AGRO BIDDING SYSTEM

Submitted in partial fulfillment of the requirements of

PG Diploma in Advanced Computing

By

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Juhu

February 2020

CERTIFICATE

This is to certify that the project entitled **“Agro Bidding System”** is a bonafide work of **“Kalpesh Patil (200240520041), Mangesh Dase (200240520052), Sanjit Shelke (200240520088), Sneha Somwanshi (200240520096), Deepanjan Joth (200240520034).”** submitted to C-DAC Mumbai in partial fulfillment of the requirement for the award of the Post Graduate Diploma in Advanced Computing.

Mr. Vivek Nanaware
Supervisor/Guide

Mr. Atul Malokar
Faculty Supervisor/Guide

Declaration

I declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Abstract

India is an agro based country. The main livelihood of the majoritarian population here is through farming who dwell in villages and feed the whole country. Food is one of the basic necessities of a human being, which is fulfilled by the framers. However, they fail to get proper price of the stock they sell in the market. Hence, they are deprived from getting profits for their stock.

Agro Bidding system is a web based application, in which seller can sell the goods. It is a popular method for buying and selling products. It is developed with the objective of making the auction system reliable, easier and faster. The objective of the online auction system is that the user can have better choice for their investment. Also it is time saving and through this system user can invest in their own selected firm. The application allows consumers to bid for the farm produce, thus eradicating middle man and benefiting both farmers and Buyers.

In this System we have introduced a dynamic system to sell and buy agricultural products based on auction. The web application will allow the online auction administrator to sell the products through the desired person. Customer must have a valid user id and password to login to the system. In this the admin will post the image and details of the product. The buyer can select the product and bid accordingly. The bidding will have a specific time duration, which will be set by the seller. At the end of time limit, product will be sold to the highest bidder. Our main aim is to provide a software environment for farmers to gain maximum profit.

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Chapter 1

Introduction

The farmers who grow crops according to the season and fertility of the soil, after growing the crops they accumulate the crops, further process and pack them and contact the wholesale vendors regarding the availability of stock. The wholesale vendor first asks the price to the farmer who tells the price at which he/she can trade at. The wholesale vendor aiming for his own profits negotiates with the farmer regarding the price the poor farmers sacrificing their profits generally accept the price quoted by the wholesale vendor. So, he/she sell their stock at low prices due to some unfavourable conditions such as financial problems, unavailability of wholesale vendors or market etc.

Some farmers who live very near to the cities bring their stock directly to the wholesale markets and sell their stock to the retailers and end customers. But for the farmers who live in the remote areas, it is not possible for them to come to the cities do frequently and sell their stock directly in their quoted price. Hence, they have no other option but to contact the wholesale vendor for selling their products in the market.

Agro Bidding System is a web application in which farmers will be able to show case there agri products on website and buyers can do a bid on particular products. The main objective of this project is to obtain best value and the highest price for the farmers agri products.

1.1 Description

Agriculture is the backbone of India, saying this, many of the agriculturists face so many problems in the agriculture that includes improper value for the products they produce.
Thus, here a new method is tried to find a solution to make the farmers to sell their products.
A bidding website with all the other kinds of features such as a chat forum would satisfy the farmer needs.

In this bidding type, many sellers offer their agri products and compete for the bidding and the bidder can bid and the bidder who bids the highest price will get that product and farmer will also get good price for their products.

We are creating a website where buyer can participate in auction for any agri product and in this auction type, many sellers offer their items and compete for the bidding. In this auction the buyer can accept any bid, by paying for every bid he can buy or can reject all the items.

In First sealed price auction, the bidder can bid and one who bids for highest price will get that agri product and farmer will also get good price for their products.

Thus, here a new method is tried to find a solution to make the farmers to sell their agri products. A bidding website with all the other kinds of features such as a chat forum would satisfy the farmer needs.

1.2 Problem Formulation

- Poor bargaining strength of farmers: Millions of smallholders with small scattered individual production do not have any network or bargaining platform to negotiate for better prices, nor are they able to retain their own production to increase time utility.
- Unnecessary intermediaries between the producer and the consumer: Farmers are always dominated by the local traders. They assemble small quantities from and around the primary markets, incurring extra costs, time and efforts
- Agricultural products such as wheat, coffee, cocoa and sugar gets spoiled due to transportation delay.
- The Online Bidding Application helps the farmers meet the customers directly.
- Bidding is totally a time-based process. The bidding is a limited with subject to time constraints. Due to perishability of the stock, the time constraints would also be there for delivery**.**

1.3 Motivation

- To Analyse, design and develop an online auction system that ensures the buyers on the sellers and the agro products that are being auctioned.
- The aim of this bidding auction is research of the importance of auctions for wholesale of agro products.
- The basic goal is through the analysis of auction importance for trade, to affirm information and conclusions that may show that wholesale markets are appropriate place for auction trade in agro-industry.
- The aim is achieve expected result on the market, by auction trade by bid based on and equivalent to expected incomes.

1.4 Scope

- **Farmers:** Farmers can sell their stock online to the customers directly such that they can sell at profits by the bidding price quoted by them to the highest price in which the buyer are ready to buy. Farmers can sell their stock in both wholesale and retail quantities to the buyer.
- **Buyer:** A convenient method to order the agro products such as food grains, vegetables online in wholesale or retail. Direct trade between buyer and farmers through a virtual intermediary. Ensuring a reliable customer service for customer satisfaction. Timely delivery of stock keeping in mind perishability of goods. An innovative platform for buying agro products online.

Chapter 2

Review of Literature

In case of auction the first thing comes in mind how to sell a product. Simply it means in auction the seller waits for the high number of prices and waits for the bidder who remains active till the last of the auction process. There are various types of bidding a product. To overcome a traditional auction process, this online auction process had been used which is detailed in [1]. Secondly, a various types of auctions had been described such as English auction (ascending bid auction), the Dutch auction (descending-bid auction), the first-price sealed-bid auction, and the Vickrey auction (second-price sealed-bid auction) as explained din [2]. It also described the steps of how auction will be carried out and what information should be carried on. The internet auction is the most simple to use for maintaining the data then the traditional auction which is to be carried on the paper. And most of the auction has been learned by the economists for the understanding purpose to study their properties and how it works. In [3], it describes how the auction is carried out on the internet and what the information is provided before the auction and after the auction process. It also describes auction such as user agents and mobile agents. User agent mostly done on the users PC with the help of the some services or some expert advices while mobile agent deals with the execution of program through remote base server. In addition to this the auction time is provided with the help of auction date and the last date of ending the auction. Earlier auction products were like electrical equipments, etc. But now Agricultural Product can also been auctioned. First product was Tea Auction. Now-a-days auctioning process has been became a competitive in the market. The auction can be done from anywhere in the world at any time and anyone can auction the products which is detailed in [4]. In additional to single item auctioning, it also consists of multi-item auctioning where n number of items are auctioned simultaneously as described in[6]. In multi-item auction it provides more opportunities for online auction market in large market over the world with higher efficiency. This multi-item auction has came into existence because now-a-days very small markets does the auctioning of similar items which results into less efficiency.

Multi-attribute auctions consists of practical and theoretical problems which has been detailed in [7]. In case of practical problems the users should know the product and market characteristics. With help of this term the auction is also referred as the common value based. Sometimes it becomes difficult

to arrange the behaviour of the goods which may result in difficult for the analysis of the product. The analysis of the product is also done in case of reverse auction. Because of this the economist's theory and experiments which is used for the developmental testing. Along with traditional auction the internet auction has been more popular. For the internet auction there are various security requirements. Firstly the seller should know whether he/she is going to post a product in large scale or not. Then the user who is interested should register first and then access the site. The security requirement is used to know whether the site is used by the registered person. Therefore an administrator is used as a trusted third party to keep the records of all the procedures happening which has been explained in[8].Auction application is carried with the help of auction rules which defines the auction schedule, templates for creating the auction and the individual auction rules for the individual auction product. As e-commerce auction is used widely it has featured many security protocols [9]. It has described some security properties such as atomicity of the transaction, weak private keys and weak public keys for the bidders. In case of voting or bidding the product it consists of much work on the verification of the users and the product which is to be handled in the area of privacy. As auction is defined as mobile agents which deals with the execution of program on the remote server database. The mobile agents in electronic auction is slightly different as described in[10]. The mobile agents in electronic auction first visits the site of auction and then the user may actively participate in auction process. If the user is disconnected for sometime then in behalf of user it can participate for a specific time period. After registering it as server, the mobile agents itself creates its own user profile.

Chapter 3

System Analysis

3.1 Functional Requirements *[Follow IEE SRS format]*

3.1.1 Login of Admin

- The system will allow the admin to delete user profile.

3.1.2 Login of Farmer

- The system will allow the farmer to add product.
- The system will allow the farmer to show product list.
- Farmer will be able to set the minimum price.
- Farmer will be able select the bid end date.

3.1.3 Login of Buyer

- In this module, the bidder will first see which product is been posted on the web app which is to be auctioned.

- The buyer will register to website after that he will see all the information about the product. If the bidder is interested to buy that product then he will and bid the amount.

- At last, at the end of the auctioning the bidder will get to know the result. Last when the number of auction has been created the bidder will decide the amount which product to be auction. The bidder has to auction within a time which is set by the admin while creating auction.

3.2 Non-functional Requirements *[Follow IEEE SRS format]*

3.2.1 Performance Requirements

The system should store all the database records of each farmer, buyer and admin properly and the application should be available for use 24*7 through the server. Also, the application should be user friendly with a proper user interface which makes it easy for the user to understand. All the options should be present in properly accessible places for user convenience.

3.2.2 Safety Requirements

All login ids and passwords of the farmers, bidders and admin should be protected for privacy using whatever constraints required in the database or the application.

Farmer and Bidder records are to be backed up securely across database servers. Incase database is hacked by someone and data is deleted a backup server should be present for such purpose.

3.2.3 Security Requirements

All passwords of the administrators should be protected for privacy using whatever constraints required in the database or the application. Transactions regarding farmer and bidder records should be carried out properly. Only admin will have access rights to the farmer data according to the need. The database should be protected from attacks and unauthorized access. The interface should be protected from attacks.

3.2.4 Software Quality Attributes

3.2.4.1 Availability

The system should run on a variety of operating systems that support the JavaScript language. The system should run on a variety of hardware.

3.2.4.2 Accessibility

The software will be accessible to admin, farmers and bidders.

3.2.4.3 Compatibility

The software will be compatible with multiple platforms.

3.2.4.4 Durability

The software will be tested for working with multiple users.

3.2.4.5 Effectiveness

The software will be made to handle operations effectively.

3.2.4.6 Maintainability

The system should be easy to maintain. There should be a clear separation between the interface and the business logic code. There should be a clear separation between the data access objects that map the database and the business logic code.

3.3 Specific Requirements *(Hardware and software requirements)*

- **Hardware platform:**
  Processor – Above Pentium 4, with clock speed of 2.0 GHz
  RAM – 1 GB or above
  Hard Disk – Free disk space of above 1 GB

- **Software platform:**
  Front-end: HTML, CSS, Bootstrap, Angular.
  Back-end: MySQL, Spring Framework , JPA.

- **Supported tools:**
  Visual Code Studio, MySQL Workbench, Eclipse.

J2EE

Java 2 Enterprise Edition is a programming platform part of the Java Platform for Developing and running multitier architecture Java applications, based largely on modular software components running on an application server.

TOMCAT

It's an application server which is mostly used in the web-applications. It implements the Servlet 2.5 &JSP 2.1 specifications. It's a cross-platform application Server.

ANGULAR

Angular is a type script based open source, front end web application framework led by the Angular Team at Google and by a community of individuals and corporations.

ECLIPSE

In computer programming, **Eclipse** is an integrated development environment (IDE). It contains a base workspace and an extensible plug-in system for customizing the environment. Written mostly in Java, Eclipse can be used to develop applications. By means of various plugins, Eclipse may also be used to develop applications in other programming languages: C, C++, and JavaScript. It can also be used to develop packages for the software Mathematical. Development environments include the Eclipse Java development tools (JDT) for Java.

SPRING

Spring is a MVC based framework in J2EE. Spring is used to reduce the dependencies between multiple files using Inversion of Control (IOC). Spring makes code loosely coupled. It is a light weight framework, easy to test

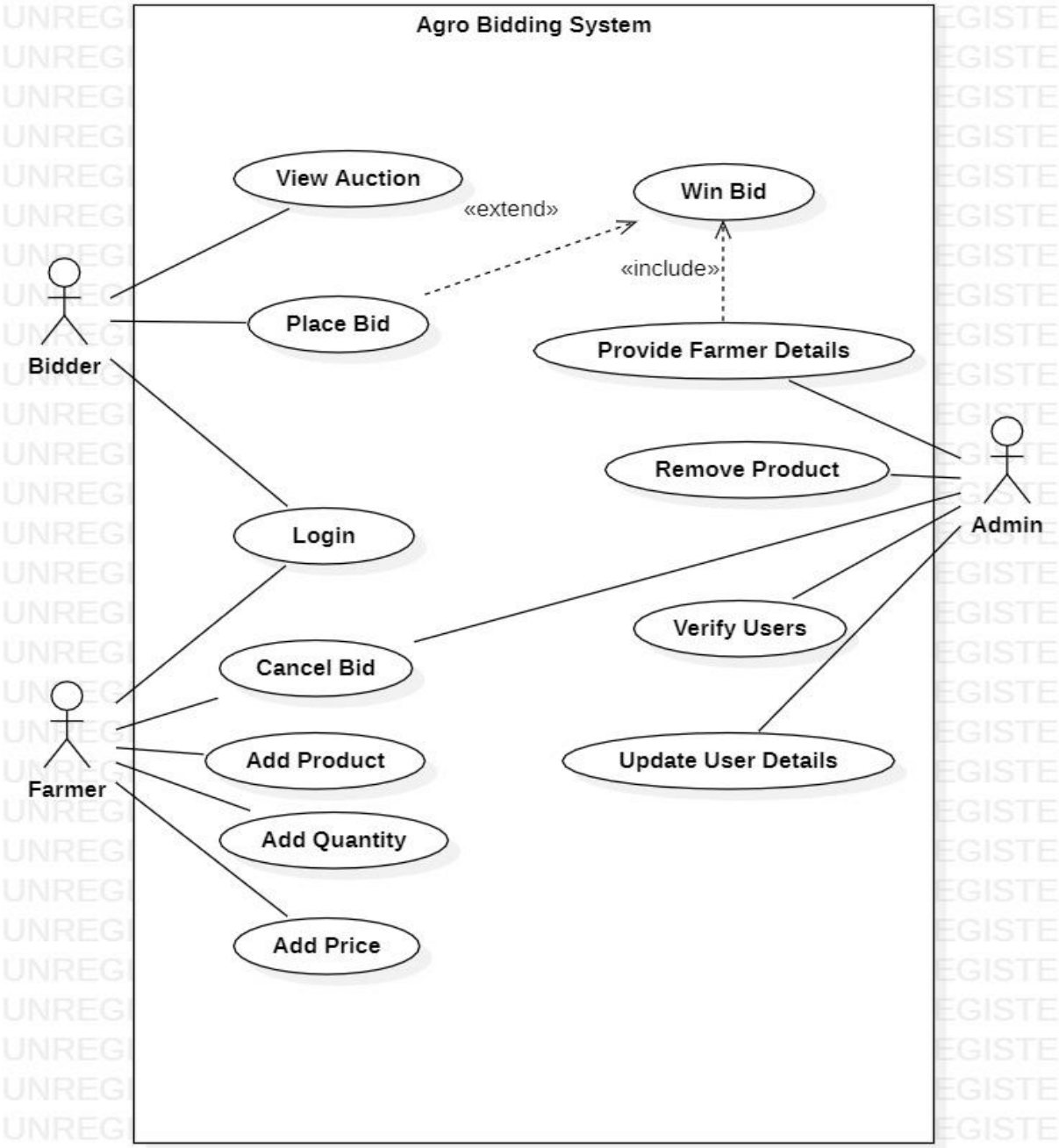
MySQL

MySQL is an open source Relational Database Management System in which all the data are stored in the form of tables. Each table is connected to some other table i.e. has a relation with another table and this relationship is established through integrity constraints. These tables have columns which represents the attributes of an entity and there are rows of data for each column. This is called the database and is connected to the frontend or user interface with the help of controller. For this project I have normalized database tables named user, contact_us, job. We can manipulate the data in the tables such as update, delete, alter, modify etc. This is a fast and highly scalable database management System.

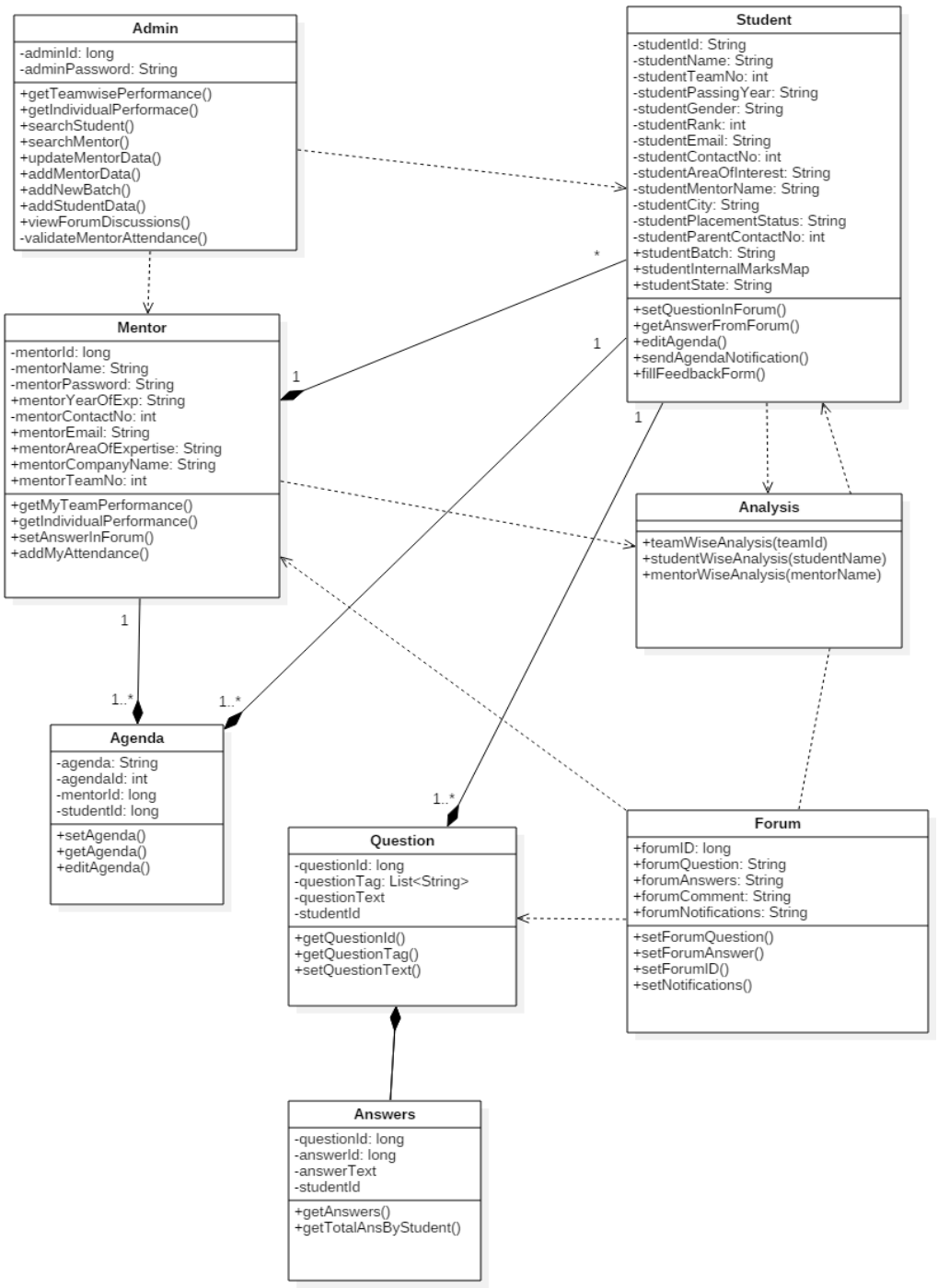
Chapter 4

Analysis Modeling

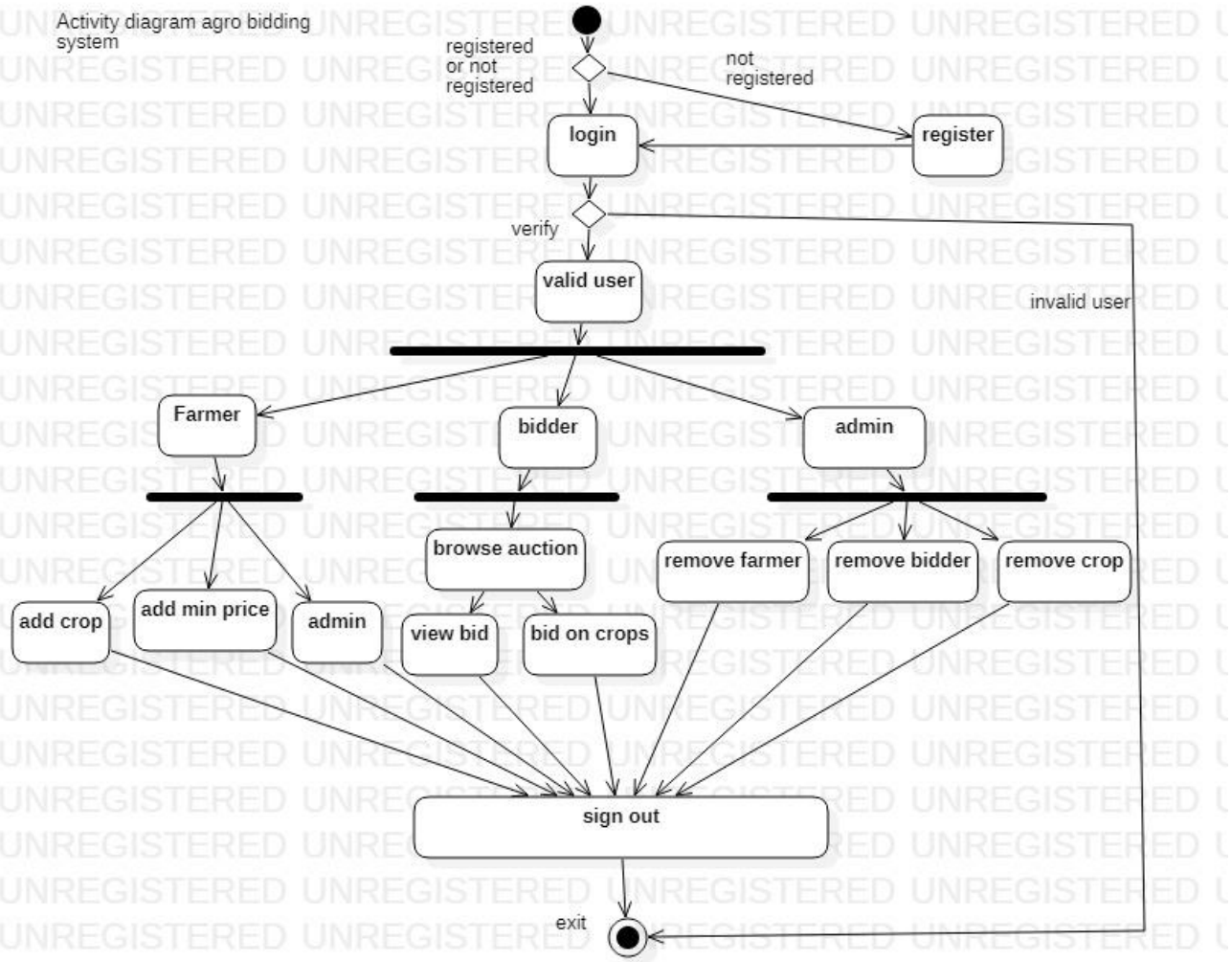
4.1 Use Case Diagram: -



4.2 Class Diagram:-

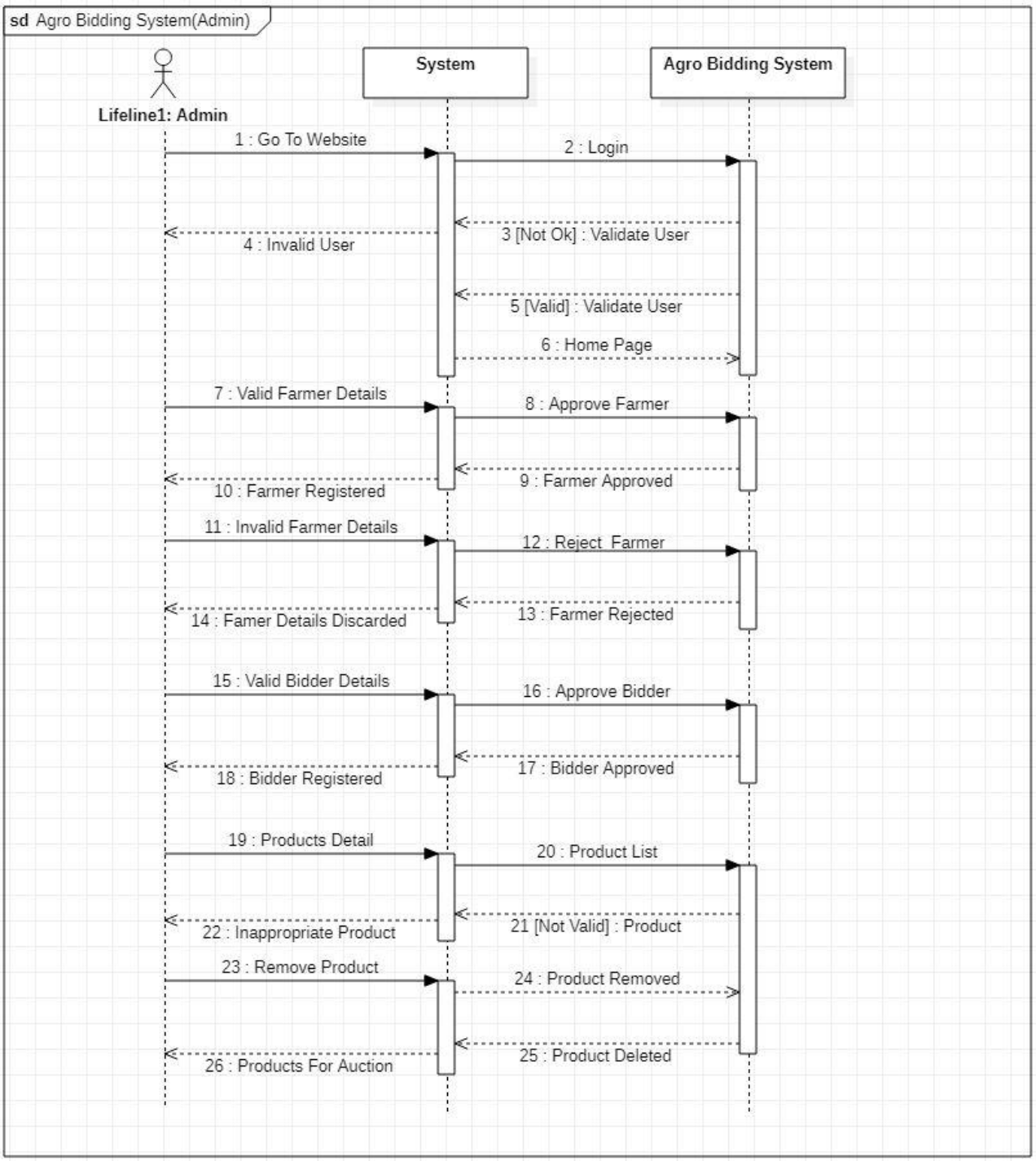


4.3 Activity Diagram:-

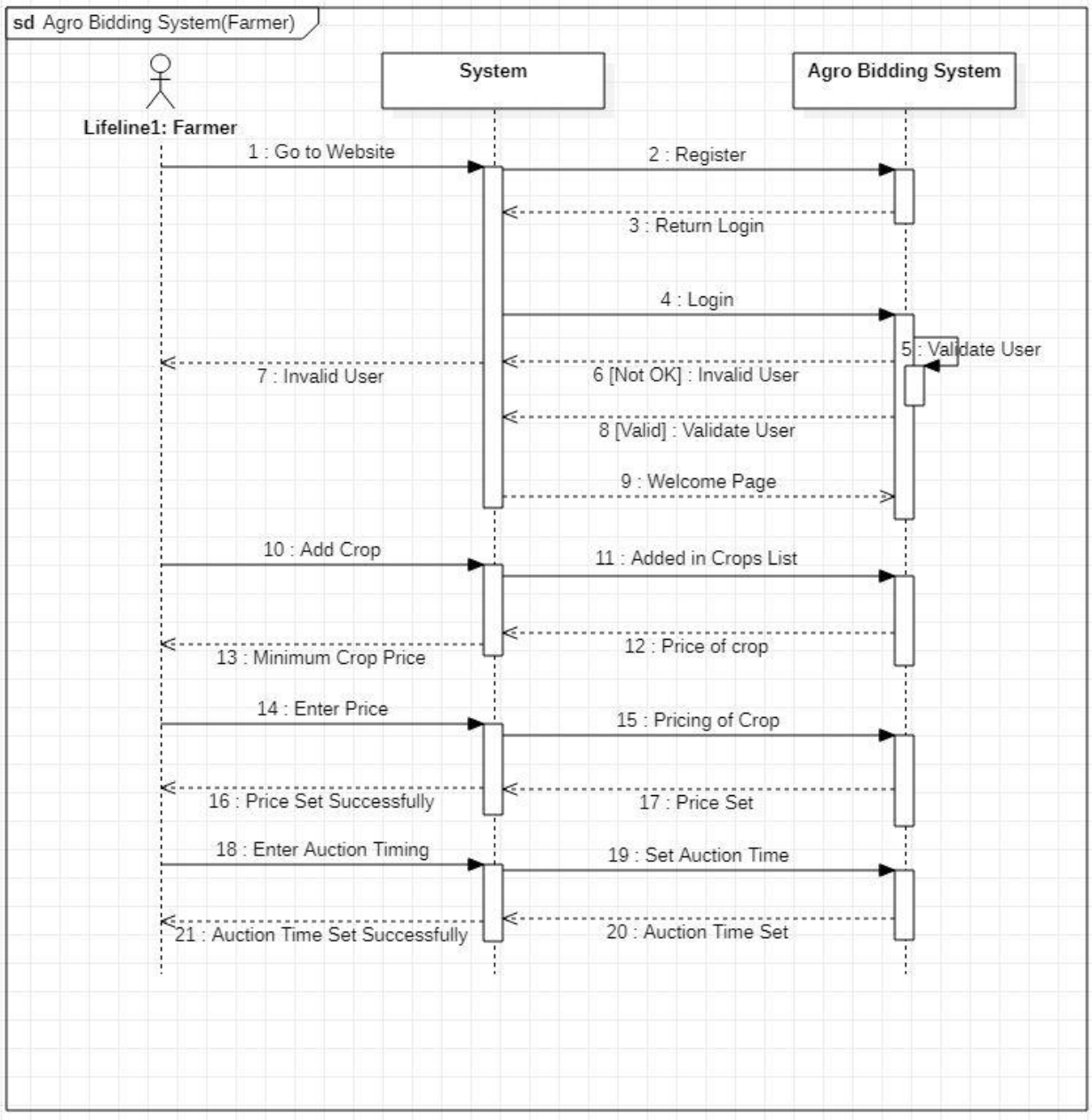


4.4 Sequence Diagram:-

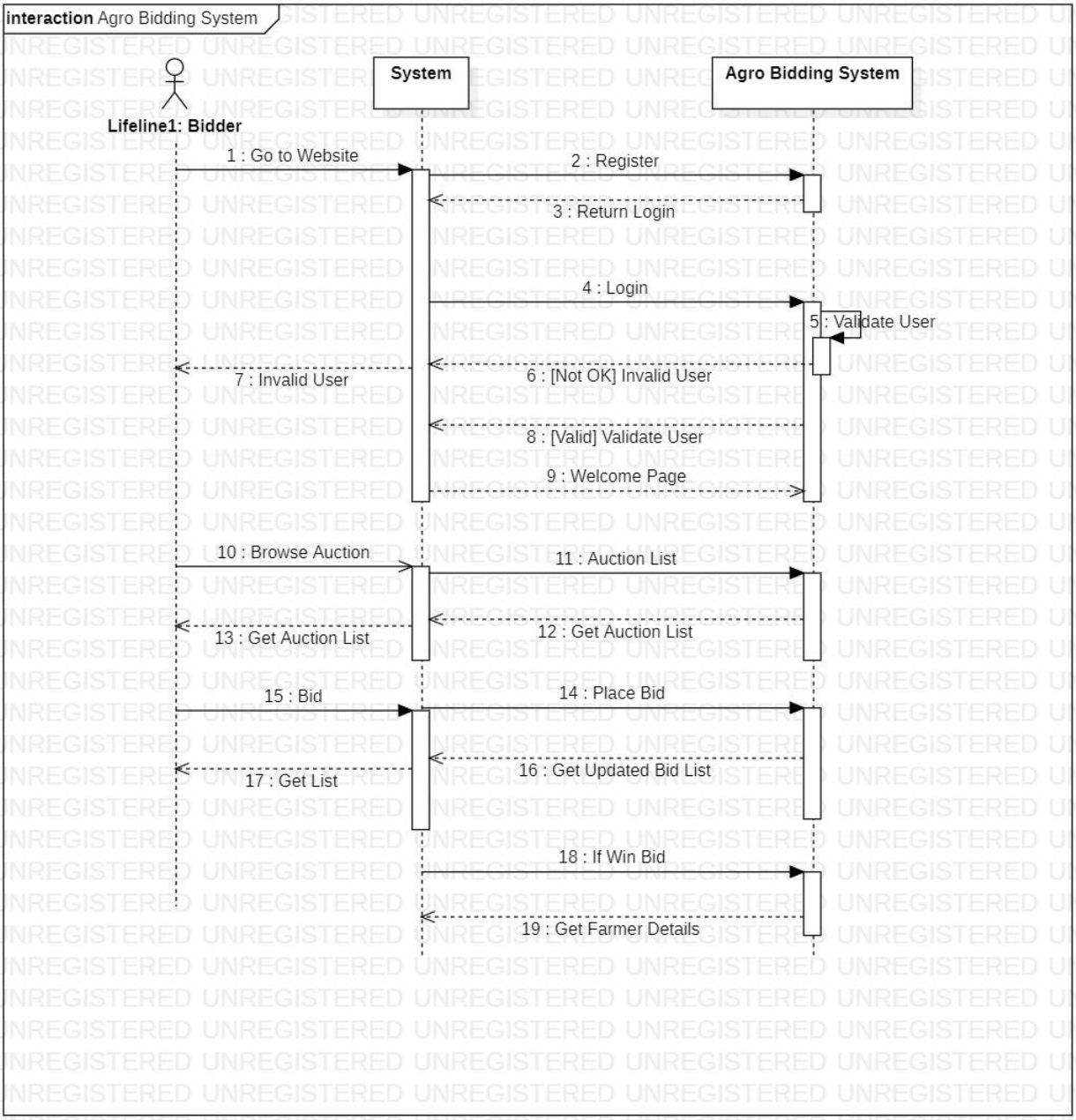
- **Admin**


sd Agro Bidding System(Admin)
Lifeline1: Admin
System
Agro Bidding System
1 : Go To Website
2 : Login
3 [Not Ok] : Validate User
4 : Invalid User
5 [Valid] : Validate User
6 : Home Page
7 : Valid Farmer Details
8 : Approve Farmer
9 : Farmer Approved
10 : Farmer Registered
11 : Invalid Farmer Details
12 : Reject_Farmer
13 : Farmer Rejected
14 : Famer Details Discarded
15 : Valid Bidder Details
16 : Approve Bidder
17 : Bidder Approved
18 : Bidder Registered
19 : Products Detail
20 : Product List
21 [Not Valid] : Product
22 : Inappropriate Product
23 : Remove Product
24 : Product Removed
25 : Product Deleted
26 : Products For Auction

- **Farmer**


sd Agro Bidding System(Farmer)
Lifeline1: Farmer
System
Agro Bidding System
1 : Go to Website
2 : Register
3 : Return Login
4 : Login
5 : Validate User
6 [Not OK] : Invalid User
7 : Invalid User
8 [Valid] : Validate User
9 : Welcome Page
10 : Add Crop
11 : Added in Crops List
12 : Price of crop
13 : Minimum Crop Price
14 : Enter Price
15 : Pricing of Crop
16 : Price Set Successfully
17 : Price Set
18 : Enter Auction Timing
19 : Set Auction Time
20 : Auction Time Set
21 : Auction Time Set Successfully

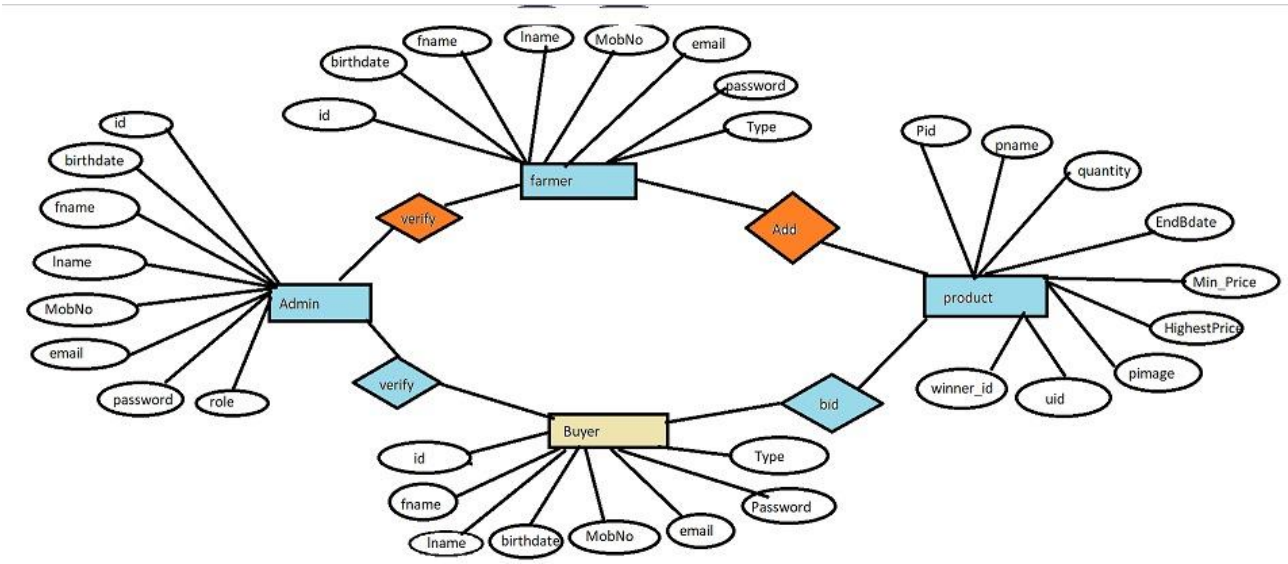
- **Buyer**


interaction Agro Bidding System
System
Agro Bidding System
Lifeline1: Bidder
1 : Go to Website
2 : Register
3 : Return Login
4 : Login
5 : Validate User
7 : Invalid User
6 : [Not OK] Invalid User
8 : [Valid] Validate User
9 : Welcome Page
10 : Browse Auction
11 : Auction List
13 : Get Auction List
12 : Get Auction List
15 : Bid
14 : Place Bid
17 : Get List
16 : Get Updated Bid List
18 : If Win Bid
19 : Get Farmer Details

Chapter 5

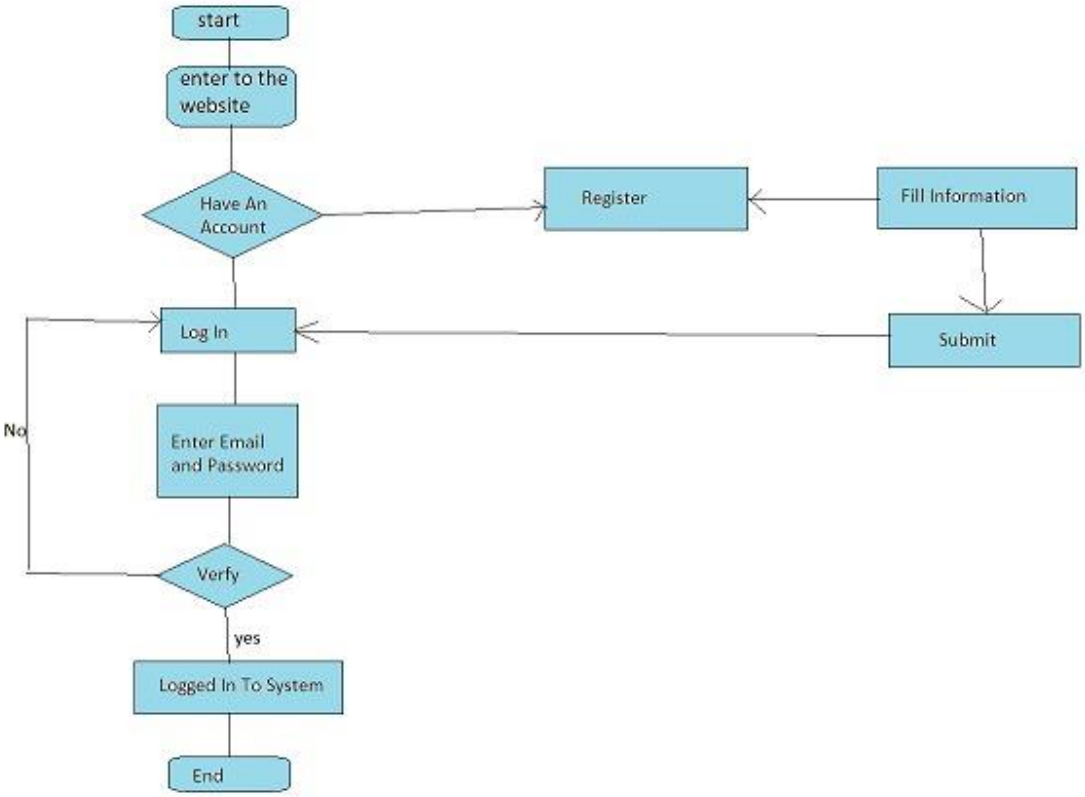
DESIGN

5.1 Data Modeling ***(E-R Model, Relational tables with its associated Data dictionary)*** ER Diagram normalized till the third normal form accompanied by the respective data dictionary table should be included

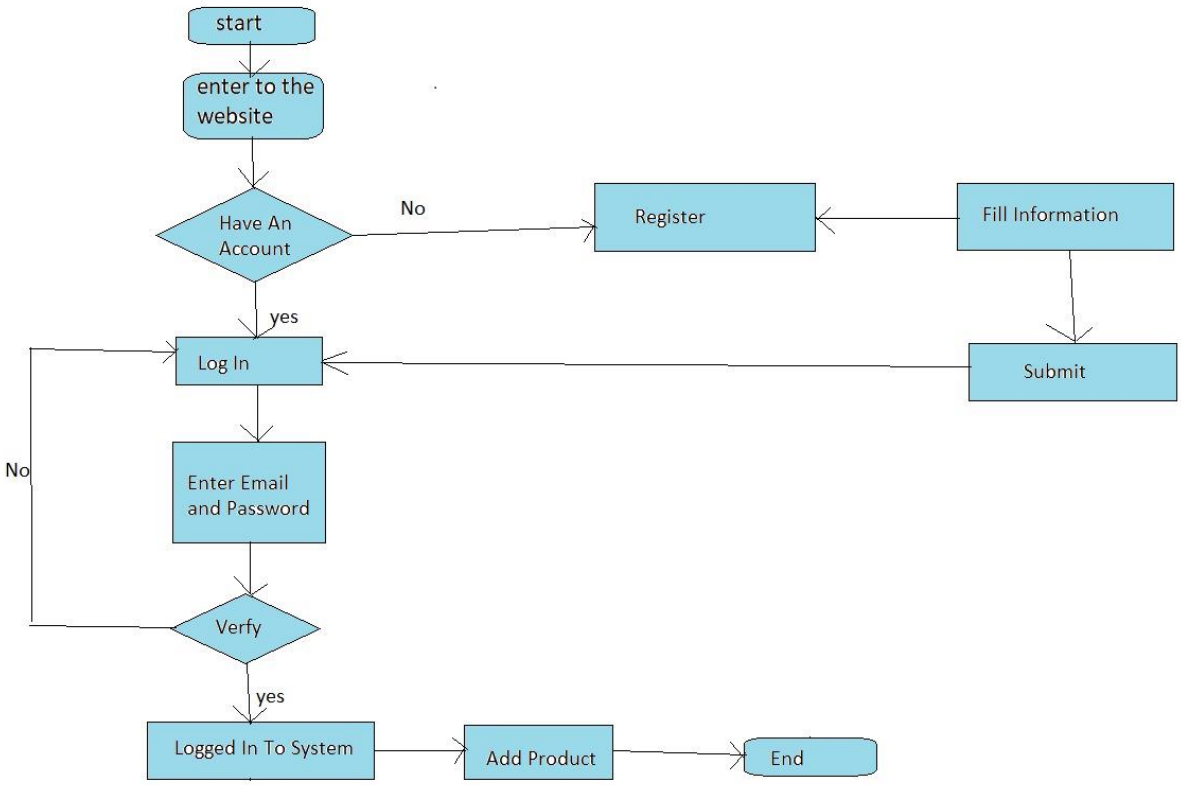


5.2 Architectural Design (*Project Flow /architecture with description)*

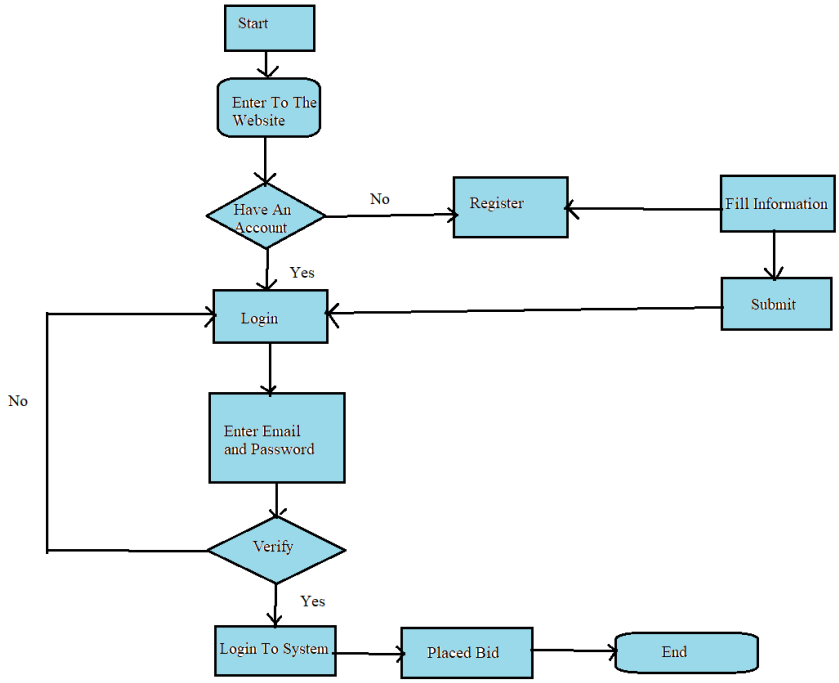
- **Admin:**



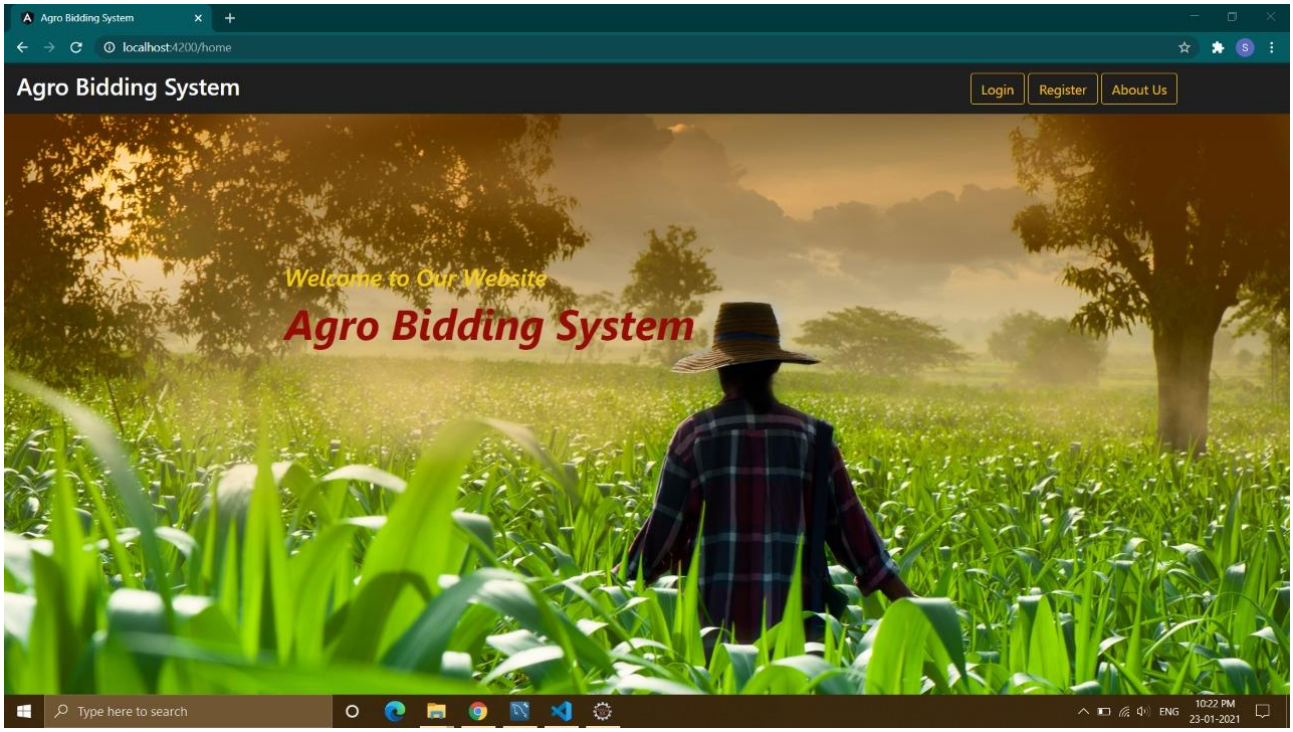
- **Farmer:**



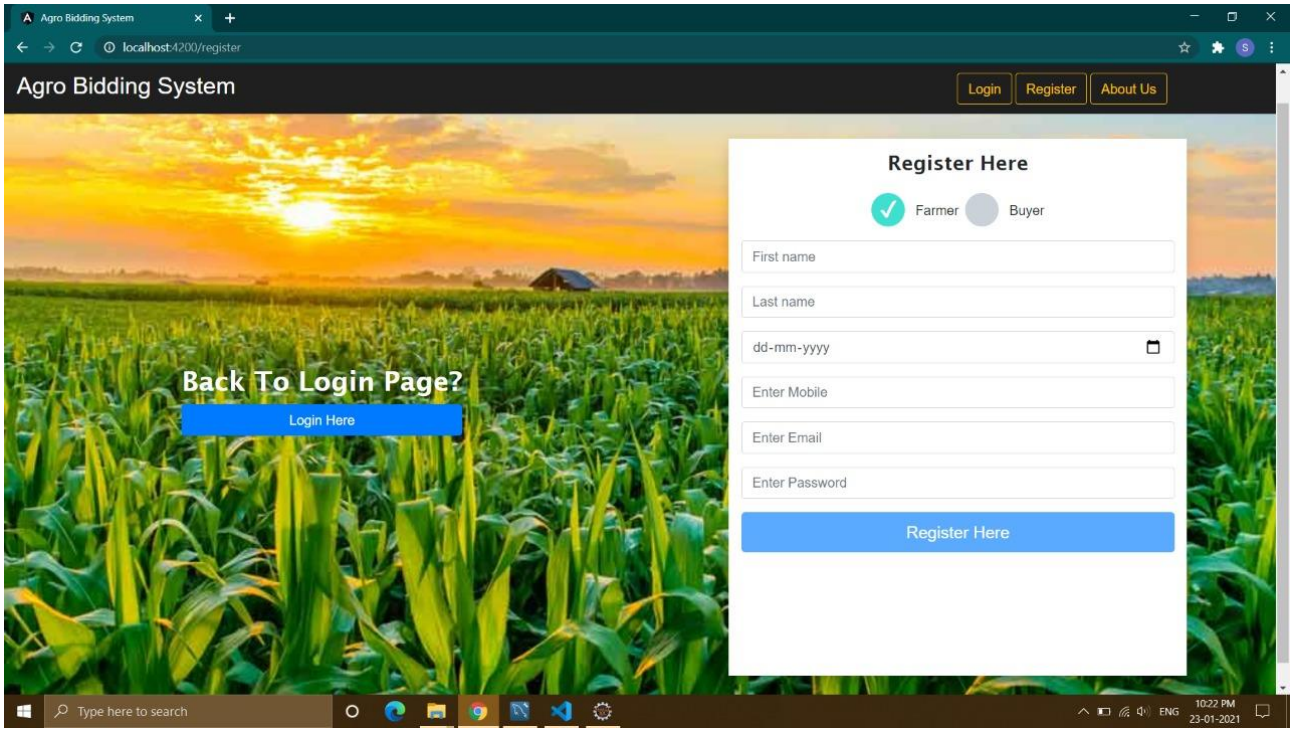
- **Buyer:**



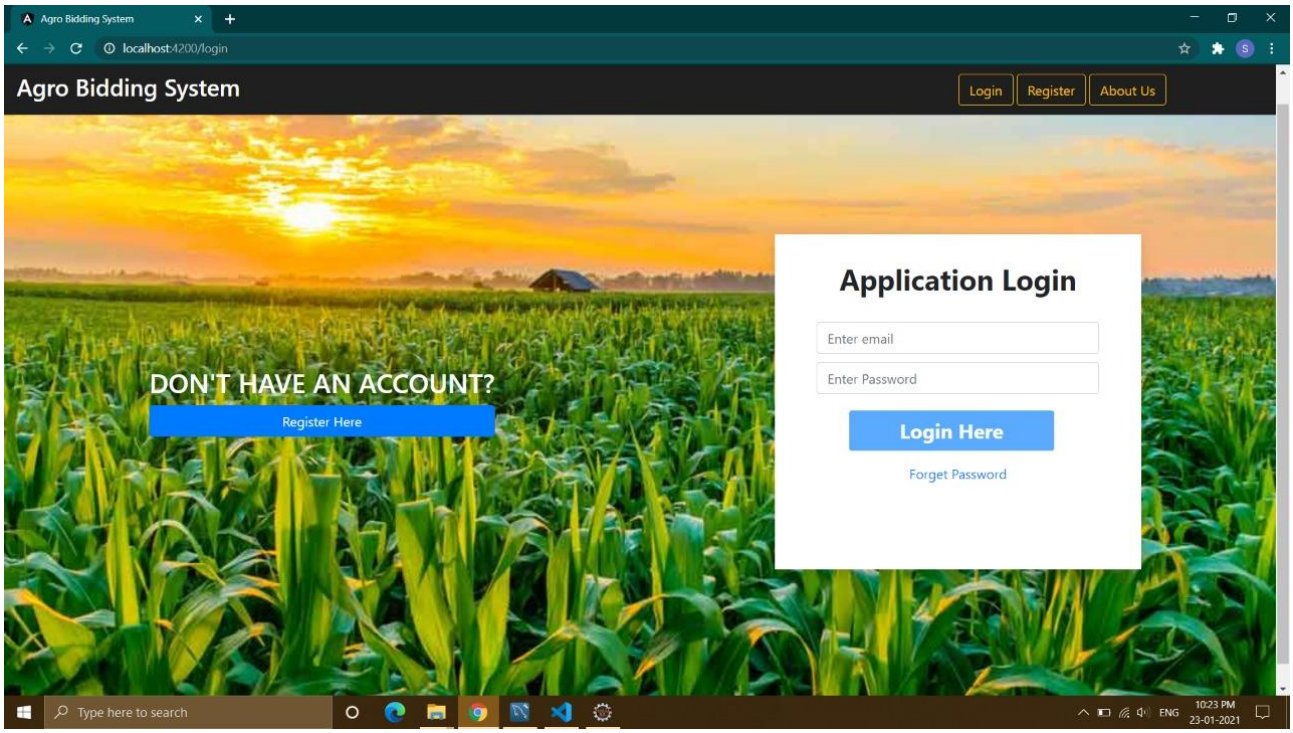
5.2 User Interface Design: Home Page



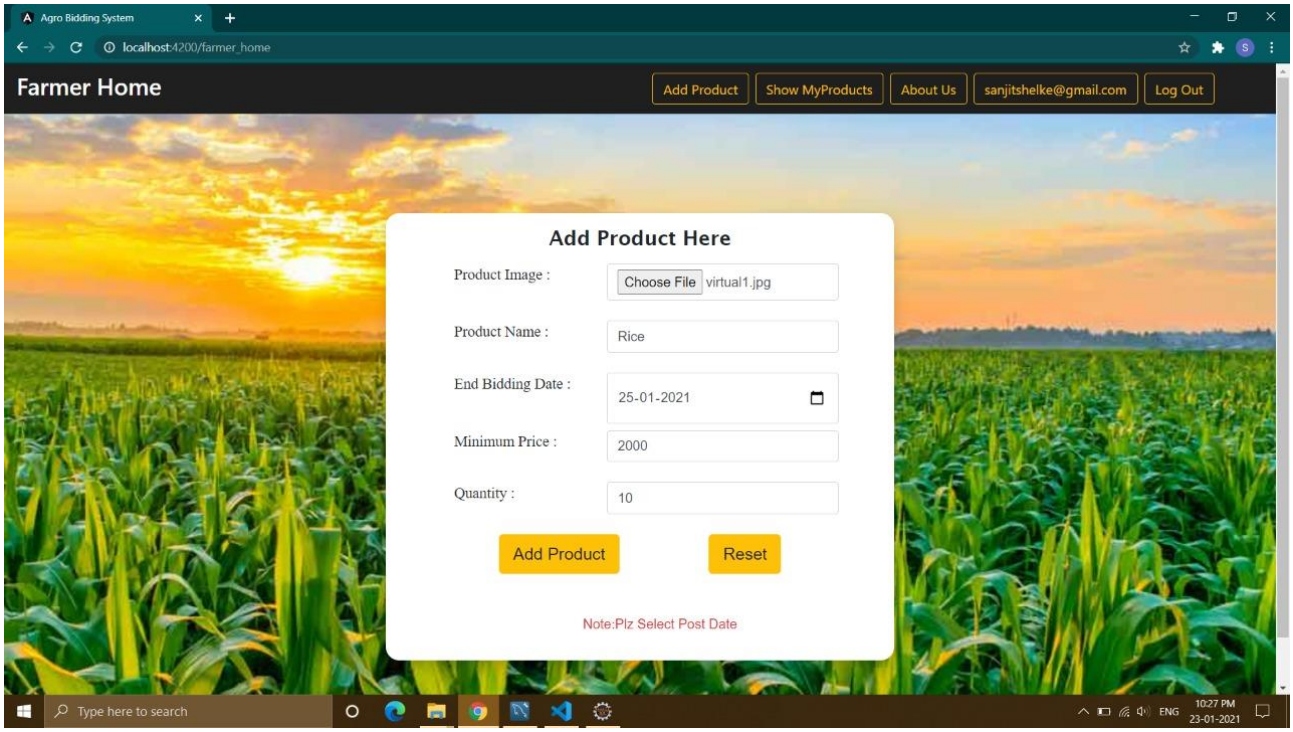
Register Page



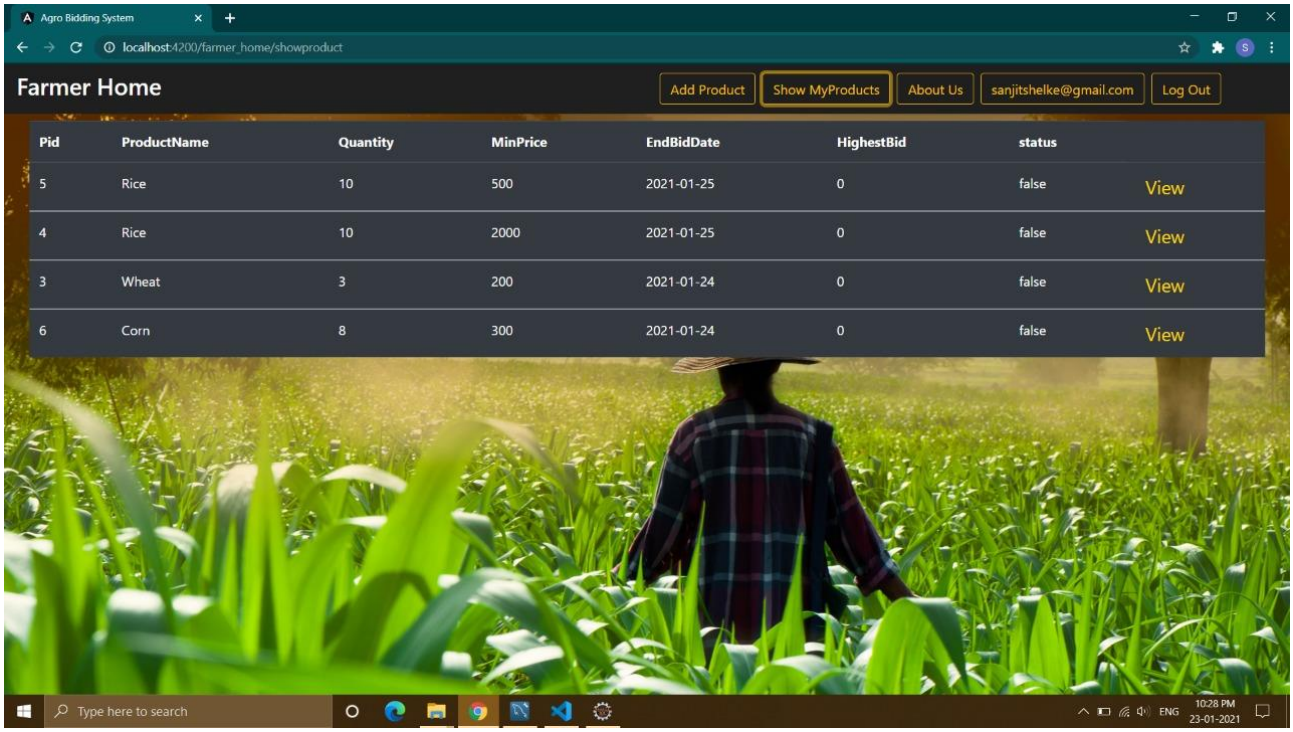
Login Page



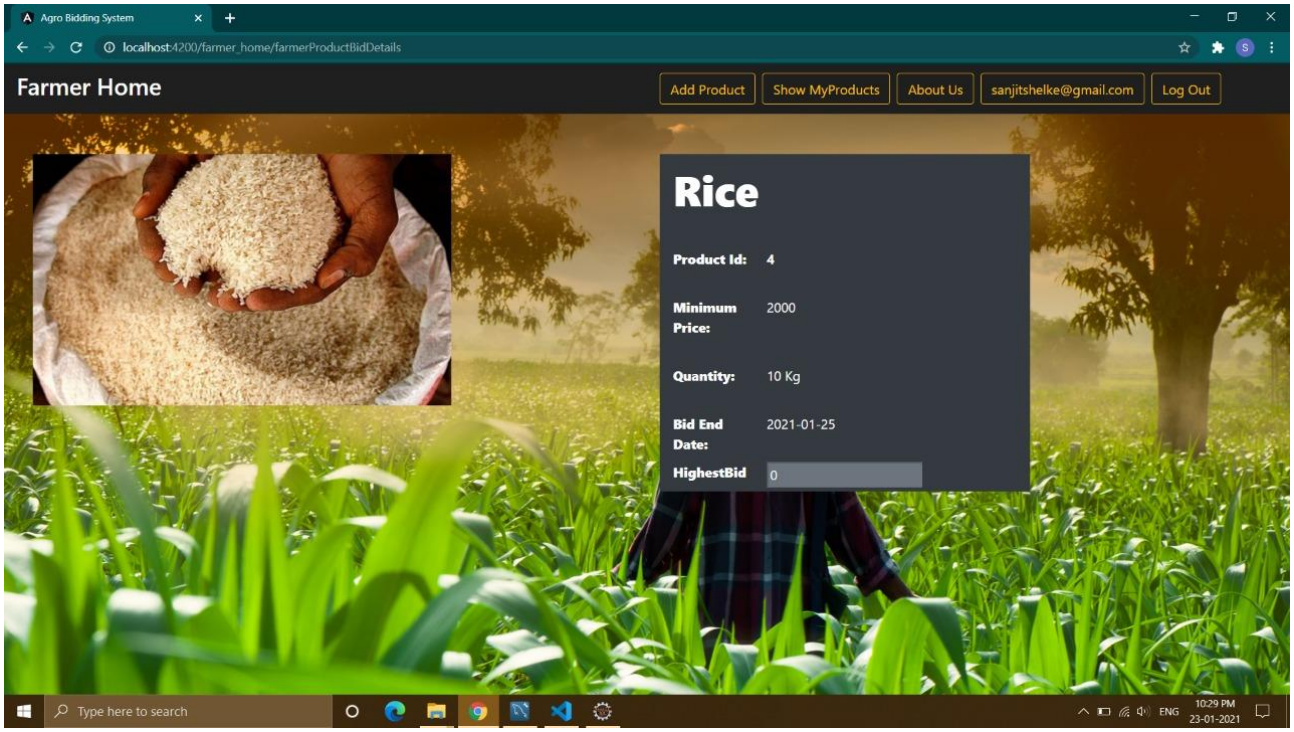
Add Product Page



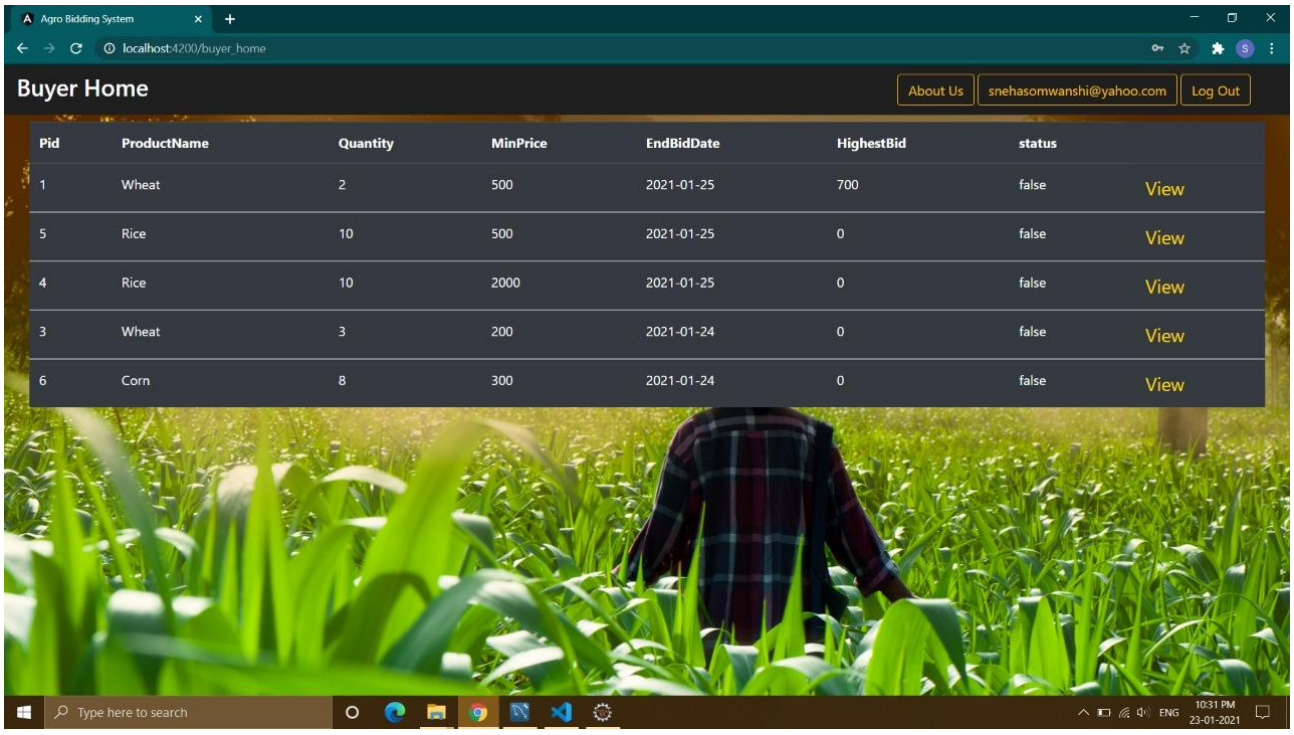
Show MyProduct Page



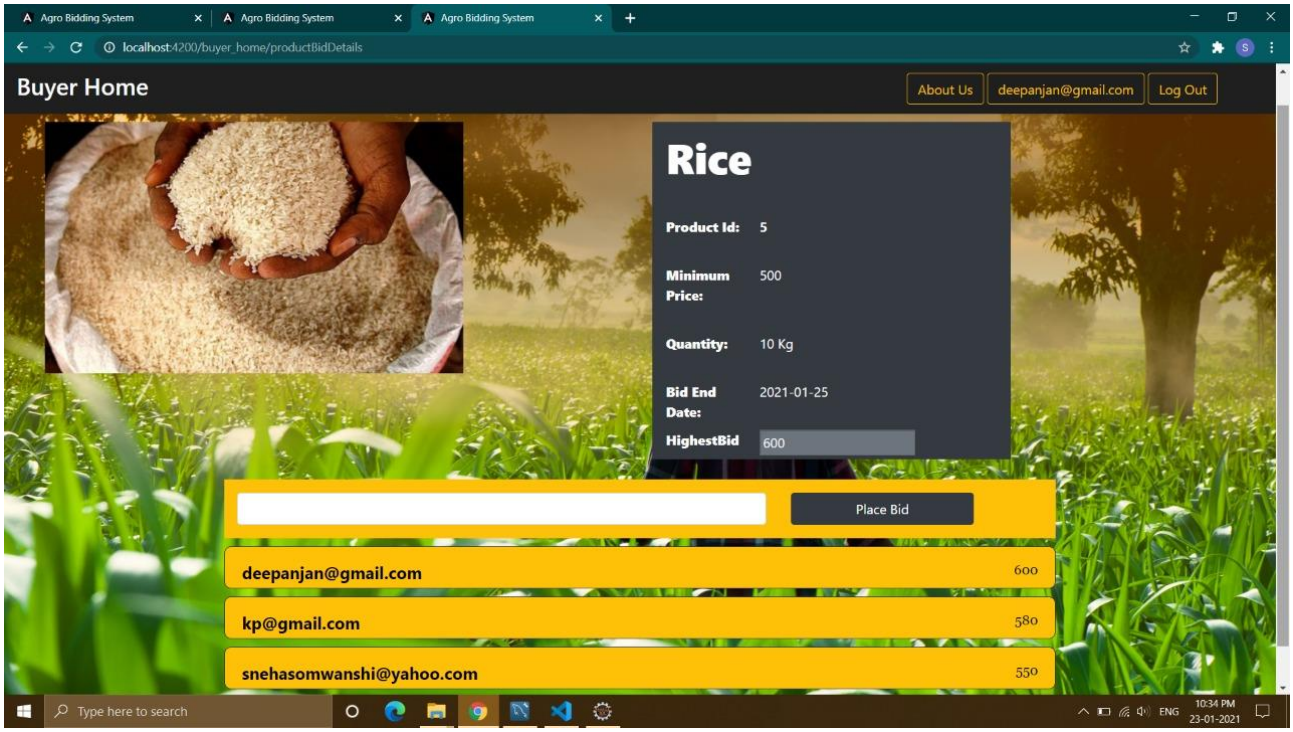
Product Details Page



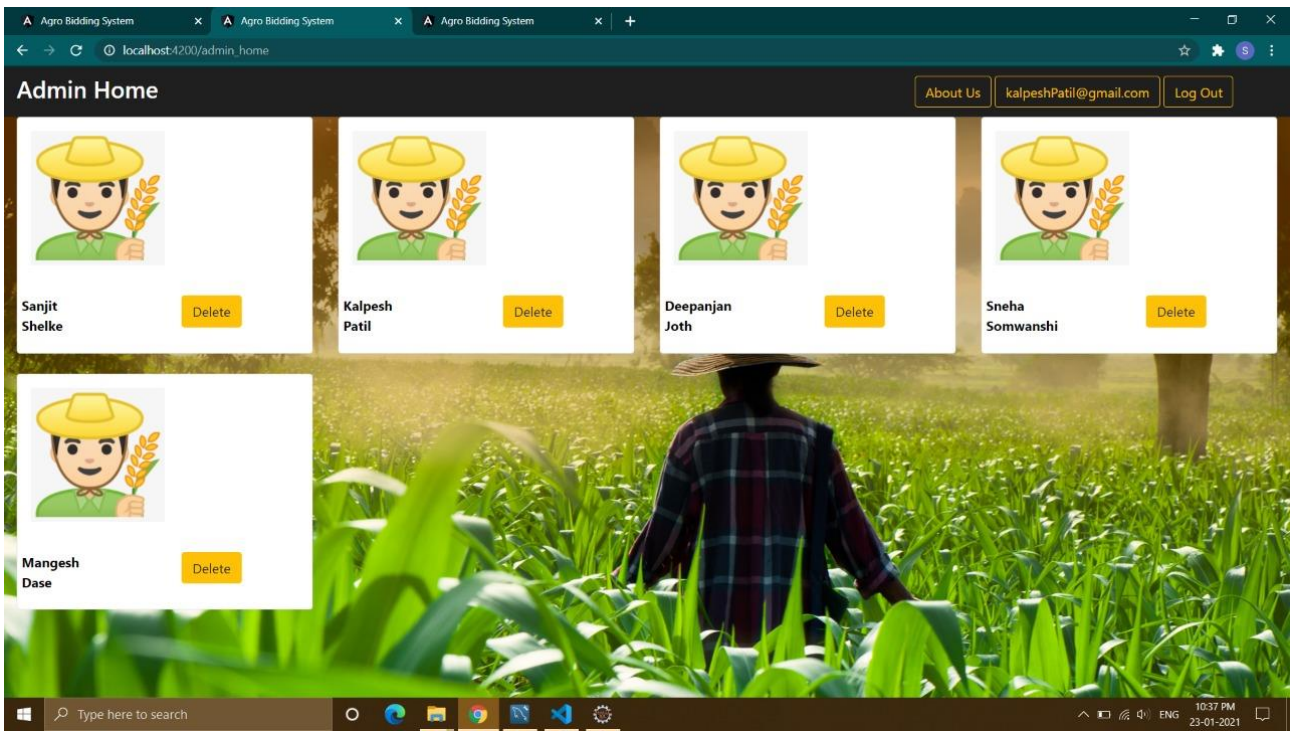
Buyer Home Page



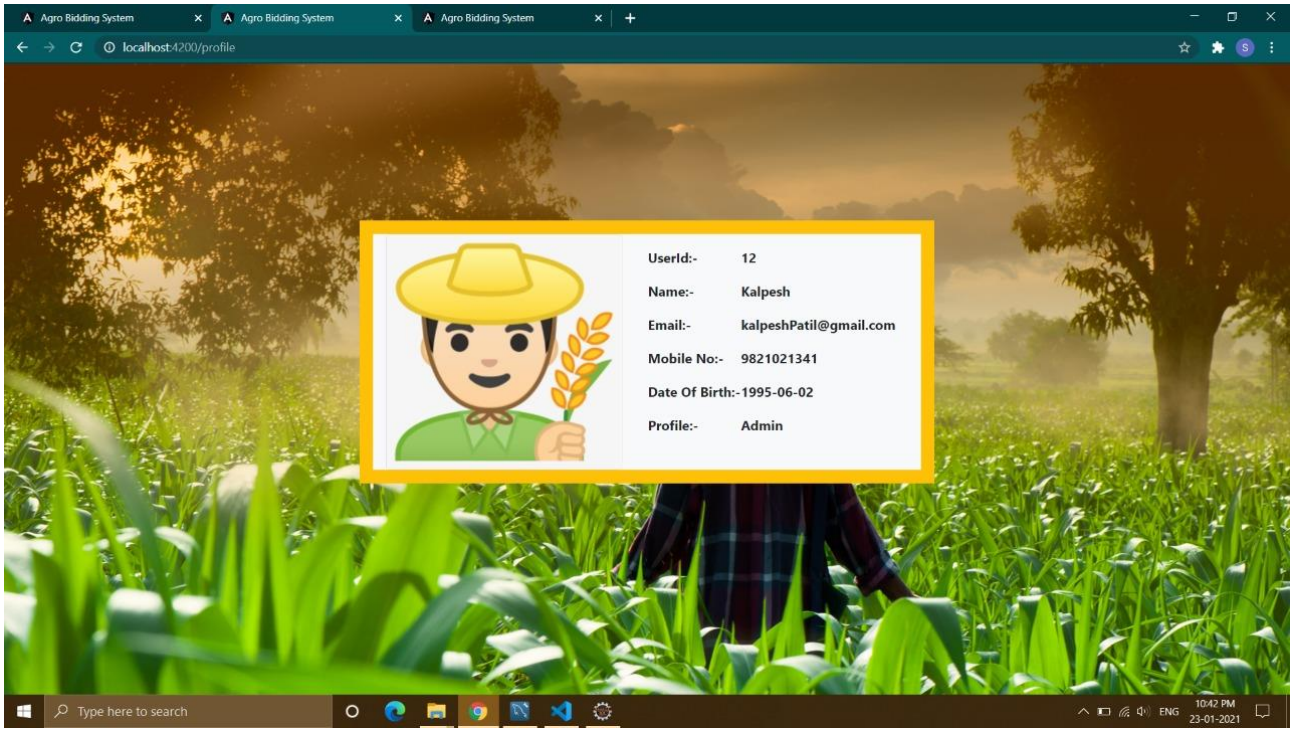
Product Bid Details Page



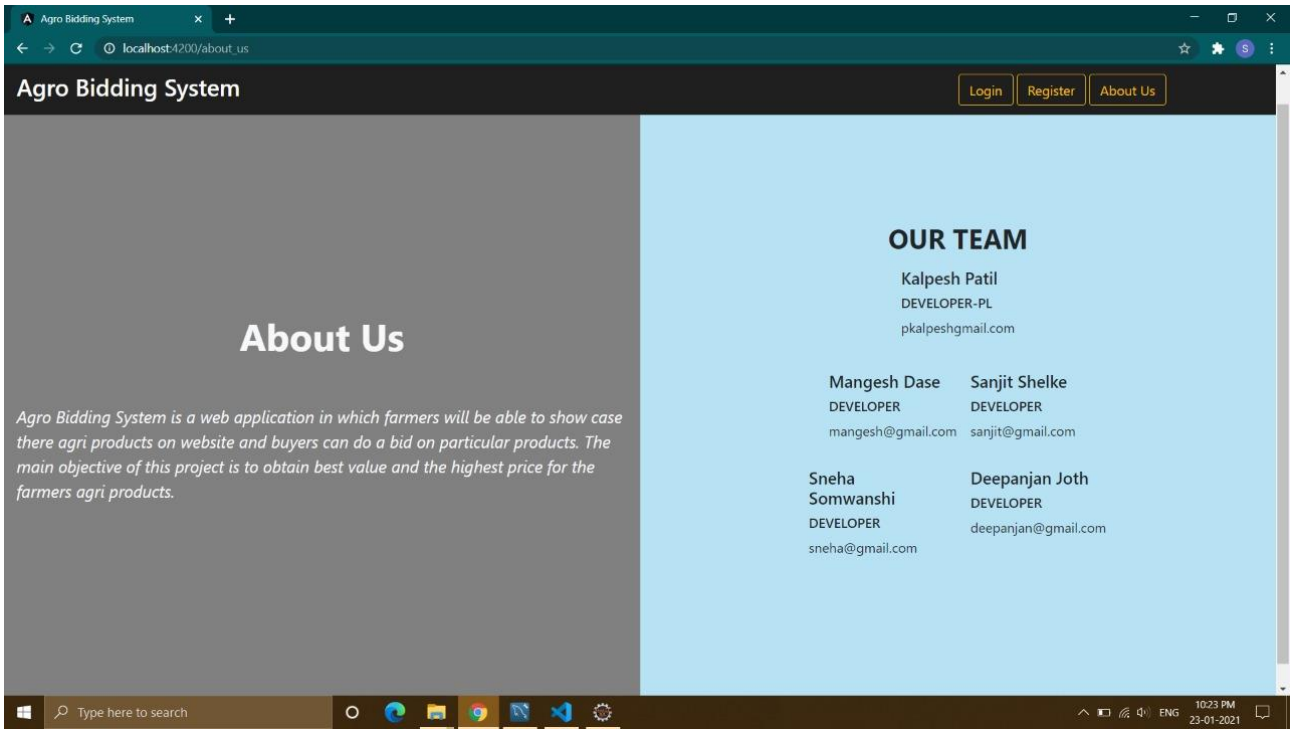
Profile List Page



Profile Details Page



About Us Page



Chapter 6

IMPLEMENTATION

6.1 Algorithms / Methods Used

Mention your algorithms if any or any methodology used.

6.2 Working of the project *(code for mentioned algorithms) [do not copy paste entire code. Only main snippets]*

Chapter 7

TESTING

7.1 Test cases *(conditions on which testing is done)*

7.1 Test Cases

Test Id	Item to be Tested	Steps	Input	Actual Output	Expected Output	Pass/Fail
1	Verify Email Id	User enters email	email	If already not exist email success	success	Pass
2	System check for proper username and password entered by users	System compares the data entered by user and the entered data in database				
		If username and		valid	valid	Pass

		password is valid				
		If username and password is invalid		Report invalid user id and password	Report error	Pass
3	System checks whether details of user are entered as per the format	System checks the data entered by user is in valid form or not.				
		If valid	User entered data	Inserted Successfully	Inserted Successfully	Pass
		If invalid	User entered data	“Invalid Data” message will be display	“Invalid Data” message will be display	Pass

4	**To Check Valid User Or Not**	**Enter the Data**				
		If valid user		**Logged In**	**Success**	**Pass**
		If Invalid User		**Not Valid User**	**Faild**	**Pass**
5	**To Check Add Product**	**Enter The valid Data**		**valid**	**valid**	**Pass**
		Enter The Invalid data		**Invalid**	**Invalid**	**Pass**
6	**To Check Bidding Placed Or Not**	**Enter bid the Price**		**stored**	**stored**	**pass**
		Enter The Characters		**Display error**	**Display error**	**pass**

7.2 Type of Testing used *(explanation and reason of testing method used*

Unit Testing – Testing an application to its smallest unit is called Unit Testing. Again, testing each module of an application which numerous test cases and checking validations against unforeseen scenarios is what unit testing is all about. Once a bug is detected, that is recorded in the bug tracker, a ticket is raised, this bug is fixed, and again new unit test cases are written to perform unit testing over the debugged piece of code.

Integration Testing – Once each individual part of the system is tested, every smallest unit is tested, different modules of the system are now integrated together and tested. Whether the integration works or whether a part of the system that is functional individually starts failing when integrated with another part is what integration testing is all about.

System Testing – That an integrated system meets all its specifications and requirements is decided by system Testing. Regression Testing – Once the system is debugged, it is tested again to see if it is compatible with the changes made and compatible with any changes made to the environment.

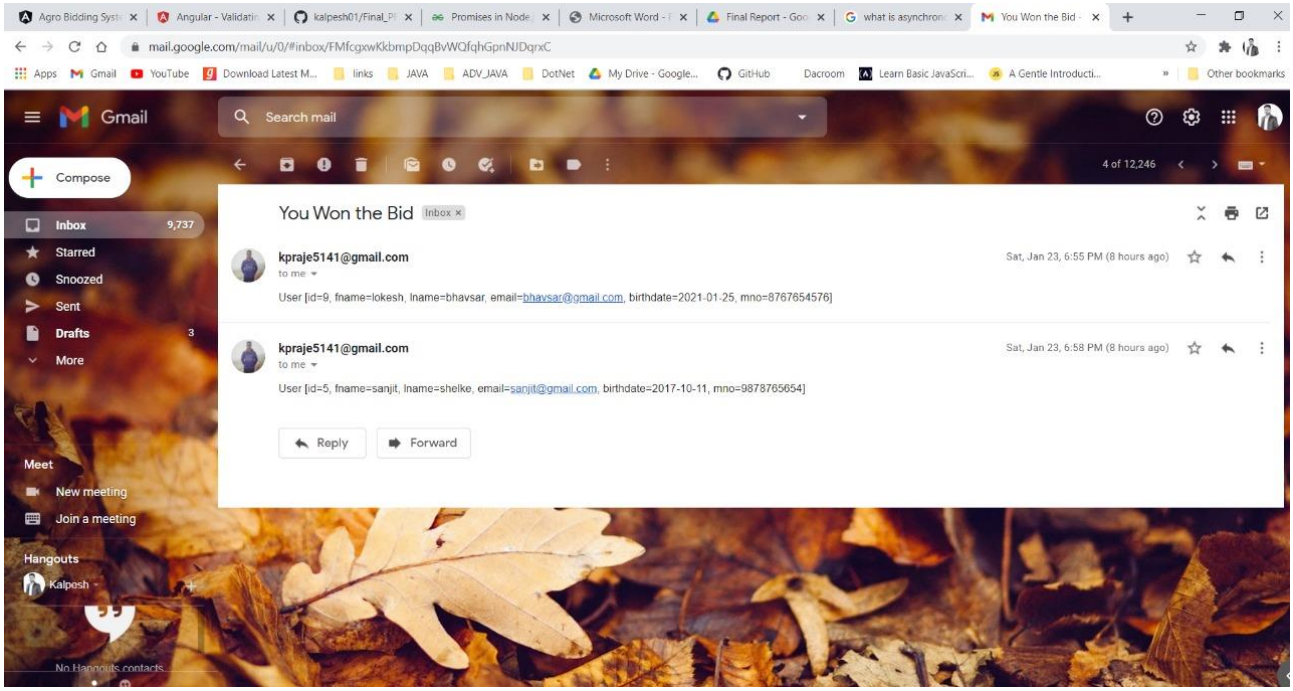
Load Testing – Testing that the system can take as much load as it is supposed to take and testing how much load it can take and to what extent it can exceed its limit and where it breaks.

Performance Testing - Testing how the system performs like slow/fast and how it performs under certain workloads

Chapter 8

Results and Discussions

This shall form the penultimate chapter of the report and shall include a thorough evaluation of the investigation carried out and bring out the contributions from the study. The discussion shall logically lead to inferences and conclusions as well as scope for possible further future work.



Chapter 9

Conclusions

It has been a great pleasure for us to work on this exciting and challenging project. This project proved good for us as it provided practical knowledge of not only programming in Spring Boot and Angular web-based application and some extent to Windows Application and SQL Server, but also about all handling procedure related with “AGRO BIDDING SYSTEM”. It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

The project is completely related to the farmers and the buyers. It would benefit both of them equally. Farmers will get the actual price of their hard work. Farmers need to pay only the price of the product and not the intermediate charges which are applied due to the involvement of the middlemen and cost required for transportation. Buyers will also get good choice for products they want to buy and can directly get fresh products. This application completely eliminates middlemen hence it’s a direct communication platform between the farmers and the buyers.

Appendix

- MySQL is an open-source relational database management system (RDBMS).
- Spring Boot is an open source Java-based framework used to create a micro Service.
- Java Persistence API. It's a specification which is part of Java EE and defines an API for object-relational mappings and for managing persistent objects.
- Eclipse is an integrated development environment (IDE). Eclipse is written mostly in Java and its primary use is for developing Java applications.
- Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS.

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