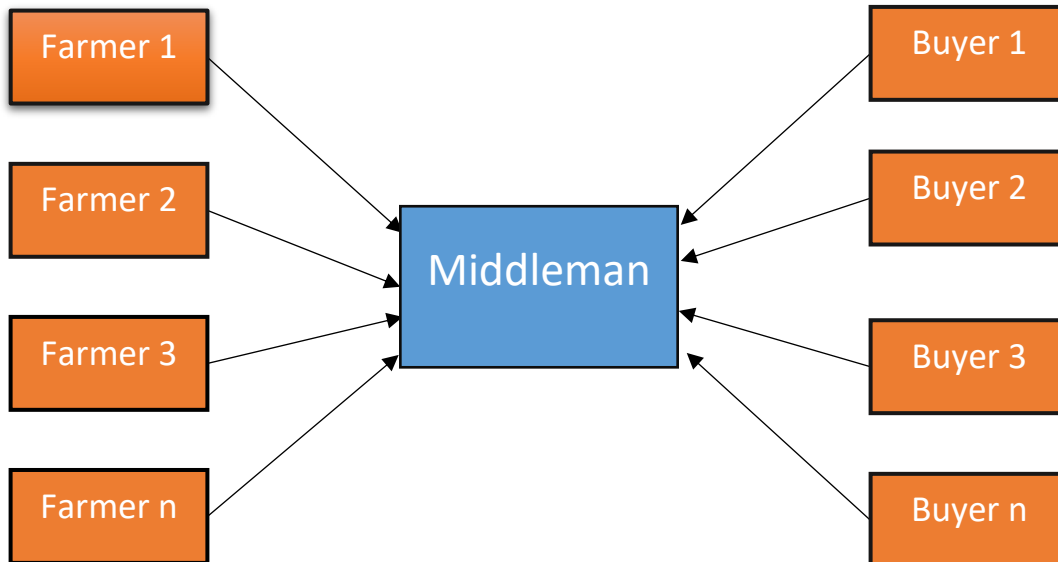


Figure 1:Role of Middleman

Traders are often intermediaries who connect farmers' products with consumers. They sometimes connected with markets that were far away from the production areas. They are often overlooked and tried to sell directly to the market. The profit margin of the farmers is indeed more than 60%, but the farmers are not profitable due to the limited volume of transactions.

1.5 Problem Statement

New orders and regulations from Govt. Stability, development and functioning of global financial markets Bangladesh's rural agricultural marketing remains in disarray. In the absence of adequate marketing infrastructure, farmers have to rely on local traders and middlemen to dispose of their produce, which is sold at a premium. Storage facilities in rural areas are either non-existent or woefully inadequate.

Farmers are forced to sell their produce. Immediately after harvest at current market prices, which are almost always lower. Such distressed sales deprive farmers of their legitimate revenue.

1.6 Scope

The scope of the project includes:

- Farmers can increase their profit by participating in this program.
- This service improves corporate communication and increases system transparency.
- Multiple communities can interact and transact with each other.
- Agricultural advice is easily provided to the farmers, and their problems can be resolved.

1.7 Report Layout

Chapter 1 describes the projects main features, motivation and the scopes.

Chapter 2 concludes a detailed review of the related literature.

Chapter 3 presents the proposed methodology with a detailed description.

Chapter 4 explains the result analysis and comparison with existing work.

Chapter 5 highlights the present research along with a direction for future work.

CHAPTER 2

Literature Review

2.1 Introduction

It covers three other areas of study that are expanding rapidly, as well as agricultural challenges, technology adoption norms and concerns.

Second, by identifying the factors influencing extension services through the proper use of ICT to determine the factors of technology transfer, this chapter helps to develop the basic concepts of ICT and decision-making at all levels of the agricultural decision-making process.

Finally, it provides a comprehensive assessment of several models used in past research to facilitate information content relevant to farmers to drive information naivety in farmers' decision-making processes.

2.2 Related Works

This government has created this website in order to learn and know about the current market price of the crops and farming products. Their mission is to provide marketing knowledge all over the farmers of the country. Farmers and suppliers can know about different government events on agriculture through this website. Also some helpful blog available for the farmers.[2]

Right now though, the agriculture world has the lowest adoption rate for digital marketing at 78%, lower than the average of 88% for all other industries. For brands and suppliers to then expand their reach across industries, digital marketing in the agriculture sector presents opportunities to increase organic site traffic, increase search-engine rankings, and increase perceived industry authority.[3]

For businesses in this sector, ag services and online retailers may find that established KPIs don't translate clearly to the internet marketing universe. But it's not true. Digital marketing for agriculture – including search optimization and paid advertising – helps businesses digitally market agricultural ecommerce products while generating better B2B leads.[3]

It is a portal funded by the South Asia Sub-Regional Economic Cooperation (SASEC) Information Highway Project in Bangladesh, Bhutan, India and Nepal. The main objective of the project is to establish high-speed Internet access Community e-Centers (CECs) in more than 100

villages, which will bring enhanced distance education, telemedicine, electronic mail, social networking and e-commerce opportunities to the villagers.[6]

2.3 Scope of the problem

The immense solution of this website is to informing farmers and suppliers for about current market situation rather than making a platform for them to communicate. So there needs a solution where the proper market analysis can be utilized for farmers well-fare.[2]

The digital marketing strategy is important for the farmers and suppliers but there is no specific way to involve them in the large sector of ecommerce. Introducing ecommerce with agricultural marketing policy may bring to a conclusion of such problem.[3]

South Asian community has a big number of rural areas where it's necessary not only to make people familiarize with technologies but also apply the real life application. Through the involvement of agricultural marketing and their real life participation on it may solve this problem.

2.4 Challenges

The potential challenges will be making a large number of rural people involve and motivate them to use ecommerce facility for agricultural business management. Also creating a reliable platform for secure transaction to take place. Bringing the whole traditional agricultural business management into this digital platform has also technical challenges.

CHAPTER 3

System Requirements

3.1 Used Method

Among the various software development methods, the traditional waterfall method is the most appropriate to use for this project.

3.1.1 Justification of the used methodologies

- Waterfall methodology is a sequential process.
- Phases are completed one at a time.
- A schedule can be set with deadlines for each phase.
- Works well for small ones where the requirements are very well understood
- Easy to understand and operate.
- Connecting to an HTTP site via GPRS/WIFI.
- Handling relevant html pages using HTTP POST&GET.
- Logically parsing farmer, buyer information/crop/problem data.
- Creating a local database for offline viewing.

3.2 Waterfall Model

The waterfall model is a phase bound process and each phase has distinct goals to complete to advance to the next phase-

3.2.1 Phases Waterfall Model

- Requirement Analysis
- System Design
- Implementation
- Testing

- Deployment
- Maintenance

 **Waterfall method**

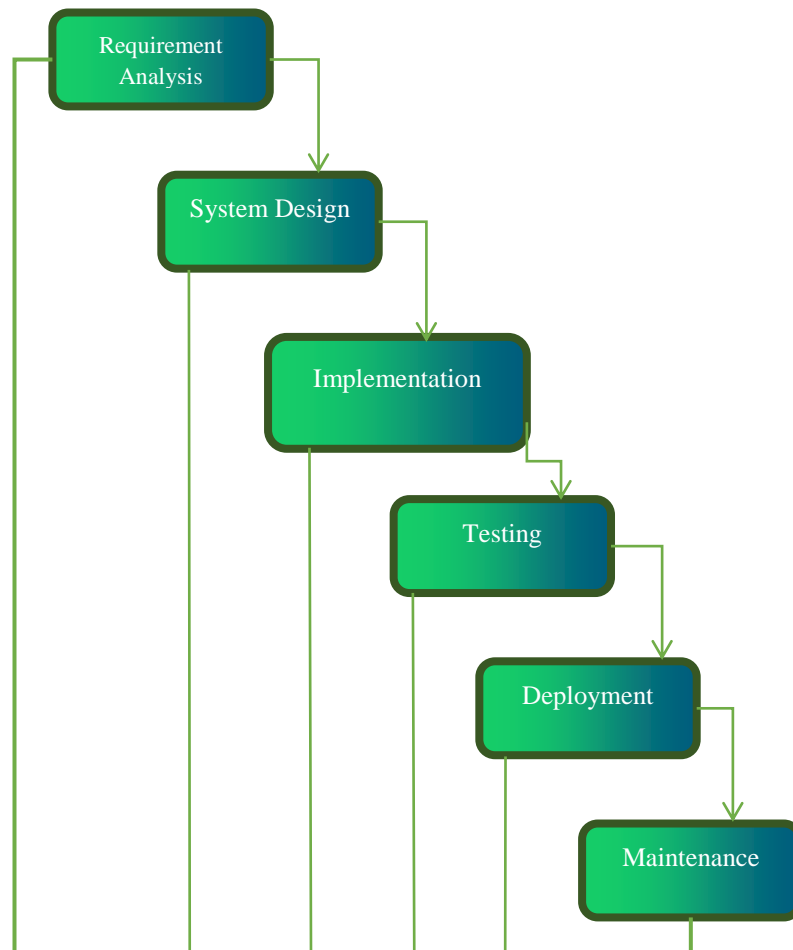


Figure-2:Waterfall Model

Requirement Analysis

Usually Requirement analysis and requirement gathering through data analysis and existing project analysis is done in this part.

System Design

System architecture and flow of data designed here on the basis of 1st phase requirement gathering.

Implementation

System development work is partially done here, with input from system design.

Our systems technical specification is:

Frontend: React js, CSS, bootstrap.

Backend: Node js, Express js, GraphQL API.

Database: Mongodb.

Browser: Cross browser compatibility

Integration and Testing

After testing each module, the partially developed system is integrated into a complete system.

After integration the entire system is tested for any errors and failures.

Deployment of System

After system development and all types of testing are done with the system it is deployed in the customer environment.

Maintenance

After deployment, the system needs to be upgraded with better versions.

3.3 Requirement analysis

This Grow Farm web service needs many conventional tools, scripting language, server and so on. As we can clearly identify that the whole system works on internet. It's completely workable as long as there is no disruption on internet service. The functional and non-functional requirements are given below:

3.3.1 Functional Requirement

Software Requirements

- Windows XP, Windows 7(ultimate, enterprise)
- VS code
- Browser

Hardware Components:

- Processor–i3
- Hard Disk–5 GB
- Memory–1GB RAM

3.3.2 Non-Functional Requirement

- Extensibility: The system can be expanded as new features and options are increasingly required according to farmer-buyer relationships and contemporary economic markets.
- Usability: This web service can be a break-through to build interaction with the farmers and help them to provide proper guidance on sale and purchase.
- Scalability: There are several opportunities where we can make this system functional and compelling especially in our economy sector.
- Security: The system provides complete security of the database used. Admin can take action against Complaint Farmer-ID or Buyer-ID.

CHAPTER 4

Design and Implementation

4.1 Introduction

The proposed system allows the users of "Grow Farm" to trade and communicate through the online system This helps them inspect the product beforehand Commodity prices are open so that farmers know the real price Sell the products and smartly and pay them fairly.

4.2 Features of the Proposed System

Separate login areas for Farmers, Buyers and the Admin.

1. A separate page where farmers can share their grievance and only assigned administrator can edit this page and give solutions.
2. It has pages where the buyers can post their ads.
3. An effective and simple interface so the rural people,in effect,everyone can use the system.

Being an online system,it can be accessed from everywhere with an internet connection,even the people of remote areas can access this system.

4.3 Module Description

This Grow Farm web service has several individual modules and the management of those modules are supported and mapped by the following required actions:

4.3.1 Admin

- Admin can see the farmers and buyers full profiles.
- View complaints:This page contains the complaints of the both farmers and the buyers.
- He also can remove farmer and buyers.
- Farming Tips:Admin can give valuable tips to farmer.
- Can remove previous sold out crops advertisements.

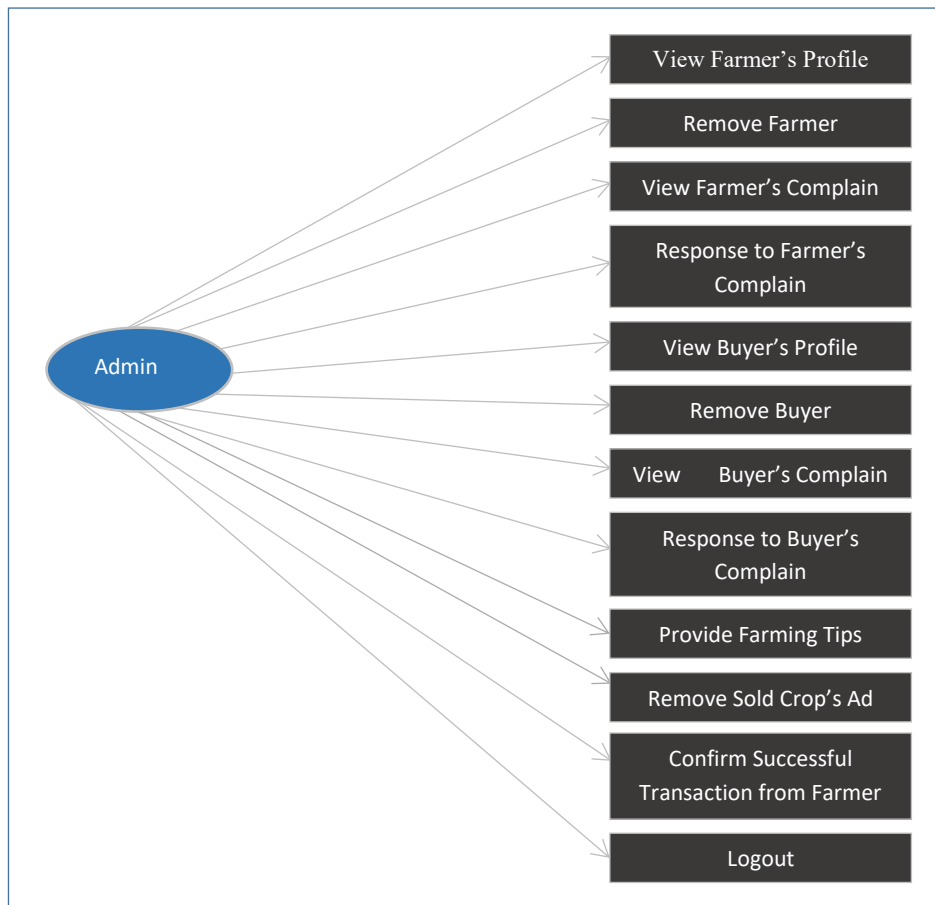


Figure-3.1.1: Admin Module

4.3.2 Farmer

- Registration: The farmer first need to be registered himself to login.
- Login: The farmer need to log-in in order to get access to the system.
- Complain page: The page where farmers can post their complaints and only assigned as admin can read and edit the page.
- View Complain Status: In this page farmers can view the complaint details by viewing the status of complaints is read/unread/solved.
- Crop Advertisement details: The page consists of Crop advertisement details post by the buyer and the status of the Sell crop accepted by the buyer or not.
- Sell Crop: The page is for the crop to the buyer. This includes crop and buyer name, crop name, quantity, prices besides location.
- Sell product details: This page consists of sale details sold by the farmers.

- Post Ad: Farmers can also post advertise of their crops for particular price and quantity mentioned.
- Confirm Sale: Can confirm the sale of his own sell advertise.
- View Farming Tips: Can view tips provided by the farmer.[3]

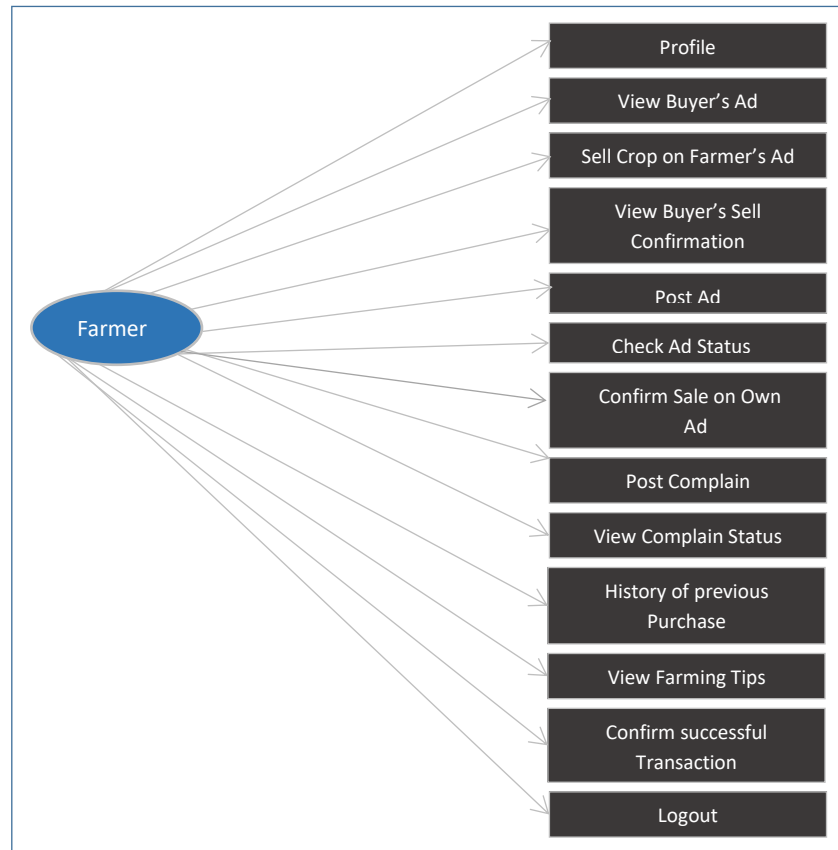


Figure-3.1.2: Farmer Module

4.3.3 Buyer

- Registration: The farmer first need to be registered himself to login.
- Login: The farmer need to login into get access to the system.
- Complain page: The page where the buyers can post their complaints and only assigned as admin can read and edit the page.
- View Complain Status: In this page buyers can view the complaint details by viewing the status of complains is read/unread/solved.
- Crop Advertisement details: The page consists of Crop advertisement details post by the buyer and the status of the Sell crop accepted by the buyer or not.

- Purchase Crop: The page is for the crop to the buyer. This includes crop and buyer name, crop name, quantity, prices besides location.
- Confirm purchase: Can confirm the purchase of his own sell advertise
- View farmer's ad: This page consists of sale details of the by the farmers.
- Order Crops: According to farmer's advertise the buyers can order crops.[3]

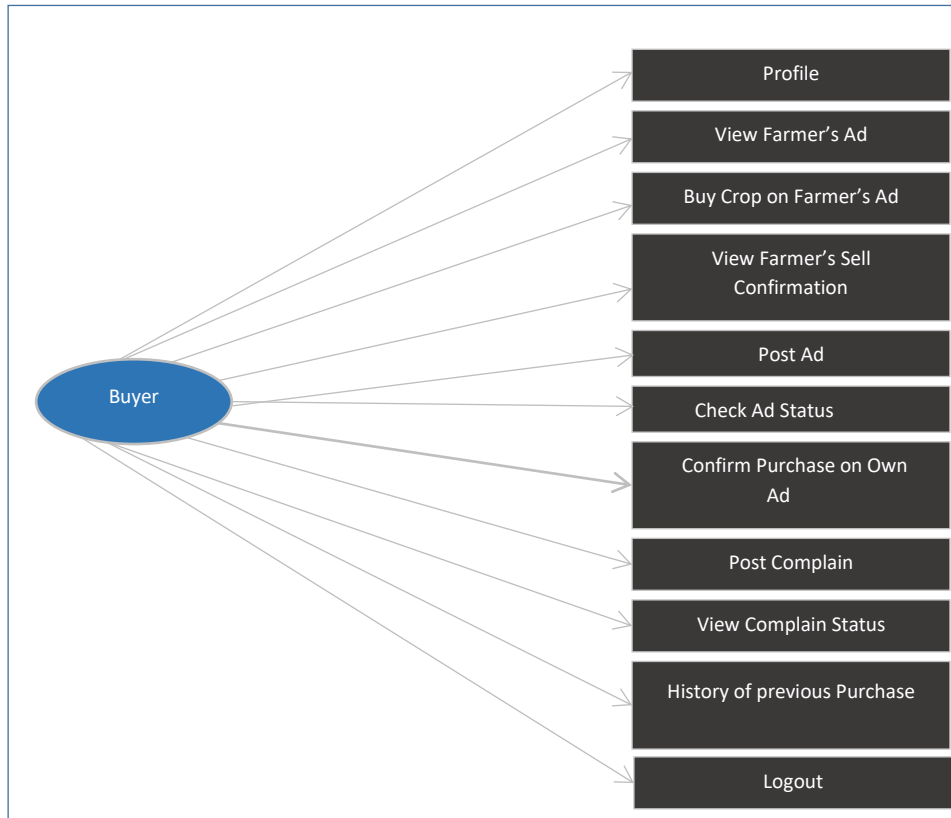


Figure-3.1.3: Buyer Module

4.4 Design Issue

4.4.1 Use-case diagram

The use-case diagrams of 'Grow Farmer's as follows:

Admin to Farmer:

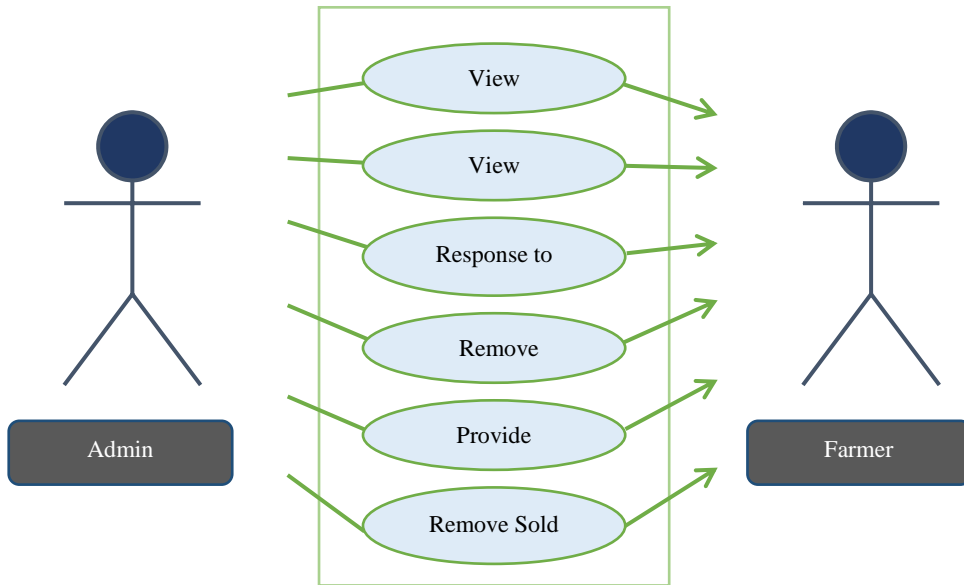


Figure-3.2.1: Use-case diagram between the Admin and the Farmer

Farmer to Admin:

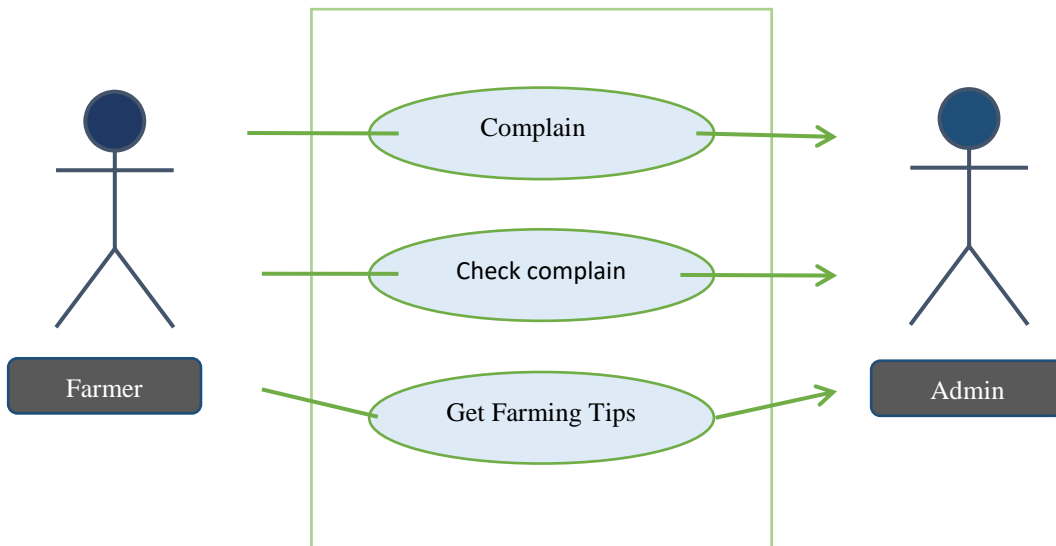


Figure-3.2.2: Use-case diagram between the Farmer and the Admin

Admin to Buyer:

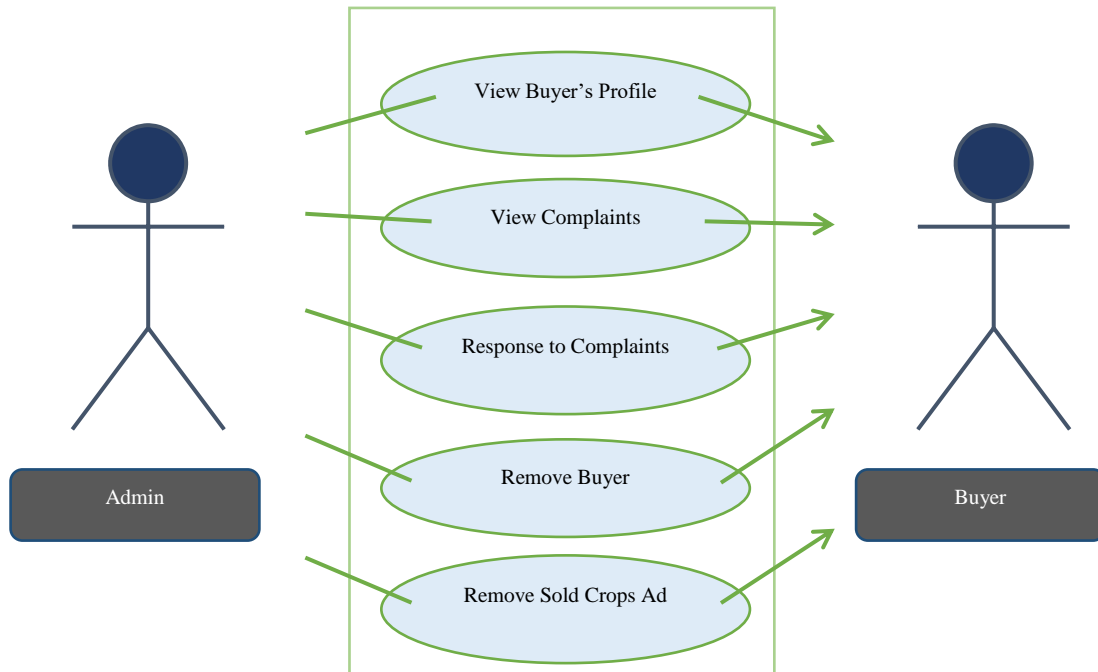


Figure-3.2.3:Use-case diagram between the Admin and the Buyer

Buyer to Admin

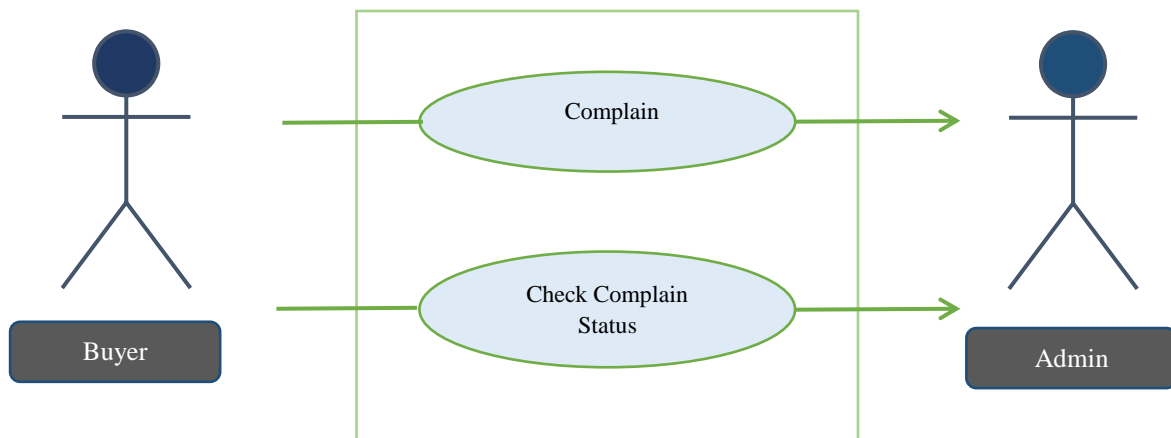


Figure-3.2.4:Use-case diagram between the Buyer and the Admin

Farmer to Buyer

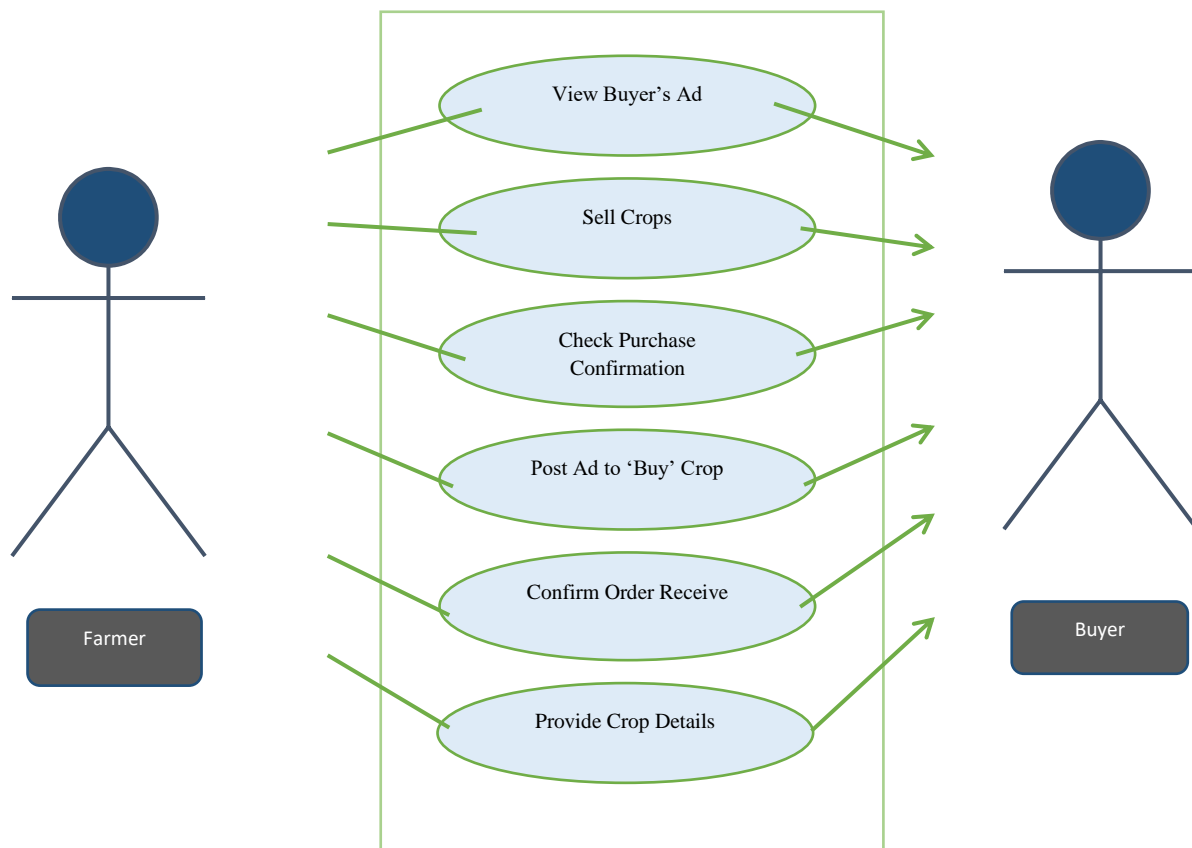


Figure-3.2.5:Use-case diagram between the Farmer and the Buyer

Buyer to Farmer

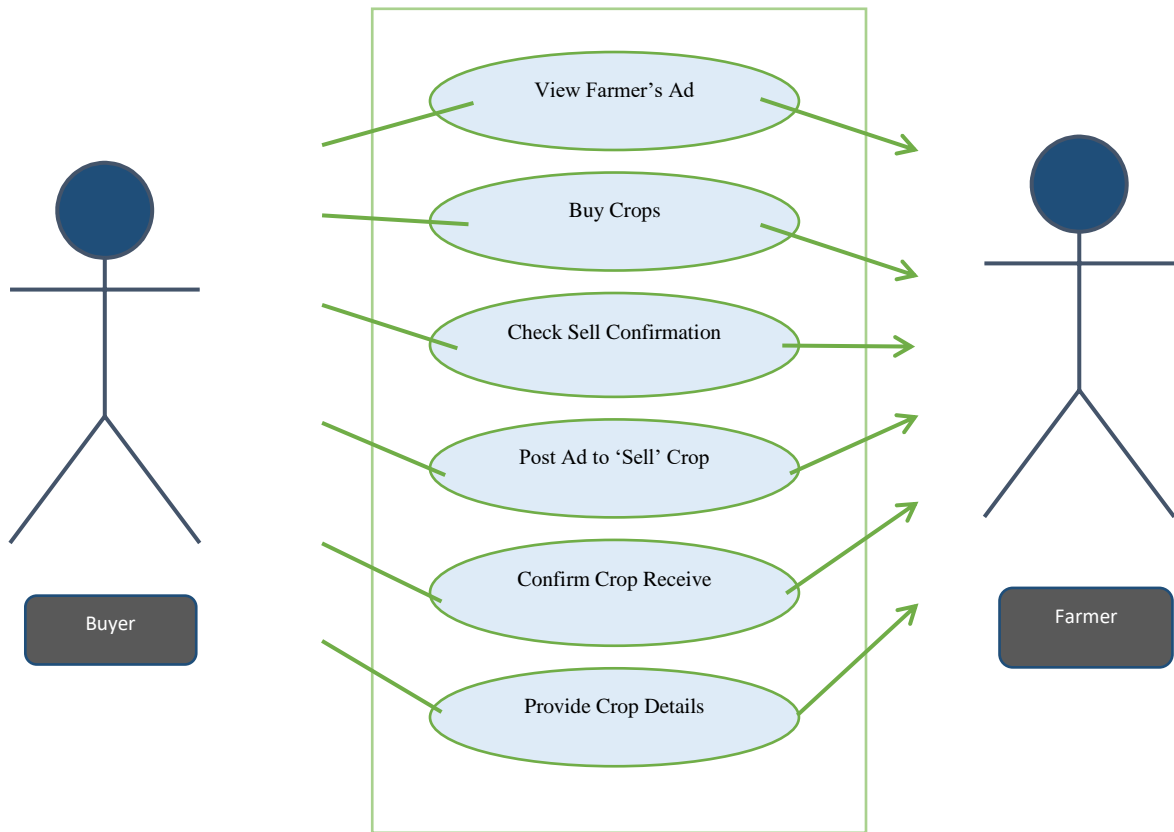


Figure-3.2.6: Use-case diagram between the Buyer and the Farmer

4.4.2 ER Diagram

ER modeling helps you systematically analyze data requirements to create a well-designed database. Therefore, it is considered a best practice to complete ER modeling before implementing your database.

Entity	Primary Key	Attribute
Tips	Farming Tips	Farming Tips
Farmer	<u>F-id</u>	F-id, F_name, F_image, F_address, F_contact
Farmer's Complain	C-id, F-id	C-id, F-id, Complain Type, Status, Complain
Buyer	S-id	S-id, S_name, S_image, S_address, S_contact
Buyer's Complaint	C-id, S-id	C-id, S-id, Complain Type, Status, Complain
Admin	A-id	A-id, A_name, A_image
Farmer's Ad	Cr-id, F-id	Cr-id, F-id, F_contact, Cr_image, Cr_name, Status, Location, Amount, Price
Order	Cr-id, S-id	Cr-id, S-id, S_name, Amount, Price
Buyer's Ad	Cr-id, S-id	Cr-id, S-id, S_contact, Cr_name, Status, Cr_image, Amount, Price
Crop Receive	F-id, Cr-id	F-id, Cr-id, F_name, Amount, Location, Price

Table1-1: Attributes

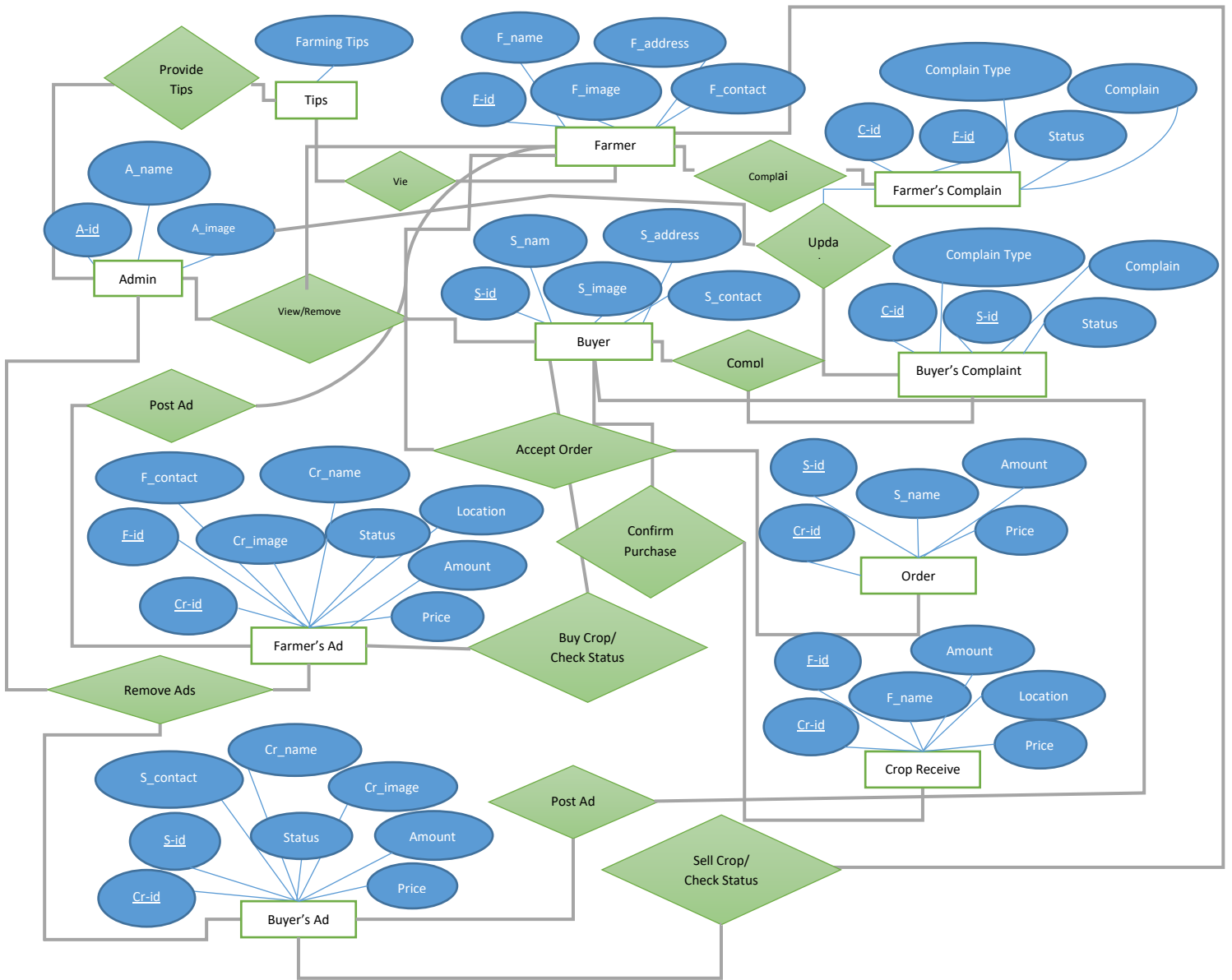


Figure-3.3:ER Diagram

4.5 Implementations

The system is first built in small programs called units, which are integrated at a later stage. Each unit is developed and tested for its functionality, which is referred to as unit testing.

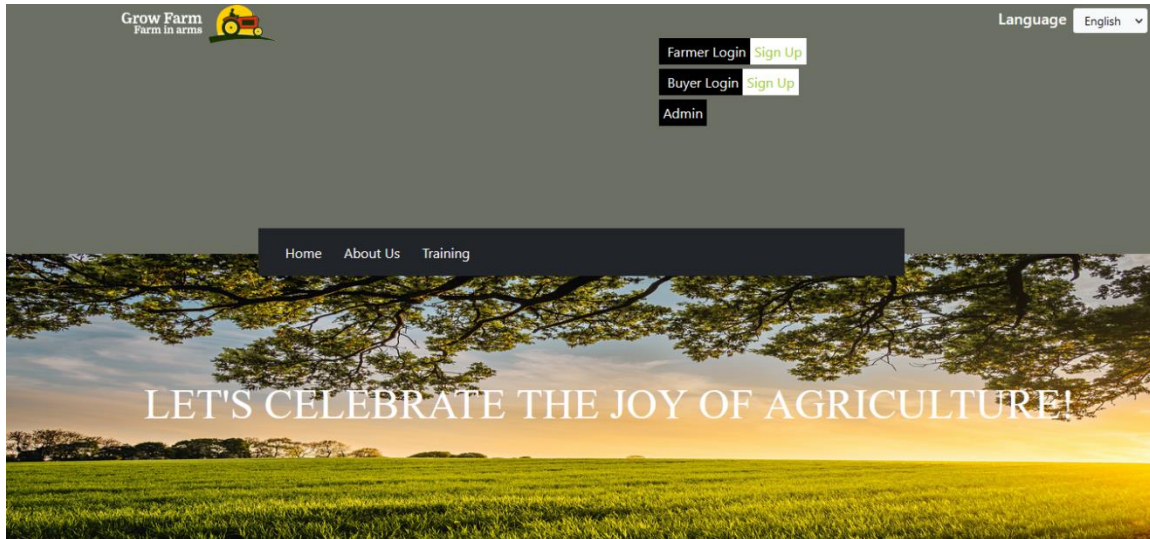


Figure-4.1: Home page

4.5.1 Home page

This is the base page of the website, anyone who has authorization or not can view this page. From here all the three modules can sign up/sign in. Also there is an language switch option from where an user can easily select his/her preferred language.

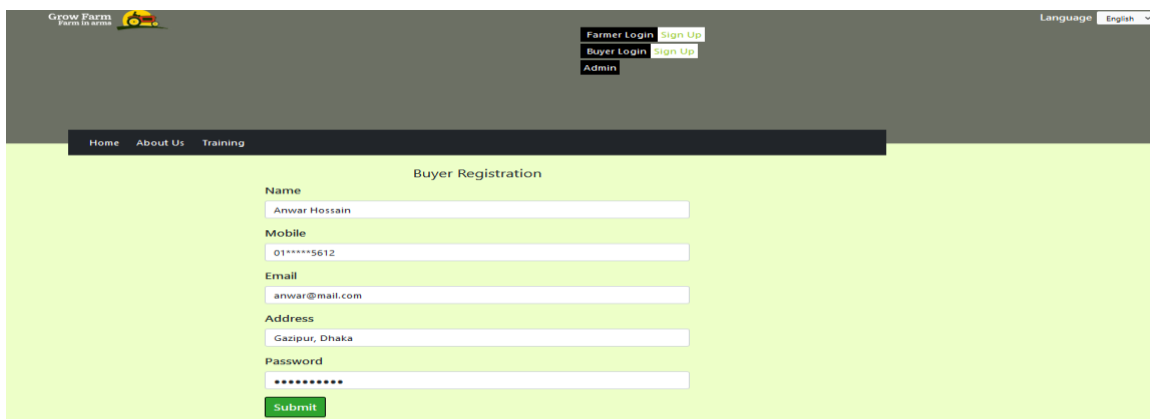


Figure-4.2: Sign Up page

4.5.2 Sign Up page

Both farmer and buyer need to ensure their accounts authorization after completing registration. Here all the fields are mandatory and they are name, mobile, email, password and address. Emails must be unique that is at the same time one person can create one account with the same email address.

The screenshot displays the 'Edit Profile' interface. At the top, there is a navigation bar with the 'Grow Farm Farm in arms' logo on the left and a 'Language English' dropdown on the right. Below the logo, there are three buttons: 'Farmer Login Sign Up', 'Buyer Login Sign Up', and 'Admin'. Underneath this is a dark navigation bar with links for 'Profile', 'Post Advertise', 'My Advertise', and 'Logout'. The main section is titled 'Edit Profile' and contains a form with the following fields: 'Name' (Anwar Hossain), 'Mobile' (01***56654588), 'Email' (Gazipur, Dhaka), and 'Address' (anwar@mail.com). A green 'Submit' button is positioned at the bottom left of the form.

Figure-4.3: Profile page

4.5.3 Profile page

In this page, the information that we are taking from users will be displayed and updated. Here all the fields are mandatory like name, mobile, email, address. Only verified user has the access to view this page. User will get to see different top menu bar according to user type.

Admin can also view his profile and update his information from this page.

Figure-4.4: Post Crops Advertise page

4.5.4 Post Crops Advertise page

In the buyer module the most important feature that is posting crops advertise. Here all the fields are mandatory and they are Crop Name, Crop Image, Location and Required Quantity in kilogram (kg) unit. A successful post will redirect the buyer to the following My Advertise page.







Crop Name	Crop Image	Required Quantity(kg)	Status	Response
Potato		4645	Approved	
Mango		50	Pending	
Watermelon		60	Pending	

Figure-4.5: My Advertise page

4.5.5 My Advertise page

For a successful post of crop advertise there will a popup message telling buyer that he must have to wait for admin approval. Besides creating post for the first time anytime buyer can view this page in order to find his own advertise list. Each an every single advertise has individual options to display responses of farmer against the post.

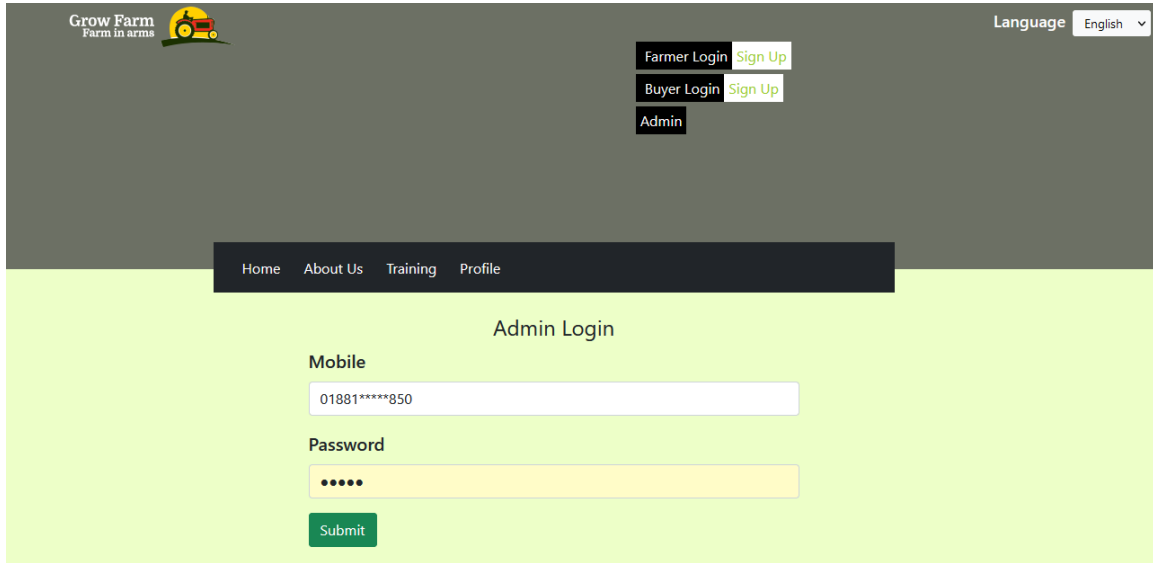


Figure-4.6: Admin Login page

4.5.6 Admin Login page

Admin can login from this page. This authorization has been done from the backend manually for security purpose. That means user does not have option to register himself as admin.

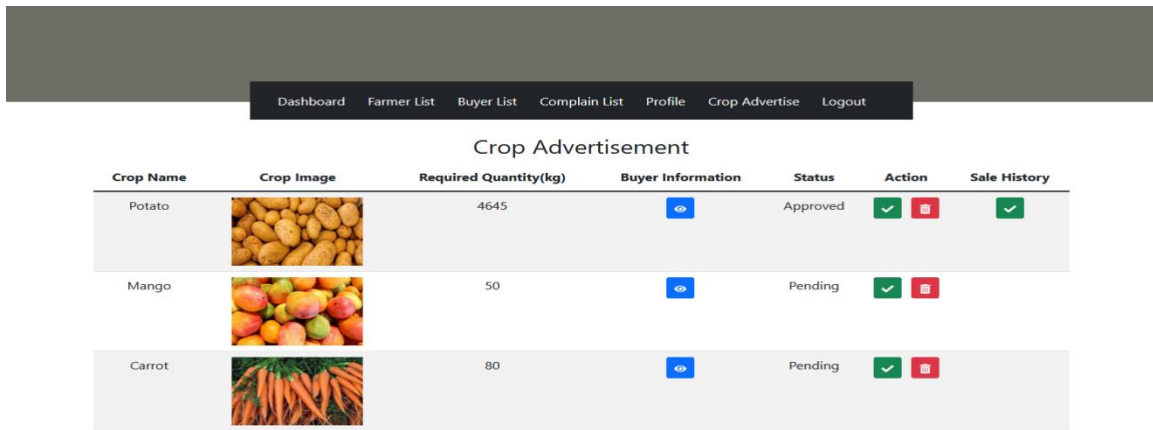
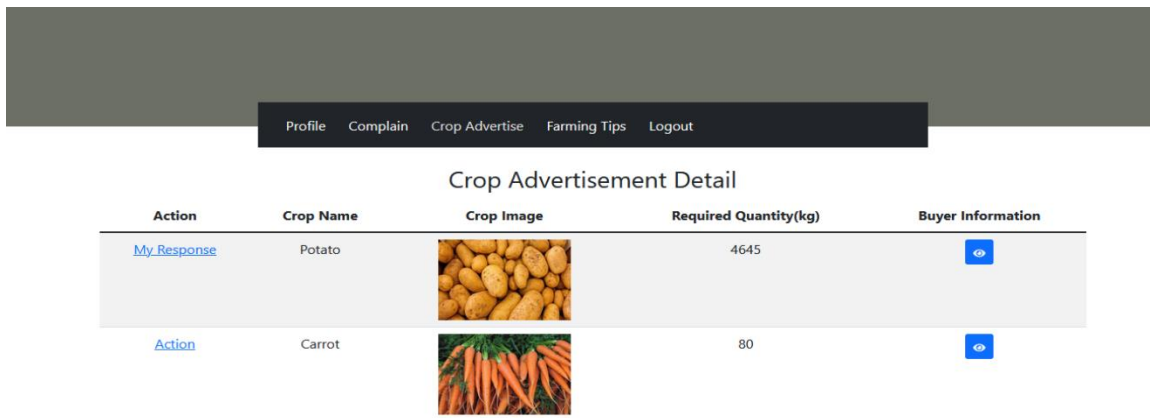


Figure-4.7: Crop Advertisement page from admin

4.5.7 Crop Advertisement page from admin

Here admin can see all the latest advertisement. The advertisement contain crop name, crop image, required quantity in kilogram(kg), status-which depends on admin approval, action options from where admin can approve the post or delete the post and a sale history- how many response was recorded for that post and how many transaction has been taken placed.







Action	Crop Name	Crop Image	Required Quantity(kg)	Buyer Information
My Response	Potato		4645	
Action	Carrot		80	

Figure-4.8: Crop Advertisement page from farmer

4.5.8 Crop Advertisement page from farmer

All the admin approved advertise will be displayed here in this crop advertisement page. Crop advertisement page at the farmer side will provide all the advertise information such as crop name, crop image, required quantity in kilogram(kg), buyer information. For individual advertise farmer can view his response only for once. But if he has not responded yet he will see the sell option for creating a response of the advertise.

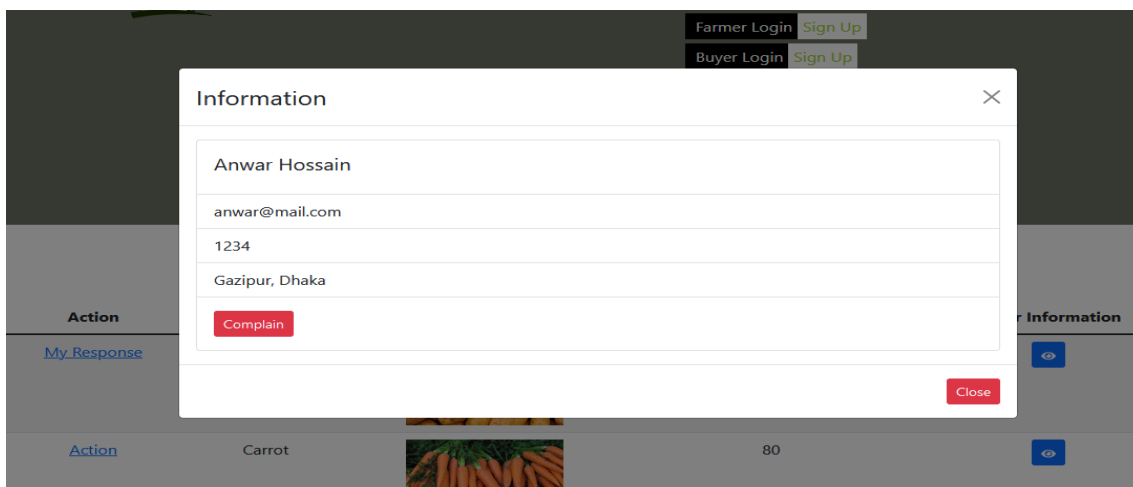


Figure-4.9: Buyer information section

4.5.9 Buyer information popup

From this popup a farmer can view a buyers contact information such as name, mobile number, email, address and vice versa

Quantity: 50

Price: 10000

Submit

Figure-4.10: Sell Crop page

4.5.10 Sell Crop page

From this page farmer can send a response to a specific advertise. Here all the fields are mandatory such as available quantity and the desired price in taka(tk). A successful response will redirect to the crop advertisement page.

Make Payment	Farmer Details	Date	Available Quantity	Price(tk)	Payment Status
✓	👁️	8/20/2022	50	10000	Unpaid

Figure-4.11: Received Crop Detail page

4.5.11 Received Crop Detail page

This page is visible to both buyer and admin. But the payment option has been made available only for the buyer. If the buyer is satisfied with the available quantity and the price which the farmer is asking for the buyer can proceed with the payment option. From the advertise response a buyer can also view the farmers contact information.

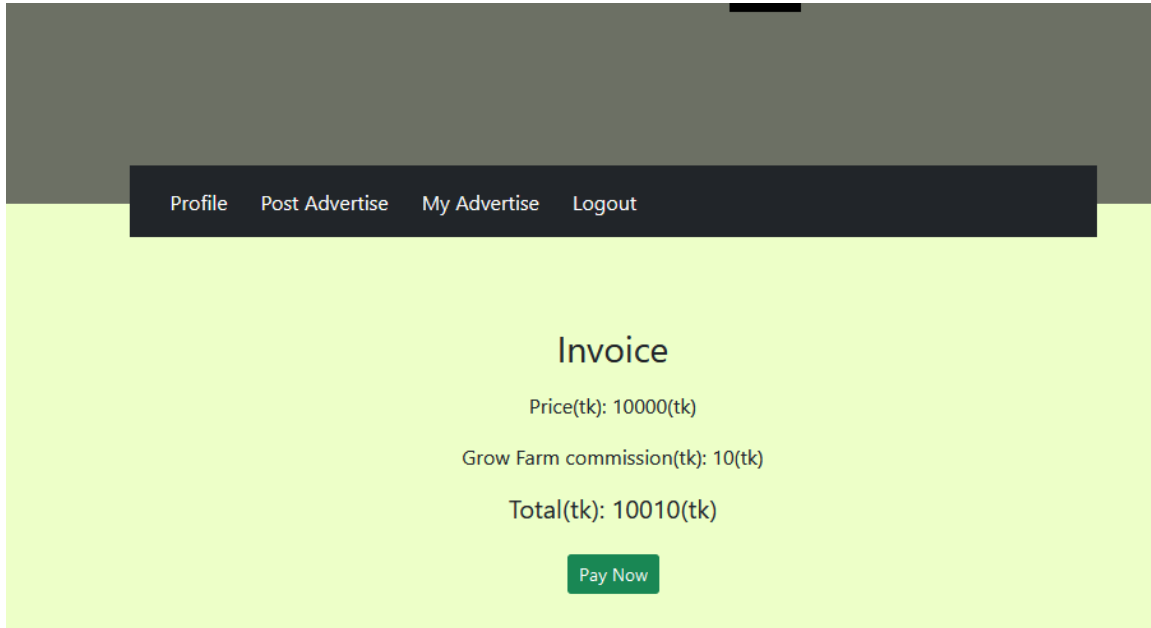


Figure-4.12: Invoice page

4.5.12 Invoice page

After clicking on the make payment button the will see this invoice page containing the price of his crops or farming products along with the grow farm commission amount. The total amount will be redirected with a payment gateway after clicking on the **Pay Now** button.

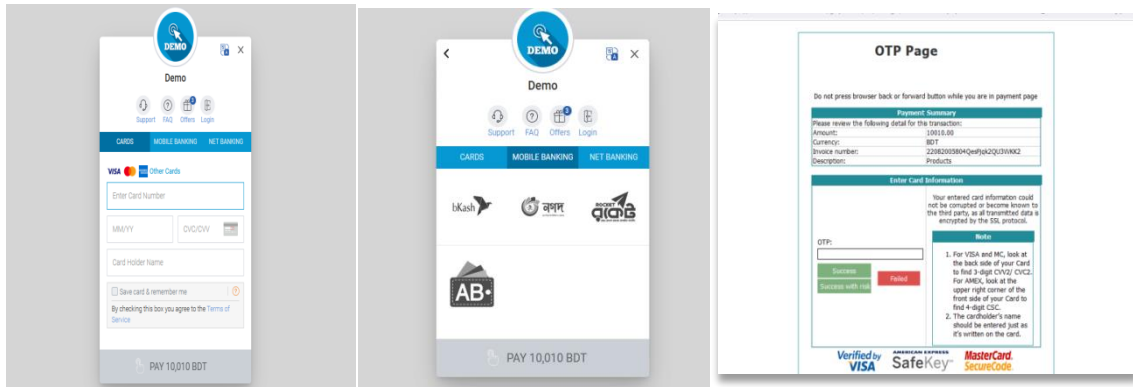


Figure-4.13: Payment Gateway pages

4.5.13 Payment Gateway Pages

We have used very popular payment gateway in Bangladesh and that is sslcommerz. This third party library provides user to pay with cards, mobile banking and net banking which is secure and trustworthy. If we consider the most usable and popular mobile banking such as **bkash**, buyer must have to provide OTP (One Time Password) to authenticate himself.

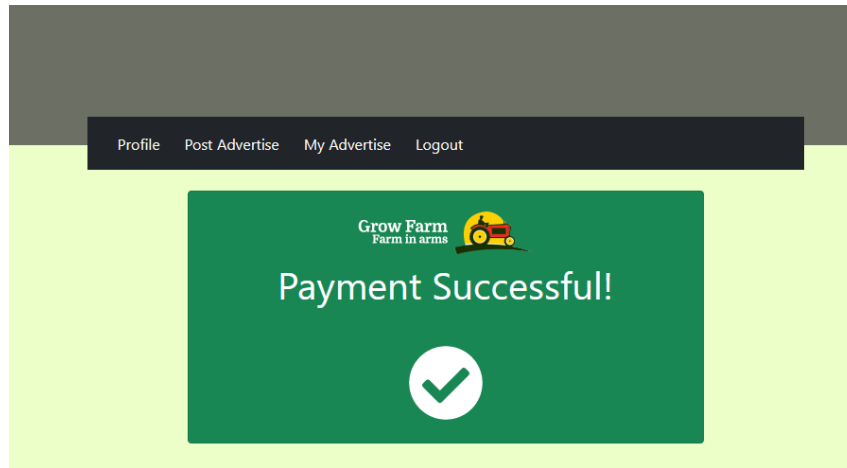
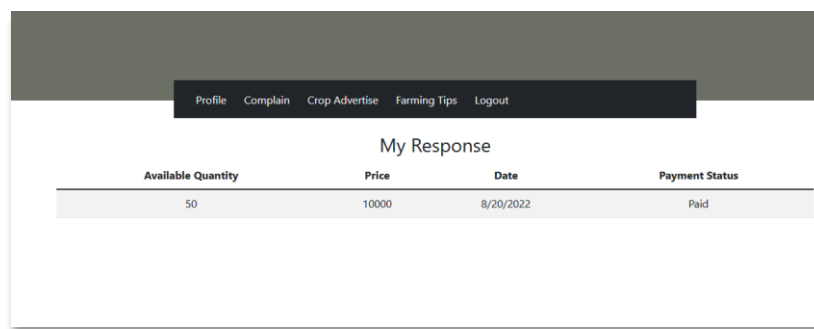


Figure-4.14: Payment Successful pages

4.5.14 Payment Successful page

If a successful transaction takes place the buyer will be redirected from the payment gateway to the payment successful page.



My Response			
Available Quantity	Price	Date	Payment Status
50	10000	8/20/2022	Paid

Figure-4.15: My Response page from farmer

4.5.15 My Response page from farmer

The farmer will now see see the payment status as paid which was initially unpaid, from the response of that specific advertise.

CHAPTER 5

Testing

5.1 Introduction

Software testing is the process of evaluating and improving what a software product app or what it is supposed to do. Development benefits include preventing bugs, reducing development time, and improving performance.

5.2 Types of software testing

Acceptance testing: Verifying that the entire system works as intended.

Integration Testing: Ensuring that software components or functions work together.

Unit Testing: Verifying that each software unit works as expected. A unit is the smallest testable component of an application.

Functional Testing: Testing functions by simulating business scenarios based on functional requirements. Black-box testing is a common way to verify functions.

Performance Testing: Testing how the software performs under different workloads.

Load testing, for example, is used to evaluate performance under real-life load conditions.

Regression Testing: Testing whether new features break or degrade functionality. Sanity testing can be used to verify menus, functions, and commands at a surface level when there is no time for full regression testing.

Stress Testing: Testing how much strain a system can take before it fails. Considered as a type of non-functional test.

Usability Testing: Testing how well a customer can use a system or web application to complete a task.

5.3 Used Testing Method

5.3.1 Unit testing

Used technology Jest which is a JavaScript testing framework designed to ensure the correctness of any JavaScript code-base. It allows us to write tests with an accessible

format. As in this project the backend is developed with Node js and the frontend is build with React js , the most suitable unit testing framework that can test all together is jest.

```
PASS app/actions/__tests__/activity_list.spec.js
PASS app/actions/__tests__/messaging.spec.js
PASS app/actions/__tests__/authentication.spec.js
PASS app/actions/__tests__/payment.spec.js
PASS app/actions/__tests__/fellow.spec.js
PASS app/actions/__tests__/workflow.spec.js
PASS app/actions/__tests__/environment.spec.js
PASS app/actions/__tests__/loading.spec.js
PASS app/actions/__tests__/activity_workflow.spec.js
PASS app/reducers/errors/__tests__/errors.spec.js
PASS app/actions/__tests__/errors.spec.js
PASS app/reducers/mixpanel/__tests__/mixpanel.spec.js
PASS app/actions/__tests__/mixpanel.spec.js
PASS app/reducers/loading/__tests__/loading.spec.js
PASS app/reducers/messaging/__tests__/messaging.spec.js
PASS app/reducers/workflow/__tests__/workflow.spec.js
PASS app/components/custom/carousel/__tests__/carousel.spec.js (8.915s)
PASS app/components/custom/v2/activity/__tests__/task_container.spec.js (9.187s)
PASS app/components/custom/v2/navigation_bar/__tests__/base_nav_bar.spec.js (9.163s)
PASS app/components/custom/v2/activity/__tests__/task_row.spec.js (9.891s)
PASS app/components/custom/carousel/__tests__/carousel_image.spec.js
PASS app/components/custom/v2/navigation_bar/__tests__/back_nav_bar.spec.js
PASS app/components/custom/headers/__tests__/modal_cancel_icon.spec.js
PASS app/components/custom/v2/navigation_bar/__tests__/edit_nav_bar.spec.js
PASS app/components/custom/headers/__tests__/modal_close_icon.spec.js
PASS app/components/custom/headers/__tests__/pop_modal_header.spec.js
PASS app/components/custom/headers/__tests__/modal_header.spec.js
PASS app/components/custom/headers/__tests__/reset_password.spec.js
PASS app/components/custom/headers/__tests__/cancel_icon.spec.js
PASS app/components/custom/add_issue_flow/__tests__/back_to_issues_button.spec.js (10.745s)
PASS app/components/custom/v2/navigation_bar/__tests__/home_nav_bar.spec.js (9.719s)
PASS app/components/custom/headers/__tests__/save_icon.spec.js
PASS app/components/authentication/__tests__/enter_login.spec.js (11.603s)

Test Suites: 33 passed, 33 total
Tests: 229 passed, 229 total
Snapshots: 229 passed, 229 total
Time: 14.782s
Ran all test suites.
```

Figure-5.1: Unit testing using Jest

Test result

All the small functionalities from both backend and frontend have passed the unit testing successfully. The tested jest was Testing arithmetic functions with Jest, Jest skipping tests, Jest parameterized tests, Jest grouping tests.

5.3.2 Usability testing

Usability testing, also known as user experience (UX) testing, is a testing method for measuring how easy and user-friendly a software application is. A small set of target end-users use software applications to expose usability flaws. Usability testing mainly focuses on the user's ease of use of the application, the application's flexibility to manage controls, and the application's ability to fulfill its purpose.

A demo test case is given below:

Test Case Description	Test Steps	Test Data	Expected Results	Expected Post Result	Pass/Fail	
Login & Logout						
G017	Check when pass correct email and password	1. Enter valid username 2. Enter valid password 3. Click on Continue Button	mobile: test@gmail.com Pass: #Syn*441036	User should Login into an application	Partner Dashboard	Pass
G018	Check the required fields by not filling any data	1. Go to site grow farm 2. Click on For partners from header menu 3. Email & Password blank 4. Click on Continue Button		User should not log in and should show proper error message	Should stay on Login page	Pass
G019	Check When passing a correct username and invalid password	1. Enter valid username 2. Enter incorrect password 3. Click on Continue Button	mobile: test@gmail.com Pass: #Syn*44103	User should not log in and should show error message	Should stay on Login page	Pass
G020	Verify when passing incorrect Email and correct password	1. Enter incorrect username 2. Enter correct password 3. Click on Continue Button	mobile: test@gmail.com Pass: #Syn*441036	User should not log in and should show error message	Should stay on Login page	Pass

Figure-5.2: Test case for usability testing

This test case contains all the necessary testing steps with the expected results and the final result. This manual testing is done for better user friendly experience.

Test result

The expected behaviour of the system was quit satisfactory because of Easy navigation, common familiarized payment gateways, user friendly UI.

CHAPTER 6

Conclusion and Future Work

6.1 Conclusion

Nowadays every possible service is available online and they are also user friendly But we need to find a better convenient way for farmers to sell their products and communicate with our buyers/buyers/retailers. A similar scenario we can even envision for buyers to have easy access to all area wise required crops with their desired price and crop quantity.

Even sometimes both of them may complain against the services provided by each other We have come to that solution with alternatives to complaints and appropriate responses to those complaints Admin can do such things and take action by removing the reported The main feature of this project will be the possibility and flexibility to manage the overall site by switching between Bengali and English languages.

There will also be an overview of the entire navigation process for each category of people for easy navigation. The process by which we are highlighting the reality of visual representation in a way that is both simple and attractive.

5.2 Future Work

An international standard based website that can raise fund for our farmers. Also we can integrate a web chat system with real time chatting facilities. Verification and validation using NID. Automatic geo-location identifier and also weather prediction can be included to make the system more effective for our farmers. An easy website guide for user friendly experience.

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