

**A  
Project Report  
On  
"BidSphere"**

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**A Report Submitted to**  
Charotar University of Science and Technology  
for Partial Fulfillment of the Requirements for the  
4<sup>th</sup> Semester Project-2 (CE268)  
**Submitted at**



**Department of Computer Engineering**  
**Devang Patel Institute of Advance Technology and Research (DEPSTAR)**  
**Faculty of Technology & Engineering (FTE), CHARUSAT**  
**At: Changa, Dist: Anand – 388421**  
**April 2025**



# CHARUSAT<sup>®</sup>

CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

## CERTIFICATE

This is to certify that the report entitled "BidSphere - Online auction website" is a bonafied work carried out by Hemil Hansora(23DCE041), Khushi Italiya(23DCE042), Yuvrajsinh Jadeja(23DCE043), Dev Khirsariya(23DCE059) under the guidance and supervision of Ms. Neeta Chudasama for the subject CE268-Project-2 (CE) of 4th Semester of Bachelor of Technology in Devang Patel Institute of Advance Technology & Research (DEPSTAR) at Faculty of Technology & Engineering – CHARUSAT, Gujarat.

To the best of my knowledge and belief, this work embodies the work of candidate himself, has duly been completed, and fulfills the requirement of the ordinance relating to the B.Tech. Degree of the University and is up to the standard in respect of content, presentation and language for being referred to the examiner.

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## DECLARATION BY THE CANDIDATE

We hereby declare that the project report entitled “**BidSphere**” submitted by us to Devang Patel Institute of Advance Technology & Research, Changa for Partial Fulfilment of the Requirements for the **4<sup>th</sup>** Semester Software Group **Project-2(CE268)** in Faculty of Technology and Engineering, DEPSTAR-CHARUSAT under the guidance of **Assistant Prof. Neeta Chudasama**. I further declare that the work carried out and documented in this project report has not been submitted anywhere else either in part or in full and it is the original work, for the award of any other degree or diploma in this institute or any other institute or university.

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## **ABSTRACT**

In the digital age, traditional auction methods often lack efficiency, transparency, and accessibility. To address these challenges, BidSphere is designed as a comprehensive online auction platform that facilitates seamless and fair bidding processes. Our platform enables users to list and bid on items in real-time, ensuring a competitive and engaging auction experience. Key features include automated bid tracking, secure transactions, user authentication, and an intuitive interface that enhances usability. Sellers can showcase their products with detailed descriptions, images, and starting bids, while buyers can participate in auctions with confidence, backed by a robust rating and review system. Additionally, BidSphere integrates advanced security protocols to prevent fraudulent activities, ensuring a trustworthy marketplace. By leveraging modern web technologies and an Agile development approach, BidSphere aims to revolutionize online auctions by offering a transparent, user-friendly and efficient bidding platform.

## ACKNOWLEDGEMENT

We, the developer of web platform “**BidSphere**”, with immense pleasure and commitment would like to present the project assignment. The development of this has project give us wide opportunity to think, implement and interact with various aspects of management skills as well as the new emerging technologies.

Every work that one completes successfully stands on the constant encouragement, good will and support of the friends, colleagues and people around. We hereby avail this opportunity to express our gratitude to number of people who extended their valuable time, full support and cooperation in developing the project.

I express deep sense of gratitude towards our Head of the CE Department, Dr. Dweepna Garg and project guides Assistant Prof. Bhavika Patel for the support during the whole session of study and development and without which this project would not have been completed. It is because of them, that we were prompted to do hard work, adopting new technologies.

Thanks,  
Hemil Hansora  
Khushi Italiya  
Yuvrajsinh Jadeja  
Dev Khirsariya

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## CHAPTER 1: INTRODUCTION

### 1.1 PROJECT DEFINATION

- **BidSphere** is an online auction platform that allows users to list, bid, and purchase items in a competitive and transparent environment. Buyers can explore various auction categories, place real-time bids, and track auctions seamlessly. Sellers can showcase their products with detailed descriptions, images, and starting bids. The platform ensures fair bidding through automated bid tracking, secure transactions, and a user rating system, providing a trustworthy marketplace for all users.

### 1.2 OBJECTIVE

- Traditional auction systems often suffer from inefficiencies, lack of transparency, and geographical limitations. **BidSphere** aims to solve these issues by offering a digital-first, automated auction experience.
- Our platform provides a fair and secure bidding system where buyers and sellers interact in real-time.
- **BidSphere** ensures a smooth user experience by integrating features such as automated bid tracking, product descriptions, rating & review systems, and fraud prevention mechanisms.
- The goal is to create a trustworthy and dynamic marketplace where auctions are conducted efficiently and fairly.



## CHAPTER 2: TOOLS & TECHNOLOGY

### 1. Frontend Development

- **React.js & Tailwind CSS** – Fast UI, component-based structure, and efficient styling.

### 2. Backend Development

- **Node.js & Express.js** – Scalable, non-blocking, and ideal for API development.

### 3. Database Management

- **MongoDB** – NoSQL flexibility, high performance, and easy Node.js integration.

### 4. Authentication & Security

- **Firebase Authentication / JWT** – Secure, scalable, and supports stateless authentication.

### 5. Cloud Hosting & Deployment

- **AWS / Vercel / Netlify** – Scalable, cost-effective, and supports CI/CD.

### 6. Payment Gateway

- **Razorpay / Stripe** – Secure transactions with multiple payment options.

### 7. Project Management

- **GitHub, Jira, Agile** – Version control, task tracking, and iterative development.

### 8. Real-time Bidding

- **Socket.io** – Enables real-time bid updates with reduced server load.

## CHAPTER 3: SOFTWARE & HARDWARE REQUIREMENTS

### 3.1 SOFTWARE REQUIREMENTS

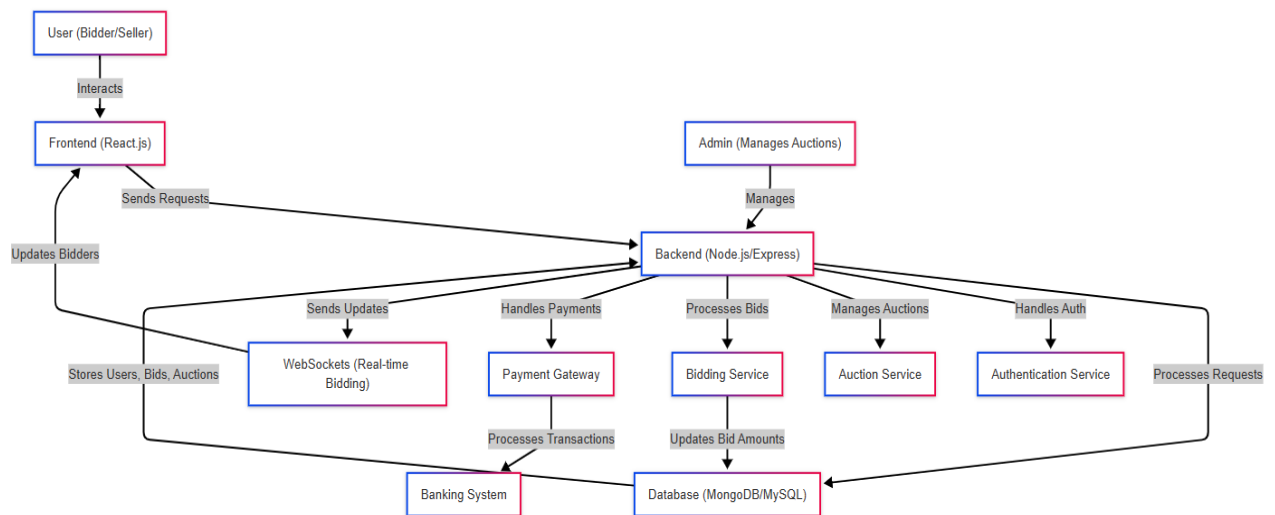
- **Browser:** Google Chrome / Mozilla Firefox
- **Development Environment:** Visual Studio Code
- **Database Management:** MongoDB Atlas
- **Backend Framework:** Node.js with Express.js
- **Frontend Framework:** React.js

### 3.2 HARDWARE REQUIREMENTS

- **RAM:** Minimum 8GB
- **Processor:** Intel Core i5 8th Gen or higher
- **Storage:** Minimum 256GB SSD for fast processing

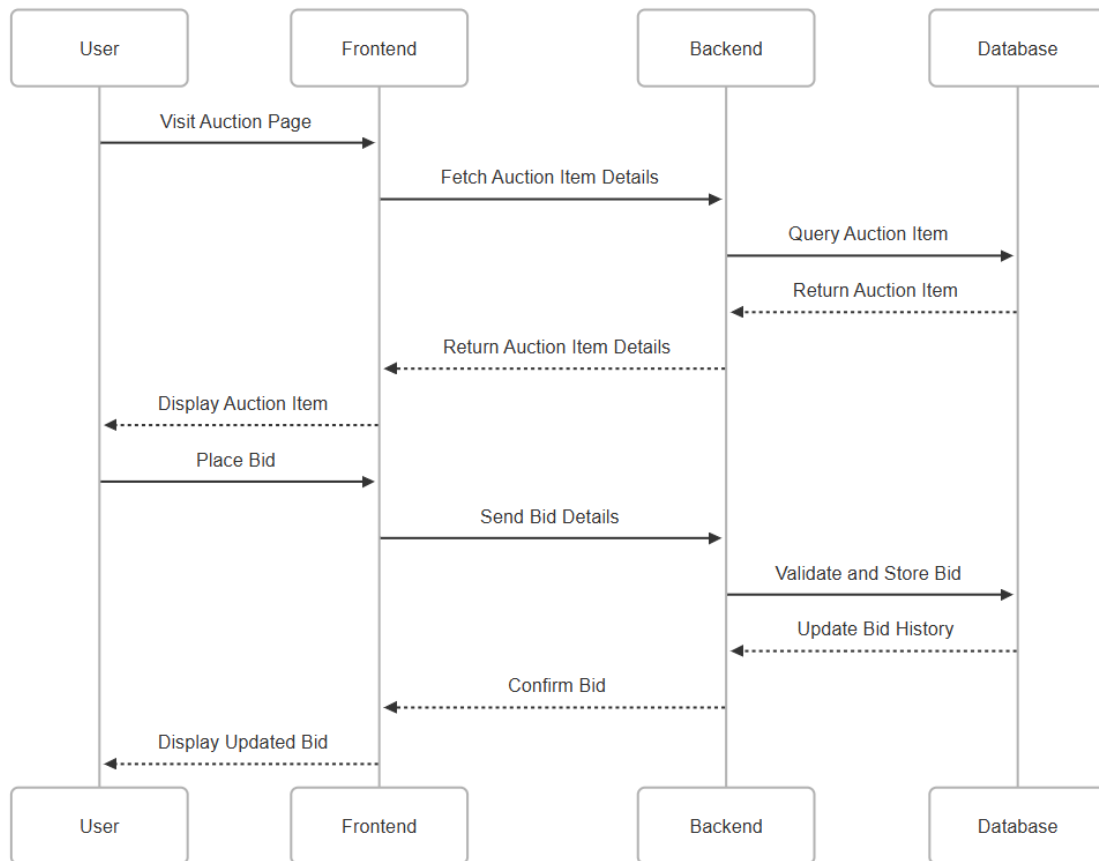
## CHAPTER 4: WORKFLOW DIAGRAM

### 4.1 COMPONENT DIAGRAM



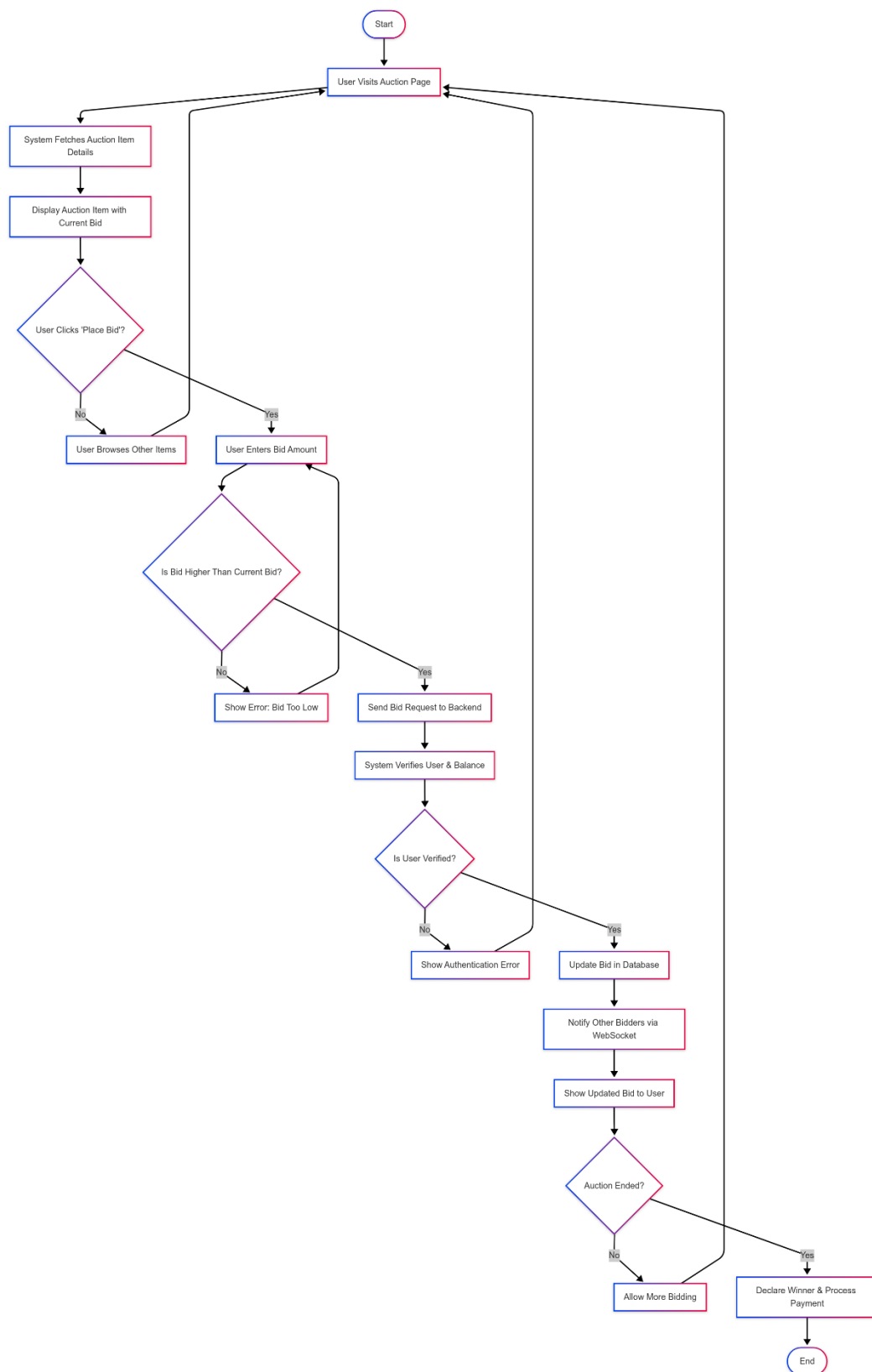
**Fig 4.1 Component Diagram**

## 4.2 SEQUENCE DIAGRAM



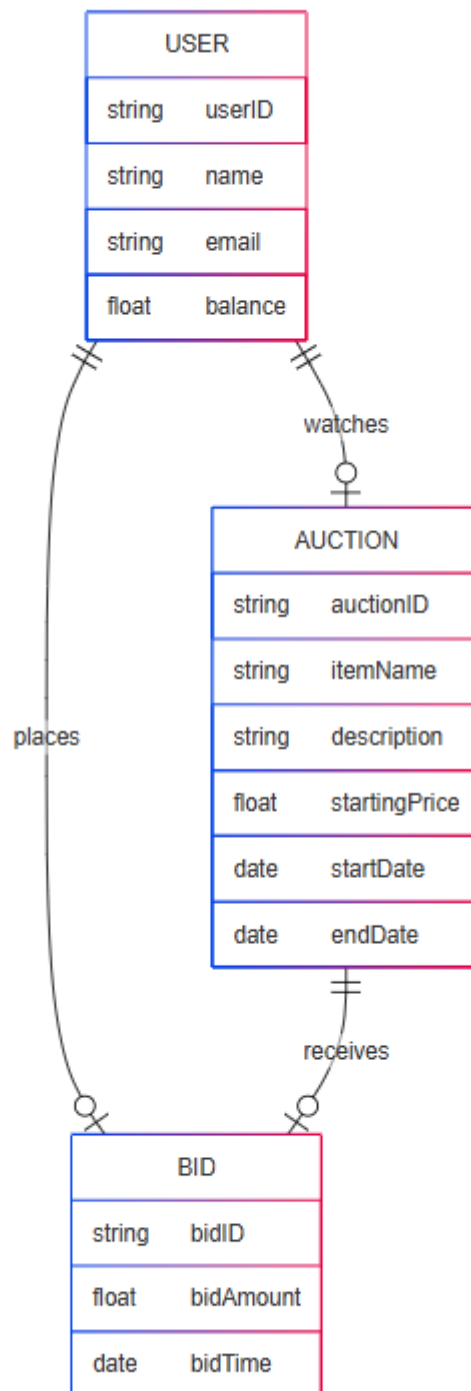
**Fig 4.2 Sequence Diagram**

### 4.3 ACTIVITY DIAGRAM



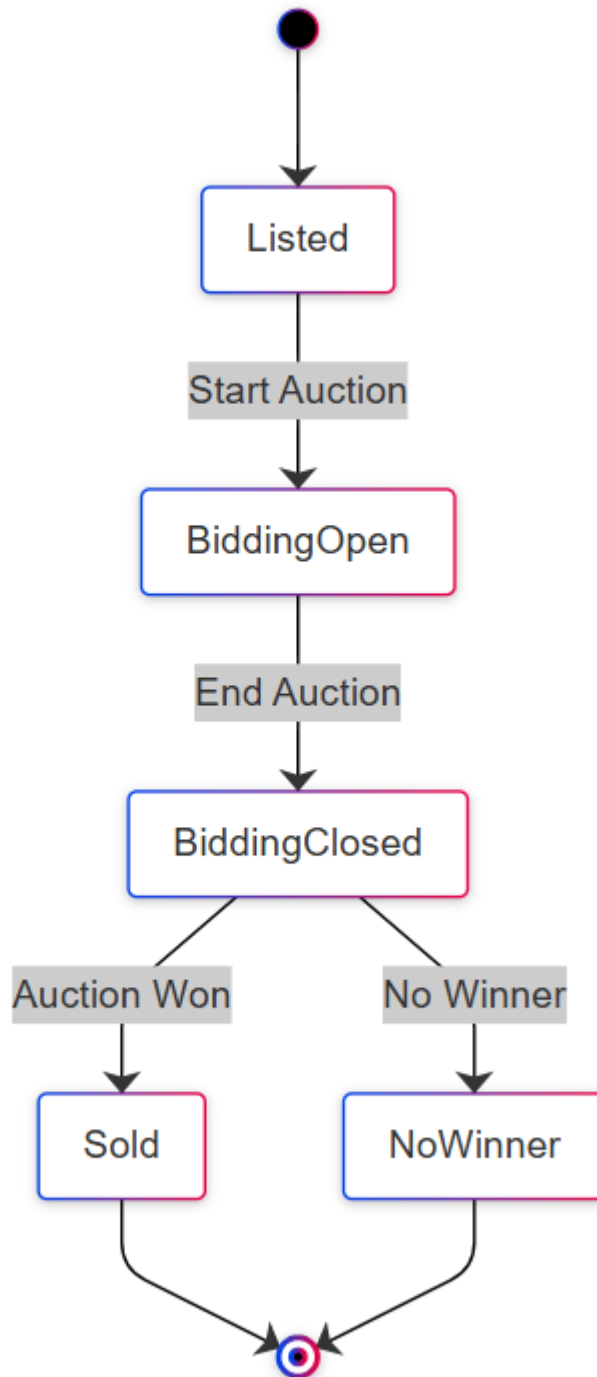
**Fig 4.3 Activity Diagram**

#### 4.4 ER DIAGRAM (ENTITY-RELATIONSHIP DIAGRAM)



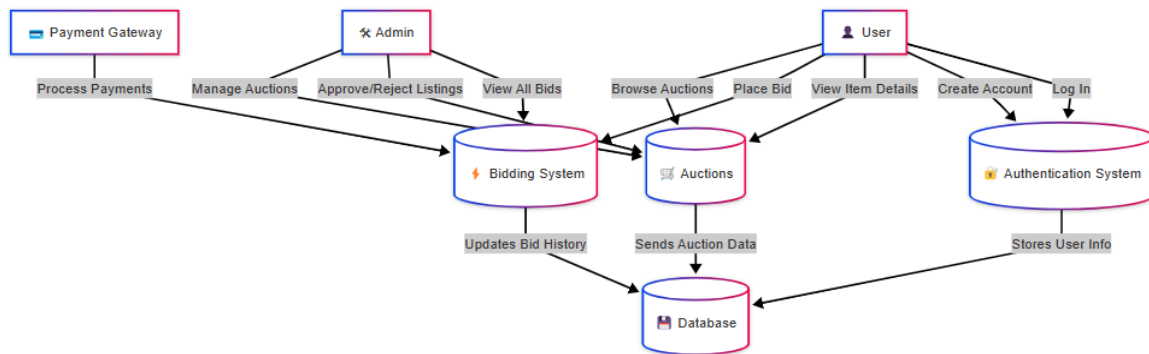
**Fig 4.4 ER Diagram**

## 4.5 STATE DIAGRAM



**Fig 4.5 State Diagram**

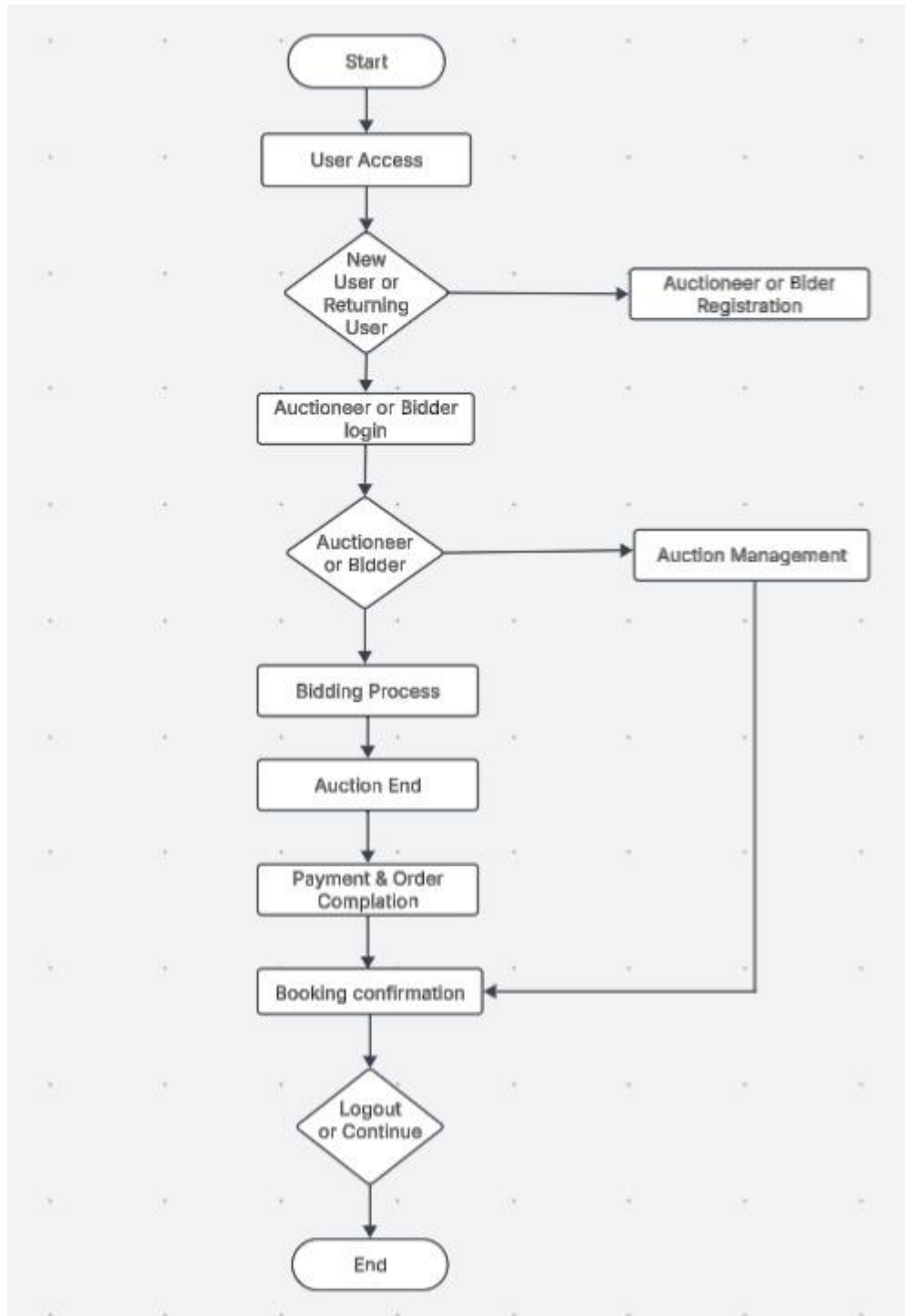
## 4.6 USE CASE DIAGRAM



**Fig 4.6 Use Case Diagram**



## 4.7 FLOW CHART DIAGRAM



**Fig 4.7 Flow Chart**

## CHAPTER 5: IMPLEMENTATION SCREENSHOTS

**BidSphere**

- Auction
- Leaderboard

[Sign Up](#)
[Login](#)

- How it works
- About us

[Contact Us](#)  
 © BidSphere, LLC.

Transparency Leads to Your Victory

# Transparent Auctions

## Be The Winner

[Sign Up](#)
[Login](#)

### How it works

**Post Items**

Auctioneer posts items for bidding.

**Place Bids**

Bidders place bids on listed items.


**Win Notification**

Highest bidder receives a winning email.

**Payment & Fees**

Bidder pays; auctioneer pays 5% fee.


### Featured Auctions



**Gaming Console**

Starting Bid: 1000


Ends in: (0 Days) 00:50:21



**Watch**

Starting Bid: 1000


Starts in: (0 Days) 00:05:21



**Gaming Console**

Starting Bid: 1000

Ends in: (0 Days) 00:50:21




**Watch**

Starting Bid: 1000

Starts in: (0 Days) 00:05:21

### Auctions For Today


**Auctions Today**



**Gaming Console**

Starting Bid: Rs. 1000


Starting Time: Tue Apr 01 2025 10:15:00 GMT+0530 (India Standard Time)



**Watch**

Starting Bid: Rs. 1000


Starting Time: Tue Apr 01 2025 10:30:00 GMT+0530 (India Standard Time)



**Gaming Console**

Starting Bid: Rs. 1000

Starting Time: Tue Apr 01 2025 10:15:00 GMT+0530 (India Standard Time)







**Watch**

Starting Bid: Rs. 1000

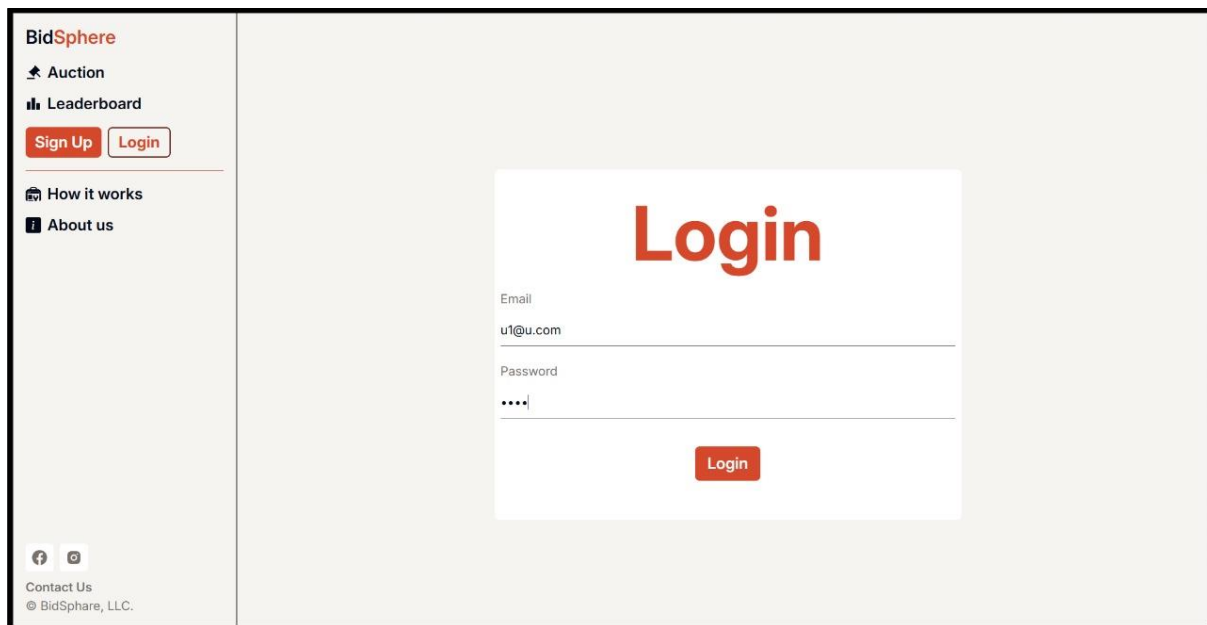
Starting Time: Tue Apr 01 2025 10:30:00 GMT+0530 (India Standard Time)

### Top 10 Bidders Leaderboard

	Profile Pic	Username	Bid Expenditure	Auctions Won
1		user5	70000	5
2		user2	50000	4
3		user4	20000	1
4		user1	10000	2

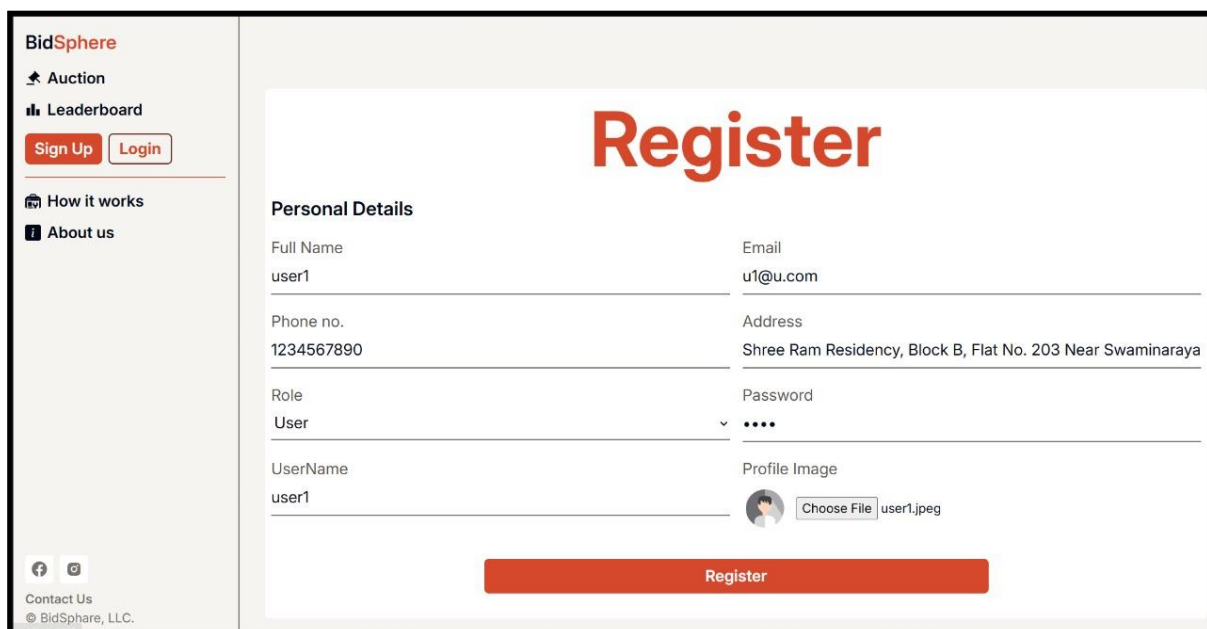
[Go to Leaderboard](#)

Fig 5.1 Front Page



The screenshot shows the BidSphere Login Page. On the left is a sidebar with the BidSphere logo, navigation links for Auction, Leaderboard, Sign Up, and Login, and footer information including social media icons and contact details. The main content area features a large 'Login' heading, followed by input fields for Email (u1@u.com) and Password (masked with dots), and a red 'Login' button.

Fig 5.2 Login Page



The screenshot shows the BidSphere Register Page. The sidebar is identical to the login page. The main content area has a large 'Register' heading and a 'Personal Details' section. This section contains two columns of form fields: Full Name (user1), Phone no. (1234567890), Role (User), and UserName (user1) on the left; and Email (u1@u.com), Address (Shree Ram Residency, Block B, Flat No. 203 Near Swaminaraya), Password (masked with dots), and Profile Image (with a 'Choose File' button and 'user1.jpeg') on the right. A large red 'Register' button is at the bottom.

### 5.3 Register Page

**BidSphere**

- Auction
- Leaderboard
- Submit Commission
- Create Auction
- My Auction
- Logout
- How it works
- About us

Contact Us  
© BidSphere, LLC.

## Create Auction

### Auction Detail

Title: Gaming Console Category: Electronics

Condition: Used Starting Bid: 1000

Description:  
A gaming console is a dedicated device designed for playing video games. It features powerful hardware, optimized controllers, and support for online gaming and multimedia functions.

Auction Starting Time: April 1, 2025 10:15 AM Auction End Time: April 1, 2025 11:15 AM

### Auction Item Image

Click to upload or drag and drop  
SVG, PNG, JPG, or GIF (MAX. 800x400px)

Create Auction

Fig 5.4 Create Auction Page

**BidSphere**

- Auction
- Leaderboard
- Sign Up
- Login
- How it works
- About us

Contact Us  
© BidSphere, LLC.

## Bidders Leaderboard

	Profile Pic	Username	Bid Expenditure	Auctions Won
1		user5	70000	5
2		user2	50000	4
3		user4	20000	1
4		user1	10000	2

Fig 5.5 Bidder Leaderboard Page

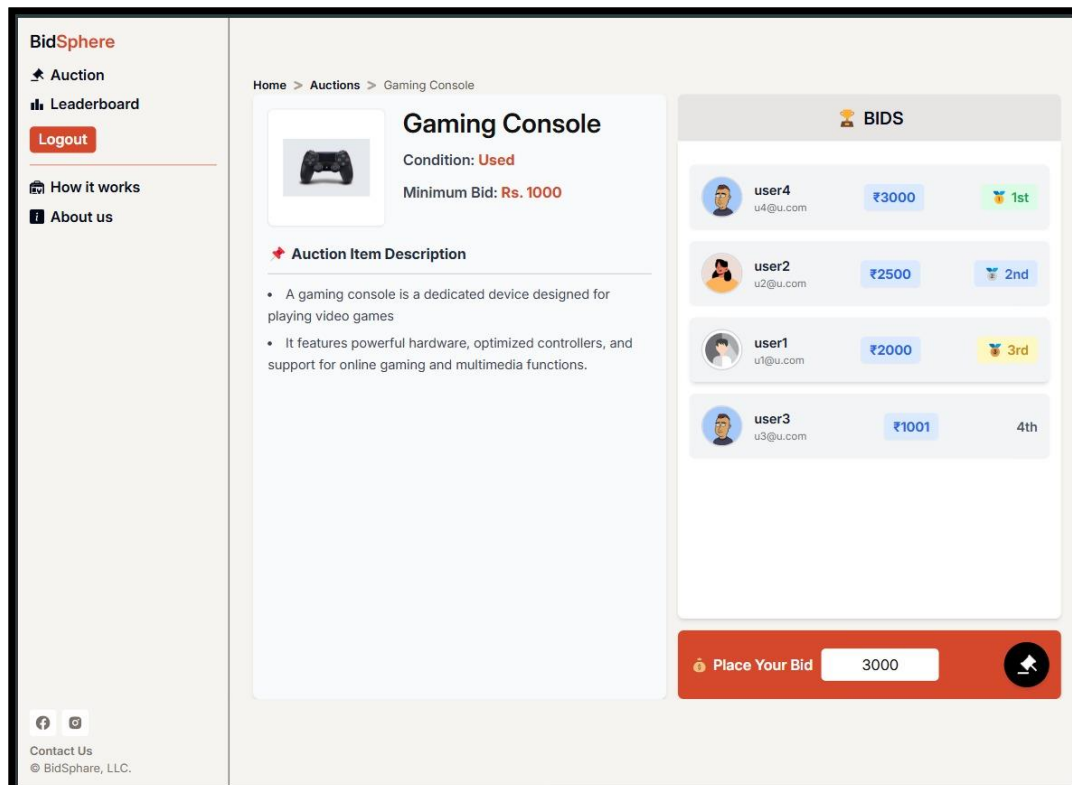


Fig 5.6 Winner Page

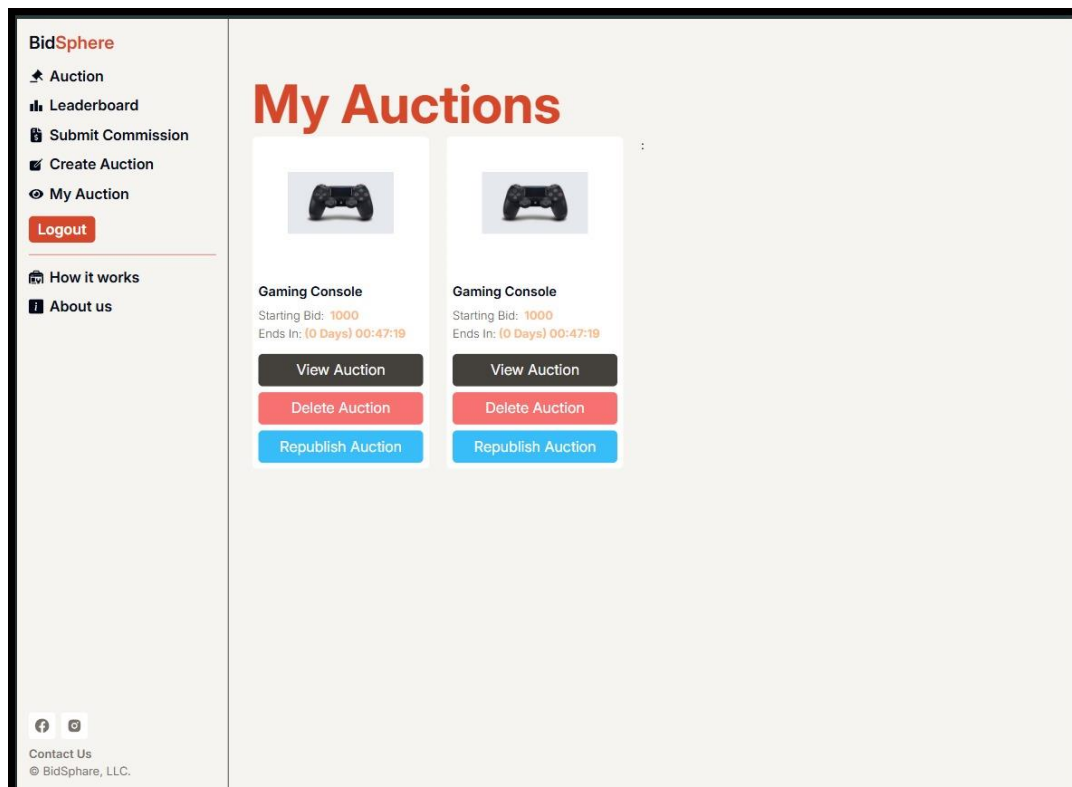


Fig 5.7 My Auction Page

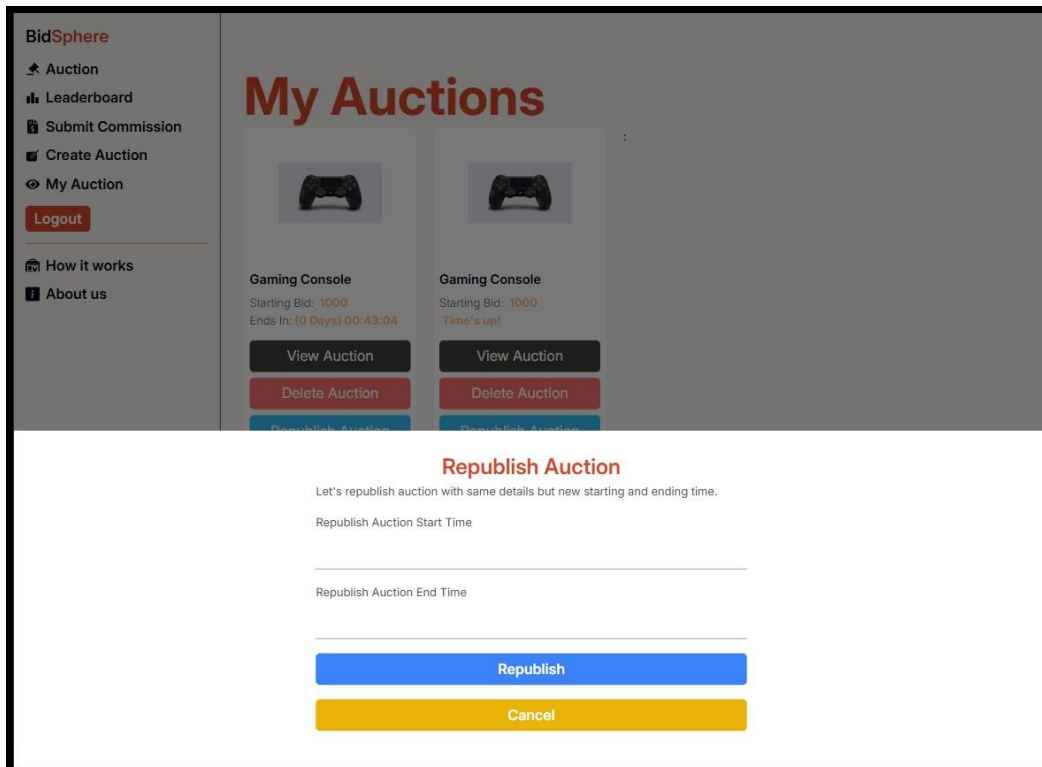


Fig 5.8 Republish Auction page

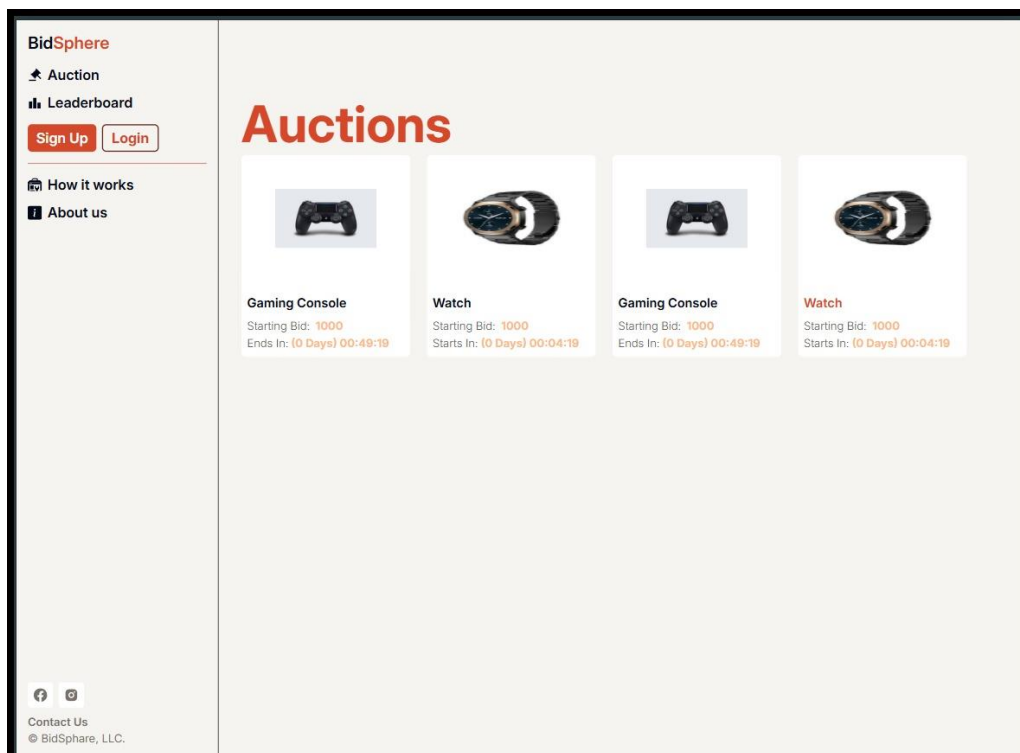


Fig 5.9 Auction List page

## CHAPTER 6: FUTURE ENHANCEMENT

- Implementing a **robust backend** to enhance performance and scalability.
- Introducing **advanced auction types**, including reserve price auctions and instant buy options.
- Adding a **real-time chat system** for better buyer-seller communication.
- Enhancing fraud prevention mechanisms to ensure a **secure and trustworthy** bidding experience.
- To enhance the platform's functionality and user experience, future iterations should consider implementing:
  - Real-time bidding using WebSockets or Firebase for dynamic updates.
  - Push or email notifications to keep users informed.
  - Expanded auction categories and support for advanced auction types.
  - Payment gateway integration for secure online transactions.

## CHAPTER 7: LIMITATIONS

- The current version of the auction website provides fundamental auction functionalities; however, several limitations exist that affect the user experience and platform efficiency. These limitations are outlined below:
- **No Real-Time Bidding**The platform does not utilize WebSockets or any real-time technology to update bids instantly. Users must manually refresh the page to view the latest bid, which can lead to delays and bidding conflicts.
- **Lack of Notifications**There is no notification system to inform users about bid updates, auction outcomes, or payment confirmations. This reduces engagement and makes it harder for users to track auction activities effectively.
- **Basic Auction Functionality**The platform currently supports only standard auctions with limited item categories. This restricts users from listing a wide variety of items, potentially limiting the platform's usability.
- **No Advanced Auction Types**The website does not support advanced auction formats such as:
  - **Reserved Price Auctions:** Auctions where an item is only sold if a minimum price is met.
  - **Sealed Bidding:** A format where bids are confidential and only revealed at the auction's conclusion.
  - **Mandatory Sign-In Requirement**Users must sign in or create an account before participating in any auction. While this enhances security, it may deter casual users who want to explore the platform before committing.
- **No Payment Gateway Integration**The platform does not include a payment gateway for processing transactions. Users must arrange payments externally, increasing the risk of incomplete or fraudulent transactions.



## CHAPTER 8: OUTCOMES

key takeaways and skills learned from this project:

- Developing a **fully responsive** website compatible with different devices.
- Implementing **user authentication** using JWT (JSON Web Tokens) for secure login/logout.
- Handling **real-time bidding** using WebSockets for a dynamic auction experience.
- Securing user data with **password hashing and encryption**.

## CHAPTER 9: REFERENCES

### Official React and Node.js Documentation:

- [1] React Docs: <https://react.dev/>
- [2] Node.js Docs: <https://nodejs.org/en>

### Web Development Resources

- [1] MDN Web Docs: <https://developer.mozilla.org/>
- [2] W3Schools: <https://www.w3schools.com/>

### Existing Auction Websites for Reference

- [1] eBay: <https://www.ebay.com/>
- [2] Sotheby's: <https://www.sothebys.com/>
- [3] Christie's: <https://www.christies.com/>