MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

Deemed to be University
(Declared under Distinct Category by Ministry of Education, Govt. of India)
NAAC Accredited with A++ Grade

Project Report

on

Development of E-Tender System

Submitted By:

Shrasti Pawar
(0901CA221063)

Industry Mentor:

Mr. Pranay Parwal (CTO, Uniinfo Telecom Services Private Limited)

Faculty Mentor:

Dr. Parul Saxena, Assistant Professor

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

January – June 2024

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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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TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. Shrasti Pawar,** student of **MCA - 4th Semester** from **Madhav Institute of Technology & Science, Gwalior** has successfully completed her training and project "**E – Tender System"** under her internship program with UNI-INFO TELECOM SERVICES LTD.

Her internship tenure was from **11th January 2024 to 20th April 2024** and was designated as **Technical Intern of Full Stack** in our Software Development Division. Uniinfo appreciates the dedicationand inquisitive nature of Shrasti. The feedback from the team is quite positive.

During this time, she worked on our client project whose outcome has met our expectations and will be in operations in near future.

We wish her the best in all future endeavors.

For UNIINFO Telecom Services Ltd.,

Authorized Signatory
Pranay Parwal (CTO)
Date –20th April 2024

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CERTIFICATE

This is certified that **Shrasti Pawar (0901CA221063)** has submitted the project report titled **Development of E-tender System** under the mentorship of **Mr. Pranay Parwal** (CTO, Uniinfo Telecom Services Limited), 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**.

Saxena 24/4/24

Dr. Parul Saxena
(Assistant Professor)
Computer Science and Engineering

24/4/24

Dr. Manish Dixit
(Professor and Head)
Computer Science and Engineering

Dr. Manish Dixit
Professor & HOD
Department of CSE
M.I.T.S. Gwalior

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. Pranay Parwal** (CTO, Uniinfo Telecom Services Limited).

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

Shrasti Pawar

Shrasti Pawar
0901CA221063
2nd Year
Master in Computer Application
Computer Science and Engineering

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

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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. Pranay Parwal** (CTO, Uniinfo Telecom Services Limited) 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 have been instrumentalin the successful completion of this project.

I am sincerely thankful to my faculty coordinator. I am grateful to the guidance of **Dr. Parul Saxena**, (Assistant 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.

Shrasti Pawar

Shrasti Pawar
0901CA221063
2nd Year
Master in Computer Application

ABSTRACT

In the current digital transformation, it is important for both public and private sector organizations to accept electronic tendering (e-tendering) platforms. The creation and execution of an e-tender website with the goal of improving the procurement procedure while maintaining efficiency, fairness, and flexibility is described in this abstract. Advanced features including electronic offer submission, secure user identification, real-time bid tracking, and automated review methods are included into the platform. It also includes strong security measures to protect confidential procurement data and stop illegal access or alteration.

The e-tender website aims to simplify the tendering process for suppliers and procurers through using latest online technology and focus on user's design approaches. This will enable efficient communication as well as collaboration throughout the procurement duration. In addition, the platform offers ex-tensive reports and analysis features that enable customers to obtain important insights into supplier performance, procurement patterns, and cost optimization.

The e-tender website improves operational efficiency and supports transparency and trust in the buying process by digital conventional tendering processes. Because of its easy-to-use interface and simple workflow, customers can easily manage complicated procurement procedures, which supports supplier productivity and increased supplier involvement while reducing administrative overheads. In the end, putting in place an e-tender website is an important initial step in bringing procurement processes into the digital age and developing workplace excellence.

सार

वर्तमान डिजिटल परिवर्तन में, सार्वजनिक और निजी दोनों क्षेत्र के संगठनों के लिये इलेक्ट्रॉनिक टेंडरिंग (ई-टेंडरिंग) प्लेटफार्मों को स्वीकार करना महत्त्वपूर्ण है। दक्षता, निष्पक्षता और लचीलेपन को बनाए रखते हुए खरीद प्रक्रिया में सुधार के लक्ष्य के साथ एक ई-निविदा वेबसाइट का निर्माण और निष्पादन इस सार में वर्णित है। इलेक्ट्रॉनिक ऑफ़र सबमिशन, सुरक्षित उपयोगकर्ता पहचान, रीयल-टाइम बिड ट्रैकिंग और स्वचालित समीक्षा विधियों सहित उन्नत सुविधाएँ प्लेटफ़ॉर्म में शामिल हैं। इसमें गोपनीय खरीद डेटा की सुरक्षा और अवैध पहुंच या परिवर्तन को रोकने के लिए मजबूत सुरक्षा उपाय भी शामिल हैं।

ई-निविदा वेबसाइट का उद्देश्य नवीनतम ऑनलाइन तकनीक का उपयोग करके आपूर्तिकर्ताओं और खरीददारों के लिए निविदा प्रक्रिया को सरल बनाना और उपयोगकर्ताओं के डिजाइन दृष्टिकोण पर ध्यान केंद्रित करना है। यह खरीद अवधि के दौरान कुशल संचार के साथ-साथ सहयोग को सक्षम करेगा। इसके अलावा, प्लेटफ़ॉर्म व्यापक रिपोर्ट और विश्लेषण सुविधाएँ प्रदान करता है जो ग्राहकों को आपूर्तिकर्ता प्रदर्शन, खरीद पैटर्न और लागत अनुकूलन में महत्वपूर्ण अंतर्दृष्टि प्राप्त करने में सक्षम बनाता है।

ई-निविदा वेबसाइट परिचालन दक्षता में सुधार करती है और डिजिटल पारंपरिक निविदा प्रक्रियाओं द्वारा खरीद प्रक्रिया में पारदर्शिता और विश्वास का समर्थन करती है। इसके उपयोग में आसान इंटरफ़ेस और सरल वर्कफ़्लो के कारण, ग्राहक आसानी से जटिल खरीद प्रक्रियाओं का प्रबंधन कर सकते हैं, जो प्रशासनिक ओवरहेड्स को कम करते हुए आपूर्तिकर्ता उत्पादकता और आपूर्तिकर्ता की भागीदारी में वृद्धि का समर्थन करता है। अंत में, ई-टेंडर वेबसाइट बनाना खरीद प्रक्रियाओं को डिजिटल युग में लाने और कार्यस्थल उत्कृष्टता विकसित करने की दिशा में एक महत्वपूर्ण प्रारंभिक कदम है।

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Chapter 1: Introduction

E-tendering is a key component of the growth of procurement procedures, transforming the way companies handle their sourcing of suppliers and vendors. E-tendering is fundamentally the combination of digital technology and procurement processes, with several benefits ranging from increased efficiency to increased security and transparency.

The ability of e-bidding to smoothly incorporate online document management into the tendering process is one of its greatest advantages. Through the digitization of the whole process, e-tendering gets rid of the laborious inefficiencies connected to paper-based methods, from document creation to tender submission. Procurement managers are freed from the constraints of managing documents by hand, which helps them save a great deal of time and reduces administrative stress. As a result, this simplified method encourages flexibility and quick thinking, allowing businesses to go through the procurement process with unmatched skill.

Most importantly, electronic tendering strengthens the security framework that envelops procurement activities. Sensitive information is protected from hostile threats and unauthorized access by means of strong security measures that include encryption, access limitations, and secure authentication systems. By guaranteeing stakeholders of the system's secrecy and dependability, this increased security not only protects the integrity of the procurement process but also fosters confidence.

Additionally, e-tendering is a driving force behind the advancement of equity and openness in supplier/vendor relationships. All suppliers are given equal access to bid information and tender papers, which creates a fair playing field and reduces prejudice. This egalitarian culture encourages healthy competition among suppliers, which raises the calibres of bids and promotes innovation. It also strengthens the legitimacy of the procurement process.

Furthermore, the improvement of equality and transparency in supplier/vendor interactions is largely attributed to e-tendering. Equal access to bid materials and information is granted to all vendors, levelling the playing field and minimizing bias. Healthy competition among suppliers is encouraged by this egalitarian atmosphere, which improves the quality of bids and fosters innovation. Additionally, it makes the procurement process more legitimate.

In conclusion, e-tendering proves to be a revolutionary factor in the modernization of procurement procedures, providing a wide range of advantages including effectiveness, openness, and safety. Businesses may achieve previously unheard-of levels of sophistication in their procurement processes by utilizing digital technology, creating the foundation for long-term development and a competitive edge in a market that is becoming more and more dynamic.

1.1 Problem Identification

(a) Complicated Access: Anyone trying to interact with the platform face considerable obstacles due to the website's formal arrangement and complex structure. It becomes difficult to sort through the numerous parts in order to find suitable tenders or submit bids. Potential participants may be discouraged by this intricacy, which also reduces the purchasing process's effectiveness.

(b) Limited Search feature: Users are unable to efficiently filter and find certain tenders that meet their needs due to the inadequate search feature. This restriction not only irritates users but also results in inefficiencies because it is difficult for them to locate relevant information among the clutter. This reduces the overall user experience by wasting important time and resources.

(c) Inefficient Tender Submission Process: Vendors trying to submit tenders face obstacles due to things like complicated paperwork, unclear instructions, and technical difficulties. These challenges discourage potential participants from participating in the tendering process completely in addition to frustrating consumers. The dissatisfaction resulting from these problems may cause participation rates to drop and undermine the integrity of the procurement procedure.

(d) Lack of Openness: The opaque nature of the bidding process undermines respond confidence in the system's fairness and openness. This is demonstrated by the intricate assessment requirements and the paucity of pertinent information offered to bidders. In the absence of clear assessment criteria and access to full knowledge, bidders may view the process as skewed or fevering specific parties, which might cause them to be sceptical and reluctant.

1.2 Parent Organization

Founded in 2010 and with its headquarters located in Indore, India, Uniinfo Telecom Services Ltd is a public limited company of Indian descent. It is listed on the National Stock Exchange (NSE India) International and provides solutions and support for the network life cycle needs of information and communication technology.

We are among the top providers of complete end-to-end solutions for IT infrastructure integration and mobile network connection across all of India.

Telecom operators, IT service providers, and OEMs are just a few of the technological companies to whom we offer our services.

Since the company's founding, we have exceeded our clients' expectations consistently, and our accolades are proof of this. We also continuously strive to expand our business in the technology sector. We never stop pushing the envelope to provide our information and communication technology initiatives more value.

(a) Type: Private

(b) Industry: IT Services, IT Consulting, IT Products

(c) Headquarter: Indore, Madhya Pradesh, India

(d) Company Website: https://uni-info.co.in/

1.3 Hardware and Software Specification

1.3.1 Hardware Specification

To guarantee optimum performance and dependability, we have specified precise specs for the hardware needed for our project. First, I have an intel Core i5 CPU, which has a frequency of 1.30 GHz. This processor has a strong processing capacity, which is necessary to effectively manage the computational needs of our project. Our system will have enough memory to facilitate multitasking and manage big datasets with ease when combined with 8 GB of RAM. We will use a 512 GB hard disk drive to store our project files and data, which will be enough storage for our purposes. We'll also include a 512 GB SSD (Solid State Drive), which improves overall system performance and provides quicker data access rates. Our system will run on a 64-bit OS X64 U-Processor to maximize performance and ensure compatibility with contemporary software. With these hardware requirements in place, we can start our project with confidence since we know that our system can handle the demands of our jobs in an effective and efficient manner.

1.3.2 Software specification

Window 11 operating system: The decision to utilize Windows 11 as the operating system stems from its advanced features, enhanced security measures, and improves user interfaces, with its modern design and optimized performance, it provides a stable and secure environment for software development.

Visual Studio Code: As the primary coding environment, VS Code offers a plethora of features tailored for modern development workflows, its support for various programming languages, extensive libraries of extensions, and integrated version control systems streamline the coding process, fostering productivity and collaboration among team member.

MongoDB: Data is stored in MongoDB as flexible documents that resemble JSON; as a result, fields may differ between documents and data structures may change over time. Working with data is made simple by the document model's mapping to the objects in your application code. Effective methods for accessing and analyzing your data include indexing, ad hoc queries, and real-time aggregate. Since MongoDB is fundamentally a distributed database, features like global dispersion, horizontal scaling, and high availability are pre-installed and simple to use.

We are looking for people that are skilled in a variety of technologies that are necessary for our project in order to fill positions. We are specifically seeking applicants with front-end programming experience, who can construct responsive and aesthetically pleasing user interfaces using HTML, CSS, JavaScript, and Bootstrap 5, React. We also need someone with experience in back-end development, namely with Node, Express and MongoDB to manage database integration and server-side logic effectively. Furthermore, MongoDB knowledge is highly preferred for control-end activities. The appointed

individuals will assume a pivotal 4 function in the advancement and sustenance of our project, offering their specialized knowledge to guarantee its triumph and expandability. Our team has to be multi-technologist adept in order to complete the job. Front-end developers with experience in HTML, CSS, JavaScript, and Bootstrap 5 are needed to create user interfaces that are both aesthetically pleasing and responsive on many platforms. We also need back-end developers, especially those that know how to work with Node, Express and MongoDB, to handle server-side logic and smoothly integrate databases. For control-end activities, MongoDB experience is also necessary. Our hiring procedure looks for applicants who can make a meaningful contribution to the growth and success of our project, so that we have a knowledgeable team that can produce excellent work.

Chapter 2: System Analysis

2.1 Problem Analysis

Traditional tendering procedures include a number of provided problems that can result in inefficiency, low participation, and even corruption. By switching to electronic tendering systems, these issues are being addressed technically. An outline of typical problems with traditional tendering is provided here, along with how electronic tendering can help.

(a) Limited Accessibility Issue: Traditional tendering often requires physical sites and documentation, which restricts participation to individuals who are able to get the tender materials and make responses.

Solution: The application of e-tendering platforms can increase the possible pool of vendors and enhance competition, hence improving the value for the tender issuer. This is because these platforms can be accessed from any location with internet connection.

(b) Transparency and Fraud: When there is frequently no clear audit trail for manual procedures, they can be unclear and at risk of manipulation, partiality, and fraud.

Solution: By offering a digital record of the complete tendering process, from bid submission to contract awarding, e-tendering solutions promote increased transparency. Because audit trails are routinely maintained and all actions are captured, it is more difficult for fraud to go detected.

(c) Time and Product Utilization: Manually processing quotes, requiring in-person meetings, and handling paperwork by hand all need a lot of time and resources.

Solution: The amount of time and resources required is greatly decreased by digital document handling and automated processing. Automation of messages and notifications can save costs and speed the process overall.

(d) Data Organization and Accuracy Rate: Data loss, gathering mistakes, and misreading handwritten documents are common with paper-based systems.

Solution: By using electronic data collection, mistakes are decreased, data integrity is enhanced, and simultaneous access to the same information is guaranteed for all participants. It also makes data retrieval and storage simpler.

(e) Safety and Security: It may be challenging and costly to verify paper-based tender procedures, and there is a good chance that some or all of the paperwork will be lost or incomplete.

Solution: All transaction records are digitally stored using e-tendering systems, which facilitates reviews and assures compliance to regulatory and internal regulations.

(f) Security Issues: Paper documents are at risk of manipulation, theft, and damage.

Solution: To keep data integrity and confidentiality, these systems can make use of advanced safety features including encryption, secure access restrictions, and backups.

2.2 Feasibility Study

2.2.1 Economical Feasibility study

Personal

S. No.	Requirement	Cost
i.	System Analyst 4 days per month (In 3 Month)	Rs. 4,000
ii.	Programmer 60 days (In 3 Month)	Rs. 5,000
iii.	Database Specialist 20 days (In 3 Month)	Rs. 2,000

Other Expenses

S. No.	Requirement	Cost
i.	Electricity (for System)	50 unit @8 Rs/unit
ii.	Stationary	Rs. 200
iii.	Workspace Facilities	Rs. 1,500
iv.	System	Rs. 6,000
	Total	**Rs. 18,100**

2.2.2 Technical Feasibility Study

Hardware Requirements: Here we are using two system with following minimum hardware components:

S. No.	Specification	Description
i.	Processor	12th Gen Intel(R) Core (TM) i5-1235U 1.30 GHz
ii.	RAM	Up to 8.00 GB
iii.	SSD	250 GB
iv.	System type	64 bits OS X64 H-Processor

Software Requirements: Here we are using two system with following minimum software components:

S. No.	Specification	Description
i.	Operating System	Windows 11
ii.	Other Application	Visual studio code, Web browser, MySQL Server
iii.	Language	Backend – MongoDB, Express JS, Node JS Frontend – HTML, CSS, JS, React JS, J Query, Bootstrap
iv.	Network	Wi – Fi

2.2.3 Behavioural Feasibility study

As we all know that behavioural feasibility study should be maintain by the co-ordination and how to made strategy.

(a) We had conducted regular meeting between team members and team leader. Gather some ideas from them for implementing.

(b) We can also provide training to use this technical support. Describe the user training schedule for the new system. Shared the approach for continuing maintenance and support.

(c) Twice a month expertise or specialist took a meeting with team for maximum involvement and satisfaction through our development process. They check all the activities from the team member and give better suggestion to resolve their query.

(d) Make that the system confirms with all applicable terms and conditions, including those pertaining to data security and privacy. Any ethical issues, such as the gathering and use of visitor data, should be addressed.

(e) Determine your training needs to use the system efficiently. We make sure that you are prepared and eager to learn the new technology by assessing the time and resources required for training.

(f) To make sure the system is simple to use and intuitive, assess the user interface and overall user experience. Lower adoption rates and resistance can result from poor UX.

(g) Analise the financial implications of putting the system into place, taking into accounts like development expenses, training costs, and anticipated benefits. For manage our activities and expenses in order to minimize the overall budget.

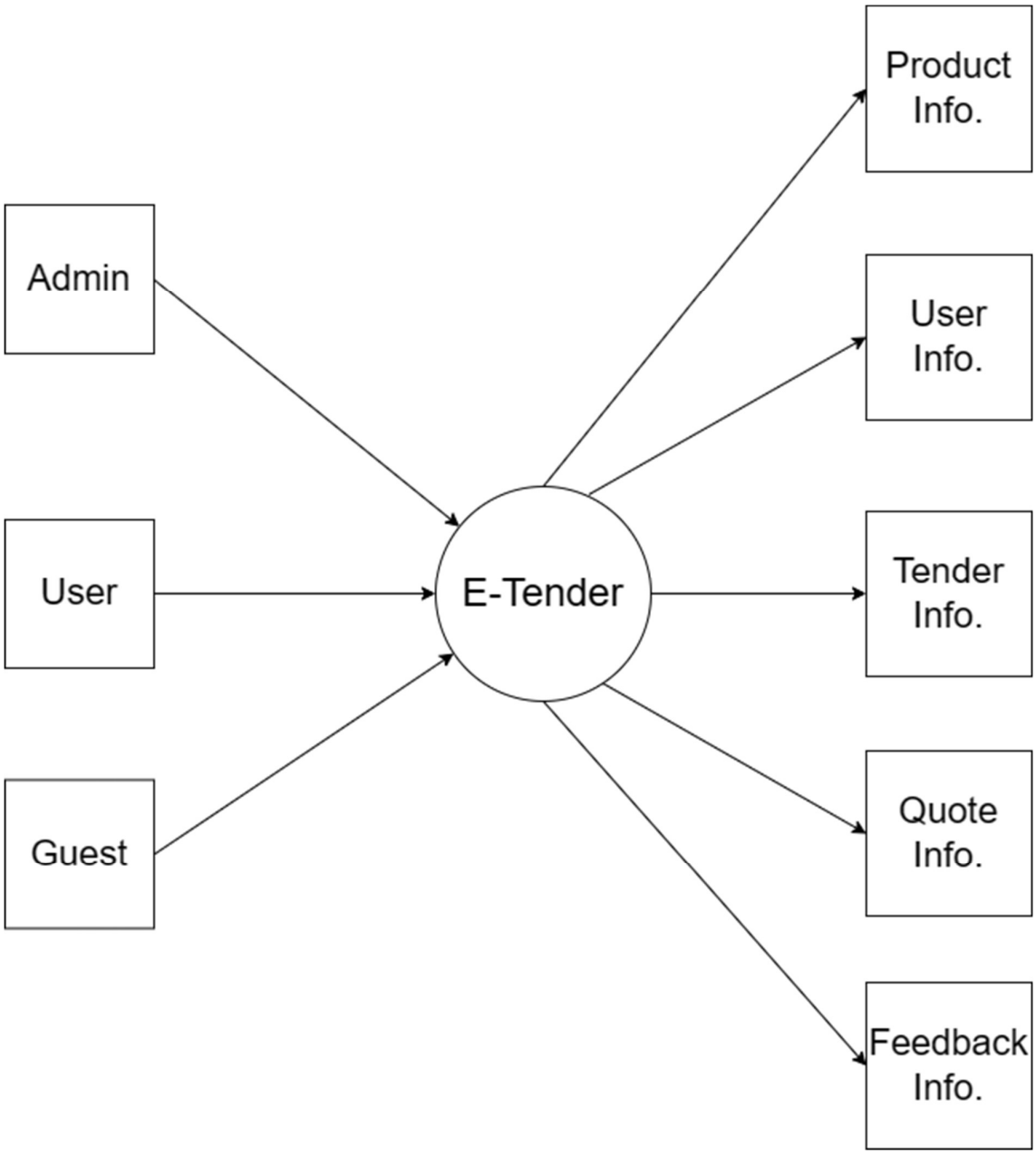
(h) Keep yourself updated on compliance requirements and regulatory changes to make sure the platform offers the data needed to compile with regulations. Make sure users have access to the data needed for compliance and reporting by updating information offerings on a regular basis in response to modifications in financial legislation.

(i) Use data analytics and technological breakthroughs to find fresh, creative approaches to information presentation that suit consumer preferences. To improve the platform's capacity to provide pertinent and perceptive information, investigate cutting-edge technologies like machine learning and data visualization tools.

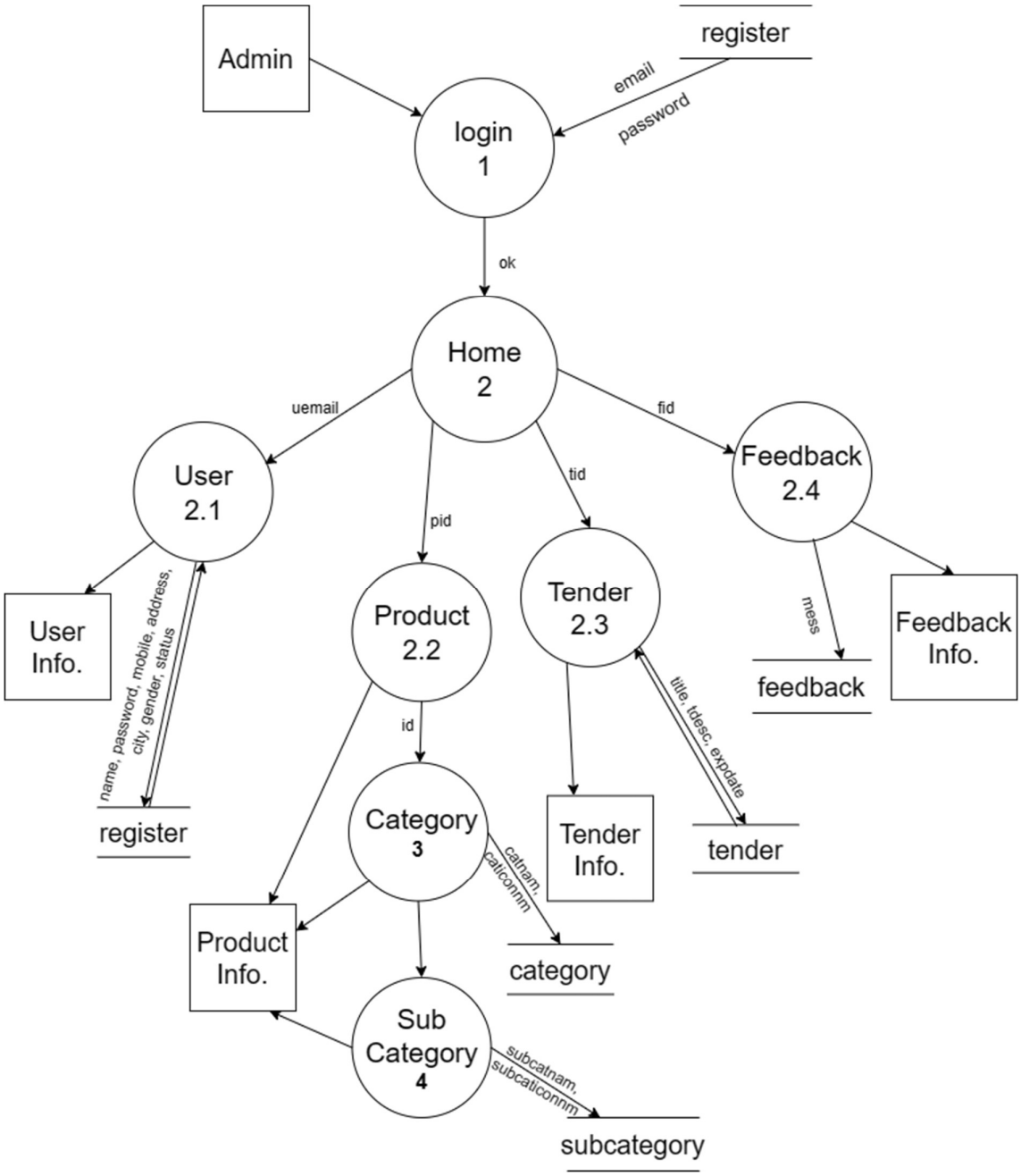
(j) Our website makes 24*7 with proper accessibility to user without any inconvenience it is quite scalable. Scalability doesn’t affect over functionality. Implement feedback forms and surveys to gather user opinions and suggestions. Act on this feedback to enhance the user experience continually. Implement personalization features such as user account dashboards, personalized product recommendations, and targeted marketing emails to enhance user engagement.

2.3 Data Flow Diagram

2.3.1 DFD 0 Level



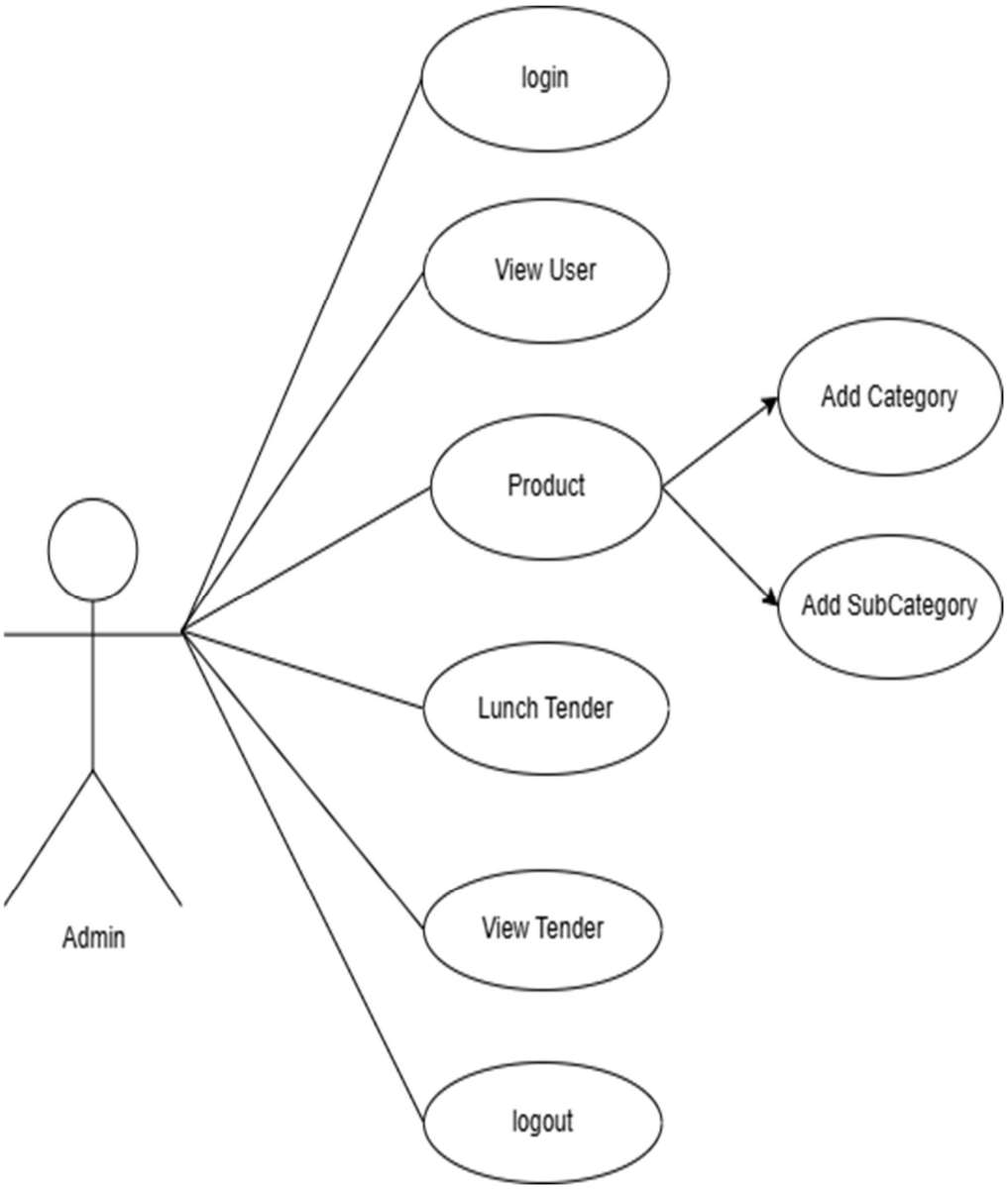
2.3.2 DFD 1 Level (Admin)



Chapter 3: System Design

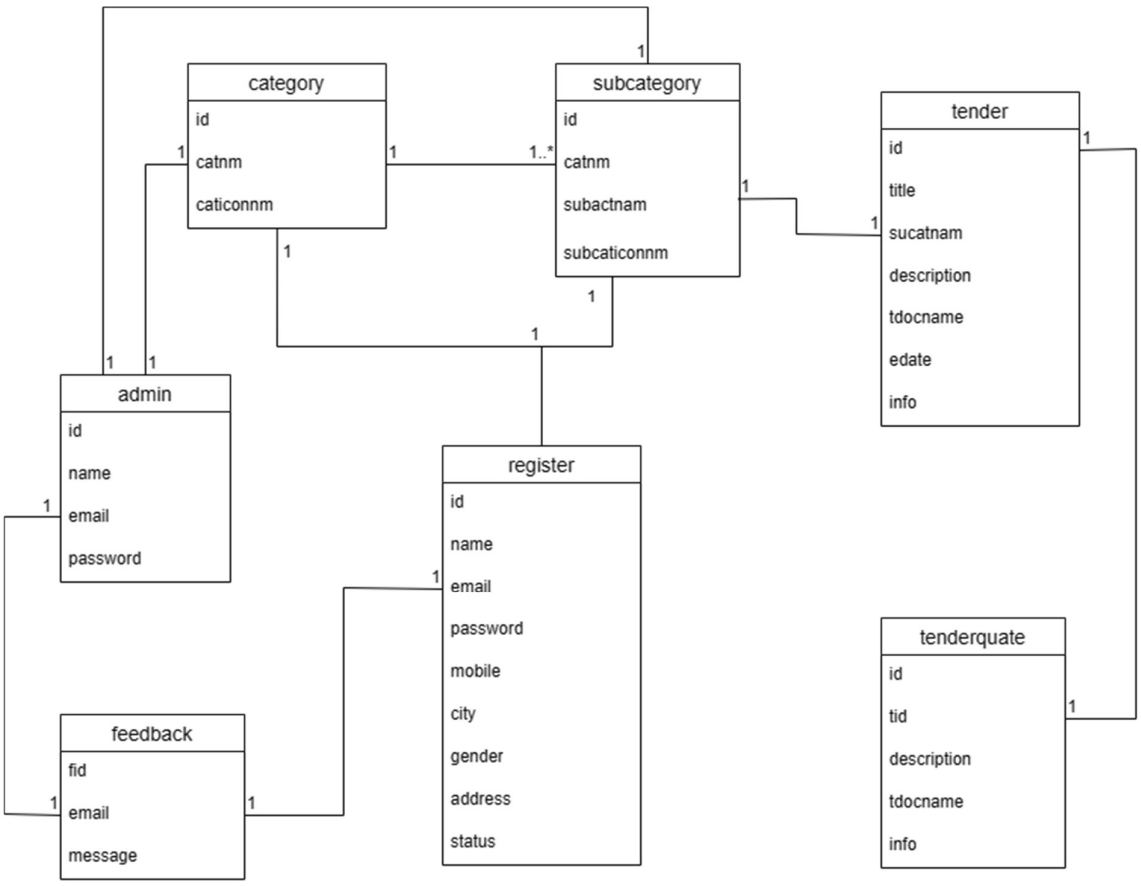
3.1 Behavioural Diagram

3.1.1 Use Case Diagram



3.2 Structural Diagram

3.2.1 Class Diagram



Chapter 4: Testing

4.1 Unit Testing

We are doing the unit testing on every small unit of the website individually to verify the proper working Wedo every type of inputs to check their outputs, and its functioning We performed these tests on user login.

Test Case

Test Case ID	Element Name	Element Type	Input	Expected Result	Actual Result	Test Result
1	Email ID	emailaddress	No input	Displays an error by pop-up	Error displayed	Passed
2	Email ID	emailaddress	shrasti******	No error	No error	Passed
3	Password	password	No input	Displays an error by pop-up	Error displayed	Passed
4	Password	password	Sh02***	Login successfully if details are valid	Passed (Successfully login)	Passed

4.2 System Testing

System testing is a type of software testing that evaluates the entire system including all its components. Tests how the different component of the application navigate to another component. Verify that only user can ableto access the user module. Verify that user dashboard has all the required option to manage all types of data.

Test Case ID	Description
Test Case 1	Only authorized admin or superuser can login
Test Case 2	Only the login admin can make changes if required
Test Case 3	Verify that user dashboard has all the required option to manage all the types of data

4.3 Performance Testing

Load Testing: Examine the system's ability to manage a large number of concurrent check-ins, check out, and service requests. Make sure it operates effectively and doesn't crash under pressure Response

Time Testing: To make that the system satisfies acceptable performance standards, timing the system's responses to various actions.

Scalability Testing: Check whether the system can grow and scale without compromising performance.

4.4 Compatibility Testing

Compatibility testing refers to the process of testing its compatibility across different platforms, devices, browsers, operating system, and network environments. The objective is to ensure that the website functions work properly and consistently for users.

Test Cases

Test Scenario	Element Name	Element Type Result	Input	Expected Result	Actual Result	Test Result
1	Device Compatibility	Responsiveness on different devices Checking Responsiveness on devices for e.g., Laptops, tablets, Smartphones	Checking Responsiveness on devices for e.g., Laptops, tablets, Smartphones	Website will adapt different screen sizes on different devices without any disbalancing	As expected, the website is full responsive and working perfectly	Passed
2	Operating System Compatibility	Checking website behaviour on different operating systems	Working on different Operating Systems e.g., Android systems, macOS, iOS, Windows, etc.	There shouldn't be any changes in website Designing, Working, Accessibility and Performance speed, while switching the Operating System.	As Expected, The Website is working all same even on different Operating System expect Linux operating system	Passed

3	Admin-user Security	Data Security	Testing security measures of admin	The logged in admin will be able to see his/her own details and check all information of user and make changes if required.	As Expected, Details of login username is shown, no one can see details of another user. Only admin can access hence, Secured.	Passed

Chapter 5: Implementation

First of all, we have to download some software to the system for the implementation of 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 MongoDB

(a) Download the MongoDB Community Server by visiting the MongoDB Download page.

(b) Open the MSI file when the download is finished, then select the following button on the startup screen.

(c) Click the "Next" button after accepting the End-User License Agreement.

(d) To install every function of the application, choose the full option at this point. Use the Custom option if you would want to install only specific software features and choose where the installation will take place.

(e) Copy the path to the data location and choose "Run service as Network Service user." Select Next.

(f) Press the Install button to begin the installation of MongoDB.

(g) MongoDB installation starts when the install button is clicked.

(h) Select Finish now.

5.3 Node JS Install

(a) Firstly, go to the official website of Node.js https://node.js.org/en/download/

(b) Click on running Node.js installer.

(c) Then Node.js setup wizard will be open.

(d) Set the destination folder where you want to install Node.js select next.

(e) Click on next and then finish.

(f) Verify the Node.js properly installed or not.

(g) Then update the local npm version.

Basic Modules and Libraries of MERN (MongoDB, Express.js React.js Node.js) Stack Used in Projects:

a) MongoDB: A Document-oriented NoSQL database that stores data in a flexible, Json-like format.

b) Express.js: A Node.js web application framework that manages middleware and routing and makes the building of backend APIs Easier. c) React.js: An interactive and reusable component creation tool for JavaScript user interface development. d) node.js: A runtime environment that enables the building of scalable and fast backend applications by running JavaScript code on the sever side.

e) mongoose: An ODM (Object Data Modeling) module for MongoDB that offers a simple interface for defining data structures and interacting with the database

f) Bcrypt: A password hashing and encryption library that is frequently used for safe password storing and verification.

g) cors: A middleware for Express.js that permits Cross-origin Resource sharing (CORS), Which is necessary to manage requests from the frontends to the backend in a MERN application. It permits regulated access to resources from many origins.

h) dotenv: A module that allows the safe and practical configuration of application settings and sensitive data by loading environment variables from a.env file into process.env.

i) Axios: A well-known HTTP client library that makes asynchronous HTTP requests from Node.js and browsers easier to make.

j) React Router: A React routing module that facilitates routing navigation inside a single-page application, enabling components to be dynamically rendered according to the URL.

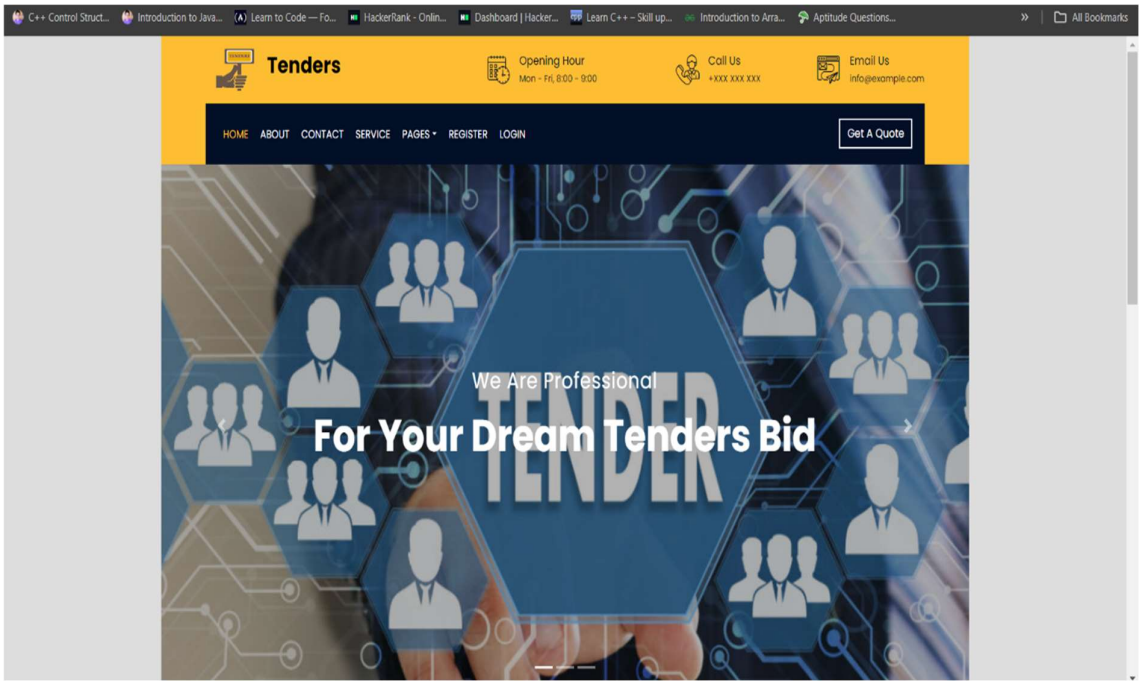
k) JWT (Json Web Tokens): Frequently used for authorization and authentication in MERN applications, JWT is a safe way to send data between parties as a JSON object.

l) React-Bootstrap: A library that offers pre-styled Bootstrap elements and tools for creating React user interfaces that are both visually appealing and responsive.

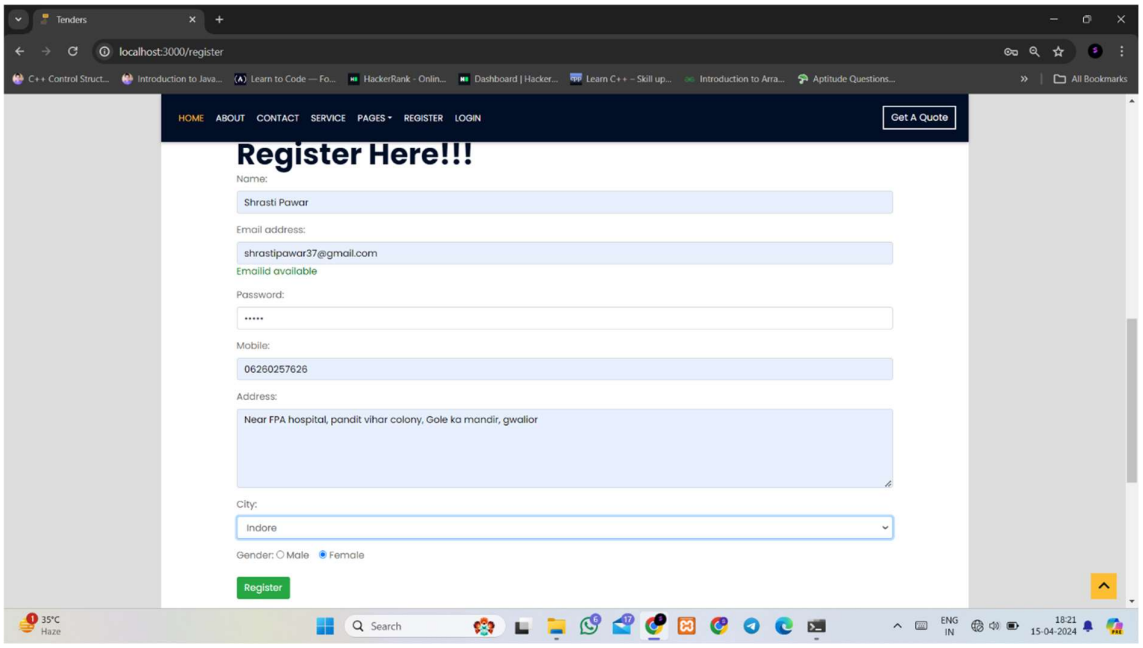
m) react-router-dom: The most recent iteration of the React Router toolkit, tailored especially for React apps. It lets you specify routes and render various components depending on the URL that is currently being used, enabling declarative routing and navigation in single-page apps. One of the most current versions, 6.7.0, offers a number of changes and enhancements to the React application's routing functionality.

Chapter 6: Sample Forms and Reports

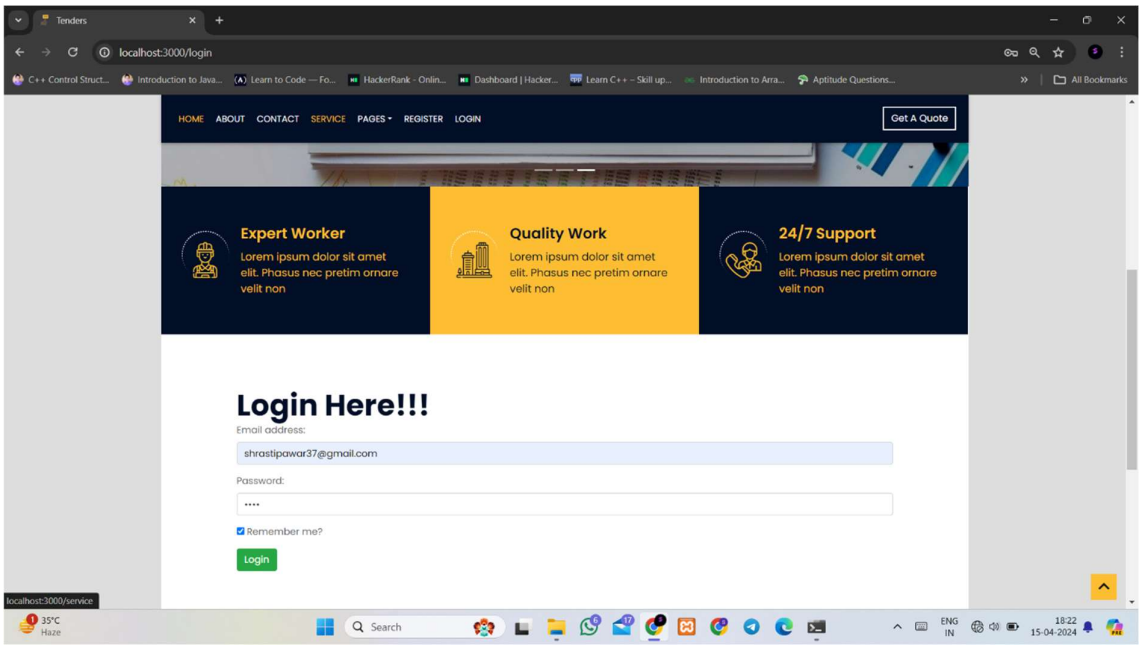
(a) Home Page



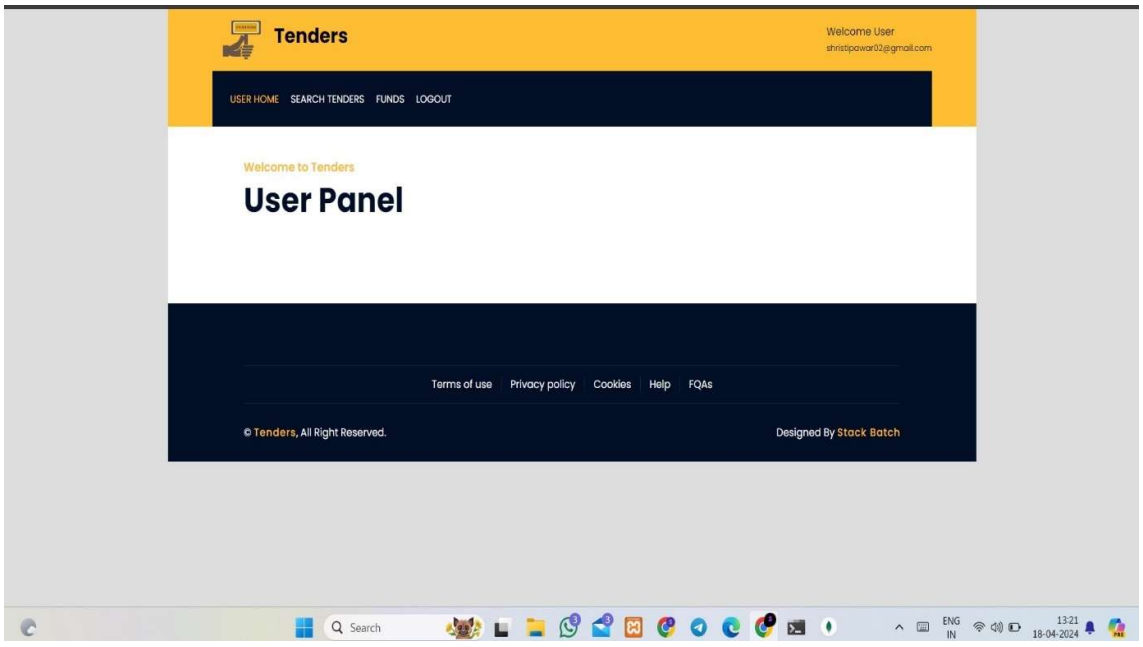
(b) User Register



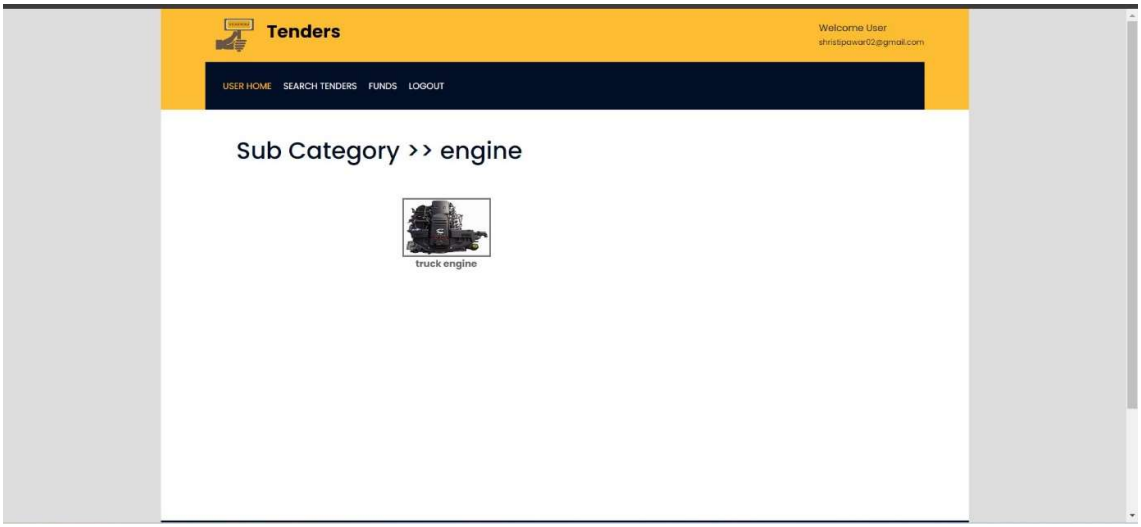
(c) User Login



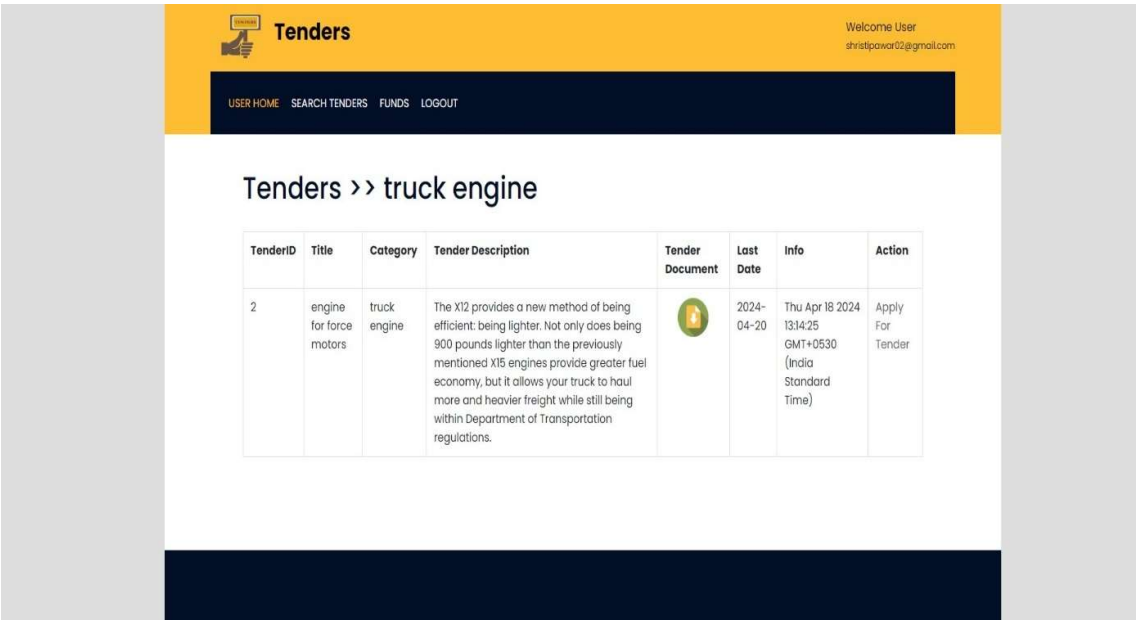
(d) User Panel



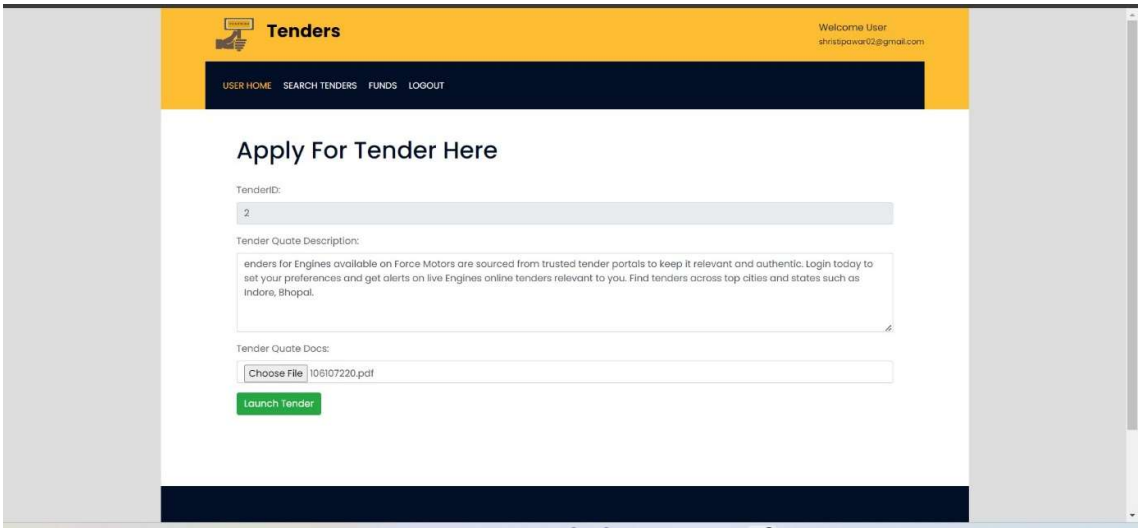
(e) Category



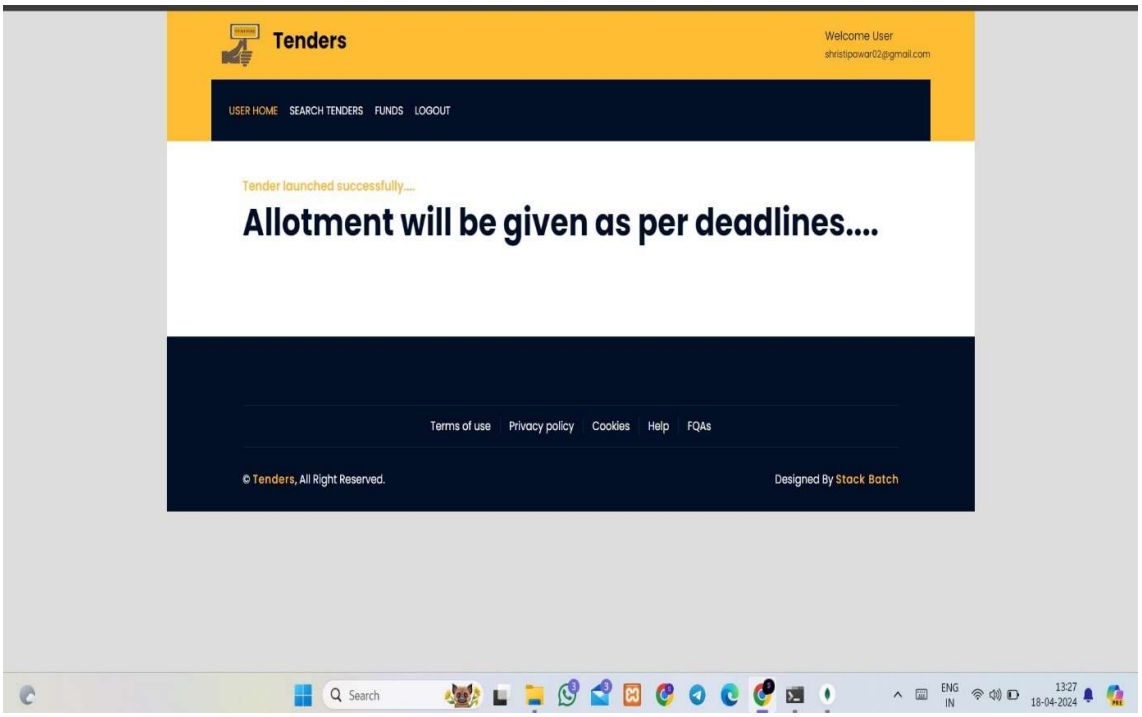
(f) Tender Details



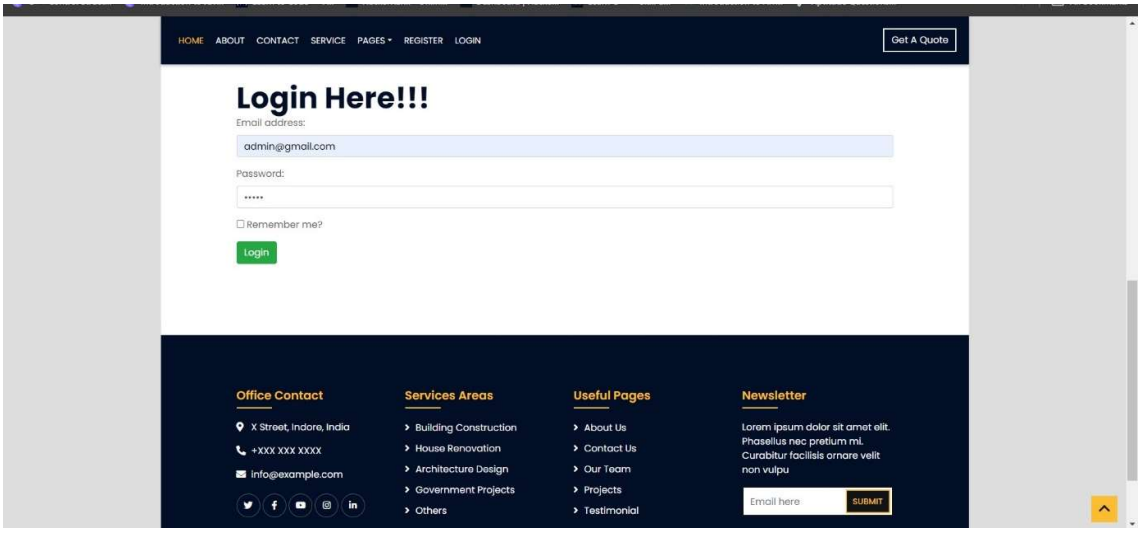
(g) Apply for Tender



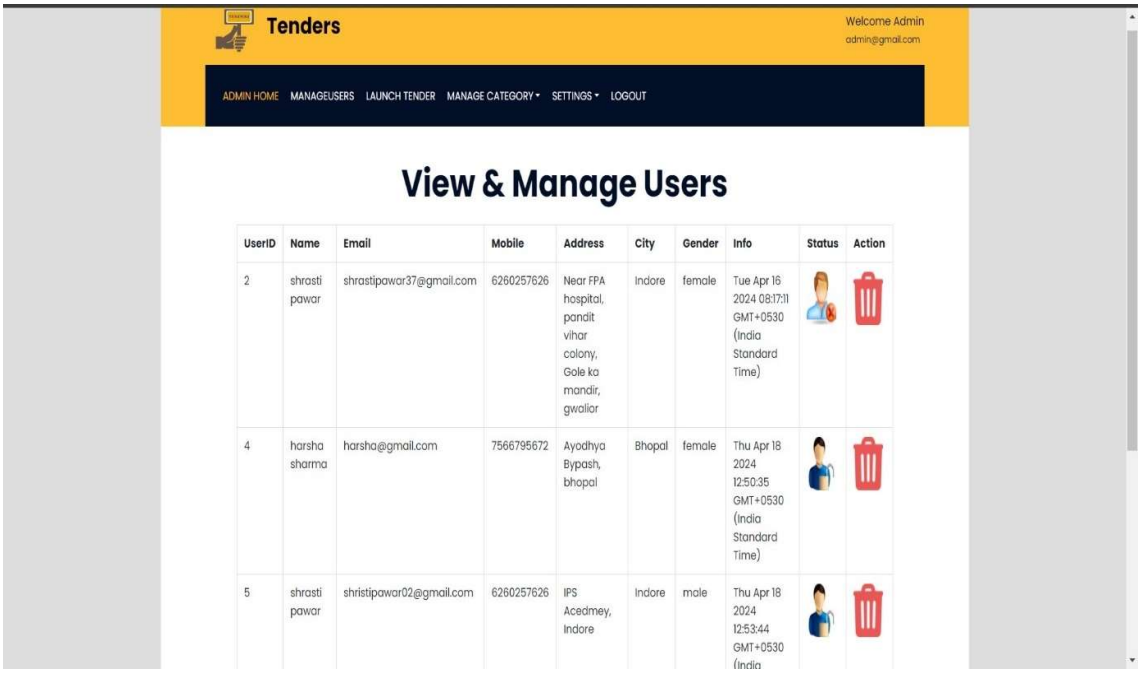
(h) Tender Filled



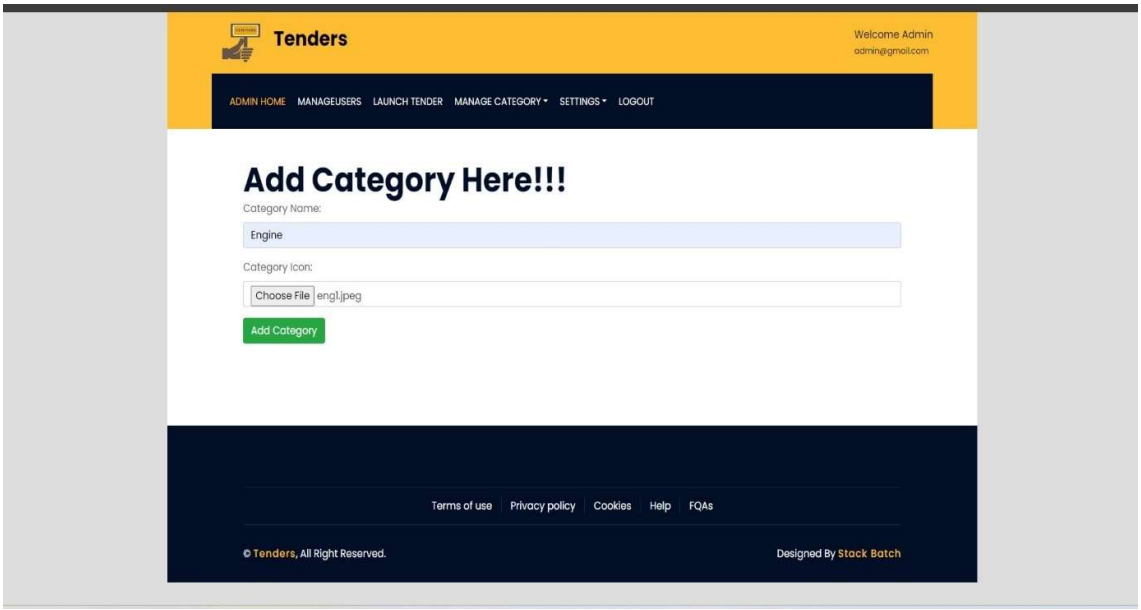
(i) Admin Login



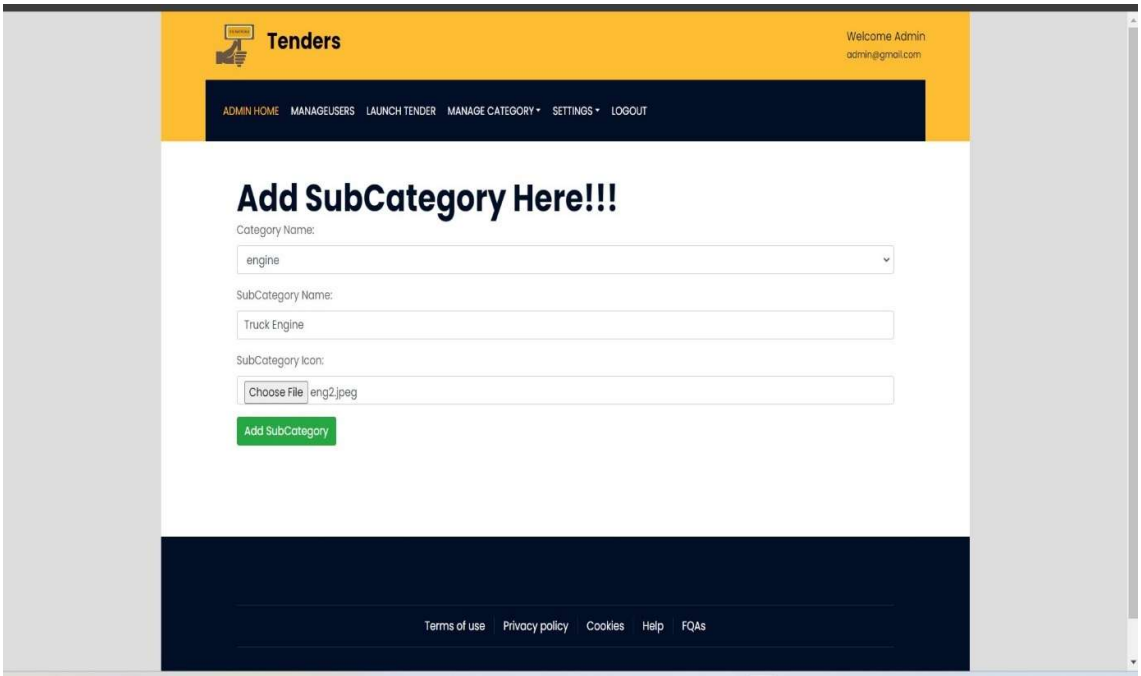
(j) Manage Users



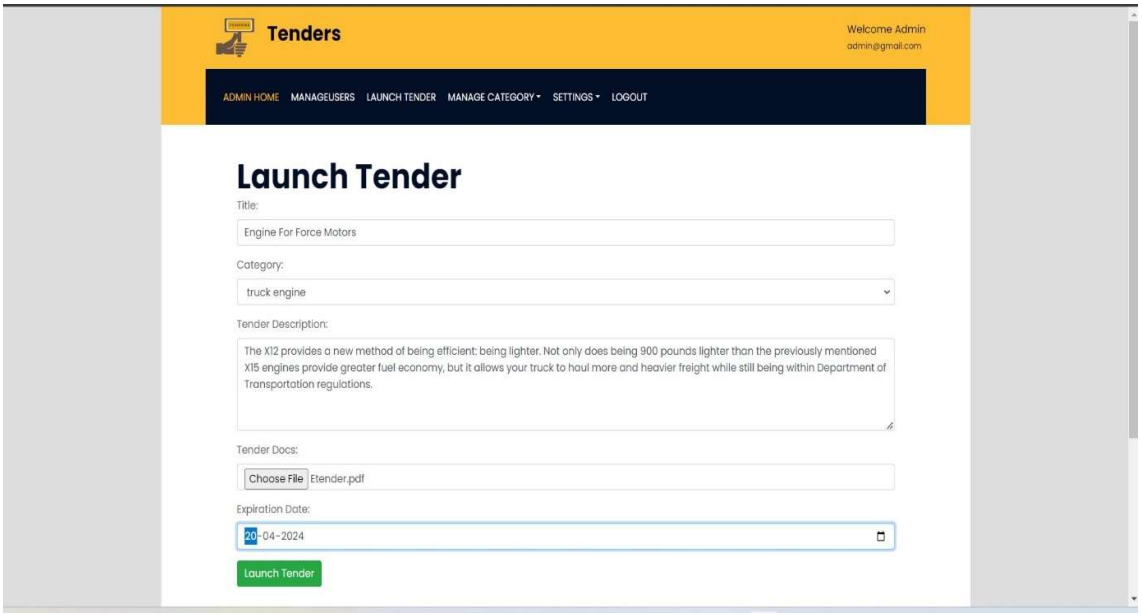
(k) Add Product Category



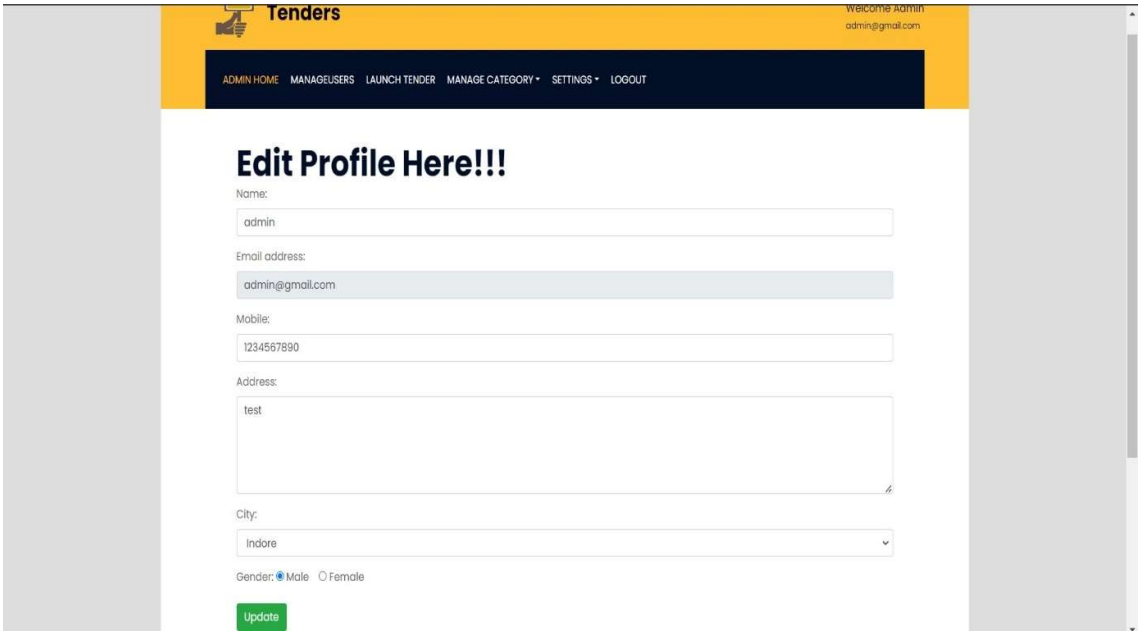
(l) Add Product Sub Category



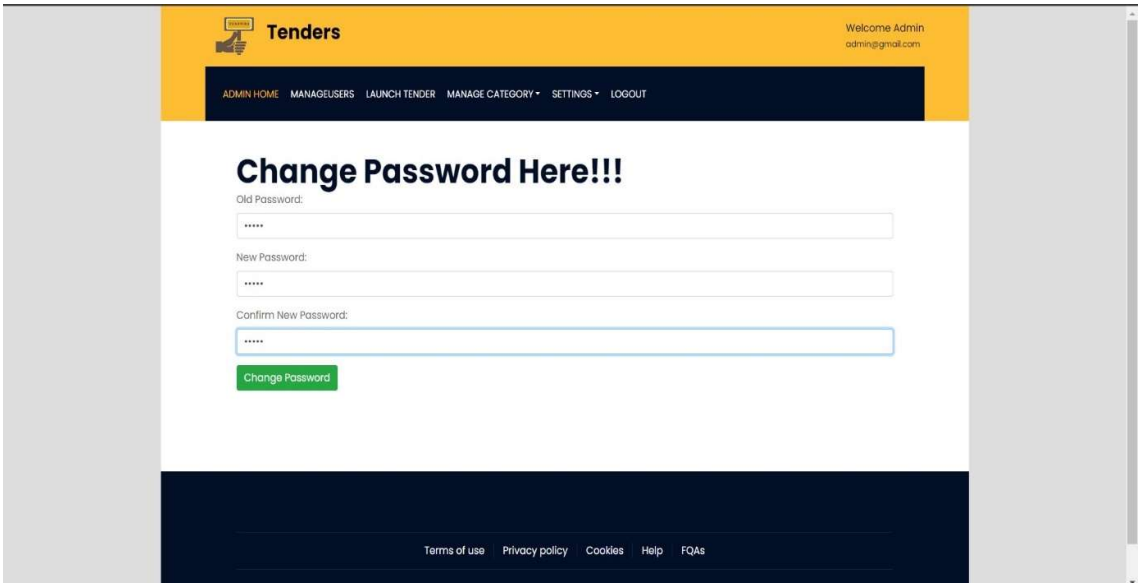
(m) Launch Tender



(n) Edit Profile



(o) Change Password



Chapter 7: Conclusion and Future Scope

Electronic tendering, or E Tendering, has become a vital tool in recent buying processes for improving the flow of products and services between suppliers and purchasers. However, the usability, functionality, and transparency of E Tender systems are critical components that determine their efficacy. So as to realize the full benefit of E Tender moves and enhance their advantages for all those involved, it is important to deal with crucial issues inside them. .

Lack of access are one of the main problems E Tender system faces. These websites formal setup and elaborate structure make it challenging for many people to browse. Potential participants may be scared by this complexity, which also reduces the selling process's performance. In order to address this problem, E Tender systems have to provide top priority to responsive design concepts, which guarantee accessible navigation and clear data classification. By making access simpler, Platforms have the potential to improve user experience and promote a greater role in the buying process.

Limited search capabilities are also a major barrier Vendors must overcome. Vendors find it difficult to filter and find particular offers that meet their needs due to poor search capabilities. This limitation creates problems by putting important time and resources looking for suitable data, in addition to annoying users. Improving search tools with greater filtering choices and better selection of keywords may make a big difference in the user experience and speed up the tender discovery process.

An expensive process for submitting tenders additionally affects the efficacy of E Tender plans. Difficult paperwork, unclear instructions, and technical difficulties prevent vendors from submitting offers.

This can avoid potential participants from involvement in the tendering process fully in addition to frustrating people. E Tender systems should concentrate on improving the tender filing procedure, giving clear guidance, and utilizing user-friendly interfaces in order to overcome this problem. Platforms may promote more participation and guarantee a simpler procurement process for everyone involved to remove these barriers. Furthermore, trust and transparency are reduced by the purchasing process's lack of transparency. The complexity of the selection criteria and the lack of related information to vendors reduce trust in the objectivity and sincerity of the whole process. Transparency and accountability must be given top priority on E Tender systems in order to create confidence among stakeholders. This may be performed by clarifying evaluation criteria easily, making relevant details available, and setting up systems for feedback and solution of problems. Platforms may boost confidence and trust in the procurement process via promoting openness and transparency, which will ultimately end in better outcomes for all Company.

In conclusion, in order to realize the maximum potential and take the most rewards from E Tender efforts, it is important that critical challenges be fixed. E Tender platforms can increase efficiency, support more involvement, and guarantee a simpler procurement experience for vendors and company by focusing on user-centric design, improving search operation, justifying the tender submission process, promoting openness and transparency. Investing in the improvement of E Tender projects is essential for improving innovation, developing productivity, and attaining better results in the global marketplace as digital technologies continue to change the procurement environment.

Future Scope

E Tender websites promise a future of efficiency, accessibility, and transparency in procurement procedures, and they hold a great deal in this respect. Modern technologies like artificial intelligence (AI) and machine learning have the ability to totally change tender management by offering useful information on vendor performance and market conditions. E Tender platforms can use artificial intelligence (AI) algorithms to process large volumes of data, improve procurement strategies, and increase productivity.

The use of blockchain technology becomes essential to ensure the security and integrity of E Tender procedures. Blockchain reduces the risk of fraud and increases investor trust through tamper-proof record-keeping enabled by its immutable record and secure processes. Increased security creates an ideal environment for open and balanced tendering procedures.

Furthermore, in an increasingly mobile-centric environment, the E Tender platforms' adaptable design and mobile accessibility optimization meet consumers' changing demands. These improvements provide easy access to tendering procedures, enabling consumers to take part from any device or location.

The possibility for further changing E Tender procedures involves the integration modern technologies such as the Internet of Things (IoT), augmented reality (AR), and virtual reality (VR). IoT-enabled real-time tracking and AR/VR-based immersive virtual inspections provide previously unheard-of levels of visibility and interaction that improve productivity and decision-making.

Additionally, E Tender platforms are essential for encouraging networking and cooperation between people and vendors. These platforms foster an innovative culture by encouraging collaboration and information exchange.

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https://www.w3schools.com/nodejs/default.asp

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Name of student	Shrasti Pawar		Department	MCA	
Industry/Organization	Uniinfo Telecom Service Ltd		Date/Duration	DD/MM/YR -DD/MM/YR 01/01/2024 - 15/01/2024	
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	Learn HTML & CSS.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Pranay Parulekar				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Parul Saxena	Sign	

(2)

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Shrasti Pawar		Department	MCA	
Industry/Organization	Uniinfo Telecom Service Pvt. Ltd.		Date/Duration	16/01/2024-31/01/2024	
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	Learn HTML, CSS & Javascript and also backend technology.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Pranay Panwal				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Parul Saxena	Sign	

(3)

FORMAT

FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Shrasti Pawar		Department	M CA	
Industry/Organization	Vniinfo Telecom Service pvt. ltd.		Date/Duration	01/02/24 – 15/02/24	
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	Learn React Framework & Bootstrap. and setup React Integration				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Pranay Parwal				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Parul Saxena	Sign	

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FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Shrasti Pawar		Department	MCA	
Industry/Organization	Vriinfo Telecom Service Pvt. Ltd.		Date/Duration	15/02/24 - 29/02/24	
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	React setup, components, Hooks props and React Bootstrap Integration.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Pranay Parwal				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Parul Saran	Sign	

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FORTNIGHTLY PROGRESS REPORT (FPR) FROM INDUSTRY MENTOR

Name of student	Shrasti Pawar		Department	M CA	
Industry/Organization	Uniinfo Telecome Services Ltd.		Date/Duration	01/03/24 – 15/03/24	
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	Work on Client Side & also on Server side.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Pranay Parwal				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Parul Sakure	Sign	

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Industry/Organization	Unisys Telecome services Pvt. Ltd.		Date/Duration	16/03/24 - 31/03/24	
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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	Work on the Admin module and also backend.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT**				
Name of Industry Mentor	Bhanay Paswal				
Signature of Industry Mentor					

Receiving Date	16/4/24	**Name of Faculty Mentor**	Parul Saxena	**Sign**	

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Learning capacity/Knowledge up gradation				✓	
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Behaviour/Discipline/Team work					✓
Sincerity/Hard work				✓	
Comment on nature of work done/Area/Topic	Work on Admin Module and payment gatway.				
OVERALL GRADE (Any one)	**POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT** ✓				
Name of Industry Mentor	Pranay Panwar				
Signature of Industry Mentor					

Receiving Date	16/4/24	Name of Faculty Mentor	Rahil Saxena	Sign	