Online Auction System

T.E. mini-project report submitted in partial fulfillment of the requirements of the degree of

BACHELOR OF ENGINEERING IN

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

by

Mr. Gaurav Raut - 227
Mr. Roshan Yadav – 271
Mr. Shivam Yadav – 272

Under the guidance of

Mr. Umesh Mohite

**Department of Artificial Intelligence and
Machine Learning**

VIDYA VIKAS EDUCATION TRUST'S

UNIVERSAL COLLEGE OF ENGINEERING

KAMAN, VASAI - 401208

UNIVERSITY OF MUMBAI

2022-2023

Vidya Vikas Education Trust's

Universal College of Engineering, Vasai (E)

Department of AIML

<u>CERTIFICATE</u>

This is to certify that, the Mini Project: 2B entitled "**Online Auction System**" is bonafide work of **Mr. Gaurav Raut (227), Mr. Roshan Yadav (271), Mr. Shivam Yadav (272)** submitted to the University of Mumbai in fulfillment of the requirement for the Mini Project: 2B Semester VI project work of T.E. AIML at Universal College of Engineering, Vasai, Mumbai at the Department of Artificial Intelligence and Machine Learning, in the academic year 2022-2023, Semester – VI.

Mr. Umesh Mohite

Supervisor

Mr. Jitendra Saturwa   **Dr. J.B.Patil**

Head of Department   Principal

T.E. Mini Project-2B Report Approval

This project report entitled"**Online Auction System" By Mr. Gaurav Raut (227), Mr. Roshan Yadav (271), Mr. Shivam Yadav (272)** is approved for the Mini Project-2B Semester VI project work of T.E AIML at Universal College of Engineering, Vasai, in the academic year 2022-2023.

Internal Examiner   **External Examiner**

Date:

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I 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. I 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.

1..
Signature
Gaurav Raut
(227)

2..
Signature
Roshan Yadav
(271)

3..
Signature
Shivam Yadav
(272)

Date:

Place:

Abstract

An online auction system is an e-commerce platform that enables buyers and sellers to bid and purchase goods and services through the internet. This system allows sellers to post their products online for bidding, and buyers can place their bids on those products until the auction time expires. The highest bidder wins the item, and the seller ships the product to the buyer after receiving payment. Online auction systems are highly convenient, allowing users to participate in auctions from the comfort of their homes. They also provide a vast market for buyers and sellers to transact business globally.

Moreover, online auction systems are highly efficient and cost-effective. With reduced overheads, sellers can sell their products at lower prices while buyers can get goods at affordable prices. The system also reduces the time it takes for transactions to occur, making it highly convenient for buyers and sellers. Additionally, it provides a platform for businesses to liquidate surplus inventory and generate revenue. Online auction systems have revolutionized the way businesses operate, enabling them to reach a broader market and generate revenue efficiently.

Contents

Acknowledgement

We take this opportunity to express our deep sense of gratitude to our project guide and project coordinator guide Mr. Umesh Mohite for her continuous guidance and encouragement throughout the duration of our project work. It is because of her experience and wonderful knowledge. We can fulfill the requirement of completing the project within the stipulated time. We would also like to thank Mrs. Hazel Lopes head of Artificial Intelligence & Machine Learning department for his encouragement, whole-hearted cooperation and support.

We would also like to thank our Principal Dr. J. B. Patil and the management of Universal College of Engineering, Vasai, Mumbai for providing us all the facilities and the work friendly environment. We acknowledge with thanks, the assistance provided by departmental staff, library and lab attendants.

Mr. Gaurav Raut
(227)

Mr. Roshan Yadav
(271)

Mr. Shivam Yadav
(272)

Chapter 1

Introduction

Online Auction management system is a web based application which will help users to buy or sell items; they can trade anything they want by posting ads. This application will allow users to post their products for auction; bidders can register and can bid for any available product. There are some existing applications that allow users to bid but the product is not available in your local area, so you cannot inspect the product that you are going to buy. By online Auction application users will be able to bid for products that are available in his local area.

1.1 Project Idea

The internet has become a very important aspect of life today. More than 3 billion people of the world have access to the internet, which is relatively 45% of the world population. This has increased from 778 million users in the past 15 years which is a great and rapid growth. The number of users is anticipated to reach 60% by the year 2020. With this in mind, the rate at which this large population is seeking to buy items is also on the rise, as many people are seeking advanced and ideal routes of trading services (Clearwater and Xerox, 2010). Some people spend a lot of money on transportation, using a lot of time at the end of the road they might lack to get the desired items which they opted for.

It is open that most people are seeking to buy items every day in most cities and towns, both locally and abroad, desperate if they might get a solution, or a right person to deliver a solution to them. These people end up settling at items or service providers who are con men or who sell illegal and fake items to the desperate buyers.

On the other hand, there are legit business people and store owners who have quality items in the locality of the auctioneer, but they do not meet for business because the auctioneer is not informed about the items available. This is a great frustration indeed!

This project shall handle this issue by creating an online platform where a user will be able to post items online for auction. The items will accompany item name, selling price, and a picture presentation for the bidder to see (Dutta, and Ramamoorthy, 2009). The bidder, if interested in the item, will auction for the product and will be able to inspect the item physically to approve the product then complete the business with the seller.

This is important since the auctioneer does not necessarily need to make a physical consultation with the seller for him/ her to get the required services (). The auctioneer will have a provision to chat with the seller and consult with him about the details of the product.

This chat will be confidential only between the buyer and the seller, ensuring the buyer's confidentiality. The customers will be assured of getting the right products, since they will take their time to analyze
and compare a range of listed items and choose appropriately according to their need or desire. This will save time that buyers take in search of items and therefore they will save themselves from worsening conditions which may lead to wastage of time conditions. This will also save money that is spent around traveling and bidding for the undesired items. Bidders will at the end of the day have a reason to smile with this online system.

This system will run on the internet since of the dynamic nature of the internet, and anybody can access it from smartphones, computers, personal digital assistants and many more digital gadgets. This is a sure promise that the system will serve many people in the country, and in the future it will reach out to the whole world.

The system is a forum where the bidders meet their respective product sellers in their locality on the internet to solve the problem of item auctioning.

Chapter 2

Review of Literature

2.1 Existing System

An auction system is a web-based platform that enables buyers and sellers to engage in transactions through a bidding process. Online auction systems have become increasingly popular due to their ease of use and convenience. The system typically consists of a user interface, a bidding mechanism, item listing, payment and shipping, feedback and rating system, and customer support.The user interface of an online auction system should be intuitive and easy to use, allowing users to navigate the system easily. The system should also be able to handle a large number of users simultaneously without any lag.

The bidding mechanism is the core of the auction system. The system should allow for different types of bidding such as silent bidding or incremental bidding. It should also allow users to place maximum bids so that they do not have to constantly monitor the bidding process. The system should provide real-time updates on the current bid amount and the time remaining for the auction.

Item listing is another essential feature of an online auction system. The system should allow users to list items for auction, provide a detailed description of the item, upload images, set a reserve price, and specify the duration of the auction. The system should also allow users to search for items based on keywords, categories, or other filters.

The system should have a secure payment gateway for buyers to make payments. It should support multiple payment methods such as credit cards, PayPal, or other online payment services. The system should also provide shipping options and allow sellers to specify shipping costs. The system should have a mechanism to track the delivery of the item and notify the buyer and seller once the item has been delivered.

The feedback and rating system is a crucial feature of an online auction system. It allows buyers and sellers to rate each other based on their experience. This helps build trust among users and creates a reliable community of buyers and sellers

2.2 Literature Survey

A literature survey was carried out to find out various papers published regarding Online Auction Website but very few informative sources were available where as abundant sources for Security problem faced, website sustainability etc and here is a tabular form of them.

Sr no.	Topic	Year	Summary	Article Problem statement	Our problem Statement
1	Secure E-Auction System Using Blockchain: UAE Case Study	2020	Traditionally,e-auction Systems have been developed using traditional computing methods such as web development. Though efficient, the electronic auction systems that are build using traditional web development methodology do pose certain risks and other limitations. This research paper has proposed a blockchain based electronic auction system that aims to minimize the risks faced by web-based electronic auction systems. They have also introduced the concept of smart contract which ensures the anonymity of identity during the bidding function. Which reduces the chances of coalition among the participants	The main objective of proposed system is to provide more security function that strengthened the security of e-auction by preventing coalition among participant	This system will try over coming the problem of scalability and unlikeability which is faced
2	uAuction: Analysis, Design and Implementation of a Secure Online Auction System	2017	This paper was all about their experience on e-auction. They provided a simple and elegant design for auction system using UML. The uAuction was mainly facilitate in order to catch the shill bidders in real-time.	The main target of the proposed system is to detect the shill biding in real-time	This system will be more focused on developing the functionality and improving environment so that it can conduct different types of auction and be secure at

					the same time.
3	Implementation of Online E –Auction to Overcome the Problem of Corruption with Effective and Efficient Procurement with Transparency	2021	The result of this research paper is that now we can have the system that is way strong and advanced than before and also will focuses on the main concern of the people worldwide. Also, the main issue i.e. trust and security has been taken under noticed in more effective ways followed by the facilitation options like navigation and suggestions bar. This will give 'all in one ' options in single platform i.e. in our online auction system.	The main focus of from the research we get is that it targeted those website which are used worldwide in which tried to resolve the faced by those website like security issues, forward auction ,reverse auction and with all the possible enchancement that could be done	This project will try overcoming the limitations of conducting auction for particular rather will create a system in which people from cross can also participate.

Table 2.1 – Literature Survey table

2.3 Problem Statement and Objective

Online auction systems face several challenges that affect their efficiency, transparency, and   security. These challenges include fraudulent activities, lack of trust, low user participation, and technical issues.

Objective : The objective of an online auction system is to provide a secure, transparent, and efficient platform for buyers and sellers to trade goods and services. This involves enhancing security, increasing transparency, improving user participation, ensuring technical efficiency, and building trust among users.

2.4 Project Scope

The project scope for an online auction system includes developing a web-based platform that allows buyers and sellers to trade goods and services through an auction process. The system should support multiple users, handle bids, manage payments, and provide a user-friendly interface for easy navigation. The scope also includes implementing robust security mechanisms, ensuring technical efficiency, and building trust among users. The project should cover the entire software development life cycle, including requirements gathering, design, development, testing, deployment, and maintenance.

Chapter 3

Proposed System

This chapter includes a brief description of the proposed system and explores the different modules involved along with the various models through which this system is understood and represented.

3.1 Analysis/Framework/ Algorithm

The analysis for an online auction system project involves several important components, such as security analysis, comparative analysis, auction algorithm, payment system analysis, user experience analysis, and trust framework.Security analysis involves identifying and addressing potential security risks and implementing appropriate security measures to ensure the system is secure.Comparative analysis involves examining existing online auction systems to identify their strengths and weaknesses and using this information to design a better system.

The auction algorithm is the core of the system and must be carefully designed to determine the winner of the auction fairly and efficiently.Comparative analysis involves examining existing online auction systems to identify their strengths and weaknesses and using this information to design a better system.

The auction algorithm is the core of the system and must be carefully designed to determine the winner of the auction fairly and efficiently.Overall, the analysis for an online auction system project is critical to ensure that the system is secure, efficient, and user-friendly, and that users trust and participate in the auction process.

- Initialize the auction by setting the item for sale, starting bid, and end time.
- Allow users to place bids by entering their bid amount and confirming their bid.
- Validate bids by checking that they are higher than the current highest bid and within the user's budget.
- Record each bid in the bid history, along with the bidder's username and bid amount.
- if a bid is placed within the last few minutes of the auction, extend the auction time to prevent sniping.
- When the auction ends, determine the highest bidder and notify them of their winning bid.
- Allow the highest bidder to complete the payment process through a secure payment system.
- Once the payment is confirmed, transfer ownership of the item to the winning bidder.
- If the payment is not completed within a specified time, allow the second highest bidder to purchase the item at their bid price.
- Provide a user-friendly interface for users to view their bid history, watch items, and manage their account.

3.2 System Requirements

This section will provide the user the required specification of the hardware and software components on which the proposed system is to be implemented.

3.2.1 Hardware Requirements

Name of component	Specification
RAM	Minimum 4 GB RAM
Device	Android Phone And PC
Processor	All Processor area allowed to use

3.2.2 Software Requirements

This subsection will provide the versions of software applications that must be installed.

The software requirements are as follows: -
- Php
- sql

Mobile should be connected to the internet to make use of the app efficiently.

3.3 Design Details

In design details, we analyze the System Architecture and System Modules in detail.   We study the flow and process of the entire project in order to develop the project in an orderly and systematic manner.

3.3.1 System Architecture

Three-tier architecture
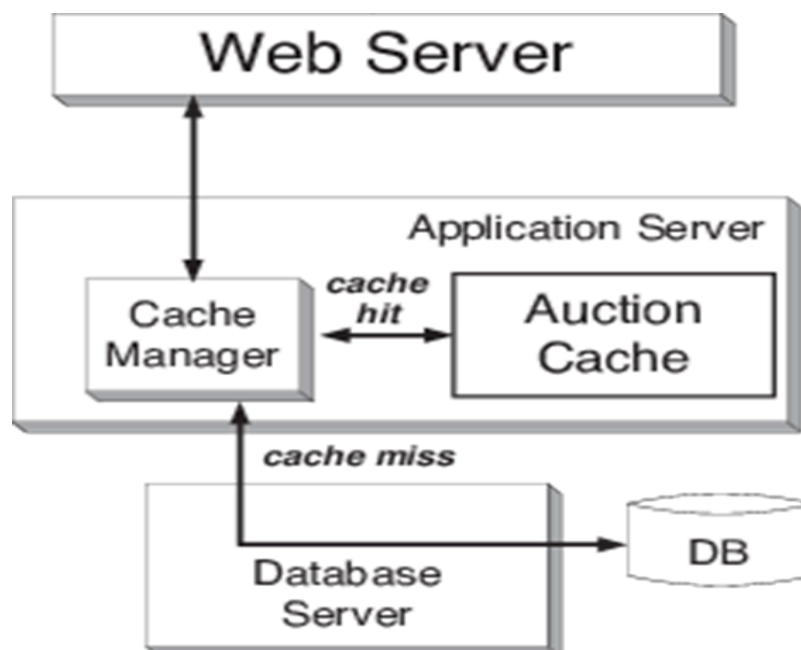
Figure. 3.1 – System Architecture

For the realization of the online auction system we used a 3-tier system architecture as shown on this schema.
In such architecture, there are 3 main elements:
•The client tier , that is responsible for the presentation of data, receiving user elements and controlling the user interface.
•The application server tier , that is responsible for the business logic of the system. In fact, business-objects that implement the business rules "live" here, and are available to the client-tier. This tier protects the data from direct access by the clients. For the project, we used JBoss as an application server.

3.3.2 Details of Modules

1. User Management Module: This module allows users to create an account, log in, and manage their profile information, including their bidding history and watchlist.
2. Item Management Module: This module allows users to search for items, view item descriptions, and place bids on items that they are interested in.
3. Auction Management Module: This module manages the auction process, including starting and ending auctions, handling bids, and determining winners.
4. Payment Management Module: This module handles the payment process, including the integration with payment gateways, tracking payment status, and handling refunds if necessary.
5. Notification Module: This module sends notifications to users when they have been outbid, when an auction has ended, or when a payment has been made.
6. Reporting Module: This module generates reports on user behavior, bidding trends, and other relevant metrics.
7. Admin Management Module: This module allows the admin to manage the system settings, user accounts, and item listings.
8. Security Module: This module provides security features to ensure that the system is protected against unauthorized access, fraud, and other security threats.

3.4 Data Model and Description

Data Model describes the relationship and association among data which includes Entity Relationship Model.

3.4.1 Entity Relationship Model

Figure 3.4 shows the Entity Relationship Diagram of the proposed system. Entity Relationship diagram is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities.
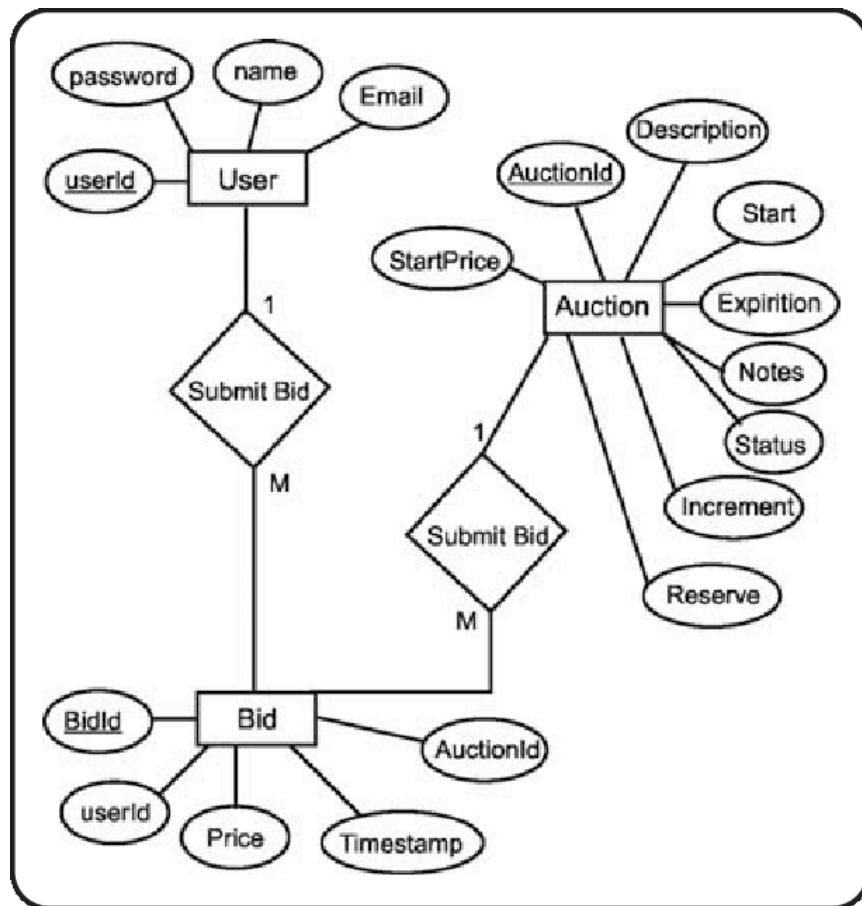
Figure 3.4 - Entity Relationship Diagram

3.5 Fundamental Model

Fundamental model of the project gives an overall idea about the project. How the entities are related to each other, what are the attributes of the entities, how the data flows between the entities is shown by the fundamental model.

3.5.1 Data Flow Model

Data Flow Diagram (DFD) shows graphical representation of the "flow" of data through an information system, modeling its process aspects. It includes data inputs and outputs, data stores, and the various sub processes the data moves through. DFDs are built using standardized symbols and notation to describe various entities and their relationships.

DFD LEVEL 0


```
+--------+              +--------+
|  User  |              | System |
| Input  |              |        |
+---+----+              +---+----+
    |                       |
    |                       |
    |                       |
    |                       |
+---V----------+            |
|  Process     |<------+
|  Management  |
+----+---------+
     |
     |
     |
     |
+----V---------+         +--------+
|  Database    |<------+  Item  |
| (Data Store) |        |  Data  |
+--------------+         +--------+
```
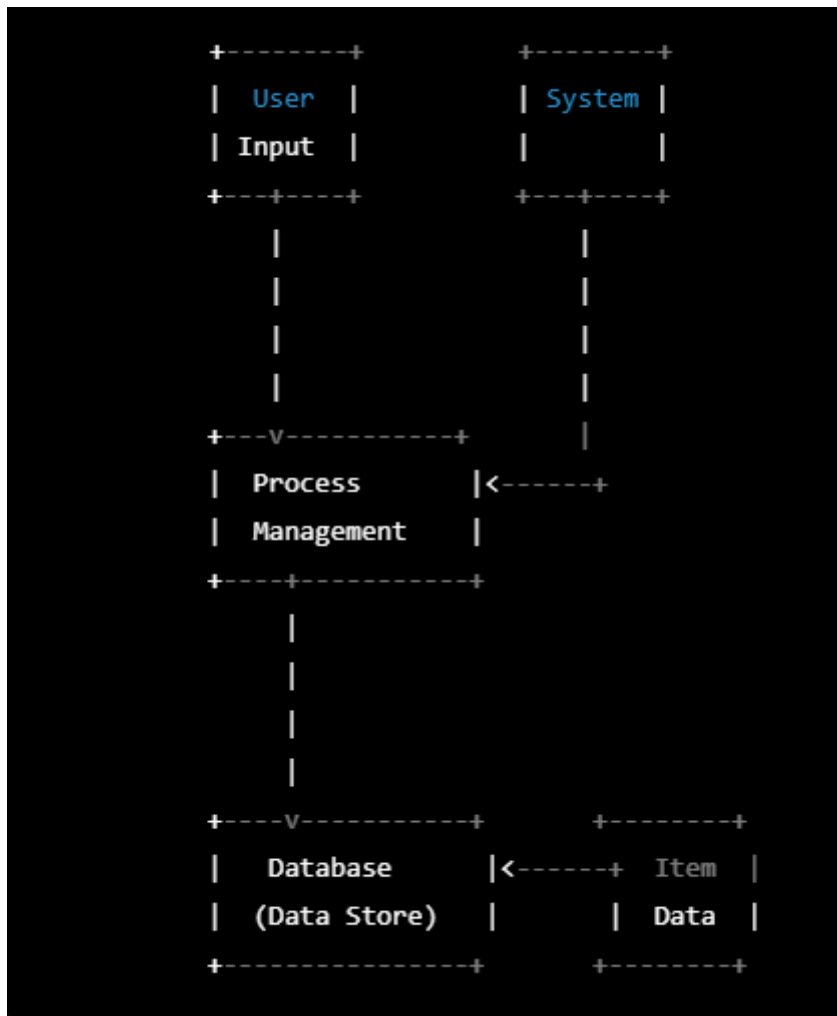
Figure 3.5 – DFD Level 0

Level 0 shows the highest-level view of the system, where the User Inputs the data and the System processes it. In the case of an online auction system, the User Input will be the information that buyers and sellers enter into the system, such as item details and bid amounts. The System includes the Process Management, which controls the bidding process, and the Item Data in the Database, which stores information about the items being auctioned.

DFD Level 1

```
        +-----------+
        |   User    |
        |   Input   |
        +----+------+
             |
             |
             |
             |
        +-----V-----------+      +--------+
        |    Process      |<-----|  Item  |
        |   Management    |      |  Data  |
        +-----+-----------+      +--------+
             |                        |
             |                        |
        +-----V------+         +------V------+
        |   Process  |         |   Process   |
        |    Bid     |         | Notification|
        | Management |         |   Module    |
        +------------+         +-------------+
```
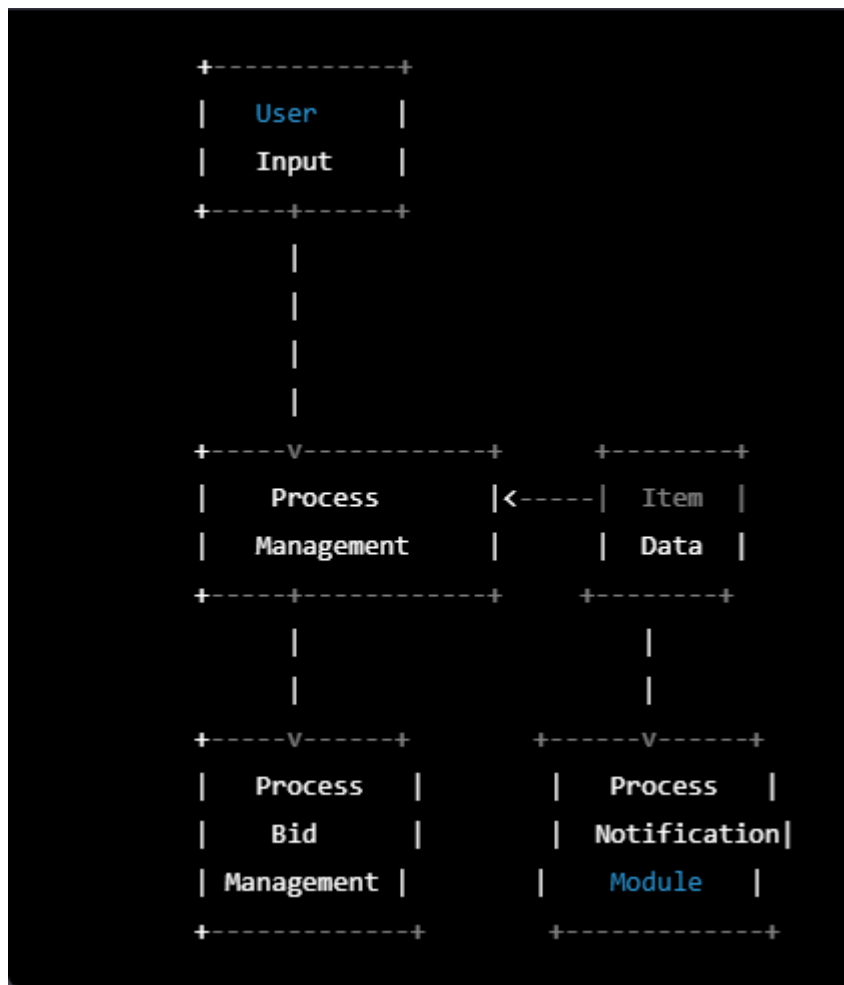
Level 1 shows more detail about the Process Management component. It includes the Process Bid Management and the Process Notification Module, which are responsible for handling the bidding process and notifying users about their auction status. The User Input feeds into the Process Bid Management, which in turn communicates with the Process Notification Module to send notifications to users.

Figure 3.6 – DFD Level 1

DFD LEVEL 2

```
        +-------------+
        |  User       |
        |  Input      |
        +-----+-------+
              |
              |
              |
              |
        +------V-----------+       +-----------+
        |   Process        |<-----| Database  |
        |   Management     |      | (Item     |
        +------+-----------+      | Details)  |
               |                  +------+----+
               |                         |
        +------V------+          +-----V------+
        |   Process   |          |   Process  |
        |   Bid       |          | Notification|
        |   Management|          |   Module   |
        +-------------+          +-----------+
```
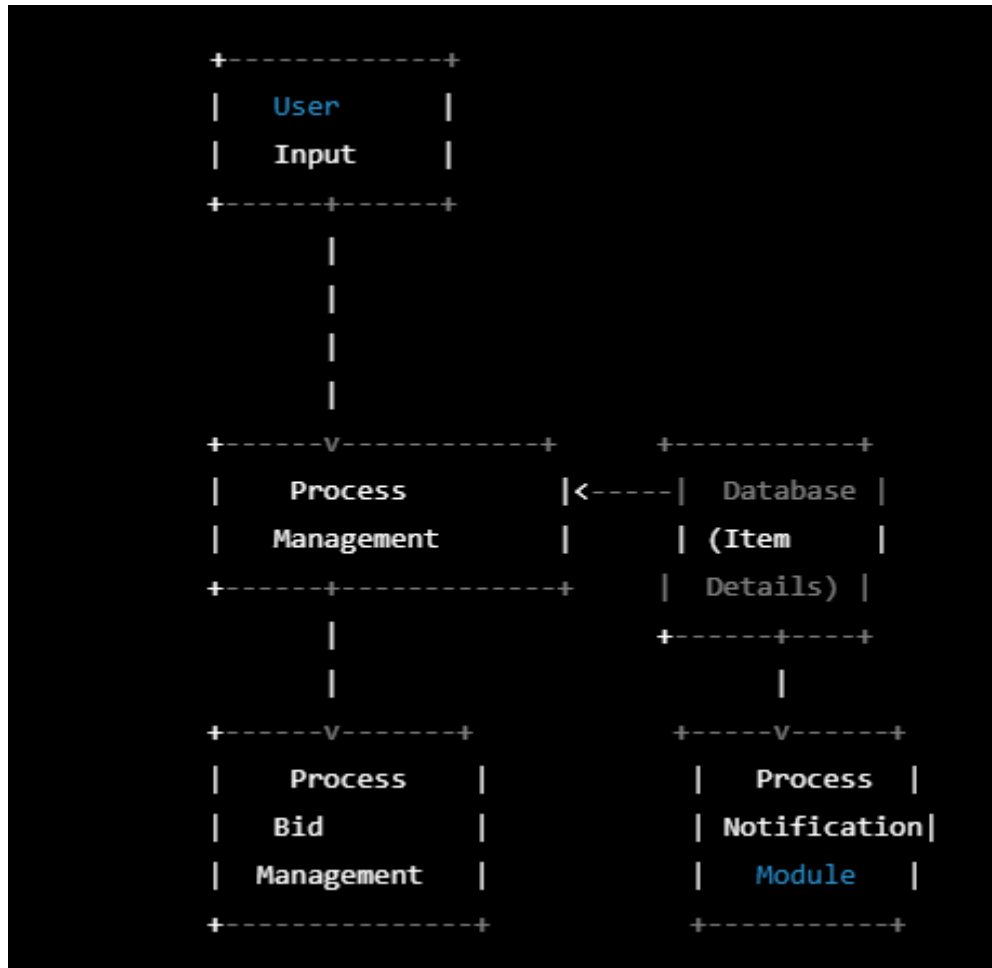
Figure 3.7 – DFD Level 2

Level 2 provides even more detail about the sub-processes within the Process Bid   Management and Process Notification Module. For example, the Bid Management process may include sub-processes such as checking the bid amount against the current highest bid, updating the bid database, and sending notifications to the seller and bidders. Similarly, the Notification Module may include sub-processes such as checking auction status, sending email notifications, and updating the user database.

3.6 UML (Unified Modelling Language) Diagram

The Unified Modelling Language is a general-purpose, developmental, modelling language in the field of software engineering that is intended to provide a standard way to visualize the design of a system. We have prepared and designed the UML diagrams of – Use Case, Activity, Component, Deployment and Sequence Diagrams.

3.6.1 Use Case Diagram

figure 3.8 denotes the Use Case Diagram of the proposed system. It shows the user's interaction with the systems. The purpose of a use case diagram in Unified Modelling Language (UML) is to demonstrate the different ways that a user might interact with a system.
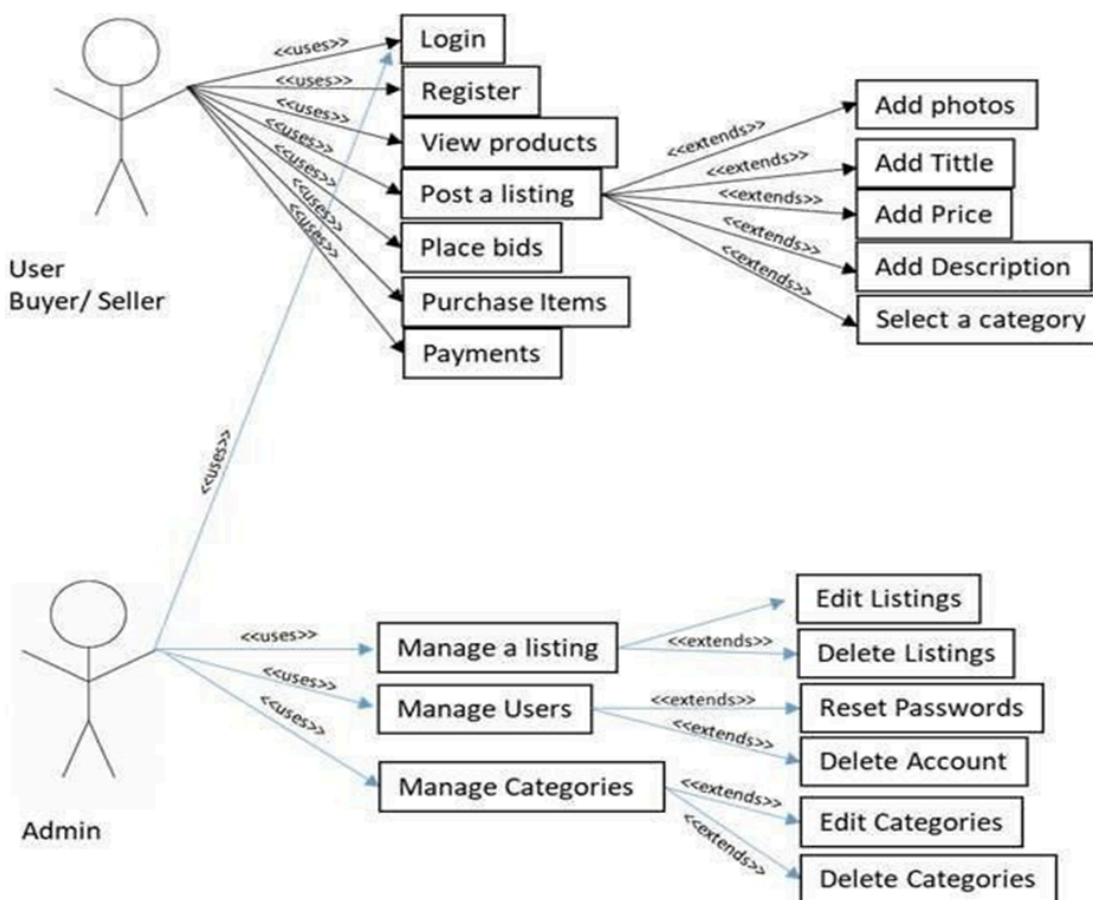
Figure 3.8 – Use Case Diagram

3.6.2 Activity Diagram

The activity diagram shows the flow of tasks within the auction house as a whole. This diagram shows the auction application. The solid black circle on the left shows the beginning of activities, and the white circles with black dots in the center denote where activities end.
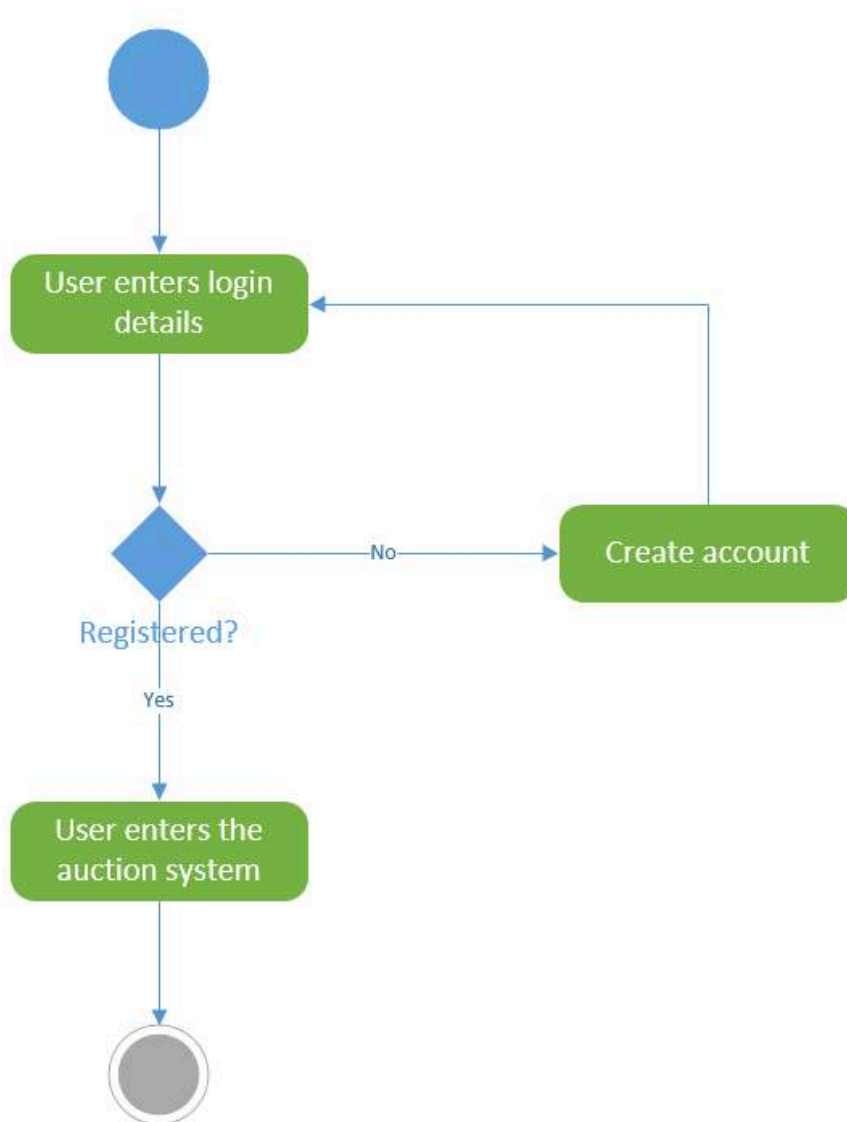
Figure 3.9 – Activity Diagram

3.6.3 Sequence Diagram

A sequence diagram is a visual representation of the interactions between the different components or actors in a system. In the case of an online auction system, the sequence diagram shows the flow of events from the creation of an auction listing to the finalization of the sale. Each step in the process is represented by a message or action, and the diagram helps to illustrate the order and dependencies of these steps. By using a sequence diagram, developers and stakeholders can better understand the functionality of the system and identify potential issues or improvements.
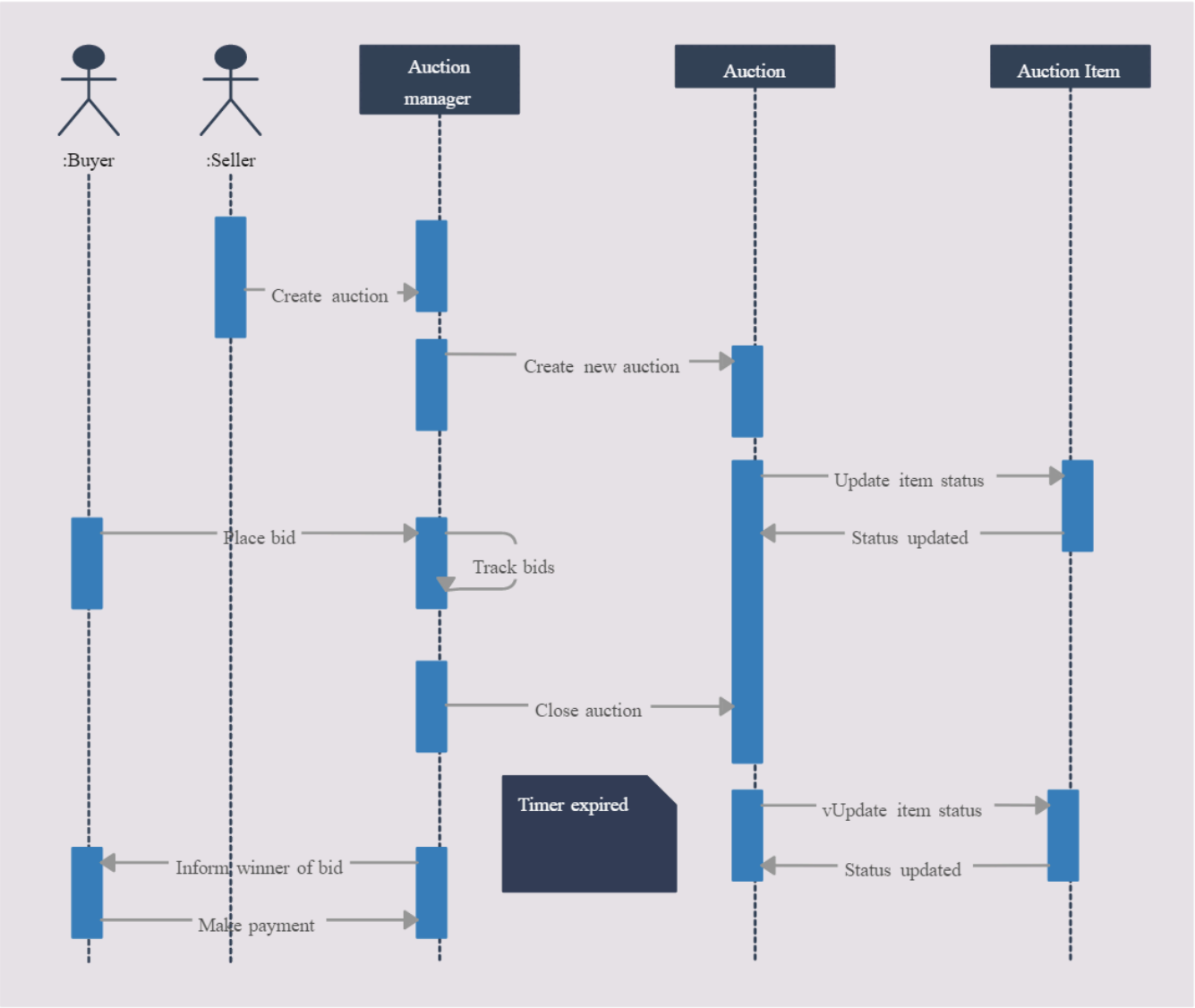
Figure 3.10 – Sequence Diagram

3.6.4 Component Diagram
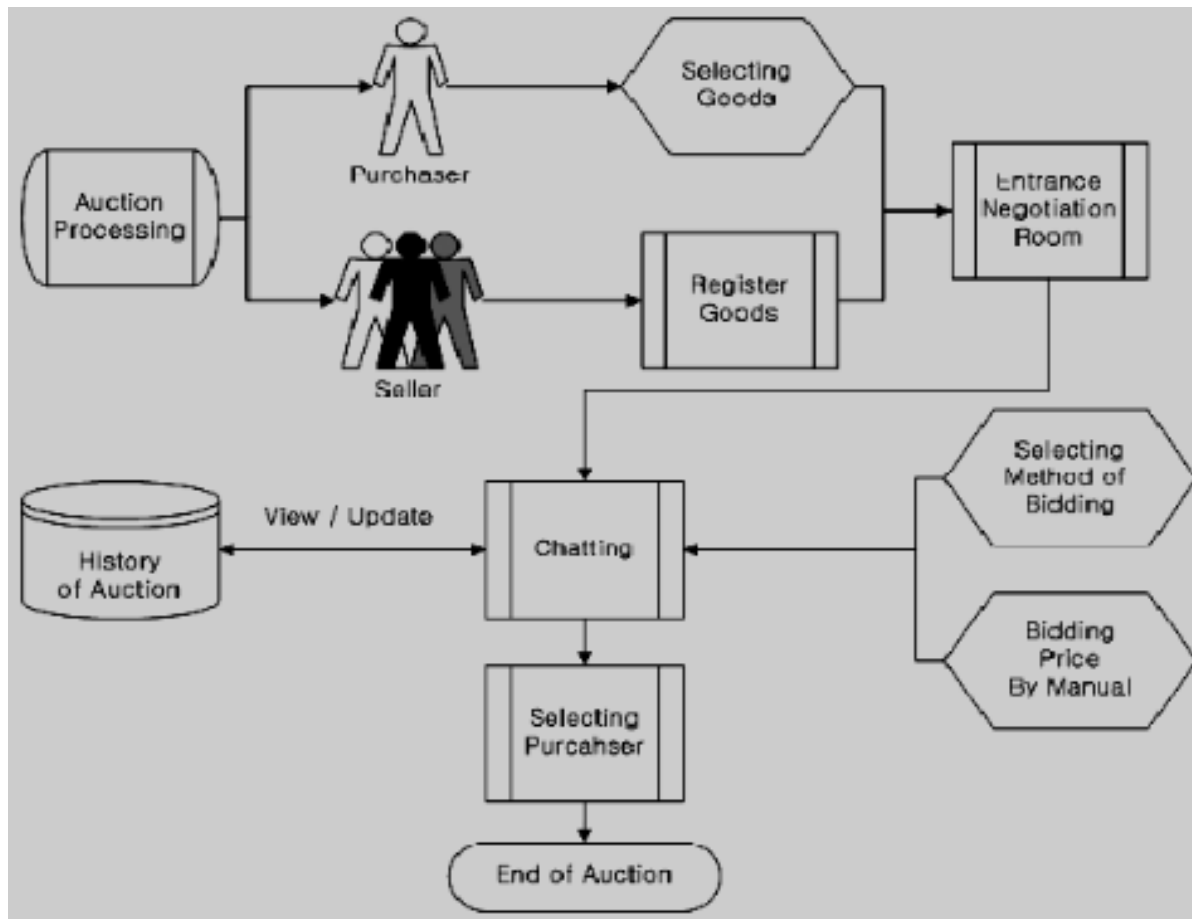
Figure 3.11- Component Diagram

In Unified Modeling Language, a component diagram depicts how components are wired together to form larger components or software systems. They are used to illustrate the structure of arbitrarily complex systems. Figure 3.11 demonstrates the component diagram of Searchious.

3.6.5 Deployment Diagram
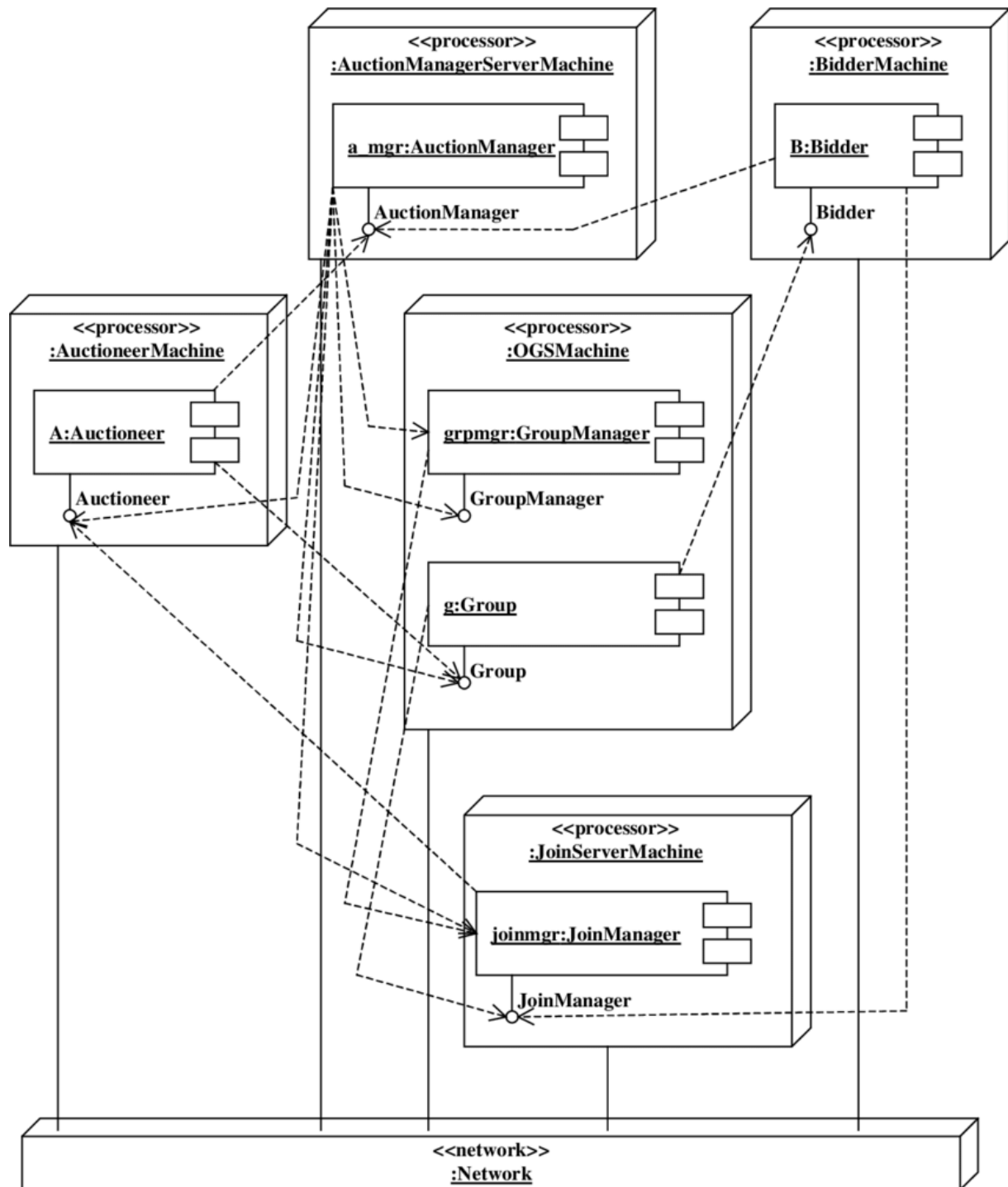
Figure 3.12 – Deployment Diagram

A deployment diagram in the Unified Modeling Language models the physical deployment of artifacts on nodes. To describe a web site, for example, a deployment diagram would show what hardware components exist, what software components run on each node, and how the different pieces are connected. Figure 3.12 shows how the system of Searches will be implemented on real devices.

3.7 Methodology

The best methodology for developing an online auction system depends on various factors such as project size, complexity, resources, and stakeholder requirements. However, the Agile methodology is often considered a good fit for online auction system development.

Agile methodology emphasizes iterative development and continuous feedback from stakeholders, which aligns well with the dynamic nature of the online auction system. The system may require frequent updates, enhancements, and changes to meet the evolving needs of users, and the Agile methodology allows for flexibility in accommodating these changes.

Agile methodology focuses on delivering working software frequently, with each iteration or sprint building upon the previous one. This approach allows for the early identification and resolution of issues, ensuring that the final product is of high quality and meets the requirements of stakeholders.
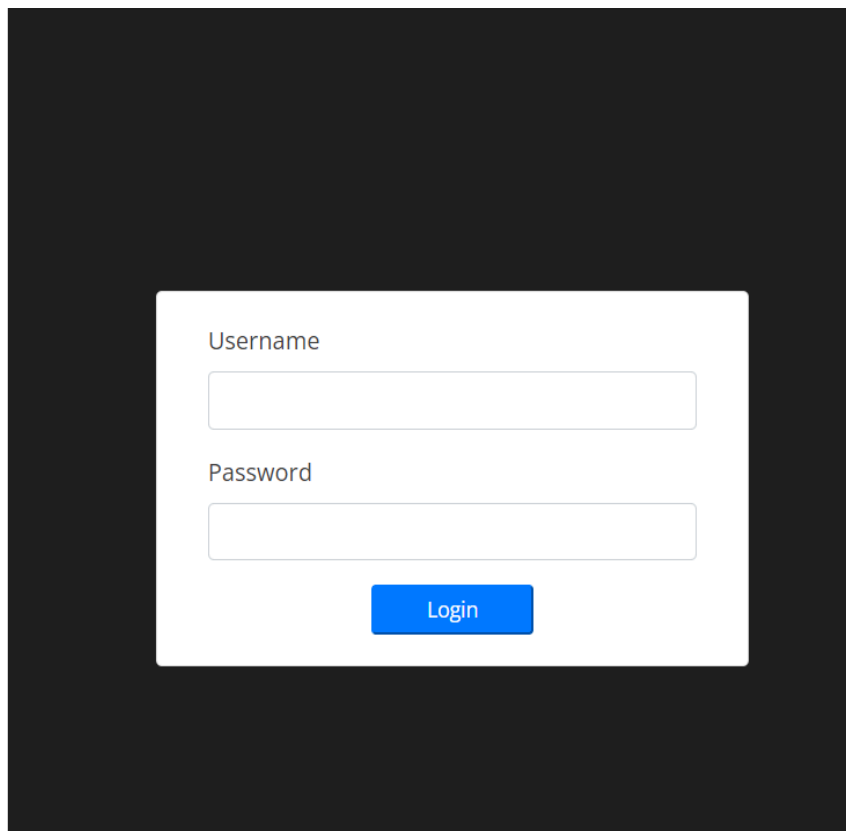
Chapter 4

Result and Discussion

This chapter includes the snapshots of the actual outputs that were seen by the user and this chapter also contains the results of the proposed system.

4.1 Proposed System Result

The proposed result of an online auction system is to efficiently connect buyers and sellers in a secure and user-friendly manner, resulting in high levels of transaction volumes, revenue, and cost savings. A successful system should attract a large number of users by providing a reliable, transparent, and low-cost platform for conducting auctions and facilitating transactions. This would lead to increased revenue for the platform through commissions or fees charged on transactions. Additionally, the system should promote a fair and transparent bidding process, which can foster trust and loyalty among users, resulting in increased transaction volumes and cost savings for buyers and sellers.

Figure 4.1 – GUI of Login Page
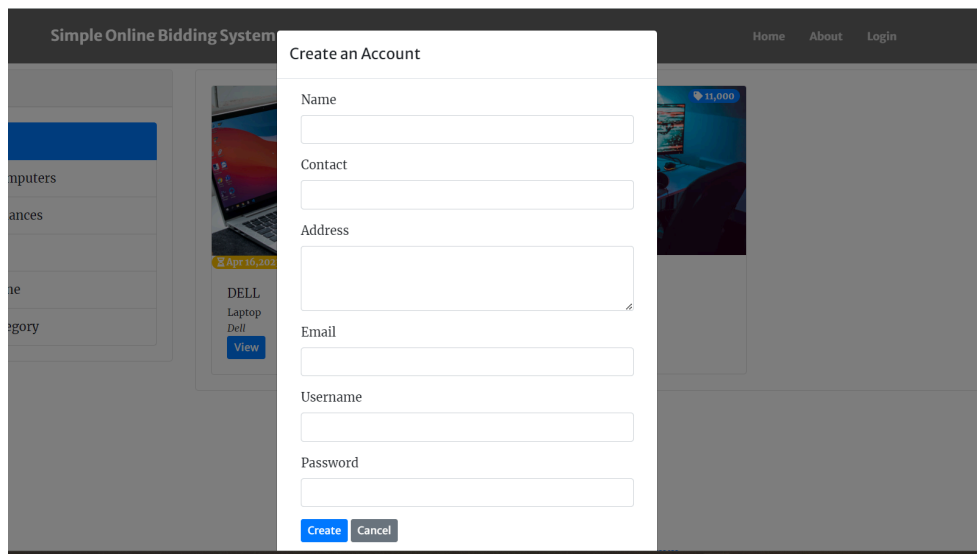
Figure 4.2- GUI of Registration Page
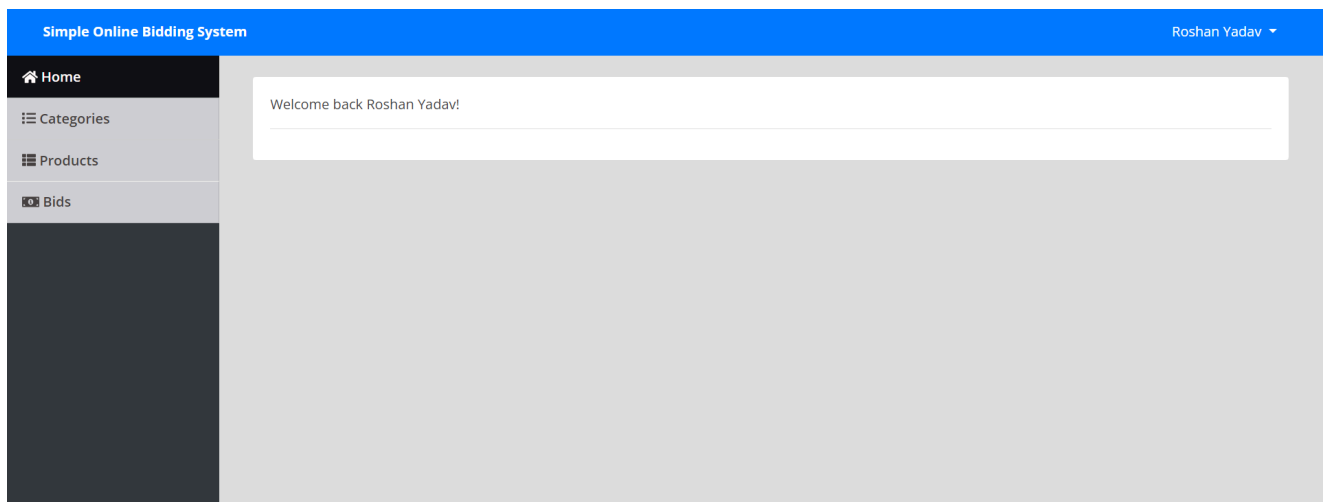
Figure 4.3 - welcome back page
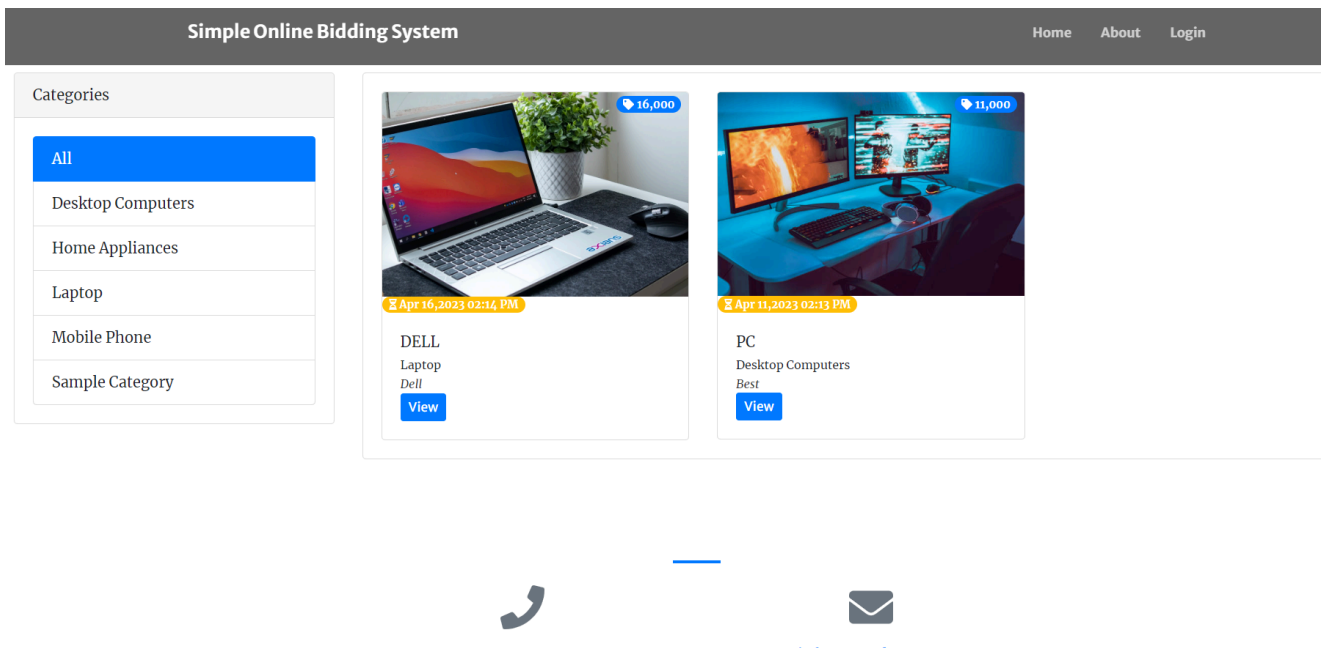
Figure 4.4 - Home page

Figure 4.5 - Category Page

Figure 4.6 - Products Page

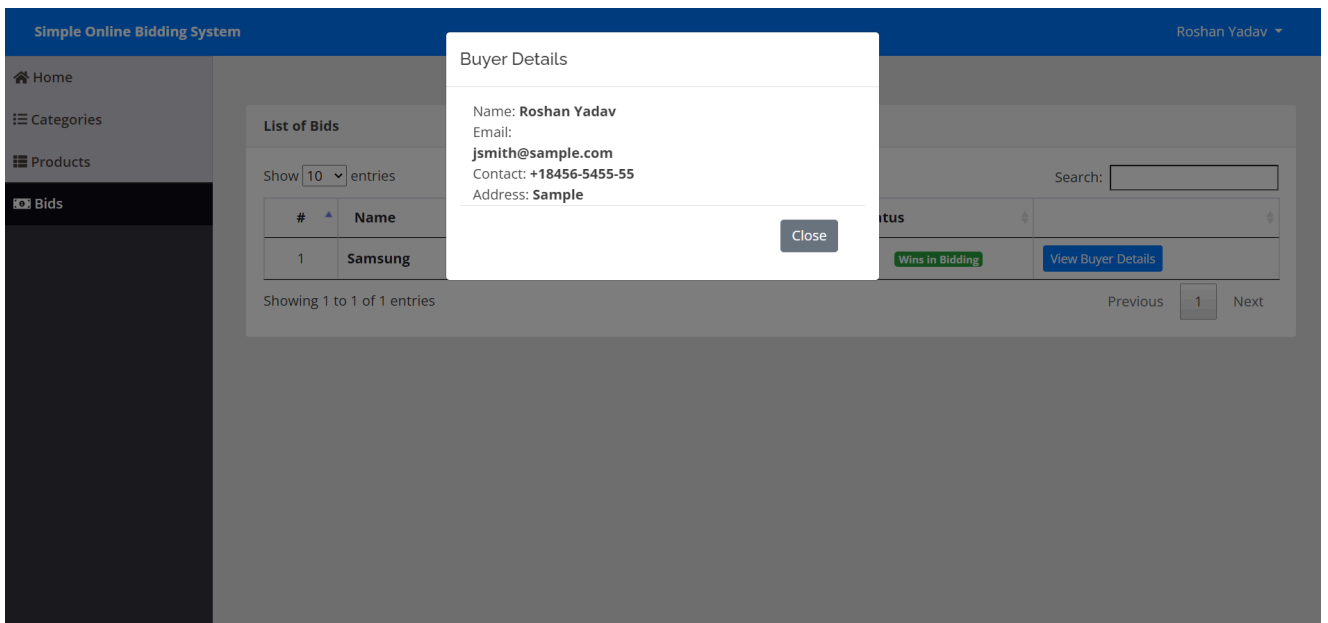Figure 4.7 - Indicating Nos of Entries

Figure 4.8 - Details about Buyer

Conclusion and Future Work

In conclusion, online auction systems have the potential to create a competitive marketplace that benefits both buyers and sellers. The success of such systems depends on their ability to provide a reliable, secure, and user-friendly platform that facilitates transactions and promotes trust and transparency between users. By reducing transaction costs, increasing revenue, and enhancing the user experience, a well-designed online auction system can attract a large user base and generate significant revenue. The future of online auction systems lies in the incorporation of advanced technologies such as machine learning, artificial intelligence, and social media integration to further improve the accuracy and efficiency of product recommendations, enhance security features, and expand the user base. As online commerce continues to grow, the importance of online auction systems in facilitating secure and efficient transactions will only continue to increase.

Future Work:

In the future, there are several areas that could be explored to further improve the functionality and efficiency of online auction systems. These include incorporating advanced technologies such as machine learning and artificial intelligence to improve the accuracy and efficiency of product recommendations, enhancing security features to prevent fraud and protect user data, and optimizing the platform's user interface to improve the user experience. Additionally, the development of mobile applications and integration with social media platforms could provide new opportunities to expand the user base and increase engagement. Further research and development in these areas could lead to the creation of more innovative and effective online auction systems.

Appendix

1) https://app.creately.com/ :- Creately tremendously helped is making the UML diagrams in the project. The various UML diagrams made in the project are – Data Flow Diagrams, Use Case Diagrams and the Entity Relationship Diagrams.

2) PyCharm IDE :- PyCharm IDE was used for setting up the entire project.

3) Python 3.6 :- Python programming language with the version of 3.6 to sync our libraries and make our app compatible on all systems.

4) Dlib :- Dlib is a general-purpose cross-platform software library written in the programming language C++. Its design is heavily influenced by ideas from design by contract and component-based software engineering.

5) OpenCV :- OpenCV is a library of programming functions mainly aimed at real-time computer vision.

6) Firebase :- Firebase is a platform developed by Google for creating mobile and web applications.

References

[1] Madhumita R. Baviskar, "Face Tracking and Recognition in Videos: HMM Vs KNN", International Journal of Advance Research in Computer Science and Management Studies (IJARCSMS), 2013.

[2] Aesha Shah, Kavin Shah, Vidhi Shah and Chintan Shah, "Built-in Face Recognition for Smart Phone Devices", International Research Journal of Engineering and Technology (IRJET), 2017.

[3] Holger Wiese, Jessica Komes, Simone Tüttenberg, Jana Leidinger and Stefan R. Schweinberger, "Age-Related Differences in Face Recognition", Durham Research Online (DRO), 2017.

[4] Pooja Malusare, Shivangi Shewale, Sanika Birla, Shivanjali Ghavate and Mohini Arote, "Face and Person Recognition from Unconstrained Video", International Journal of Engineering Science and Computing (IJESC), 2017.

[5] Ancy Anna Varghese and Devi Murali, "Aging Face Recognition Along with Personal Identification using Local Patterns Selection", International Journal of Engineering Science and Computing (IJESC), 2017.

[6] Faizan Ahmad, Aaima Najam and Zeeshan Ahmed, "Image-based Face Detection and Recognition: State of Art", International Journal of Computer Science Issues (IJCS), 2017.

[7] Ashu Kumar, Munish Kumar and Amandeep Kaur, "Face Detection Techniques: A Review", Crossmark, 2018.

[8] K. Bharath S Reddy, Onkar Loke, Shantanu Jani and Kanchan Dabre, "Tracking People in Real Time Video Footage using Facial Recognition", Institute of Electrical and Electronics Engineers (IEEE), January 2018.

[9] Shakir F. Kak, Firas Mahmood Mustafa and Pedro Valente, "A Review of Person Recognition .Based on Face Model", Eurasian Journal of Science and Engineering (EAJSE), 2018.

[10] Bharath Darshan Bala, D S Kavya, Chandana M, Anush E, Vishwanath R Hulipalled, "Efficient Face Recognition System for Identifying Lost People", International Journal of Engineering and Advanced Technology (IJEAT), 2019.