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SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

A DISSERTATION-II REPORT ON

"ONLINE FARMER AUCTION SYSTEM "

SUBMITTED TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE
IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE

MASTER OF ENGINEERING (Computer Engineering)
BY

Miss. Patil Gayatri Arunkumar Exam No: .

Under the Guidance of
Dr. Vikhe.V.P.

DEPARTMENT OF COMPUTER ENGINEERING

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I the undersigned hereby declare that I have completed and written Dissertation-II report entitled **" Online Farmer Auction System"**, during the academic year 2020-21 for the partial fulfillment for the award of degree of Master of Engineering in Computer Engineering of Savitribai Phule Pune University, Pune.

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It is my proud privilege and duty to acknowledge the thing of help and guidance received from several people in preparation of this report. It would not have been possible to prepare this report in this form without their valuable help,cooperation and guidance.

"Online Farmer Auction System" had been a wonderful subject to research upon, which leads ones mind to explore new heights in the field of Computer Engineering.

I dedicate my dissertation to esteemed guide, **Dr. V. P. Vikhe** and H.O.D., **Dr. M. R. Bendre** Computer Engineering Department, whose interest and guidance helped me to complete the work successfully. This experience will always steer me to my work perfectly and professionally and **Dr. V.P.Vikhe** (PG Co-ordinator) who has provided facilities to explore the subject with more enthusiasm. I like to express my sincere gratitude to **Dr. S.M.Gulhane**, Principal, Pravara Rural Engineering College, Loni for providing a great platform to complete the dissertation within the scheduled time.

Last but not the least, I thank all others, and specially my friends who in one way or another helped me in the successful completion of this dissertation.

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Abstract

The online farmer auction system is a web-based application that is developed using Java programming language. The purpose of this system is to provide an online platform for farmers to sell their produce to interested buyers. The system provides a user-friendly interface for both farmers and buyers to interact with each other.

The system allows farmers to register as admin and list their products for sale. Buyers can also register themselves and search for products that match their requirements. Once a buyer finds a suitable product, they can place a bid on it. Farmers can view the bids and select the highest bidder. The system also provides a feedback mechanism where buyers can rate the products and farmers based on their experience. This helps in building trust among the users and ensures the quality of the products being sold. The online farmer auction system is implemented using Java Servlets and JSPs. The system uses MySQL as the database backend to store user information and product details. The system is deployed on a web server and can be accessed by users from anywhere with an internet connection. Overall, the online farmer auction system provides a simple and efficient way for farmers to sell their produce and for buyers to purchase fresh and quality products directly from the source.

An internet-based auction is one that is held online. It is a common way to purchase and sell goods and services. Customers can sell and buy products at the greatest price using an online auction system. It is being created with the intention of making the system dependable, simple, and quick. The objects are sold by price bidding in an online auction, which uses a distinct business strategy. This study focuses on the middlemen's commissions in the supply chain, which cause significant inflation for consumers. In essence, farmers receive poor payments from the middlemen relative to their investments in the harvesting of the crop. A mobile application for Android will be created to assist village farmers in selling their products directly to consumers. The goal of this system is to close the gap between farmers and consumers. By doing so, farmers will earn more money, and consumers will be able to purchase high-quality goods directly from farmers for lower prices.

Keywords: *Admin Module, User Module , Online auction, marketing, information, User authentication, Online bidding system , Agricultural products ,Responsive web design.*

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Chapter 1
SYNOPSIS

1.1 Motivation

An online farmer auction system is a vital platform that can enable farmers to sell their products in a cost-effective and efficient way. This system can help connect farmers with buyers from various locations, providing them with a broader market reach. Additionally, an online auction system can eliminate intermediaries, reduce transaction costs, and promote transparency in pricing. Developing a Java-based online farmer auction system can provide significant benefits, such as scalability, flexibility, and security. Such a system can help farmers to maximize their profits, increase their income, and improve their livelihoods. Therefore, a project report on an online farmer auction system can provide valuable insights into the design, development, and implementation of this platform, and its potential impact on the agricultural sector.

1.2 Goals and Objectives

1. The objective of the online farmer auction system project is to provide a digital platform for farmers to auction their crops to potential buyers. This platform aims to streamline the process of buying and selling crops, eliminate the need for intermediaries, and provide transparency in pricing. The system aims to make the process more efficient and convenient for both farmers and buyers by allowing them to interact directly and trade their products without any physical presence.

2. Make sure farmers receive the best possible price for their goods..

3. Get rid of middlemen so that farmers can benefit fully.

4. Farmers can pick the customer who offer the highest amount, or they can pick the consumers to whom they sell their products based on the price the buyers are willing to pay.

5. The online auction application enables farmers to interact directly with customers.

6. To create an online platform where farmers can list their crops and potential buyers can bid on them in a transparent and efficient manner.

7. To ensure a fair price for the crops by eliminating intermediaries and providing transparency in pricing.

8. To provide a secure and user-friendly platform for farmers and buyers to interact and trade their products.

9. To enable farmers to reach a wider market and expand their customer base.

10. To improve the efficiency of the agricultural supply chain by reducing the time and cost associated with physical auctions.

11. To provide real-time data and analytics to farmers and buyers to make informed decisions about pricing and market trends.

12. To promote a sustainable and equitable agricultural system by empowering small-scale farmers and creating a level playing field for all stakeholders.

1.3 Scope

1. An online farmer auction system is a digital platform that connects farmers with potential buyers through an auction process. This project could cover the scope of developing such a system, including features such as user registration, product listing, bidding, and payment processing. The report could also explore the benefits of using an online auction system, such as reducing intermediaries, increasing price transparency, and enabling wider market access.

2. The analysis of the potential user base, market demand, and competition in the agricultural sector. Overall, the report could provide insights into the technical, social, and economic feasibility of implementing an online farmer auction system.

1.4 Review of Conference/Journal Papers Supporting Dissertation Idea

This section describes and studies the fundamentals of various authentication techniques that can be used in designing a new more reliable and secured authentication technique for a application. It helps in understanding

various ideas put forward by various technical papers published by various authors and how they put forth a more accurate and concrete techniques. Some of the ideas with technique and drawbacks are mentioned below:

1. Madhumathi, R., RadhaKrishnan, R., Kumar, S. S., Abineshkumar, K., Karthi, M., ManojKrishna, M. (2016). Bidding application in Amazon web services for the sales of agricultural products. 2016 International Conference on Recent Trends in Information Technology (ICRTIT).

2. Devi, S. P., Narahari, Y., Viswanadham, N., Kiran, S. V., Manivannan, S. (2015). E-mandi implementation based on gale-shapely algorithm for perishable goods supply chain. 2015 IEEE International Conference on Automation Science and Engineering (CASE).

3. Bhende, M., Avatade, M. S., Patil, S., Mishra, P., Prasad, P., Shewalkar, S. (2018). Digital Market: E-Commerce Application For Farmers. 2018 Fourth International Conference on Computing Communication Control and Automation (ICCUBEA).

4. Guowei Wan, Mohammad, M. R., Abe, J. (2009). A study on markets preference by the farmers in marketing of vegetables-a case study in Kanupur Village of the Bogra District, Bangladesh. 2009 6th International Conference on Service Systems and Service Management.

5. Huang, X. (2011). A dynamic game model for the formation of the farmers' reputation in the rural credit market. Proceedings of 2011 IEEE International Conference on Grey Systems and Intelligent Services.

6. Khodaskar, K. (2015). Virtual Fruits Market – An Application for Farmer. 2015 Fifth International Conference on Communication Systems and Network Technologies.

7. Faradillah, Y., Saany, S. I. A., El-Ebiary, Y. A. B. (2019). E-Marketing and Challenges among Indonesian Coffee Farmers. 2019 International Conference of Computer Science and Information Technology (ICoSNIKOM).

8. Sneha Iyer, R., Shruthi, R., Shruthhi, K., Madhumathi, R. (2021). Spry Farm: A Portal for Connecting Farmers and End Users. 2021 7th International Conference on Advanced Computing and Communication Systems (ICACCS).

9. Krishna, S., Midhul, M. S., Pillai, R. R. (2019). An efficient agricultural marketing system for optimizing the benefits of farmers. 2019 2nd International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT).

10. Sun, X., Wu, B., Li, Q., Wu, H., Chen, C. (2013). The Study of Farmers' Professional Cooperatives Information Service System. 2013 International Conference on Computer Sciences and Applications.

11. Li, H., Wang, J. (2010). An Integrated Study of Provide Service for "Agriculture, Rural Areas and Farmers" with the Help of Agricultural Futures Market. 2010 Asia-Pacific Power and Energy Engineering Conference.

12. Shuguang Chen, Xiaodong Liu, Shengli Chen. (2011). A comparative analysis of several auction types with shill bidding. 2011 International Conference on Business Management and Electronic Information.

13. Abishek, A. G., Bharathwaj, M., Bhagyalakshmi, L. (2016). Agriculture marketing using web and mobile based technologies. 2016 IEEE Technological Innovations in ICT for Agriculture and Rural Development (TIAR).

14. Chaiwongsai, J., Boonthep, N., Miyanaga, Y., Cheosuwan, T., Innawong, B. (2021). Agricultural Year-Round Planning Model for Market-oriented Farms. 2021 Joint International Conference on Digital Arts, Media and Technology with ECTI Northern Section Conference on Electrical, Electronics, Computer and Telecommunication Engineering.

15. Dormido, J. M. D., Malicdem, A. R. (2019). AGRITECHNO: A Development of a Revolutionized Farmer Assisted Agricultural Product Forecasting Mobile App System. 2019 2nd World Symposium on Communication Engineering (WSCE)

1.5 Plan of Dissertation Execution

1.5.1 Project Phase Analysis

Phase	**Work Task**	**Description**	**Duration**
Phase-1	System Analysis	Analyze the information given in the IEEE papers.	3 weeks
Phase-2	Literature Survey	Collect relevant IEEE papers and study techniques and drawbacks in them.	6 weeks
Phase-3	Design and Planning	Assign the module and design the process and time to execute.	8 weeks
Phase-4	Implementation	Implement the code for all modules and integrate then as a project.	9 weeks
Phase-5	Testing	Test the code and overall process and write test cases for all processes to recognize their failure and success conditions.	3 weeks
Phase-6	Dissertation	Prepare the dissertation for the project with conclusion and future enhancements.	4 weeks

Table 1.1: *Project Phase Analysis.*

1.5.2 Timeline Chart

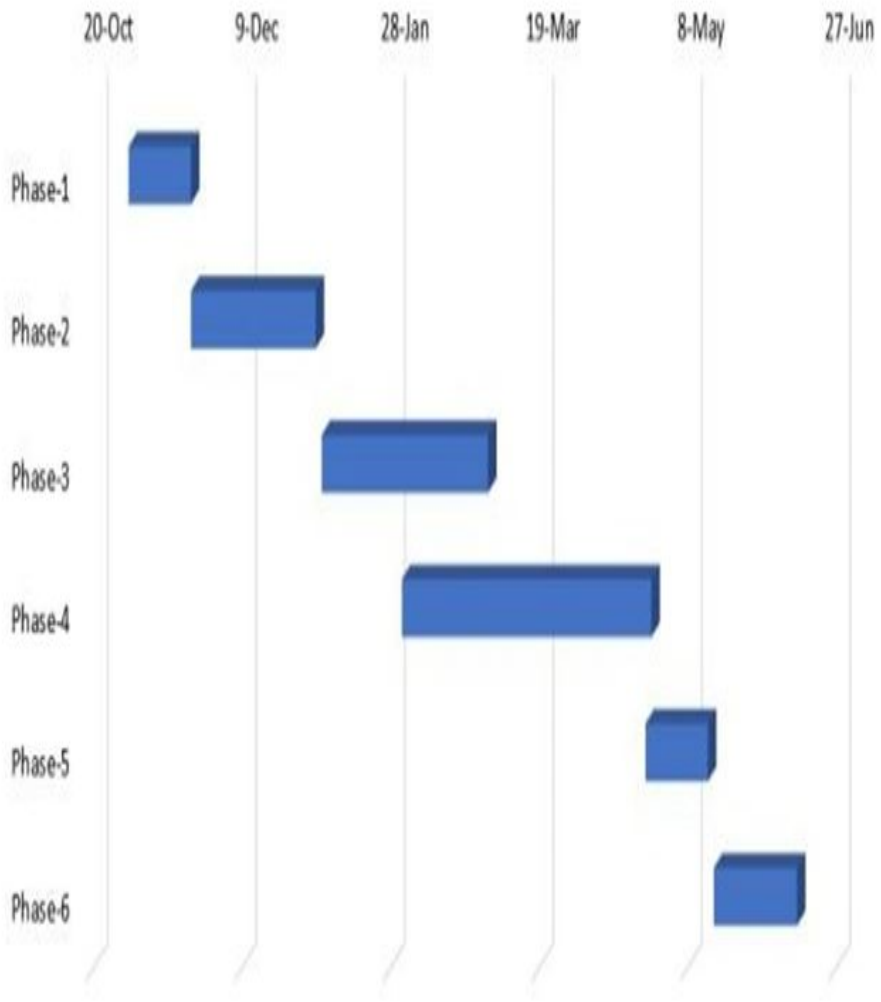

Figure 1.1: *Timeline Diagram.*

Chapter 2
INTRODUCTION

2.1 Dissertation Idea

The online auction platform where farmers and customer will buy and sell agricultural products. This will ensure that farmers receive the proper price for their products. The "Online Farmer Auction System" offers cutting-edge facilities to help ensure fair prices for all customers in market, including farmers and customers, lessens logistical burdens, and makes pertinent information readily available. This system only permits the auctioning of agricultural products of all varieties .An online farmer auction system is a platform that allows farmers to auction their produce directly to potential buyers without intermediaries. This system has various benefits, including higher profits for farmers, reduced costs for buyers, and a more transparent marketplace. In this project report, we will discuss the implementation of an online farmer auction system.

2.2 Motivation

An online farmer auction system is a vital platform that can enable farmers to sell their products in a cost-effective and efficient way. This system can help connect farmers with buyers from various locations, providing them with a broader market reach. Additionally, an online auction system can eliminate intermediaries, reduce transaction costs, and promote transparency in pricing. Developing a Java-based online farmer auction system can provide significant benefits, such as scalability, flexibility, and security. Such a system can help farmers to maximize their profits, increase their income, and improve their livelihoods. Therefore, a project report on an online farmer auction system can provide valuable insights into the design, development, and implementation of this platform, and its potential impact on the agricultural sector.

2.3 Literature Survey

1. Madhumathi, R., RadhaKrishnan, R., Kumar, S. S., Abineshkumar, K., Karthi, M., ManojKrishna, M. (2016). Bidding application in Amazon web services for the sales of agricultural products. 2016 International Conference on Recent Trends in Information Technology (ICRTIT).

2. Devi, S. P., Narahari, Y., Viswanadham, N., Kiran, S. V., Manivannan, S. (2015). E-mandi implementation based on gale-shapely algorithm for perishable goods supply chain. 2015 IEEE International Conference on Automation Science and Engineering (CASE).

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2.3.1 Contribution to Dissertation Idea

The online farmer auction system project is an important initiative that aims to improve the livelihoods of farmers by creating a transparent and efficient platform for selling their products. As a contributor to this dissertation, you can focus on several key areas that will enhance the quality of the project report.

First, you can provide an in-depth analysis of the technical aspects of the system, such as the architecture, algorithms, and data management strategies. This will help to ensure that the system is robust, secure, and scalable.

Second, you can contribute to the evaluation of the system's performance by conducting tests and experiments to measure its efficiency, accuracy, and reliability. This will help to identify any weaknesses or areas for improvement that can be addressed in future versions of the system.

Third, you can contribute to the project's social impact by examining the benefits and challenges of the system for farmers and other stakeholders in the agriculture sector. This can include an assessment of the system's potential to increase farmers' incomes, reduce transaction costs, and enhance market access.

Overall, your contribution to this dissertation will be essential in ensuring that the online farmer auction system project report is comprehensive, informative, and impactful.

Chapter 3
PROBLEM DEFINITION AND SCOPE

3.1 Problem Statement

The traditional method of farmers selling their produce through physical auctions has several limitations such as lack of transparency, limited access to a larger market, and longer transaction time. The current situation demands an efficient and transparent method of buying and selling agricultural produce. An online farmer auction system can solve these issues by providing a platform where farmers can directly sell their produce to interested buyers without any intermediaries, and buyers can access a wider range of produce at competitive prices. Therefore, there is a need for developing an online farmer auction system that is user-friendly, secure, and efficient to facilitate the buying and selling of agricultural produce.

3.2 Goals and Objectives

1. The objective of the online farmer auction system project is to provide a digital platform for farmers to auction their crops to potential buyers. This platform aims to streamline the process of buying and selling crops, eliminate the need for intermediaries, and provide transparency in pricing. The system aims to make the process more efficient and convenient for both farmers and buyers by allowing them to interact directly and trade their products without any physical presence.
2. Make sure farmers receive the best possible price for their goods..
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10. To improve the efficiency of the agricultural supply chain by reducing the time and cost associated with physical auctions.

11. To provide real-time data and analytics to farmers and buyers to make informed decisions about pricing and market trends.

12. To promote a sustainable and equitable agricultural system by empowering small-scale farmers and creating a level playing field for all stakeholders.

3.3 Technology and Associated Platform

3.3.1 Java Development Kit (JDK) package index

The Java Development Kit (JDK) package index refers to a listing of the various packages and libraries available in the JDK. The JDK is a software development kit that contains everything needed to develop, debug, and deploy Java applications. It includes the Java Runtime Environment (JRE), which provides the necessary tools for executing Java programs, as well as the Java Development Kit (JDK) libraries, which provide additional functionality for developers.

The JDK package index is a comprehensive list of all the packages and libraries included in the JDK, along with their descriptions, usage instructions, and other relevant information. The index is typically organized by category, such as networking, security, or user interface, making it easy for developers to find the packages they need for their projects. Some of the most commonly used packages in the JDK include java.lang, java.util, java.io, and java.net. These packages provide basic functionality for tasks such as input/output, networking, and data manipulation.

Overall, the JDK package index is an essential resource for Java developers, providing a comprehensive overview of the tools and libraries available to them. By using the index, developers can easily find the packages they need and leverage the full power of the Java platform to create robust and efficient applications.

3.3.2 Eclipse

Eclipse is a popular Integrated Development Environment (IDE) used for developing Java applications. It is an open-source tool that is widely used by developers to create, test, and deploy Java applications. Eclipse provides a comprehensive set of features for developing software, including syntax highlighting, code completion, debugging, and refactoring. The IDE is highly customizable, allowing developers to add or remove features according to their needs. Eclipse includes a built-in compiler that can compile Java source code, as well as tools for debugging and testing code. The IDE also integrates with other tools, such as version control systems like Git and Subversion, to help manage code changes and collaborate with other developers. Eclipse has a large and active community that develops plugins and extensions to enhance the functionality of the IDE. One of the key advantages of using Eclipse is its support for multiple platforms, including Windows, Mac, and Linux. The IDE is also highly scalable and can be used for developing small projects as well as large enterprise applications. Eclipse has a rich ecosystem of plugins and extensions, allowing developers to customize the IDE to fit their specific needs. Overall, Eclipse is a powerful and versatile tool for Java developers, and is widely considered one of the top IDEs for Java development.

3.3.3 Software Requirements

1. Operating System : Windows 7 Onward or Linux
2. Front End : : JSP , bootstrap ,html ,JavaScript
3. Back End : Java
4. Database : Mysql
5. Editors : Eclipse , Workbench

3.3.4 Hardware Requirements

1. Processor : Intel or AMD Ryzen.
2. CPU Speed : Core i3 or higher.
3. RAM : 4 GB or Higher
4. Hard Disk : 500 GB or Higher

Chapter 4
DISSERTATION PLAN

4.1 Purpose of Dissertation Plan

4.2 Purpose of Dissertation Plan

A dissertation plan is a formal document designed to guide the control and execution of a project. A dissertation plan is the key to a successful project and is the most important document that needs to be created when starting any project. The term project plan refers to a a Gantt chart or any other document that displays project activities along a timeline. However, considering these documents alone as a dissertation plan is inaccurate. These particular documents can be more precisely termed as project schedules, and may be considered only a part of the actual project plan.
A dissertation plan is used for the following purposes:

- To document and communicate stakeholder products and project expectations
- To control schedule and delivery
- To calculate and manage associated risks

4.3 Project Plan

A project plan answers the following basic questions regarding the project:

- **Why?** - What is the task related to the project? Why is the project is being sponsored?
- **What?** - What are the activities required to successfully complete the project? What are the main products or deliverables?
- **Who?** - Who will take part in the project and what are their responsibilities during the project? How can they be organized?

- **When?** - What exactly is the project schedule and when can the milestones be completed?

Project initiation requires detailed and vital documentation to track project requirements, functionalities, scheduling and budget.Poor documentation can lead to disastrous results for all project stakeholders. Formal project plans establish detailed project requirements, including human and financial resources, communications, projected time lines and risk management. Poor documentation can lead to disastrous results for all project stakeholders. Formal project plans establish detailed project requirements, including human and financial resources, communications, projected time lines and risk management.

Phase	**Description**	**Duration**
Phase-1	Analyze the information given in the IEEE papers.	3 weeks
Phase-2	Collect relevant IEEE papers and study techniques and drawbacks in them.	6 weeks
Phase-3	Assign the module and design the process and time to execute.	8 weeks
Phase-4	Implement the code for all modules and integrate then as a project.	9 weeks
Phase-5	Test the code and overall process and write test cases for all processes to recognize their failure and success conditions.	3 weeks
Phase-6	Prepare the dissertation for the project with conclusion and future enhancements.	4 weeks

Table 4.1: *Project Plan Analysis.*

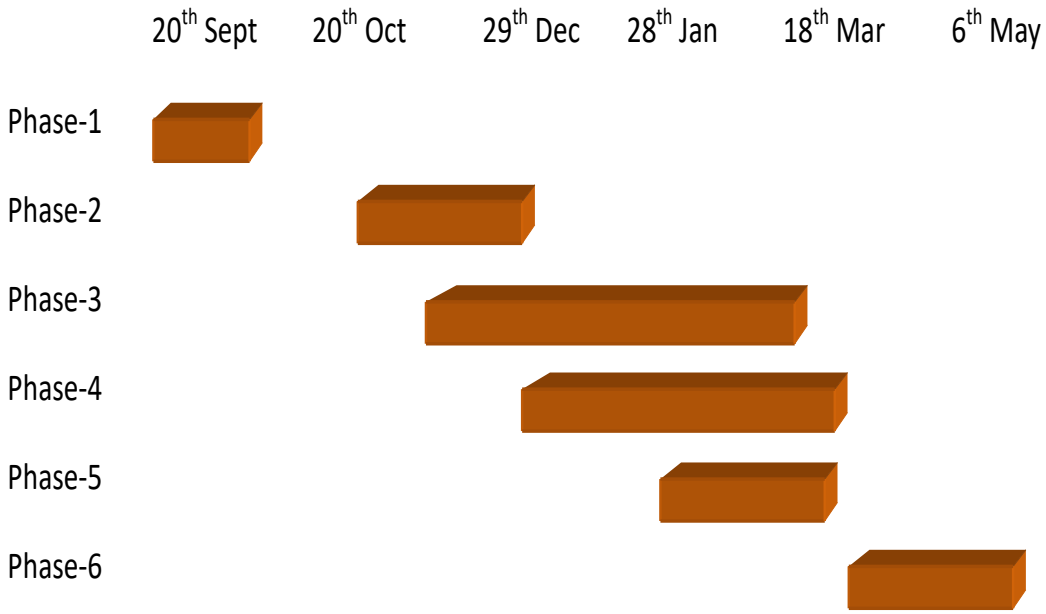

Figure 4.1: *Project Plan.*

4.4 Software Design Life Cycle

The Agile methodology is well-suited for online auction systems as it allows for iterative development, frequent testing, and quick responses to changing requirements. In addition, the Agile methodology emphasizes customer collaboration and communication, which is crucial for an online auction system where buyers and sellers interact with each other.The Agile software development life cycle is flexible, adaptable, and can be customized to meet the specific needs of the online farmer auction system.

4.4.1 Phases in Incremental Model

The Agile software development life cycle involves the following phases:

1. **Planning:-**
   This phase involves defining the project scope, identifying stakeholders, and setting project goals and objectives.

2. **Requirements Gathering:-**
   In this phase, the requirements of the online farmer auction system are identified, and the product backlog is created.

3. **Design:-**
   This phase involves creating the system architecture, wireframes, and prototypes

4. **Development:-**
   In this phase, the system is built in iterations or sprints. Each sprint typically lasts 1-4 weeks and results in a working prototype of the system.

5. **Testing:-**
   In this phase, the system is tested to ensure that it meets the requirements and functions as expected.

6. **Deployment:-**
   In this phase, the system is deployed to a production environment and made available to users.

7. **Maintenance:-**
   In this phase, the system is monitored and maintained to ensure that it continues to function correctly and meet user needs.

4.4.2 Advantages

1. Faster time-to-market: Agile development allows for faster delivery of working software, which means faster time-to-market and the ability to respond quickly to changing market conditions.

2. Customer satisfaction: Agile development puts the customer at the center of the development process, allowing for frequent feedback and the ability to adjust the product to meet customer needs.

3. Flexibility: Agile development is flexible and adaptable, allowing for changes to be made throughout the development process, rather than having to start over with a new plan.

4. Reduced risk: Agile development reduces risk by breaking down the project into small, manageable chunks, allowing for frequent testing and feedback, and enabling the team to adjust the project as needed.

5. Increased collaboration: Agile development encourages collaboration and communication among team members, which leads to better teamwork, more creativity, and a more enjoyable work environment.

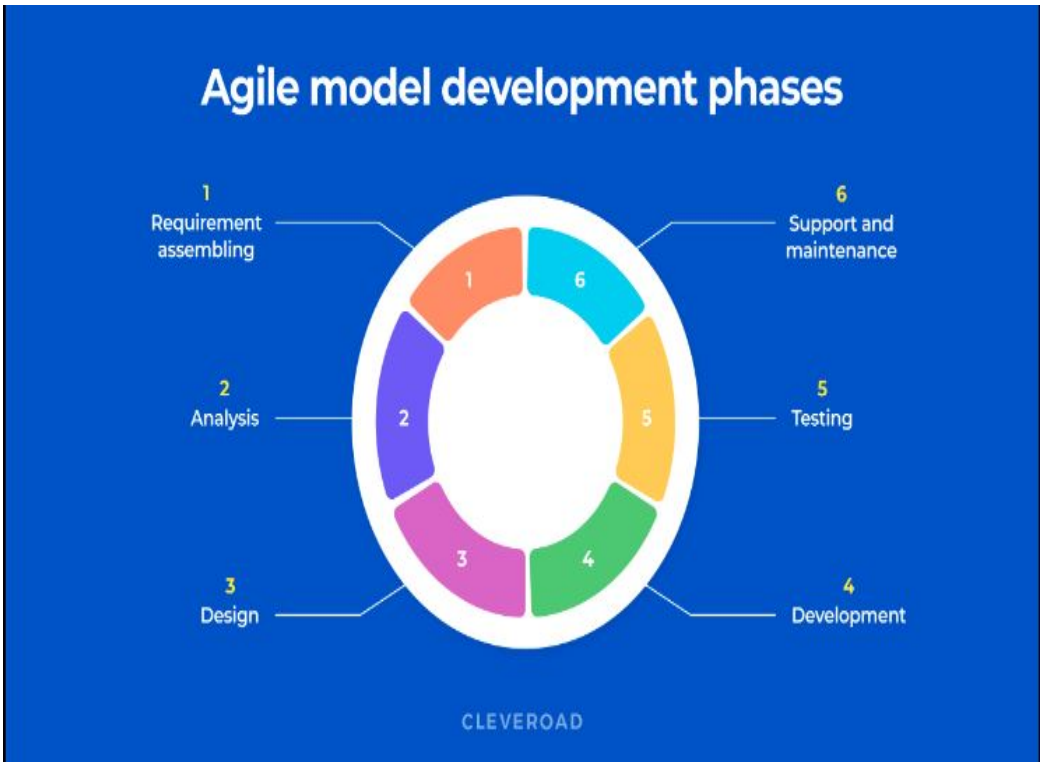

Figure 4.2: *Agile Model.*

4.4.3 When to Use Agile Model

1. Unclear or changing requirements: When the requirements are not clear or keep changing frequently, Agile SDLC can be helpful. The iterative and incremental approach of Agile allows for adapting to changing requirements quickly.

2. Complex projects: Agile SDLC is well-suited for complex projects where there are multiple stakeholders and teams involved. The collaborative approach of Agile allows for frequent communication and feedback, which can help in addressing complex issues.

3. Time-critical projects: If you have a project that needs to be completed in a short timeframe, Agile SDLC can be a good option. The incremental and iterative approach can help in delivering value early and often.

4. Innovative projects: Agile SDLC can be an excellent choice for innovative projects where the final product is not well-defined. The iterative approach of Agile allows for experimentation and innovation, which can help in creating a unique and valuable product.

5. Projects with motivated teams: Agile SDLC requires active participation and collaboration from all team members. Therefore, it is best suited for projects with motivated and engaged team members who are committed to the project's success.

4.4.4 Why to use Agile Model

1. Flexibility: The Agile SDLC allows teams to respond quickly to changes in requirements and priorities, enabling the development of high-quality software that meets the needs of stakeholders.

2. Collaboration: Agile emphasizes collaboration between team members, including developers, testers, and product owners. This can lead to better communication, faster problem-solving, and more efficient workflows.

3. Rapid iteration: The Agile SDLC emphasizes rapid iteration, with small, frequent releases. This can help teams identify and fix problems quickly, resulting in faster time-to-market and improved quality.

4. Customer focus: Agile places a strong emphasis on delivering value to customers. By involving customers in the development process and prioritizing their needs, teams can build software that better meets their needs.

5. Continuous improvement: Agile teams are constantly looking for ways to improve their processes and products. By using feedback and metrics to inform decision-making, they can continuously improve the quality of their software and the efficiency of their workflows.

4.4.5 Disadvantages of Agile Model

- Requires a high level of customer involvement: Agile requires active participation from the customer, which can be a challenge for some customers, especially those who have limited availability.
- May result in incomplete documentation: Agile methodology focuses more on working software rather than comprehensive documentation. This can be a problem for organizations that require a significant amount of documentation for legal or regulatory reasons.
- May lead to scope creep: Agile development is highly flexible, which can lead to scope creep, where the project grows beyond its original plan. This can result in budget overruns and project delays.
- Requires highly skilled team members: Agile development requires highly skilled team members who are knowledgeable in their respective fields. This can be a challenge for some organizations that have limited access to such talent.
- May result in a lack of predictability: Agile methodology is highly iterative, which can make it difficult to predict when a project will be completed. This can be a challenge for organizations that require strict deadlines.
- May require significant communication overhead: Agile development requires a high level of communication between team members, which can result in significant overhead.

4.5 Dissertation Schedule

4.6 Design and Implementation Constraints

High level design means abstract view of the system where details are not shown. High level design does contain class diagram at conceptual level and no operations are defined at high level. Low level design uses class diagram at implementation level with most of the required detail. Low Level Document (LLD) consist each class thorough description which includes method and property name and every possible details. Currently we are going to concentrate on the high level design that includes UML Diagram and Structure Diagram.

These diagrams helped us to understand working of system that we are going to develop using available resistances. This design also helped us to determine problems those may encounter during system construction.

Work Task	**Description**	**Duration**
System Analysis	Analyze the information given in the IEEE papers.	3 weeks
Literature Survey	Collect relevant IEEE papers and study techniques and drawbacks in them.	6 weeks
Design and Planning	Assign the module and design the process and time to execute.	8 weeks
Implementation	Implement the code for all modules and integrate then as a project.	9 weeks
Testing	Test the code and overall process and write test cases for all processes to recognize their failure and success conditions.	3 weeks
Dissertation	Prepare the dissertation for the project with conclusion and future enhancements.	4 weeks

Table 4.2: *Dissertation Schedule*

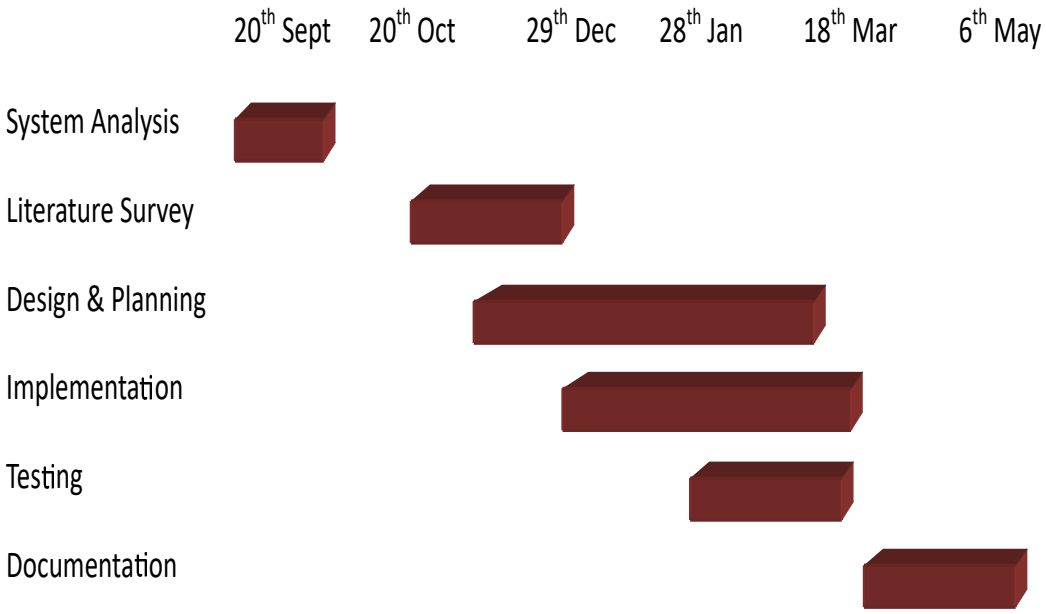

Figure 4.3: *Dissertation Gantt Diagram.*

4.7 Feasibility Study

Practicality investigation is fundamental with a particular true objective to make sense of if structure is conceivable to make or not. The change of an item based structure or an item thing which is more plausible tormented by both programming and hardware resources moreover movement dates. The primary are as of feasibility analysis are:

- Technical Feasibility
- Operational Feasibility

4.7.1 Technical Feasibility

Technical feasibility study is the complete study of the project in terms of input, processes, output, fields, programs and procedures. It is a very effective tool for long term planning and trouble shooting. The technical feasibility study should most essentially support the financial information of an organization. In technical feasibility the following issues are taken into consideration.

- Whether the required technology is available or not
- Whether the required resources are available
  - Manpower- programmers, testers & debuggers
  - Software and hardware

Once the technical feasibility is established, it is important to consider the monetary factors also. Since it might happen that developing a particular system may be technically possible but it may require huge investments and benefits may be less. For evaluating this, economic feasibility of the proposed system is carried out.

4.7.2 Economical Feasibility

For any system if the expected benefits equal or exceed the expected costs, the system can be judged to be economically feasible. In economic feasibility, cost benefit analysis is done in which expected costs and benefits are evaluated. Economic analysis is used for evaluating the effectiveness of the proposed system. In economic feasibility, the most important is cost-benefit analysis. As the name suggests, it is an analysis of the costs to be incurred in the system and benefits derivable out of the system. Click on the link below which will get you to the page that explains what cost benefit analysis is and how you can perform a cost benefit analysis.

4.7.3 Performance Feasibility

It checks whether extend keeps running under all conditions and its execution is not influenced by any conditions. The venture works for Customer-Side Networks yet may get influenced as number of Customers increments. On the off chance that vast quantities of Customer are joined then assets required for the same can be expanded in order to run it legitimately.

4.7.4 Time Feasibility

This implies evaluating to what extent the framework will take to create, and whether it can be finished in a given day and age. Thus, it is achievable to finish extend in given period on condition that its degree/profundity, imperatives are as of now known. The framework gives an easy to use graphical interface and is hence simple to utilize. The framework is operationally attainable for usage for the accompanying reasons:

1. The framework gives an easy to understand interface to the connections.

2. The framework is promptly satisfactory by the clients since it requires no extraordinary aptitudes for them to utilize the framework.

4.8 Risk Analysis

Risk analysis is the process of defining and analyzing the dangers to individuals, businesses and government agencies posed by potential natural and human-caused adverse events. In IT, a risk analysis report can be used to align technology-related objectives with a company's business objectives. A risk analysis report can be either quantitative or qualitative.

4.9 Efforts and Cost Estimation

The number of lines required for implementation of various modules can be estimated as follows:

Sr.No.	Modules	KLOC
1.	GUI	0.95
2.	Desktop interface code	0.60

Table 4.3: KLOC model for project

Thus total number of lines required is approximately estimated as 2.80 (KLOC : thousands of lines of code)

4.9.1 Efforts

The effort of persons per month is calculated using:
E = 3.2 (KLOC) 1.05
E = 3.2 (2.80) 1.05
E = 7.05

4.9.2 Development Time

The development time in months is calculated using:
D = 2.5 (E) 0.32
D = 2.5 (7.05) 0.32
D = 10.19

Chapter 5
SOFTWARE REQUIREMENT AND SPECIFICATION

5.1 Purpose and Scope of the Document

Software Requirement Specifications (SRS) is an aggregate illumination of the proposed thought and surroundings for the proposed work under change. The SRS totally ex-fields what the proposed work will do, how it will be required to perform using diagrammatic depiction. It gives an aggregate depiction of all necessities, arrange issues and required particulars against troubles for Two server mystery word Authentication structure.

5.1.1 Overview Of Responsibilities Of Developer

- Understand correct Problem Definition.
- Gather prerequisites of the venture.
- Analyze prerequisites and configuration display.
- Efficient coding with utilization of fitting information structure and calculations.
- Test extends for set of reports.
- To finish the venture effectively and scale it relying upon the time.

5.1.2 Data flow Diagram

A data flow diagram (DFD) is a graphical representation of the flow of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design). A DFD shows what kind of information will be input to and output from the system, where the data will come from and go to, and where the data will be stored. It does not show information about the timing of processes, or information about whether processes will operate in sequence or in parallel.

5.1.2.1 Data flow Diagram Level-0

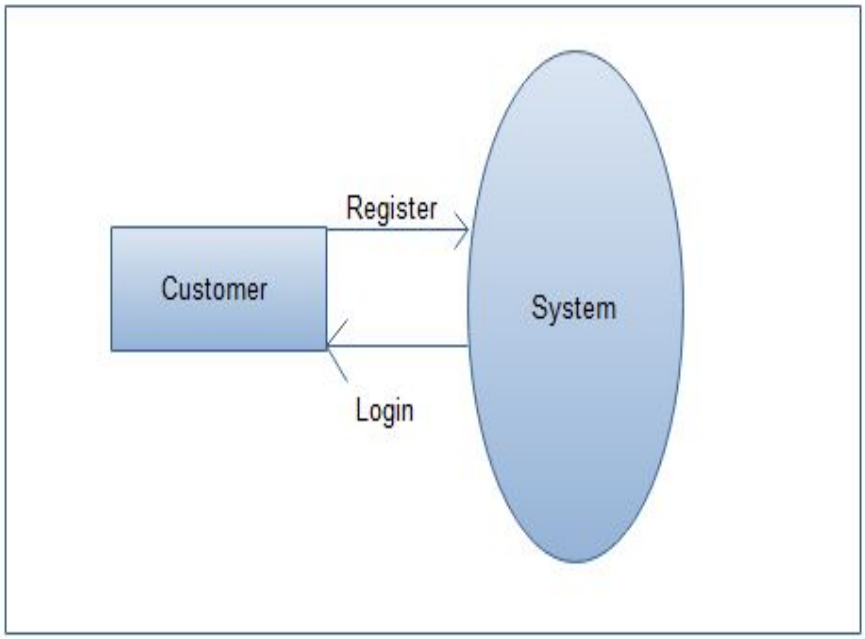

Figure 5.1: *DFD Level-0* .

5.1.2.2 Data flow Diagram Level-1

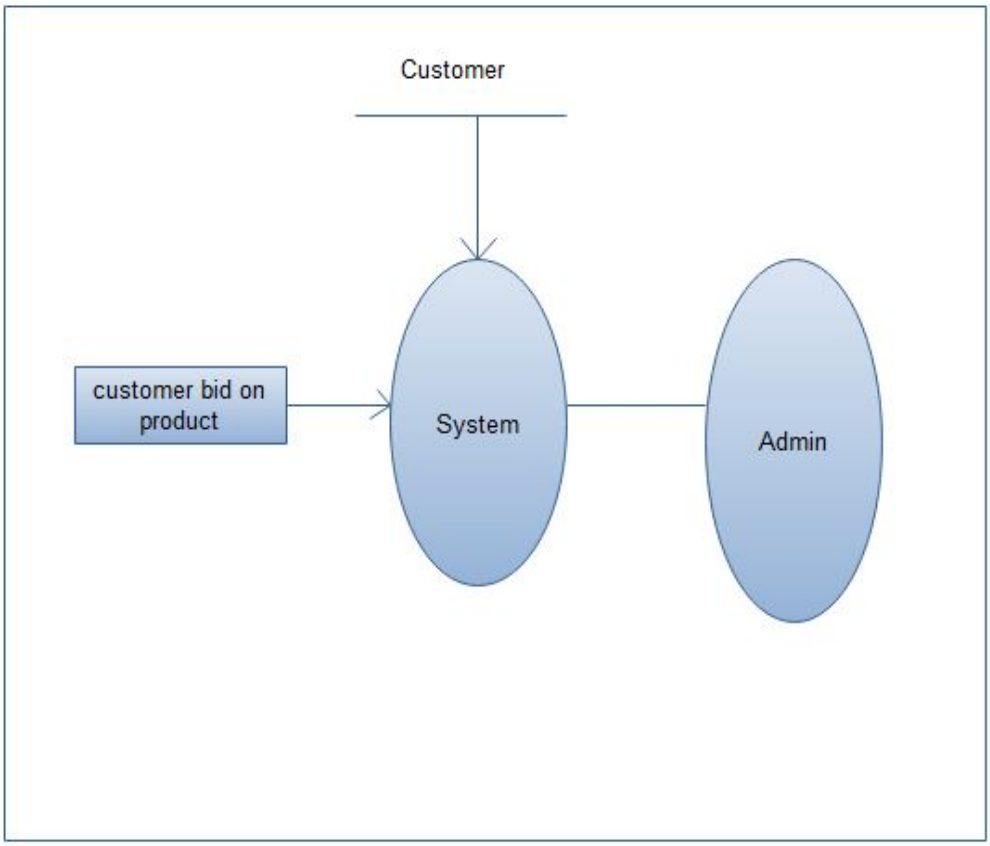

Figure 5.2: *DFD Level-1.*

5.1.2.3 Farmer/Admin Data flow Diagram Level-2

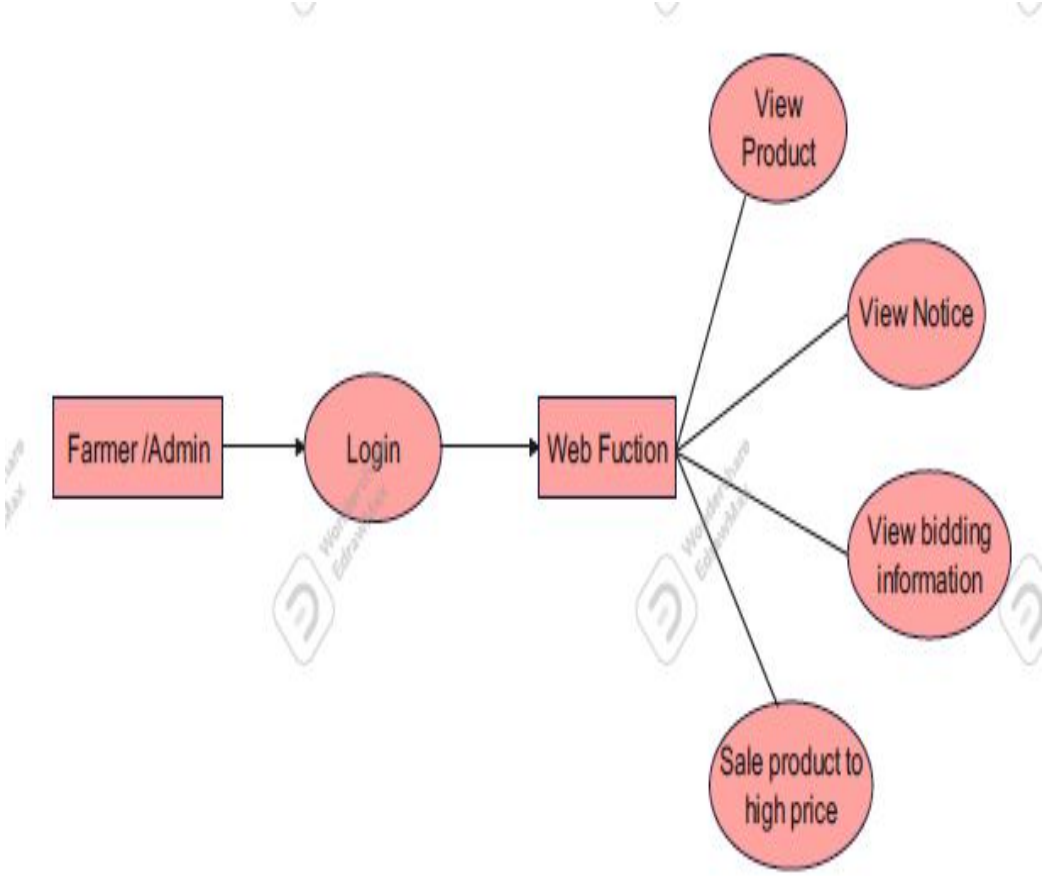

Figure 5.3: *Farmer DFD Level-2.*

5.1.2.4 Customer Data flow Diagram Level-3

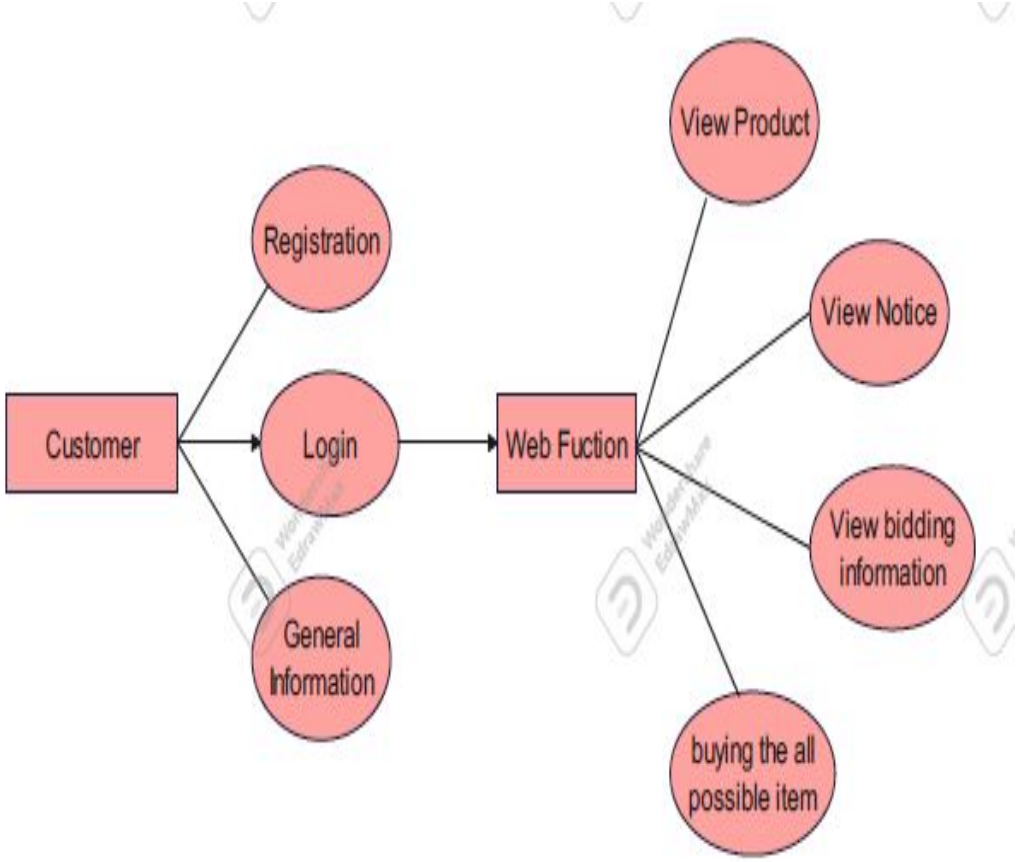

Figure 5.4: *Customer DFD Level-3.*

5.2 UML Diagram

Unified Modeling Language (UML) is an institutionalized, broadly useful demonstrating dialect in programming building. The Unified Modeling Language has an arrangement of realistic documentation strategies for making visual models of question arranged programming serious frameworks.

5.2.1 Use Case Diagram

A use case diagram at its simplest is a representation of a users interaction with the system and depicting the specifications of a use case. A use case diagram can portray the different types of users of a system and the various ways that they interact with the system.

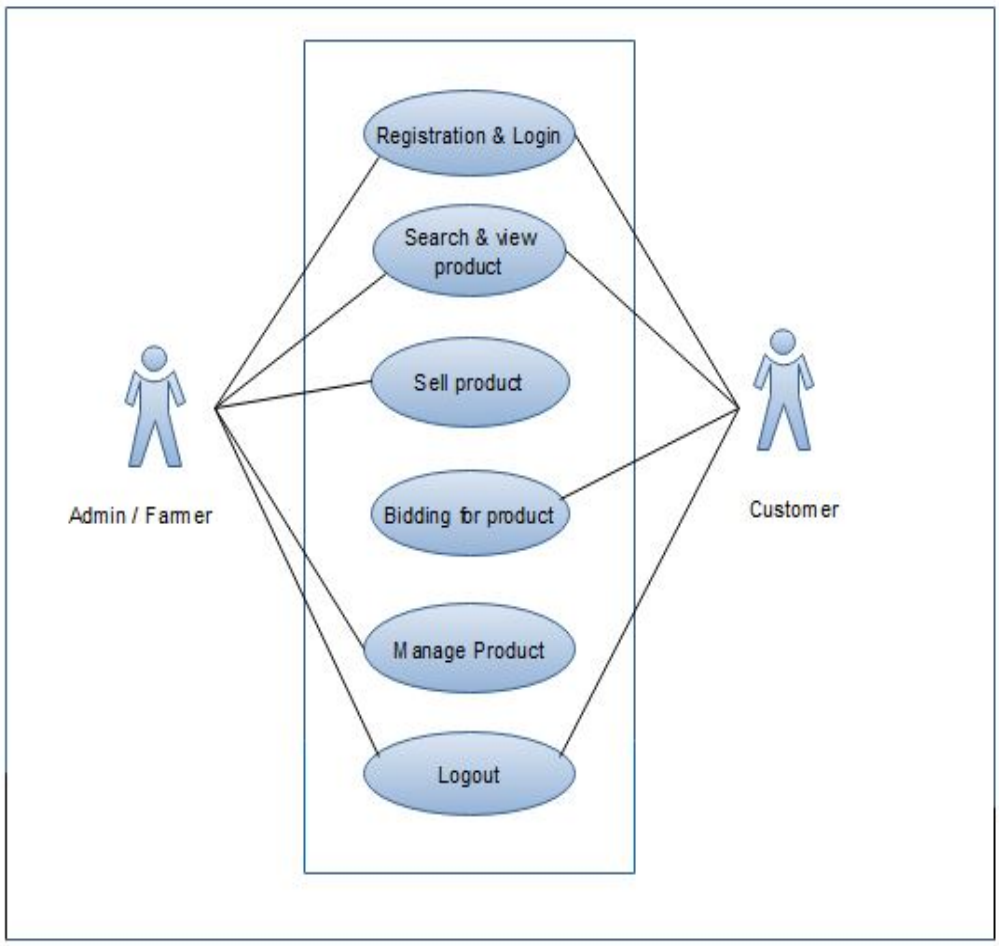

Figure 5.5: *Use Case Diagram*

5.2.2 ER Diagram

An Entity-Relationship (ER) diagram is a graphical representation of entities, their attributes, and the relationships between them. It is commonly used in software engineering and database design to help visualize the data schema and the relationships between the different data elements.The ER diagram typically consists of entities represented as rectangles, with their attributes listed within them, and relationships represented as lines connecting the entities.

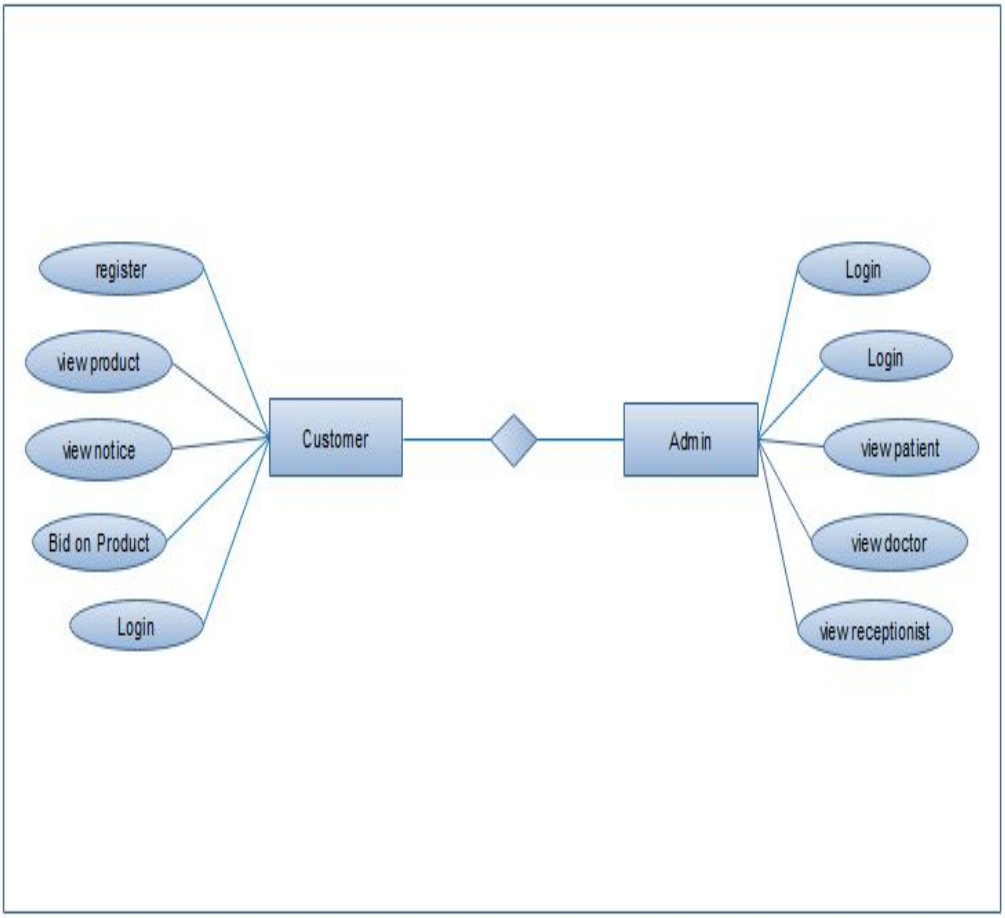

Figure 5.6: *ER Diagram*

5.2.3 Class Diagram

A class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the systems classes, their attributes, operations (or methods), and the relationships among objects.

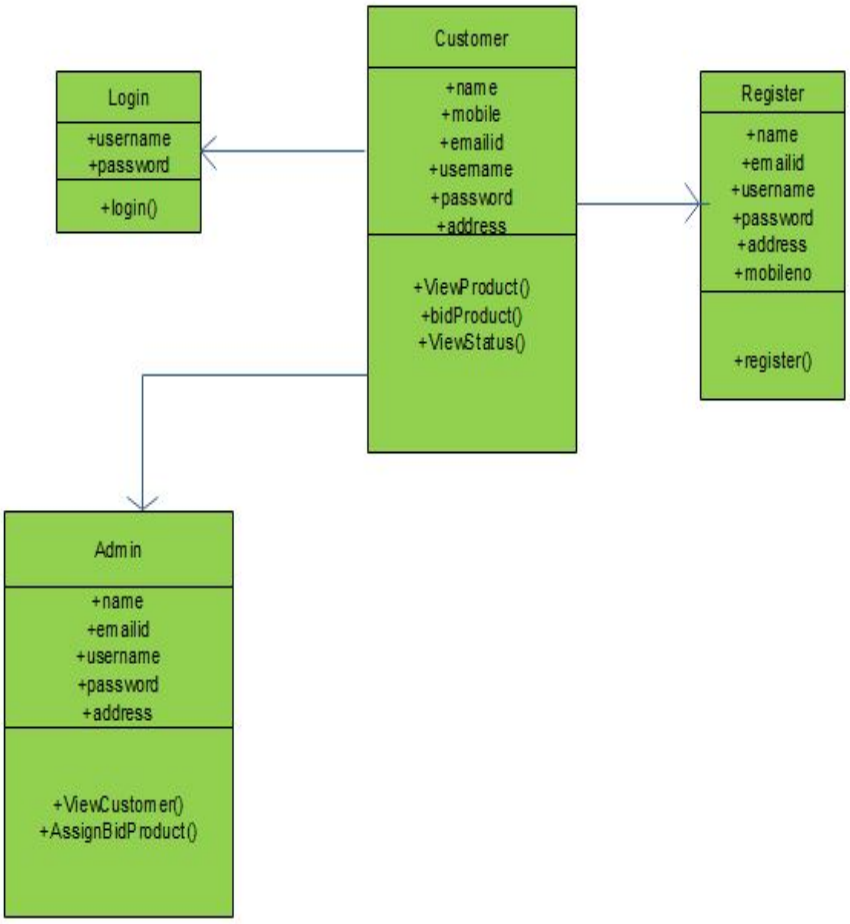

Figure 5.7: *Class Diagram*

5.2.4 Component Diagram

A component diagram is a type of UML (Unified Modeling Language) diagram used to represent the physical components of a system or software application and their relationships. It provides a high-level view of the system's architecture and helps in understanding the functionality of the system.In a component diagram, each component is represented as a rectangle with its name written inside. The components can be software modules, hardware devices, or even human actors. The relationships between components are shown as lines connecting the components, with arrows indicating the direction of the relationship.

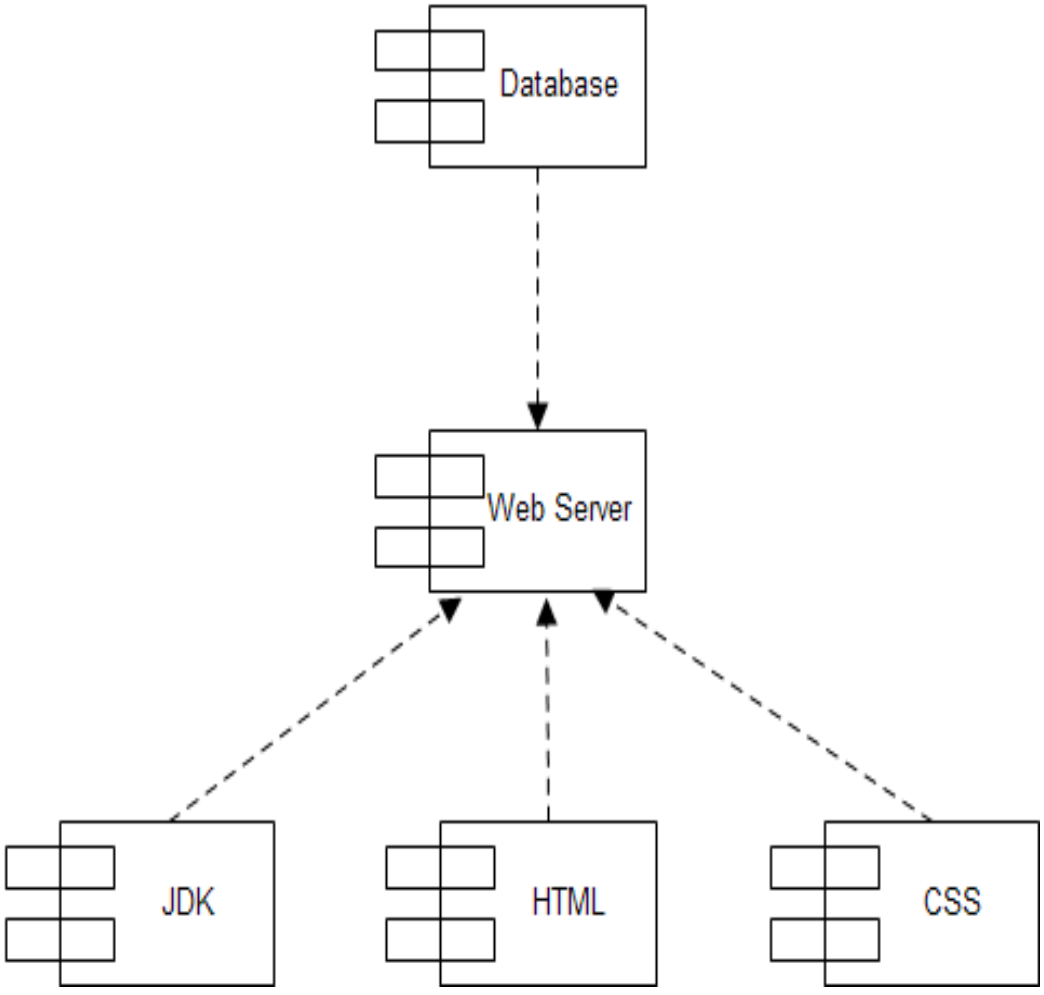

Figure 5.8: *Component Diagram*

5.2.5 Sequence Diagram

A Sequence diagram is an interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development.

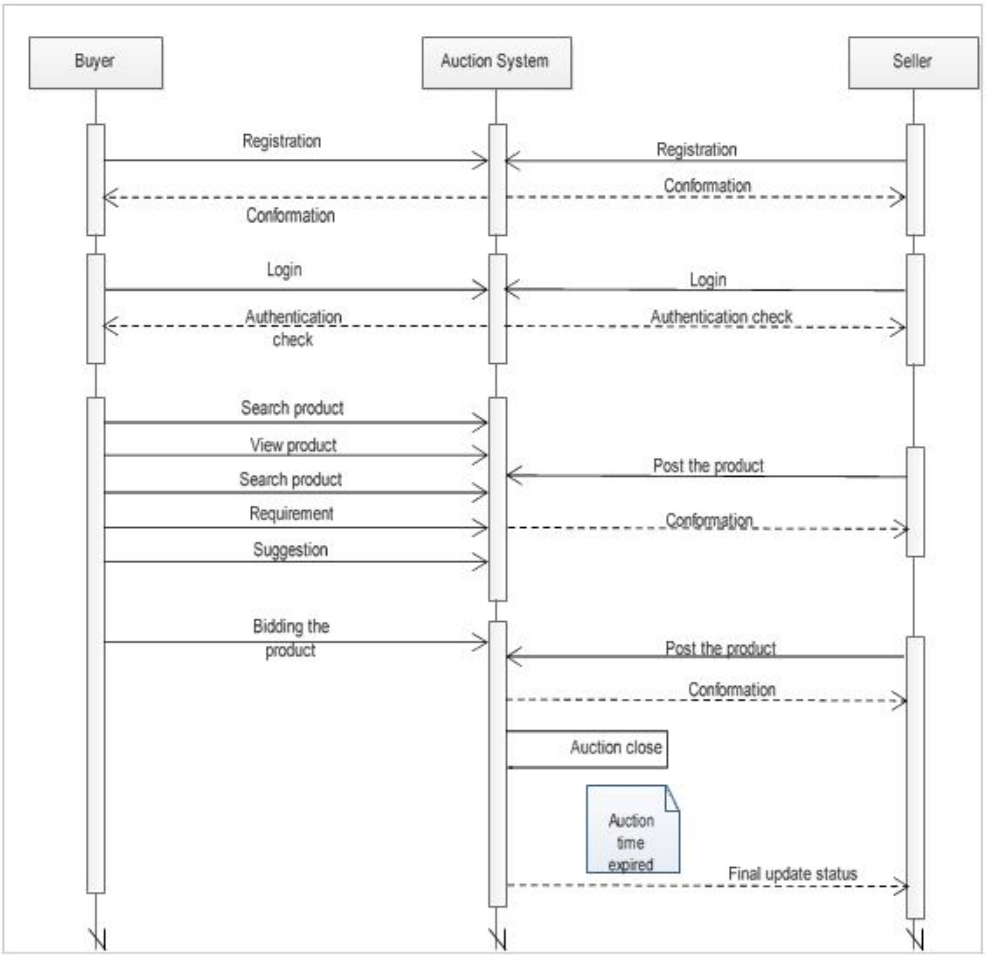

Figure 5.9: *Sequence Diagram*

5.2.6 Activity Diagram

Activity diagrams are graphical representations of work flows of step-wise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams are intended to model both computational and organizational processes (i.e. work flows). Activity diagrams show the overall flow of control.

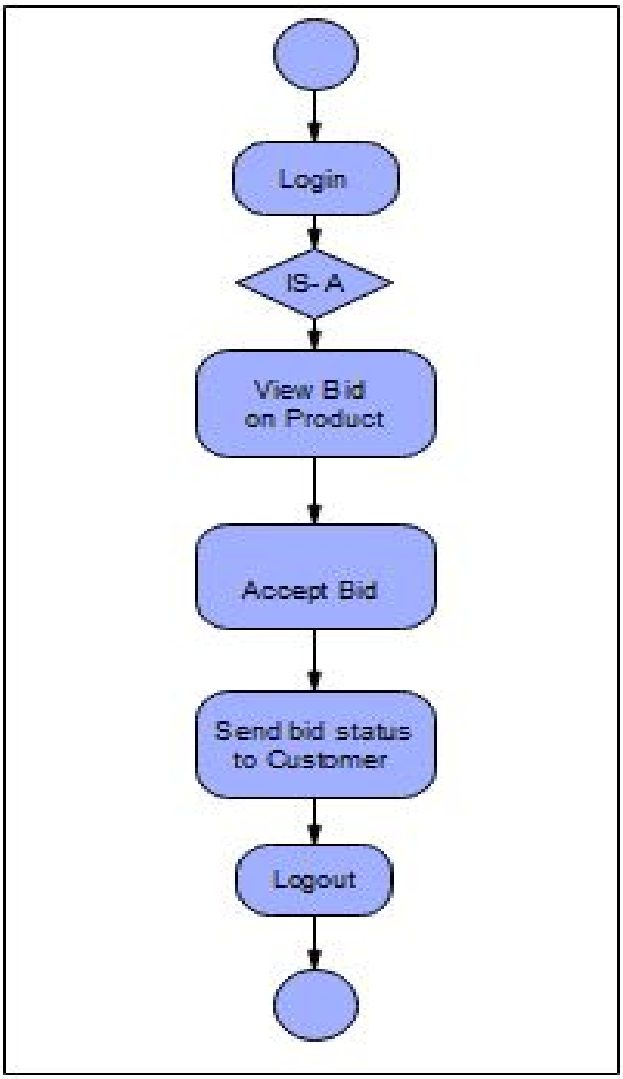

Figure 5.10: *Farmer Activity Diagram*

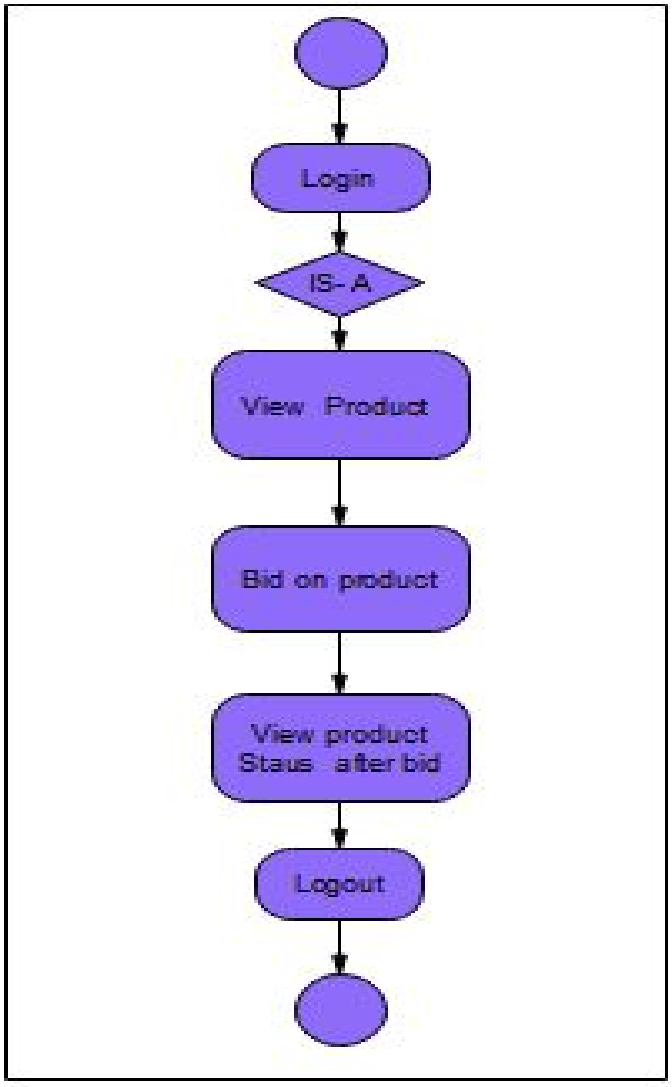

Figure 5.11: *Customer Activity Diagram*

Chapter 6
DETAILED DESIGN DOCUMENT

6.1 Introduction

This section shows the design part of the project. Also represents a algorithms, system architecture and shows the flow of system.

6.2 Requirement Gathering

Requirement analysis is for transformation of operational need into software description, software performance parameter, and software configuration through use of standard, iterative process of analysis and trade-off studies for understanding what the customer wants analyzing need, assessing feasibility, negotiating a reasonable solution validating the specification and managing the requirements.

6.3 Purpose

The purpose of System Requirements Analysis is to obtain a thorough and detailed understanding of the business need as defined in Project Origination and captured in the Business Case, and to break it down into discrete requirements, which are then clearly defined, reviewed and agreed upon with the Customer Decision Makers. During System Requirements Analysis, the framework for the application is developed, providing the foundation for all future design and development efforts. System Requirements Analysis can be a challenging phase, because all of the major Customers and their interests are brought into the process of determining requirements. The quality of the final product is highly dependent on the effectiveness of the requirements identification process.

The Functional Specification will evolve throughout this phase of the

SDLC as detailed business requirements are captured, and as supporting process and data models are created, ensuring that the eventual solution provides the Customers with the functionality they need to meet their stated business objectives. Requirement analysis is software engineering task that bridges the gap between system level software description and design module. Requirement analysis is the important part of software life cycle. This forms the base for design and development. Requirement analysis is the detailed study of various operations performed by the system and their relationship within and outside system. It defines the boundaries of the system and decides whether it should relate to other system or not.

6.4 Algorithm Details

6.4.1 Algorithm : Bidding Algorithm for the First Price Sealed Bid Auction.

1: **procedure** START
2: Determine the items being auctioned and the starting price.
3: Specify the bidding rules and the deadline for bids.
4: Invite potential bidders to participate and provide them with the relevant information, such as the starting price, bidding rules, and deadline.
5: Bidders submit their sealed bids before the deadline.
6: The auctioneer opens all bids simultaneously at the deadline.
7: The highest bidder wins the auction and pays the amount they bid.
8: The auction ends, and the item is transferred to the winning bidder.
The mathematical equation for the First Price Sealed Bid (FPSB) auction can be expressed as follows:
9: Bidder i's expected payoff = (Pr(i wins) * (Vi - Bi))
Where ,
10: Pr(i wins) is the probability that bidder i wins the auction, which can be calculated using the bid distribution of all bidders and the auction rules.
11: Vi is the value of the item to bidder i.
12: Bi is the amount that bidder i bids. In the FPSB auction, the highest bidder wins, so the probability that bidder i wins is equal to the probability that their bid is the highest among all bidders. The bidder's expected payoff is calculated as the difference between the value of the item to them and the amount they bid, weighted by the probability that they win.
13: **end procedure**

6.5 Mathematical Model

Our projects mathematical perspective can be put and described as given below.

6.5.1 Set Theory Applied to the Project

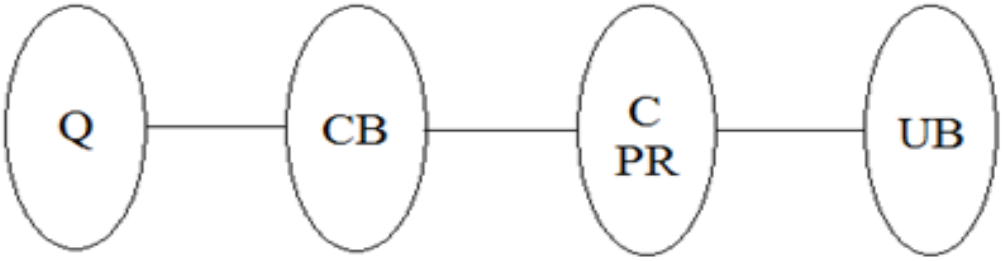

Figure 6.1: *Mathematical Model*

Where ,
Q = User entered input
CB = preprocess

C= feature selection

PR= Preprocess request evaluation

UB = predict outcome

Set Theory
1) Let S be as system which input product

S={In, P, Op, θ }

2) Identify Input In as
In={Q}
Where,
Q = User entered input data(dataset)
Identify Process P as

P={CB, C, PR}
Where,
CB = System check login credentials
C = predict output
PR = Preprocess request
4) Identify Output Op as

Op={UB}

Where,
UB = Update Result

$\theta = Failuresand Successconditions.$

Failures:

- Huge database can lead to more time consumption to get the information.
- Hardware failure.
- Software failure.

Success:

- Search the required information from available in Data.
- User gets result very fast according to their needs.

Space Complexity: The space complexity depends on Presentation and visualization of discovered patterns. More the storage of data more is the space complexity.
Time Complexity: Check No. of patterns available in the datasets= n If (n¿1) then retrieving of information can be time consuming. So the time complexity of this algorithm is O(n^n).

6.6 System Architecture

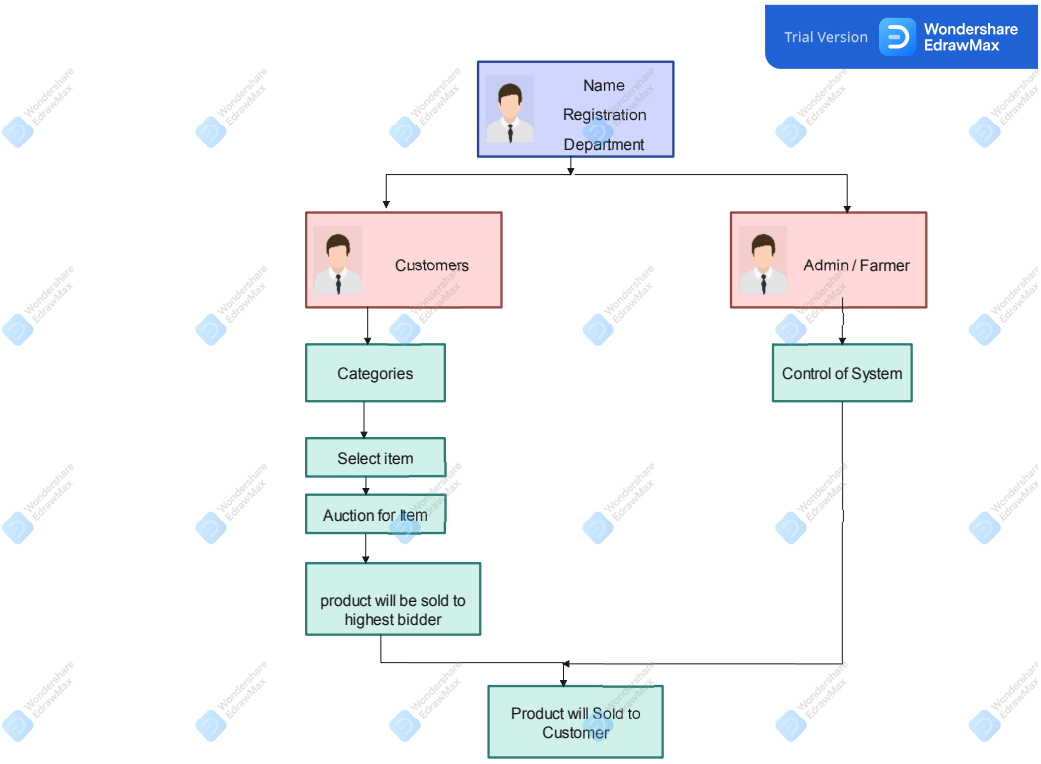

Figure 6.2: *System Architecture*

Chapter 7
TEST SPECIFICATION

7.1 PROJECT QUALITY AND TESTING REPORT

The online farmer auction system project in Java aims to provide an online platform for farmers to sell their products to potential buyers through a bidding process. The project was designed and developed to address the need for a reliable and efficient system that will benefit both farmers and buyers. In this report, we will focus on the project quality and testing process.

The online farmer auction system project was developed using the Java programming language, which is a robust and efficient language. The project design and architecture were well thought out, taking into account the project's objectives and requirements. The system was developed following best coding practices and coding standards, which helped to ensure that the system was well-structured, maintainable, and scalable. The project was also subjected to a thorough testing process to ensure that it was functioning correctly and that all the features were working as expected. The project's testing process included unit testing, integration testing, system testing, and acceptance testing.

7.1.1 Goals and objectives

The main goals of software testing are:

- To find out the errors during program execution.
- Refine the system by removing the errors.
- Functionality: To ensure that the system functions as expected and all the features and functionalities are working correctly, such as bidding, payment processing, and user registration.
- Usability: To ensure that the system is easy to use and user-friendly, and that users can navigate through the system without difficulty.

- Performance: To ensure that the system can handle a large number of users and transactions without slowing down or crashing, and that it can handle heavy loads during peak periods.
- Security: To ensure that the system is secure and that sensitive user data is protected from unauthorized access or manipulation.
- Compatibility: To ensure that the system is compatible with different browsers and operating systems, and that it works seamlessly on different devices such as desktops, laptops, tablets, and smartphones.
- Accessibility: To ensure that the system is accessible to all users, including those with disabilities, and that it complies with accessibility standards such as WCAG.
- Reliability: To ensure that the system is reliable and that it can operate without errors or crashes for an extended period of time.
- Scalability: To ensure that the system can handle an increasing number of users and transactions as the system grows.

7.1.2 Unit Testing

Unit testing was carried out to test the individual components of the project, including classes, methods, and functions. The unit tests were designed to verify that each component was working correctly and that it produced the expected output. The unit tests were automated using JUnit, which is a popular unit testing framework for Java.

7.1.3 Integration Testing

Integration testing was carried out to test the interaction between the different components of the project. The integration tests were designed to verify that the components were working together correctly and that the system was functioning as expected. The integration tests were automated using JUnit.

7.1.4 Acceptance Testing

Acceptance testing was carried out to verify that the system met the project's requirements and objectives. The acceptance tests were designed to test the system's usability, functionality, and performance. The acceptance tests were carried out manually by the project stakeholders, including the farmers and buyers.

7.1.5 System Testing

System testing was carried out to test the entire system as a whole. The system tests were designed to verify that all the features were working correctly and that the system was performing as expected. The system tests were carried out manually and automated using Selenium, which is a popular testing framework for web applications.

7.1.6 Testing Result

The testing process was successful, and the project met all the testing requirements. The unit tests, integration tests, and system tests all passed, indicating that the system was working correctly and that all the features were functioning as expected.
The acceptance testing process was also successful, and the project stakeholders were satisfied with the system's usability, functionality, and performance.

In conclusion, the online farmer auction system project in Java was developed to a high standard, following best coding practices and coding standards. The project was subjected to a thorough testing process, which included unit testing, integration testing, system testing, and acceptance testing. The testing process was successful, and the project met all the testing requirements, indicating that the system was working correctly and that all the features were functioning as expected. The project stakeholders were satisfied with the system's usability, functionality, and performance.

Chapter 8
RESULTS AND DISCUSSION

8.1 Online Auction

8.1.1 Details of System

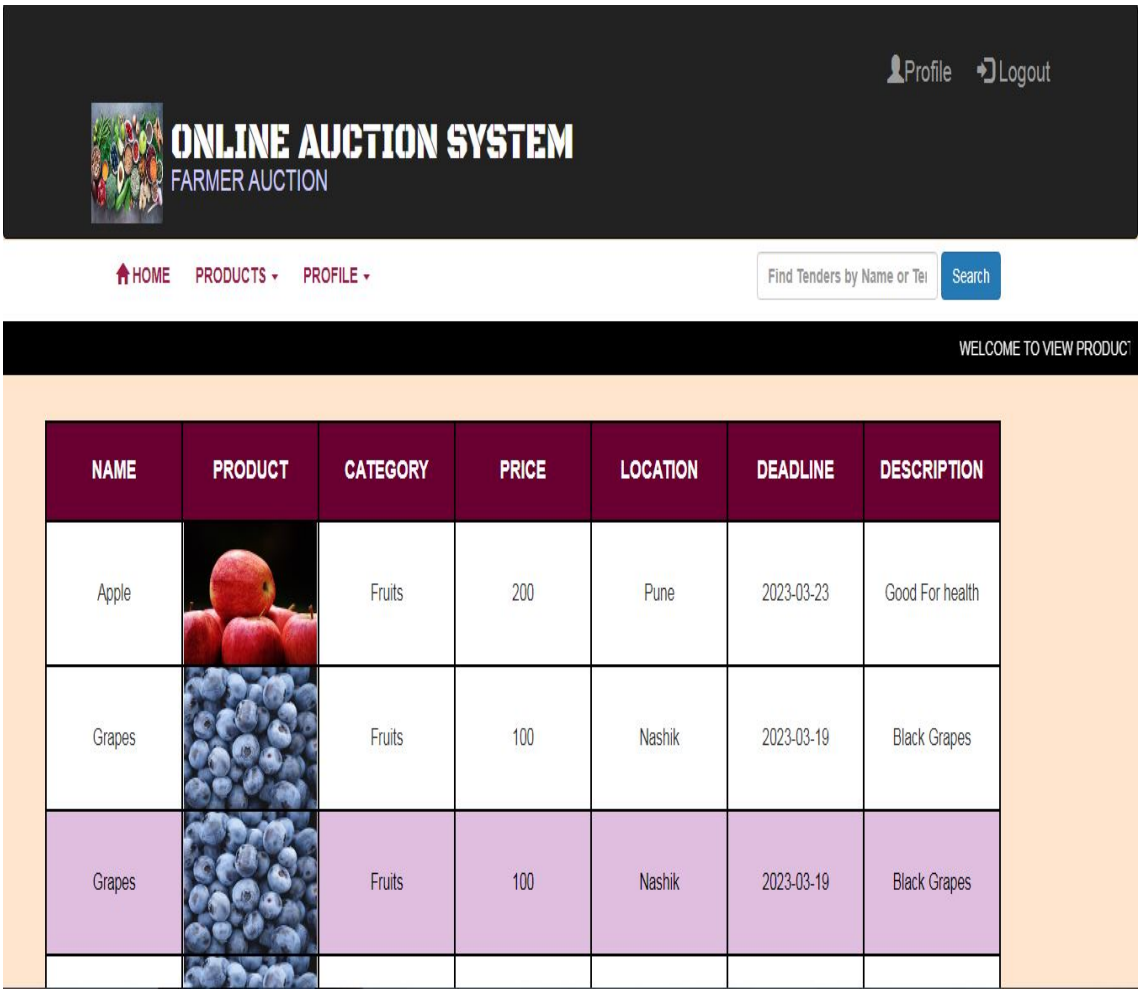

Figure 8.1: View Product Name , category.

8.1.2 Home page

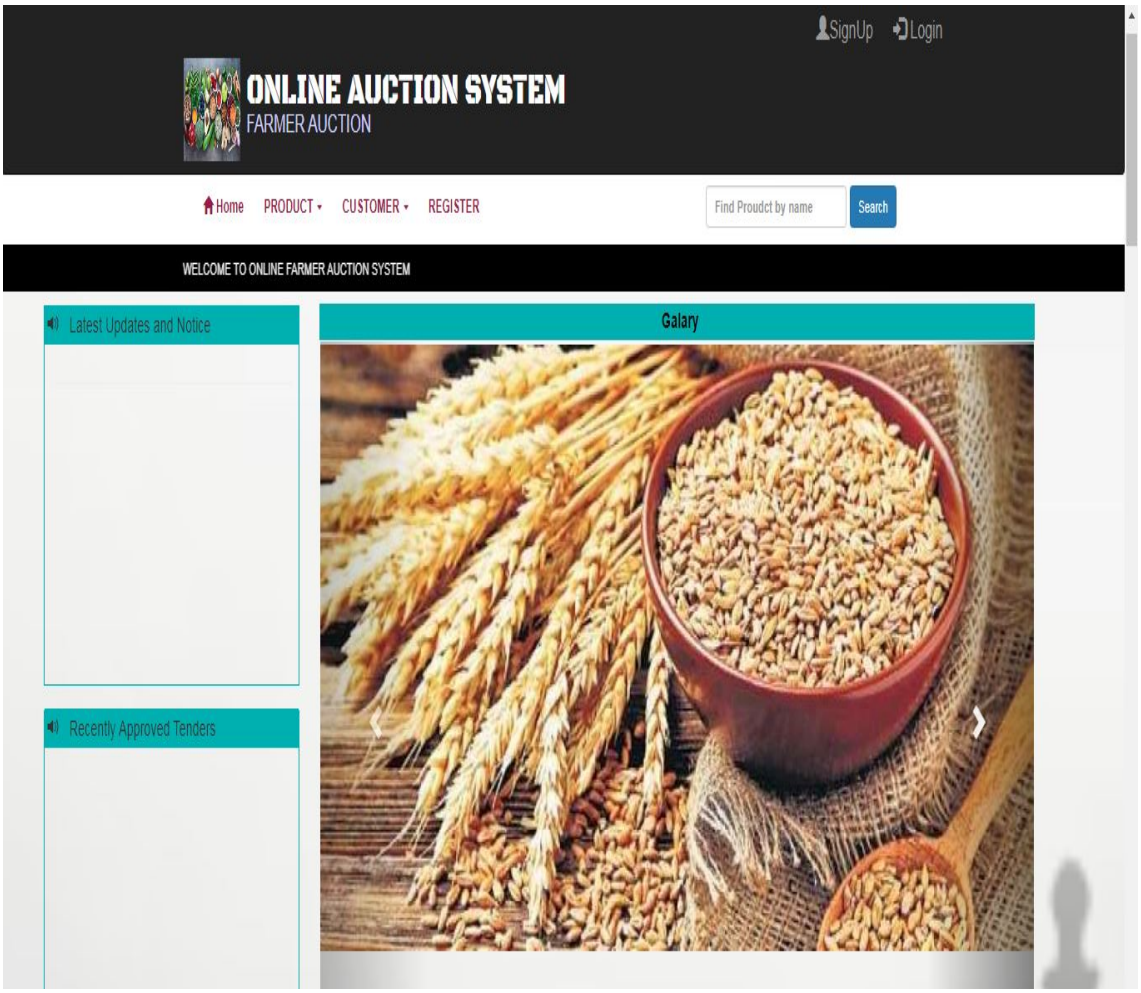

Figure 8.2: Home Page

8.2 Sign Up

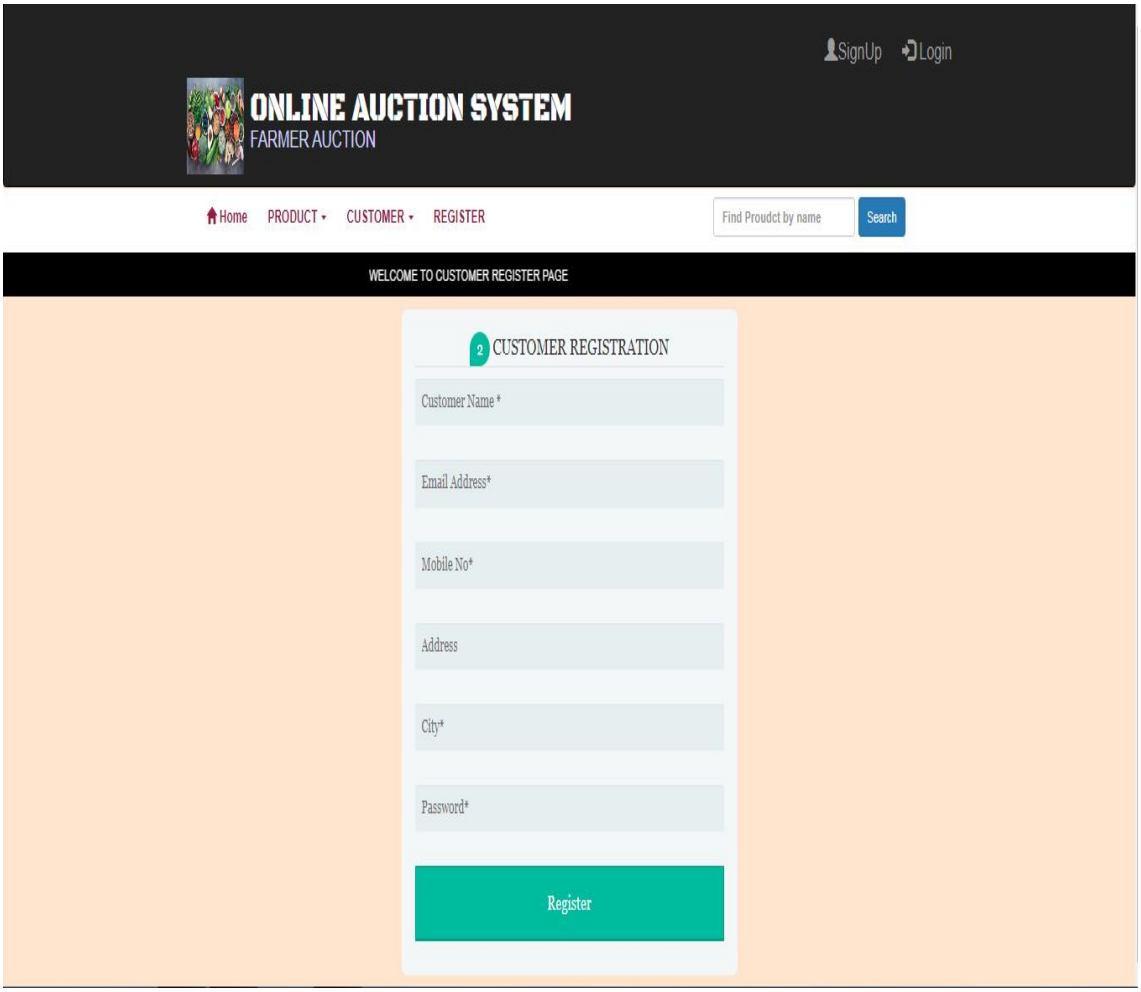

Figure 8.3: Registration for Customer .

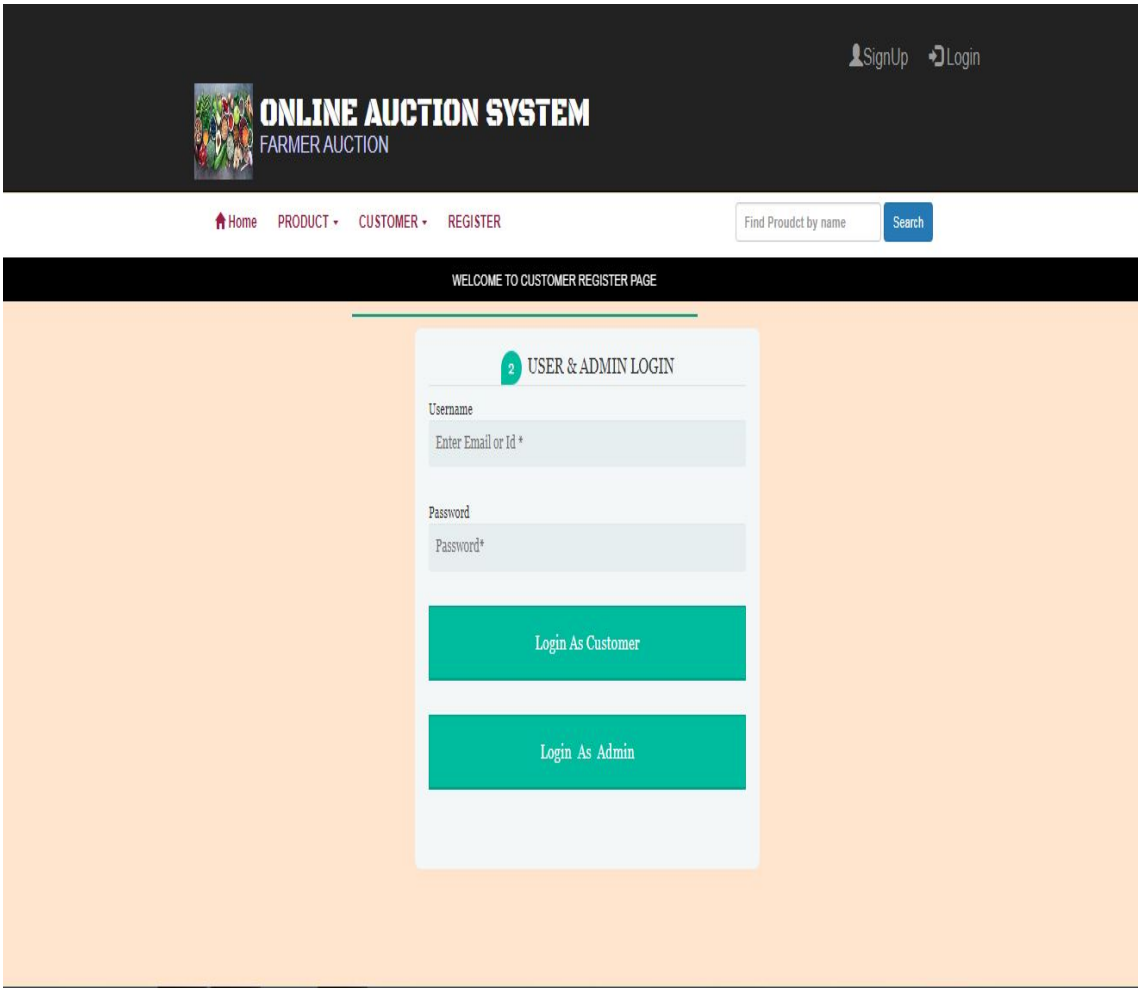

Figure 8.4: Login for Admin as well Customer.

8.3 Admin Home

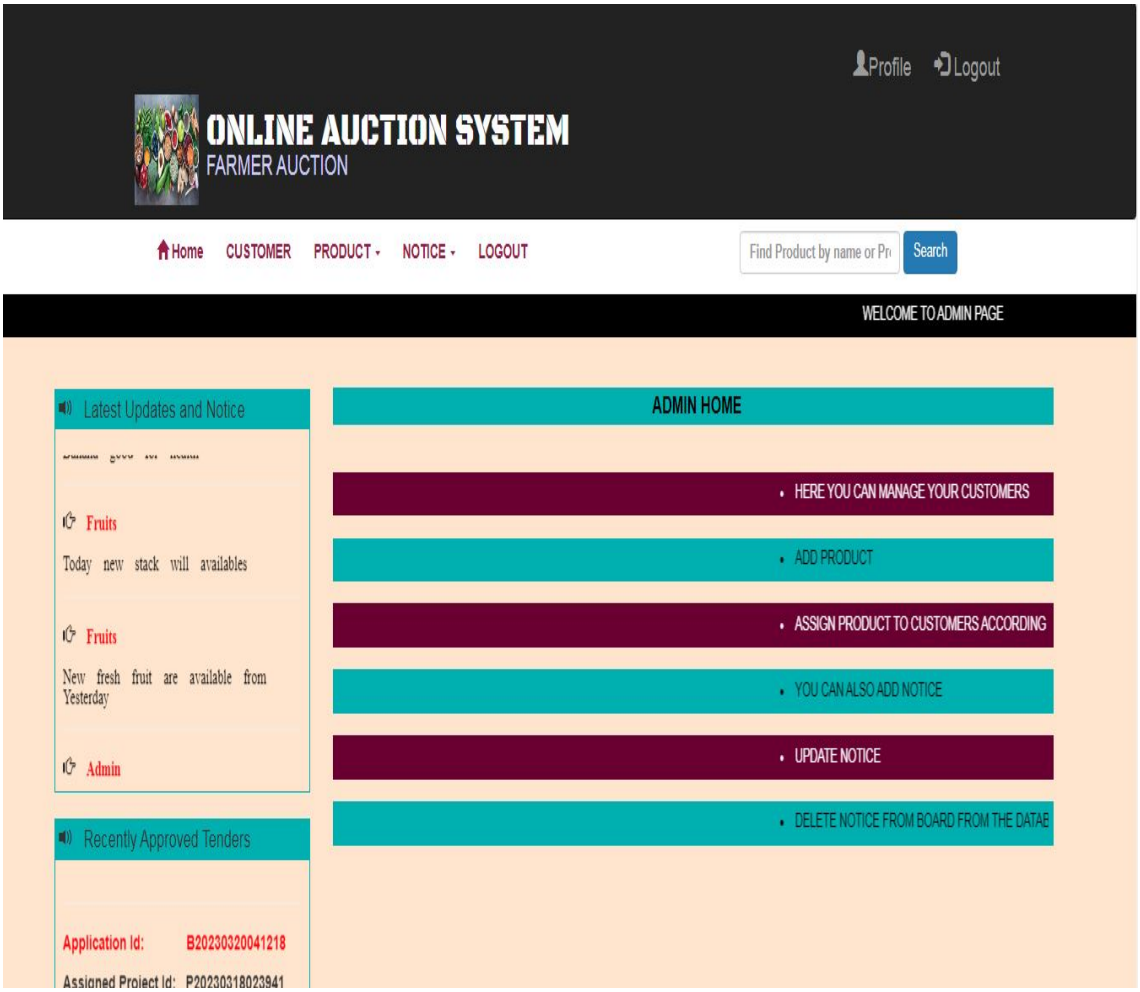

Figure 8.5: Admin Home

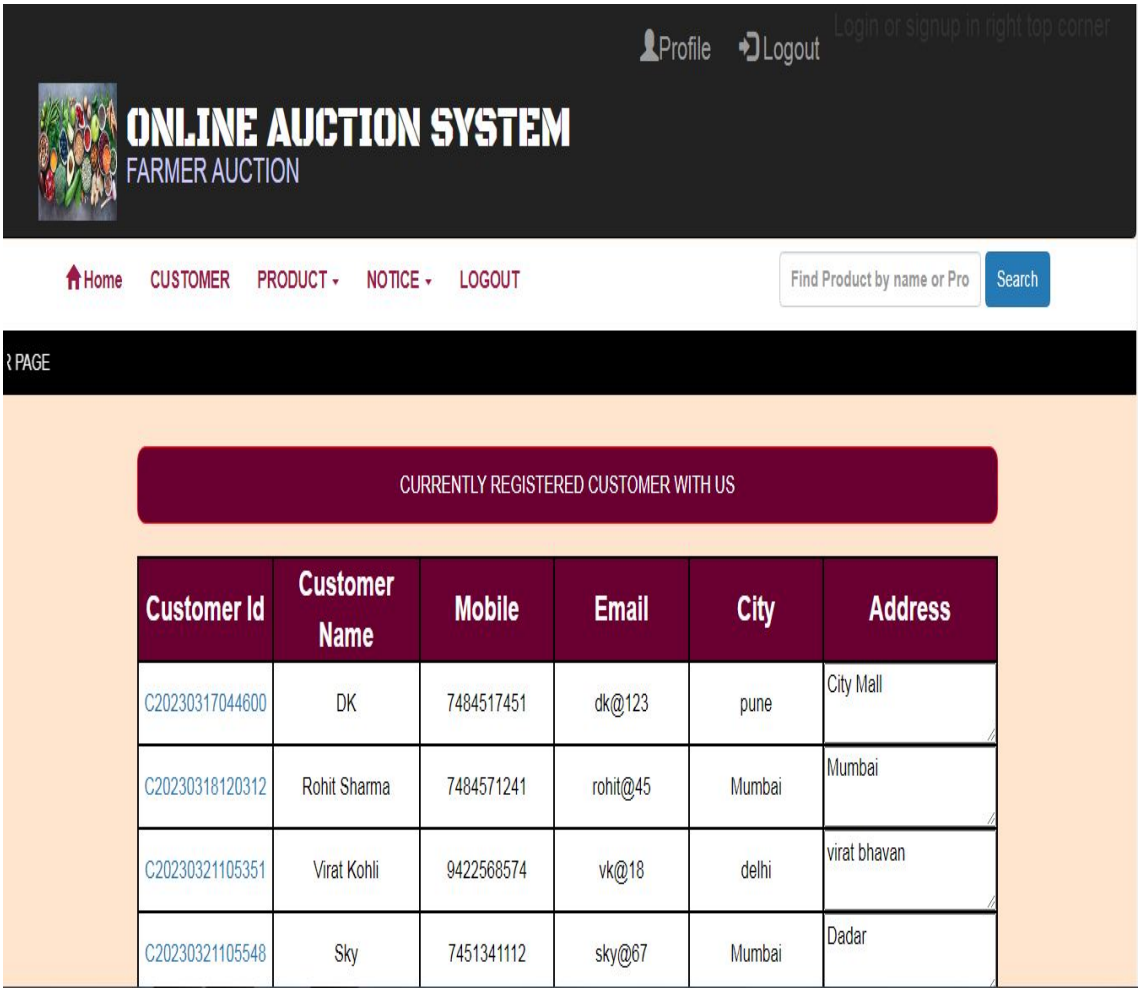

Figure 8.6: View Customer Page

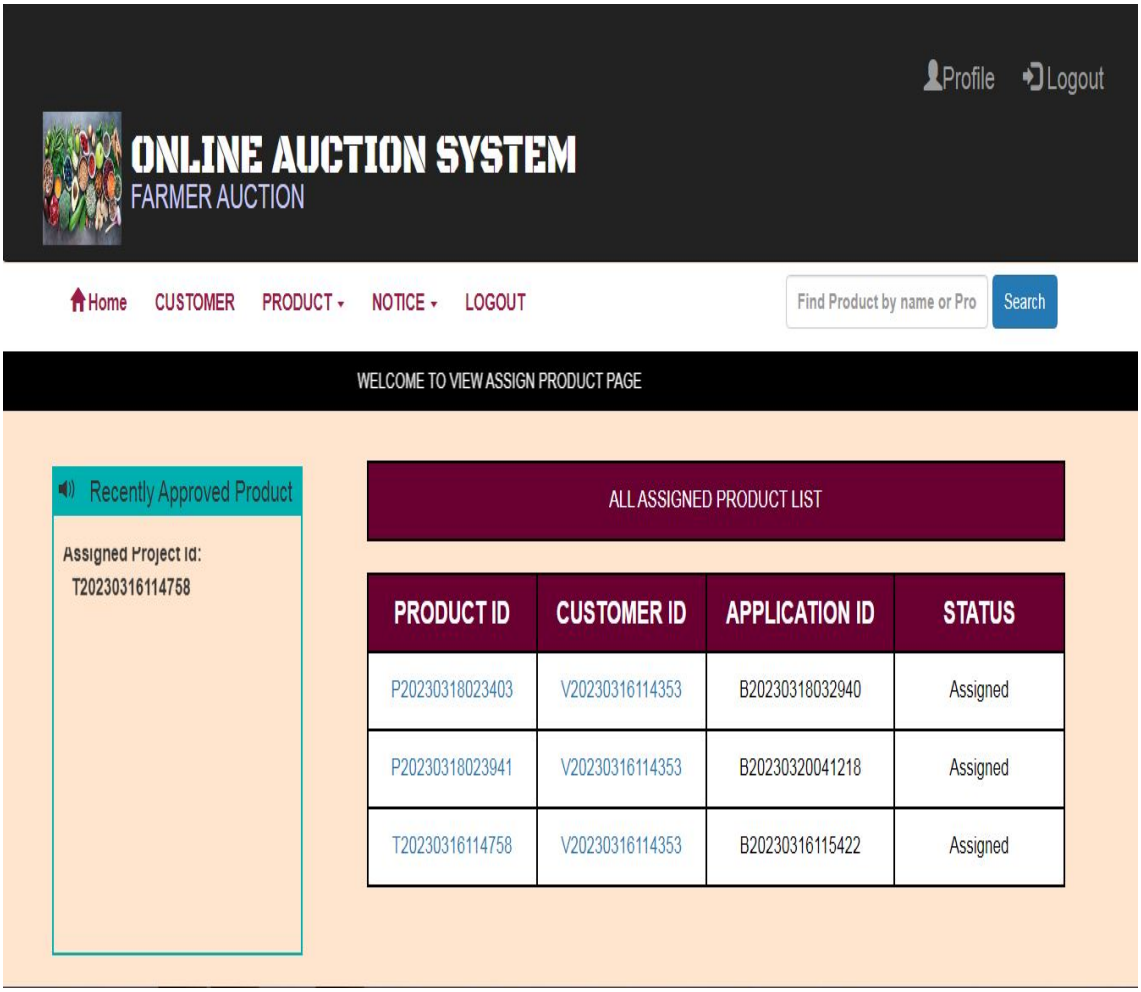

Figure 8.7: View Assign Product

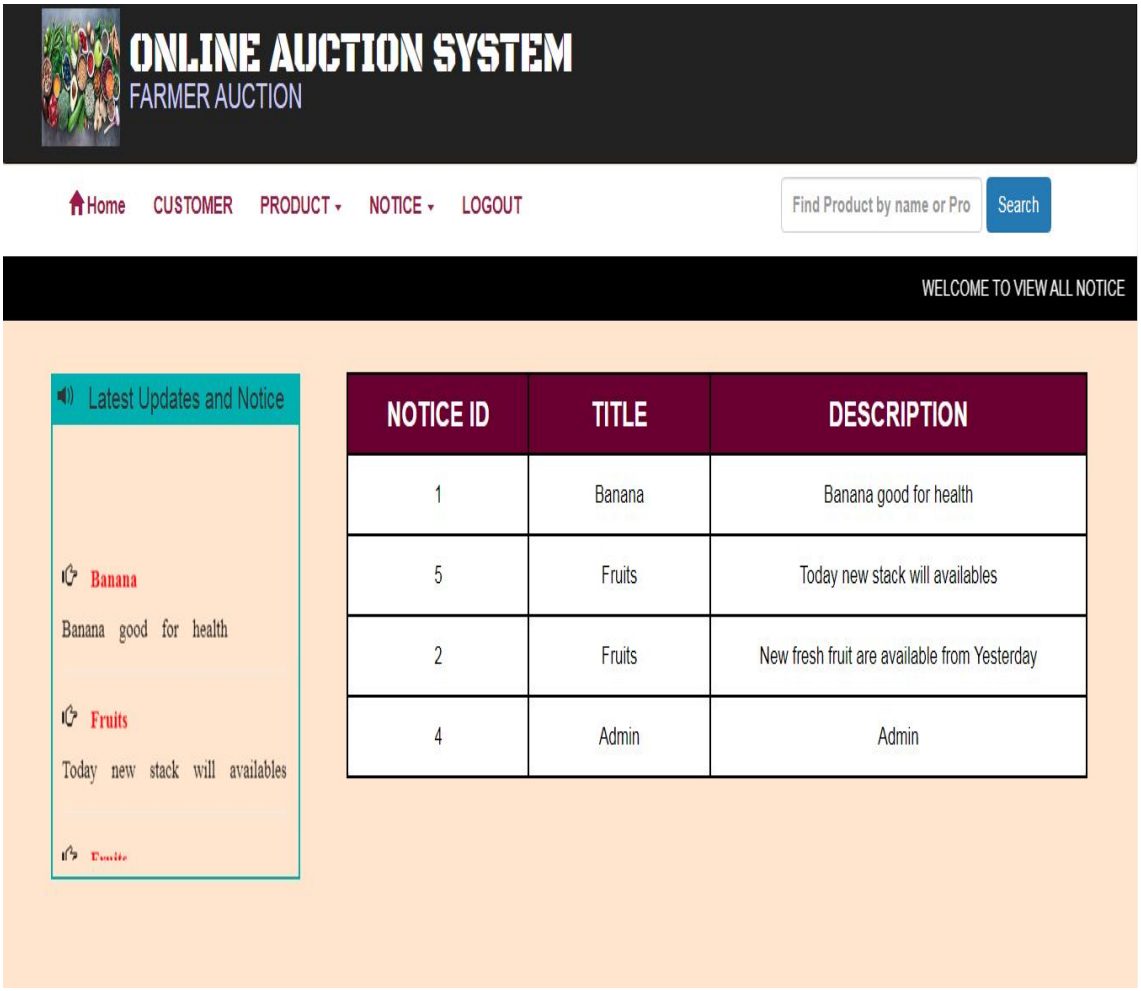

Figure 8.8: View All Notice

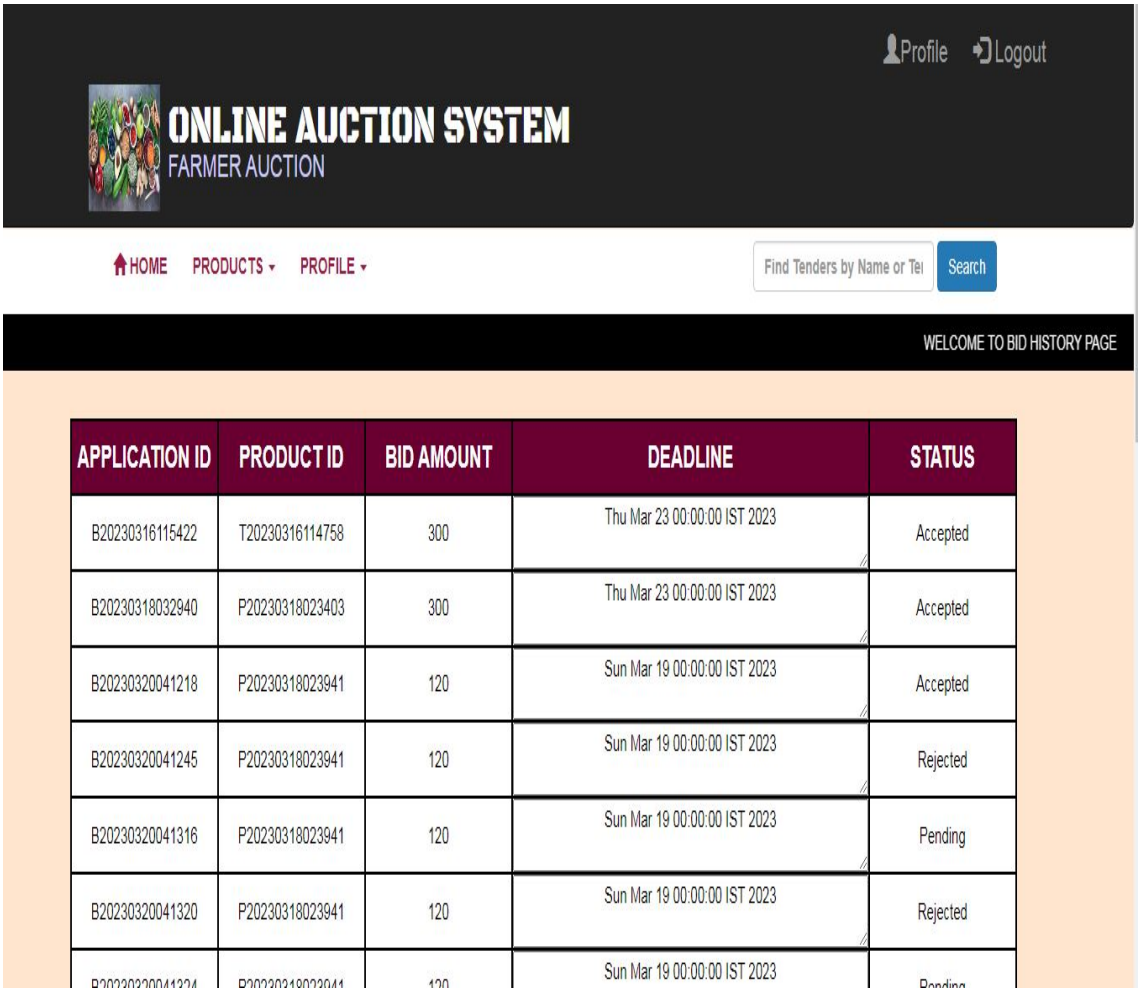

Figure 8.9: Bidding History

Chapter 9
CONCLUSION AND FUTURE SCOPE

9.1 Conclusion

The online farmer auction system is a promising platform that can revolutionize the way agricultural products are bought and sold. The system provides a digital marketplace for farmers to auction their produce and allows buyers to bid on the products they require. By adopting this platform, farmers can sell their products directly to buyers without the need for intermediaries, thereby increasing their profits.

The online farmer auction system is highly beneficial to both farmers and buyers as it provides a transparent and fair bidding process, eliminating the possibility of price manipulation. It also offers convenience and flexibility as buyers can purchase products from anywhere at any time.

Moreover, the system can help to address the problem of food waste by enabling farmers to sell their entire harvest, including the imperfect or surplus produce, which may have been discarded earlier. Additionally, it can promote sustainable agriculture by encouraging farmers to diversify their crops and reduce monoculture.

In conclusion, the online farmer auction system has immense potential to transform the agricultural industry by providing an efficient, transparent, and convenient platform for buying and selling produce. It can benefit farmers, buyers, and the environment, making it a valuable addition to the agricultural ecosystem.

9.2 Future Scope

An online farmer auction system has the potential to revolutionize the way farmers sell their produce and connect with buyers. The system can provide a platform where farmers can list their products and buyers can bid on them, resulting in fair pricing for both parties. In the future, the online farmer auction system can be expanded to include features such as real-time bidding, advanced search options, and an integrated payment gateway. The system can also incorporate AI-based algorithms that can analyze market trends and suggest optimal pricing strategies for farmers. Furthermore, the system can be scaled up to accommodate more farmers and buyers, resulting in increased market access for farmers and a wider variety of products for buyers. The online farmer auction system can also provide farmers with valuable data on market trends, demand, and pricing, allowing them to make informed decisions about their produce. In addition, the system can be integrated with logistics and transportation services, streamlining the delivery of products from farmers to buyers. This can further enhance the efficiency of the system and reduce transportation costs for farmers.Overall, the future scope for an online farmer auction system is vast, with the potential to transform the agricultural sector and provide numerous benefits to farmers and buyers alike.

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