MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

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Project Report

on

Development of Online Auction Service System

A project report submitted in partial fulfilment of the requirement for the degree of

MASTER IN COMPUTER APPLICATION
in
COMPUTER SCIENCE AND ENGINEERING

Submitted By:
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Industry Mentor:
Mr. Shubham Gupta (Director, Vigorous IT Solutions)

Faculty Mentor:
Dr. R. S. Jadon (Professor)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE
Gwalior – 474005(MP) estd.1957

January – June 2024

VIGOROUS
IT SOLUTIONS

CIN : U62099RJ2023PTC090276

PROJECT COMPLETION CERTIFICATE

This is to certify that Mr. Ayush Khare has completed his project with us at Vigorous IT Solutions, under the designation of Assistant Software Developer in the Information Technology Department. His project commenced on 8th January 2024 and concluded on 20th April 2024, during which he exhibited commendable conduct and professionalism.

Throughout the project, Mr. Ayush Khare actively contributed to the development of the Online Auction Service System, a dynamic web application aimed at enhancing user experience and functionality. His responsibilities encompassed frontend and backend development tasks, including designing user interfaces and writing clean and efficient code.

His dedication, integrity, and collaborative spirit were evident throughout the project. He consistently maintained a positive attitude, communicated effectively with team members, and demonstrated excellent problem-solving skills. His professionalism and commitment to delivering high-quality work reflect his strong character and work ethic.

Based on the exemplary performance and clear potential exhibited throughout the project, we highly recommend Mr. Ayush Khare to continue pursuing opportunities for skill development and professional growth in the field of Software Development. With a solid foundation and a keen enthusiasm for learning, we believe he has a bright future ahead in this industry.

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Director

Shubham Gupta

Director
Vigorous IT Solutions

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CERTIFICATE

This is certified that **Ayush Khare (0901CA221020)** has submitted the project report titled **Development of Online Auction Service System** under the mentorship of **Mr. Shubham Gupta** (Director, Vigorous IT Solutions), in partial fulfilment of the requirement for the award of degree of **Master** in Computer Application, submitted in the department of Computer Science and Engineering, Madhav Institute of Technology and Science, Gwalior.

24/4/24

Dr. R. S. Jadon
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24/4/2024

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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Master in Computer Application in Computer Science and Engineering at **Madhav Institute of Technology & Science, Gwalior** is an authenticated and original record of my work under the mentorship of **Mr. Shubham Gupta** (Director, Vigorous IT Solutions).

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

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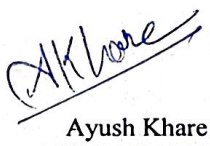
ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary project. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

I would sincerely like to thank my department, **Department of Computer Science and Engineering**, for allowing me to explore this project. I humbly thank **Dr. Manish Dixit**, Professor and Head, Department of Computer Science and Engineering, for his continued support during the course of this engagement, which eased the process and formalities involved.

I would like to extend my heartfelt appreciation to Mr. Shubham Gupta (Director, Vigorous IT Solutions) for his exceptional mentorship, guidance, and assistance throughout the project. His valuable input and feedback during the course of the project have helped me enhance my knowledge and skills. His constant encouragement and support has been instrumental in the successful completion of this project.

I am sincerely thankful to my faculty coordinator. I am grateful to the guidance of **Dr. R. S. Jadon**, (Professor), Computer Science and Engineering, for his continued support and guidance throughout the project. I am also very thankful to the faculty and staff of the department.



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ABSTRACT

The "Online Auction Service System" is a comprehensive platform designed to facilitate online auctions, providing a seamless experience for sellers and bidders alike. This platform offers three distinct interfaces catering to different user roles.

At the forefront is the Super Admin interface, endowed with comprehensive access privileges, overseeing the entire system's functionality and data. Sellers, the second user group, utilize a dedicated interface to list their products for auction, managing their offerings efficiently. The third interface accommodates bidders, enabling them to register, browse listed items, and place bids according to their preferences.

Key functionalities include real-time bidding, automated notifications for bid updates, and auction closure mechanisms. Upon the conclusion of an auction, the bidder with the highest bid receives timely notifications, securing the winning item.

Through meticulous design and development, the Online Auction Service System ensures a secure, user-friendly, and transparent environment for online auctions, aligning with modern technological standards and catering to the dynamic needs of the digital marketplace.

सार

"ऑनलाइन नीलामी सेवा प्रणाली" एक व्यापक मंच है जिसे ऑनलाइन नीलामी की सुविधा के लिए डिज़ाइन किया गया है, जो विक्रेताओं और बोली लगाने वालों के लिए एक सहज अनुभव प्रदान करता है। यह प्लेटफ़ॉर्म विभिन्न उपयोगकर्ता भूमिकाओं के लिए तीन अलग-अलग इंटरफ़ेस प्रदान करता है।

सबसे आगे सुपर एडमिन इंटरफ़ेस है, जो व्यापक एक्सेस विशेषाधिकारों से संपन्न है, जो संपूर्ण सिस्टम की कार्यक्षमता और डेटा की देखरेख करता है। विक्रेता, दूसरा उपयोगकर्ता समूह, नीलामी के लिए अपने उत्पादों को सूचीबद्ध करने के लिए एक समर्पित इंटरफ़ेस का उपयोग करते हैं, अपनी पेशकशों को कुशलतापूर्वक प्रबंधित करते हैं। तीसरा इंटरफ़ेस बोलीदाताओं को समायोजित करता है, उन्हें पंजीकरण करने, सूचीबद्ध वस्तुओं को ब्राउज़ करने और उनकी प्राथमिकताओं के अनुसार बोलियां लगाने में सक्षम बनाता है।

मुख्य कार्यात्मकताओं में वास्तविक समय पर बोली लगाना, बोली अपडेट के लिए स्वचालित सूचनाएं और नीलामी समापन तंत्र शामिल हैं। नीलामी के समापन पर, उच्चतम बोली लगाने वाले को समय पर सूचनाएं प्राप्त होती हैं, जिससे विजेता वस्तु सुरक्षित हो जाती है।

सावधानीपूर्वक डिज़ाइन और विकास के माध्यम से, ऑनलाइन नीलामी सेवा प्रणाली ऑनलाइन नीलामी के लिए एक सुरक्षित, उपयोगकर्ता-अनुकूल और पारदर्शी वातावरण सुनिश्चित करती है, जो आधुनिक तकनीकी मानकों के साथ संरेखित होती है और डिजिटल बाज़ार की गतिशील आवश्यकताओं को पूरा करती है।

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CHAPTER 1: INTRODUCTION

In the quickly advancing scene of online trade, online commercial platforms have arisen as focal center points for purchasers and dealers around the world. In this system, online closeouts address a dynamic and connecting with road for exchanges, offering people and organizations a stage to trade products through serious offering. The "Online Auction Administration Framework" is a demonstration of the fusion of technological innovation and pragmatic software engineering, imagined to address the advancing necessities of members in the e-commerce space.

The Online Auction Service System isn't only an independent application yet an exhaustive arrangement carefully created to smooth out the closeout interaction, improve client experience, and encourage trust and straightforwardness. At its center, the framework is intended to take special care of three particular client personas: the Super Admin, sellers, and bidders. Every persona is supplied with explicit functionalities and honors custom-made to their job inside the bartering environment.

The Super Admin interface fills in as the foundation of the framework, giving overall control and oversight. Outfitted with complete access honors, the Super Admin has the power to oversee clients, screen barters, and guarantee the trustworthiness and security of the stage. This focal administration guarantees consistence with guidelines, mitigates gambles, and keeps up with the smooth activity of the framework.

For sellers, the Online Auction Service System offers a devoted point of interaction to list their items available to be auctioned, oversee the listing, and track sell off execution. Sellers benefit from intuitive tools and analytics that empower them to optimize their listings, reach a broader audience, and maximize their returns. In addition, the framework furnishes consistent joining with installment entryways, working with secure exchanges and improving the general effectiveness of the selling system.

Bidders, then again, access an easy to use interface custom fitted to their requirements and inclinations. Through this connection point, bidders can enroll, peruse postings, place offers, and screen closeout progress continuously. The framework utilizes modern calculations to guarantee fair and straightforward offering processes, while robotized warnings keep bidders educated regarding applicable updates and results.

With a sharp spotlight on ease of use, security, and versatility, the Web-based Closeout Administration Framework addresses a change in perspective in the internet based sell off space. By saddling the force of state of the art advances and sticking to best practices in computer programming, this task expects to rethink the web-based closeout experience, enabling clients and cultivating a flourishing commercial center helpful for development and success.

1.1 Problem Identification

The Online Auction Service System resolves the shortcomings and complexities that are there in conventional auction platforms. It tends to the test of unavailable and non-easy to use interfaces, taking care of both tech-savvy and non-tech clients. By offering simple functionalities and easy to use interfaces, the system engages sellers and bidders on the platform to easily explore auctions. In addition, it guarantees transparency and fairness in bidding processes, mitigating errors and enhancing overall user experience. In essence, the system addresses the pressing need for a simplified, accessible, and user-friendly auction management solution, thereby revolutionizing the online auction landscape.

1.2 About Organization

Vigorous IT Solutions, is a trusted sports web and app development partner in shaping client's digital experiences to reality because that matters. With a passion for innovation in the sports arena and a commitment to excellence, Vigorous IT can be a doorway to innovative web and the best sports mobile app solutions that redefine industries and elevate businesses. Certainly, here are concise points highlighting what sets them apart in the web and app development industry that they serve:

- Years of Experience & unbridled passion in the industry.
- Pioneering technology integration for standout apps.
- Tailoring versatile solutions for a wide spectrum of businesses.
- Ensuring seamless quality and performance through meticulous testing.
- Keeping clients transparent and informed communication at every step.
- On-time delivery without compromising on excellence.
- Post-launch support and continuous support.
- Expertise in iOS, Android, and cross-platform development.
- Demonstrated by a track record of satisfied clients and accolades.

1.3 Hardware and Software Specifications

To ensure the optimal performance and reliability of The Online Auction Service System. careful consideration of both hardware and software specifications is imperative. Below are the recommended specifications for deploying and operating the system effectively:

a) **Hardware Specifications:**

i CPU: Quad-core processor or higher to handle concurrent requests efficiently.

ii RAM: Minimum 8 GB RAM.

iii Storage: M.2 SSD storage for improved data access speed and responsiveness.

iv Internet: Reliable internet connection to facilitate remote access and software updates

v Network: Network infrastructure capable of handling data transfer and communication between servers and client devices.

b) **Software Specifications:**

i Operating System: Linux (Ubuntu) or Windows Server based on compatibility and organizational preferences.

ii Database: SQLite3 as the relational database management system (RDBMS) to store auction data and application metadata.

iii Programming Language and Frameworks: Choose a suitable programming language and web application framework for developing the online Auction Service System.

iv Dependency Management: Used package managers like pip (package installer for Python) to manage software dependencies and libraries efficiently.

These hardware and software specifications lay the foundation for a robust and reliable Online Auction Service System, capable of meeting organizational requirements effectively and efficiently. By adhering to these recommendations, organizations and individuals can ensure the seamless operation and performance of the Online Auction Service System.

CHAPTER 2: SYSTEM ANALYSIS

2.1 Problem Analysis:

The Online Auction Service System aims to address several key challenges and pain points inherent in traditional offline auctions and existing online auction platforms. The problem analysis for the system is as follows:

a) **Accessibility Barrier**: Many existing online auction platforms are complex and intimidating for non-technical users, leading to a significant accessibility barrier. Non-tech-savvy individuals, including small business owners and casual sellers, may find it challenging to navigate these platforms effectively, limiting their ability to participate in auctions and capitalize on potential sales opportunities.

b) **Inefficiencies in Traditional Auction Processes**: Traditional offline auctions often involve manual processes, paperwork, and logistical challenges, resulting in inefficiencies and delays. Similarly, some existing online auction platforms lack automation and streamlined processes, leading to time-consuming tasks for sellers and bidders.

c) **Lack of Transparency and Trust**: Trust and transparency are critical in online auctions, but some platforms may lack mechanisms to ensure fairness and prevent fraudulent activities. Bidders may be hesitant to participate in auctions if they perceive a lack of transparency in bidding processes or have concerns about the authenticity of listings and sellers.

d) **Limited Convenience and Flexibility**: Offline auctions require physical attendance, limiting participation to individuals who can be present at specific locations and times. Similarly, some online auction platforms may lack flexibility in terms of auction scheduling or accessibility from mobile devices, restricting participation and reducing the overall convenience for users.

e) **Security Concerns**: Security is a significant concern in online auctions, as participants need assurance that their personal information and financial transactions are secure. Some existing platforms may lack adequate security measures, leaving users vulnerable to data breaches, identity theft, or fraudulent activities.

The Online Auction Service System aims to resolve these problems by providing a user-friendly, efficient, transparent, and secure platform for conducting online auctions. Through intuitive interfaces, streamlined processes, real-time insights, and robust security features, the system empowers users to participate in auctions with confidence, optimize their auction strategies, and capitalize on sales opportunities effectively.

2.2 Feasibility Study

The feasibility study for the Online Auction Service System project is crucial to assess the viability and potential success of the initiative. It involves evaluating various aspects to determine if the project is technically, economically, and operationally feasible. Here's a brief overview of the feasibility study:

a) **Economical Feasibility:** Here economic feasibility assesses whether the benefits derived from implementing the Online Auction Service System outweigh the costs associated with its development, implementation, and maintenance. The evaluation involves estimating project costs and comparing them with expected benefits to determine the system's economic viability.

i **Time Savings:** The online auction service system streamlines auction processes, reducing the time required for listing products, managing auctions, and facilitating transactions. Sellers can list their products more efficiently, while bidders can browse and bid on items without unnecessary delays. This time-saving aspect translates to increased productivity for both sellers and bidders, leading to potential cost savings in labor and resources.

ii **Improved Accuracy:** Automation within the online auction service system minimizes manual intervention and standardizes processes, reducing the likelihood of errors and discrepancies in auction listings, bids, and transactions. By ensuring data accuracy and consistency, the system enhances trust and confidence among users, mitigating the risks associated with inaccuracies and potential disputes. This improvement in accuracy can result in cost savings by avoiding costly errors and the need for manual reconciliation.

iii **Compliance Enhancement:** The online auction service system incorporates features to facilitate adherence to regulatory requirements governing online auctions, such as transparency in bidding processes, secure transaction handling, and data privacy protection. By ensuring compliance with legal and regulatory standards, the system helps avoid penalties, legal issues, and reputational damage. This compliance enhancement contributes to cost savings by mitigating the risk of non-compliance-related expenses and fines.

iv **Better Decision Making:** Access to real-time data and analytics within the online auction service system enables stakeholders, including sellers and administrators, to make informed decisions regarding auction strategies, pricing, and resource allocation. By leveraging insights derived from auction performance metrics and user behavior analysis, stakeholders can optimize their decision-making processes,

leading to improved business outcomes and potential cost savings through more efficient resource allocation.

- **Reduction in Auction Time:** The online auction service system aims to reduce the duration of auction cycles through features such as real-time bidding, automated notifications, and streamlined processes. Based on historical data and projections, a reduction of 20% in auction time is anticipated. This reduction translates to cost savings in labor, operational expenses, and resource utilization, as fewer resources are required to manage and oversee auctions.

Overall, the economic feasibility of the online auction service system depends on the accurate estimation of benefits relative to the costs incurred over the system's lifecycle. While the initial investment may be significant, the potential cost savings, efficiency gains, and improved business outcomes offered by the system justify its economic viability. Additionally, considerations such as project completion time should be factored in to assess the overall economic feasibility of the online auction service system accurately.

b) **Technical Feasibility:** This aspect assesses whether the technology required for the online auction service system project is available and can be implemented effectively. It involves evaluating the technical requirements, compatibility with existing systems, and availability of skilled resources to develop and maintain the online auction service system platform.

i **Compatibility with Existing Systems:** The chosen technologies for the online auction service system, including Python Django and Sqlite3, are widely used in modern web development practices and are known for their compatibility and scalability. These technologies can seamlessly integrate with existing systems and infrastructure, allowing for efficient communication and data exchange. Additionally, the architecture of the online auction service system is designed to accommodate future integrations and expansions, ensuring long-term compatibility with evolving technological landscapes.

ii **Availability of Skilled Resources:** Skilled resources proficient in Python Django and Sqlite3 are in high demand in the industry, reflecting the widespread adoption and popularity of these technologies. The availability of experienced developers, designers, and system administrators familiar with these technologies ensures that the online auction service system project can access the necessary expertise for development, implementation, and maintenance. Furthermore, the extensive documentation, online communities, and training resources available for these technologies facilitate knowledge transfer and skill development among team members.

The technical feasibility assessment of the Online Auction Service System indicates that the required technologies, hardware, and software are readily available and compatible with the project requirements. The chosen programming languages and frameworks, including Python Django and Sqlite3, are well-suited for building a scalable, efficient, and user-friendly auction management system. Additionally, the availability of skilled resources and the feasibility of integration with existing systems further reinforce the technical viability of the online auction service system project. aspect assesses whether the technology required for the online Auction Service System project is available and can be implemented effectively. It involves evaluating the technical requirements, compatibility with existing systems, and availability of skilled resources to develop and maintain the online Auction Service System module.

c) **Behavioral Feasibility:** The online auction service system is designed with a focus on maximizing user acceptance and minimizing resistance to change by implementing the following measures:

i **User-Friendly Interface:** The online auction service system features an intuitive and user-friendly interface tailored to the needs of sellers, bidders, and administrators. With its simple navigation, clear instructions, and familiar design patterns, users can easily navigate the platform and perform tasks efficiently. The intuitive interface reduces the learning curve for new users and enhances overall usability, fostering positive user experiences.

ii **Training and Support Resources:** Comprehensive training materials and support resources are provided to users to facilitate their understanding and use of the online auction service system platform. These resources include user guides, video tutorials, and online help documentation, ensuring that users have access to the knowledge and assistance they need to effectively utilize the system. By offering robust training and support, the online auction service system aims to empower users and build their confidence in using the platform.

iii **Continuous Improvement:** The online auction service system incorporates feedback mechanisms to gather user input and suggestions for improvement continuously. User feedback is carefully considered and used to inform ongoing enhancements and updates to the platform. By actively soliciting and responding to user feedback, the online auction service system demonstrates a commitment to continuous improvement and ensuring that the platform evolves to meet the changing needs and preferences of its users.

iv **User-Centric Design Approach:** The online auction service system is developed with a user-centric design approach, involving stakeholders from all user groups in the design and development process. By collaborating closely with sellers, bidders, and administrators, the online auction service system ensures that the platform aligns with their workflows, preferences, and priorities. This collaborative approach fosters a sense of ownership and engagement among users, enhancing their satisfaction and acceptance of the online auction service system platform.

By focusing on the user experience and addressing the human aspects of technology adoption, the online auction service system aims to promote user acceptance, confidence, and satisfaction in the context of online auction management. This behavioral feasibility approach ensures that users can easily adapt to the platform and derive maximum value from its features and functionalities.

d) **Operational Feasibility:** Operational feasibility is crucial for the successful implementation and adoption of the Online Auction Service System. The following factors contribute to the operational feasibility of the online auction service system:

i **Seamless Integration:** The online auction service system seamlessly integrates with existing e-commerce platforms, payment gateways, and other systems within the organization's IT infrastructure. By ensuring compatibility and data consistency across platforms, the online auction service system facilitates smooth data exchange and communication, minimizing disruptions and enhancing operational efficiency.

ii **Role-Based Access Control:** The online auction service system offers role-based access control, allowing organizations to define user roles and permissions based on their responsibilities. Sellers, bidders, and administrators have access to specific functionalities and data relevant to their roles, ensuring data security and compliance with privacy regulations.

iii **Comprehensive Reporting and Analytics:** The online auction service system provides robust reporting and analytics capabilities, enabling organizations to gain insights into auction performance, bidder behavior, and market trends. Customizable reports and dashboards empower decision-makers with real-time data to make informed decisions, optimize auction strategies, and drive business growth.

iv **Scalability and Flexibility:** The online auction service system is designed to be scalable and flexible, capable of accommodating the evolving needs and growth of the organization. Whether it's scaling to support increased user traffic during peak periods, adding new auction categories, or integrating with third-party services, the online auction service system offers flexibility to adapt to changing business requirements.

By addressing these operational considerations, the online auction service system ensures smooth implementation, seamless integration, and effective utilization within the organization. Operational feasibility is paramount in maximizing the benefits of the online auction service system and fostering a thriving online auction marketplace.

Thus, the feasibility study conducted for the Online Auction Service System has demonstrated its technical, economic, behavioral, and operational viability. The study has identified potential challenges and risks while also highlighting opportunities for optimization and enhancement. Moving forward, careful planning, effective resource allocation, and continuous monitoring will be essential to navigate potential hurdles and maximize the online auction service system's chances of success in the dynamic landscape of online auctions.

2.3 Data Flow Diagram

a) Level 0 DFD

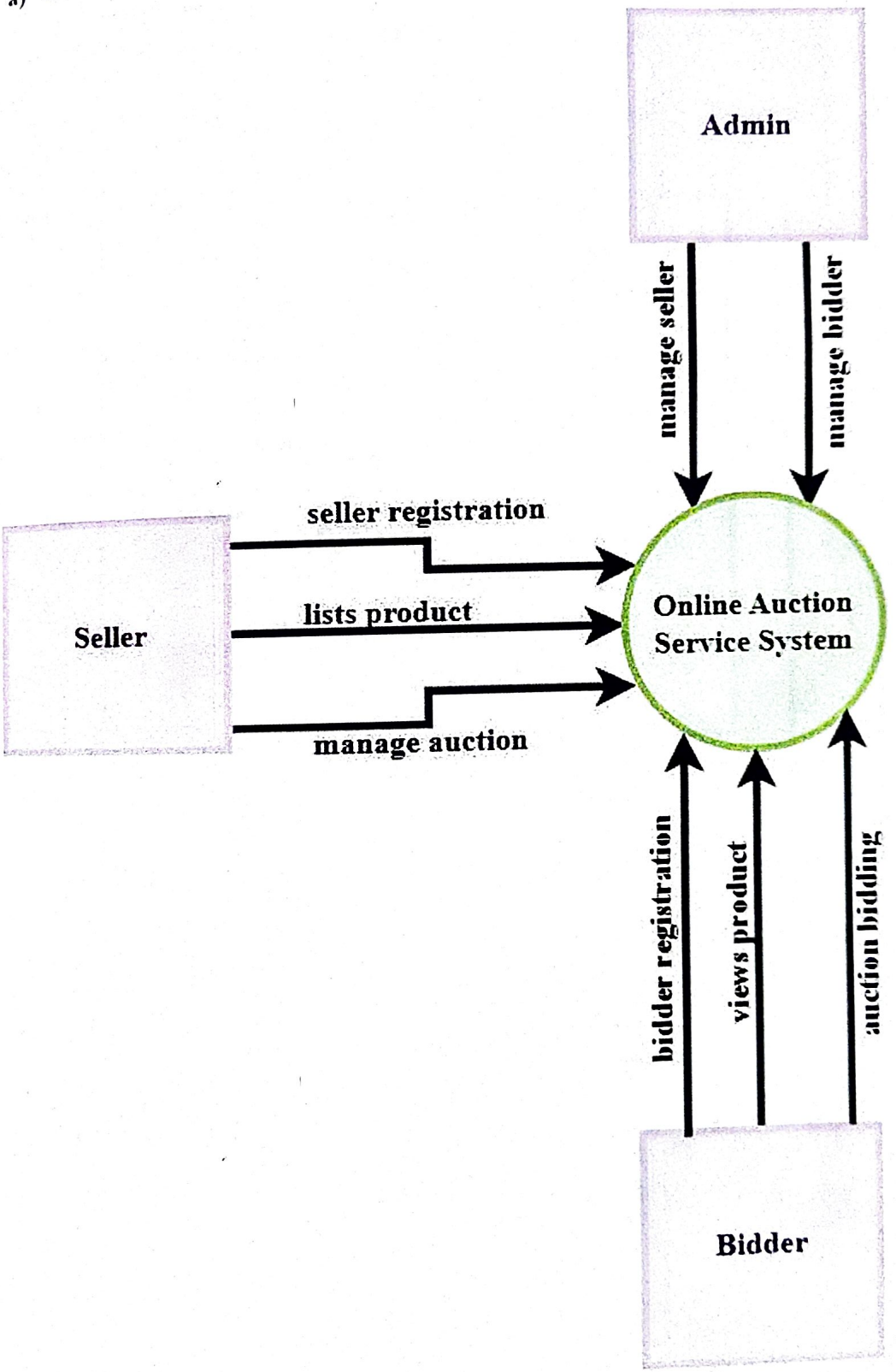


Figure 1: Level 0 DFD

b) Level 1 DFD

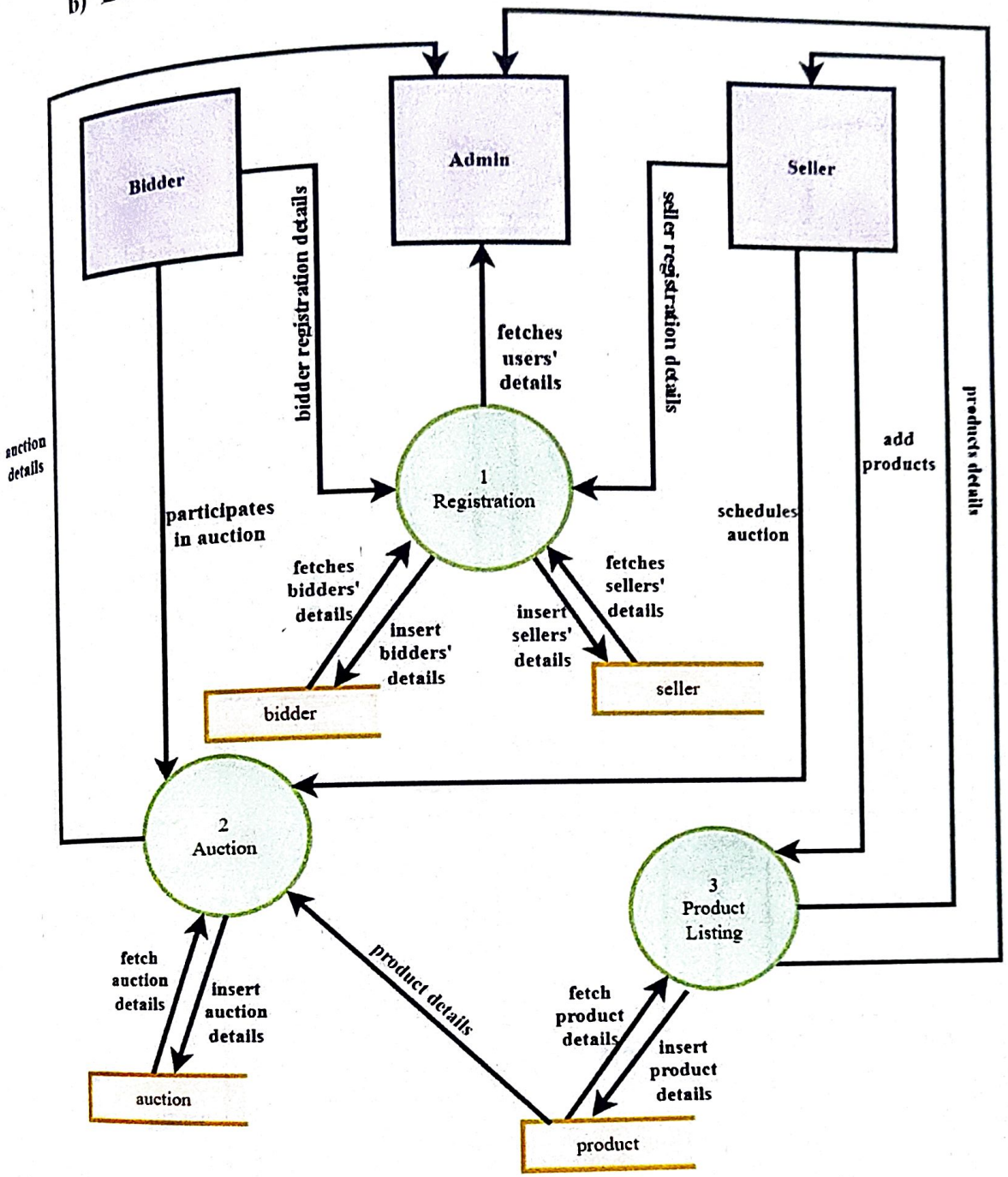


Figure 2: Level 1 DFD

c) Level 2 DFD

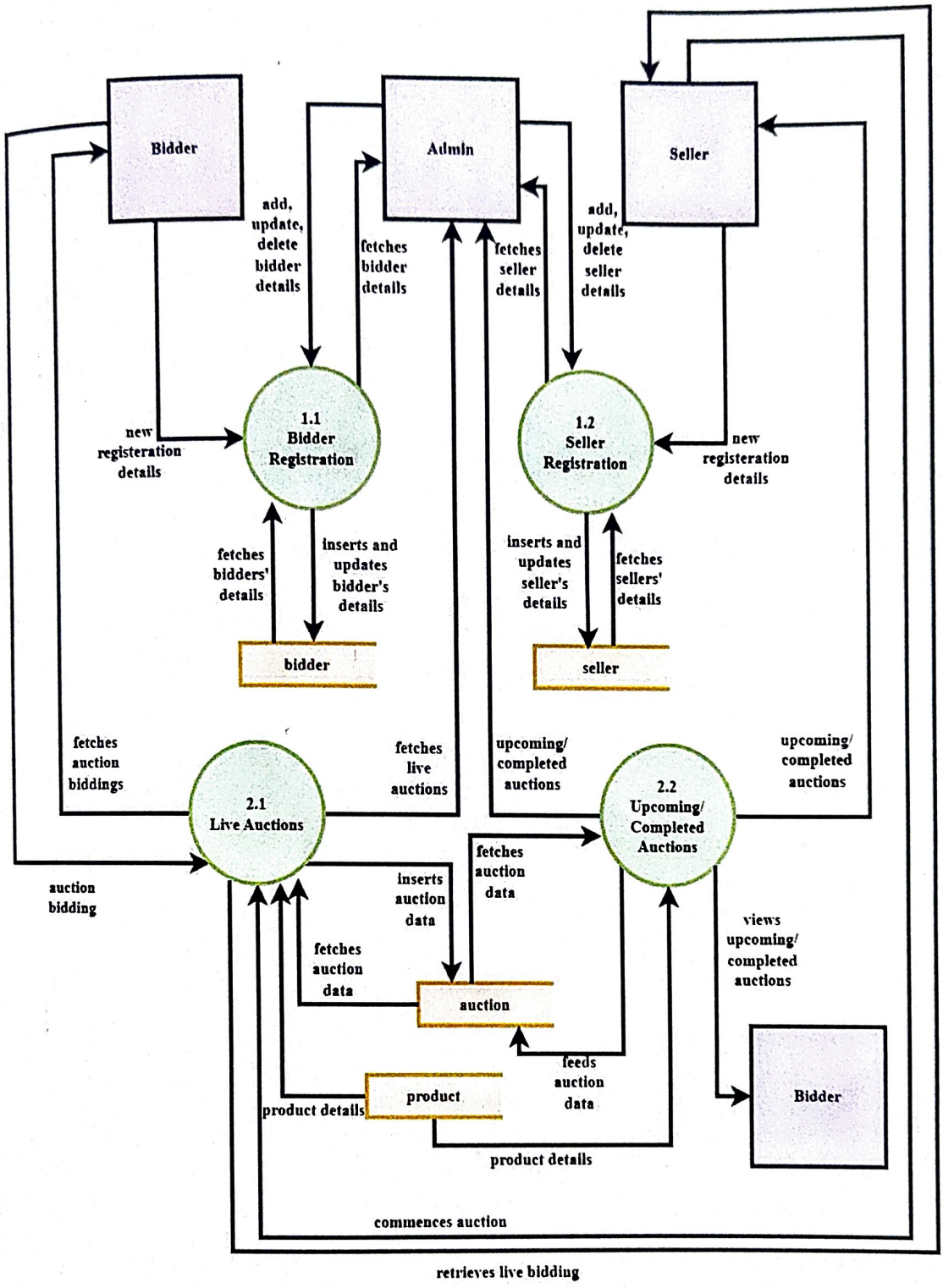


Figure 3: Level 2 DFD

2.4 Decision Trees

a) For Admin

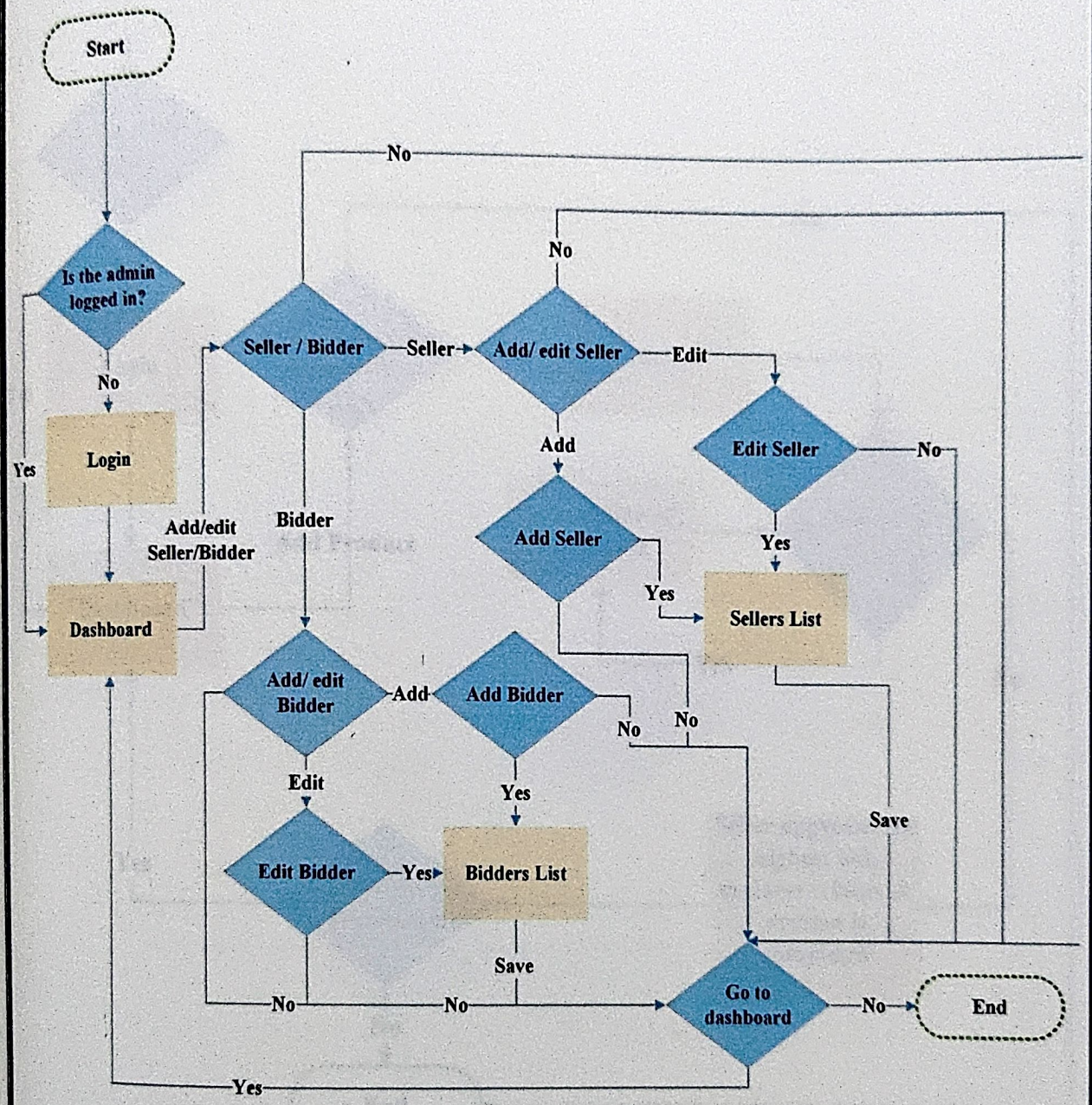


Figure 4: Decision Tree for Admin

b) For Seller

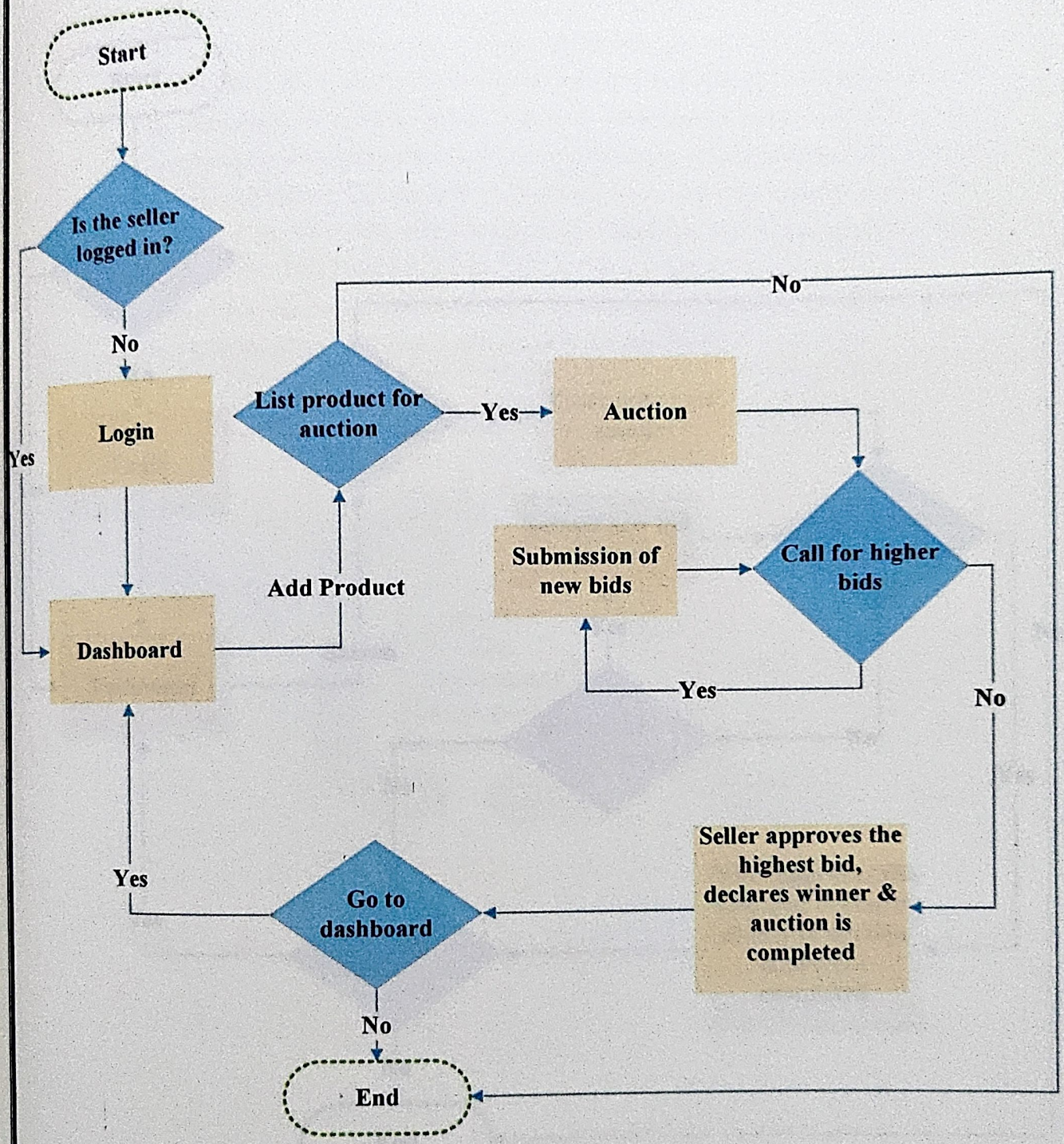


Figure 5: Decision Tree for Seller

c) For Bidder

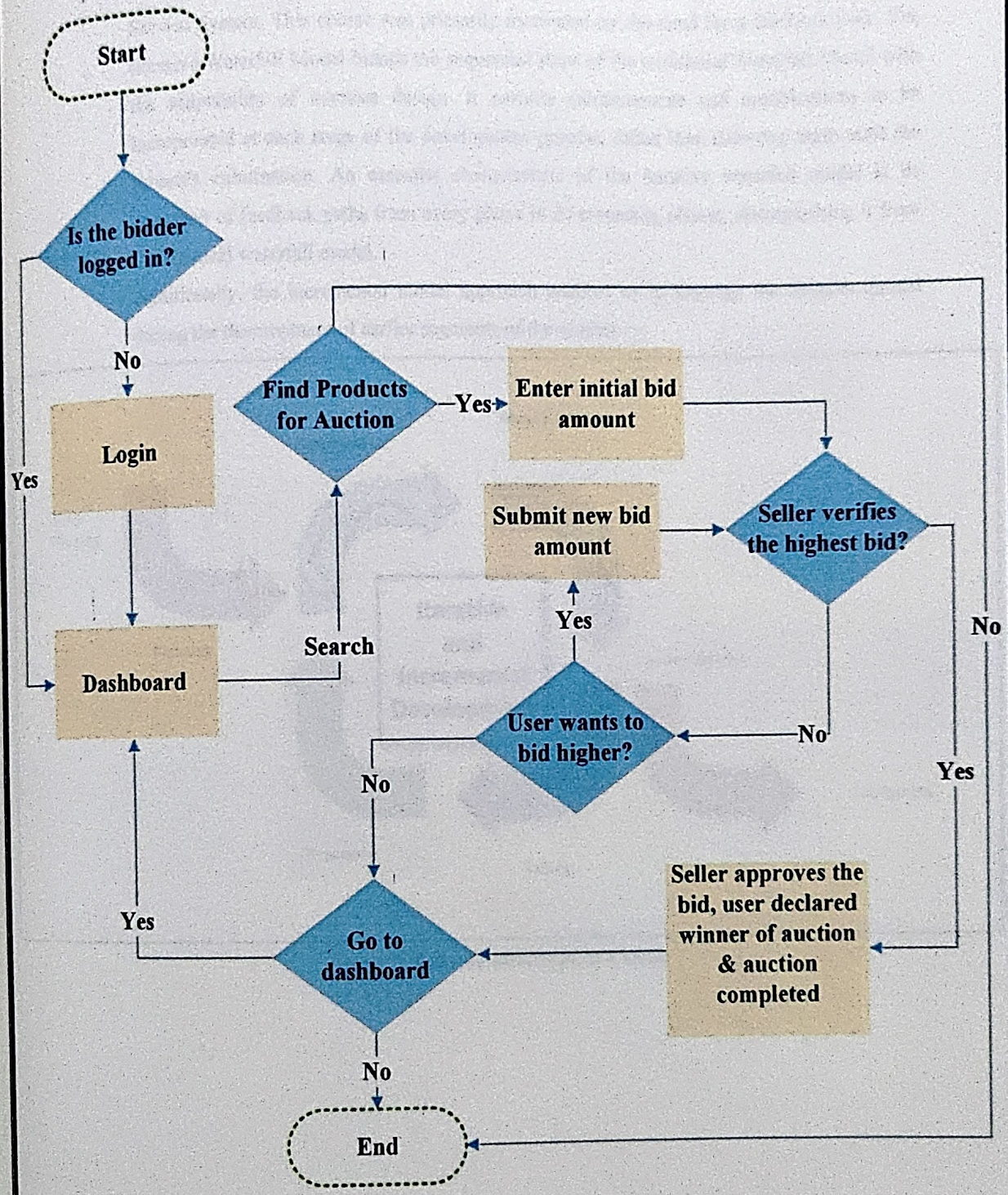


Figure 6: Decision Tree for Bidder

2.5 Software Development Process

We opted for an Iterative Waterfall methodology in the development of our Online Auction Service System. This choice was primarily motivated by the need for a feedback path. The Iterative Waterfall Model blends the sequential steps of the traditional Waterfall Model with the adaptability of iterative design. It permits enhancements and modifications to be incorporated at each stage of the development process, rather than deferring them until the project's culmination. An essential characteristic of the iterative waterfall model is its provision of feedback paths from every phase to its preceding phases, distinguishing it from the classical waterfall model.

Additionally, the incremental model approach enabled us to leverage the insights gained during the development of earlier segments of the system.

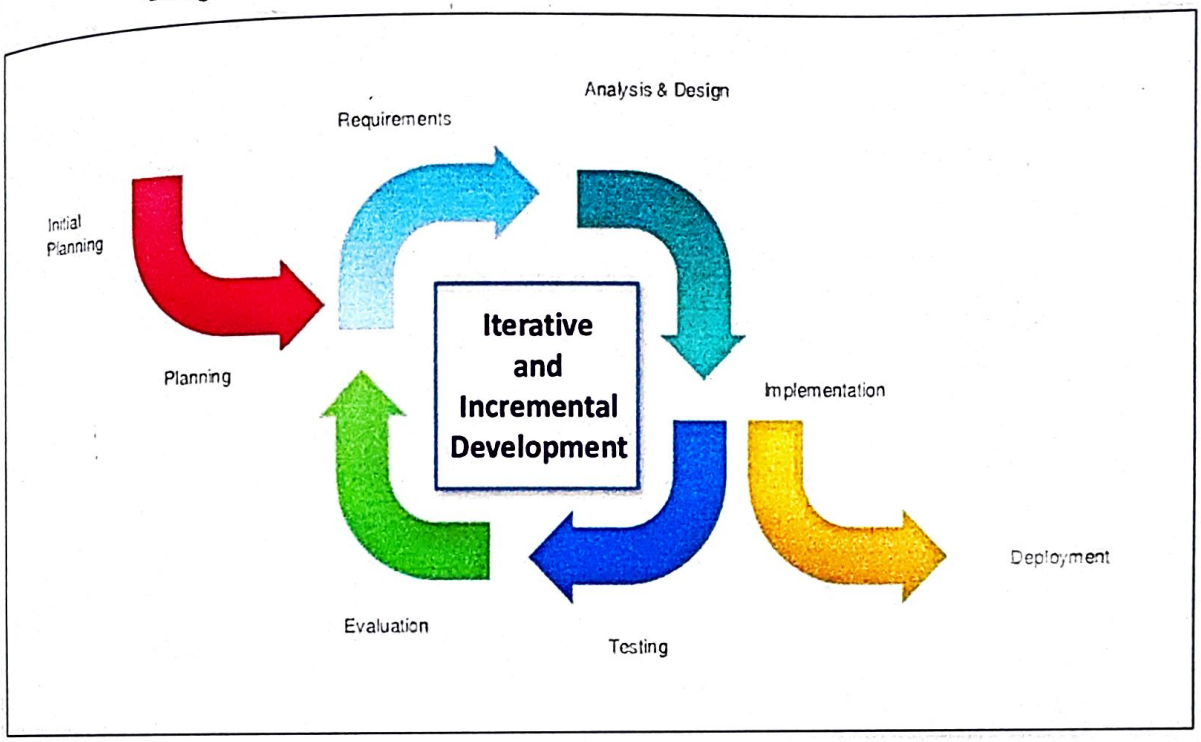


Figure 7: Software Development Process

CHAPTER 3: SYSTEM DESIGN

3.1 HIPO Diagram

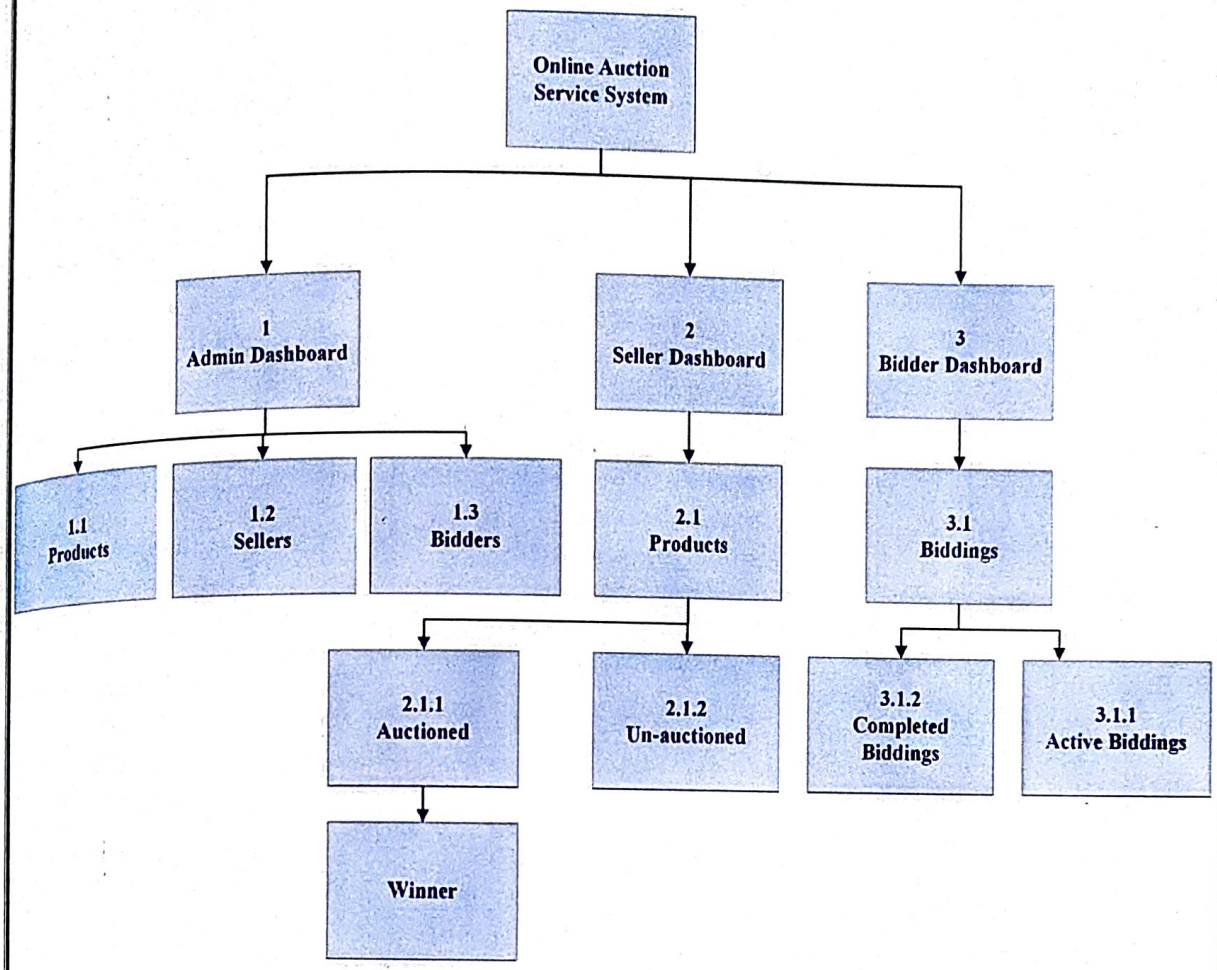


Figure 8: HIPO Diagram

3.2 Database Design

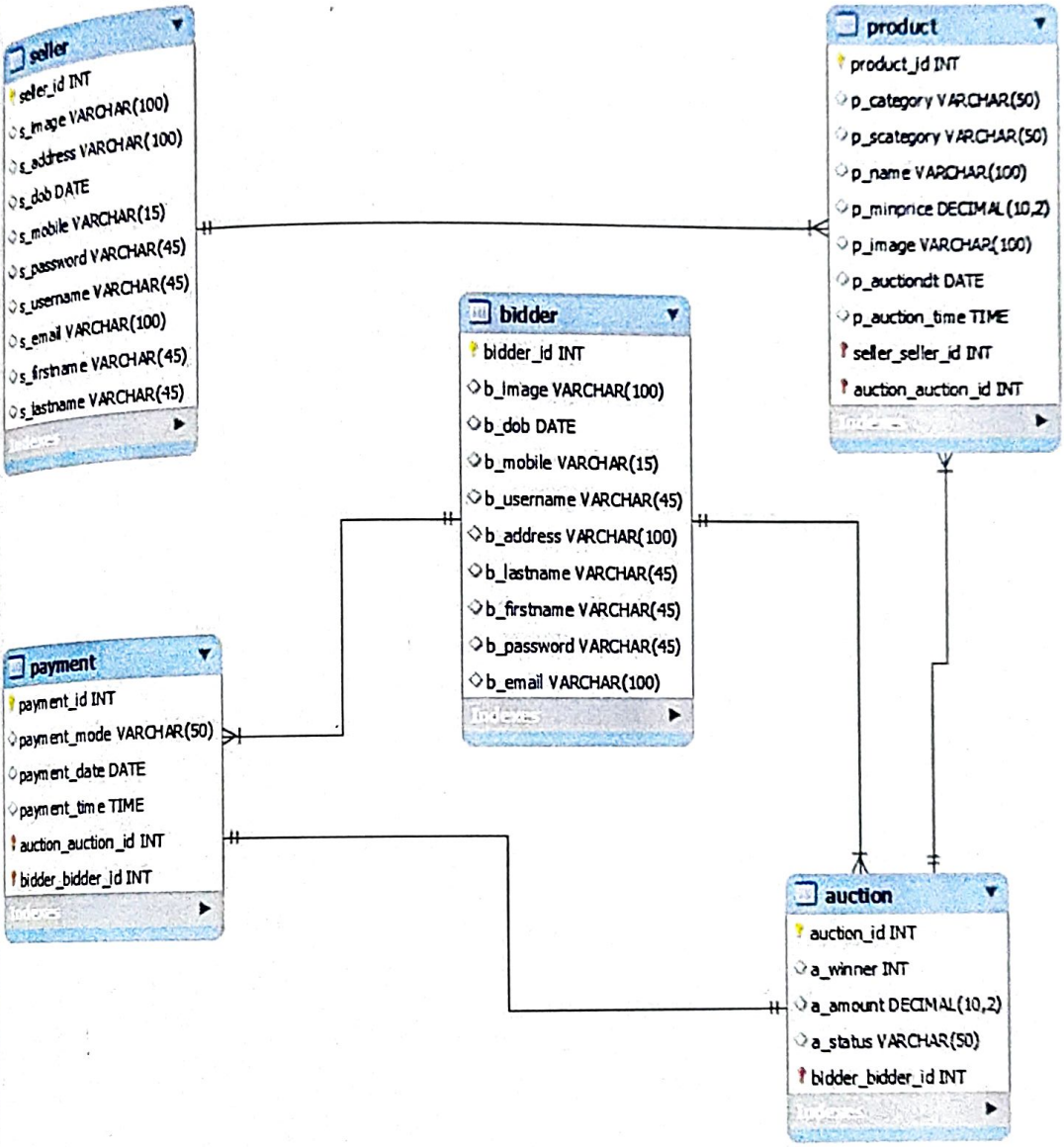


Figure 9: Database Design

3.3 Database Table

a) Admin

Field	Type	Null	Key	Default	Extra
admin_id	int	NO	PRI	NULL	AUTO_INCRIMENT
name	varchar(45)	YES		NULL	
password	varchar(45)	YES		NULL	

Table 1: Admin Table

b) Seller

Field	Type	Null	Key	Default	Extra
seller_id	int	NO	PRIMARY	NULL	AUTO_INCRIMENT
s_image	text	YES		NULL	
s_address	varchar(100)	YES		NULL	
s_dob	date	YES		NULL	
s_mobile	varchar(15)	YES		NULL	
s_password	varchar(45)	YES		NULL	
s_username	varchar(45)	YES		NULL	
s_email	varchar(100)	YES		NULL	
s_firstname	varchar(45)	YES		NULL	
s_lastname	varchar(45)	YES		NULL	

Table 2: Seller Table

c) Product

Field	Type	Null	Key	Default	Extra
product_id	int	NO	PRIMARY	NULL	AUTO_INCRIMENT
seller_id	int	NO	FOREIGN	NULL	
p_category	varchar(50)	YES		NULL	
p_scategory	varchar(50)	YES		NULL	
p_name	varchar(100)	YES		NULL	
p_minprice	decimal(10,2)	YES		NULL	
p_image	text	YES		NULL	
p_auctiondt	date	YES		NULL	
p_auction_time	time	YES		NULL	

Table 3: Product Table

d) Bidder

Field	Type	Null	Key	Default	Extra
bidder_id	int	NO	PRIMARY	NULL	AUTO_INCRIMENT
b_image	text	YES		NULL	
b_dob	date	YES		NULL	
b_mobile	varchar(15)	YES		NULL	
b_username	varchar(45)	YES		NULL	
b_address	varchar(100)	YES		NULL	
b_lastname	varchar(45)	YES		NULL	
b_firstname	varchar(45)	YES		NULL	
b_password	varchar(45)	YES		NULL	
b_email	varchar(100)	YES		NULL	

Table 4: Bidder Table

e) Auction

Field	Type	Null	Key	Default	Extra
auction_id	int	NO	PRIMARY	NULL	AUTO_INCRIMENT
bidder_id	int	NO	FOREIGN	NULL	
product_id	int	NO	FOREIGN	NULL	
a_winner	int	YES		NULL	
a_amount	decimal(10,2)	YES		NULL	
a_status	varchar(50)	YES		NULL	

Table 5: Auction Table

f) Payment

Field	Type	Null	Key	Default	Extra
payment_id	int	NO	PRIMARY	NULL	AUTO_INCRIMENT
bidder_id	int	NO	FOREIGN	NULL	
auction_id	int	NO	FOREIGN	NULL	
payment_mode	varchar(50)	YES		NULL	
payment_date	date	YES		NULL	
payment_time	time	YES		NULL	

Table 6: Payment Table

3.4 Entity Relationship Diagram

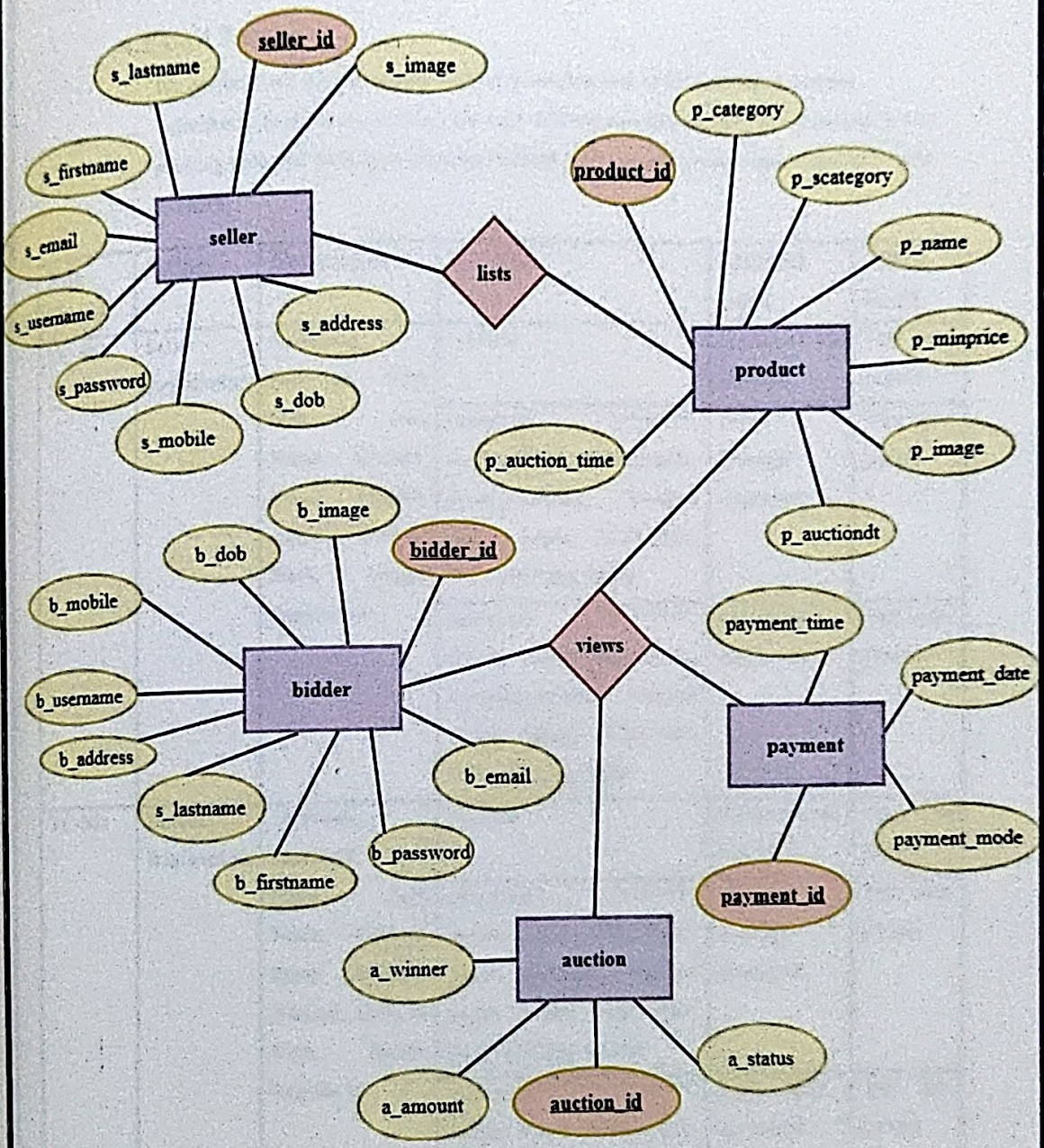


Figure 10: Entity Relationship Diagram

CHAPTER 4: TESTING

4.1 Unit Testing

We perform unit testing on each and every smallest unit of the developed website individually to check its working. We used different test data to perform the testing. We try possibly each and every type of inputs to check their corresponding outputs, and its related working.

Test Case id	Section	Element name	Test data	Expected result	Actual Result
TC-001	Seller Registration	Username, Password, First Name, Last Name, Contact, Email Address, Address, Date of Birth, Image, Register as	No Data	Please fill out this field.	Test case passed.
			userayush, ********, Ayush, Khare, 995as25671, ayush_gmail.com, Vaishali nagar- Jaipur, 31-03-2001, DSC_0228.jpg, Seller	Error message displayed.	Test case passed.
			userayush, ********, Ayush, Khare, 9958625671, ayush@gmail.com, Vaishali nagar- Jaipur, 31-03-2001, DSC_0228.jpg, Seller	Successfully registered.	Test case passed.
TC-002	Bidder Registration	Username, Password, First Name, Last Name, Contact, Email Address, Address, Date of Birth, Image, Register as	No Data	Please fill out this field.	Test case passed.
			userayush2, ********, Ayush, Khare, 995as25672, ayushk_gmail.com, Vaishali nagar- Jaipur, 31-03-2001, DSC_0228.jpg, Bidder	Error message displayed.	Test case passed.
			userayush, ********, Ayush, Khare, 9958625672, ayushk@gmail.com, Vaishali nagar- Jaipur, 31-03-2001, DSC_0228.jpg, Bidder	Successfully registered.	Test case passed.

Test Case id	Section	Element name	Test data	Expected result	Actual Result
TC-003	Add Product	Select Category, Select sub-category, Product Name, Minimum price, product image, session date, Session time	No Data	Please fill out this field.	Test case passed.
			Vehicle, Old vehicle, Bajaj CT 100, 10D00, CT100.pdf, 2020-06-16, 10:46	Error message displayed.	Test case passed.
			Vehicle, Old vehicle, Bajaj CT 100, 10000, CT100.jpeg, 2024-06-16, 10:46	Successfully added.	Test case passed.
TC-004	Selller Login	Username, Password	No Data	Please fill out this field.	Test case passed.
			userayh, ********	Error message displayed.	Test case passed.
			userayush, ********	Successfully logged in.	Test case passed.
TC-005	Bidder Login	Username, Password	No Data	Please fill out this field.	Test case passed.
			usesh, ********	Error message displayed.	Test case passed.
			userayush2, ********	Successfully logged in.	Test case passed.

Table 7: Unit Testing

4.2 System Testing

System Testing is a comprehensive software testing phase where the entire integrated system is tested as a whole to validate its behaviour and functionality against specifies requirements.

a) **Functional Testing:** Functional Testing involves validating that each function of software application operates as expected, adhering to defined requirements and specification.

Test Case ID	Test Case Scenario	Input / Test Data	Pass Condition	Fail Condition	Test Result
FT–01	Search Functionality	Enter specific keyword related to product.	Relevant products are displayed.	Irrelevant product or error displayed	Pass
FT-02	Pagination Functionality	Pagination control allow bidders to navigate through multiple pages of products.	Users can navigate through pagination control.	Pagination control doesn't allow users to navigate.	Pass
FT-03	Bidding Functionality	Select Product for bidding.	Bidder can participate in auction and place bids.	Inaccurate or false information present.	Pass

Table 8: Functional Testing

b) **Non functional Testing: :** Non-Functional Testing focusses on evaluating aspects such as performance, usability, security and error handling of software ensuring it meets quality attributes beyond functional requirements.

i **Performance Testing:**

Test Case ID	Test Case Scenario	Test Description	Pass Condition	Fail Condition	Test Result
NFT-01	Response Time Testing	Measure System Response Time	Responses are generated within acceptable time frames.	Response time exceeds threshold.	Pass
NFT-02	Load Testing	Evaluate system performance under load	System handles unexpected load.	System crashes.	Pass

Table 9: Performance Testing

ii **Usability Testing:**

Test Case ID	Test Case Scenario	Test Description	Pass Condition	Fail Condition	Test Result
NFT-03	User Interface Testing	Evaluate UI Design and Usability	User can easily navigate through system and perform task without confusion and frustration.	UI is cluttered and confusing, leading to errors and user dissatisfaction.	Pass

Table 10: Usability Testing

iii **Error Handling Testing:**

Test Case ID	Test Case Scenario	Test Description	Pass Condition	Fail Condition	Test Result
NFT-04	Exceptional Handling Testing	Evaluate system's response to exceptions.	System handles the exceptions gracefully and provide meaningful error messages.	System crashes or data loss occurs.	Pass

Table 11: Error Handling Testing

iv Security Testing:

Test Case ID	Test Case Scenario	Test Description	Pass Condition	Fail Condition	Test Result
NFT-05	Authentication Testing	Verify User Authentication	Users are granted access only with valid credentials.	Allowing unauthorized access.	Pass

Table 12: Security Testing

CHAPTER 5: IMPLEMENTATION

We need to install some IDE softwares for implementing our project which are as follows:-

5.1 Visual Studio Code:

a) Go to the official Visual Studio website: https://visualstudio.microsoft.com/downloads/

b) Click on the "Download" button for the version of Visual Studio you want to install.

c) Choose the components you want to install, such as languages, frameworks, and tools.

d) Click on the "Install" button to start the installation process.

e) Follow the installation wizard and select the options that suit your needs.

5.2 SQLite

a) Go to the official SQLite website: https://www.sqlite.org/

b) Select the appropriate version of SQLite for your operating system, in our case SQLite3.

c) Click on the "Download" button to start the download.

d) Once the download is complete, run the installer. Follow the installation wizard and select the options that suit your needs.

5.3 Django

a) Go to the official Django website: https://www.djangoproject.com/

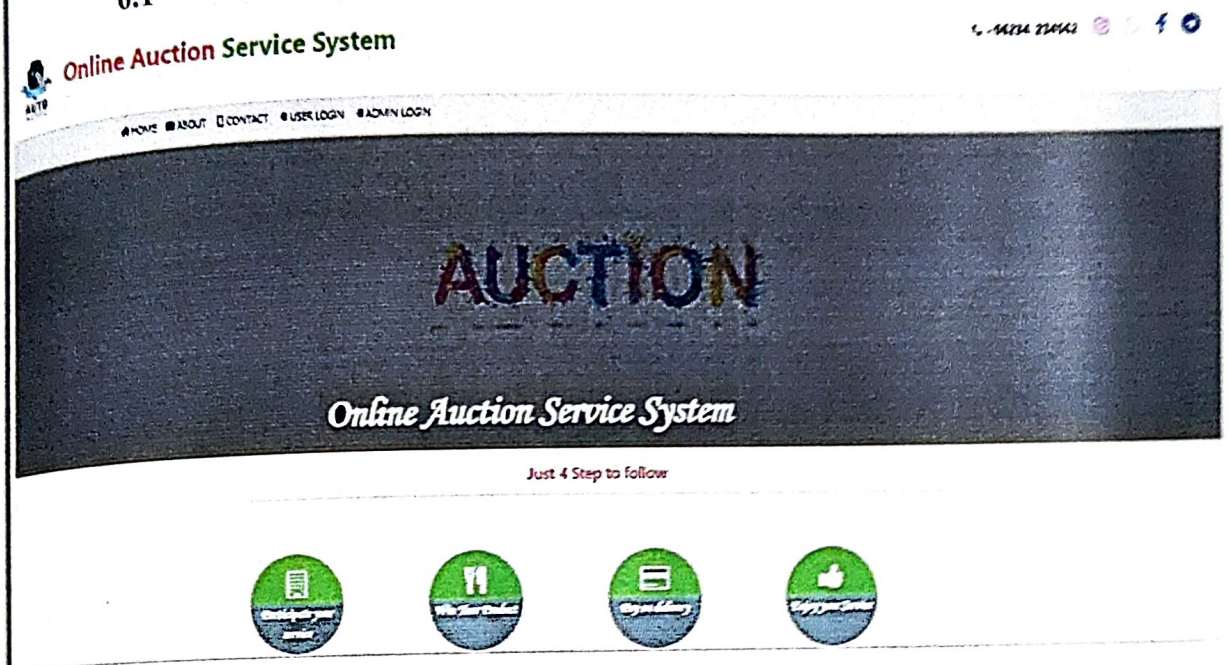
b) Select the appropriate version of Django for your operating system (e.g., Windows, macOS, or Linux), in our case Django 5.0.4.

c) Click on the "Download" button to start the download.

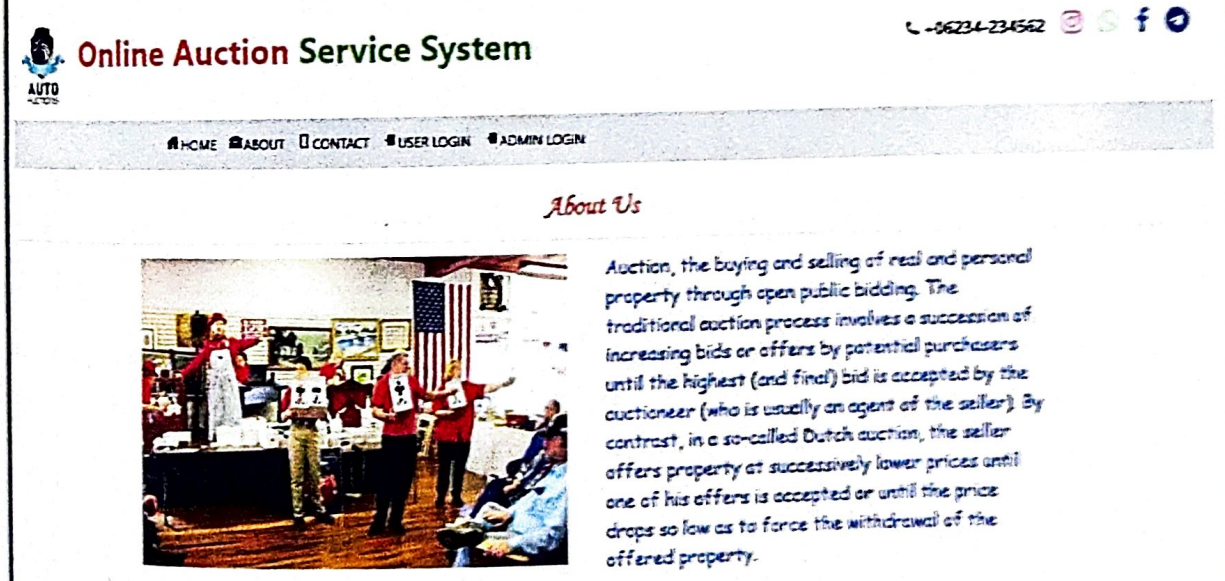
d) Once the download is complete, run the installer. Follow the installation wizard and select the options that suit your needs.

CHAPTER 6: SAMPLE FORMS AND REPORTS

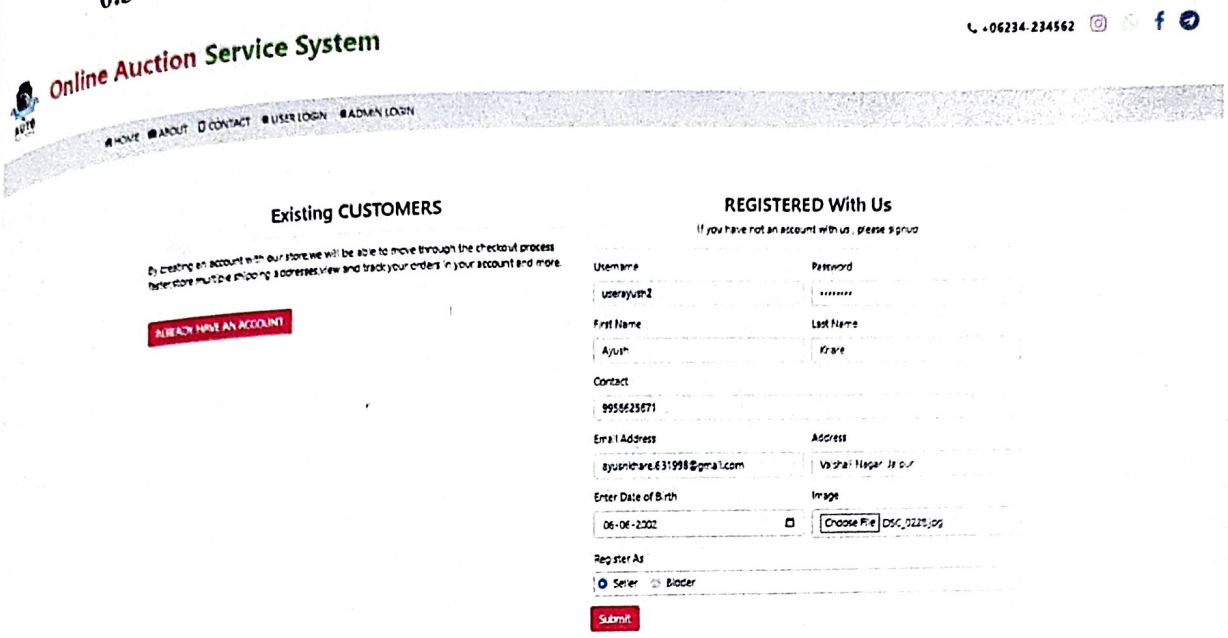
6.1 Homepage



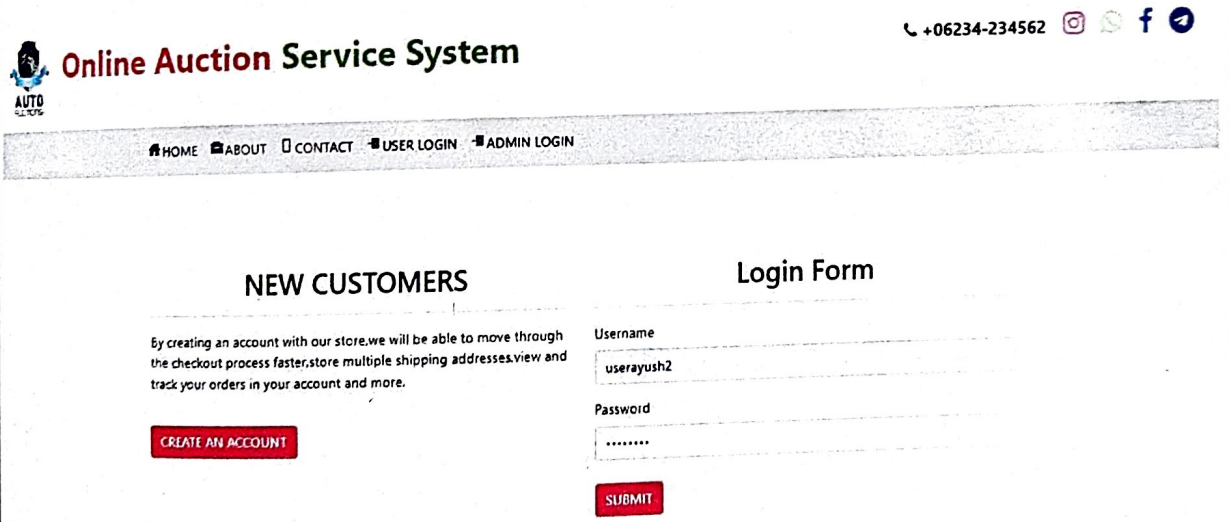
6.2 About Us



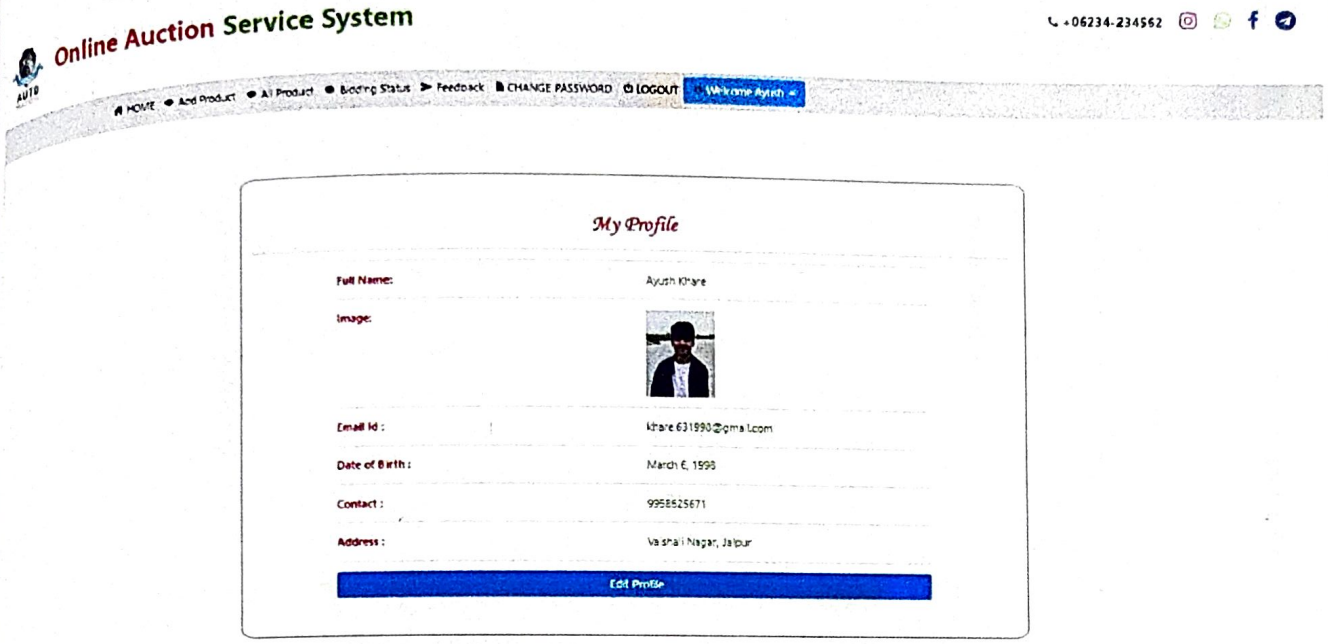
6.3 Registration Form



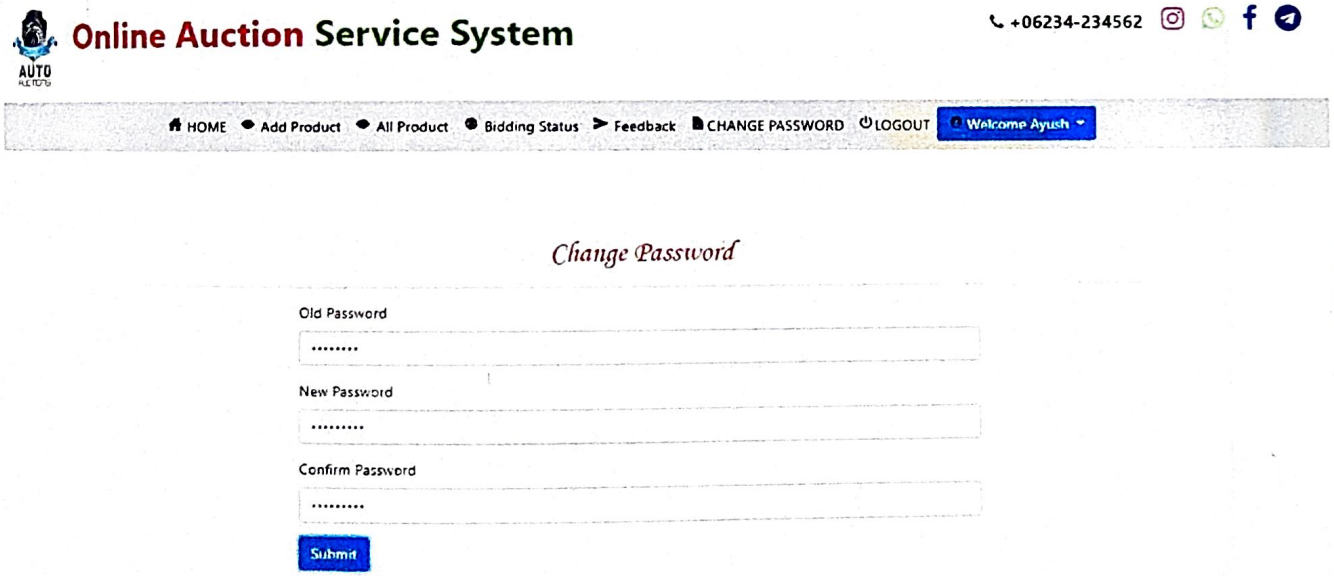
6.4 Login Form



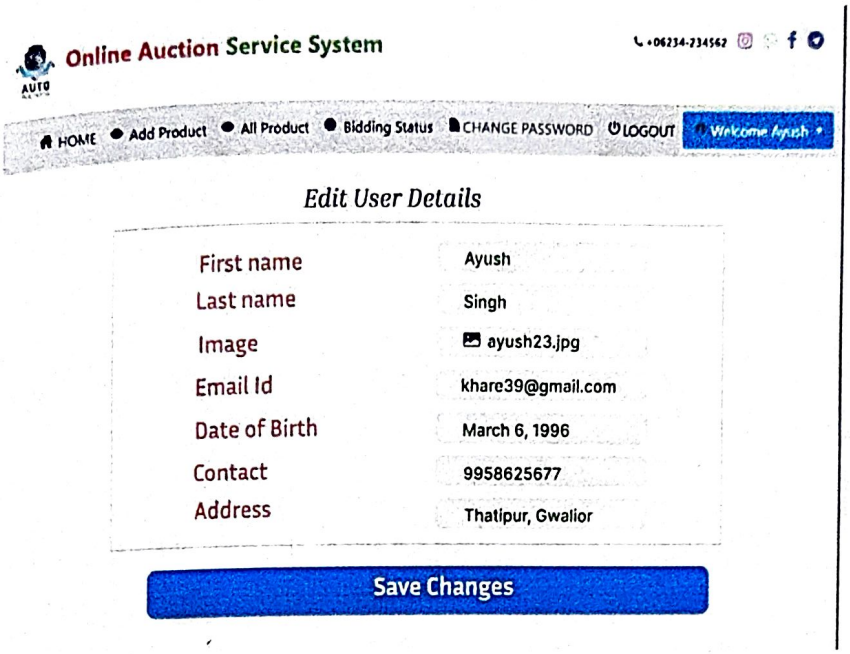
6.5 User Profile



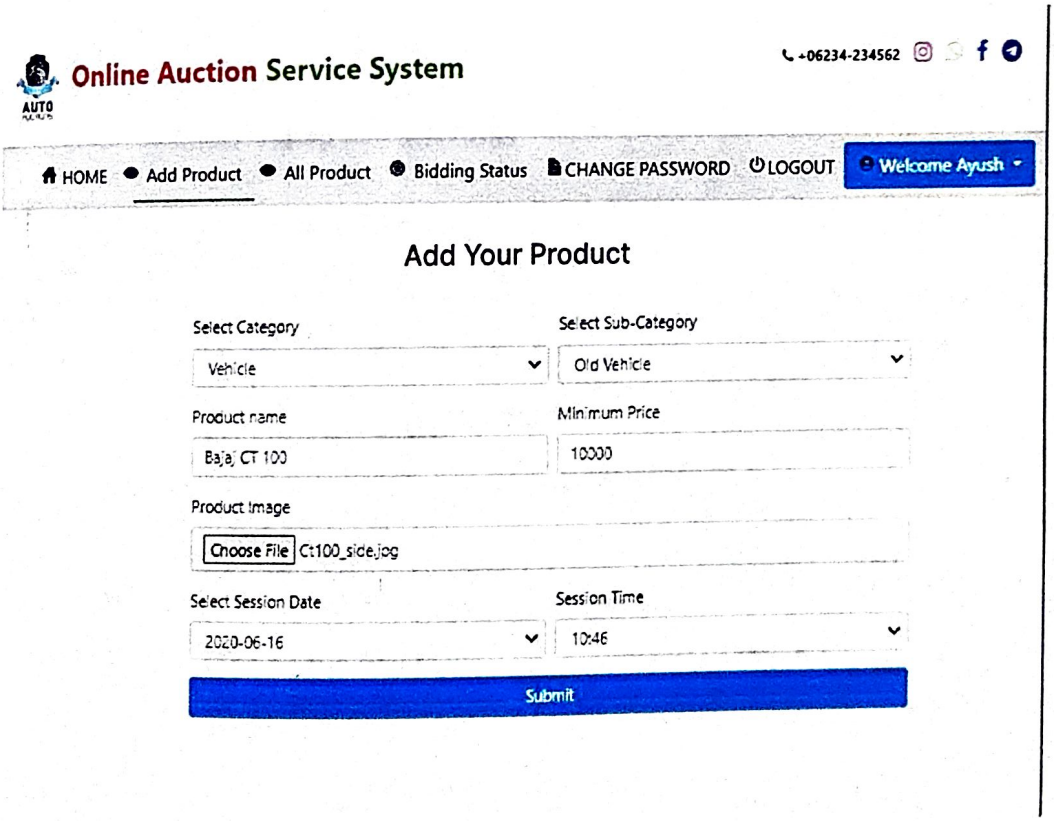
6.6 Change Password



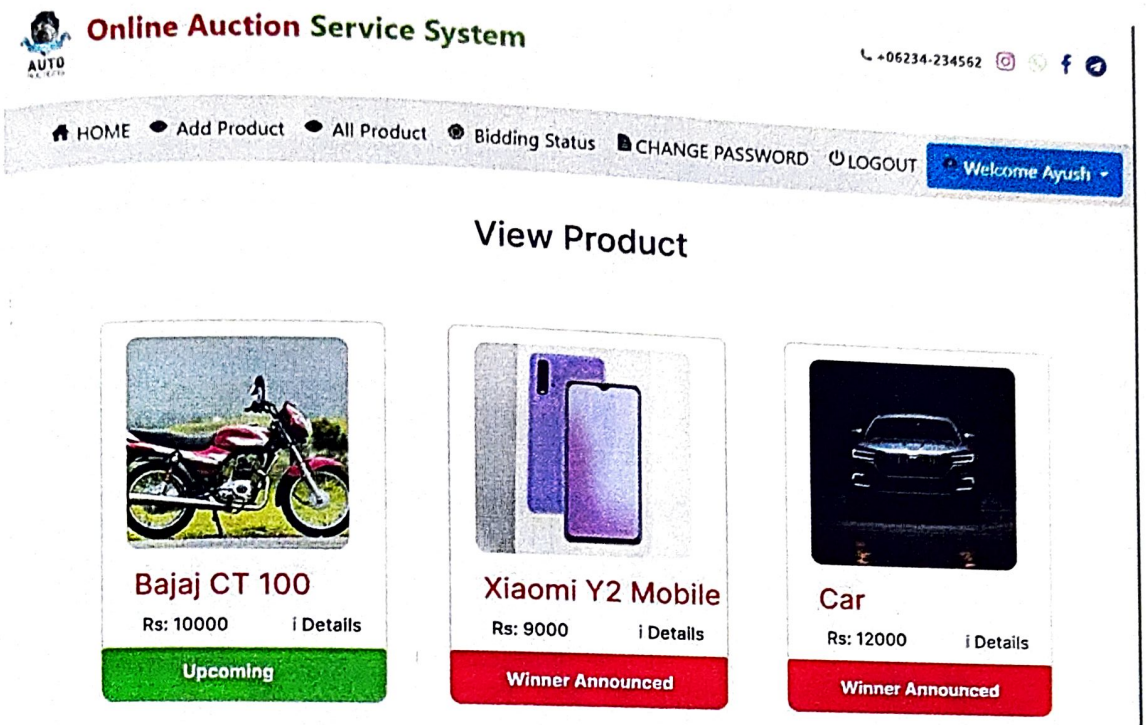
6.7 Edit details



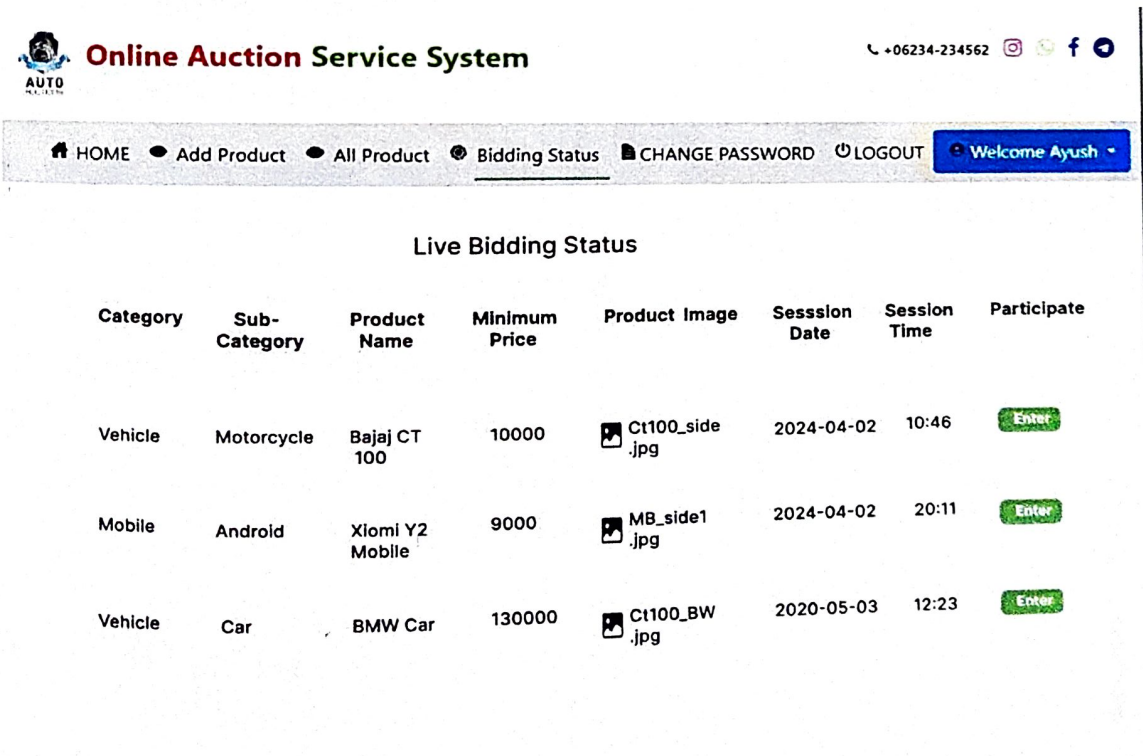
6.8 Add product for auction



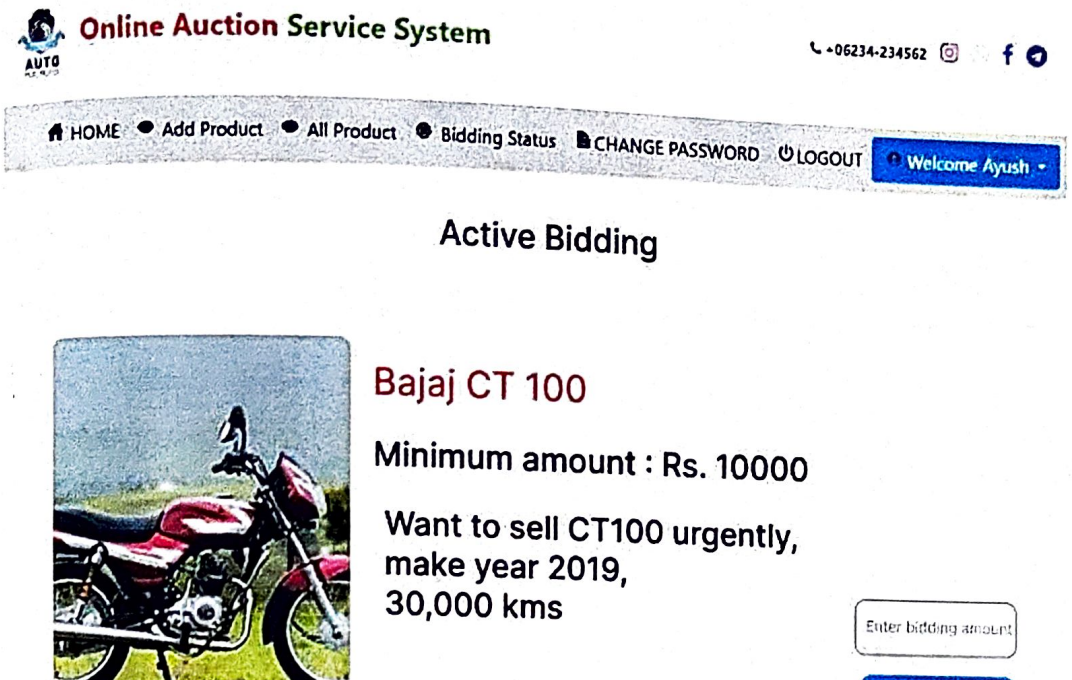
6.9 Bidder views products



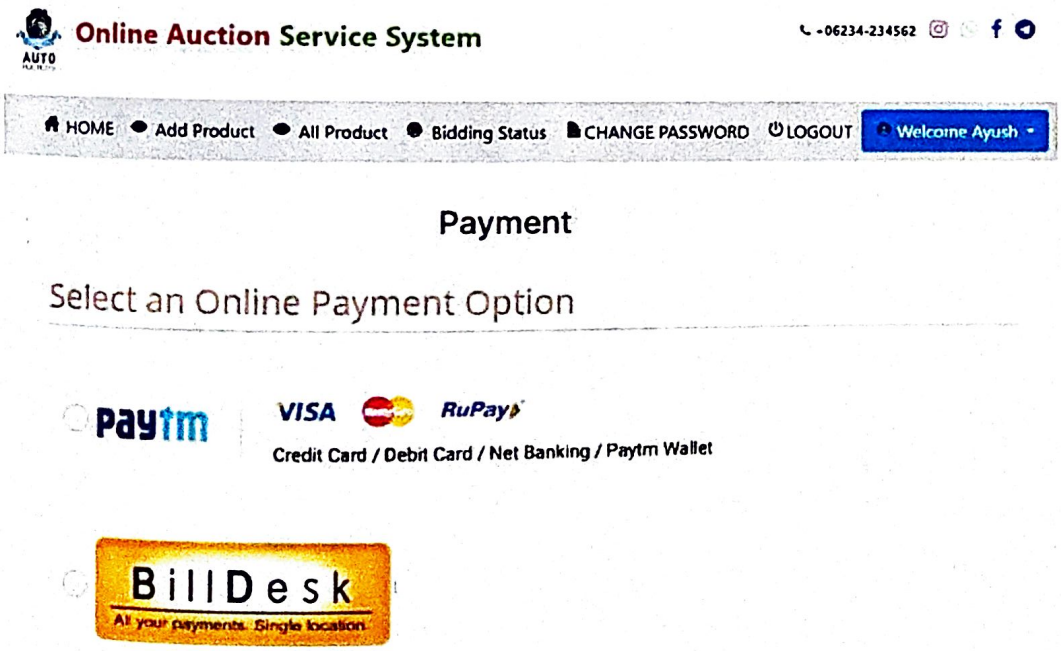
6.10 Bidder views live auctions



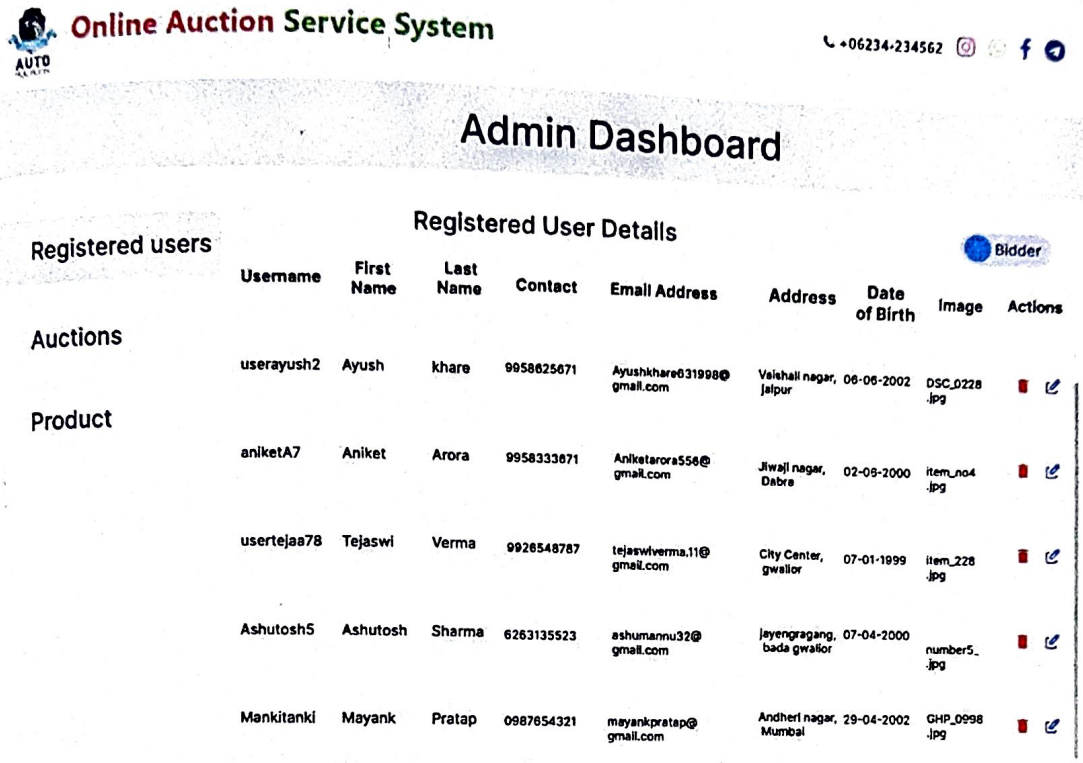
6.11 Bidding screen



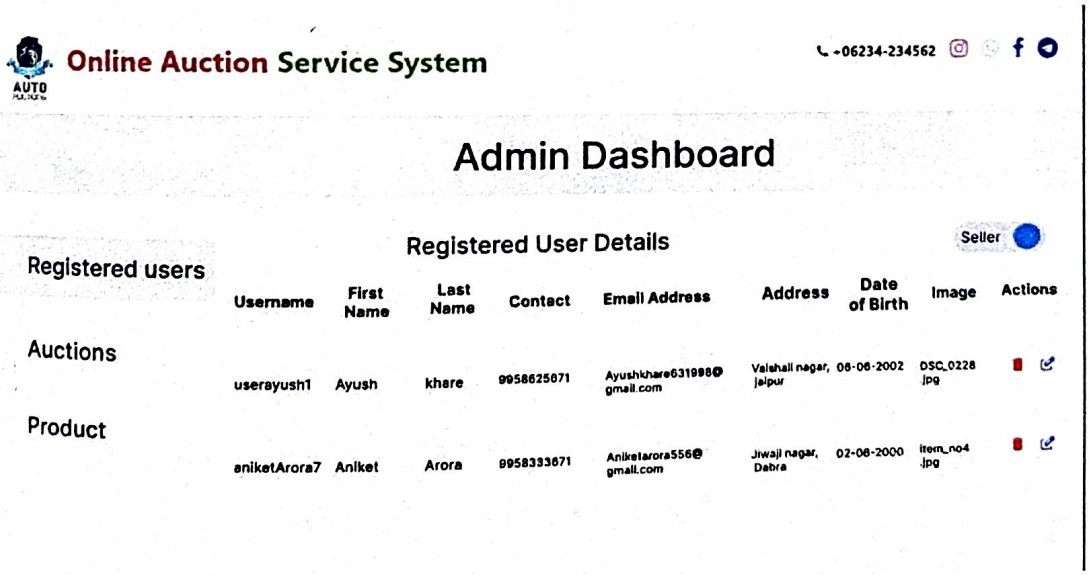
6.12 Payment screen



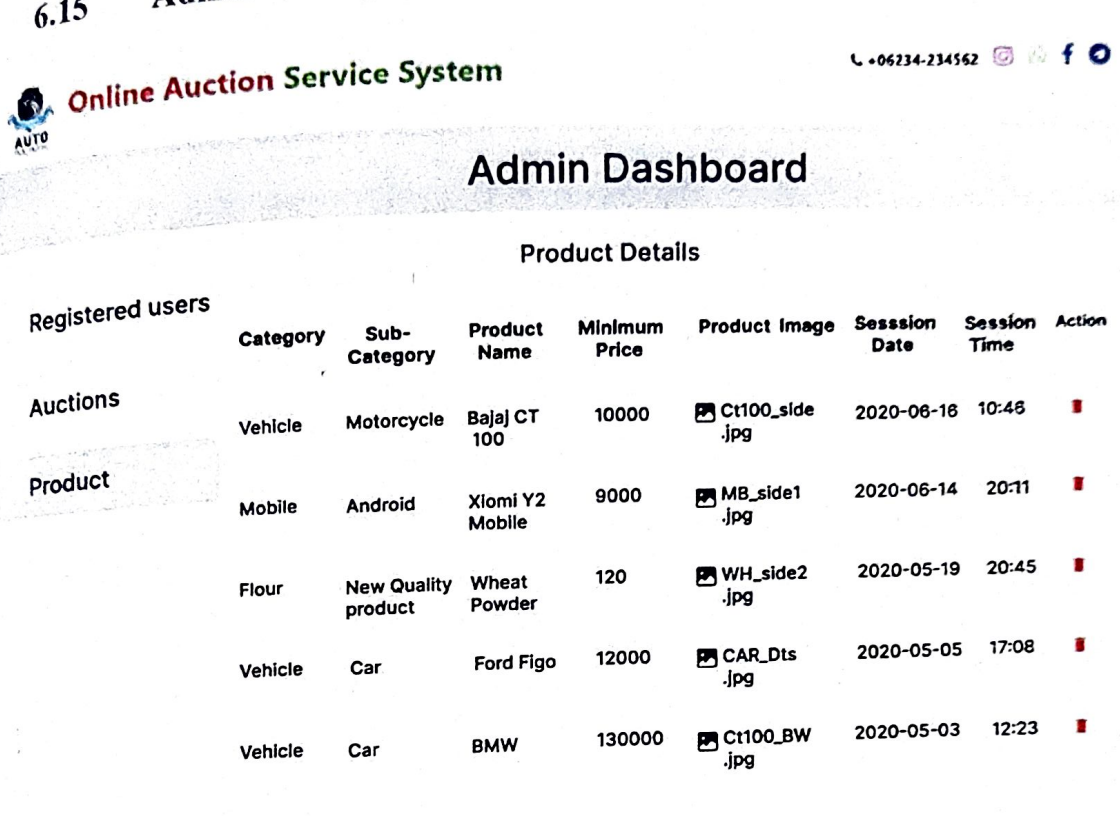
6.13 Admin views bidders



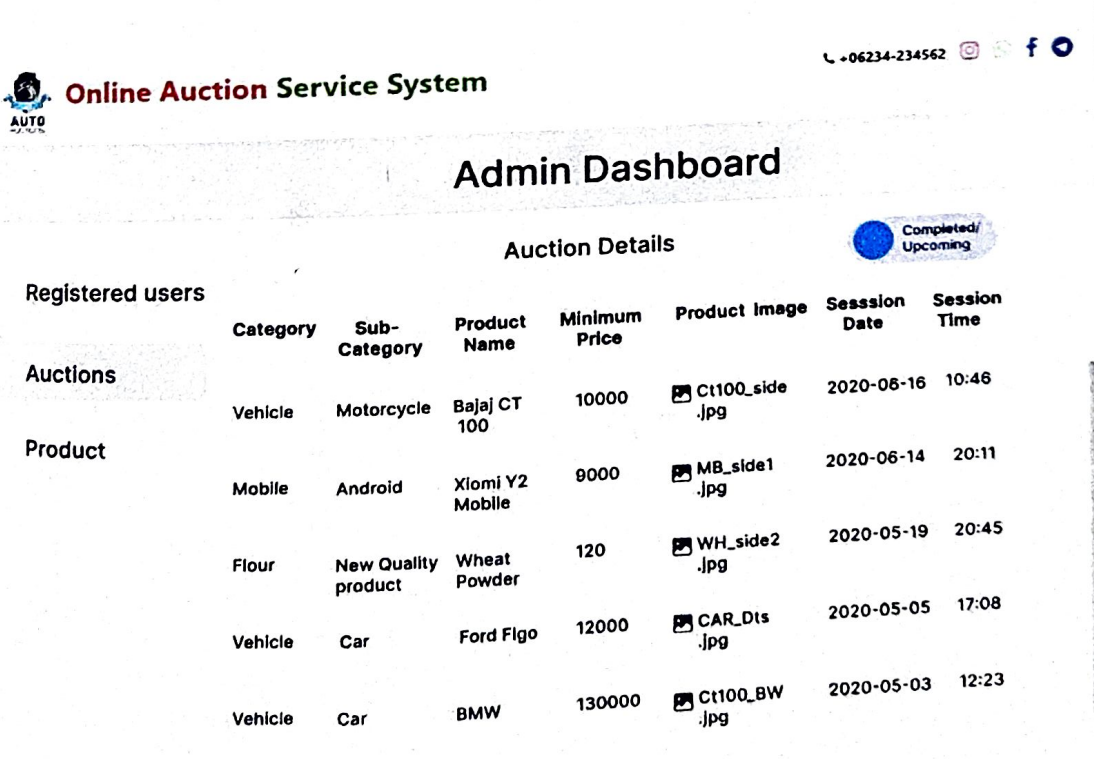
6.14 Admin views sellers



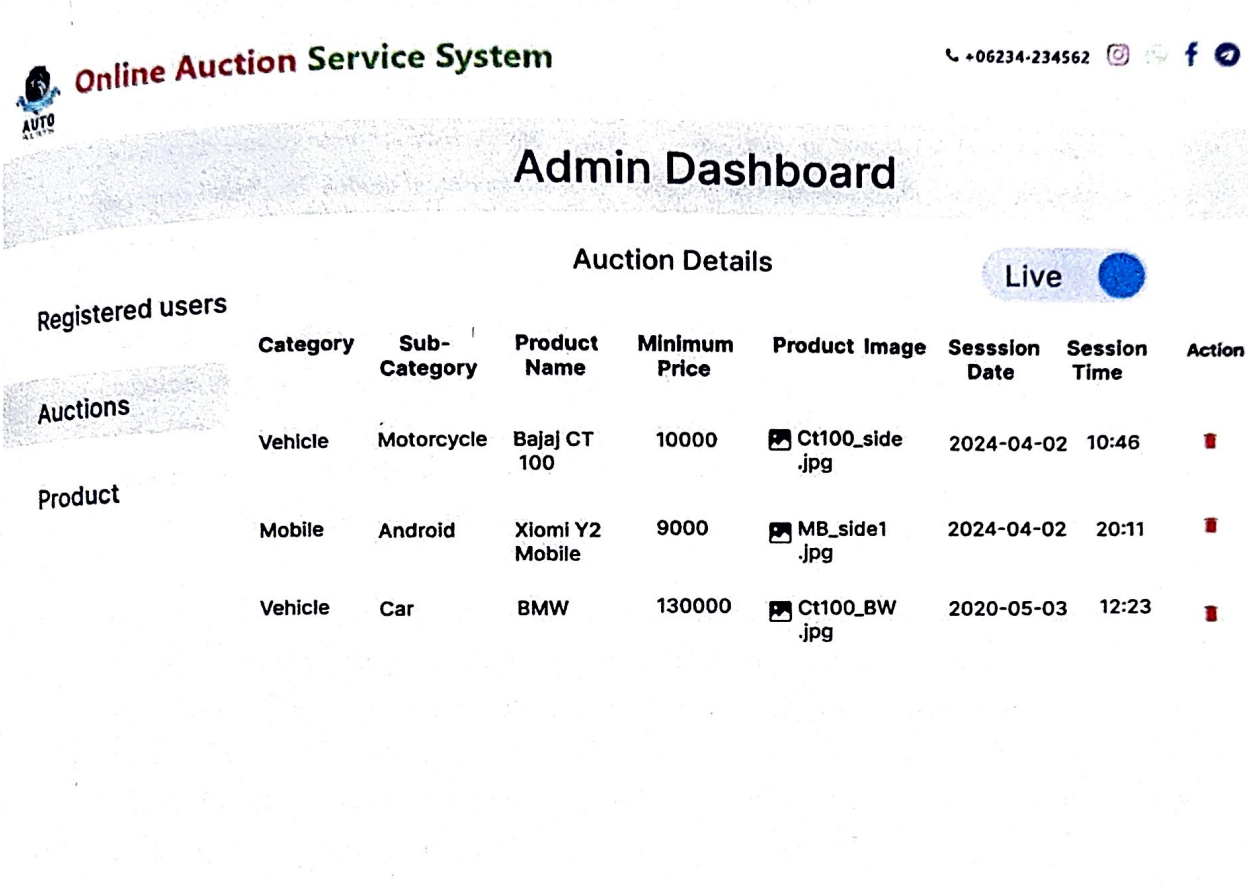
6.15 Admin views products



6.16 Admin views completed/upcoming auctions



6.17 Admin views live auctions



CHAPTER 7: CONCLUSION

In conclusion, the development and implementation of the Online Auction Service System represents a significant step forward in the realm of online commerce. By providing a comprehensive platform tailored to the needs of sellers, bidders, and administrators, the online auction service system offers a seamless and efficient way to conduct online auctions. Through intuitive interfaces, robust features, and a user-centric design approach, the online auction service system aims to maximize user acceptance, trust, and satisfaction.

The feasibility study conducted for the online auction service system has demonstrated its technical, economic, and operational viability. By leveraging compatible technologies, ensuring scalability and flexibility, and addressing key operational considerations, the online auction service system is well-positioned to meet the evolving needs of organizations and users in the dynamic online auction marketplace.

Moving forward, careful planning, effective resource allocation, and continuous monitoring will be essential to navigate potential challenges and optimize the online auction service system's performance. With its focus on usability, security, and transparency, the online auction service system has the potential to redefine the online auction experience, fostering a thriving marketplace conducive to growth and success for all stakeholders involved. In future, if we want to change anything in this project and develop it further, then following functionalities can also be added:

- UI/UX advancements can be made so as to improve the website layout and make it more user friendly and attractive at the same time.
- Ratings and Reviews system can be incorporated to enhance bidder engagement.
- Filter options for products listed on the website can be integrated for quick filtering out the products and betterment of search functionality.

Bibliography

The following websites were referred during the analysis and execution of the AMM Module:

1. https://www.djangoproject.com/
2. https://www.sqlite.org/
3. https://www.researchgate.net/publication/47619337_Formalization_of_the_Data_Flow_Diagram_Rules_for_Consistency_Check
4. https://spot.colorado.edu/~kozar/DFDtechnique.html
5. https://online-auction.state.gov/en-US
6. https://eauction.gov.in/eauction/#/

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Learning capacity/Knowledge up gradation				✓	
Performance/Quality of work					✓
Behaviour/Discipline/Team work				✓	
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	- Discussing the requirements with the client.				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT** ✓				
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Signature of Industry Mentor					

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Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation				✓	
Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	- Choosing suitable tech stacks for the development.				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
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Signature of Industry Mentor	Shubham				

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Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	- Designing DB schema.				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT**				
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Signature of Industry Mentor					

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Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	– UI Design and Development.				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT**				
Name of Industry Mentor	Mr. Shubham Gupta				
Signature of Industry Mentor	Shubham				

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Learning capacity/Knowledge up gradation				✓	
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	- Database connectivity and configuration.				
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Name of Industry Mentor	Mr. Shubham Gupta				
Signature of Industry Mentor	Shubham				

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Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work				✓	
Sincerity/Hard work				✓	
Comment on nature of work done/Area/Topic	- Perform unit testing of developed software. ✓				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT**				
Name of Industry Mentor	Mr. Shubham Gupta				
Signature of Industry Mentor	Shubham				

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Learning capacity/Knowledge up gradation					✓
Performance/Quality of work					✓
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	- Overall system testing and deployment preparation.				
Overall Grade (Any One)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT** ✓				
Name of Industry Mentor	Mr. Shubham Gupta				
Signature of Industry Mentor	Shubham				

Receiving Date	16/04/24	Name of Faculty Mentor	Dr. R.S. Jadon	Sign	

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Director