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Project Report

on

Development of E-Auction (User Module)

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

MASTER IN COMPUTER APPLICATION

in

COMPUTER SCIENCE AND ENGINEERING

Submitted By:

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

January – June 2024



22nd April 2024

CERTIFICATE

This is to certify that **Mr/Ms. Rahul Rajak** student of **MCA - 4th Semester** from **Madhav Institute of Technology & Science, Gwalior** has successfully completed internship program in our organization from **15th January 2024** to **22nd April 2024**. During Period he/she worked on our client project "**E – Auction (User Module)**" using **MERN Stack & Project Development Technologies**.

During this period he has demonstrated exceptional skills & dedication in the assigned task. We are confident that Intern has gained valuable experience & knowledge during this time. We wish him all the best for future endeavors

For Ypsilon IT Solutions Pvt. Ltd.,



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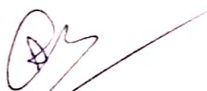
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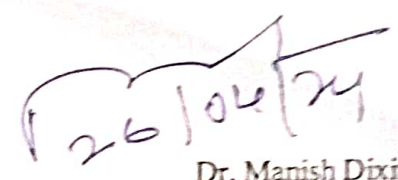
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CERTIFICATE

This is certified that **Rahul Rajak (0901CA221049)** has submitted the project report titled **Development of E-Auction (User Module)** under the mentorship of **Ms. Ina Maheshwari (Human Resource, Ypsilon IT Solutions Pvt. Ltd.)**, in partial fulfilment of the requirement for the award of degree of **Master in Computer Application of Computer Science and Engineering** from **Madhav Institute of Technology and Science, Gwalior.**


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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 Ms. Ina Maheshwari (Human Resource, Ypsilon IT Solutions Pvt. Ltd.).

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



Rahul Rajak

0901CA221049

2022-2024

Master in Computer Application
Computer Science and Engineering

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



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Master in Computer Application
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ABSTRACT

Online commerce is the center of convenience, accessibility, and global engagement, having completely changed the way millions of people purchase and sell. The leading edge of this digital revolution are e-auctions, which go beyond geographic borders and offer a dynamic platform for people to engage in competitive bidding in order to secure a wide range of goods and services.

E-auctions have become an essential part of our everyday lives in today's connected world since they provide a transparent trading channel, a large marketplace for research, and affordable shopping. Even if there are many advantages, it can be difficult and time-consuming to negotiate the complexity of traditional selling and buying techniques. All of these issues are addressed by the E-auction Platform, which provides a user-friendly website that enables people to participate in smooth online auctions.

This platform serves as a centralized hub where users can explore a diverse array of products, engage in competitive bidding, and ultimately secure items of interest. The primary objective is to simplify the online auction process, providing users with an intuitive and efficient platform to discover, bid on, and purchase products. The E-auction Platform automates key processes, from listing items for auction to confirming purchases, streamlining the user experience and saving valuable time and effort.

Users can leverage this platform to not only browse and compare various products but also participate in transparent bidding processes. The automation of booking and confirmation ensures a hassle-free experience, making the E-auction Platform the go-to solution for individuals seeking a user-centric and efficient online auction experience. Join us on this digital journey, where buying and selling become seamless, transparent, and accessible to all.

सार

ऑनलाइन वाणिज्य सुविधा, पहुंच और वैश्विक जुड़ाव का केंद्र है, जिसने लाखों लोगों के खरीदने और बेचने के तरीके को पूरी तरह से बदल दिया है। इस डिजिटल क्रांति का अग्रणी पहलू ई-नीलामी है, जो भौगोलिक सीमाओं से परे जाती है और वस्तुओं और सेवाओं की एक विस्तृत श्रृंखला को सुरक्षित करने के लिए लोगों को प्रतिस्पर्धी बोली में शामिल होने के लिए एक गतिशील मंच प्रदान करती है।

आज की कनेक्टेड दुनिया में ई-नीलामी हमारे रोजमर्रा के जीवन का एक अनिवार्य हिस्सा बन गई है क्योंकि वे एक पारदर्शी व्यापारिक चैनल, अनुसंधान के लिए एक बड़ा बाज़ार और किफायती खरीदारी प्रदान करते हैं। भले ही कई फायदे हों, पारंपरिक बिक्री और खरीद तकनीकों की जटिलता पर बातचीत करना कठिन और समय लेने वाला हो सकता है। इन सभी मुद्दों को ई-नीलामी प्लेटफॉर्म द्वारा संबोधित किया जाता है, जो एक उपयोगकर्ता-अनुकूल वेबसाइट प्रदान करता है जो लोगों को सुचारू ऑनलाइन नीलामी में भाग लेने में सक्षम बनाता है।

यह प्लेटफॉर्म एक केंद्रीकृत केंद्र के रूप में कार्य करता है जहां उपयोगकर्ता विभिन्न प्रकार के उत्पादों का पता लगा सकते हैं, प्रतिस्पर्धी बोली में संलग्न हो सकते हैं और अंततः रुचि की वस्तुओं को सुरक्षित कर सकते हैं। प्राथमिक उद्देश्य ऑनलाइन नीलामी प्रक्रिया को सरल बनाना है, जिससे उपयोगकर्ताओं को उत्पादों को खोजने, बोली लगाने और खरीदने के लिए एक सहज और कुशल मंच प्रदान किया जा सके। ई-नीलामी प्लेटफॉर्म नीलामी के लिए वस्तुओं को सूचीबद्ध करने से लेकर खरीदारी की पुष्टि करने, उपयोगकर्ता अनुभव को सुव्यवस्थित करने और मूल्यवान समय और प्रयास की बचत करने तक प्रमुख प्रक्रियाओं को स्वचालित करता है।

उपयोगकर्ता इस प्लेटफॉर्म का लाभ उठाकर न केवल विभिन्न उत्पादों को ब्राउज़ और तुलना कर सकते हैं, बल्कि पारदर्शी बोली प्रक्रियाओं में भी भाग ले सकते हैं। बुकिंग और पुष्टिकरण का स्वचालन एक परेशानी मुक्त अनुभव सुनिश्चित करता है, जिससे ई-नीलामी प्लेटफॉर्म उपयोगकर्ता-केंद्रित और कुशल ऑनलाइन नीलामी अनुभव चाहने वाले व्यक्तियों के लिए आसान समाधान बन जाता है। इस डिजिटल यात्रा में हमारे साथ जुड़ें, जहां खरीदारी और बिक्री निर्बाध, पारदर्शी और सभी के लिए सुलभ हो जाएगी।

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Chapter 1 : Introduction

Our goal is to introduce a ground-breaking application that completely transforms the online shopping and selling experience in the rapidly changing world of e-commerce. The main goal of this project is to create a cutting-edge platform that will enable smooth product promotion and speedy transactions. Our main goal is to have a strong auction system that makes sure every commodity reaches its maximum market value.

The core objective of this application is to provide a comprehensive solution for users engaged in online commerce. It serves as a virtual marketplace where products, ranging from everyday goods to recyclable materials and beyond, can be showcased and sold. At the heart of our innovation lies an intricate auction system, meticulously crafted to elevate the selling process and optimize financial returns for sellers.

The primary goal of this project is to provide a user-friendly and efficient platform that empowers both buyers and sellers in the online marketplace. Our application will not only streamline the process of showcasing and purchasing products but will also introduce a sophisticated auction system for select items. This auction mechanism is designed to optimize the selling process, ensuring that products are sold at their highest possible prices.

This application is not limited to conventional retail products; it extends its reach to include a diverse range of items, from everyday goods to recyclable materials. The inclusion of scrap items adds a unique dimension to our project, addressing the need to manage and sell products that may not fit the traditional retail mold.

By incorporating an auction feature, our application aims to revolutionize the buying and selling experience, enhancing competition and maximizing the value of each transaction. This innovation seeks to reduce the manual efforts involved in selling and managing products, providing users with a seamless and efficient platform to showcase their goods and discover unique items through the auction mechanism.

Module – User Panel

Our specifically developed user panel allows seamlessly access and engage with the digital marketplace. Users benefit from a comprehensive platform that is tailored to their needs, from simple registration to dynamic bidding and selling features. Transparent bid management technologies promote clarity and empowerment, resulting in a new era of online commerce.

Registration and Login:

Seamless access begins with a user-friendly registration and login process. Our meticulously designed forms incorporate robust validation mechanisms, ensuring data integrity and security.

Email Verification:

Prioritizing security, every registered user receives a verification email upon registration. This crucial step safeguards user accounts and grants access only upon successful verification, enhancing overall platform security.

User Panel:

Upon login, users are greeted with a dynamic user panel, offering a comprehensive overview of available auctions. Our intuitive interface showcases auctions categorized into multiple categories, seamlessly synced with the admin panel for real-time updates. Within each category, users can explore multiple sub-categories, refining their search for specific products.

Bidding and Selling:

Our module enables users to actively participate in the marketplace by facilitating both bidding on available things and selling personal items. Users can engage in auctions using an easier bidding mechanism, which increases competitiveness and increases value. Furthermore, sellers have the freedom to offer their products for auction and manage them easily using our platform.

Bid Management:

Users are provided with advanced bid management tools, allowing them to closely monitor the bidding activity for their listed products. When a bid is successful, sellers are given access to detailed information about the buyer.

Conclusion:

Our user module isn't merely a gateway to transactions but a catalyst for empowerment and efficiency. With our intuitive user panel, dynamic bidding and selling features, and advanced bid management tools, we prioritize security and user experience, making online auctions more accessible and efficient than ever before.

1.1 Problem identification

The current auction management system is insufficient, with inefficiencies in the purchasing and selling processes, limited cost control for purchasers, a lack of visible feedback systems, insufficient customization possibilities, and challenges with market analysis. These inadequacies impede productivity, consumer satisfaction, and market competitiveness, necessitating new solutions to streamline operations and improve user experiences.

- i. **Inefficient Buying and Selling Process :** The traditional methods of buying and selling goods lack efficiency, often involving time-consuming negotiations and complex transactions. This inefficiency is a significant challenge for both sellers and buyers in the current marketplace. Consequently, this inefficiency poses a formidable challenge within the contemporary marketplace, necessitating innovative solutions to streamline the buying and selling process for enhanced efficiency and productivity.
- ii. **Limited Cost Control for Buyers :** Buyers often face challenges in controlling costs due to fixed retail prices. The absence of a dynamic pricing mechanism hinders buyers from exploring cost-effective options and obtaining products at prices reflective of market dynamics. This lack of price responsiveness diminishes consumer satisfaction and undermines the competitiveness of the marketplace. Embracing dynamic pricing mechanisms can empower buyers with greater control over their expenditures and foster a more dynamic and responsive marketplace ecosystem.
- iii. **Lack of Customization Options :** Buyers often seek personalized products or services tailored to their specific needs or preferences. However, traditional buying and selling processes may offer limited customization options, resulting in a mismatch between consumer expectations and available offerings. This mismatch between consumer expectations and available offerings can lead to dissatisfaction among buyers and missed opportunities for sellers to capitalize on niche markets and drive customer loyalty.
- iv. **Difficulty in Market Analysis :** Without access to comprehensive data and analytics tools, both buyers and sellers may struggle to make informed decisions regarding pricing strategies, product selection, and market trends. This lack of market analysis capabilities can hinder competitiveness and growth opportunities for businesses operating within the marketplace. The absence of sophisticated analytics tools may result in missed opportunities for revenue growth, customer retention, and market expansion.

1.2 Parent organization :

Ypsilon IT Solutions Pvt. Ltd. : IT and Software Solutions.

At Ypsilon, we are at the forefront of providing comprehensive IT and software solutions tailored to meet the diverse needs of businesses across various industries. Specializing in Mobile Development, Ecommerce Development, DevOps, SEO & Digital Marketing, Web Development, and CMS Development, we offer a wide range of services to empower businesses and drive digital transformation.

Our expert team excels in crafting intuitive and high-performance mobile applications that engage users and enhance brand visibility in the rapidly evolving mobile landscape. Additionally, our eCommerce solutions are designed to deliver seamless online shopping experiences, driving conversions and revenue growth for businesses of all sizes. With a focus on DevOps practices, we streamline development processes and ensure faster time-to-market for software applications, while our SEO & Digital Marketing strategies help businesses amplify their online presence and reach their target audience effectively.

Furthermore, our Web Development services encompass cutting-edge technologies and best practices to create scalable, secure, and visually appealing websites that elevate brand identity and drive business growth. Additionally, our CMS Development expertise enables businesses to efficiently manage and update their digital content, ensuring dynamic and engaging online experiences for users.

At Ypsilon, we are committed to excellence and innovation in every project we undertake. Whether you need to enhance your mobile presence, optimize your eCommerce platform, streamline development workflows, boost online visibility, create a stunning website, or manage your content effectively, we have the expertise and resources to bring your vision to life. Partner with us to unlock the full potential of your business in the digital realm .

we pride ourselves on our commitment to innovation and continuous improvement. Our R&D team stays abreast of the latest technologies and trends, ensuring that our solutions are always at the forefront of industry standards. Whether it's harnessing the power of emerging technologies like AI, blockchain, or IoT, or adopting best practices in security and compliance, we prioritize staying ahead of the curve to future-proof your business.

At Ypsilon, we understand that every business is unique, which is why we approach each project with a customized strategy and a relentless focus on delivering value. From startups to enterprises, across diverse industries, our solutions are designed to drive tangible results and exceed expectations.

1.3 Hardware and Software Specification

- (a) **Hardware Requirement** - For our project's robust performance and reliability, we've outlined precise hardware specifications. Our system will feature an Intel Core i5 processor from the latest 10th generation, clocked at 2.40 GHz, ensuring efficient handling of computational tasks.

To facilitate multitasking and manage large datasets effortlessly, we'll incorporate 8 GB of DDR4 RAM into our system. Storage needs will be met with a 256 GB solid-state drive (SSD), offering faster data access and improved system responsiveness.

Running on a 64-bit Windows 10 operating system, our hardware configuration is optimized for seamless compatibility with contemporary software and applications. With these specifications in place, we're poised to commence our project confidently, knowing our system can effectively meet its demands.

S.no	Specification	Description
i.	Processor	Intel core i3 and above generation.
ii.	RAM	Upto 8 GB
iii.	SSD	512 GB
iv.	System Type	64 bit OS X64 H Pre-Processor

(b) Software Requirement -

i. Front-End Development :

- Proficiency in HTML, CSS, JavaScript, and Bootstrap 5 is essential for creating visually appealing and responsive user interfaces.
- Ability to ensure cross-platform compatibility and optimal user experience across various devices and screen sizes.

ii. **Back-End Development :**

- Expertise in Node.js for server-side development, including API creation and handling of HTTP requests.
- In-depth knowledge of Express.js framework for building robust and scalable web applications.
- Competence in MongoDB for database management, including schema design, querying, and data manipulation.

iii. **Database Management :**

- Proficiency in MongoDB, a NoSQL database, for storing and managing application data in a flexible and scalable manner.
- Understanding of MongoDB's document-oriented nature and its advantages for handling unstructured or semi-structured data.

iv. **Performance and Security Consideration :**

- Implementation of performance optimizations at both the front-end and back-end levels to ensure responsive user experiences and efficient data processing.
- Adherence to best practices for web application security, including input validation, authentication, and authorization mechanisms.

S.no	Specification	Description
	Operating system	Window 11
	Other Applications	Visual code, MongoDB Atlas, Version Control System, Web browser
	Languages	Front-End – HTML, CSS, JavaScript, JQuery, Bootstrap 3, React. Server-Side – Node.js , Express.js. Back-End – MongoDB.
	Network	Wi-Fi, LAN

Chapter 2 : System Analysis

2.1 Problem Analysis :

Our solution addresses challenges like scattered data and complex bidding processes by introducing a centralized platform with user-friendly navigation. We created a user-friendly interface that simplifies the process. Products in our project are controlled categorically and sub-categorically, which simplifies the search process for users and allows them to simply discover what they need.

- i. **Fragmented Data Sources :** The dispersed availability of auction data across multiple platforms poses a significant challenge for participants, leading to inefficiencies in accessing comprehensive information crucial for informed decision-making.

Solution : The distributed availability of auction data over numerous platforms presents a major barrier to participants, resulting in inefficiencies in accessing comprehensive information required for informed decision-making.

- ii. **Complex Bid Retrieval Processes :** The large structure of auction data retrieval, which includes bid history, item descriptions, and seller information, complicates things for users looking to participate in auctions. Simplifying this process is critical for improving user experience and encouraging greater involvement.

Solution : Create a user-friendly platform with simple navigation tools. By providing users with easy access to bid history, item descriptions, and seller profiles, the platform may speed up the bidding process, empower users to make informed decisions, and ultimately increase satisfaction with the service.

- iii. **Time-Consuming Research Procedures :** Conducting comprehensive research across several auction platforms can be challenging and time-consuming, preventing customers from fully investigating available prospects and making timely investment selections.

Solution : Implement a comprehensive research platform that aggregates real-time auction data from diverse sources. By providing users with a centralized hub for market analysis, trend monitoring, and competitor evaluation, the platform streamlines the research process, enabling users to make informed decisions efficiently and stay ahead of market trends.

- iv. **Limited Comparative Analysis Tools :** The absence of robust tools for comparing multiple auctions simultaneously inhibits users' ability to evaluate and prioritize investment opportunities effectively.

Solution : Enhance decision-making capabilities by integrating advanced comparison tools into the platform. These tools should enable users to conduct side-by-side analyses of various auctions, assessing factors such as bidding history, item specifications, and seller reputations. By empowering users with comprehensive comparative insights, the platform facilitates informed decision-making and fosters a more competitive auction environment.

- v. **Lack of Transparency in Auction Processes :** Participants often encounter opacity in auction procedures, leading to uncertainties regarding bidding mechanisms, fee structures, and dispute resolution protocols. This lack of transparency undermines trust and confidence in the auction platform.

Solution : Implement clear and concise guidelines outlining the auction process, including bidding rules, fee structures, and dispute resolution procedures. Additionally, provide real-time updates and notifications to keep participants informed of auction progress and relevant announcements. By enhancing transparency, the platform fosters trust among users and promotes a fair and equitable auction environment.

- vi. **Lake of Risk Mitigation Measures :** Users face potential risks while using online auctions, such as fake postings, payment disputes, and delivery concerns. Without proper safeguards in place, participants may be hesitant to participate in auctions, reducing market activity.

Solution : Implement strong risk mitigation methods to safeguard users against potential fraud and disputes. Implement features like identity verification processes, and buyer protection policies to protect participant interests and build trust in the platform. By prioritising user security, the platform creates a secure and trustworthy auction ecosystem that encourages long-term participation and growth.

2.2 Feasibility Study :

2.2.1 Economic Feasibility Study :

The E-auction project's economic feasibility has been carefully assessed, taking into consideration both the project's beginning and ongoing costs. The initial expenses include staff training, equipment procurement and installation, and the development of the digital platform. Ongoing costs include human costs and ongoing maintenance and software and hardware upgrades. This project will probably cost about 1.5 lakh Indian rupees, which is affordable considering the benefits that the system offers.

Our project's economic feasibility has been thoroughly analyzed, taking into consideration elements such as job creation, economic growth, transaction cost reductions, inclusive economic participation, and government income generation.

- i. **Job Creation and Employment Opportunities :** Our EAuction platform has the potential to create significant employment opportunities, both directly and indirectly. It can directly establish jobs such as developers, customer service representatives, and marketing specialists. Furthermore, it can indirectly increase demand for goods and services, promoting employment development in industries such as logistics, packaging, and delivery services.
- ii. **Economic Growth and Innovation :** Our EAuction platform contributes to economic growth and promote innovation. It increases commerce and productivity while offering new features and technology to the e-commerce industry, promoting growth in an affordable and effective approach.
- iii. **Reduction of Transaction Costs :** Our EAuction platform can reduce transaction costs for both buyers and sellers when compared to traditional offline commerce techniques. Our platform optimizes and reduces the cost of transactions by removing brokers and simplifying the buying and selling process.
- iv. **Government Revenue Generation :** Our EAuction platform has the potential to improve government revenue through taxes and fees.. As the platform grows and generates revenue, it can contribute to tax revenue for governments at the local, regional, and national levels, which can be reinvested in public services and infrastructure.

2.2.2 Technical Feasibility Study :

Technical feasibility refers to the evaluation of whether a proposed project can be implemented using current technology and resources. Here's a draft for our E-Auction project:

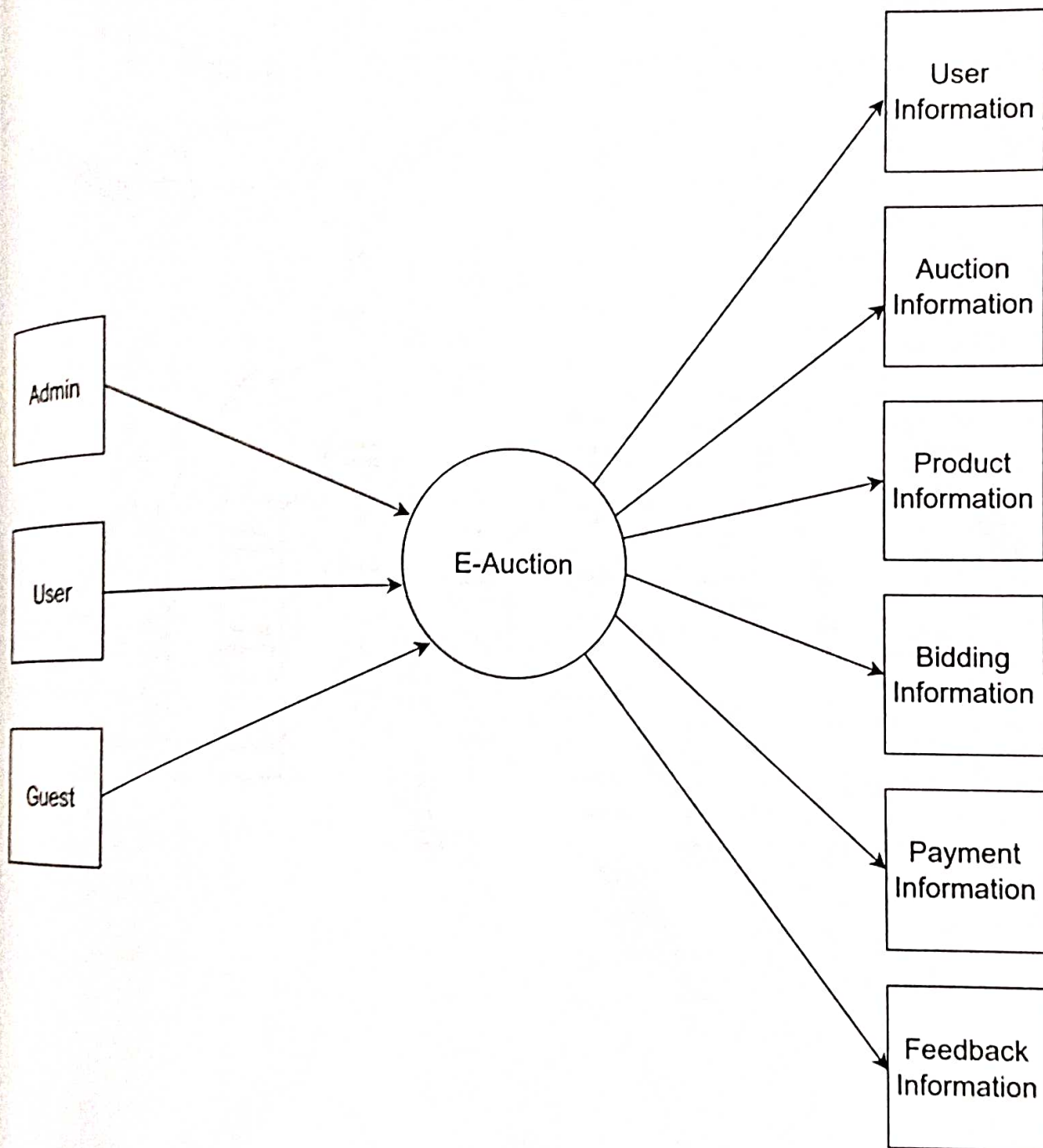
- i. **Infrastructure Requirements** : The E-Auction platform will require robust server infrastructure to handle concurrent user connections, database management, and secure transactions.
- ii. **Security Measures** : Implementing encryption protocols to ensure secure data transmission between users and the server is essential. Additionally, measures like secure authentication mechanisms, firewalls, and regular security audits will be employed to safeguard against potential cyber threats.
- iii. **Database Managements** : To efficiently manage multiple data elements such as product listings, user accounts, bidding history, and transaction records, we used a NoSQL database system. This selection enables flexibility in managing unstructured data, ensuring the seamless functioning and scalability of our platform.
- iv. **Mobile Compatibility** : Considering the prevalence of mobile devices, ensuring the platform's compatibility with various screen sizes and operating systems is crucial. Implementing responsive design principles and mobile app development (iOS and Android) can extend accessibility to a wider audience.
- v. **Technical Support and Maintenance** : We have offered ongoing technical support and maintenance services to address user inquiries, troubleshoot issues, and ensure that our platform continues to operate and perform optimally. This ensures that user queries are quickly handled, issues are effectively troubleshooted, and our platform functions smoothly while constantly improving performance.

2.2.3 Behavioural Feasibility Study :

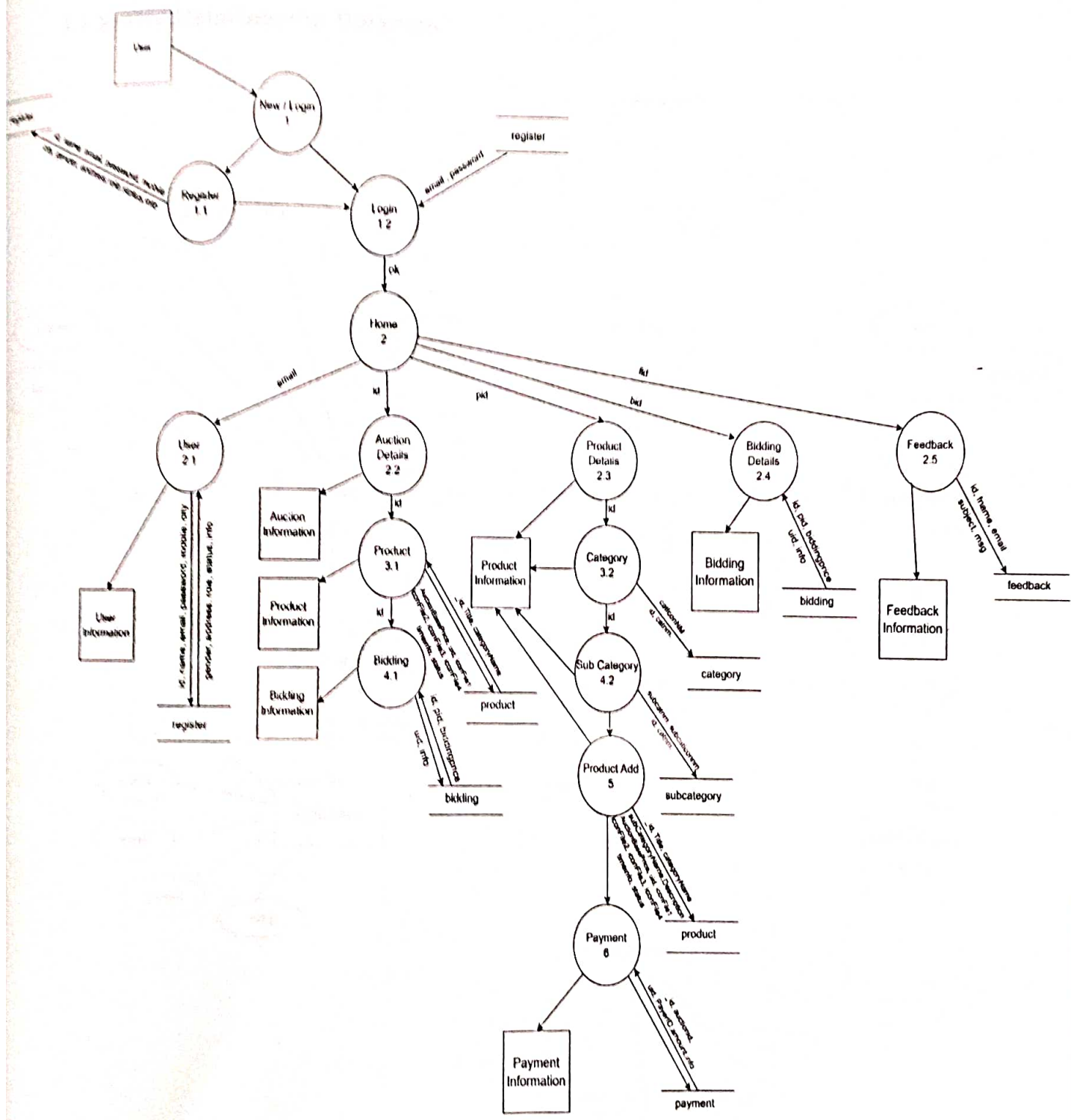
The behavioural feasibility study evaluates the project's feasibility based on user behaviour and acceptance. In our E-Auction Project:

- i. We offer competitive pricing on auction items, ensuring that users can secure deals that align with their budgetary constraints. Our platform features various discounts and incentives, including seasonal promotions and special event offers, to enhance the affordability of auctioned goods.
- ii. To maintain transparent communication and build trust with our clients, we conduct regular progress meetings throughout the auction process. Through these recurring sessions, clients are kept informed about the status of their auctions, ensuring their satisfaction and confidence in our services.
- iii. Our E-Auction platform is designed for ease of use and accessibility, empowering users to navigate through auctions effortlessly and make informed bidding decisions. With intuitive interfaces and streamlined processes, users can participate in auctions and manage their bids independently, without the need for external assistance.
- iv. Our E-Auction platform streamlines the bidding process, providing users with comprehensive budgetary options tailored to their preferences. Through efficient categorization and filtering mechanisms, users can easily find items within their desired price range, saving them valuable time and ensuring a stress-free bidding experience. Additionally, our platform offers transparent pricing information, enabling users to make well-informed decisions without the need for extensive planning.
- v. Analyse how users are likely to interact with the system or project, including their expected usage patterns, habits, and preferences. This helps in designing user interfaces and workflows that align with user expectations and behaviour.
- vi. Assessing the feasibility of offering thorough training and support to users is critical for assuring our system's effective use. We will assess the availability of resources such as training materials, user manuals, and technical assistance to help users learn and build skills. This review will guarantee that users can browse our site with confidence, enhancing their experience and participation.
- vii. Identifying and engaging key stakeholders, including users, management, and other relevant parties, to gather feedback, address concerns, and build support for the project or system.

2.3 Data Flow Diagram (DFD)
2.3.1 DFD LEVEL 0

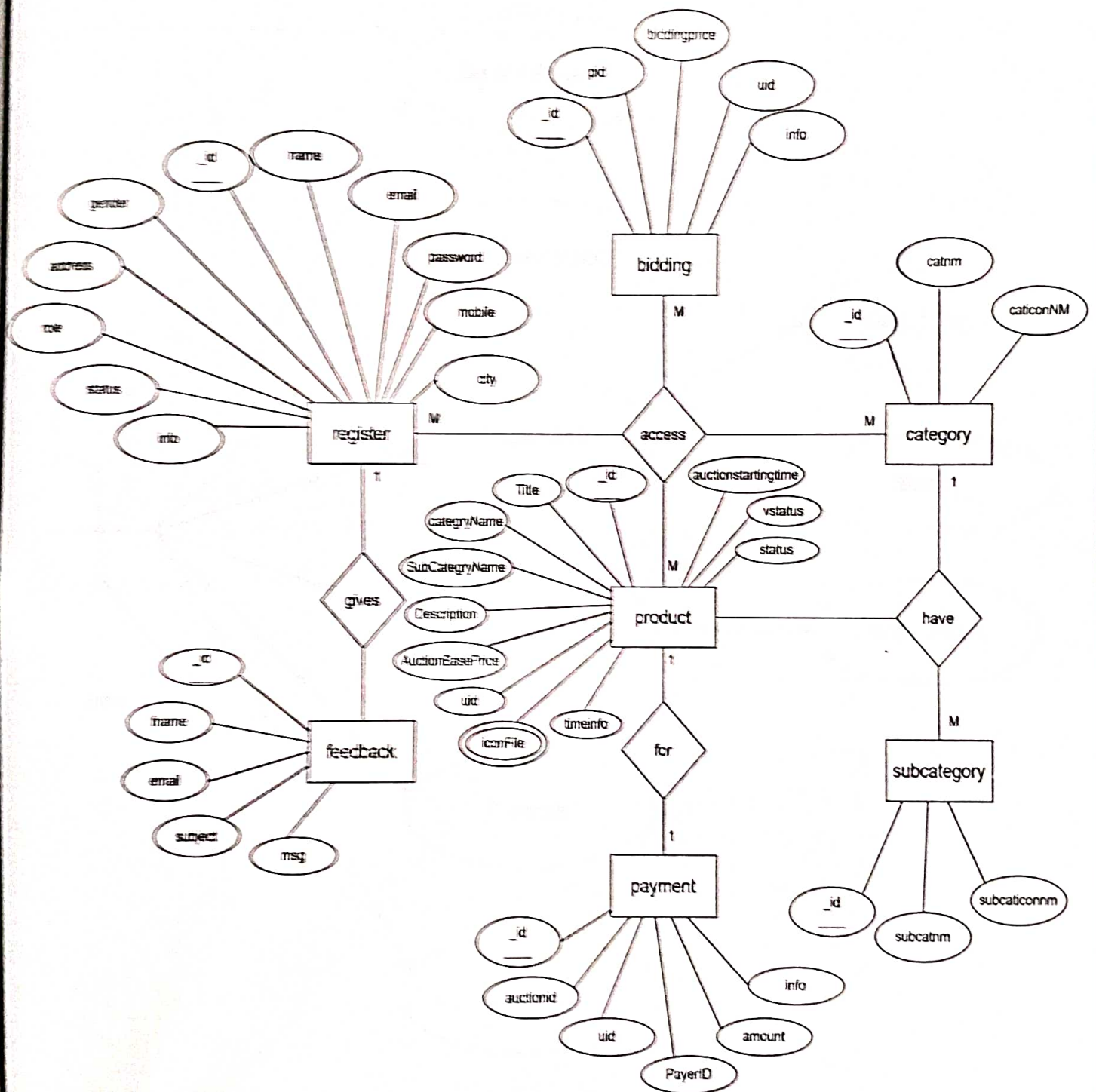


3.3.2 DFD LEVEL 1 (USER)

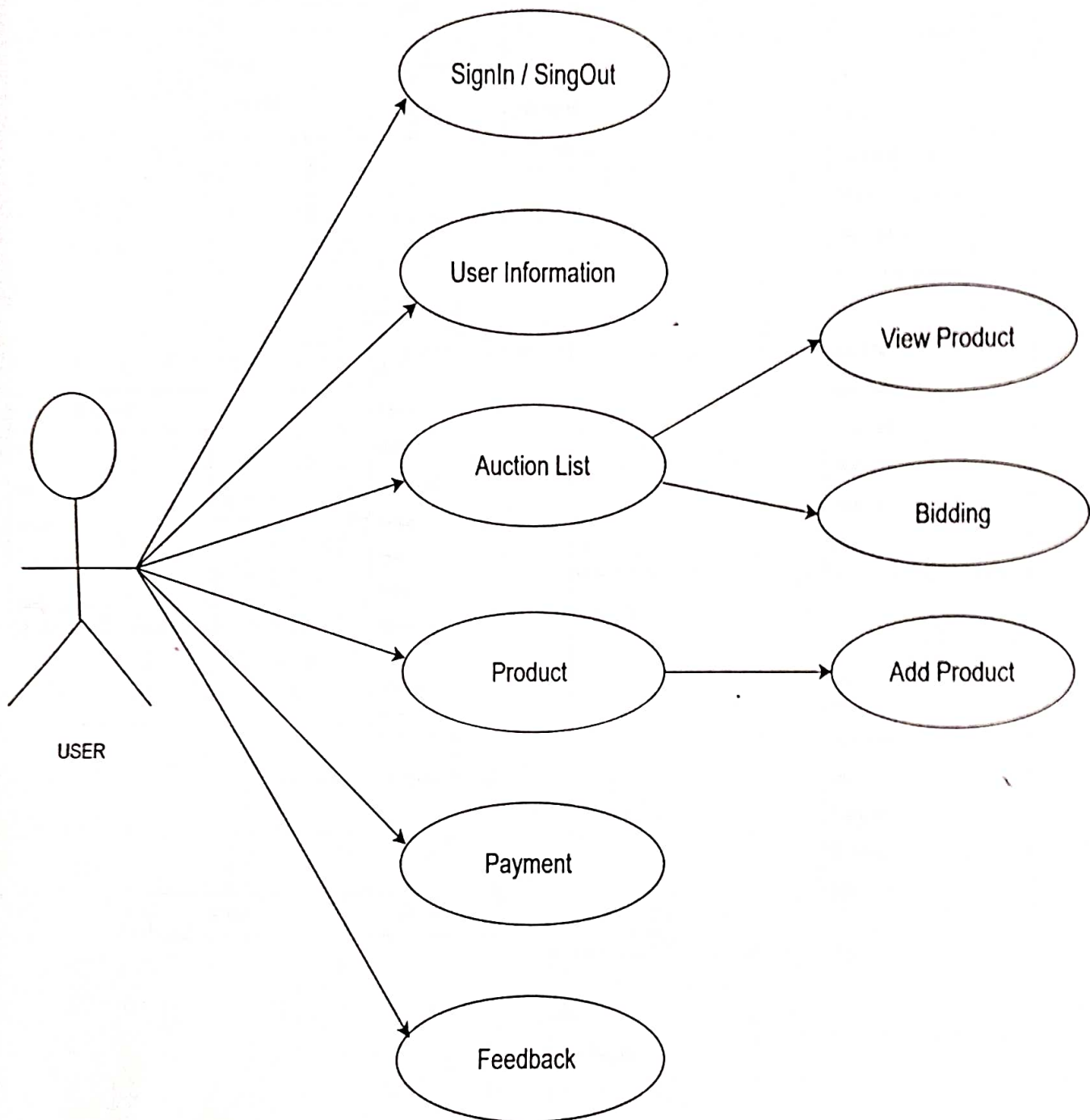


Chapter 3 : System Design

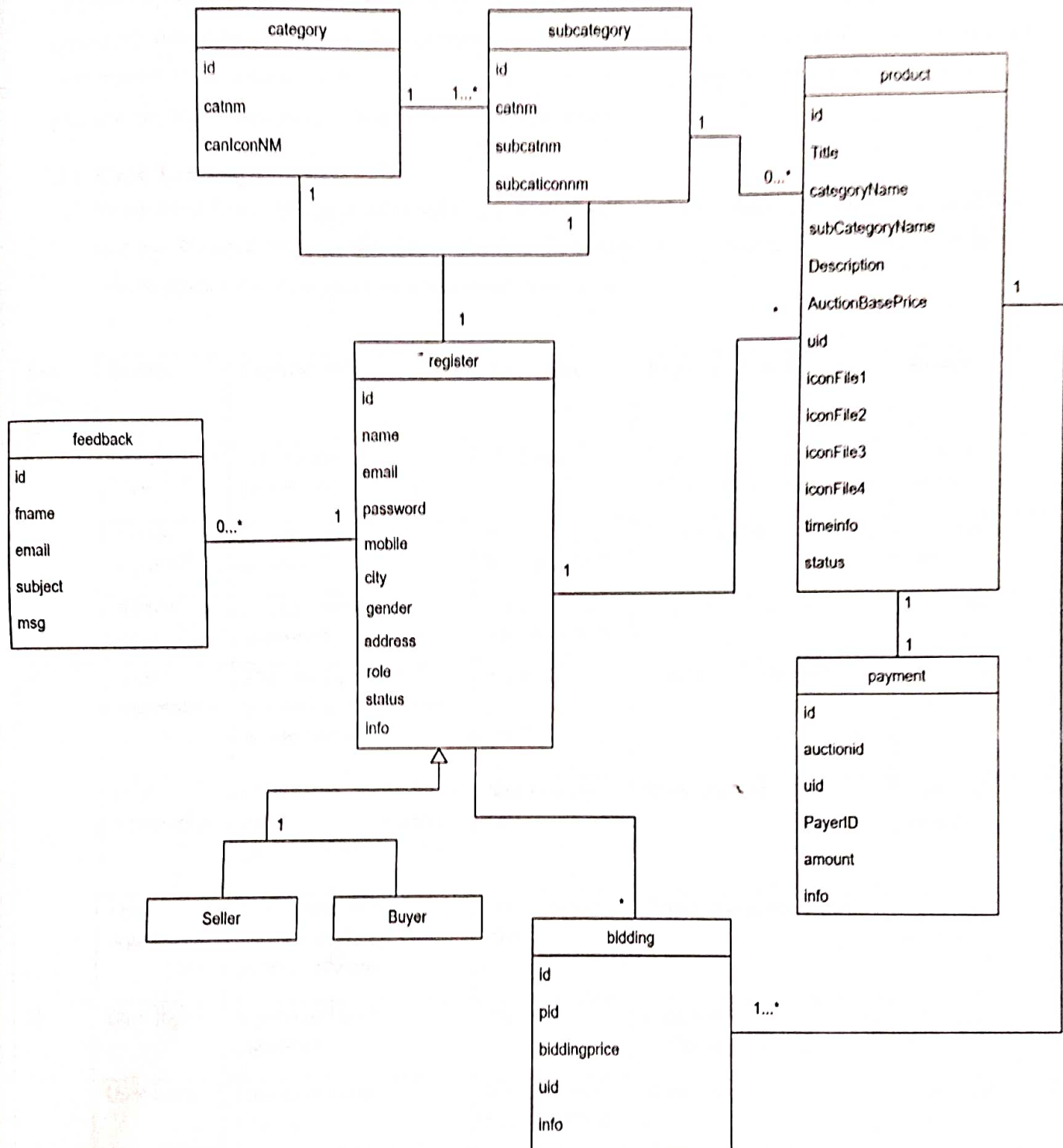
3.1 Entity Relationship Diagram :



3.2 Use Case Diagram



3.3 Database Design



Chapter 4 : Testing

Thorough testing is a vital component of our development process as we strive to create a stable and dependable online service. Our dedication to quality goes beyond simple operation and includes thorough evaluations of performance and security. In order to maintain the reliability and effectiveness of our platform, the following thorough testing techniques are utilize :

4.1 Unit Testing :

We performed unit testing in each and every smallest unit of the of project individually to check its working. We need different test data to perform the testing. We try each and every type of possible input to check their corresponding outputs and its working.

Test Case ID	Section	Element Name	Test Data	Expected Result	Result
01	Admin login	Admin email, password	No Data	Please Enter Login e-mail or Please Enter Password	Test case passed
	Admin login	Admin email, password	Wrong email and password	Error showed	Test case passed
	Admin login	Admin email, password	Correct email and password	Login successfully	Test case passed
02	User registration	User name, email, password, phone, city, gender, address	No Data	Please fill out the fields	Test case passed
	User registration	User name, email, password, phone, city, gender, address	Insert wrong data	Error Showed	Test case passed
	User registration	User name, email, password, phone, city, gender, address	Insert correct data	Registered successfully	Test case passed
03	User login	User email and password	No data	Please Enter Login e-mail or Please Enter Password	Test case passed
	User login	User email and password	Wrong email and password	Error showed	Test case passed
	User login	User email and password	Correct email and password	Login successfully	Test case passed

04	Payment Gateway	User Payment email and password	No data	Please Enter Login e-mail or Please Enter Password	Test case passed
	Payment Gateway	User Payment email and password	Wrong email and password	Some of your info isn't correct. Please try again.	Test case passed
	Payment Gateway	User Payment email and password	Correct email and password	Payment Successfully	Test case passed

4.2 Integration Testing:

In order to guarantee that different components of our web application integrate and interact seamlessly, integration testing is essential. Integration testing is a crucial step in our quest for operational, security, and performance excellence. It verifies the consistency and interoperability of individual modules. This is how integration testing fits into the particular requirements of our project:

Test Case ID	Test Case Description	Action	Expected Result	Actual Result	Result
01	Verify that new product is added to the system	1. Enter new details in the form. 2. Submit form	Product added successfully	Product added successfully	Test case passed
	Verify that duplicate record is not added	1. Enter an existing details in the form. 2. Submit form	Record is not added to the system	Record is not added to the system	Test case passed
02	Verify that Product is Display in correct category .	1. Navigate to the add product section and add new product to a specific category. 2. Submit form	Product is Displayed in correct category.	Product is Displayed in correct category.	Test case passed
	Verify that Product is Display in correct sub-category	1. Navigate to the add product section and add new product to a specific sub-category. 2. Submit form	Product is Displayed in correct sub-category.	Product is Displayed in correct sub-category.	Test case passed
03	Verify Successful Bid placement	1. Place a bid on active auction item and verify if the bid is Successfully placed. 2. Submit form	Bid is successfully placed for the correct product .	Bid is successfully placed for the correct product .	Test case passed
	Verify bid increment Validation	1. Enter new bid amount 2. Submit	Bid increment is successfully done.	Bid increment is successfully done.	Test case passed

4.3 Compatibility Testing :

The purpose of this critical testing phase is to find and fix compatibility problems by carefully analysing the software's behaviour and functionality under numerous scenarios. It is recognized that users of today access apps using a variety of devices, including desktop computers, laptops, tablets, and smartphones, all of which run distinct operating systems, including Windows, iOS, Android, and more. They also use a different range of web browsers, including Edge, Firefox, Safari, Chrome, and more. It's critical that our project functions properly on each of these configurations.

1. Cross-Browser Testing:

Test Scenario 1: Ensure the system functions correctly on the latest versions of popular browsers (Google Chrome, Mozilla Firefox, Microsoft Edge, Safari).

Result: The system was tested on the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari. All functionalities performed as expected without any issues.

Test Scenario 2: Verify that the system displays and functions appropriately on older versions of browsers to ensure backward compatibility.

Result: The system was tested on older versions of Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari. The system functioned properly without any noticeable issues, ensuring backward compatibility.

2. Cross-Device Testing:

Test Scenario 1: Ensure the system is responsive and functions correctly on various devices such as desktops, laptops, tablets, and smartphones.

Result: The system was tested on various devices including desktops, laptops, tablets, and smartphones. The system displayed and functioned correctly on all devices, adapting well to different screen sizes and resolutions.

Test Scenario 2: Verify that the system functions correctly on different operating systems (Windows, macOS, iOS, Android).

Result: The system was tested on different operating systems including Windows, macOS, iOS, and Android. The system operated smoothly without any platform-specific issues, ensuring compatibility across various operating systems.

Chapter 5 : Implementation

Firstly, we need to install some IDE software for implementing our project which are as follows:

I. Visual Studio Code –

- Go to the official Visual Studio website <https://visualstudio.microsoft.com/downloads/>.
- Click on the "Download" button for the version of Visual Studio you want to install.
- Choose the components you want to install, such as languages, frameworks, and tools.
- Click on the "Install" button to start the installation process.
- Follow the installation wizard and select the options that suit your needs.

II. MongoDB –

- Go to official MongoDB website: <https://www.mongodb.com/try/download/community>.
- Select the appropriate version of MongoDB community edition, your system architecture and the package type.
- Click on the "Download" button to start the download.
- Once the download is complete, run the installer. Choose the "Complete" installation type for a typical installation with default settings.
- Make sure to select the option to install MongoDB Compass and MongoDB as a Windows service so that it starts automatically.

III. NodeJS –

- Go to the official Node.js website: <https://nodejs.org/en/download/>.
- Select the appropriate version of Node.js for your operating system (e.g., Windows, macOS, or Linux).
- Click on the "Download" button to start the download.
- Once the download is complete, run the installer. Follow the installation wizard and select the options that suit your needs.
- Once the installation is complete, you can open a terminal or command prompt and type `node -v` to check if Node.js is installed correctly. This should display the version of Node.js that you just installed.

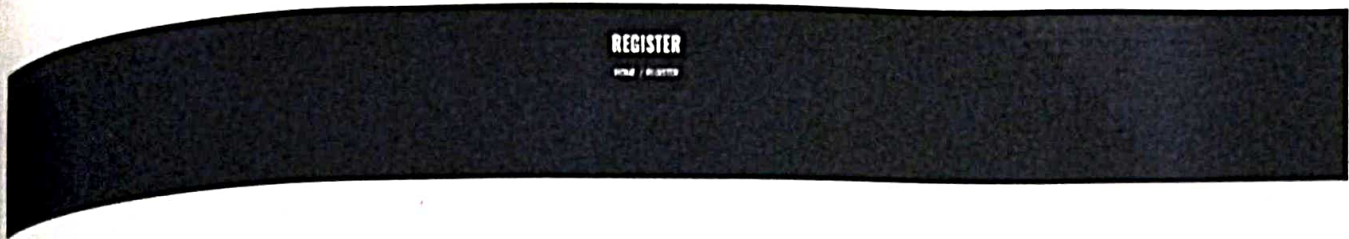
Below are the steps of implementation after installing all the essential software required for the development:

- Step 1 - Firstly, user click on Sign in on landing page.

- Step 2** - User will enter their information like username, email, password, phone, city, gender, address to register.
- Step 3** - New user click on sign in button and enter their registered email id and password.
- Step 4** - After successfully login user can update their profile and can again login with their new credentials.
- Step 5** - Once logged in, the user navigates to the "Auction Listings" section, within the "Auction Listings" section, the user can filter products based on categories such as antique, bikes, vintage card, etc., making it easy to find items of interest.
- Step 6** - For each product listed, the user can view detailed information including product description, images, starting bid price, and current highest bid.
- Step 7** - If the user finds a product of interest, they can place a bid directly from the product listing page, initiating their participation in the auction process.
- Step 8** - Throughout the auction duration, the user can monitor the bidding activity in real-time, receiving notifications of any competing bids on their chosen item.
- Step 9** - Admin adds categories and subcategories, enabling sellers to categorize their products effectively.
- Step 10** - Sellers access the "Add Product" feature, where they input product details and select relevant categories and subcategories.
- Step 11** - After successfully adding the product, sellers are prompted to pay a minimum fee to list the product for auction.
- Step 12** - Upon successful payment of the fee, the product becomes visible to other users, initiating the bidding process.

Chapter 6 : Sample Forms

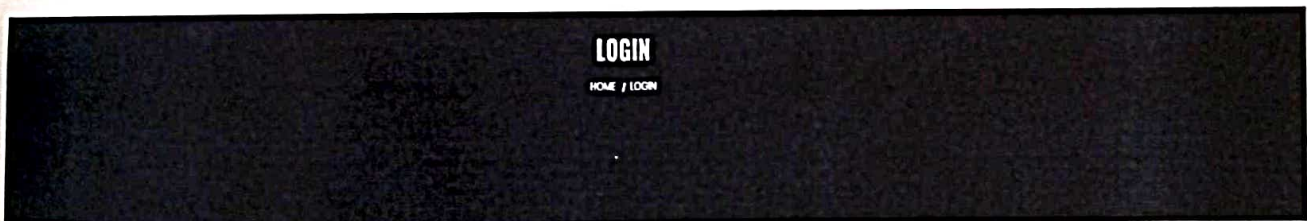
6.1 Registration



Form fields for registration:

- First Name:
- Last Name:
- Email:
- Phone:
- Gender: ☐ Male ☐ Female
- Address:
- Submit:

6.2 Login



LOGIN

Form fields for login:

- Email:
- Password:
- ☐ Remember Me
- [Forgot Password?](#)
- Submit:

6.3 Home Page

eAuction

WANT TO TALK WITH US 10194 688 887

0795.99

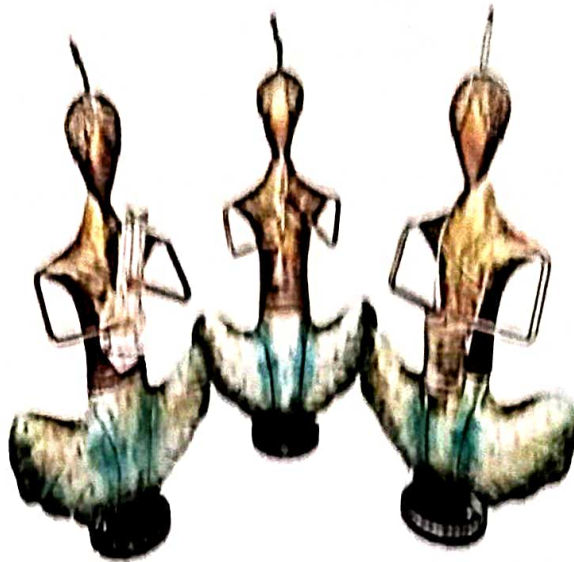
HopeTech WORLD MOST LARGEST AUCTION STORE

HopeTech the world's largest auction store not only offers the finest quality of antique items but also provides a platform for individuals to sell their own items. With a vast collection of rare and unique artifacts, the store is a treasure trove for collectors and enthusiasts alike. Whether you're in search of timeless pieces or looking to part ways with your own treasures, this auction store offers a seamless experience, ensuring satisfaction for both buyers and sellers.

HAVE ANY QUESTION?



01245 658 698



eAuction

WANT TO TALK WITH US 10194 688 887

0795.99

ACCESSORIES

HopeTech the largest online auction platform in the world, offers the latest quality products across various categories. You can buy and sell a wide range of items on Ejection.

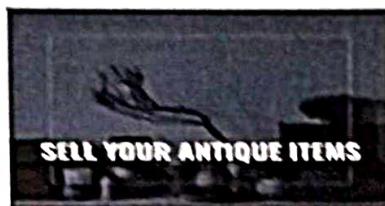


6.4 User Panel

eAuction

Welcome User panel

Here you can manage your account, view your profile, and manage your items. You can also view the status of your items and manage your bids. You can also view the status of your items and manage your bids.



6.5 Change Password

eAuction

Change Password !!!

Old Password

New Password

Confirm Password

Change Password

6.6 Update Profile

EDIT PROFILE

NAME : [Name]

First Name

Last Name

Address

Phone Number

City

State

Zip

Update Profile

6.7 Add Product as a Seller

ADD PRODUCTS

Title:

Select Category:

Select Sub-Category:

Description:

Regular Base Price:

Product Icon:

Subscribe our newsletter

6.8 View and Manage Products as seller

Welcome : rahulrajok28271@gmail.com

WANT TO TALK WITH US +01254 265 987

eAuction

View & Manage Products

ProductID	Title	Catnm	Description	Base price	Icon1	Icon2	Icon3	Icon4	Status	Action
5	Brass	ANTIQU ITEMS	10th years old	100					Verified	---
6	Antique Brass Set	ANTIQU ITEMS	30th Years old Brass Set	100					Not Verified	



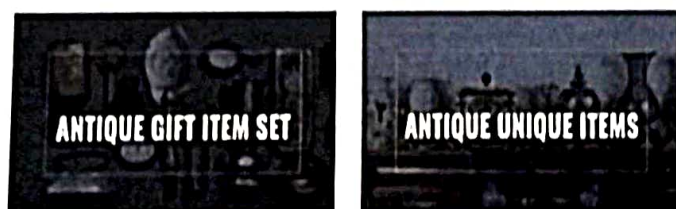
6.9 Category

eAuction



6.10 Sub-category

eAuction



Subscribe our newsletter

Enter your email here

1

6.11 View Product as Buyer

username: kahulal1080@gmail.com

eAuction

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View & All Bids and Result

ProductID	Title	Catnm	Description	Base price	Icon1	Icon2	Icon3	Icon4	Status	Action
6	Antique Brass Set	ANTIQUUE UNIQUE ITEMS	30th Years old Brass Set	100					Running	Bid Now



Subscribe our newsletter

Enter your email here...



6.12 Bidding

eAuction

HOME AUCTION LIST MANAGE PRODUCT SHOW PRODUCT BUYER LIST



SETTING LOGOUT

Make A Bid To Buy Product

Bidding Product Id

Bidding Base Price

Current Bidding Price

New Bidding Price



Chapter 7 : Conclusions

In conclusion, EAuction stands as a testament to innovation and efficiency in the realm of online commerce. With its user-centric design and robust features, EAuction revolutionizes the buying and selling experience, offering a dynamic platform for users to engage in auctions with ease.

Throughout the development process, our team has prioritized functionality, security, and performance, ensuring that EAuction delivers a seamless and secure environment for users to transact with confidence. From the intuitive registration and login process to the comprehensive auction listings and bidding functionality, every aspect of EAuction has been meticulously crafted to enhance user satisfaction and maximize value.

The integration of advanced security measures, such as NoSQL injection prevention and XSS protection, underscores our commitment to safeguarding user data and maintaining platform integrity. Additionally, performance testing has validated the scalability and responsiveness of EAuction, ensuring optimal performance even under high load conditions.

With EAuction, users have access to a diverse range of products across various categories, empowering sellers to showcase their offerings and buyers to discover unique items through competitive bidding. The seamless integration of payment processing ensures smooth transactions, while the transparent fee structure enhances trust and transparency within the platform.

As EAuction continues to evolve and adapt to the changing landscape of e-commerce, our commitment to innovation remains unwavering. We are dedicated to continually enhancing the platform to meet the evolving needs of our users and to redefine the standards of online auction experiences.

Bibliography

The following links were referred during the analysis and execution phase of the project.

1. <https://cauction.gov.in/cauction/#!/>
2. <https://demoeproc.nic.in/eAuction/app>
4. <https://youtu.be/8xRFKhTOw1c?si=xd7Ud7LvIJiARG24>
5. <https://react.dev/>

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Summary

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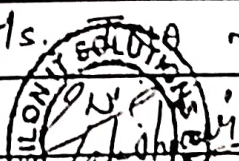
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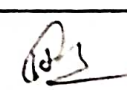
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Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
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<u>Name of Industry Mentor</u>	J. I. A MAHESHWARI				
<u>Signature of Industry Mentor</u>					

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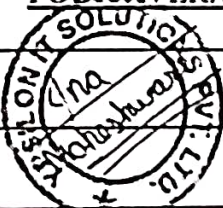
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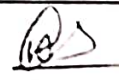
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<u>Name of Industry Mentor</u>	Ms. Jyoti MAHESHWARI				
<u>Signature of Industry Mentor</u>					

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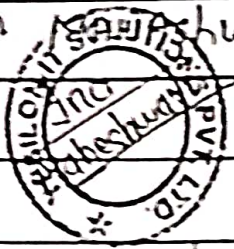

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Learning capacity/Knowledge up gradation				✓	
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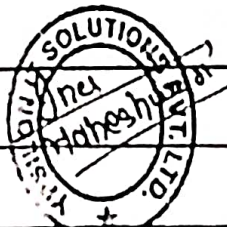
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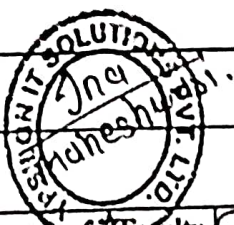


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