



GREEN UNIVERSITY OF BANGLADESH (GUB)

## An Online Auction Platform (Auction-Craft)

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*A project submitted to the Department of Computer Science & Engineering  
for the partial fulfillment of the degree of  
Bachelor of Science in Computer Science & Engineering*

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July, 2024

# **Declaration**

We hereby declare that this project is based on the results found by ourselves. Materials of work found by other researcher are mentioned by reference. This project, neither in whole nor in part, has been previously submitted for any degree.

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# Certificate

This is to certify that the project entitled **An Online Auction Platform (Auction Craft)** has been prepared and submitted by **A.K.M Hasnine Mamud & Md. Hasinur Rohman & Abu Shaleh Mohammad Nayeem** in partial fulfillment of the requirement for the degree of Bachelor of Science in Computer Science and Engineering on June 25, 2024.

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# Acknowledgments

It is a very difficult task to acknowledge all those who have been of tremendous help in this project. I would like to thank our respected supervisor **MS. Rokeya Khatun** for providing us with the necessary facilities to complete our project and for her guidance and encouragement in completing our project successfully without which it wouldn't be possible.

# **Abstract**

Auction Craft is an innovative online auction platform designed to bring the traditional auction process into the digital age. By creating an accessible, user-friendly, and secure environment. Auction Craft allows users to participate in real-time competitive bidding for a wide range of products. The platform offers a visually appealing interface and supports essential features like user authentication, product listing and management, real-time bidding, and user feedback. Unlike many existing auction platforms, Auction Craft tackles common issues such as user engagement, security vulnerabilities, and real-time responsiveness. It provides a seamless and enhanced user experience, fostering a transparent and dynamic bidding environment. This encourages more frequent participation and strengthens the integrity and trustworthiness of online auctions. Whether you're an individual buyer or seller or a commercial entity looking to liquidate assets or acquire goods in a competitive marketplace, Auction Craft is designed to meet your needs.

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# **Chapter 1**

## **Introduction**

It is my pleasure to introduce you to Auction Craft – an auction business unearthing a new way of purchasing goods. Advertise the sale of the considered items through energetic bidding. It is the aim of this project to provide a pleasant experience of gaming to the end user is possible for all shoppers, including the casual ones and those who are collectors, for the most part at least. Auction Craft is equipped with some features to permit you to optimistically engage in auctions, thus It is our platform for you efficiently and effectively to muster all of your needs.

But we are not finishing it here. We are always looking forward always planning for improvements. that will help the Auction Craft take it to the next level. Shortly, you will be able to use im- demonstrated that the options for search and filtering are optimal to target a specific item and get it with a minimum of effort. Real time updates will enable you to know when you are being out bid so you don't lose out on the bid war. fail to find out the time an auction will elapse.

We're also keen on Incorporating the most used payment gateway to ease the transactions. and more secure, so you feel more confident when finally you win an auction. Plus, our advanced an- analysis and reporting tools are going to become very useful as the sellers will be able to use them for perfecting for improving the listings and strategies that the competitors are using for achieving higher results.

This knowledge is in tandem with Auction Craft's organisational culture where improvement is always pursued, and the outlook to the future is always welcome. Enhancements we have planned. Our goal is to provide high quality services in the auction business exceeds your expectations. Please watch the space as we launch these fabulous new features!

### **1.1 Motivation**

The reason for the development of Auction Craft is to transfer the traditional procedure of an auction into a better modernistic solution that meets general problems of involvement of users, security problems and inability of the given process to work in real time. These modern on-line auction sites do not provide an integrated environment that is secured for the users; therefore, situation of “user frustration and absence of their trust” is the consequence.

Research shows that the online auction market is growing rapidly, driven by advancements in technology and increasing consumer trust in digital transactions (source: A research tool

administered with the objective of getting a database on a particular subject (usually conducted by organizations like Research Reports Insights). [?] However, there remains a significant gap in user satisfaction due to issues like inadequate security measures and poor real-time functionality (Source: This one is an international Journal (International Journal of Electronic Commerce). Auction Craft does not make the amateurs and the business people vulnerable to such schemes since it aims at providing the competent, efficient, effective and occupied auctions to all categories of users.

The next steps in the application development might be the enhanced search and the filter settings, the real time notifications, support of the most popular payment services, the analytical and the reporting options and similar features. Such features are to ensure the high position of Auction Craft in providing the end user with the maximum result within the context of the modern Internet auctions.

## 1.2 Aims and Objectives

In general a primary business objective of Auction Craft is to reinvent an auction process by creating a fully functional, yet highly efficient online competitive bidding marketplace. Therefore, through selling products in matters such as Electronic Devices, Cars, Furniture, and laptops Auction Craft seeks to supply these specialized products to collector and enthusiasts in these fields. Improving user experience is among the goals, eliminating disadvantages of competitors' auctions by increasing user attraction, security, and real-time reaction. In its pursuit of the above-mentioned objectives, Auction Craft has drawn the following objectives.

- **Increase Accessibility:** Allow more people to bid in auctions from the comfort of their homes, eliminating the limitations of location.
- **Enhance Efficiency:** Allow more people to bid in auctions from the comfort of their homes, eliminating the limitations of location.
- **Expand Market Reach:** Exposure of the sellers to a larger market so as to target many potential consumers.
- **Facilitate Transparency:** To make the auction materials well-organized and easily understandable to the potential buyers, seller, or anyone interested in the auction.
- **Encourage Engagement:** Design a simple layout of the webpage and incorporate some features that enable the users to interact with the website, especially when bidding.

## 1.3 Project Scope

Several important parts are discussed in Auction Craft that focus on presenting an excellent and ready-to-use online auction website – that is tailored to collectors. It attempts to allow comfortable transitions from a buyer to a seller and vice versa and includes many features to enhance the customers' experience in the online auctions. Here is the specification of part that teaches what Auction Craft encompasses of.

## **Target Audience**

- **Collectors of Various Product:** Primarily targeting collectors interested in electronic Devices, cars & furniture, figurines, trading cards, and comic books.
- **Casual and Serious Collectors:** Serving equally the viewers with average interest in collecting as well as collectors searching for a trustworthy source to buy unique products.
- **Dealers and Private Sellers:** Assisting low to mid-tier dealers of specific markets such as coins, stamps, cards, as well as private sellers who wish to sell off their collections.

## **Key Functionalities**

### **1. User Authentication:**

- On the registration and login processes safety and fluidity to be guaranteed.
- Maintain user information, preferences, and auction history seamlessly.

### **2. Product Listing:**

- Prepare user details, customization of product/event per user, and auction history without interruption.
- Allow sellers to easily come up with qualitative and quite attractive offers for buyers.

### **3. Product Management:**

- Include features for uploading photos that are as clear as possible and giving brief or detailed descriptions of the items.
- provide a total control over an item as a seller, an interface that allows the seller to track bids made on his or her items, and an interface that permits the seller to keep a track record of previous sales.

### **4. Real-time Bidding:**

- Enable notifications on bidding that will notify the sellers and the status of their offered items.
- A bidding model in real-time which changes as new bids are received to the current position in real-time.

### **5. User Feedback:**

- Elements to enable users to place bids, monitor auctions that are currently running and receive information concerning the results of the bidding.
- The arrangements for the buyers to post their feedback and the sellers to reply trustful community.

## 1.4 Contribution

When it comes to our Auction Craft, the main idea is to transform the traditional concept of the auction and focus on the availability, convenience, and security of the Internet. Thus, we make users worldwide easily able to participate in auctions from any device that has a browser and is optimized for mobile use. Our automation systems and status updates of events improve functionality throughout the functioning of the institution. That is why we engage in strategic globalization processes of programming and rendering with effective digital marketing tools to increase market coverage and unite sellers with a vast global audience while ensuring secure cross-border transactions. The pricing is made more interactive through dynamic pricing and other related features that avail sufficient data to the market to ensure determination of fair market value. Thus, using features and community-building activities, like gamification and comments from experts, Auction Craft shapes positive and credible interaction for buyers and sellers. The main reasons are that remain focused on innovation, striving to provide the best service to our clients that makes us to set high standards for our online auction platform.

## 1.5 Project Outline

Thus, the subject-matter expertise of Auction Craft is located in its ability to anticipate the problems and requirements of both buyers and sellers within the sphere of online auctions. Combining the findings from the questionnaires concerning user's preferences, dissatisfaction, and expectations for the system, Auction Craft has created a solution that minimizes these shortcomings and fulfills the aforementioned aspects to the maximum extent possible.

- **Introduction:** In this chapter, the concept of Auction Craft is defined with the goal in mind of improving the experience with online auctions. It encompasses a brief description of why the project was developed, its goals and objectives, what the project is all about and key progress made by the project team. It draws the reader's attention, placing the project and its goals within the context of its importance and the changes the project aims to implement in the online auction sector.
- **Literature Review:** This chapter also provides insight into the current online auction sites including Sotheby's, Christie's, the global eBay, the global heritage auction sites, and Bonhams. These papers describe their characteristics, benefits, and drawbacks, which creates the background for understanding Auction Craft's vision of enhancing these models. The area where the current vacancies/gaps/needs in the market are presented that Auction Craft fulfills is shown in the literature review section.
- **The Design Methods and Procedures** In this chapter, the author described the design and the methodological framework that was used in the creation of Auction Craft. This comprises of the system architecture, use case diagrams based on the roles of the users, such as admin, seller, and bidder, data flow diagrams showing the flow of data, UML class diagram, sequences diagrams, estimated budget and Gantt chart whose major component is the schedule. In the chapter, the logical sequence followed to come up with a solid and reliable platform design is articulated.

- **Result Evaluation and Analysis:** This chapter outlines the schedule and procedure of Auction Craft's implementation. It describes the general conceptual layout of the architecture and details the primary building blocks of the application as well the notation and technology of the tools to be used. The chapter gives an understanding of how the theoretical architectures are metamorphosed into a working online auction system.
- **Conclusion:** In this last chapter, the project's major findings, constraints, and potential for further development are presented. Their proposition is to transform the auction industry by developing auction craft which is much simpler to use and more efficient thus targeting specific areas like electronics, cars, furniture and laptops among others. Still, it has problems like, it is sometimes fully or partially unavailable, it can be accessed only from a certain place, often uses services of third parties, and it is not very safe in terms of users' privacy. The future work will include further elaboration of the platform based on its usage, broadening the availability of services, strengthening the security layer, besides extending the list of functional components to address users' new demands.

# **Chapter 2**

## **Literature Review**

### **2.1 Introduction**

Welcome to Auction Craft, the auction service which is helping people to find the interested items through the different kinds of bidding systems. Enjoyment to the clients is another aspect that must be achieved throughout the entire process so that the customer whoever it may be, is satisfied whether you are a casual shopper or a collector. Here is a breakdown of the Auction Craft features to effectively be able to participate in auctions, with surety of the platform's efficiency and reliability.

But this is not the end of the movie. We are always forward thinking, and checking for future improvements that would make the Auction Craft even more attractive. In the near future, more effective search and filtering tools can then enable one to Locate, Select or Specify exactly the required item in a very short period of time. BID protocol notifications will help you with updates, so you do not miss a bidding war or even the time an auction is ending.

We are also busy in a process of linking the common payment options to facilitate easy and secured payment once one has won an auction. Also for the sellers, our keen analytics and reporting tools will be able to help them better fine-tune their merchandise and marketing schemes for optimum results.[1]

Indeed, the management of Auction Craft has always aimed at increasing the caliber of its work and is looking forward to implementing the future advancements. It is our goal to provide the very best auction services in a way that you won't have any reason for disappointment.

### **2.2 Related Works**

Custom and various types of online auctions exist in the Internet space with participation of collectors, investors, and fans. Starting from ancient Auction Houses – Sotheby's[1], established back in 1744 and Christie's [2] – the Auction Houses concentrating on fine arts and luxury items: jewelry, vehicles, wines, and bonds, – to contemporary behemoths like eBay[3] – the Auction House which unites people around the globe and covers everything, from exotic collectibles to ordinary items, the field is incredibly diverse. Heritage Auctions[4] is a shining example of the best venue for collecting and selling everything that remains a secret and can interest a connoisseur; Bonhams[5] specializes in art, antiques, and motor cars on the inter-

national level. Every platform either live auctions or online bidding is a significant player in bringing bidders and sellers together in the international market, enhancing the collecting zone, and advancing the auction solutions in the digital platform.

### 2.2.1 Sotheby's

Sotheby's,[2] established in 1744, operates in the league of the worldwide famed auction houses with presiding in the sales of the fine art, jewelry, real estate and collectibles. With its history and offices all over the world, Sotheby's has entered the sphere of auctions as one of the most successful business for the elite, collectors and investors.

- **Findings:** The findings of the study are; Christie's auction is well known for its prestigious auctions and an excellent quality of auctioned items. The online system is very effective and well-developed offering detailed information and photos of auction items. However, like Sotheby's, Christie's targeting the high-end collector eliminates it from the retail market to some extent because it does not have much attraction for the occasional or inexpensively inclined buyer.
- **Limitations:** There are limitations involved on the basis of the fact that the platform operates mostly for the elitist connoisseurs of art or the people who have abundant monetary resources to spend on procuring different pieces of art. The pecuniary cost of the initial products and the fact that there are premium items can be a drawback form the point of view of entry-level collectors. collectors.

### 2.2.2 Christie's

Christie's,[3] dating back to 1766 when James Christie initiated business, is ranked among the international establishments offering auctions of fine arts, luxurious goods, and rare collectibles. Christie's has been established for many years with international presence that has made it the preferred auction house for the wealthy.

- **Findings:** Implementation Works Christie's is an establishment that acts as an auctioneer, majoring in the sale of fine art, luxurious items, and various other collectibles. Christie's operates around the world and provides not only live sales, but online ones as well; people from different countries buy its goods.
- **Limitations:** Like Sotheby's, Christie's is expensive for the average consumers since it serves the elite market domain. This is understandable given that the main focus of iPods and other material items is to give a premium look as compared to the low priced or even specialized collectibles.

### **2.2.3 eBay**

eBay,[4] an American company, was launched in 1995 by its creator Pierre Omidyar. It is operating at the international level and brings millions of customers and sellers together with the assistance of the convenient interface and provides both the auctions and the price list formats for purchases.[5]

- **Findings:** In regard to the findings, eBay stands out as a versatile venue for sales with a high density of uploaded items. It is possible to state that the format of the auction is rather simple, and in addition, there are filters and a search bar on the site. However, the large amount of listing makes it difficult to search for merchandise, and there are issues about the quality and genuineness of merchandise found occasionally, with probability of fake products.
- **Limitations:** However it is a site that specialize in sales of everything and at times it could be very challenging to locate a given item, and the quality of items sold or even the authenticity are some times questionable. Another problem of online shopping is that customers can be supplied with fake or misrepresented goods.

### **2.2.4 Heritage Auctions**

Heritage Auctions[6] is one of the world's largest auction houses that provide a spectrum of collectible items such as paintings, coins, sports items, comics, and other historical items. This organization was established in 1976 and has rapidly evolved over the years; use of technology has enabled it to extend its services through the internet where it offers an efficient online auction service.

- **Findings:** Thus, Sotheby's operating in the internet environment is known for its simple design and convenient interface, which targets wealthy customers and passionate collectors. This is made possible by the well-detailed Findings as well as the excellent quality photographs of items offered for auction. However, the given platform has rather high starting prices because of which it can be rather unattractive for collectors who are just starting or have a limited amount of money to spend.
- **Limitations:** As was already mentioned, Heritage Auctions can be rather intimidating to consumer as there are a lot of expensive items. Their concentration on significant pieces may make many of them hard to come by for the everyday or smaller scale collector.

## **2.2.5 Bonhams**

Bonhams which started[7] its operations in 1793 is one of the oldest and renowned auctioneering companies globally. It operates internationally, holds its auctions in global cities and is recognized as a leading professional company in the categories of fine arts, antiques, motor cars, jewelry and etc.

- **Findings:** The following findings were made about Bonhams It is an international auctioneer with specialisation in fine art, antiques, motor cars and other miscellaneous items. It provides both the live as well as the online services of selling and purchasing, thus contrives a pool of clientele from across the globe.
- **Limitations:** Taking into account that Bonhams is one of the leading auction houses addressing clients in the upper segment, some of its offers may seem too far-reaching to those public. This could also mean that the kind of auctions that they engage in can be fairly narrow and this could thereby confine the available goods to those that are more attractive to middle-market or experienced bidders.

## **2.3 Conclusion**

Today, the area of the online auction market continues to count a significant number of companies that include Heritage Auctions, Sotheby's, Christie's, eBay, and Bonhams that primarily target different segments of buyers. Heritage Auctions , Sotheby and Christie primarily deal with luxurious items, which are suitable for professional users yet not suitable for common users. While Amazon targets a niche number of people in a specialized manner, eBay handles a larger population of buyers; however, it can sometimes become problematic regarding product quality and originality. Bonhams is balanced as it also provides the elite auction services and at the same time it is well oriented to such limited product niches as motor cars and antiques.

# Chapter 3

## The Design Methods and Procedures

### 3.1 Introduction

The design method and procedure section describes the process used for the creation and deployment of Bid Bazaar online auctioning environment. Thus, this section provides the description of the methodologies, designs, and procedures applied to the platform to meet its objectives and users' needs. Understood in such manner, these elements point to a clear development conception and a construction of the well-organized process that would without a doubt contribute to the creation of the efficient, user-friendly auction platform.

#### 3.1.1 Methodology

In order to design the Auction Craft platform, the user-centered design (UCD) approach was used which focuses on the need, preference, and behavior of the end user in the development process. It helps in the delivering of final products that are both functional and socially appreciated by the target consumer groups. The UCD methodology involves several key phases. The UCD methodology involves several key phases:

##### 3.1.1.1 Research and Analysis

- **User Research:** Identify the end-users and visit them to have a one-on-one conversation and ask them what they require, what challenges they have, and what they would prefer.
- **Market Analysis:** Make a comparison of the existing auction platforms in order to know their strongholds, drawbacks, and opportunities.
- **Requirement Gathering:** Gather functional and non-functional requirements extracted from the user's feedback and information on the market.

##### 3.1.1.2 Conceptual Design

- **Use Case Development:** Develop rich use cases to capture all possible ways that users which are the sellers and purchasers engage with the system.

- **Wireframing:** Create wireframes to conceptualize the positioning of the interfaces to be used in the platform (UI).
- **Prototyping:** Design real like models that mimics the user interface and get some real user feedback.

### 3.1.1.3 Detailed Design

- **UI/UX Design:** Make it as GUI (Graphic User Interface) friendly, appealing to the eye, but at the same time easy to navigate.
- **Database Design:** Design an ideal database structure that would help in the storage of information concerning the users, auction, bids placed, as well as transactions done.
- **System Architecture:** Engineer the basics of the solution such as client-server model, APIs to be used, and integration points.

### 3.1.1.4 Implementation

- **Frontend Development :** Employ the html, css, javascript and other server side technologies as used in the contemporary websites to develop the front end of the platform.
- **Backend Development:** To deal with the business logic and processing as well as the storage aspect, perform server-side programming with an adequate stack (Django, RestAPI).
- **Security Implementation:** Implement security solutions like Secure Socket Layer, secure authentication, and security check ups to ensure privacy of the users and their transactions.

## 3.2 System Architecture

The architectural structure of the Auction Craft online auctioning system is as follows. With a goal to offer reliable, scalable, and secure interface for both the buyer and the seller of products online. They use the current Web technologies and trends concerning the set of modern Web 2.0 standards and conventional practices. In this section, information on modules, their relations and collaborations that form the context of system architecture are presented.

### 3.2.1 Architectural Overview

In the Auction Craft, the architecture used is client-server that divides the client and the server. Thus, the separation is much more scalable, maintainable, and flexible. The components of the system architecture are the client, server, DBMS and the APIs.

### **3.2.2 Key Components**

#### **3.2.2.1 Client-Side**

Client side is the part of the application implemented to be delivered to the client, and it handles the interaction with the user and the output of the data. It is developed using modern web technologies for instance Hypertext markup language also known as HTML, Cascading Style Sheets commonly referred to as CSS, and JavaScript. Key responsibilities of the client side include:Key responsibilities of the client side include:

- Auctions of various products and information on these products. Fast response to the reactions of the user; this includes bidding, posting comments and even listing products.
- API is used to interact with the server. item Offering constant feedback on the progress of the auctions and the bids in them

#### **3.2.2.2 Server-Side (Back-end)**

Server-side deals with the application's functionality and the client's requests, data, and security of the transactions. It is also being built from Django which offers a responsive framework for running server-side processes. Key responsibilities of the server-side include:Key responsibilities of the server-side include:

- User management, which is responsible for user authentication as well as authorization. item Electronics, Auction listings, Bids and Transactions Interacting with the database to enter and to retrieve data from it.
- Protecting data and its' integrity.
- This is done through the exposure of APIs to act as facilitators of client-server communication.

#### **3.2.2.3 Database**

Thus, the data about the users, auction items, bids, and transactions are stored in the database. Auction operation utilizes Django default database SQLite database since it is adaptable to large-scale unstructured data. Key aspects of the database design include:Key aspects of the database design include:

- Schema design to decide structure of collections and the documents. Data validation in efforts to assert the validity of the collected data. This approach creates indexes to enhance the quick locality for amino acid that will help in effectively querying and executing the process with the least time taken.

#### **3.2.2.4 APIs**

APIs (Application Programming Interfaces) ensure interactions between the client and server. They define end points for the various functions, including users, listing a product, bids, and sales information among others. Key considerations for the API design include:

- Use of RESTful principles to make sure that the API is easy and may support large quantities of requests Conclusion: Endpoint Security is the process of protecting an organization's data and transactions, especially the endpoint devices.
- An easy to understand API that has been documented properly so that the customers can understand how to use it.

### **3.2.3 Presentation Layer**

presentation tier is the client side of the application which deals with the users. This covers the various interfaces built with the use of React, that renders the interfaces quite dynamic in nature.

#### **3.2.3.1 Application Layer**

The application layer is concerned with management of business logic and providing services to the clients through handling client requests. It spans the Django components which handle user logins, transactions and bid processing and data processing.

#### **3.2.3.2 Data Layer**

The data layer is the data repository of the application or it deals with the entire data system. It comprises the SQLite database, whereby users' details, auction descriptions, bids, and transactions are stored.

#### **3.2.3.3 Authentication and Authorization**

Some measures of protection for the accounts of the users include the OTP (One-Time Password) mode of authentication. The RBAC concept makes certain actions can only be carried out by people with certain privileges.

#### **3.2.3.4 Regular Security Audits**

Security audits are done time to time to check the problems and initiate measures to correct them on the security front. These are such as code review, penetration testing, and conformity to standard measures.

### 3.3 Entity Relationship Diagram

From the given ER diagram it can be alternatively represented that it is an online auction system which can be used to list items for auction, bid on auctions and manage auctions. Managing of users and auction is also provided by this system. The accompanying database design is the users table, the admins table, the items table, the auctions table, and the bids table. All of the tables include the right fields and essential primary keys. Foreign key constraints define a link between two tables in order to confirm the valid entries in the referred table. Thus, the proposed online auction system has a stable platform of the following ER diagram and database schema. We get some idea from stack overflow. [?]. The design is reflected in the basic features that help the users – registration, account in catalog, auction, bids. It makes it easier for a site to expand as well as offering the necessary security for a detailed auction service.

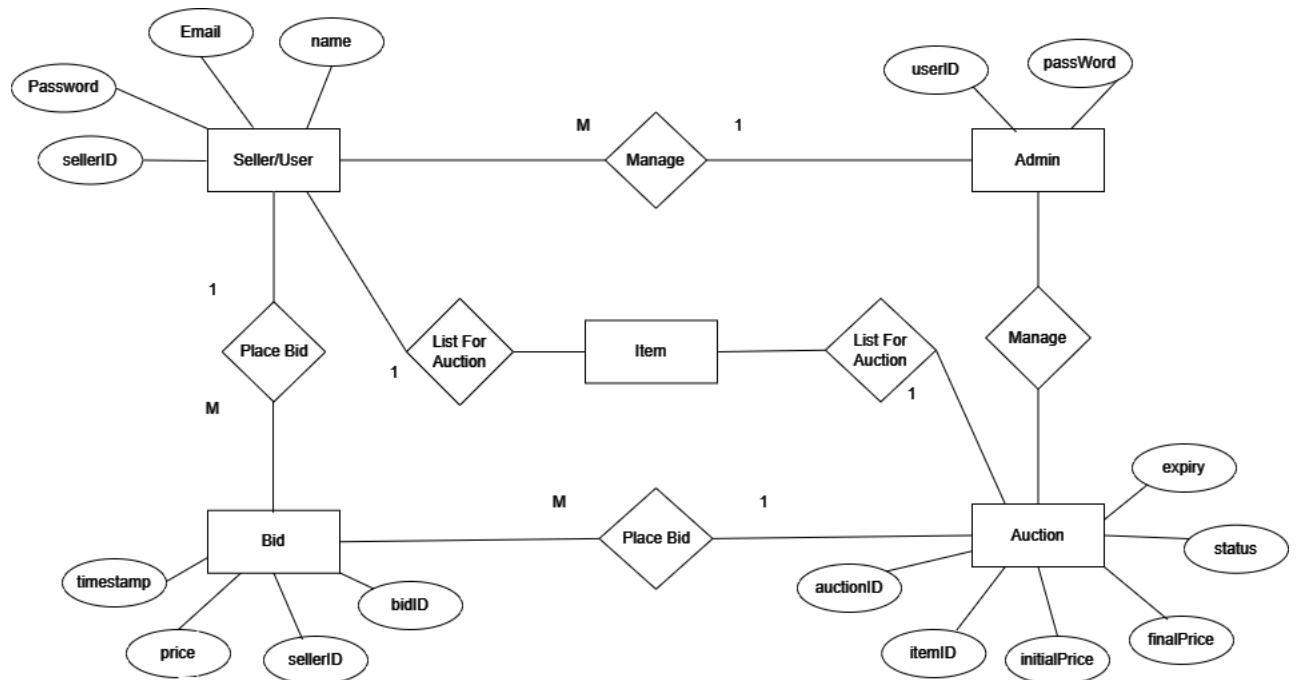


Figure 3.1: Entity Relationship Diagram

## 3.4 Use Case Diagram

Out of all the diagrams describing the interactions between the Actors and the system, the Use case diagrams for Project Auction Craft aim at showing how the different users of the system such as sellers, bidders, as well as administrators will interact with the system. [?] Here's an overview based on the document provided[?]. Here's an overview based on the document provided:

This section presents the Use Case Diagram for the sellers who are to interact with the proposed system. **Actors:** Seller

### Primary Use Cases:

- a. **Create Listing:** The seller can add new listings to items he or she wants to sell through auctioning.
- b. **Manage Listings:** Here, sellers can change the details of the current listings or can even remove the listing.
- c. **View Bids:** Bidders can have access to information about the items that is being sold and the bids that are being made on it.
- d. **Accept/Reject Bids:** In the auctions it is the sole prerogative of the sellers to either accept or reject bids offered by the bidders.
- e. **View Sales History:** The selling process features a history of sales and transactions carried out by the sellers.

And the following is the use case diagram for bidder. **Actors:** Bidder

### Primary Use Cases:

- a. **Browse Listings:** The bidders can go through the list of available ads.
- b. **Place Bids:** It is possible for buyer to offer different price to the different lot he or she is interested in.
- c. **View Bidding History:** There is also the provision of the bidding history that enables bidders to see their previous activities of bidding.
- d. **Receive Notifications:** Bidder get alert on the status of the bid that they placed.
- e. **Manage Account:** The accounts are kept secure with features allowing the bidders to change their account information and settings.

Thus, the use case diagram for the administrators is as follows: **Actors:** Admin

### Primary Use Cases:

- a. **Manage Users:** An administrator can for instance be able to create, modify and or remove users.
- b. **Monitor Activity:** Managers supervise users and the whole process going on in the network.

- c. **Resolve Disputes:** The matters between buyers and sellers are settled by the administrators.
- d. **System Configuration:** Co-ordinators set up the systems and enforce standards on security measures to be taken.
- e. **Generate Reports:** It offers administrators quite a number of reports touching on the use of the system, sales, and so on.

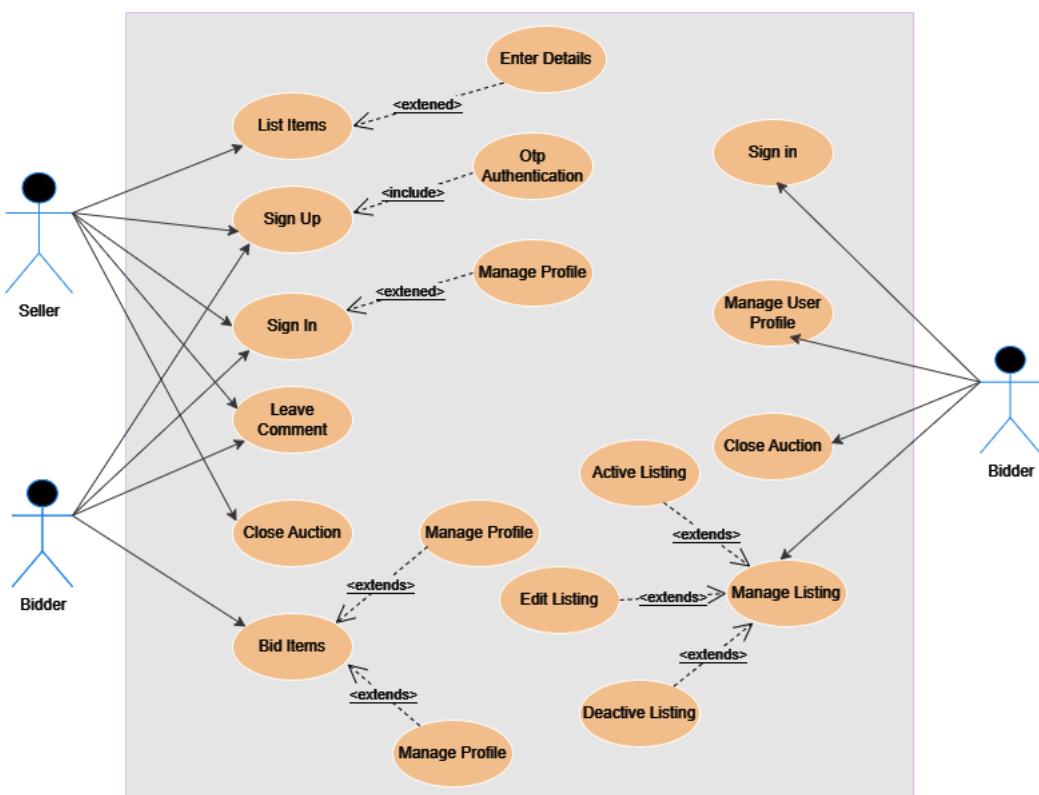


Figure 3.2: Use Case Diagram

The following use case involves a brief description of how the Auction Craft system is used by various users with an essence on how each user is served by the developed system.

## 3.5 Data Flow Diagram (DFD)

### 3.5.1 DFD Level - 0

The Level 0 Data Flow Diagram (DFD)[8] for Auction-Craft provides a high-level view of the system's interactions with its external entities. The primary external entities include the Admin, Buyers, and Sellers.

- **Admin Interactions:**

- It is a type of user that logs into the system and performs auction listings.
- It returns Order confirmation message to the Admin and Authentication success message.

- **Buyer and Seller Interactions:**

- They are in the midst of a crisis which is a pointer to the fact that they are in extremely unfavourable times.
- As the name suggests consumers or businessmen interface with the system by uploading products, searching items, and logging in. It reacts by providing search results and different notices to these users.

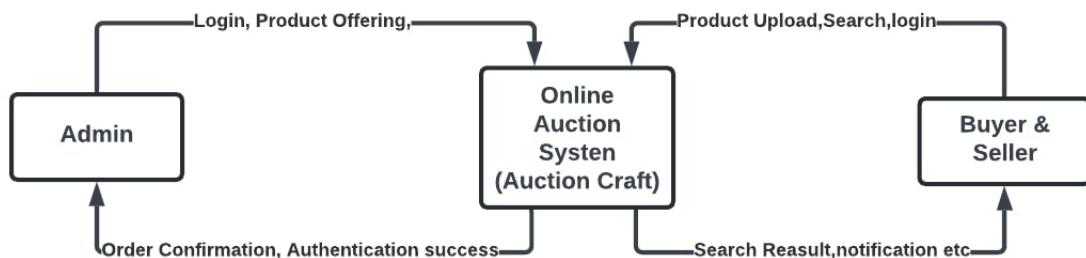


Figure 3.3: Data Flow Diagram Level 0

### 3.5.2 DFD Level - 1

The Data Flow Diagram (DFD) Level 1 for the "Online Auction System (Auction Craft)" illustrates the major processes and data flows within the system. The central component is the Online Auction System, which interacts with various subsystems and data stores. Users register and log in, providing registration data and receiving login credentials. Item listing allows users to input new item details, which are confirmed by the system. The bidding process captures bid details and provides bid confirmation, storing bids data. Admin commands and auction updates are managed by the Auction Management (Admin) subsystem, which also receives auction updates. The Notification System handles user notifications and auction updates, while the Payment Processing system manages payment details and confirms payments, feeding into the Notification System. The Data Store serves as a central repository for user data, auction items data, bids data, and transaction data, ensuring all processes have access to necessary information. Overall, the DFD Level 1 provides a comprehensive overview of the interactions between users, administrators, and various subsystems in the auction process.

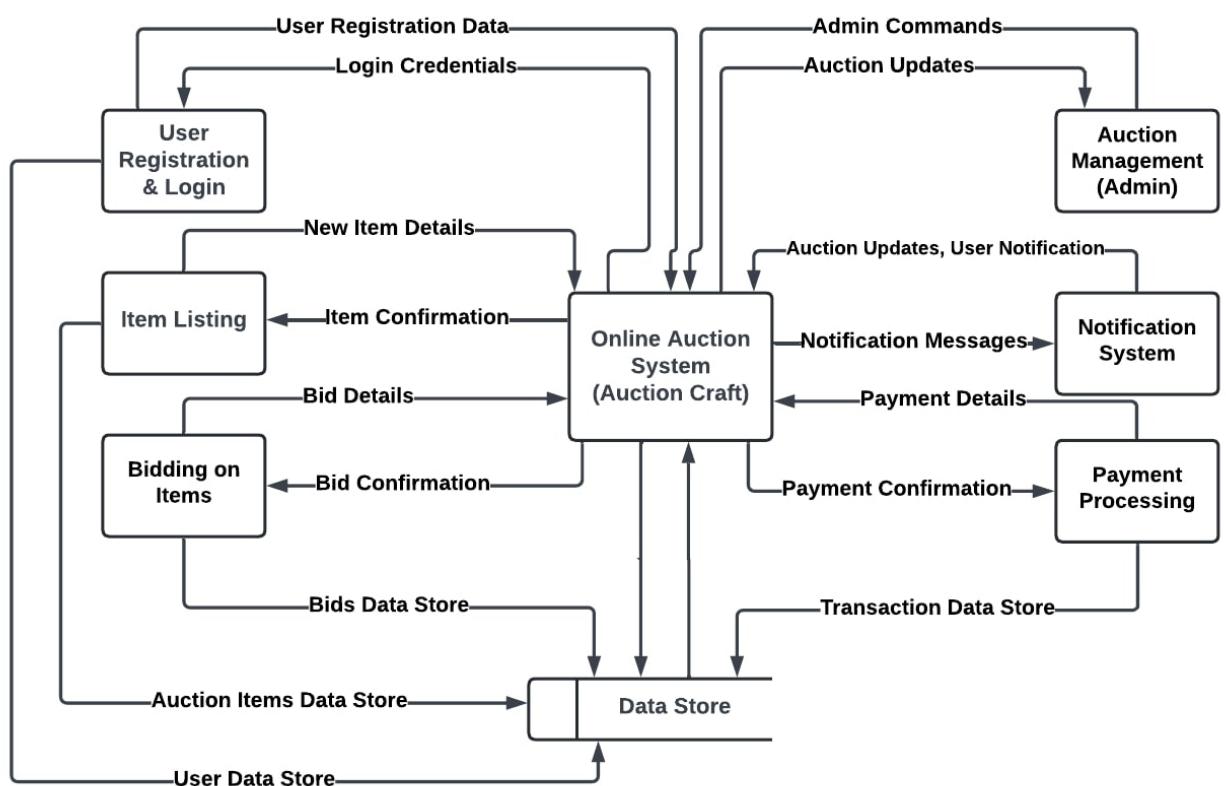


Figure 3.4: Data Flow Diagram Level 1

### 3.5.3 DFD Level - 2

The Data Flow Diagram (DFD) Level 2 for the “Online Auction System (Auction Craft)” shows the information processing within the Context Diagram. Some of them include the users’ registration, the items’ listing, bidding, auctions’ management, notifications, and payment processing. Users create their accounts and sign in, offer their items to the other users for auctioning, and bid for other items. These actions are then affirmed and approved by the system with regards to the new highest bids and other datum. Auctions, their closing, and sending of any updates that are necessary are activities that are undertaken by admins. Some of the notifications created and delivered to the users include bid notification, auction notification, and payment notification. Payment processing is defined as; It is the process of verifying and authorizing the payments made by the user ,reviewing the record of the transaction. All functions are interconnected by the central system, which enables smooth information exchange and retains the data set integrity at the central data storage.

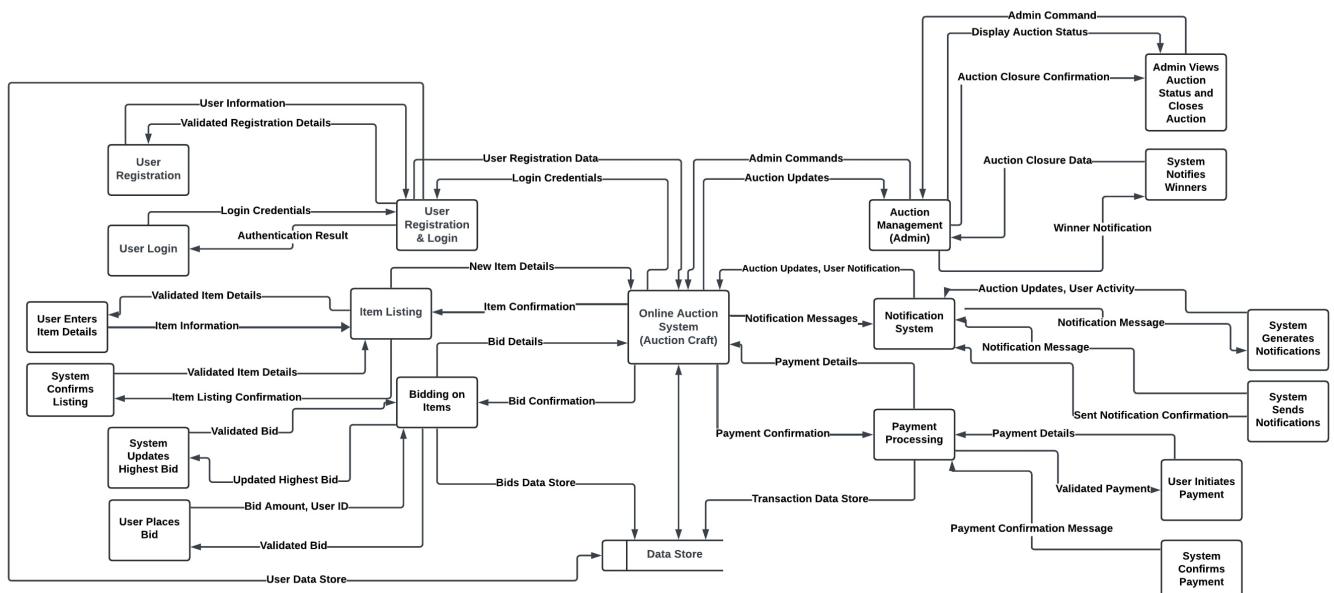


Figure 3.5: Data Flow Diagram Level 2

## 3.6 Class Diagram

This class diagram shows the detailed instructions of an online auction system, including the basic abstract classes (User, Item, Auction, Bid), and their relations. It has to provide such basic capabilities as users' registration, items' listing, auctions administration, and, of course, bidding. It guarantees the unified and easily extendible framework for the online auctions management which leaves no doubts about how it can be done.

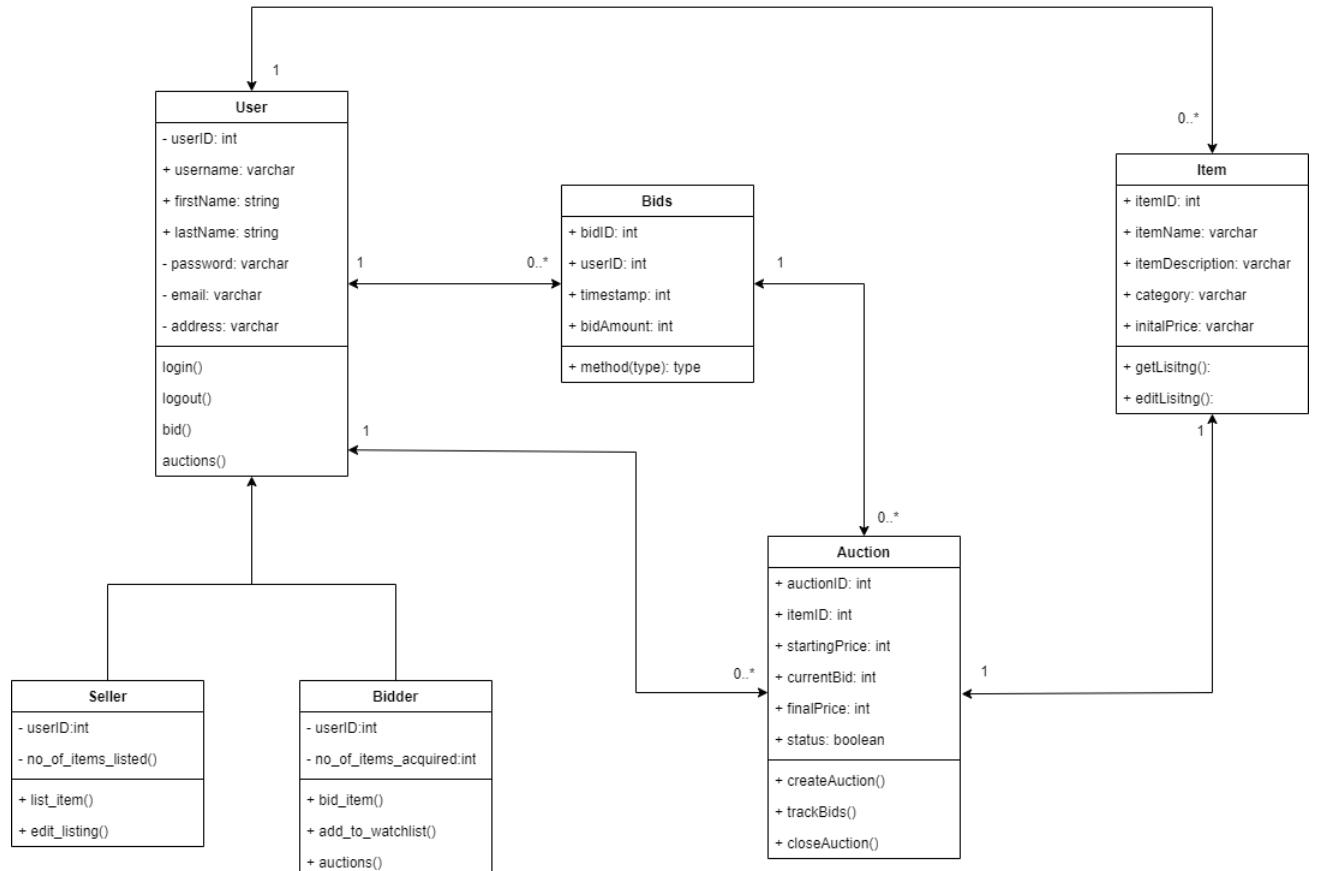


Figure 3.6: UML Class Diagram

## 3.7 Sequence Diagram

### 3.7.1 Sequence Diagram-Seller

Sequence diagram shows how different individuals/roles (Bidder, Auction Manager and AuctionCraft Platform) and the system objects (Item, Auction Manager) in an online auction system elate. It describes how they happen for registration, listing items for sale, creating auction-based items, tracking sold items, and announcing the winners.

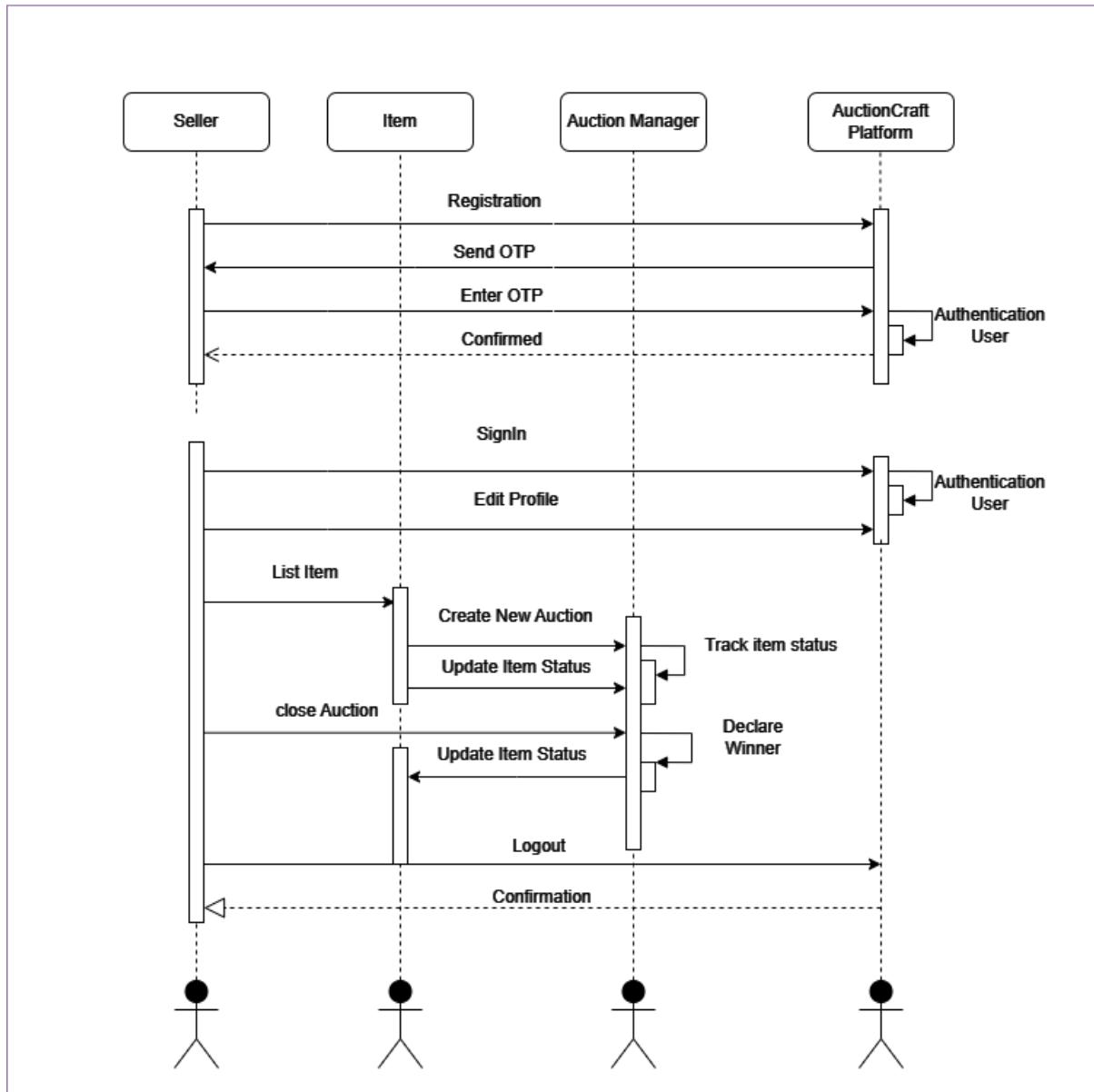


Figure 3.7: Sequence Diagram-Seller

### 3.7.2 Sequence Diagram-Bidder

The actions described in the above sequence diagram involve the various actors namely; Bidder, Auction Manager, and Auction Craft Platform, and the system components which includes Item and Auction Manager of an online auction system. It describes the workflows for different scenarios including the registration process, login process, bid submission, addition of items to the watchlist, bid tracking, and auctions termination.

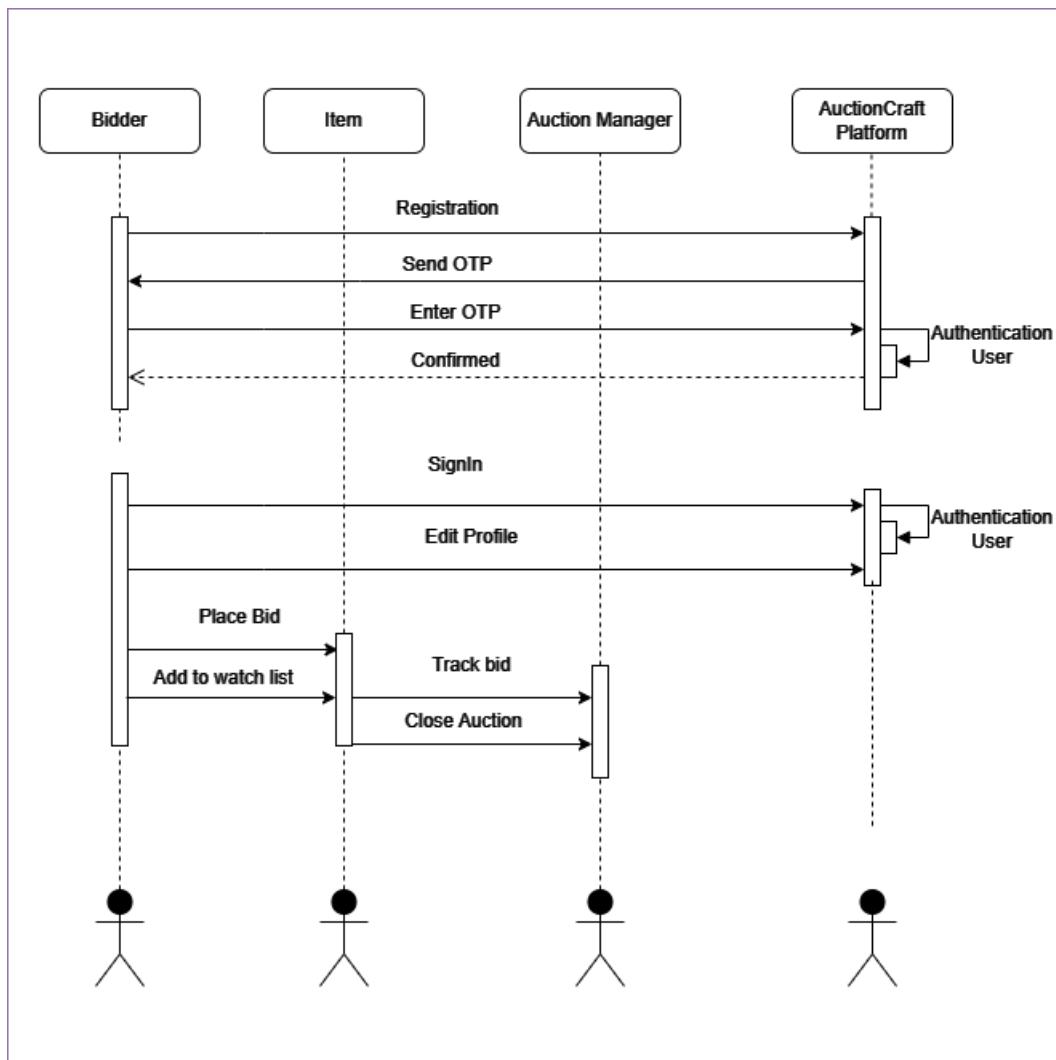


Figure 3.8: Sequence Diagram-Bidder

## 3.8 Tools and Techniques

The workflow of the Auction Craft project implies the usage of specific tools and methods to make the platform safe, accessible, and performance-oriented. These tools and techniques are selected to solve the problem of an online auction for collectors. Below is a detailed description of the tools and techniques employed in the project:Below is a detailed description of the tools and techniques employed in the project:

### Django Framework

**Description:** Django is the high-level Python web framework that stresses on does obvious, clear design and systematic, fast development.

**Usage:** Django is used for producing complex back ends for applications that allows creating complex, database-oriented sites easily.[9]

### HTML, JavaScript, and TailwindCSS

**Description:** These are the realms of technologies that are applied in front-end development as the main components.

- **HTML:** A system utilized to develop the world wide web that has become the common language for constructing websites.
- **JavaScript:** A programming language that is used to write scripts for the performance of certain operations in the interactions evident on any given website.
- **TailwindCSS:** UI design sheets with clear assets for producing one-of-a-kind styles instead of starting CSS from scratch.

**Usage:** Integrated to design effective, efficient and attractive user interface that is optimized to work on various devices.

### SQLite

**Description:** SQLite is a fast, easy to use object-relational database management system.

**Usage:** Being effective and solid in handling files containing most complex queries, SQLite is the database of choice for managing all the data connected to the auctions, the users, as well as the listings and the bids on them, and the transactions.

### WebSockets

**Description:** WebSockets are a protocol for two-way communication over a single Transmission Control Protocol connection.

**Usage:** Created for the purpose of real-time bidding enabling users to view the bid list / and latest auction information in real time.

## 3.9 Front-End Design

Front end design is very significant in any web app mainly because this is what the user feels and touches. In the case of AuctionCraft we have to understand that not only does the interface have to look good, it has to be practical and usable. Here's what we need to focus on. Here's what we need to focus on:

### 3.9.1 Key Components of Front-End Design

- **Navigation:** Organization and usability being what they are, the latter should not and, indeed, cannot be sacrificed. These are as follows; menu should displayed properly, use of breadcrumbs and there should be a search bar.
- **Forms and Inputs:** This should be evident in all the forms such as the registration forms, log-in forms, bidding forms where the label and the validating messages should be friendly plus in case of an error, the kind of errors that should pop up should also be friendly to the users.
- **Product Listings:** The current catalog should be in the form of a grid or list view, and the product displayed should have good quality and brief description of the product as well as bid amount, and time left for bidding.
- **Real-Time Updates:** A live feed for auctions is able to ensure the users, be informed of the new bid price as well as the status of the auction without having to refresh the page.
- **Feedback Mechanisms:** Allowing the users to give their opinions by commenting on products, rating certain products, and even writing their own reviews of the product is guaranteed to raise the interest as well as the trust of the users.

## 3.10 Back-End Design

The back end of Auction Craft is a powerhouse; it forms the application's base and effectuates most of the concerns that have to do with the servers, databases, and other services. Auction Craft back-end must be fast, secure and most importantly easy to scale. Here's a detailed look at the back-end design. The following is a brief discussion on the back-end design:

### 3.10.1 Key Components of Back-End Design

- **Server-Side Logic:** An interface to jobs concerning the reception of a user response, the execution of auctions, bid processing algorithms, and control of users' accounts.
- **Database Management:** The ability to properly store and access data as well as effectively use the data for computations. Select the correct type of database to use and gain information on the correct method of constructing queries in order to improve their performance.
- **API Design:** Establish the RESTful APIs for communicating with the front-end part and the back-end part as well as for accessing the 3rd party services.
- **Authentication and Authorization:** Recover and strengthen the mandatory degree of user identity and assign the stated rights to the resources.
- **Data Validation:** Make it a policy that no information with the possibility to enter a system with wrong input is allowed to do so since it is risky to a system.

## 3.11 Budget

However, to realize a real-world project creating, it is necessary to indicate our budget for one of the sections of the project. with the requirements. For this project to be complete and successful we defined our budget. Since Team meetings attract the highest cost amounting to 22,500/- for 15 sessions at 1,500/- per, the domain, and hosting fees claim 10,000/- for one. unit. Supervisor meetings were 9,600/- for 8 sessions that were 1,200/- each and hardware. general expenses are an initial connection and router 4,000/-, three laptops cost 360,000/-, three sets of keyboard and mouse 15,000/-. The total overall spending, including all groups, amounts to 421,100/-

<b>SL</b>	<b>Cost specification</b>	<b>Unit</b>	<b>Amount</b>	<b>Total</b>
1	Team meeting	15	1,500/-	22,500/-
2	Domain and Hosting	1	10,000/-	10,000/-
3	Meeting with supervisor	8	1,200/-	9,600/-
4	Initial connection and Router	1	4,000/-	4,000/-
5	Laptop	3	120,000/-	360,000/-
6	Keyboard and Mouse	3	5,000/-	15,000/-
<b>Total</b>				<b>= 421,100/-</b>

Table 3.1: Cost Specification Table

## 3.12 Methodology

We use the Waterfall methodology since this is how people's minds function, and their real-life practice unfolds. The advantage is that it is logically arranged, and each step is carried out before the following phase is started, similarly to preparing a travel. This linear approach provides goal orientation and check points hence provides a linear way of achieving a goal thus having the feeling of accomplishing something and this implies the achievement of personal milestones. It is highly effective since it is easy to follow, understand and control, hence becoming easy to implement by the various teams and stakeholders as they simply follow instructions. Moreover, the focus on writing clear and detailed throughout the problem-solving process also helps to maintain satisfactory levels of paperwork and traceability: it is like making detailed notes of the entire process.

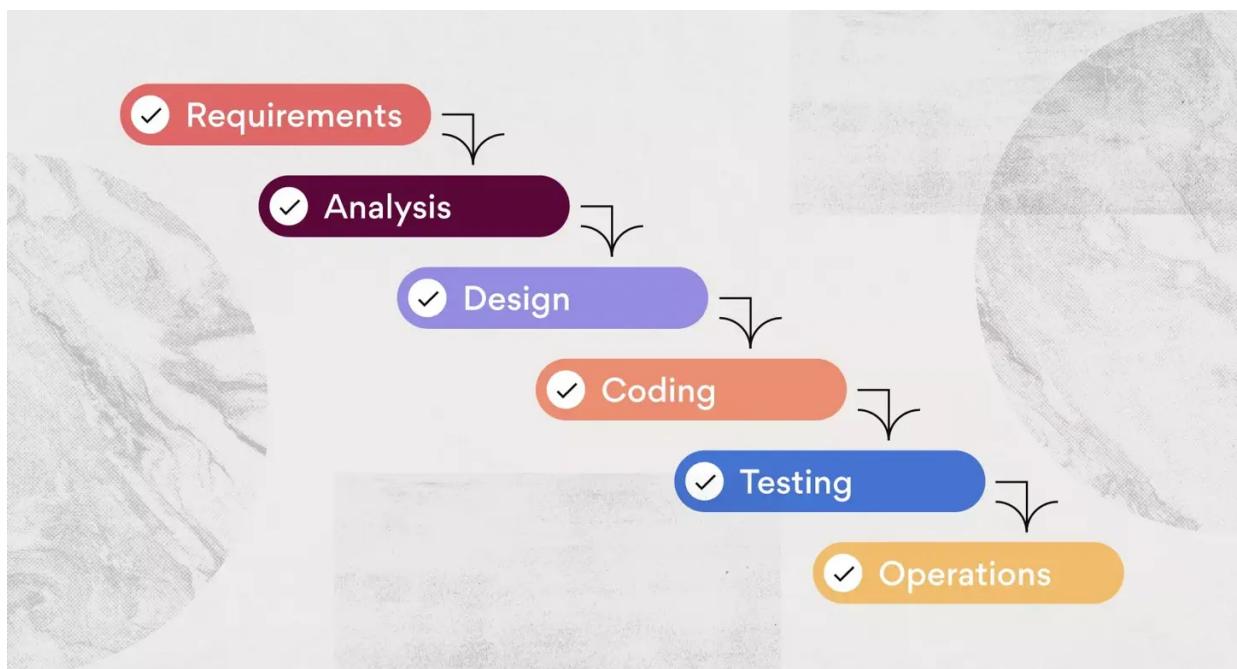


Figure 3.9: Waterfall Model

### 3.13 Gantt Chart

Starting in January, a kick-off meeting is held and Continue to collect the requirements of business from February. Database development is done between March and April, while UI development is done between April and June, though the periods slightly overlap. Implementation is from June to August; testing starts in July and ends in August to allow for the resolution of difficulties. Customer acceptance testing happens in August as it gives the green light to the system to go live. Maintenance begins in the September and lasts till December to ensure that the system is functioning as desired and there is identification of problems that may require fixing.

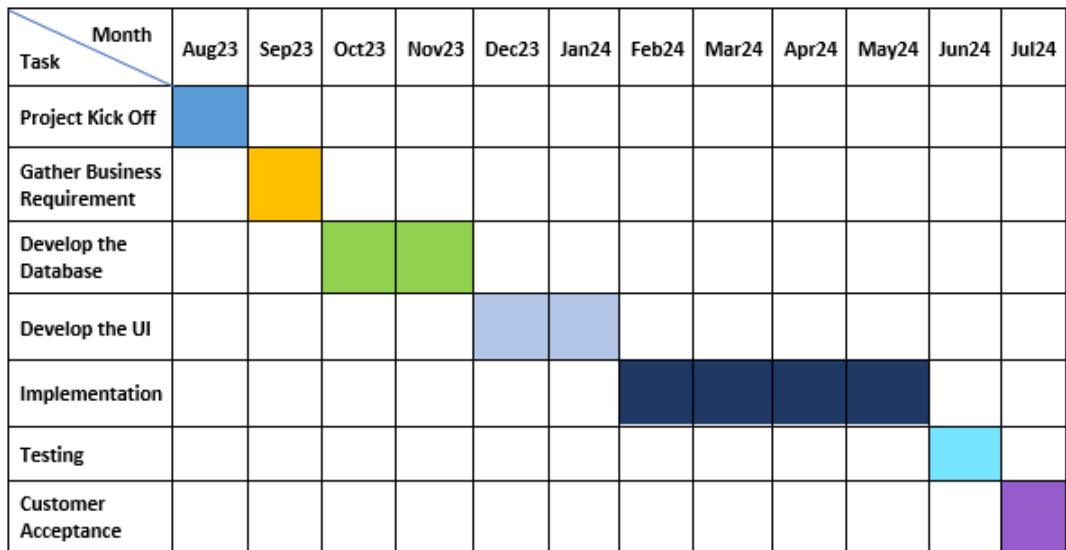


Figure 3.10: Gantt Chart of our project

### 3.14 Conclusion

Auction Craft's intends to change new online auction market by introducing focus, safe and convenient platforms for collectors. It shows the significance of the discovering and analyzing the characteristics of specific target markets, employing the up-to-date technologies to design the believable and stimulating auction spaces. Looking at previous such initiatives and growing from them, it is possible to make the next platforms even better and more suitable for the needs of all users who attend online auctions.

# Chapter 4

## Result Evaluation and Analysis

### 4.1 Introduction

Assessment and subsequent analyses of the Auction-Craft project are the defining activities that can be properly identified. Measures the general level of accomplishment and efficiency of the given platform. In this section, the emphasis is made on the analysis of quality, efficiency and productivity of the system in order to meet the aforesaid criteria. Specifications and offers an acceptable level of utilization to the users. This is a structural approach to the analysis that involves a methodical study of the operation. methodology to check the correct application of the offered features, possible enhancements, and the stability and trustworthiness of the site.

#### 4.1.1 Objectives of Result Evaluation

- **Validation of Functional Requirements:** Thus, to meet all the functional necessities of a contemporary business environment and to remain competitive a business needs to stick to an efficient plan. Specified at the time of planning are also correctly put into practice and operate effectively. This covers user verification, the catalogue of products, the actual bidding process, and a feedback mechanism from the user.
- **Performance Assessment:** To decide on the efficiency or otherwise of the system when put under different conditions like users distributions, load, and the number of transactions that would be involved. This involves measuring the response times, and throughput, and to what extent the platform performs under conditions of multiple user loads. and the platform's ability to handle concurrent users.
- **Usability Testing:** To evaluate the user interface and the Users' experience. This entails the process of gathering the opinions from the target users and evaluating the possibility of encountering problems concerning the usability of the product improvement.
- **Security Analysis:** To ensure that none of the above threats has exploited the system's vulnerabilities and to ensure that the system is protected, the following needs to be done threats. This entails assessing the security initiatives of the organisation, for instance, the efficiency of the security policies or protocols. Authentication of the users and authorization to access the various areas of the application or data that is to be transmitted.

- **Reliability and Stability Testing:** Thus, decision-makers should know that making the process open and honest is essential for the system to work without breakdowns. Crashes or significant bugs. It entails putting the platform through various trials for several months or years and under different conditions in order to make sure that the identified flow is stable.

## 4.2 Project Overview

Thus, the Auction Craft project is an internet-based auction model which should help to collect The setup of each feature is to provide a comfortable and entertaining experience to the operators and auction enthusiasts. The platform objective of this site is to allow the users to navigate it, search through an array of products, and bid for and buy those products with the assistance of real-time auctions.

## 4.2.1 User Dashboard

The Interface of the Auction Craft dashboard is neat, comprehensive, and optimized for users while providing information. It helps to convey the main value proposition and capabilities of the platform and literally leads the user prospective users towards the acts of browsing auctions, bidding, or registering to become members of the community. The rationale of such a design strategy is to create a user-friendly with low perceptual arousal. imagining users of the site coming back to copy actively in the auctions.

The screenshot shows the Auction Craft user dashboard with a dark theme. At the top, there's a navigation bar with links for Home, Categories, Register, and Login. The main header says "Welcome to Auction Craft" and describes it as "Your Premier Online Auction Destination". Below this, there are two main sections: "Bid with Confidence" and "Explore Our Auctions". The "Bid with Confidence" section features a paragraph about transparency and security, followed by a "LOGIN" button. The "Explore Our Auctions" section features a paragraph about the variety of items available, followed by a "REGISTER" button. In the center, there's a section titled "Recent Listings" showing four auction items:

- Apple MacBook Air (2022)** Apple M2 Chip 8GB RAM 512GB SSD 13.6 In  
Category: Laptop  
Current Bid: \$ 170000  
Active  
[BID NOW](#)
- Mercedes AMG G-Class**  
Category: Car  
Current Bid: \$ 10020  
Active  
[BID NOW](#)
- WNR-6D6-GDFS-DD**  
Category: Electric Device  
Current Bid: \$ 2000.00  
Active  
[BID NOW](#)
- Heat Master Elite**  
Category: Electric Device  
Current Bid: \$ 350  
Active  
[BID NOW](#)

At the bottom, there's a footer with the Auction Craft logo, a copyright notice ("All Rights Reserved © auctioncraft"), and links for Admin, Terms of Service, Privacy Policy, and Contact Us.

Figure 4.1: User Dashboard

## 4.2.2 User Login

The Auction Craft login page effectively balances simplicity and functionality, providing a clear and user-friendly interface for both returning and new users. The consistent branding, coupled with easy navigation and essential links, ensures that users have a seamless experience when accessing the platform.

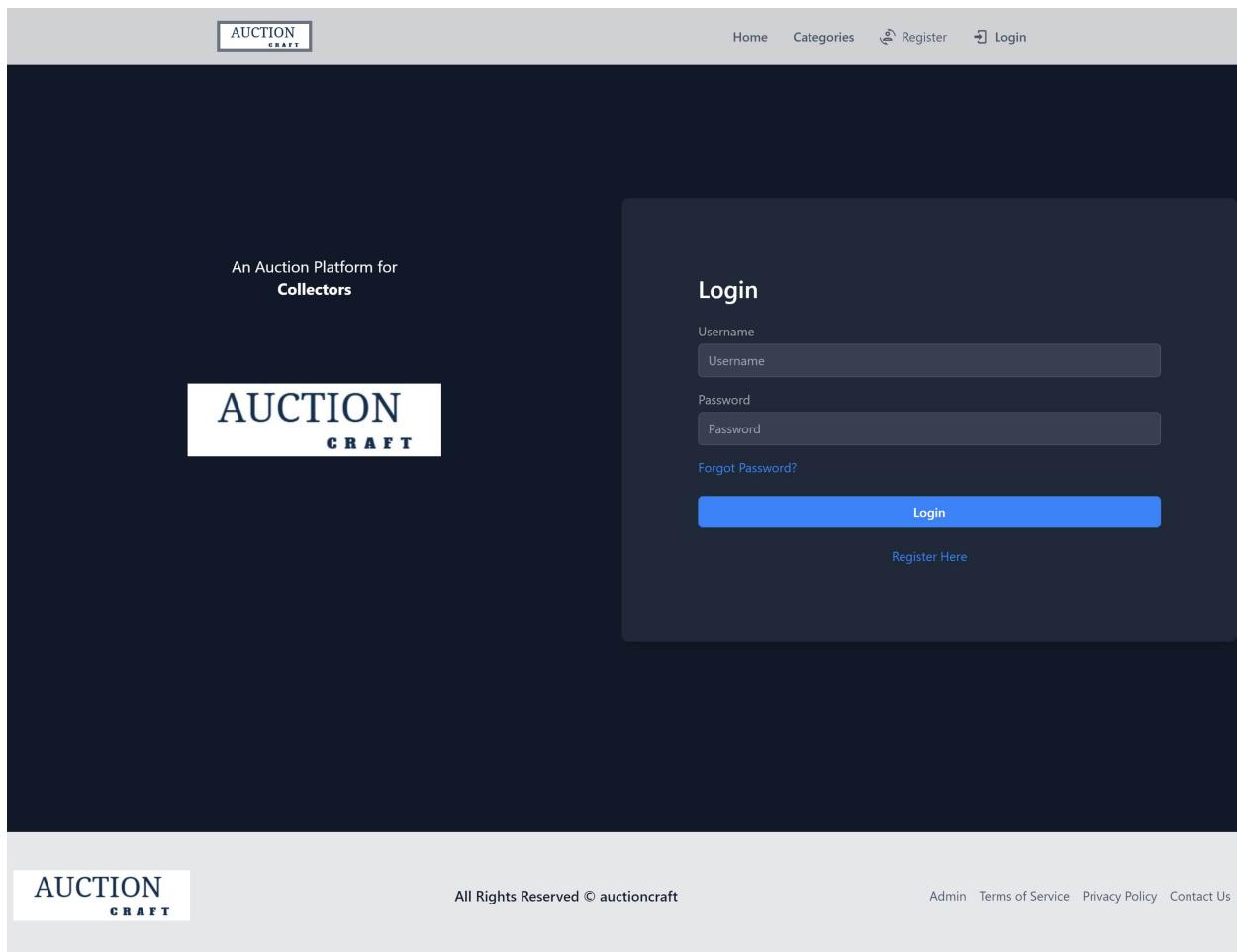


Figure 4.2: User Login

### 4.2.3 User Registration

The registration page of Auction Craft is a core process that is involved in user acquisition and the growth platform's community. Its ability to incorporate data, naturally integrate itself into a practitioner's job, and its general security help to provide proper registration as well as to define the uninterrupted safety of registration procedures that will help to improve the experience for users. Building credibility of the Auction Craft brand.

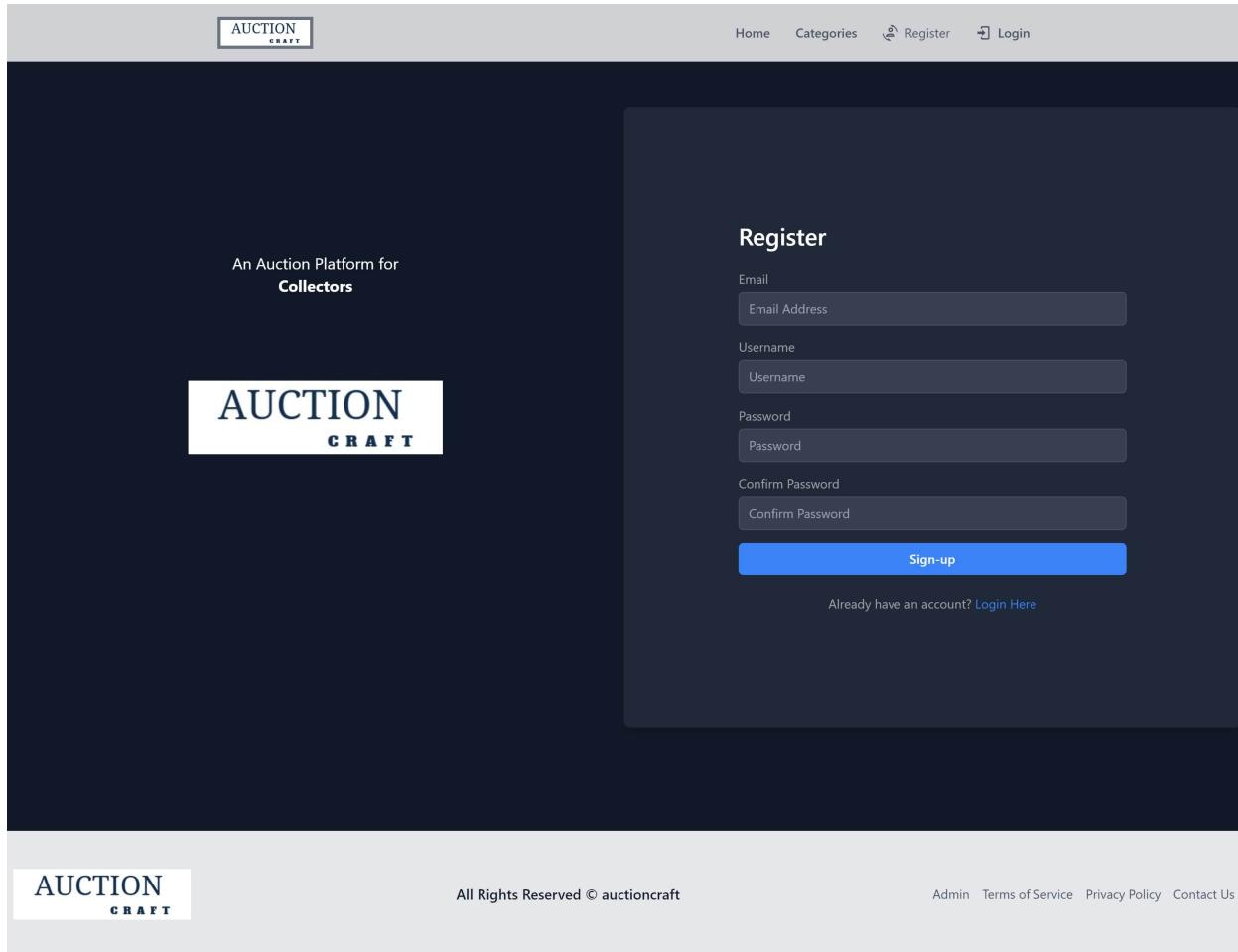


Figure 4.3: User Registration

#### 4.2.4 OTP Authentication

The OTP authentication page of Auction Craft is an essential component used in the security process of the site to assure user identity, and on occasions, even safeguard accounts. Their simplicity, flexibility in usage, and numerous instructions are conveniently unified. Objectives such as branding help in achieving a smooth and safe environment for users. This means that by adding an extra layer of securities in the investment process, it reduces vulnerability to risks. Security, this page assists in the protection of user accounts and contributes to the formation of trust of the Auction Craft platform.[10]

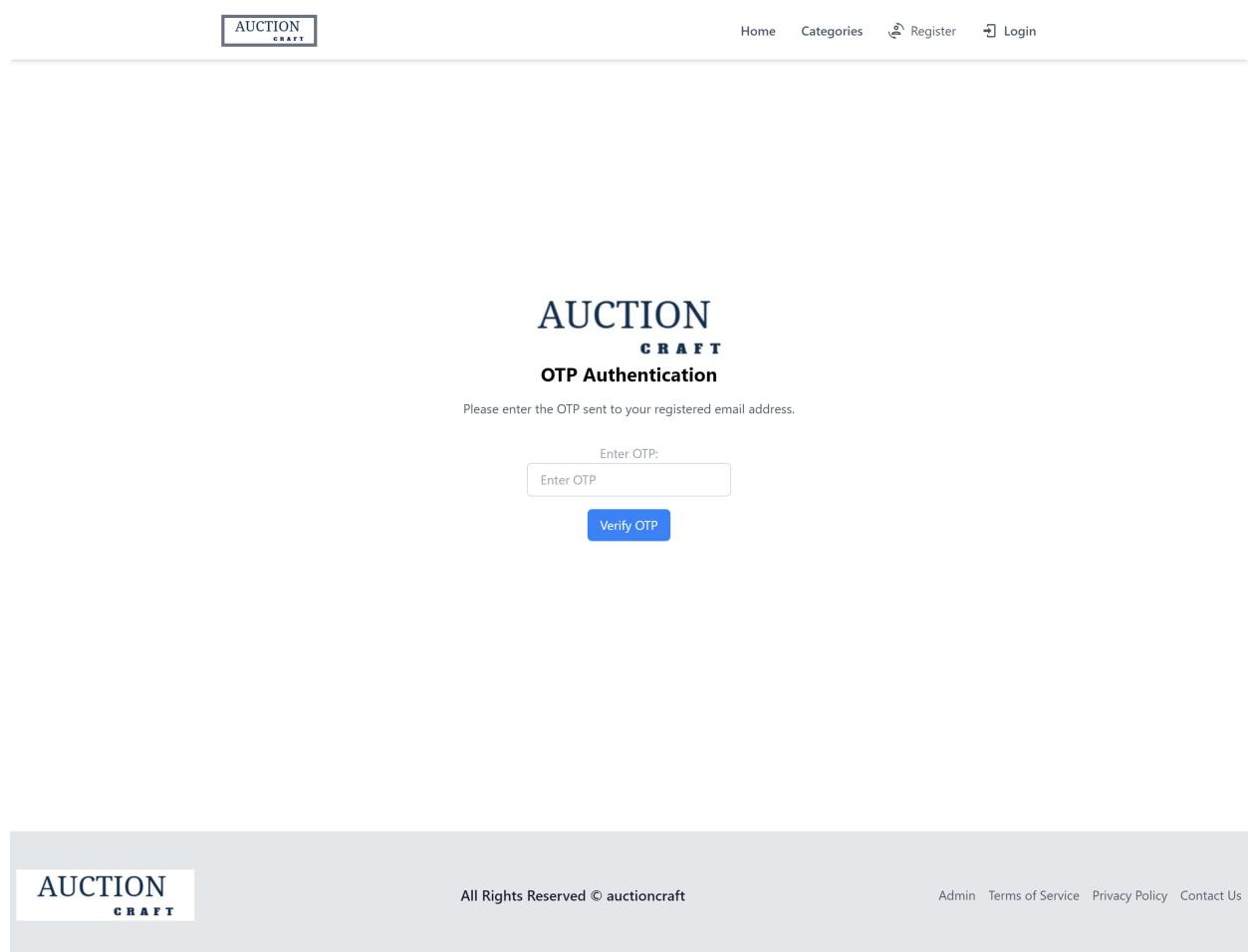


Figure 4.4: OTP Authentication

#### 4.2.5 Categories

The created categories page contributes to improving the buyers' overall experience since the clients can quickly locate the most suitable products for their purchase. purchase, and competitively bid for, virtually all products. Hence, the most basic features like the search bar, are considered an absolute minimum that any basic website should have. The list format, subcategories, and headings and search filter options make it possible for the user to maneuver through the auction frail efficiently and confidently.

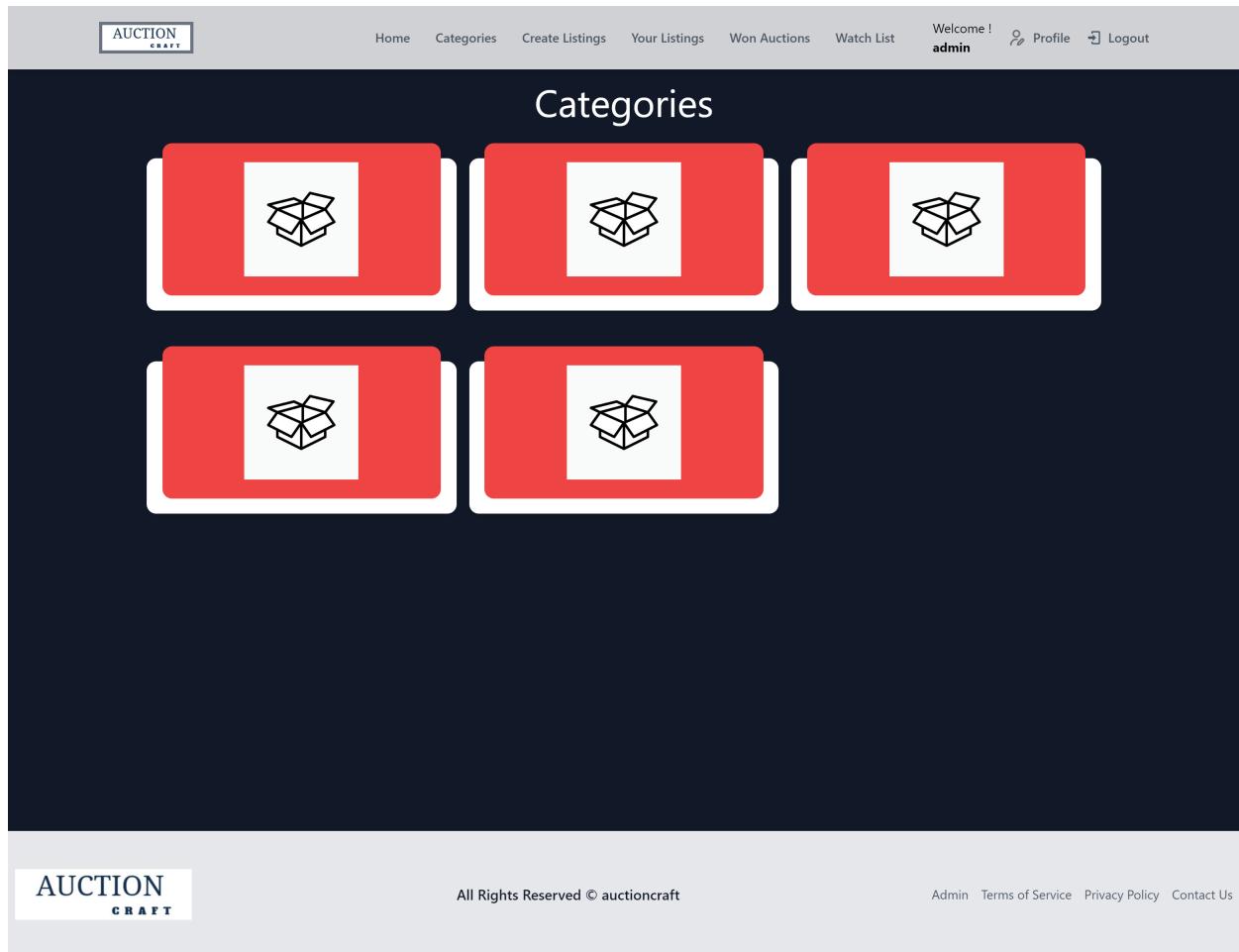


Figure 4.5: Product Categories

## 4.2.6 Create Listing

Auction Craft has features that allow users to easily complete the step dealing with product upload and list the products for auction in the quickest of time possible. Thus, Auction Craft presents an understandable interface, clear instructions, and the most necessary options, including category selection and image placement, to help people sell their items properly. Thus, this process helps sustain users' interest, contribute to the platform's efficiency, and foster trust and transparency. By promoting a proper listing pattern of products, Auction Craft improves the general outlook of its website making it the best site to make your online auctions.

The screenshot shows the 'Create Listings' page of the Auction Craft website. At the top, there is a navigation bar with links for Home, Categories, Create Listings, Your Listings, Won Auctions, Watch List, and a user profile section for 'Hasnine'. Below the navigation bar, the main content area has a title 'Create Listings'. The form contains fields for 'Title' (with a placeholder), 'Category' (set to 'Electric Device'), 'Description' (empty), 'Starting value' (empty), and 'Image' (with a file input field showing 'Choose File No file chosen'). A blue 'Submit' button is at the bottom of the form. The footer of the page includes the 'AUCTION CRAFT' logo, copyright information ('All Rights Reserved © auctioncraft'), and links for Admin, Terms of Service, Privacy Policy, and Contact Us.

Figure 4.6: Create Listing

## 4.2.7 Your Listing

The listing function represents the primary component of Auction Craft; it allows users to bid on the products and monitor the status of the auctions. This makes Auction Craft simple by offering detailed product information to its users, the most convenient bidding process possible, and giving its users a very clear and concise status of the auction. Besides increasing users' interest the function contributes to the constant dynamics and further competition in the market.

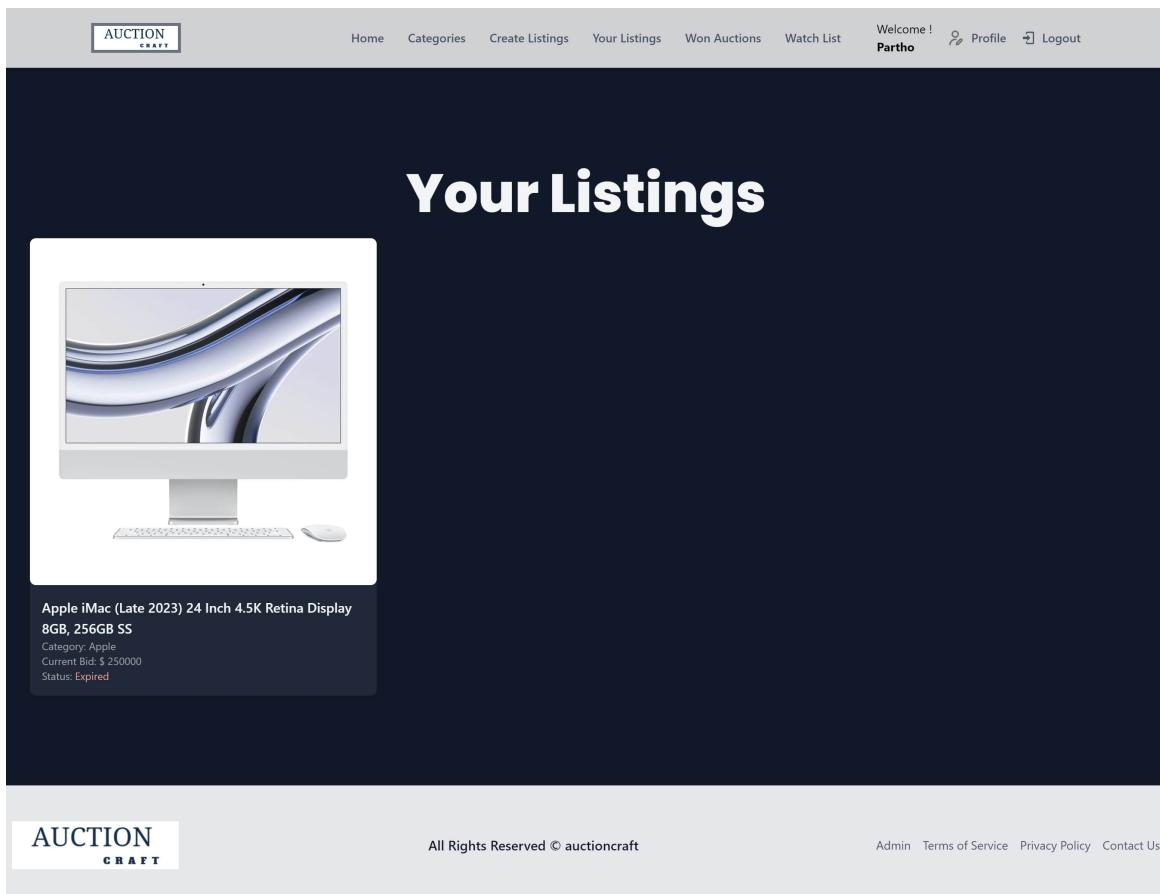


Figure 4.7: Your Listing

## 4.2.8 Listing Detail

The quality of the product page of Auction Craft is well-developed and designed to give a user optimized information about auction items in order to make a right bid. They include picture display, detailed description, background information on biddable elements, and updates. In this manner, it provides users with the necessary amount of information, increases consumer trust, and enables active participation in auctions.

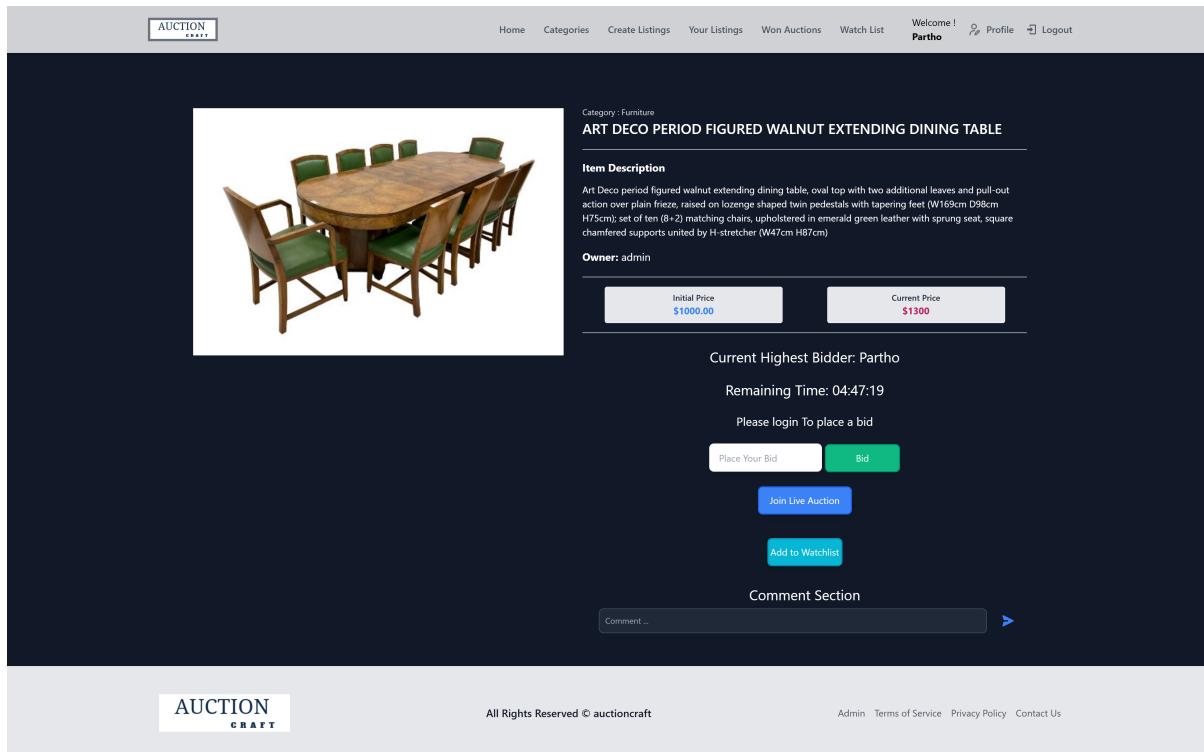


Figure 4.8: Listing Detail

#### 4.2.9 Watch List Product

Watch Listing makes a tremendous impact on the user interface of Auction Craft as it helps to filter the favorite products and continuously monitor them. This function provides real-time status information, notification, and specifics to do with the product in question all of which are located in a section of the users' account. As a result, the Watch Listing feature directly correlates to the Auction Craft platform's success and user interface by improving engagement, productivity, and satisfaction.

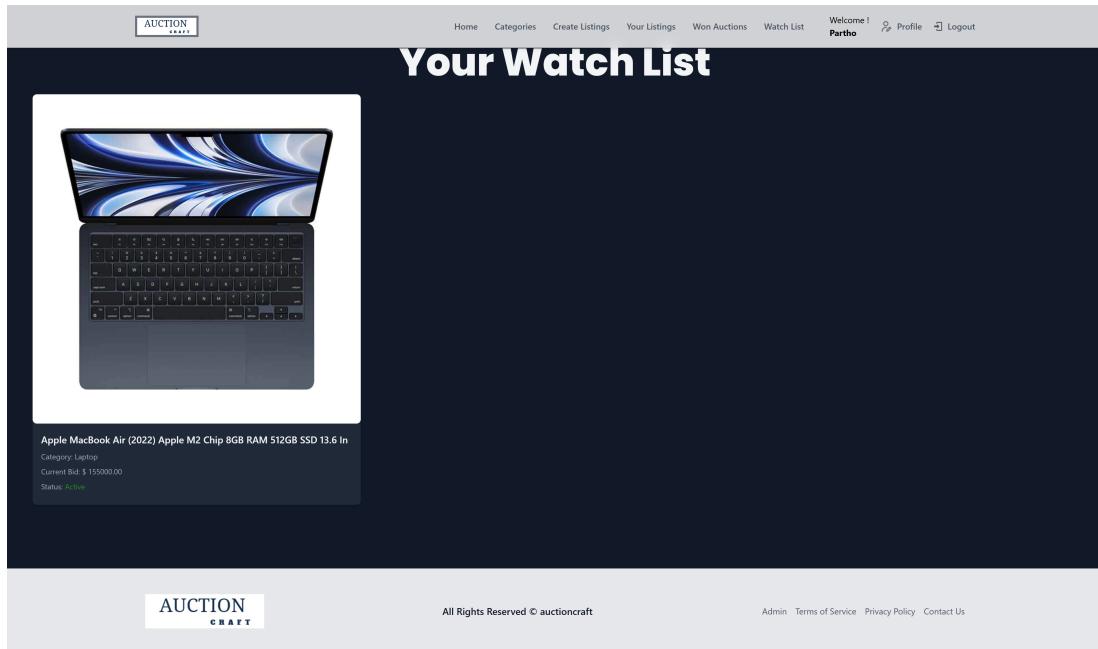


Figure 4.9: Watch List Product

#### 4.2.10 User Profile

The concept of the user profile page for AuctionCraft is again crucial because it gives all the necessary personal information about the specific user, as well as the means to modify various aspects of one's profile and password info. User-friendliness is another idea that organizes convenient navigation, reliable security, and competent consistent branding to complement the value added to the user. This would easily increase interaction and satisfaction of users with the account management page that this change would provide.

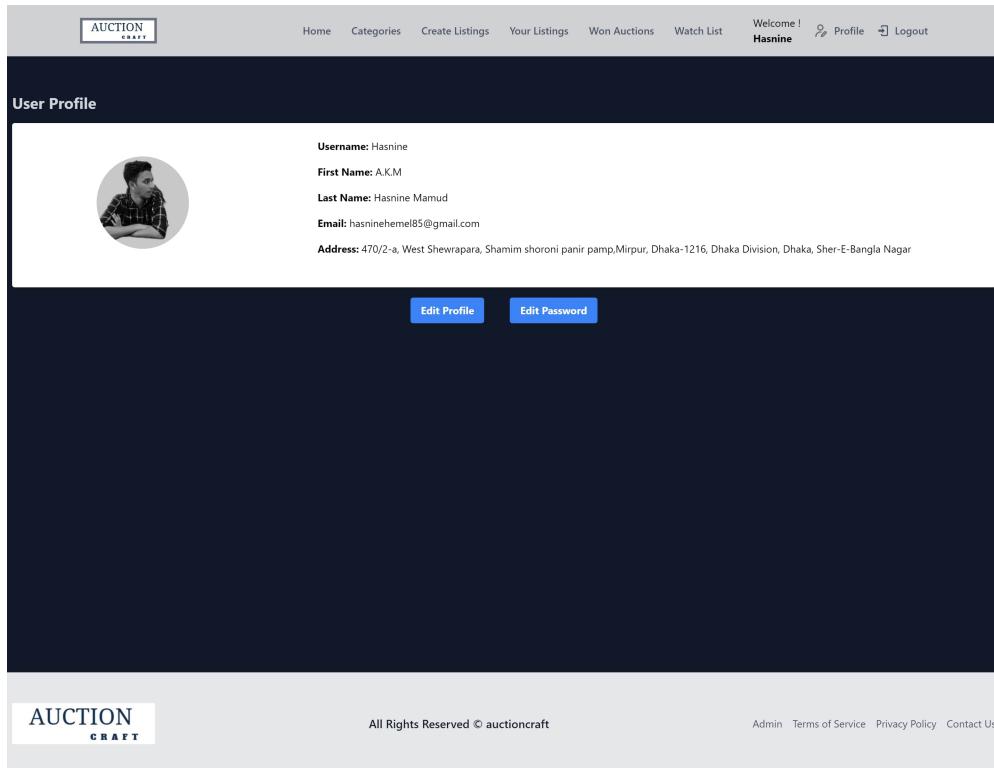


Figure 4.10: User Profile

#### 4.2.11 Live Meeting

Live meetings regarding Auction Craft most probably allow for real/live bidding, product presentation, bargaining, and customer service coming in to make the auction experience more interactive and spirited for buyers and sellers.

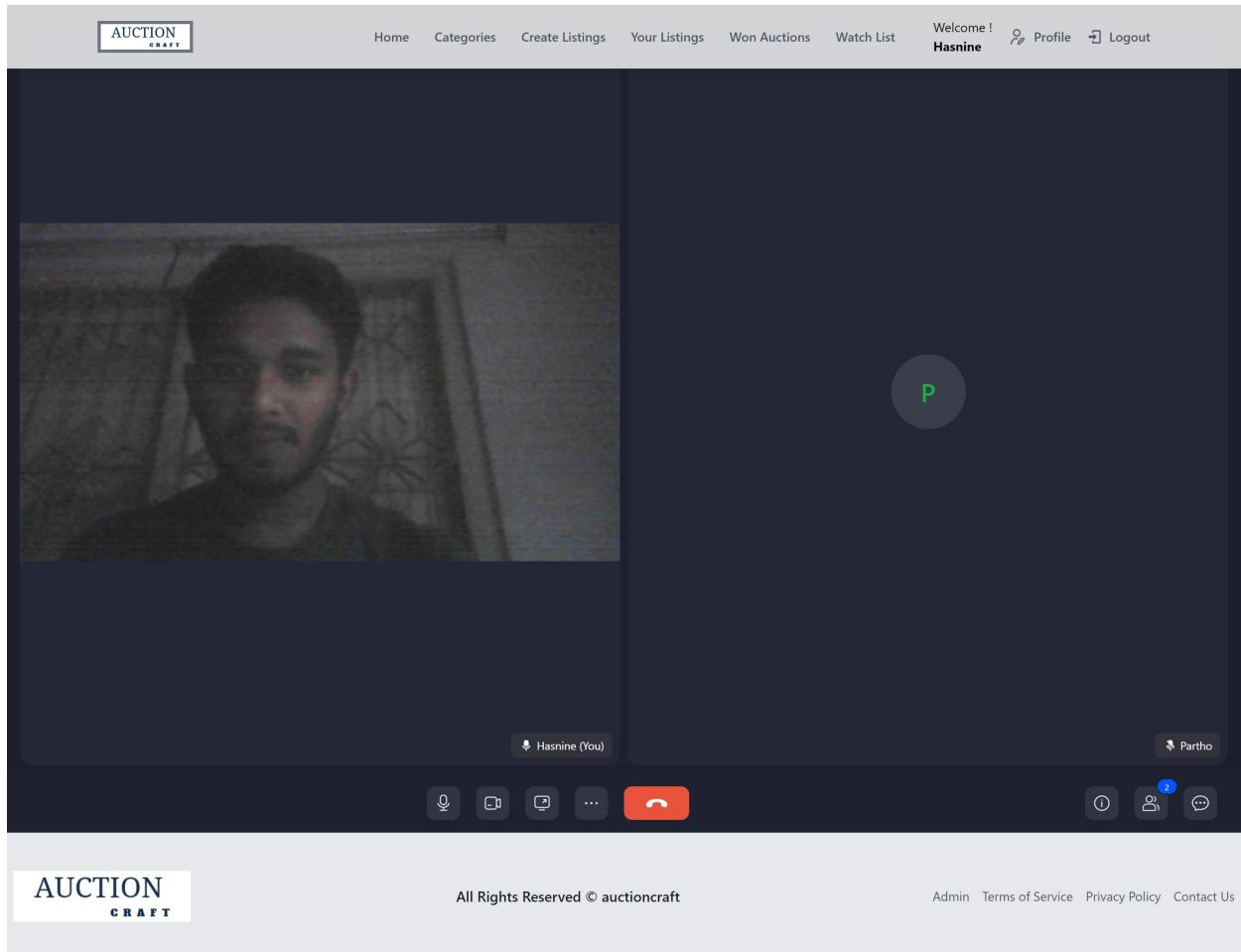


Figure 4.11: Live Meeting

#### 4.2.12 Admin Dashboard

In general, AuctionCraft Admin Dashboard has been deemed an essential mechanism for the administrators of this platform regarding users, listings, and reports. Functions aimed at improving business processes and offering useful information makes the dashboard guarantee the administrators managed a secure and high-quality auction process. The ease of use of the item and the inclusion of all the aspects makes it an essential tool of AuctionCraft helping in the efficient running of the platform.

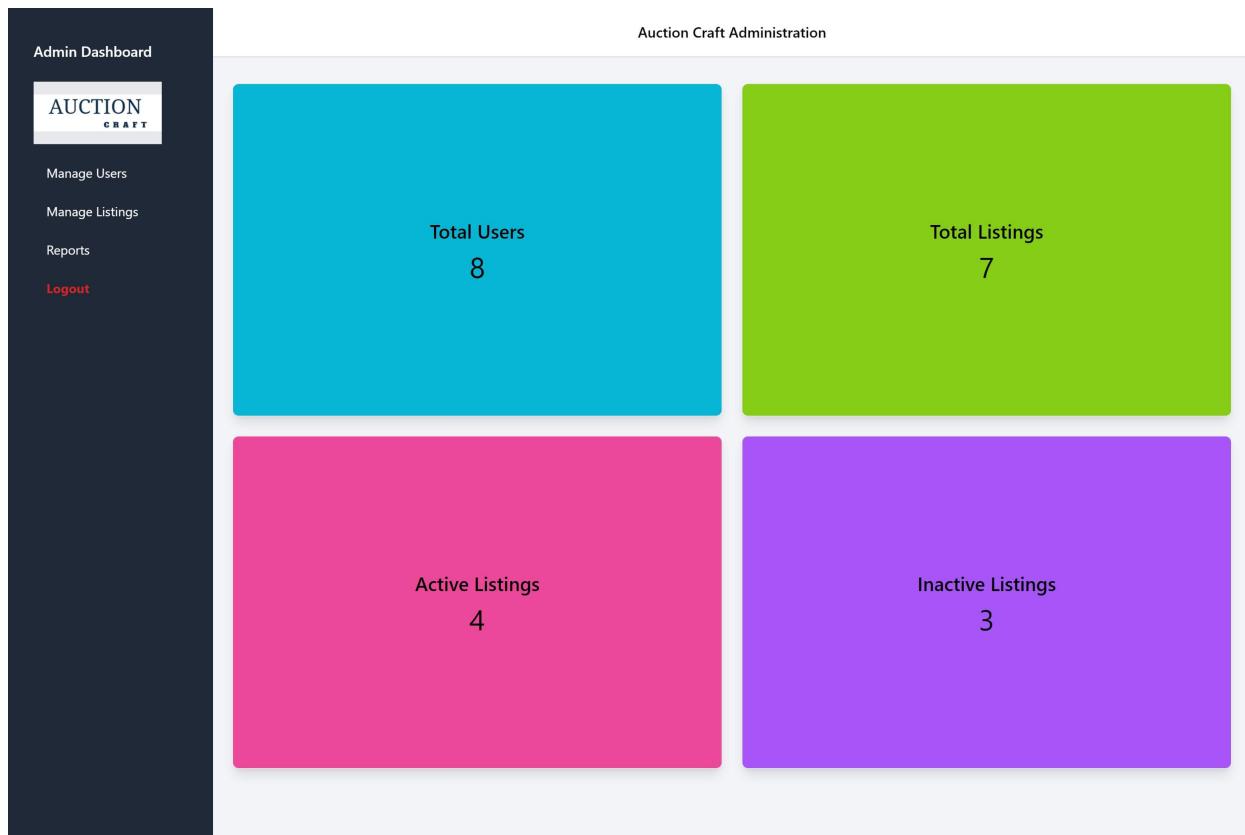


Figure 4.12: Admin Dashboard

#### 4.2.13 Manage User

Manage Users is one of the crucial instruments found on Auction Craft's admin panel designed to facilitate the management of the selected platform's user base. For the users, it offers a convenient solution to work with the accounts and personal data, while the administrators get all the tools needed to control the actions and improve the security.

The screenshot shows the 'Auction Craft Administration' interface. On the left, there is a dark sidebar with the 'Admin Dashboard' header. Inside the sidebar, there are four menu items: 'Manage Users' (highlighted in blue), 'Manage Listings', 'Reports', and 'Logout'. The main content area is titled 'Manage Users'. It lists eight users with their names, email addresses, and small profile icons. To the right of each user entry is a 'View Profile' button. The users listed are:

User	Email	Action
admin	hasninehemel85@gmail.com	<a href="#">View Profile</a>
Hasnine	hasninehemel85@gmail.com	<a href="#">View Profile</a>
Partho	priyotopartho400@gmail.com	<a href="#">View Profile</a>
Nayeem	mdhasinemamud8513512@gmail.com	<a href="#">View Profile</a>
Mamud	hasninemamud004@gmail.com	<a href="#">View Profile</a>
Roman	abrar151279@gmail.com	<a href="#">View Profile</a>
Hasinur	hasinurrahman01012018@gmail.com	<a href="#">View Profile</a>
ASM Nayem	asmnayem2001@gmail.com	<a href="#">View Profile</a>

Figure 4.13: Manage User

## 4.2.14 Manage Product

Manage Listings which is located in the Auction Craft basically offers an efficient way of managing the auction listings. They are set to enable the administrations to view the listing, edit, activate, deactivate, and delete them, thus serving to protect the quality of the platform as well as the quality of the interfaces. This feature helps the smooth running of the business, followed by improvement of its users' experience, and final adherence to the legal requirements. If Auction Craft pays attention to the different listings it hosts, it can ensure that its environment is trustworthy and entertaining to all the users.

The screenshot shows the 'Manage Listings' section of the Auction Craft Administration interface. The left sidebar includes links for Admin Dashboard, AUCTION CRAFT, Manage Users, Manage Listings (which is selected), Reports, and Logout. The main area has a search bar with placeholder 'Search listings' and a 'Search' button. Below the search bar, the title 'Manage Listings' is displayed. The page lists five products:

- Apple MacBook Air (2022) Apple M2 Chip 8GB RAM 512GB SSD 13.6 In**  
Processor Type - Apple M2 Generation - Not ApplicableRAM - 8GBStorage - 512GBSS/Grafic Memory - SharedDisplay Size (Inch) - 13.6Starting Value: \$155000.00Category: LaptopAuction Active: Yes  
[Delete](#) [Deactivate](#)
- BMW X1 SUV**  
2.0-liter BMW M TwinPower Turbo inline 4-cylinder, 16-valve 312-hp engine. Combines a twin-scroll turbocharger with variable valve control (Double-VANOS and Valvetronic) and high-precision direct injectionStarting Value: \$49000.00Category: CarAuction Active: No  
[Delete](#)
- Mercedes AMG G-Class**  
All G550 now come with a turbocharged 3.0-liter inline six with 443 hp and 413 lb-ft of torque. A 48-volt hybrid system helps out but doesn't provide any electric-only driving range. The powertrain sends its torque to the wheels via a nine-speed automatic transmission; all-wheel drive is standard, as are the famed triple differential locks that center lock and low-range. In our initial test drive, the new inline-six engine performed admirably but lacked the distinctive sound of a V-8 thatStarting Value: \$100000.00Category: CarAuction Active: Yes  
[Delete](#) [Deactivate](#)
- Apple iMac (Late 2023) 24 Inch 4.5K Retina Display 8GB, 256GB SS**  
Display Size - 24 InchDisplay Resolution (Pixels) - 4480 x 2520RAM - 8GBHard Disk Drive (HDD) - NoSolid-State Drive (SSD) - 256GBGraphics Memory - SharedStarting Value: \$30000.00Category: AppleAuction Active: No  
[Delete](#)
- West Master Elite**  
High-temperature sustainable glass - From 200Watt to 2000 Watt for cooking - Rapid Heating, faster cooking timeStarting Value: \$200.00Category: Electric DeviceAuction Active: Yes  
[Delete](#) [Deactivate](#)
- ART DECO PERIOD FIGURED WALNUT EXTENDING DINING TABLE**  
Art Deco period figured walnut extending dining table, with top with two additional leaves and pull-out action over plain brass, raised on ligerine shaped thin pedestals with tapering feet (W169cm D98cm H75cm); set of ten (8+2) matching chairs, upholstered in emerald green leather with sprung seat, square chamfered supports united by H-shaped base (W47cm H87cm)Starting Value: \$70000.00Category: FurnitureAuction Active: Yes  
[Delete](#) [Deactivate](#)

Figure 4.14: Manage Product

## 4.2.15 Report

The likely audience of the Management Report section on Auction Craft are administrators and specifically, it offers information on the leads acquired within the past week. It presents the result in the form of graphical as well as tabular form, which make an overall and easy view of registration scenario and enable the tracking of growth and activity of the particular platform. This information is vital for providing tactical decision-making as to what marketing approaches to take, how to allocate resources, and how to manage AuctionCraft's platform, all to guarantee growth in the number of people using the platform.

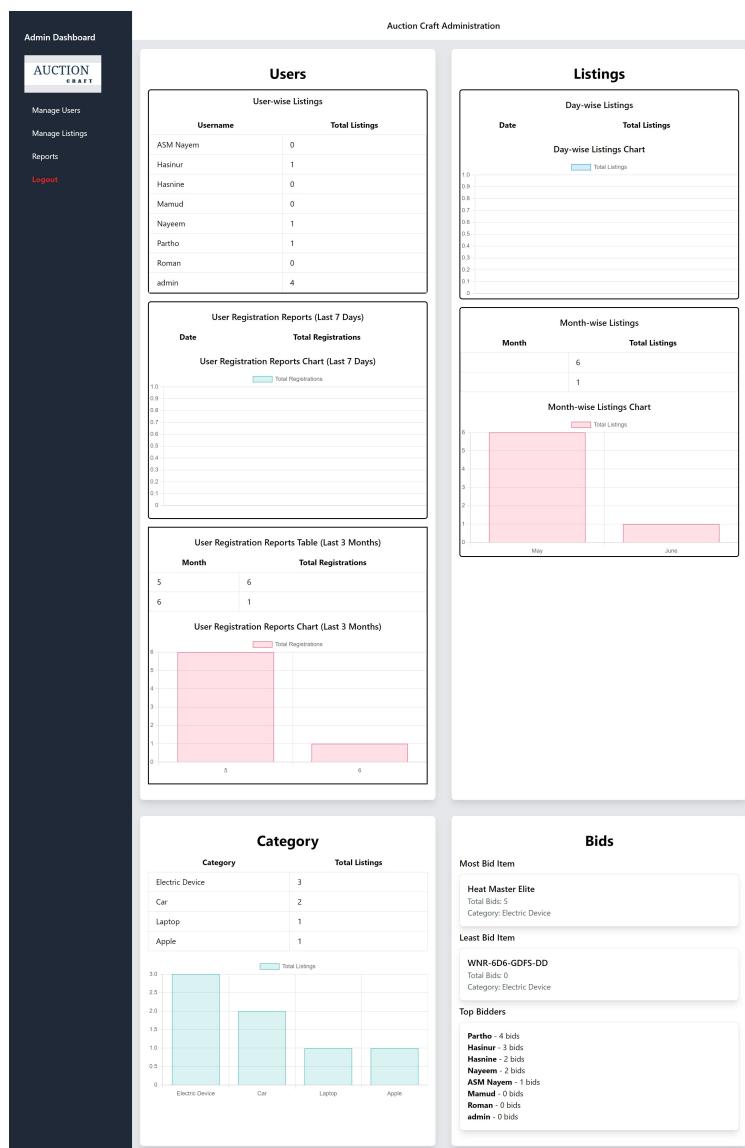


Figure 4.15: Report

#### 4.2.16 Django administration panel

The Django administration panel is an effective and mandatory tool for controlling various activities and features of the Django-oriented website. Thus, the site offers them the ability to work with user accounts, content, auctions, bids, comments, and watchlists conveniently through a single admin interface. Through the use of the admin panel, the website's administrators can achieve operational efficiency and also retain customers' satisfaction as well as abide by website polices. It helps to manage a website and simplify its functioning to the extent that administrators can concentrate on main changes and advancements.

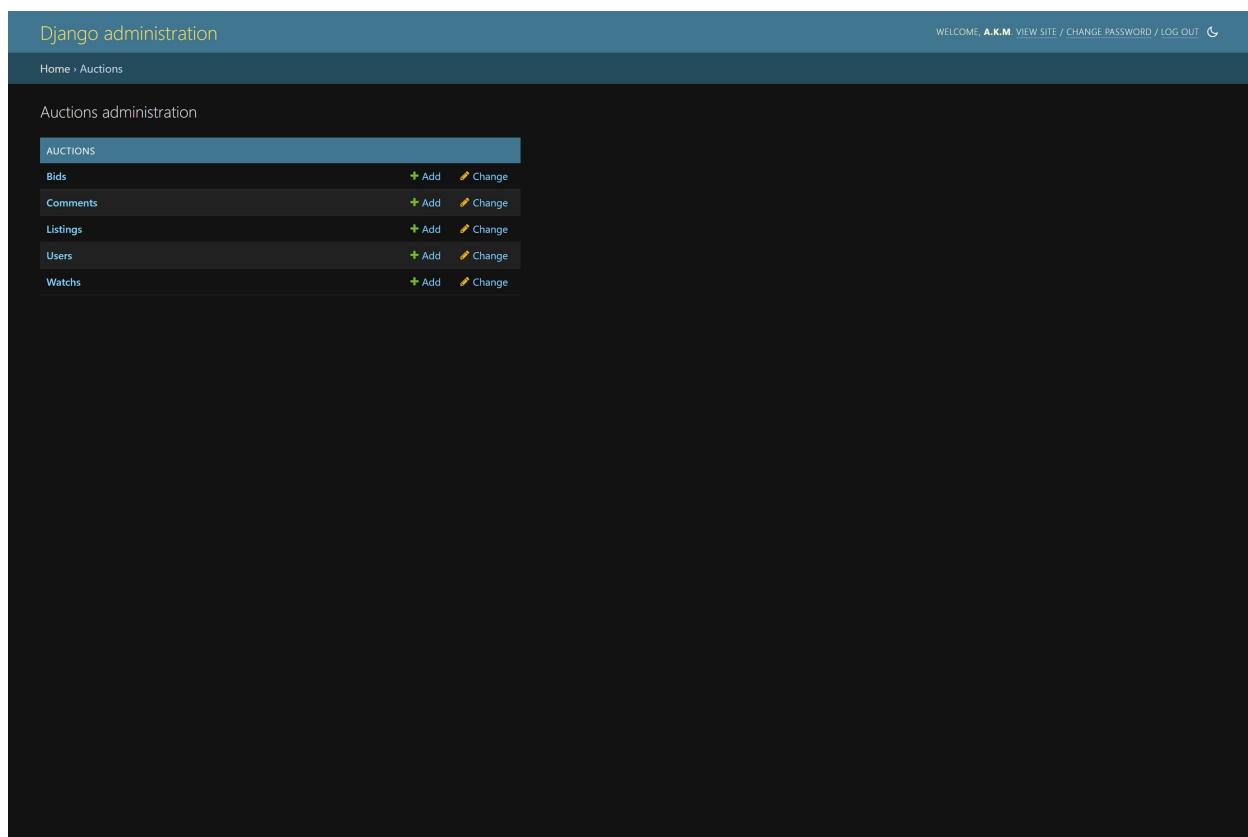


Figure 4.16: Admin Panel

## 4.2.17 Auction Bids

Be it the aesthetics or the usability, the stack of an application has to be well-disciplined in order to maintain the quality and the consistency of the auction process on the Auction Craft application. Through provision of accurate and relevant information, it makes it possible for administrators to have proper management in dealing with issues concerning bidding so as to have proper and efficient bids that are credible to the users. Such a design not only accommodates the administrative requirements but also improves the image of the auction process, encouraging users' trust.

The screenshot shows the Django administration interface for the 'Bids' model. The left sidebar contains navigation links for 'AUCTIONS' (Bids, Comments, Listings, Users, Watches), 'AUTHENTICATION AND AUTHORIZATION' (Groups), and 'OTP\_TOTP' (TOTP devices). The main content area displays a table titled 'Select bid to change' with columns: Action, ID, USER, LISTING, and VALUE. The table lists 12 bids from various users (ASM Nayem, Hasinur, Partho, Hasnine, Nayeem) against different listings with their respective values. A footer at the bottom indicates '12 bids'.

Action:	ID	USER	LISTING	VALUE
<input type="checkbox"/>	18	ASM Nayem	Listing object (17)	250000.00
<input type="checkbox"/>	17	Hasinur	Listing object (19)	350.00
<input type="checkbox"/>	16	Hasinur	Listing object (19)	320.00
<input type="checkbox"/>	15	Partho	Listing object (19)	213.00
<input type="checkbox"/>	14	Hasinur	Listing object (19)	212.00
<input type="checkbox"/>	13	Hasnine	Listing object (19)	210.00
<input type="checkbox"/>	12	Partho	Listing object (16)	10020.00
<input type="checkbox"/>	11	Nayeem	Listing object (15)	53000.00
<input type="checkbox"/>	10	Partho	Listing object (15)	52000.00
<input type="checkbox"/>	9	Nayeem	Listing object (15)	50000.00
<input type="checkbox"/>	7	Partho	Listing object (13)	170000.00
<input type="checkbox"/>	6	Hasnine	Listing object (13)	160000.00

Figure 4.17: Show bidders list, product, and amount

## 4.2.18 Product Comments

The comments part in the administration panel of Auction Craft, an online auction system designed using the Django framework. This section can be considered as the part of the administrative interface that makes it possible to collect and manage users' comments on the given auctions.

The screenshot shows the Django administration interface for the 'Comments' model. The left sidebar lists various models: Bids, Comments, Listings, Users, Watches, Groups, and TOTP devices. The 'Comments' model is selected and highlighted in green. The main content area displays a table of comments. The table has columns for 'ID', 'USER', 'LISTING', and 'COMMENT'. There are 11 comments listed:

ID	USER	LISTING	COMMENT
12	Hasnine	Listing object (19)	http://127.0.0.1:8000/meeting/?roomID=3660
11	Hasnine	Listing object (16)	http://127.0.0.1:8000/meeting/?roomID=4674
10	Hasnine	Listing object (16)	http://127.0.0.1:8000/meeting/?roomID=8460
9	ASM Nayem	Listing object (17)	Hi I'm Nayeem
8	Hasinur	Listing object (19)	Hi Partho. I'm fine. what about you
7	Partho	Listing object (19)	Hi Hasinur How are you
6	Hasinur	Listing object (20)	You can bid Now
5	Hasinur	Listing object (19)	How many time i can bid
4	Hasnine	Listing object (19)	Product is really good
3	admin	Listing object (19)	Fake product
2	Hasnine	Listing object (13)	What's up

At the bottom of the table, it says '11 comments'.

Figure 4.18: Product Comments

## 4.2.19 Product Listing

Through the Listings section in the Django administration panel of Auction Craft, it is possible to easily manage added auction items. This application enables administrators to get a good look at all created listings as well as to edit and manage them effectively thus providing assurance to the platform that it is timely and well sorted. This section has a very important role in ensuring the auctioning process is professional and above board by ensuring that all information and tools relating to the listing are accessible conveniently.

The screenshot shows the Django administration interface for the 'Listings' model. The left sidebar contains a navigation menu with links for 'Bids', 'Comments', 'Listings', 'Users', and 'Watches'. Below these are sections for 'AUTHENTICATION AND AUTHORIZATION' (Groups) and 'OTP\_TOTP' (TOTP devices). The main content area is titled 'Select listing to change' and displays a table of 7 entries. The table columns are 'ID', 'USER', and 'TITLE'. The entries are:

ID	USER	TITLE
20	Hasinur	Redmi Note 9 Pro Max
19	admin	Heat Master Elite
18	admin	WNR-5D6-GDFS-DD
17	Partho	Apple iMac (Late 2023) 24 Inch 4.5K Retina Display 8GB, 256GB SSD
16	Nayeem	Mercedes AMG G-Class
15	admin	BMW X1 SUV
13	admin	Apple MacBook Air (2022) Apple M2 Chip 8GB RAM 512GB SSD 13.6 In

At the bottom of the table, it says '7 listings'.

Figure 4.19: Product Listing

#### 4.2.20 User Information's

The target feature in the Auction Craft – Users offers authorities control over accounts, included into the administration interface. This one displays all people who are registered or logged in, provides an ability to select several of them using checkboxes and/or the drop-down list at the top, and use the corresponding button to add a new user. Thus, it allows maintaining and managing the users and customers efficiently for easy and effective supervision and management of the users in the site.

The screenshot shows the Django administration interface for the 'Users' model. The left sidebar has a 'Start typing to filter...' input field and lists 'ACTIONS' (Bids, Comments, Listings, Users, Watches), 'AUTHENTICATION AND AUTHORIZATION' (Groups), and 'OTP\_TOTP' (TOTP devices). The main area is titled 'Select user to change' and shows a list of 8 users with checkboxes. The users listed are: ASM Nayem, Hasinur, Roman, Mamud, Nayeem, Partho, Hasnine, and admin. At the bottom, it says '8 users'.

Figure 4.20: User Information's

#### 4.2.21 Product on Watch

The last one is the “Watches” section that can be found in the Auction Craft admin interface and it can be used to sort out the currently watched items owned by users. It displays the watch list, allows multiple selecting for actions, and contains the buttons for adding new watch strings. This goes a long way in managing and sustaining the users’ interest on the platform adequately.

The screenshot shows the Django administration interface for the 'Watches' model. The left sidebar has a search bar and lists categories: AUCTIONS (Bids, Comments, Listings, Users, Watches), AUTHENTICATION AND AUTHORIZATION (Groups), and OTP\_TOTP (TOTP devices). The main area is titled 'Select watch to change' and shows a table with 5 rows. The columns are 'ID', 'USER', and 'LISTING'. The data is as follows:

ID	USER	LISTING
41	Partho	Listing object (18)
40	ASM Nayem	Listing object (17)
39	Hasinur	Listing object (19)
37	Nayeem	Listing object (13)
36	Hasnine	Listing object (13)

Below the table, it says '5 watches'. There are 'Action' dropdown and 'Go' buttons at the top, and an 'ADD WATCH' button in the top right corner.

Figure 4.21: Here Admin can add new product

# **Chapter 5**

## **Conclusion**

To sum up, Auction Craft project is a great step forward for improving modernized auctions as with the help of technologies one can create a safe and easy-to-use platform designed for certain types of sales. By solving problems of user attraction and keeping, security issues, and real-time actions, Auction Craft will improve the experience of collecting electronics, cars, furniture, and laptops for admirers of auctions. However, one have to indicate possible drawbacks connected with access, geographic coverage of services provided, dependency on third parties, and security issues. Through the evaluation of such factors and consistent updates of this platform in response to the users' feedback, Auction Craft can indeed satisfy the various demands of these users and become a prominent solution in the sphere of online auctions.

### **5.1 General Discussion**

There is a lot that Auction Craft has for the auctioning context, and its chief objectives are to simplify, make easier, and optimize the auctions. This platform aims at simplifying the categories of sales and purchase in niche markets such as electronics, automobiles, furniture, and laptops that are generally marketed to collectors. Thus, developing the enhanced functions and the clear navigation, the Auction Craft aims to reduce the typical problems of auction arenas.

The main focus of Auction Craft is the improvement of client experience and joy. Thus, with such features as real-time bidding options and fair feedback, the platform strives for the creation of an active and reliable space for the users. It also helps to widen the circle of participants since they can engage in an auction and, at the same time, it enhances the competitive context while not making it unfair.

In the case of Auction Craft, accessibility proves to be a central factor. Thus, the platform perfectly targets regular and first-time users – everyone that dabbles in auctions should find the system easy to use. Also, Auction Craft also aims at covering limitations like service accessibility and availability since the offered services can differ depending on the region.

Concerning Security and privacy, Auction Craft's layout says it all. This argues that using strong security measures in handling the user information and transactions is among the cardinal principles that people shall embrace. In light of this, the proper implementation of this approach as well as taking advantage of any technological solutions in the execution of online

auctions, Auction Craft seeks to ensure that clients' interests are protected from potential risks of online transactions.

## 5.2 Limitation of the project

It has some drawbacks as follows; A major challenge that may arise is the ability to scale up Auction Craft from the scope of a solo developer's college project to deal with more users and, therefore, higher transaction frequency. It also does not include many of the features that come with well-developed auctions such as multiple bid types and self-serve arbitration systems. The lack of capital and experience make security a potential problem because the platform could easily be hacked into. Possible constraints inscribed in the project: browser compatibility and problems with a device, for example. Satisfying such legal and regulatory obligations may also be difficult especially on matters relating to data protection and consumers' rights given the lack of legal expertise and capital. Also, it reveals some of the weaknesses of the system that do not allow the users particular characteristics to be seen, like the bidding time that to an equal extent may hinder the efficiency of bidding.

The following is a preview of the tasks that are likely to be undertaken in future work for auction craft.

To improve specific aspect of Auction Craft there are several changes suggested which would provide better functionality, usability, and experience for the users. These future enhancements will leverage emerging technologies and user feedback to address current limitations and introduce new features:These future enhancements will leverage emerging technologies and user feedback to address current limitations and introduce new features:

### a. Real-Time Notifications:

- To create another important feature, the real-time notification will notify users of other important events like outbidding, changes of the auction statuses and new messages, among others. This will increase the usage by the users and also enable proper timely communication of buyers and the sellers.

### b. Enhanced Search and Filtering:

- The improvements for the search tools will enable users to sort the search results by factors such as the condition of the item, the rating of the seller, or by locality for instance to help them identify appropriate listings.

### c. Mobile App Development:

- To serve Smartphone and tablet users, establishing a special application for mobile devices shall be considered to ensure their smooth access to the platfrom. Some of the elements could include main, optimized interfaces and push notifications and offline atag, thus enhancing the app's usability and availability.

**d. Improved Security Measures:**

- Additional encryption, two-factor authentication, and hourly updating will minimize risks of data leakage and safeguard the customers' data.

**e. Additional Payment Options:**

- Extending more payment types or verticals ranging from digital wallet, cryptocurrency, and or even installment payments will make paying easier and acceptable to the users' needs, thereby improving the payment completion rate.

All these improvements' main goal is to make Auction Craft more powerful and functional online auction site. This way, Auction Craft can further strengthen its position as the call for global collectors by actively responding to its users' needs and preferences, as well as by improving its functionality based on new technologies.

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