



# ONLINE AUCTION AND BIDDING ADMINISTRATION SYSTEM

KR

## A PROJECT REPORT

*Submitted by*

**KABILAN P                            811722104066**

**KEVIN JACOB D                      811722104075**

**KEVIN JOEL K                      811722104076**

*in partial fulfilment of the requirements for the award degree of  
Bachelor in Engineering*

## **20CS7503 DESGIN PROJECT -3**

**DEPARTMENT OF COMPUTER SCIENCE AND  
ENGINEERING**

**K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY  
(AUTONOMOUS)**

**SAMAYAPURAM - 621112**

**NOVEMBER 2025**

**K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY**  
**(AUTONOMOUS)**  
**SAMAYAPURAM - 621112**

**BONAFIDE CERTIFICATE**

The work embodied in the present project report entitled "**ONLINE AUCTION AND BIDDING ADMINISTRATION SYSTEM**" has been carried out by the students **Kabilan P, Kevin Jacob D, Kevin Joel K**, the work reported herein is original and we declare that the project is their own work, except where specifically acknowledged, and has not been copied from other sources or been previously submitted for assessment.

Date of Viva Voce: .....

**Mr. R. Rajavarman, M.E., (Ph.D.,)**  
SUPERVISOR  
Assistant Professor  
Department of CSE  
K. Ramakrishnan College of  
Technology  
Samayapuram -621 112

**Mr. R. Rajavarman, M.E., (Ph.D.,)**  
HEAD OF THE DEPARTMENT  
Assistant Professor (Sr. Grade)  
Department of CSE  
K. Ramakrishnan College of  
Technology  
Samayapuram -621 112

**INTERNAL EXAMINER**

**EXTERNAL EXAMNIER**

## ABSTRACT

This project presents an Online Auction and Bidding Administration System, a web-based platform designed to digitize the traditional auction process by offering a structured, secure, and user-friendly environment for online bidding. The system enables registered users to participate as buyers or sellers, where sellers can list items for auction and buyers can place manual bids within a predefined time window. When the auction duration expires, the system automatically finalizes the auction and awards the item to the highest bidder. Unlike auto-bidding mechanisms, this platform emphasizes manual user participation and requires the winning bidder to confirm the purchase to complete the transaction.

This system demonstrates a reliable approach to managing competitive bidding while maintaining transparency and fairness throughout the auction process. With its structured workflow, real-time updates, and secure authentication, the platform enhances user trust and convenience. The modular design also makes it adaptable for future expansion, such as integrating automated bidding, payment processing, and intelligent recommendation features to further enhance usability and scalability.

**Keywords:** Online Auction System, Bidding Platform, Web Application, Manual Bidding, Product Listing, Auction Timer, Bid History, User Authentication.

## ACKNOWLEDGEMENT

We thank our **Dr. N. Vasudevan**, Principal, for his valuable suggestions and support during the course of my research work.

We thank our **Mr. R. Rajavarman**, Head of the Department, Assistant Professor (Sr. Grade), Computer Science and Engineering, for his/her valuable suggestions and support during the course of my research work.

We wish to record my deep sense of gratitude and profound thanks to my Guide **Mr. R. Rajavarman**, Assistant Professor, Computer Science and Engineering for her keen interest, inspiring guidance, constant encouragement with my work during all stages, to bring this thesis into fruition.

We are extremely indebted to our project coordinator **Mr. M. Saravanan**, Assistant Professor, Computer Science and Engineering, for his valuable suggestions and support during the course of my research work.

We also thank the faculty and non-teaching staff members of the Computer Science and Engineering, K. Ramakrishnan College of Technology (Autonomous), Samayapuram, for their valuable support throughout the course of my research work.

Finally, we thank our parents, friends and our well wishes for their kind support.

## SIGNATURE

---

---

---

## TABLE OF CONTENTS

| CHAPTER NO. | TITLE   | PAGE No.    |
|-------------|---|-------------|
|             | <b>ABSTRACT</b>                                 | <b>iii</b>  |
|             | <b>LIST OF FIGURES</b>                          | <b>vii</b>  |
|             | <b>LIST OF ABBREVIATIONS</b>                    | <b>viii</b> |
| <b>1</b>    | <b>INTRODUCTION</b>                             | <b>1</b>    |
|             | 1.1 DESCRIPTION                                 | 1           |
|             | 1.2 E-COMMERCE AND DIGITAL<br>MARKETPLACE       | 2           |
|             | 1.3 REAL-TIME BIDDING AND AUCTION<br>MANAGEMENT | 3           |
| <b>2</b>    | <b>LITERATURE SURVEY</b>                        | <b>5</b>    |
| <b>3</b>    | <b>EXISTING SYSTEM</b>                          | <b>15</b>   |
| <b>4</b>    | <b>PROBLEMS IDENTIFIED</b>                      | <b>17</b>   |
| <b>5</b>    | <b>PROPOSED SYSTEM</b>                          | <b>19</b>   |
| <b>6</b>    | <b>SYSTEM REQUIREMENTS</b>                      | <b>22</b>   |
|             | 6.1 HARDWARE REQUIREMENTS                       | 22          |
|             | 6.2 SOFTWARE REQUIREMENTS                       | 22          |
| <b>7</b>    | <b>SYSTEM IMPLEMENTATIONS</b>                   | <b>23</b>   |
|             | 7.1 MODULE DESCRIPTION                          | 23          |
|             | 7.1.1 User Registration & Login                 | 23          |
|             | 7.1.2 Product Listing by Seller                 | 24          |
|             | 7.1.3 Manual Bidding System                     | 24          |
|             | 7.1.4 Time-Based Auction Closing                | 25          |

| <b>CHAPTER NO.</b> | <b>TITLE</b>                      | <b>PAGE No.</b> |
|--------------------|-----------------------------------|-----------------|
|                    | 7.1.5 Winner Notification         | 25              |
| <b>8</b>           | <b>SYSTEM TESTING</b>             | 26              |
|                    | 8.1 UNIT TESTING                  | 26              |
|                    | 8.2 FUNCTIONAL TESTING            | 26              |
|                    | 8.3 NON-FUNCTIONAL TESTING        | 27              |
|                    | 8.4 BLACK BOX TESTING             | 27              |
|                    | 8.5 WHITE BOX TESTING             | 28              |
| <b>9</b>           | <b>RESULTS AND DISCUSSION</b>     | 29              |
| <b>10</b>          | <b>CONCLUSION AND FUTURE WORK</b> | 31              |
|                    | 10.1 CONCLUSION                   | 31              |
|                    | 10.2 FUTURE ENHANCEMENTS          | 32              |
|                    | <b>APPENDIX A - SOURCE CODE</b>   | 33              |
|                    | <b>APPENDIX B - SCREENSHOTS</b>   | 43              |
|                    | <b>REFERENCES</b>                 | 51              |

## LIST OF FIGURES

| <b>FIGURE NO</b> | <b>FIGURE NAME</b>      | <b>PAGE NO</b> |
|------------------|-------------------------|----------------|
| 3.1              | Existing System Diagram | 16             |
| 5.1              | Proposed System Diagram | 20             |
| B.1              | Home Page               | 43             |
| B.2              | User Login Screen       | 44             |
| B.3              | Seller Dashboard        | 44             |
| B.4              | Create New Auction      | 45             |
| B.5              | My Listings             | 45             |
| B.6              | Browse listings         | 46             |
| B.7              | Bidding Section         | 46             |
| B.8              | Item Preview            | 47             |
| B.9              | Bidding Confirmation    | 47             |
| B.10             | Bid History             | 48             |
| B.11             | Profile Update          | 48             |
| B.12             | Admin Dashboard         | 49             |
| B.13             | Auction Management      | 49             |
| B.14             | User Management         | 50             |

## LIST OF ABBREVIATIONS

|       |                                       |
|-------|---------------------------------------|
| UI    | User Interface                        |
| UX    | User Experience                       |
| SQL   | Structured Query Language             |
| HTML  | Hypertext Markup Language             |
| CSS   | Cascading Style Sheets                |
| JS    | JavaScript                            |
| PHP   | Hypertext Preprocessor                |
| RDBMS | Relational Database Management System |
| AI    | Artificial Intelligence               |
| CRUD  | Create, Read, Update, Delete          |
| IP    | Internet Protocol                     |
| URL   | Uniform Resource Locator              |
| HTTP  | Hypertext Transfer Protocol           |
| MVC   | Model-View-Controller                 |
| 2FA   | Two-Factor Authentication             |
| KNN   | K-Nearest Neighbors                   |

# CHAPTER 1

## INTRODUCTION

### 1.1 DESCRIPTION

The online auction and bidding administration system a web-based application developed to modernize and streamline the traditional auction process by offering an online platform where sellers can list items and buyers can place bids in real time within a specified time frame. This system eliminates the limitations of physical auctions such as geographical restrictions, limited participant access, and time constraints. It provides secure user registration and authentication, manual bidding, seller product listing, auction time tracking, winner announcement, and post-auction purchase confirmation, all through an intuitive and user-friendly interface. An admin module is included to manage users and ensure proper monitoring of all system activities. A key feature of the system is the integration of a recommendation mechanism using the K-Nearest Neighbors (KNN) algorithm, which analyzes user activity to suggest relevant auctions, enhancing the personalized experience. While the current version does not implement payment processing, this functionality is planned as part of future enhancements. Overall, the system demonstrates the integration of full-stack web development and basic machine learning to build a functional and scalable auction platform.

The integration of the KNN-based recommendation engine further enhances the platform's intelligence and user engagement. By analyzing user interactions- such as browsing patterns, previous bids, and product categories-the system generates personalized suggestions that help users discover relevant items quickly. This not only improves the user experience but also increases auction visibility for sellers, potentially boosting overall platform activity.

## 1.2 E-COMMERCE AND DIGITAL MARKETPLACE

The Online Auction and Bidding Administration System primarily belongs to the broader domain of E-Commerce and Digital Marketplace Solutions. In this domain, the system acts as a digital platform that facilitates the buying and selling of goods through a dynamic, auction-based model rather than conventional fixed price purchasing. The core purpose of this domain is to enable a virtual commercial environment where sellers can list their products and buyers can interact with these listings from any location. Sellers are provided with tools to upload detailed product descriptions, images, minimum bid price, and auction timelines, creating an organized and transparent catalog for potential buyers. Buyers, on the other hand, can browse through various categories, compare items, participate in active auctions, and place competitive bids in a secure environment. This marketplace aims to replicate and enhance traditional auction experiences by eliminating geographical constraints, physical presence requirements, and manual handling of bids. The domain ensures seamless interaction between the system and its users by incorporating secure login mechanisms, encrypted data transfer, user profile management, and safe transaction handling. It also supports features such as product search, filtering, sorting, viewing previous auction results, and checking seller credibility through ratings and reviews. Furthermore, the system adapts to the commercial needs of different user groups by supporting both casual buyers and professional sellers, thereby broadening its scope. The digital marketplace domain also emphasizes scalability, ensuring that the platform can handle increasing numbers of users and auctions without affecting performance.

In addition, it focuses on reliability, meaning the platform must consistently function without downtime to avoid losing potential bids or sales. It also includes support for responsive design so that users can access the marketplace across mobile phones, tablets, and computers. Another essential aspect is secure payment integration, enabling successful buyers to proceed with checkout using safe online payment gateways. The domain ensures compliance with legal and ethical online

commerce standards, including data protection and anti-fraud policies. Overall, this domain highlights the transformation of traditional auctions into a modern digital ecosystem, enhancing accessibility, convenience, transparency, and business growth opportunities through an online marketplace structure.

### **1.3 REAL-TIME BIDDING AND AUCTION MANAGEMENT**

The Online Auction and Bidding Administration System is centered around RealTime Bidding and Auction Management, a specialized technological domain that focuses on the real-time processing of bids, auction monitoring, and dynamic event handling. This domain is responsible for managing all live auction activities, ensuring that every bid placed by a participant is accurately captured, validated, and updated instantly. It includes the creation and configuration of auction events, where system administrators or sellers define auction rules such as start time, end time, bid increment value, product reserve price, and bidding eligibility. The real-time engine continuously tracks bid values, compares them, and automatically updates the highest bid to reflect the most recent valid offer, ensuring transparency and fairness. The system maintains countdown timers for each auction, alerting users about the time remaining and updating the interface without requiring manual page refreshes. Real-time notifications are a critical element in this domain, informing bidders when they have been outbid so they can react quickly.

This domain also handles automatic auction closure, declaring winners based on the highest valid bid recorded at the exact closing time. It ensures that time synchronization is precise so that no last-second bid is missed or mishandled. Furthermore, auction management includes data logging of bid history, which enables users to review their past bids and administrators to monitor unusual patterns. It incorporates fraud detection mechanisms to prevent unethical behaviors such as bid rigging, bot-generated bidding, or unauthorized access. Administrators can intervene in auctions if irregular activity is detected, ensuring the legitimacy of the bidding process. This domain also emphasizes system performance, requiring fast

data processing, efficient server communication, and reliable backend services to handle simultaneous bids from multiple users. Scalability is equally important because peak auction times may involve high traffic and intense bid activity. The domain ensures that all auction events remain stable and uninterrupted under load. Moreover, it provides features such as auction analytics, real-time dashboards, bidder activity reports, and performance statistics for administrators. Error handling is also integrated to manage issues such as network delays or failed bid submissions. This domain ensures that the entire auction flow—from starting the auction, processing live bids, updating values, sending alerts, and declaring winners—is managed in a controlled, transparent, and real-time manner. Ultimately, the RealTime Bidding and Auction Management domain guarantees fairness, efficiency, and accuracy in the auction experience, making the system trustworthy and professionally managed.

## CHATPER 2

### LITERATURE SURVEY

#### **2.1 IMPLEMENTATION OF SECURE ONLINE AUCTION SYSTEM USING BLOCKCHAIN TECHNOLOGY M. ANWAR, F. SHEIKH – 2024**

Anwar and Sheikh propose a decentralized auction model using blockchain to enhance transparency, data integrity, and user trust in online bidding environments. The authors explain that centralized auction platforms are vulnerable to several security issues such as unauthorized data alteration, deletion of historical bids, fake participants, and manipulation of bidding outcomes by privileged administrators. Blockchain technology resolves these problems by using a distributed ledger where every bid is recorded immutably with a secure timestamp, ensuring that no entity - not even the system administrator - can modify or remove transactions once stored.

The paper highlights smart contracts as a major advancement, enabling automation of bidding rules such as minimum increments, time closure, real-time ranking of bidders, and automatic declaration of the highest bidder at the end of an auction. These contracts eliminate the need for manual intervention and reduce the chances of human-influenced fraud. Furthermore, cryptographic hashing ensures secure identity protection and prevents unauthorized access while still maintaining visibility of bid values for open and fair competition. The authors acknowledge the increased infrastructure costs and processing delays associated with blockchain networks but conclude that the security and trust benefits delivered are far more critical in online trading systems.

## **2.2 AUCTION BIDDING PLATFORM FOR BUYING AND SELLING GOODS USING FULL STACK, DR.MEKAMBARAM NAIDU – 2024**

Dr. M. Ekambaram Naidu focuses on the development of a full-stack auction platform designed to support real-time interaction between buyers and sellers in a secure and responsive digital environment. The study emphasizes clearly defined system modules, including user authentication, product catalog management, bid submission, and admin oversight. By utilizing technologies such as HTML, CSS, JavaScript, Node.js, and MongoDB, the system ensures smooth communication between the front-end interface and back-end services. The author stresses the importance of transactional integrity, where every bid submitted by users must be accurately reflected and validated in the database. Performance considerations such as minimizing page reloads and reducing latency during bidding peaks are achieved through asynchronous operations and optimized server responses. Error handling mechanisms are also implemented to prevent invalid bid entries and unauthorized access to sensitive features, ensuring that the system remains reliable even during heavy usage.

The research highlights the significance of real-time bid updates and seamless navigation to improve user engagement throughout the auction lifecycle. The author proposes modular development practices to simplify maintenance and enable future scalability, which is crucial for handling growing user demand. These architectural and design strategies directly influenced the development of our E-Auction System, especially in how front-end and back-end components communicate to ensure fast bid processing and consistent user experience. While the paper focuses primarily on core auction functionalities without integrating data-driven enhancements

## 2.3 REAL-TIME AUCTION SYSTEM WITH MULTI-DEVICE COMPATIBILITY L. HERNANDEZ, M. WONG – 2023

Hernandez and Wong address the growing need for ensuring that online auction platforms are accessible and fully functional across a wide variety of digital devices, such as smartphones, laptops, and tablets. The researchers propose a responsive UI design framework that guarantees consistent visual layout, scalable interface components, and accurate bid interaction regardless of screen size or device specifications. Real-time communication protocols ensure that bid updates, countdown timers, and auction status changes are instantly pushed to all participants without requiring the user to refresh the page. Additionally, the authors explore solutions for maintaining session persistence when users switch devices mid-auction, ensuring uninterrupted participation. The paper highlights how cross-device compatibility enhances user convenience, encourages increased participation, and ultimately drives more competitive bidding outcomes.

The security aspects discussed include preventing session hijacking, securing multi-device logins, and ensuring that user-specific data remains protected through secure token-based authentication. This study has strongly influenced the design of our E-Auction System by ensuring that accessibility is a core objective in the UI and functional design. By supporting multiple device interactions, the platform eliminates physical and hardware limitations, allowing users to engage in auctions anytime and anywhere. The findings emphasize that in the modern online marketplace, flexibility in device usage leads to a broader audience reach and improved system usability. This ultimately helps create a more dynamic and inclusive auction environment, increasing user satisfaction and platform effectiveness.

## **2.4 AUCTION AS A METHOD OF PRIVATIZATION OF STATE PROPERTY IMOMNIYOZOV DONIYOR BAKHTIYOROVICH – 2024**

Imomniyozov examines how auction-based mechanisms play a crucial role in the privatization of government-owned assets, ensuring fairness, transparency, and competitive pricing in public economic systems. The study emphasizes that auctions provide equal opportunities for interested buyers, reduce corruption by preventing closed-door deals, and maximize revenue for the state by allowing market-driven pricing outcomes. Important structural factors are discussed, such as proper participant verification, clear auction rules, publicly visible bidding processes, and legally enforced time frames for auction closure. These aspects help maintain trust in the privatization system and ensure legal accountability in asset distribution. The author argues that auctions promote democratic participation by allowing economically capable individuals and organizations to compete openly.

Although the study focuses on auctions used in national-scale economic policies, the underlying principles strongly relate to digital auction systems as well. Features such as secure user authentication, real-time bidding, tamper-proof records, and admin supervision directly reflect practices used in public auction models. The emphasis on eliminating manipulation and providing clear bidding transparency has influenced the implementation of key functionalities in our E-Auction System, such as deadline-driven bidding and result visibility. This literature reinforces the importance of trust and integrity in auction environments, motivating us to design a platform where fairness is guaranteed and manipulation risks are minimized. It validates the broader relevance of auction-based methods beyond e-commerce settings, highlighting their impact on maintaining ethical trade and equitable competition in high-value transactions.

## 2.5 DEVELOPMENT OF REAL-TIME ONLINE AUCTION SYSTEM USING WEBSOCKET PROTOCOL S. KAVITHA, R. NAGARAJAN – 2023

Kavitha and Nagarajan propose the adoption of the WebSocket protocol as a solution to common latency issues in traditional HTTP-based auction systems. They argue that online auctions require real-time bid propagation because even minor lags can affect final pricing outcomes and user fairness. Web Sockets facilitate full-duplex communication, allowing instant transmission of bid updates, timer changes, and user presence information without repeated page refreshes. Their architecture includes mechanisms for concurrency control and server load optimization to ensure smooth, uninterrupted performance even when user traffic spikes during intense bidding moments.

The system also integrates secure communication and bid validation techniques to preserve the credibility of transactions. WebSocket implementation ensures that bidders always see accurate, up-to-date information, enhancing both the excitement and transparency of the auction experience. This research strongly guided our selection of real-time update strategies in the E-Auction System by emphasizing responsiveness and fairness. Implementing similar technology strengthens engagement, encourages competitive bidding, and improves user trust - all crucial elements of successful digital auctions.

Furthermore, the research delves into the reliability challenges associated with maintaining long-lived WebSocket connections. The authors propose the use of heartbeat mechanisms, connection fallback strategies, and message acknowledgment systems to ensure persistent connectivity even under unstable network conditions. These techniques help prevent user disconnections during critical bidding moments, thereby safeguarding against accidental bid losses or missed updates.

## 2.6 ANALYSIS OF USER BEHAVIOR IN ONLINE AUCTION SYSTEMS

J. LEE, H. KIM – 2023

Lee and Kim investigate the behavioral traits and decision-making patterns exhibited by users participating in online auctions, focusing particularly on bidding strategies and psychological influences. Their study reveals key behavioral trends such as “bid sniping,” where participants intentionally place bids during the last few seconds of an auction to minimize competition, and incremental bidding, where users respond to others’ bids with slight increases to maintain competitive presence. The authors emphasize that time pressure, risk perception, social competition, and personal interest strongly influence how aggressively users bid. They analyze extensive auction system logs and highlight that bidders are more likely to participate actively when notifications clearly show remaining time, latest bid status, and number of active participants. They further discuss the psychological excitement associated with competitive bidding, which motivates users to continue placing higher bids even if items exceed planned spending limits.

This study directly informs the design of our E-Auction System, especially in implementing user-centric features that support fair and engaging bidding environments. For example, we strengthened visual cues such as countdown timers, live bid updates, and quick notifications to keep users aware of competitor activity. Understanding user behavior also helps identify suspicious bidding patterns that may indicate automated bot participation or fraudulent manipulation. Lee and Kim’s findings underscore the importance of enhancing user engagement through intuitive design elements while also ensuring regulatory features to maintain fairness. By tailoring the system experience around authentic human bidding patterns, online auction platforms can build a more interactive and trustworthy experience that promotes both participation and satisfaction.

## **2.7 ONLINE AUCTION SYSTEM USING ARTIFICIAL INTELLIGENCE R. PATEL, S. GUPTA – 2024**

Patel and Gupta present the integration of Artificial Intelligence (AI) into online auction platforms to enhance efficiency, competitiveness, and overall decision making. The authors utilize machine learning models to analyze user interest patterns, bidding history, and product interactions to suggest items most relevant to individual users. The research demonstrates how intelligent recommendation algorithms help users discover desired products more efficiently, reducing browsing time and increasing auction participation. AI prediction models are also explored to forecast bid outcomes and identify items that may experience higher demand during auction closings. Moreover, the study proposes potential support for automated bidding features, where an AI agent places bids on behalf of the user within predefined limits, ensuring bidders never lose opportunities due to delays or disconnections.

Although the authors mention ethical and fairness challenges surrounding automated assistance-such as creating an unfair advantage or rapidly inflating bid prices-they emphasize its controlled implementation to ensure equal opportunity across users. Their study strongly influences the innovation direction of our E-Auction System, particularly in our adoption of a K-Nearest Neighbors (KNN) recommendation module. This helps guide users toward auctions aligned with their preferences, improving satisfaction and platform utility. The contributions of this research illustrate how AI-powered intelligence can transform online auctions into smarter, more personalized, and data-driven environments while maintaining transparency and legitimacy.

## **2.8 DESIGN AND IMPLEMENTATION OF ONLINE AUCTION SYSTEM A. S. RANI, S. RAMYA – 2023**

Rani and Ramya describe a structured online auction system framework built using PHP and MySQL to support product listing, secure user authentication, dynamic bidding, and automated winner selection. The authors emphasize the importance of database integrity, where every bid is time-stamped and validated to ensure that only legitimate bids update the current status. Their system introduces role-based access control, where administrators manage auction items while users can view and participate in ongoing auctions. They highlight that security mechanisms like session handling and input validation protect the platform from unauthorized access and common web vulnerabilities such as injection attacks.

The core architecture discussed in this study aligns closely with the baseline structure of our E-Auction System. Their implementation proves the effectiveness of a centralized auction model with clear interaction roles and workflow automation. However, the system lacks advanced real-time bidding or recommendation intelligence, which we have enhanced using modern machine learning techniques and UI improvements. The paper contributes essential foundational elements, including bid comparison algorithms, countdown-based auction closures, and activity monitoring. These practical insights helped form the operational backbone of our platform while enabling us to expand upon their approach with improved accessibility, technical scalability, and user experience design.

## **2.9 AUCTION RECOMMENDATION SYSTEM USING COLLABORATIVE FILTERING P. SHARMA, V. SINGH – 2023**

Sharma and Singh introduce a personalized recommendation system within online auction platforms using collaborative filtering, a technique that groups similar users based on shared interests and purchase behaviors. The system analyzes bid histories, product searches, and category visits to recommend items that users are likely to show interest in. Their research highlights how personalization increases user engagement, reduces the time spent navigating, and improves the overall likelihood of active bidding. They explore both user-based and item-based filtering approaches to enhance prediction accuracy, as well as hybrid models to address data sparsity in new auctions with fewer participants.

This study holds significant relevance to our E-Auction System because we incorporated a K-Nearest Neighbors algorithm to enhance product discovery and improve bidding efficiency. With intelligent suggestions, users become more involved and platform success improves. Sharma and Singh emphasize that recommendation support not only improves user satisfaction but also boosts the economic performance of auction platforms through a larger number of active bids. Their work provides a solid reference point for designing intelligent engagement strategies in competitive marketplaces and reinforces the need for user-specific content delivery in digital auctions.

**2.10 A STUDY ON ONLINE AUCTION SYSTEM USING MACHINE  
LEARNING TECHNIQUES K. SRINIVAS, M. BHANU PRAKASH –  
2023**

Srinivas and Prakash examine machine learning applications in online auctions to automate fraud detection, analyze demand patterns, and optimize system performance through predictive analytics. They present algorithms such as decision trees, clustering, and regression models to help systems recognize suspicious behavior, like unusually fast bidding or repetitive bid increments from the same source. Machine learning also assists in forecasting pricing behavior and identifying items likely to receive high competition based on historical trends. Their prototype integrates intelligent processing into a traditional auction system to improve reliability and dynamic pricing decisions.

The concept of using ML to identify user preferences directly aligns with our implementation of KNN-based recommendations, making bidding more useful and efficient for participants. Their findings reinforce the importance of smart automation and data-driven insights when user volumes increase and operational challenges expand. Srinivas and Prakash show how ML can contribute to a secure, adaptive environment that enhances decision-making accuracy. Their research motivates future work in our system to introduce real-time fraud analytics, anomaly detection, and price-trending models for improved fairness and auction profitability.

## CHAPTER 3

### EXISTING SYSTEM

#### **3.1 EXISTING SYSTEM**

The proposed online auction and bidding administration system is developed as a robust and scalable platform that addresses the common shortcomings found in existing auction solutions. It offers essential features like product listing, manual bidding, time-based auction closure, and winner notification, while also incorporating enhancements aimed at improving usability, security, and system intelligence.

This system introduces a time-bound manual bidding environment where sellers can list products with relevant details and set auction durations. Buyers can place their bids in real-time until the auction expires. At the end of the bidding period, the system automatically identifies the highest bidder and notifies them accordingly. Unlike conventional systems, this platform requires the winning bidder to manually confirm their purchase, promoting intentional participation and reducing disputes.

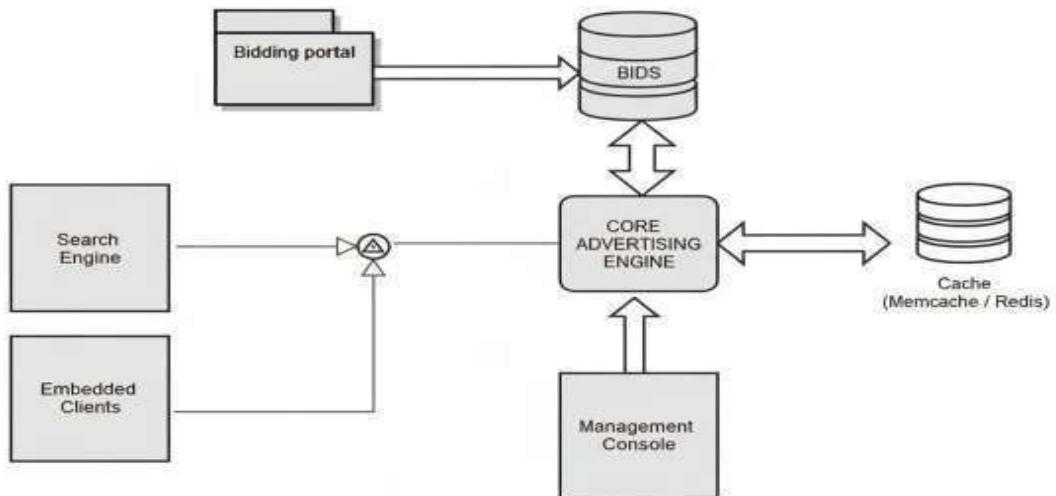
One of the key advancements in the proposed system is the integration of a K Nearest Neighbors (KNN) based recommendation engine. This functionality analyzes user behavior, previous bids, and interests to suggest relevant products, aiming to increase user engagement and satisfaction. In contrast to traditional auction platforms with limited recommendation capabilities, this system provides a more personalized experience.

Real-time bid updates are achieved through dynamic page scripting, enhancing the user experience by displaying live bid changes without manual refresh. While it does not yet incorporate advanced protocols like WebSocket, the current implementation ensures a smoother bidding process compared to static systems.

Security has also been emphasized in the design. The system enforces strong user authentication and bid validation protocols, with input sanitization and database constraints to prevent unauthorized actions and data inconsistencies. Although blockchain-based decentralization is not part of this version, the system architecture supports modular upgrades for integrating future security mechanisms such as two factor authentication or encrypted communication.

While the payment module is intentionally excluded in the initial phase to maintain system simplicity, provisions have been made in the backend for future integration of payment gateways, enabling seamless transactions between users. This approach allows the project to focus first on building a reliable auction flow before expanding into transaction processing.

Administrative features have also been incorporated, allowing platform managers to oversee user activities, monitor auctions, and handle disputes or fraudulent behavior.



**Figure 3.1: Existing System**

## CHAPTER 4

### PROBLEMS IDENTIFIED

#### **1. Manual and Traditional Auction Process**

Most auctions are still conducted in physical locations, requiring participants to be present at a specific time and place. This creates inconvenience and restricts participation to only those who can attend, reducing the overall effectiveness of the auction process.

#### **2. Limited Buyer and Seller Reach**

Due to geographical constraints, both buyers and sellers have a limited audience. Sellers often fail to reach potential bidders who might offer a better price, and buyers miss opportunities to purchase valuable items that are not available near them.

#### **3. Time-Consuming Operations**

Conducting auctions offline involves several manual activities such as registration, bid management, verification, and payment settlement. These slow processes result in delays and inefficiencies in completing transactions.

#### **4. Lack of Transparency and Trust**

Offline auctions may lead to trust issues as there is no reliable proof of bids placed by users. Miscommunication, favoritism, or manipulation in bid values can occur, affecting the fairness of auction results.

#### **5. Security and Data Handling Issues**

Physical documentation and non-secure records increase the chances of data loss, theft, or unauthorized access. Ensuring secure identity verification and bidder authentication becomes a major challenge.

#### **6. No Real-Time Updates or Notifications**

In traditional auctions, bidders may not be immediately informed about counter bids or auction status. Lack of real-time communication decreases competitive bidding and may result in lower final prices for auction items.

## **7. Inefficient Record Management**

Manual storage of auction history, bidder information, item details, and transactions is error-prone. Retrieving or validating records becomes difficult, especially for repeated auctions or legal verification.

## **8. Restricted Remote Participation**

People who are traveling, living abroad, or facing mobility issues cannot attend physical auctions. This exclusion lowers bidding activity and overall success of the auction.

## **9. Delayed Payment and Settlement**

Verification of payment and completion of post-auction processes take a long time in offline platforms. This reduces responsiveness and causes dissatisfaction for both buyers and sellers.

## **10. Low Awareness of Ongoing Auctions**

Since offline promotions are limited to small regions, many interested buyers remain unaware of scheduled auctions. This leads to fewer participants and lower profit outcomes.

## **CHAPTER 5**

### **PROPOSED SYSTEM**

The proposed online auction and bidding administration system aims to revolutionize the way online auctions are conducted by delivering a transparent, time-bound, and user-friendly platform where buyers and sellers can interact efficiently. It addresses the shortcomings of traditional and existing auction platforms, such as lack of intelligent product suggestions, real-time feedback, and secure bidding environments. By leveraging modern web technologies and smart algorithms, the system ensures that the auction process is not only smooth but also intelligent and scalable.

This system enables registered users to participate in auctions where products are listed by sellers along with their description, starting price, and auction duration. Bidders can view the product details and place their bids manually before the auction time ends. The system tracks all bids in real-time, and when the timer expires, the product is automatically awarded to the highest bidder. To promote user accountability and transparency, the system requires the winning bidder to confirm the purchase manually, ensuring deliberate and confirmed participation.

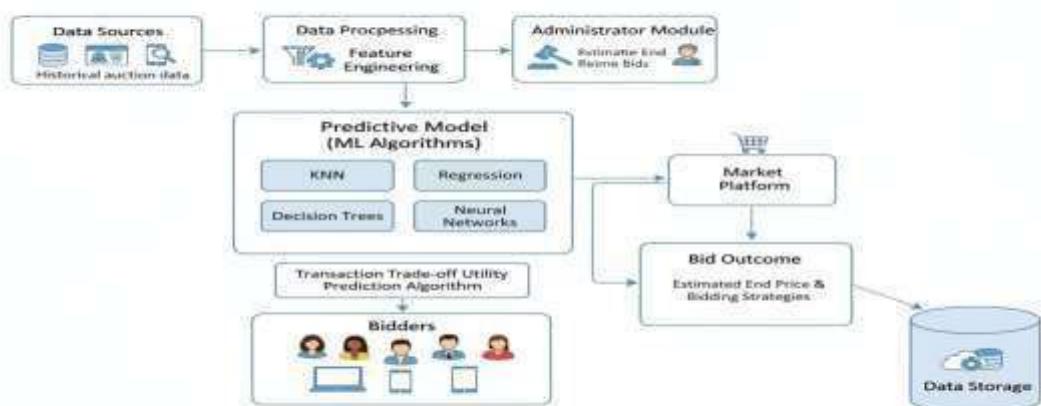
One of the distinctive features of the proposed system is the integration of the K-Nearest Neighbors (KNN) algorithm for recommendation functionality. This module intelligently suggests products to users based on their past interactions, interests, and bidding behavior, thereby improving engagement and making the platform more personalized. This feature transforms the static browsing experience into an adaptive one where the system learns and responds to user preferences dynamically.

The platform has been developed using a LAMP stack - with PHP as the server side scripting language, MySQL as the database management system, and HTML,

CSS, and JavaScript for front-end development. This ensures a lightweight yet robust structure that supports dynamic features and can be deployed on most servers easily. The user interface is responsive and accessible across a wide range of devices including desktops, tablets, and smartphones.

Security has been given high priority in the proposed system. The platform incorporates secure user authentication mechanisms, including encrypted password storage and session management. Bidding operations are protected through input validation, database-level restrictions, and server-side verification to prevent tampering or manipulation.

Although the current version does not include an integrated payment system, the architecture has been developed with modularity in mind. This allows easy future enhancement such as payment gateway integration, automatic bidding systems, and transaction verifications. Additional features like analytics dashboards for administrators and security upgrades such as CAPTCHA and 2FA can also be incorporated seamlessly in future versions.



**Figure 5.1: Proposed System**

## 5.1 ADVANTAGES

1. **Personalized Recommendations:** By implementing the K-Nearest Neighbors (KNN) algorithm, the system intelligently suggests auction items based on user preferences and previous interactions, making the platform more engaging and user-friendly.
2. **Real-Time Bidding Updates:** The system ensures instant updates of bid values without the need to reload the page, improving responsiveness and creating a seamless, competitive bidding experience.
3. **Time-Based Auction Closure:** Auctions are automatically closed once the bidding time expires, and the highest bid is recorded. This promotes fairness and eliminates confusion over auction deadlines.
4. **User Authentication and Security:** Strong login and validation processes protect the system from unauthorized access and fraudulent activities, ensuring a trustworthy environment for all participants.
5. **Cross-Device Compatibility:** The interface is responsive and optimized for desktops, tablets, and smartphones, providing users with a consistent experience across all devices.
6. **Simplified User Interface:** A clean, intuitive UI design helps users easily navigate the platform, reducing complexity for both new and experienced bidders.
7. **Scalable and Modular Architecture:** The system is built with future enhancements in mind. Modules such as payment integration, analytics, and blockchain security can be incorporated later without restructuring the core platform.

## CHAPTER 6

### SYSTEM REQUIREMENTS

#### **6.1 HARDWARE REQUIREMENTS**

| <b>Component</b>  | <b>Specification</b>  |
|-------------------|---|
| Processor         | Intel Core i3 or higher   |
| RAM               | Minimum 4 GB (8 GB recommended)                                   |
| Hard Disk         | Minimum 100 GB free space   |
| Display           | 1024 × 768 resolution or higher<br>PC, Laptop, Tablet, Smartphone |
| Devices Supported |   |

#### **6.2 SOFTWARE REQUIREMENTS**

| <b>Component</b>     | <b>Specification</b>                    |
|----------------------|---|
| Operating System     | Windows 10/11, Linux, or macOS          |
| Programming Language | HTML, CSS, JavaScript, PHP              |
| Database             | MySQL or PostgreSQL                     |
| Web Server           | Apache                                  |
| Browser Support      | Chrome, Firefox ,Edge (Latest Versions) |
| Other Tools          | VS Code                                 |

## CHAPTER 7

# SYSTEM IMPLEMENTATIONS

### 7.1 MODULE DESCRIPTION

- 7.1.1 User Registration & Login
- 7.1.2 Product Listing by Seller
- 7.1.3 Manual Bidding System
- 7.1.4 Time-Based Auction Closing
- 7.1.5 Winner Notification

#### 7.1.1 User Registration & Login

This module acts as the entry point for users of the E-Auction System. It enables new users—including bidders, sellers, and administrators—to register by providing essential information such as their name, email, contact number, and password. During registration, the system performs validation to ensure the accuracy of the data and encrypts passwords for secure storage.

The login functionality allows existing users to access the system using their registered credentials. Security features include checks against SQL injection and brute-force attempts. Role-based access control is implemented to determine whether the logged-in user is a buyer, seller, or admin, thus granting appropriate permissions. Successful login initiates a session, and session management ensures users remain authenticated until they log out, preserving both usability and security.

### **7.1.2 Product Listing by Seller**

This module enables registered sellers to add items they wish to auction. When a seller chooses to list a product, they are required to fill out a form that includes the product name, category, starting bid price, detailed description, auction duration, and an image upload.

The system validates the input data to ensure all required fields are filled and the values are within acceptable ranges. Once validated, the product is added to the list of active auctions and made available to all registered bidders. Sellers can manage their listed items, including editing product details or removing items before the auction begins. This module ensures that product listings are clean, informative, and ready for competitive bidding.

### **7.1.3 Manual Bidding System**

This module allows bidders to participate in active auctions by submitting manual bids. Users can view ongoing auctions, current highest bids, and remaining time. To place a bid, the bidder enters their bid amount manually. The system then validates that the new bid is higher than the current one and follows the required bid increment rule.

Each valid bid updates the current highest bid in real time, keeping all participants informed without requiring a page refresh. The system maintains a complete bidding history, which can be viewed by all users to ensure transparency. This module encourages fair competition and engagement among bidders.

#### **7.1.4 Time-Based Auction Closing**

Each product auction is set with a specific start and end time. This module is responsible for tracking the auction duration and ensuring the auction closes automatically when the end time is reached.

Once the auction time has expired, no more bids are accepted. The system determines the highest bidder and marks the auction as “closed.” This ensures fairness by giving all participants an equal opportunity to place their bids within the allowed time. The module eliminates manual intervention in closing auctions, thereby improving system efficiency and integrity.

#### **7.1.5 Winner Notification**

When an auction concludes, the system automatically identifies the user with the highest bid as the winner. This module generates a notification that is sent via email or displayed within the user’s dashboard.

The notification includes details such as the product name, final bid amount, and further instructions for confirming the purchase. Simultaneously, the seller is also notified of the winning bidder and final bid amount. Timely notification ensures both parties are aware of the auction result and can proceed to the next steps of the transaction.

## CHAPTER 8

# SYSTEM TESTING

### 8.1 UNIT TESTING

Unit testing is the first level of testing performed in the e-auction system to ensure that each module and function works correctly in isolation. It focuses on validating the smallest segments of code such as user login verification, bid submission processing, and admin authorization functions. For example, when a user places a new bid, the internal logic must accurately compare the bid amount with the current highest bid and update the database only if the bid is valid. Unit testing was also conducted to verify error handling for edge cases like invalid user input, bidding after auction expiration, and login attempts using incorrect credentials. By testing each method individually before integrating modules, unit testing prevents early-stage errors from spreading to other components of the system.

### 8.2 FUNCTIONAL TESTING

Functional testing was carried out to verify that the e-auction system meets all functional requirements and that every user-facing feature works as intended. During this testing, the behaviors of user registration, login, viewing auction items, bidding operations, winner declaration, and admin item management were validated. It also ensured accurate input validation, such as preventing users from placing bids lower than the existing highest bid and denying access to auctions after expiry. Proper functional behavior was additionally confirmed for unauthorized access attempts, ensuring that only privileged users could perform tasks like creating or deleting auction items. This testing guaranteed that the system functions correctly under normal usage conditions and satisfies the expected operational outcomes.

### **8.3 NON-FUNCTIONAL TESTING**

Non-functional testing was applied to check the performance, security, and usability aspects of the e-auction system. Performance testing validated that the system responds quickly, especially during real-time operations like bid updates and countdown timer refresh. The system was tested under heavy user loads to ensure that the bidding process remains smooth even when multiple bidders interact simultaneously. Security testing validated that user passwords are securely stored, database transactions are protected from unauthorized access, and restricted operations are only accessible by authenticated users. Usability testing evaluated whether the interface is simple, intuitive, and efficient for users to participate in auctions without confusion. This type of testing ensured that beyond functionality, the system is reliable, secure, responsive, and easy to use.

### **8.4 BLACK BOX TESTING**

Black box testing was performed to evaluate the external behavior of the E-Auction system without having any knowledge of its internal code structure. It focused on input and output verification, such as checking whether the system correctly displays error messages for invalid login details and prevents submission of under-valued bids. Black box tests also confirmed correct auction lifecycle behavior by ensuring that once the countdown timer reaches zero, the system automatically closes the bidding process and selects the highest bidder as the winner. This form of testing verified that all user interactions produce the expected observable outcomes and conform to system requirements.

## 8.5 WHITE BOX TESTING

White box testing concentrated on analyzing the internal logic, structure, and execution flow of the system. It ensured that all conditional statements, iterative loops, and database interactions functioned correctly and efficiently. For example, the bidding logic was examined to confirm accurate comparison of new bids with existing bids and prevention of invalid bid updates. The auction expiry function was tested at the code level to ensure that once the timer ends, the system completely blocks further bidding attempts. Additionally, admin functionalities were verified through access control logic to ensure that unauthorized users cannot reach restricted pages through URLs or hidden navigation. White box testing helped detect hidden logical errors and ensured the internal workings of the system were optimized and reliable.

## CHAPTER 9

### RESULTS AND DISCUSSION

The E-Auction System developed in this project successfully fulfills the primary objective of providing a secure and efficient digital platform for auctioning products and enabling competitive bidding among users in real-time. The system allows users to register, log in, view items, and place bids seamlessly through a user-friendly interface. Throughout various stages of testing, including unit testing, functional testing, and nonfunctional testing, the application performed effectively and demonstrated reliable behavior across all major operations.

The results indicate that real-time bid updates were accurately reflected to active participants, ensuring a fair and transparent auction process. When the auction timer expired, the system automatically restricted further bidding and correctly declared the highest bidder as the winner. Admin functionalities such as adding, modifying, and removing auction items worked efficiently without any data inconsistency. Error validation was also successful, as the system properly rejected incorrect bids, unauthorized access attempts, and invalid login information.

Performance evaluation showed that the platform maintained stable responsiveness even when multiple users interacted simultaneously during the peak bidding period. Security features such as password protection and restricted admin access helped improve trust and prevent misuse of the system. The overall user experience was observed to be smooth and intuitive, making it convenient for first-time as well as frequent users to participate in auctions without confusion.

From discussions with users during trial runs, it was found that the platform encourages wider participation since it eliminates geographical limitations and physical presence requirements. This increases competitiveness among bidders and therefore benefits sellers through better pricing outcomes. In addition, digital record-keeping helped maintain accurate transaction histories for future verification and transparency. However, a few observations were noted for future enhancement. Users suggested the inclusion of features like auction reminders, notifications for bid increments, and integration of secure payment gateways for automated settlements. Implementing mobile-friendly responsiveness could further improve accessibility. These suggestions highlight potential opportunities for upgrading the system to a more advanced commercial-level application.

Overall, the test results confirm that the E-Auction System performs reliably according to the intended goals while delivering enhanced convenience, transparency, and accessibility compared to traditional auction methods.

## CHAPTER 10

### CONCLUSION AND FUTURE WORK

#### 10.1 CONCLUSION

The development of the online auction and bidding administration system addressed the limitations of traditional offline and semi-automated auction processes. The proposed system offers a transparent, user-friendly, and secure online platform where users can participate in bidding and sellers can list products efficiently. By removing the payment functionality from the current scope, the system remains simple yet expandable for future development. The project also highlights how recommendation systems such as KNN can enhance user experience by personalizing content. This system has the potential to be integrated into real-world applications with minor enhancements.

The implementation of real-time communication technologies such as Web Sockets ensures that bidding updates, timer synchronization, and user activities are reflected instantly without the need for manual page refreshes. This significantly improves system responsiveness and fairness, particularly in competitive bidding scenarios where timing plays a crucial role. The inclusion of authentication and role-based access control also enhances data integrity and prevents unauthorized usage, making the platform reliable and secure.

The system's modular architecture allows seamless scalability, enabling future integration of additional features such as automated payment gateways, fraud detection mechanisms, and AI-based price prediction models. By incorporating machine learning techniques like KNN for personalized recommendations, the

system demonstrates how intelligent automation can increase user engagement and simplify decision-making for buyers.

## 10.2 FUTURE ENHANCEMENTS

While the online auction and bidding administration system fulfills its primary goal of facilitating transparent and time-bound online auctions, there is considerable scope for future improvements to make the platform more robust, user-centric, and scalable. One of the most valuable additions would be the integration of a secure payment gateway. This would enable users to make online payments directly through the platform once they have won an auction, streamlining the transaction process. By incorporating trusted services such as Razor pay, PayPal, or Stripe, the platform can provide a seamless and encrypted payment experience, reducing the dependency on external communication between buyers and sellers' post-auction.

Another enhancement that would greatly benefit the platform is the introduction of auto-bidding functionality. This feature would allow users to specify a maximum bid amount, after which the system would automatically place incremental bids on their behalf. This eliminates the need for users to constantly monitor ongoing auctions and creates a more competitive and dynamic bidding environment, improving overall user engagement.

In the interest of maintaining high standards of security and trust, the platform could also incorporate advanced security measures. Future versions might support two-factor authentication (2FA) for user logins, CAPTCHA implementation to prevent automated bot activities, and end-to-end encryption to protect sensitive data exchanges. These improvements would significantly reduce security vulnerabilities and enhance the overall integrity and reliability of the E-Auction System.

## APPENDIX A

### SOURCE CODE

#### Login.php

```

<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Login</title>
    <link href="css/bootstrap.min.css" rel="stylesheet">
    <link href="css/custom.css" rel="stylesheet" type="text/css">
    <style>
        body
        {
            background: linear-gradient(120deg, #f5f7fa, #c3cfe2);
            font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
            height: 100vh;
            display: flex;
            justify-content: center;
            align-items: center;
            margin: 0;
        }

        .container {
            perspective: 1000px;
            width: 500px;
        }

        .form-signin {
            background: #ffffff;
            padding: 40px 30px;
            border-radius: 12px;
            box-shadow: 0 20px 40px rgba(0, 0, 0, 0.2);
            transform-style: preserve-3d;
            transform: rotateY(0deg);
            transition: transform 0.8s ease, box-shadow 0.5s ease;
        }

        .form-signin:hover {
            transform: rotateY(5deg);
            box-shadow: 0 30px 60px rgba(0, 0, 0, 0.25);
        }
    </style>

```

```

.form-signin-heading {
  text-align: center; margin-bottom: 30px; font-weight: 600;
  color: #333;
}

.form-control {
  margin-bottom: 15px; border-radius: 6px;
  padding: 12px; font-size: 15px;
}

.checkbox {
  margin-bottom: 20px;
}

.btn-block {
  border-radius: 6px; padding: 12px;
  font-size: 16px;
}


text-align: center; margin-top: 15px;

color: #007bff; text-decoration: none;
text-decoration: underline;

```

</style>

</head>

<body>

<div class="container">

<form class="form-signin" action="login\_result.php" method="post">

<h2 class="form-signin-heading">User Login</h2>

```

        <label for="inputEmail" class="sr-only">email</label>      <input
type="text"    id="inputEmail"    class="form-control" placeholder="email"
required autofocus name="email">
        <label for="inputPassword" class="sr-only">Password</label>      <input
type="password"           id="inputPassword"          class="form-control"
placeholder="Password" required name="password">
        <div class="checkbox">
            <label>
                <input type="checkbox" value="remember-me"> Remember me
            </label>
        </div>
        <button class="btn btn-lg btn-primary btn-block" type="submit">Sign
in</button>
        <?php
            $register = 'register.php';
            echo '<p>Not a user? <a href='
. $register . '">Register</a></p>';
        ?>
        </form>
    </div>
</body>

</html>

```

## Create auction.php

```

<?php include_once("header.php")?>
<?php
/* (Uncomment this block to redirect people without selling privileges away from
this page)
// If user is not logged in or not a seller, they should not be able to // use this
page.
if (!isset($_SESSION['account_type']) || $_SESSION['account_type'] != 'seller') {
header('Location: browse.php');
}
*/
?>

<div class="container">

```

```

<!-- Create auction form -->
<div style="max-width: 800px; margin: 10px auto">
  <h2 class="my-3">Create new auction</h2>
  <div class="card">
    <div class="card-body">
      <!-- Note: This form does not do any dynamic / client-side /
JavaScript-based validation of data. It only performs checking after the
form has been submitted, and only allows users to try once. You can make
this fancier using JavaScript to alert users of invalid data before they try to
send it, but that kind of functionality should be extremely lowpriority /
only done after all database functions are complete. -->

      <form method="post" action="create_auction_result.php"
enctype="multipart/form-data">

        <!--
*****-->
        <!--***** Auction Title
*****-->
        <!--
*****-->

<div class="form-group row">
  <label for="auctionTitle" class="col-sm-2 col-form-label text-right">Title of
auction</label>
  <div class="col-sm-10">
    <input type="text" class="form-control" id="auctionTitle"
name="auctionTitle" placeholder="e.g. Black mountain bike"> <small
id="titleHelp" class="form-text text-muted"><span class="textdanger">*
Required.</span> A short description of the item you're selling, which will display
in listings.</small>
  </div>
</div>

<!--
*****-->
        <!--***** Item Name
*****-->
        <!--
*****-->

```

```

<div class="form-group row">
    <label for="itemName" class="col-sm-2 col-form-label text-right">Name of
Item</label>
    <div class="col-sm-10">
        <input type="text" class="form-control" id="itemName" name="itemName"
placeholder="e.g. insert item name">
        <small id="nameHelp" class="form-text text-muted"><span
class="textdanger">* Required.</span> A name you wish to give your
item.</small>
    </div>
</div>

<!--
*****-->
<!--***** AuctionDetails
*****-->
<!--
*****-->

<div class="form-group row">
    <label for="auctionDetails" class="col-sm-2 col-form-label
textright">Details</label>      <div class="col-sm-10">
        <textarea class="form-control" id="auctionDetails" name="auctionDetails"
rows="4"></textarea>
        <small id="detailsHelp" class="form-text text-muted">Optional.</small>
    </div>
</div>

<!--
*****-->
<!--***** AuctionCategory
*****-->
<!--
*****-->

<div class="form-group row">

```

```

<label      for="auctionCategory"      class="col-sm-2"      col-form-label
textright>Category</label>
<div class="col-sm-10">
    <select  class="form-control"      id="auctionCategory"
name="auctionCategory">
        <option selected disabled>Choose...</option>
        <option value="Electronics">Electronics</option>
        <option value="Fashion">Fashion</option>
        <option value="Home">Home</option>
        <option value="Books">Books</option>
        <option value="Other">Other</option>
    </select>
    <small   id="AuctionCategoryHelp"      class="form-text
textmuted">Optional.</small>
</div>
</div>

<!--
***** ItemColour
-->
<!--
*****-->
<!--
*****-->

<div class="form-group row">
    <label      for="itemColour"      class="col-sm-2"      col-form-label
textright>Colour</label>
    <div class="col-sm-10">
        <select class="form-control" id="itemColour" name="itemColour">
            <option selected disabled>Choose...</option>
            <?php
                $colors = ['Red', 'Orange', 'Yellow', 'Green', 'Blue', 'Purple', 'Pink',
'White', 'Grey', 'Black', 'Brown', 'Other'];
                foreach
                ($colors as $color) {
                    echo "<option value=\"$color\">$color</option>";
                }
            ?>
        </select>
    </div>
</div>
```

```

        <small id="colourHelp" class="form-text text-muted">Optional.</small>
</div>
</div>

<!--
***** ItemCondition *****
-->
<!--
***** Starting Price *****
-->

<div class="form-group row">
    <label for="itemCondition" class="col-sm-2 col-form-label textright">Condition</label>
    <div class="col-sm-10">
        <select class="form-control" id="itemCondition" name="itemCondition">
            <option selected disabled>Choose...</option>
            <option value="Great">Great</option>
            <option value="Good">Good</option>
            <option value="Okay">Okay</option>
            <option value="Poor">Poor</option>
        </select>
        <small id="conditionHelp" class="form-text text-muted"><span class="text-danger">* Required.</span> State the condition of the item</small>
    </div>
</div>

<!--
***** Starting Price *****
-->
<!--
***** Starting Price *****
-->
>
<!--
***** Starting Price *****
-->

<div class="form-group row">
    <label for="auctionStartPrice" class="col-sm-2 col-form-label textright">Starting price</label>
    <div class="col-sm-10">
        <div class="input-group">
            <div class="input-group-prepend">
```

```

<span class="input-group-text">₹</span>
</div>
<input type="number"      class="form-control"
id="auctionStartPrice" name="auctionStartPrice">
</div>
<small   id="startBidHelp"      class="form-text      text-muted"><span
class="textdanger">* Required.</span> Initial bid amount.</small>
</div>
</div>

<!--
*****-->
<!--***** Reserve Price
*****-->
<!--
*****-->

<div class="form-group row">
    <label    for="auctionReservePrice"    class="col-sm-2    col-form-label
textright">Reserve price</label>        <div class="col-sm-10">
        <div class="input-group">
            <div class="input-group-prepend">
                <span class="input-group-text">₹</span>
            </div>
            <input  type="number"  class="form-control"  id="auctionReservePrice"
name="auctionReservePrice">
        </div>
        <small id="reservePriceHelp" class="form-text text-muted">Optional.
Auctions that end below this price will not go through. This value is not displayed
in the auction listing.</small>
    </div>
</div>

<!--
*****-->
<!--***** End Date
*****-->
<!--
*****-->

```

```

<div class="form-group row">
    <label for="auctionEndDate" class="col-sm-2 col-form-label textright">End
date</label>      <div class="col-sm-10">
    <input type="datetime-local" class="form-control" id="auctionEndDate"
name="auctionEndDate">
    <small id="endDateHelp" class="form-text text-muted"><span
class="textdanger">* Required.</span> Day for the auction to end.</small>
</div>
</div>


<!--***** Photo Attach
-->
<!--
-->

<div class="form-group row">
    <label for="uploadImage" class="col-sm-2 col-form-label textright">Upload
Image</label>
    <div class="col-sm-10">
        <input type="file" name="image" id="uploadImage">
        <small id="uploadImage" class="form-text text-muted">      <span
class="textdanger">* Required.</span> Allowed file types: jpg, png, jpeg</small>
    </div>
</div>


<!--
-->

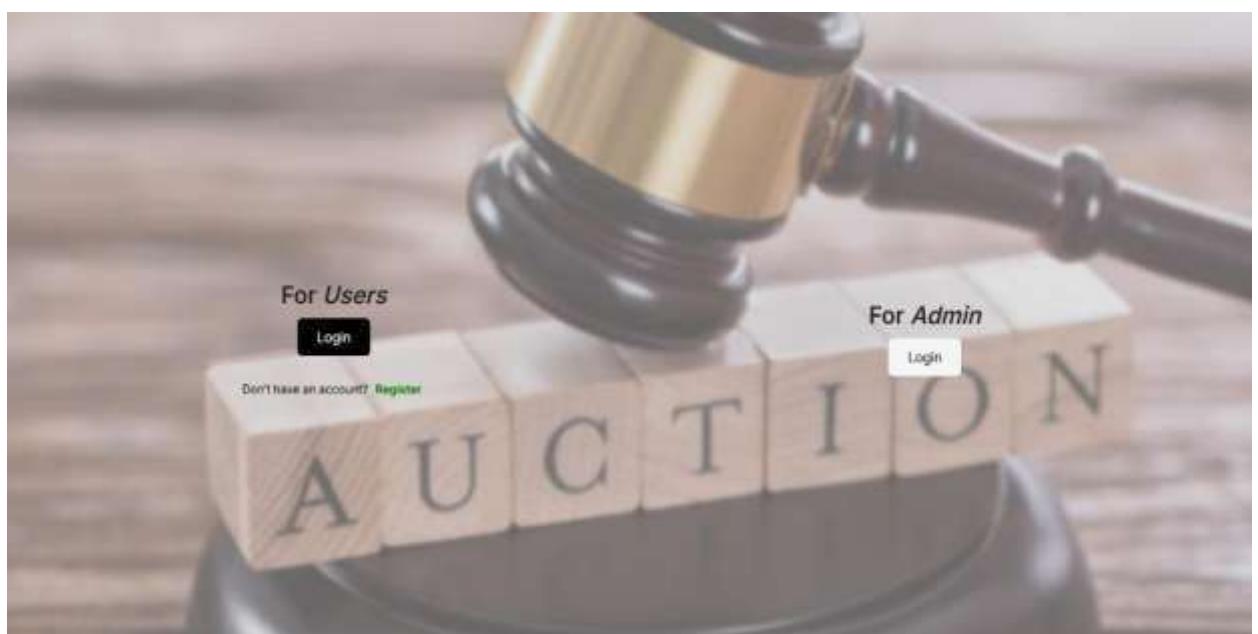
```

```
<button type="submit" class="btn btn-primary form-control">Create  
Auction</button>  
</form>  
</div>  
</div>  
</div>  
</div>  
  
<?php include_once("footer.php")?>
```

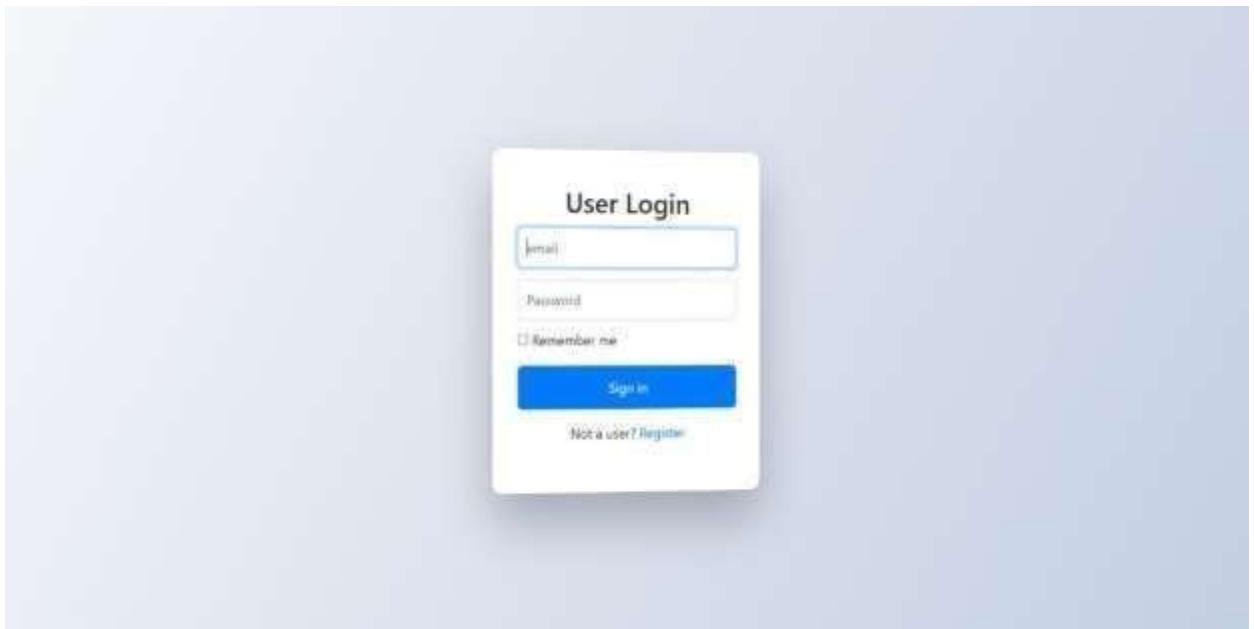
## APPENDIX B

### SCREENSHOTS

#### SAMPLE OUTPUT



FigureB.1: Home Page



**Figure B.2: User Login Screen**

A screenshot of the seller dashboard for the E-Auction System. The top navigation bar includes links for "Browse", "My Listings", "+ Create auction", and a profile icon. The main content area starts with a "Welcome, Seller!" message, followed by a section titled "Selling Activities" with three bullet points: "Browse Listings", "See My Current Listings", and "Create a New Auction". Below this is a section titled "Your Current Rating is" with the note "You haven't been rated yet".

**Figure B.3: Seller Dashboard**

E-AUCTION SYSTEM

Browse My Listings + Create auction Log in

### Create new auction

Title of auction: e.g. Black mountain bike  
Required. A short description of the item you're selling, which will display in listings.

Name of item: e.g. insert item.name  
Required. A name you wish to give your item.

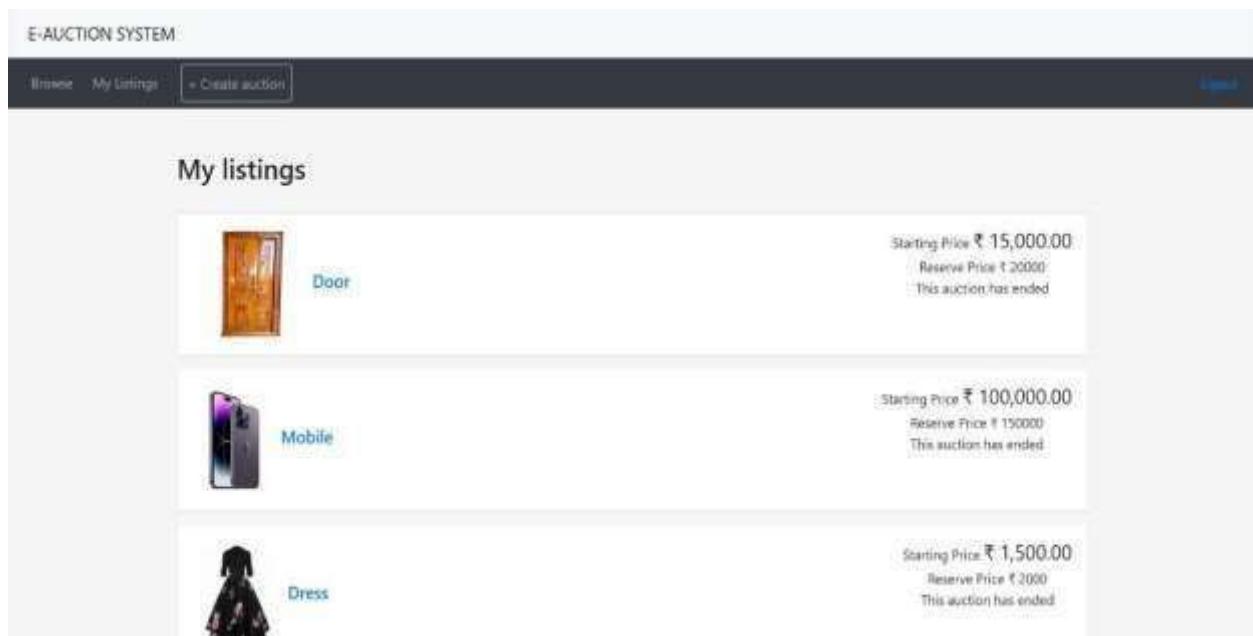
Details (Optional)

Category: Choose... (Optional)

Colour: Choose... (Optional)

Condition: Choose... (Optional)  
e.g. brand new, from the manufacturer or the store.

**Figure B.4: Create New Auction**



**Figure B.5: My Listings**

The screenshot shows the 'E-AUCTION SYSTEM' interface. At the top, there is a navigation bar with links for 'Browse', 'My listings', 'Create auction', and 'Logout'. Below the navigation bar, the title 'Browse listings' is displayed. There is a search bar with placeholder text 'Search for anything...', a dropdown menu for 'All categories', a 'Sort by' dropdown set to 'Price low to high', and a 'Search' button. The main content area displays four auction items:

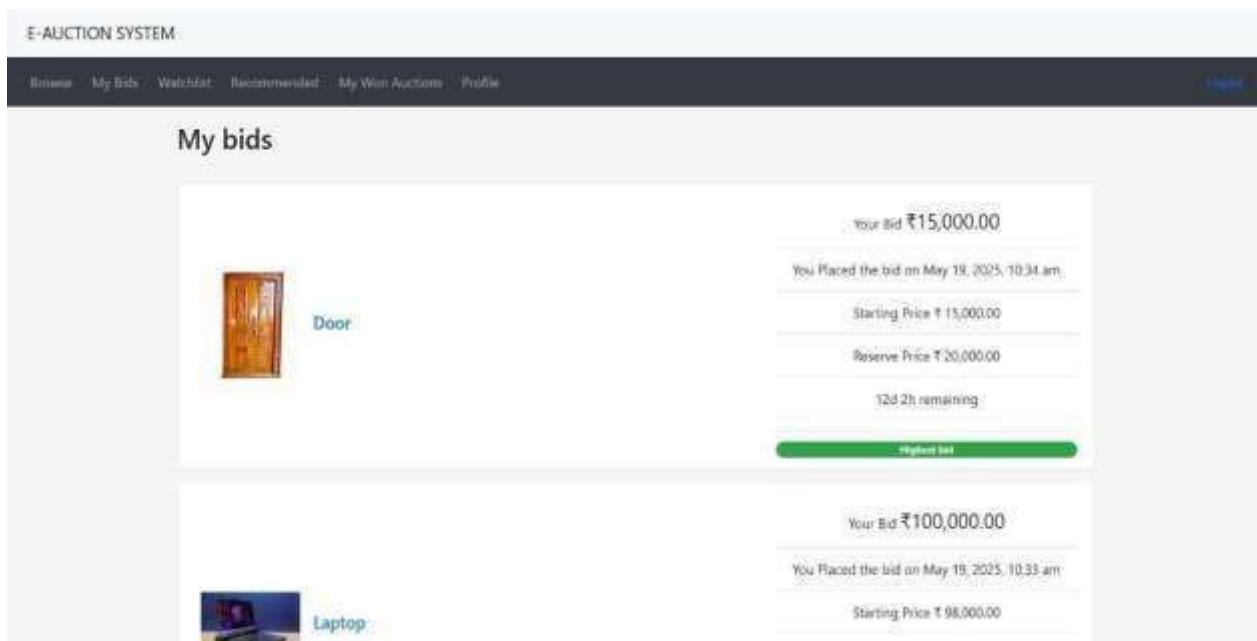
| Auction Item  | Current Bid | Bids   | Status                 |
|---------------|-------------|--------|------------------------|
| Mobile        | \$0.00      | 0 bids | This auction has ended |
| Dress         | \$0.00      | 0 bids | This auction has ended |
| Playing Thing | \$0.00      | 0 bids | This auction has ended |
| faf           | \$0.00      | 0 bids | This auction has ended |

**Figure B.6: Browse Listings**

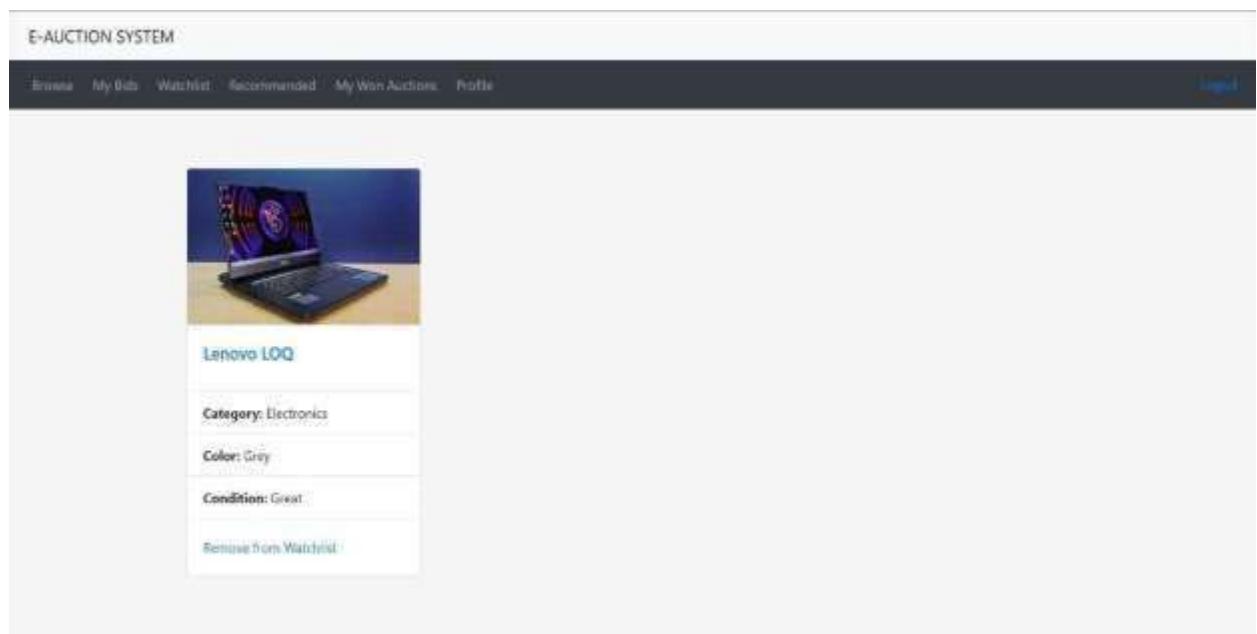
The screenshot shows the 'E-AUCTION SYSTEM' interface from the buyer's perspective. At the top, there is a navigation bar with links for 'Browse', 'My bids', 'Watchlist', 'Recommended', 'My Won Auctions', and 'Profile'. Below the navigation bar, the title 'Welcome, Buyer!' is displayed. A message 'What would you like to do today?' is shown above a section titled 'Buying Activities'. This section contains a bulleted list of activities:

- [Browse Listings](#)
- [See My Current Bids](#)
- [Check Out My Watchlist](#)
- [Look At Recommended Items](#)
- [View Won Auctions and Rate Sellers](#)

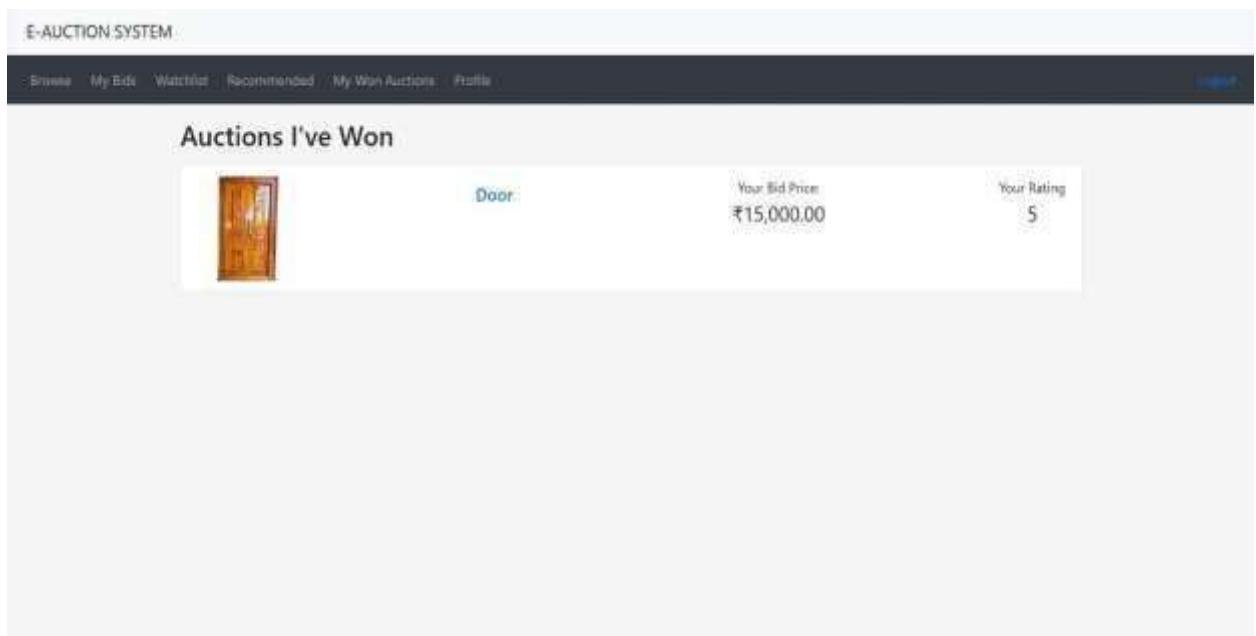
**Figure B.7: Bidding Section**



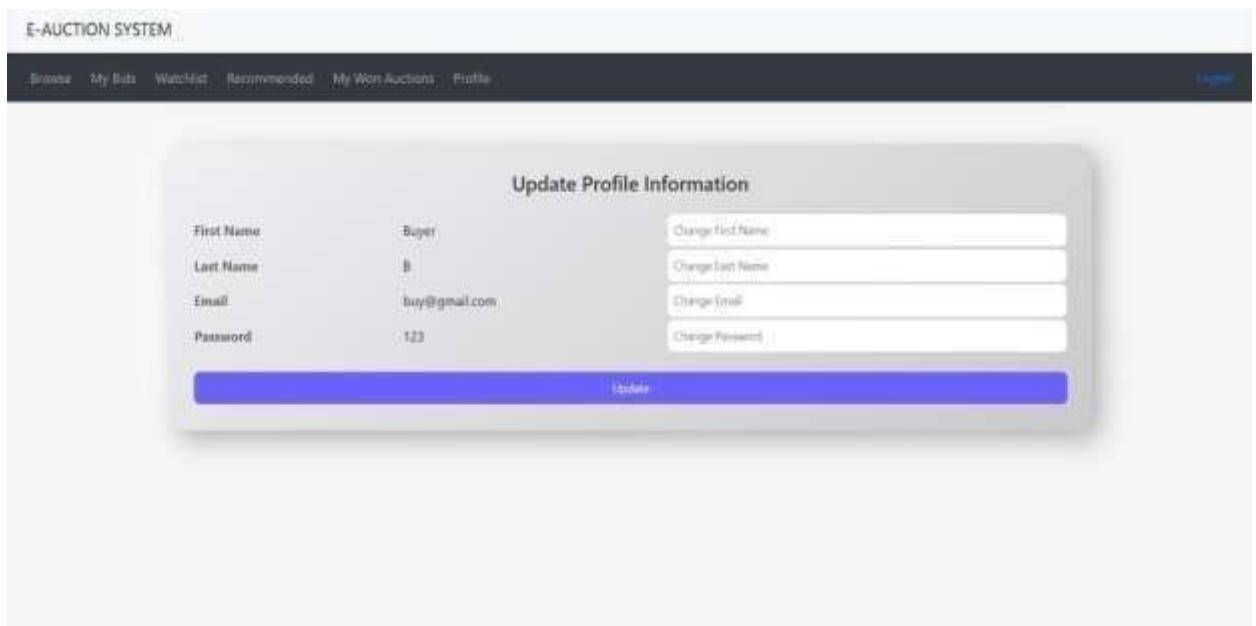
**Figure B.8: Item Preview**



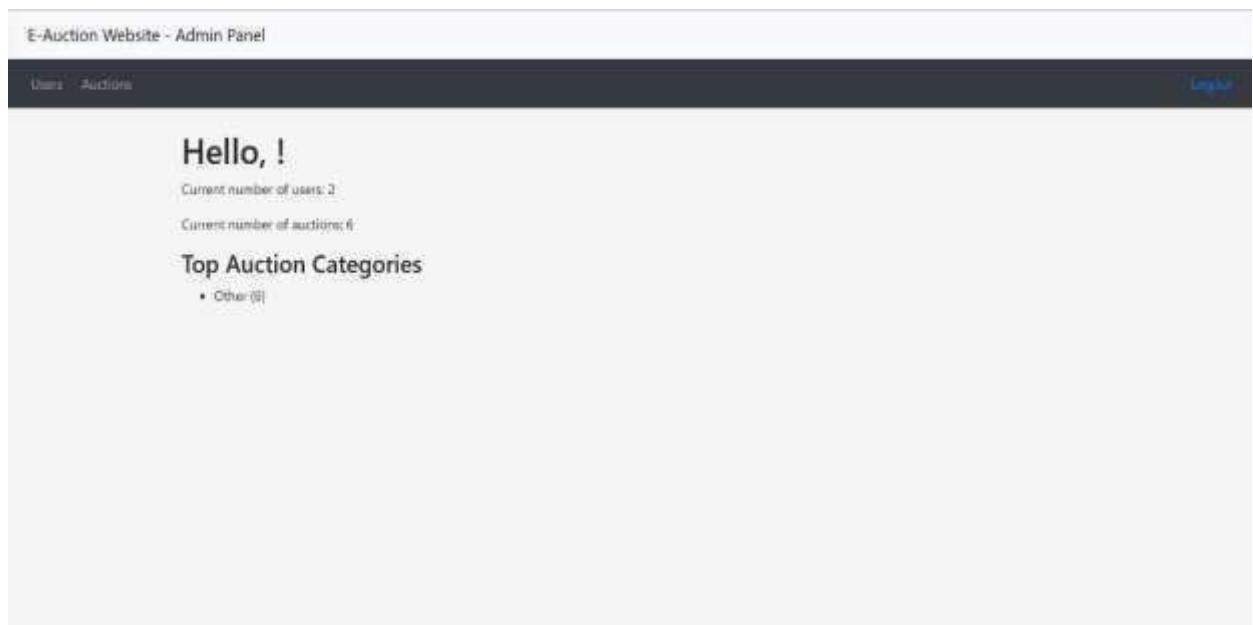
**Figure B.9: Bidding Confirmation**



**Figure B.10: Bid History**



**Figure B.11: Profile Update**



**Figure B.12: Admin Dashboard**

| Auction Management |               |                    |                     |                      |
|--------------------|---------------|--------------------|---------------------|----------------------|
| ID                 | Title         | Item Name          | End Time            | Action               |
| 1                  | Door          | Wooden Door        | 2025-05-05 15:00:00 | <a href="#">Edit</a> |
| 2                  | Mobile        | I phone 16 pro max | 2025-05-05 15:01:00 | <a href="#">Edit</a> |
| 3                  | Dress         | Girl Gown          | 2025-05-05 15:04:00 | <a href="#">Edit</a> |
| 4                  | Playing Thing | Carrom Board       | 2025-05-05 16:05:00 | <a href="#">Edit</a> |
| 5                  | faf           | faf                | 2025-05-05 16:07:00 | <a href="#">Edit</a> |
| 6                  | Play Ground   | Play Ground        | 2025-05-05 16:07:00 | <a href="#">Edit</a> |

**Figure B.13: Auction Management**

The screenshot shows the 'User Management' section of the E-Auction Website's Admin Panel. At the top, there is a navigation bar with links for 'Users', 'Auctions', and 'Logout'. Below the navigation bar, the title 'User Management' is displayed. A table lists two users:

| ID | Email           | Name     | Action               |
|----|-----------------|----------|----------------------|
| 1  | buy1@gmail.com  | Buyer B  | <a href="#">Edit</a> |
| 2  | sell1@gmail.com | Seller S | <a href="#">Edit</a> |

**Figurer B.14: User Management**

## REFERENCES

1. M. Anwar and F. Sheikh, “Implementation of Secure Online Auction System Using Blockchain Technology,” Journal of Information Security and Applications, 2024.
2. Dr. M. Ekambaram Naidu, “Auction Bidding Platform for Buying and Selling Goods and Services Using Full Stack,” International Journal of Computer Applications, 2024.
3. L. Hernandez and M. Wong, “Real-Time Auction System with Multi-Device Compatibility,” Journal of Real-Time Systems, 2023.
4. Imomniyozov Doniyor Bakhtiyorovich, “Auction as a Method of Privatization of State Property,” International Journal of Economic Research, 2024.
5. S. Kavitha and R. Nagarajan, “Development of Real-Time Online Auction System Using WebSocket Protocol,” International Journal of Computer Science and Mobile Computing, 2023.
6. J. Lee and H. Kim, “Analysis of User Behavior in Online Auction Systems,” International Journal of Human-Computer Interaction, 2023.
7. R. Patel and S. Gupta, “Online Auction System Using Artificial Intelligence,” International Journal of Computer Applications, 2024.
8. A. S. Rani and S. Ramya, “Design and Implementation of Online Auction System,” Journal of Advanced Research in Computer Science, 2023.
9. P. Sharma and V. Singh, “Auction Recommendation System Using Collaborative Filtering,” International Journal, 2023.
10. K. Srinivas and M. Bhanu Prakash, “A Study on Online Auction System Using Machine Learning Techniques,” International Journal of Innovative Research in Computer and Communication Engineering, 2023.