

A  
Project Report  
on

**“E-Tendering Management System”**

Developed By

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developed at

**DHALAV`S DESIGNERS - Hyderabad  
as**

**Partial Fulfillment of IV<sup>th</sup> Semester of  
Master of Computer Applications  
for A.Y. 2023 - 2024**

**Under The Guidance of**

**Prof. Vaishali shah**

**Submitted To**

**Department of MCA  
Faculty of IT & Computer Science  
PARUL University**





## **CERTIFICATE**

This is to certify that **Mr. Guduru Madhu Sudhan Reddy, 2205112120008, Mr. Chekuri Snehith Sri Sai, 2205112110162 and Mr. Mukkala Yugandhar, 2205112110167** student of Master of Computer Applications has satisfactorily completed the Major Project on “**E-Tendering Management System**” at **DHALAV`S DESIGNERS** as fulfillment of MCA Semester IV.

Seat No. \_\_\_\_\_

Date of Submission: \_\_\_\_\_

\_\_\_\_\_

Internal Guide

\_\_\_\_\_

Project Coordinator

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**Mr. Yugandhar,**

We are delighted to extend this offer of employment for the position of Machine Learning Intern at Dhalav's Solutions. As an intern We were highly impressed by your Knowledge and your commitment to excellence in Machine Learning, and we believe you will be a valuable addition to our team.

**Key Responsibilities:**

As an at Dhalav's Designers, you will be responsible for:

- Stay abreast of the latest advancements in machine learning and propose innovative solutions to improve existing processes.
- Contribute to ongoing research projects and explore new opportunities for application.
- Work closely with software developers, data scientists, and other stakeholders to integrate machine learning models into production systems.
- Participate in team meetings to share progress, insights, and challenges.

**NOTE :** Training sessions will start from 19th DEC there will be 3 weeks of training. Then the work will be deployed Mon - Fri 10:30AM - 07:30PM .

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We are delighted to extend this offer of employment for the position of Machine Learning Intern at Dhalav's Solutions. As an intern We were highly impressed by your Knowledge and your commitment to excellence in Machine Learning, and we believe you will be a valuable addition to our team.

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**Mr. Snehith Sri Sai,**

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## **ACKNOWLEDGMENT**

We put effort on this project. However, without the kind support and assistance of many people and organizations, it would not have been feasible. I want to express my sincere gratitude to each and every one of them. I owe a great deal to Prof. Vaishali Shah for their direction, ongoing oversight, and provision of the information required for the project as well as their assistance in seeing it through to completion. I would like to thank. Parul University for their kind encouragement and cooperation, which enabled me to finish this project. I want to offer my sincere appreciation and thanks to those in the profession who took the time to pay me such close attention. My gratitude and appreciation also go to my project. Development partners/colleagues and the others who volunteered their skills to assist me.

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## 1.0 About Department of MCA

### PARUL University

Parul University is a legitimate university established under Gujarat Private University Act 2009, after legislation passed by the Government of Gujarat on 26<sup>th</sup> March 2015 giving University status to Parul Group of Institutes functioning under the aegis of Parul Arogya Seva Mandal Trust.

### Faculty of IT & Computer Science

Faculty of IT and Computer Science, Parul University has materialized as one of the prime IT education providers at global level. Various departments under Faculty of IT and Computer Science strive in preparing IT-industry ready professionals by means of various skill development courses, vocational courses, co-curricular & extra-curricular activities, industry visits and expert lectures.

### MCA Department

The Department of Master of Computer Application at Parul University emphasizes on building professionals in the domain of computer applications by providing necessary environment by means of facilitating suitable blend of technical and non-technical learning experience. The department cultivates students in various curricular, co-curricular and extra-curricular activities in order to produce future system analysts, system designers, system programmers, application programmers, testing professionals, system managers, project managers, researchers and other leading positions in systems/IT department.

The department offers various subjects from diversified technical/non-technical areas such as – core IT domain, management, communication skills, mathematics & logic building and rich pool of elective subjects.

The department of MCA focuses on project-based learning, and hence students are motivated to work on tiny hands-on projects in practical oriented subjects to get better exposure. Moreover, throughout their MCA studies, students are required to work on around 3 mini/major projects in individual/team to get enough confidence on software-development



## 2.0 Company Profile

At Dhalavs Designers, we believe that a well-designed poster can speak volumes, convey a message, and leave a lasting impression. Our passion for design extends beyond the digital realm – we also specialize in creating eye-catching posters for businesses, hospitals, schools, restaurants, gyms, and more.

Our poster design services are tailored to suit the unique needs and objectives of each client. Whether you're promoting an event, a special offer, or simply enhancing your brand's visibility, we have the creative process to craft posters that resonate with your target audience. From vibrant color schemes to compelling imagery and persuasive copy, every element is meticulously chosen to make your message stand out.

We understand the importance of visual storytelling, and our designs are a testament to that philosophy. Let us be your partner in bringing your ideas to life on paper. Elevate your marketing efforts with posters that not only grab attention but also leave a lasting impression. Experience the art of poster design with Dhalav's Designers – where creativity knows no bounds

Dhalavs is main is branch is situated in kukatpalley (hyderabad).

## 3.0 Project Profile

### 3.1 Project Definition

A tender notification is an online service, which in more recent times is provided as Software as a Service. Historically, the service would be provided by basic coding techniques in java code, when a new tender had been published. Since then, the industry has grown to provide fully automated systems that deliver various forms of communication to notify users of tendering opportunities. Typically, services are delivered in the form of an email and are commonly for open tenders, which allow any potential supplier to register interest in a tender opportunity. Some may argue that notification services have become integral to open tenders and the process. Notification services are often the main form of communication to the client that a new tender is available. People closely linked with the providing end user, may receive communication directly, but with the growth of the notification industry, this is becoming unlikely. Procurement software sometimes incorporates the tendering data into packages to make the information more accessible for suppliers interested in various tenders. Many of the direct notification packages often have a targeted market or segment, often from one or two providers, for example a county council or large government institution. Repacks allow for greater numbers of tenders and often cover multiple countries, segments and markets.

### 3.2 Types of Notification:

**Direct:** These are normally opportunities that are sent direct from the system they were created on. For example if a government institution used a certain brand of tendering software, then this brand would also offer a tender service to notify the user of tenders on that specific system.

**Repacks:** Repacks are normally provided by external organizations and software as a service providers. Feeds from multiple sources are combined, collated and then sent out. The aim of repacks is normally to give the supplier as many opportunities as possible on a daily basis. Normally where feeds from multiple sources are combined, collated and then sent out. The aim is obvious here, to give the supplier as many opportunities as possible on a daily basis. However, due to the information often being second or third hand, some data can be lost in the process, or may become inaccurate as it is passed down the line. The collated information tends include a range of sectors, from construction to healthcare tenders. Similar

**Processes:** A request for tender and request for quotation is a closed tender where people are invited by a buyer to quote for specific work. A tender notification alerts potential suppliers of open tenders that they then have to register interest in before entering the tendering process. Invitation to tender is also a similar process to a tender notification. The major difference is the institution or organization that created the tender chooses who to invite, often in the form of a closed tender.

The Electronic Tendering System (E-Tendering System) is a comprehensive digital solution designed to streamline and automate the procurement process for government agencies, businesses, and organizations. This system will replace the traditional paper-based tendering process with an efficient, transparent, and user-friendly online platform. The primary goal of this project is to enhance transparency, reduce paperwork, and improve the overall efficiency of the tendering process.

The tender management system is developed to enable the vendors to get all the tender details online and provide facility to submit the tender. Once tender is closed then the report will be generated automatically with granted tender details. As all the work is happening from the system the information will be secure as no other person will have access to the system. Initially to sign in into the site the customer has to get his user id and password and if he is a registered user he can directly login or if he is a new user he has to undergo the registration process. The administrator software stores the tender details. The system makes the overall project management much easier and flexible. It can be accessed over the Internet. This research aims to eliminate corruption in the procurement process, identify the additional factors relating to a contractor's qualification that contribute towards an increase in the quality of the project.

### **3.3 EXISTING SYSTEM**

In the existing system all the work is done manually. This system works need to be completed manually. Contractors need to submit their documents on time and must be submitted through ordinary post by which they sometimes not able to bid for particular tender on time. All working personnel within department involved just for doing same task which is document verification and there may be chance in which the best one may be left behind.

The process is manual that is the department will first advertise about the tender in the newspaper. A contractor who is interested in the tender need to read the newspaper daily for information. Then the interested person will go in the specific department and will get the application form by paying the money. Now they need to fill and send it to the

### **3.4 Problem Statements:**

The problem statement for an e-tendering system could be to develop a secure and efficient online platform that allows organizations to publish, manage, and evaluate tenders electronically. The system should ensure transparency, streamline the tendering process, and provide a user-friendly interface for both buyers and suppliers. Traditional tendering processes may not be accessible to all potential participants, including those with disabilities, limiting opportunities for broader supplier engagement. Addressing these problem statements through the implementation of an Electronic Tendering System can significantly improve the

efficiency, transparency, and fairness of the procurement process while reducing costs and environmental impact.

### **3.5 Needs For New System:**

A tenders management system can automate all your tender processes from issuing a tender to awarding a work contract. There are many benefits if you choose to get an e-Tendering system: Reduce in the manual tasks like recording tender submissions. Prepare tender proposals using templates.

### **3.6 PROPOSED SYSTEM**

In order to provide fully automated processes of tendering in the enterprise which increase the ability to conduct more optimized and better integrated tendering processes, this research is proposing a new systematic and comprehensive model to achieve this goal.

All activities will happen through the software which will be a web-based system. The user can get the available tender by accessing through the system.

In order to access the system, they need to register with the system. At the time of registration, they will provide with a user Id and password.

The interested user can also pay online and download the form through the internet. Or can fill directly on the web so there will be no need to send the tender by post.

The user will also get the notification about any new tender through the system. As all the work is happening from the system the information will be secure as no other person will have access to the system.

### **ADVANTAGES**

- No cost for advertising in newspapers.
- Tenders can be viewed anywhere and anytime.
- Suppliers can ask queries immediately.
- Bidding through online saves a lot of time.
- Buyers can answer queries posed by suppliers immediately.

### **3.7 Scope**

The scope for an e-tendering system includes creating a comprehensive platform that allows organizations to conduct the entire tendering process digitally. This includes features such as publishing tender notices, receiving and managing bid submissions, facilitating communication between buyers and suppliers, and automating the evaluation and awarding of contracts. The system should also provide robust security measures, user-friendly interfaces, and customizable options to meet the specific needs of different organizations.

### **3.8 Tools and Technologies:**

#### **3.8.1 INTRODUCTION TO HTML:**

The hypertext markup language (HTML) is a simple markup language. Used to create a hypertext documents that are portable from one platform to another HTML documents are SGML (Standard generalized mark up language) documents with generic semantics that are appropriate for representing information from a wide range of applications. This specification defines HTML version 3.2. HTML 3.2 aims to capture recommended practice as of early '96 and as such a replacement for HTML2.0 (RFC 1866).

A set of instructions embedded in a document is called mark up language. These instructions describe what the document text means and how it should look like in a display. Hyper Text Mark Up language (HTML) is the language used to encode World Wide Web documents.

#### **3.8.2 WHY TO USE HTML:**

Website is a collection of pages, publications, and documents that reside on web server. While these pages, publications, and a document as a formatted in a single format, you should use

HTML for home page and all primary pages and the site. This will enable the millions of web users can easily access and to take advantage of your website.

HTML is considered first for formatting any new material you plan to publish on the web. HTML documents are platform independent, meaning that they don't conform to any standard.

If they are created properly, you can move home page to any server platform or you can access them with any complaint www browser.

#### **3.8.3 INTRODUCTION TO JAVA:**

Java was conceived by James Gosling, Patrick Naughton, Chris Warth, Ed Frank and Mike Sheridan at SUN Microsystems Incorporation in the year 1991. It took 18 months to develop the 1st working version. This

language was initially called “OAK”, but was renamed “JAVA” in 1995, many more contributed to the design and evolution of the language.

### 3.9 JAVA OVERVIEW

Java is a powerful but lean object-oriented programming language. It has generated a lot of excitement because it makes it possible to program for Internet by creating Applets. Programs that can be embedded in web page. The context of an applet can be an animation with sound, an interactive game or a ticker tape. With constantly updated stock prices.

But Java is more than a programming language for writing Applets. It is being used more and more for writing standalone applications as well. It is becoming so popular that many people believe it will become standard language for both general purpose and Internet programming. There are many buzzwords associated with Java, but because of its spectacular growth in popularity, a new buzzword has appeared ubiquitous. Indeed, all indications are that it will soon be everywhere.

Java builds on the strength of C++. It has taken the best features of C++ and discarded the more problematic and error prone parts. To this lean core, it has added garbage collection (automatic memory management), multithreading (the capacity for one program to do more than one thing at a time), security capabilities. This result is that Java is simple, elegant, and powerful and easy-touse.

Java is actually a platform consisting of 3 components:

Java Programming Language.

Java Library of Classes and Interfaces.

Java Virtual Machine

The following sections will say more about these components.

#### 3.9.1 JAVA IS PORTABLE:

The Virtual Machine is what gives Java is cross platform capabilities. Rather being compiled into machine language, which is different for each OS's and computer architecture, Java

understand. The problem is that other computers with different machine instruction set cannot understand that language. Java code on the other hand is compiled into Byte-Code rather than a machine language. These byte codes go to the JVM, which executes them directly or translates them into the language that is



understood by the machine running it. In summary, these means that with the JDBC API extending Java, a programmer writing Java code can access all the major RDBMS on any platform that supports the JVM.

### 3.9.2 DIFFERENCE BETWEEN JAVA AND JAVASCRIPT:

Although the names are almost the same Java is not the same as Java Script. These are two different techniques for Internet programming. Java is programming language. JavaScript is a scripting language as the name implies. The difference is that we can create real programs with java. But about real programming. So Java Script is meant to be easy to understand and easy to use. JavaScript authors should not have to care too much about programming. We could say that Java Script is rather an extension to HTML than a separate computer language. Of course this is not the official definition but it makes it easier to understand the difference between java and java script.

### 3.10 Project Plan

Mile stone	Description	Date to complete
1	Project profile	05/01/2024
2	Requirement Analysis	27/01/2024
3	Design	10/02/2024
4	Implementation	02/03/2024
5	Testing	09/03/2024
6	Bibliography	09/03/2024

## 4.0 Requirement Analysis

### 4.1 Feasibility Study

The feasibility of the project is analysed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- ECONOMICAL FEASIBILITY
- TECHNICAL FEASIBILITY
- SOCIAL FEASIBILITY

#### 4.1.1 ECONOMIC FEASIBILITY:

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus, the developed system as well within the budget and this was achieved because most of the

#### 4.1.2 TECHNICAL FEASIBILITY:

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

### 4.2 Users Of The System:

Users of an e-tendering system, also known as an electronic tendering system or online procurement system, include various individuals and entities involved in the procurement process. Here are the key users of such a system:

These are organizations or government agencies that require goods, services, or construction projects. They initiate the procurement process by creating and publishing tender documents and requests for proposals (RFPs).

#### 4.2.1 Suppliers/Vendors/Bidders:

These are businesses or individuals who are interested in providing goods, services, or construction work in response to a tender. They access the e-tendering system to view and respond to tender opportunities by submitting bids or proposals.

#### **4.2.2 Administrators/Procurement Managers**

They are responsible for overseeing and managing the e-tendering system within the buying organization. Administrators configure and maintain the system, manage user accounts and permissions, and ensure compliance with procurement policies and regulations.

#### **4.2.3 Reviewers/Evaluators:**

Individuals or committees responsible for evaluating bids and proposals submitted by suppliers. They use the e-tendering system to assess and score submissions based on predefined criteria.

#### **4.2.4 Auditors/Internal Compliance Teams:**

They use the e-tendering system to conduct audits and ensure that the procurement process follows internal policies and external regulations.

#### **ADMINISTRATOR:**

Administrator is the master user of this system who will be responsible for uploading advertisement documents, verifying suppliers by using their information, maintaining data and confirmation of final report.

#### **VENDOR:**

Vendor needs to get registered and login with a valid username and password. Vendor can apply for the tender and view the status of the tender. Vendor can give feedback.

#### **EMPLOYEE:**

Employee can view the home page. Employee can view the details of the vendor tenders. Employee can give suggestions to the vendor if he has any queries regarding the tender. Employee gets login with a username and password.

### **4.3 Modules**

**4.3.1 User Management Module:** This module handles user authentication, authorization, and user profile management for administrators, suppliers, and other stakeholders.

**4.3.2 Tender Creation Module:** Allows administrators to create and publish tenders, specifying details such as tender description, documents required, deadlines, and evaluation criteria.

**4.3.3 Supplier Registration Module:** Enables suppliers to register on the platform, submit required documents, and qualify for participating in tenders.

**4.3.4 Document Management Module:** Facilitates the uploading, storage, and management of tender documents, ensuring accessibility and security.

**4.3.5 Bidding Module:** Allows registered suppliers to view available tenders, submit bids, and track the status of their submissions.

**4.3.6 Evaluation Module:** Supports the evaluation process by providing tools for administrators to review and compare bids based on predefined criteria.

**4.3.7. Awarding Module:** Handles the process of awarding the tender to the winning bidder, including notifications, contract generation, and signing.

**4.3.8 Reporting Module:** Provides various reports and analytics related to tendering activities, supplier performance, and overall system usage.

**4.3.9 Notification Module:** Sends automated notifications to stakeholders regarding important events such as tender publication, bid submission deadlines, and award announcements.

**4.3.10 Feedback and Support Module:** Allows users to provide feedback, raise queries, and seek assistance from administrators or support staff.

These modules collectively form the backbone of an eTender management system, enabling efficient and transparent handling of the tendering process from start to finish

#### 4.4 Process Model

**4.4.1 Requirements Gathering:** Engage stakeholders, including administrators, suppliers, and end-users, to gather comprehensive requirements for the eTender management system. Document functional and non-functional requirements, considering factors such as security, scalability, and usability.

**4.4.2 Analysis and Design:** Analyze the gathered requirements to identify key functionalities and system architecture. Design the system architecture, database schema, user interfaces, and integration points. Create wireframes or prototypes to visualize the system's functionality and gather feedback from stakeholders.

**4.4.3 Development:** Implement the system modules based on the approved design. Adopt an iterative development approach, breaking down the implementation into smaller, manageable tasks or sprints. Conduct regular code reviews and testing to ensure quality and adherence to requirements.

**4.4.4 Testing :** Develop test cases based on functional and non-functional requirements. Conduct various types of testing, including unit testing, integration testing, system testing, and user acceptance testing (UAT). Address and fix defects identified during testing iterations.

**4.4.5 Deployment:** Prepare for deployment by configuring servers, setting up databases, and ensuring compatibility with the target environment. Deploy the system in a staging or testing environment for final validation. Plan and execute the production deployment, ensuring minimal downtime and smooth transition.

**4.4.6 Feedback and Iteration:** Gather feedback from stakeholders, including end-users and administrators, after deployment. Address any issues or enhancement requests through iterative development cycles. Continuously improve the system based on feedback and changing requirements.

#### **4.5 Hardware & Software Requirements:**

##### **4.5.1 Software Requirements :**

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. The minimal hardware requirements are as follows,

Processor	:	Pentium IV
RAM	:	8 GB
Processor	:	2.4 GHz
Main Memory	:	8GB RAM
Hard Disk Drive	:	1TB
Keyboard	:	104 Keys

##### **4.5.2 SOFTWARE REQUIREMENTS:**

Software requirements deals with defining resource requirements and prerequisites that needs to be installed on a computer to provide functioning of an application. The minimal software requirements are as follows,

Operating System : Window 7 or above

Programming Language : JAVA

Front End : HTML, CSS

Back End : JSP, Servlets, JDBC

Database : MySQL

#### **4.6 Use Case Scenarios :**

##### **4.6.1 Construction Industry:**

A construction company is planning to build a new office complex. They use an e-tendering system to invite bids from subcontractors for services like electrical work, plumbing, and HVAC installation. This ensures transparency, competitive pricing, and compliance with regulations.

##### **4.6.2 Government Procurement:**

A state government agency needs to purchase a fleet of vehicles for its public transportation system. They use an e-tendering platform to solicit bids from automobile manufacturers, allowing them to efficiently evaluate offers and select the best supplier.

A multinational corporation needs to outsource its IT support services. They use an e-tendering system to invite proposals from IT service providers, evaluate their capabilities, and negotiate contracts for IT support.

##### **4.6.3 Nonprofit Fundraising:**

A nonprofit organization is planning a fundraising event and needs event management services. They use an e-tendering platform to request proposals from event management Tools Required : Eclipse EE, Java JDK 8+, Tomcat v8.0, Apache Maven.



#### 4.7 Use Case Diagram

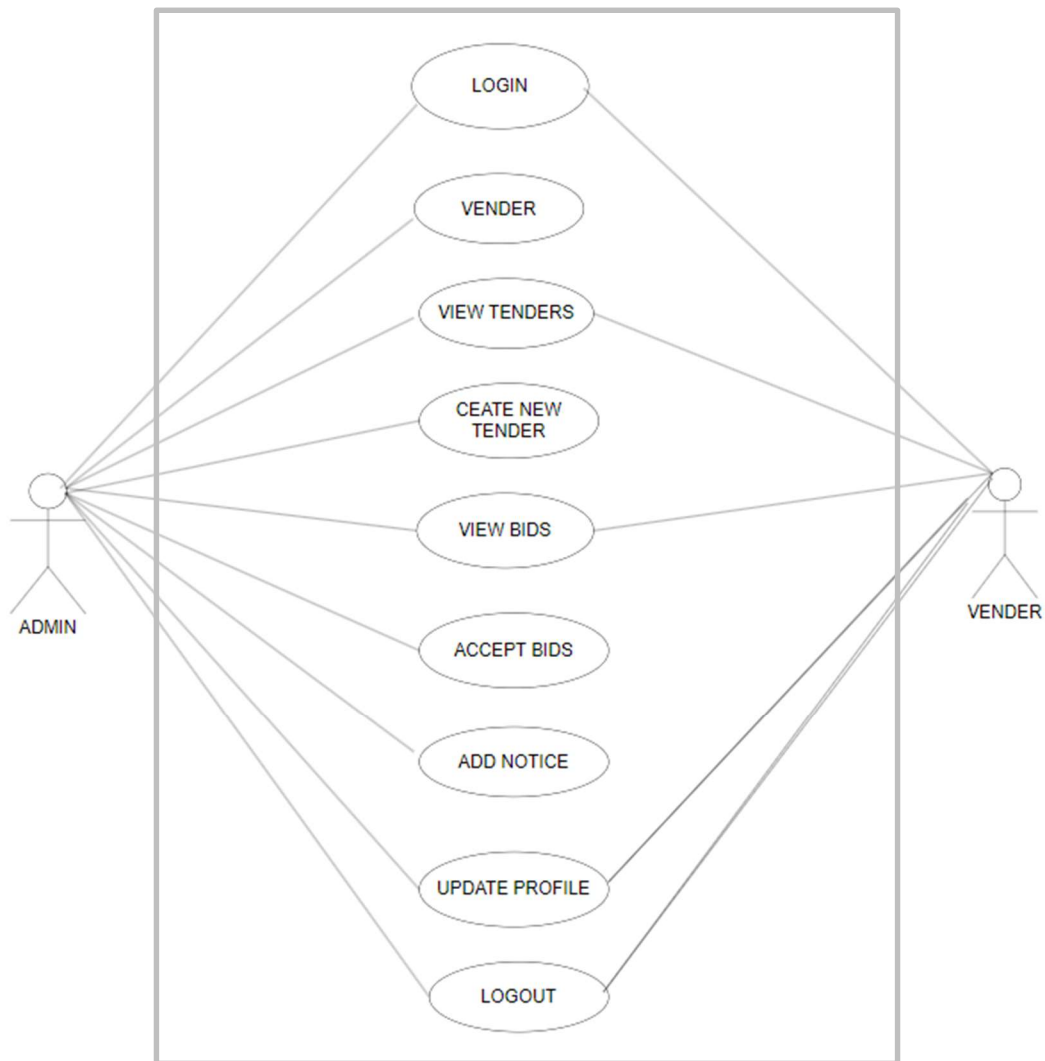


Fig (1) : Use Case Diagram

Use case diagrams are a set of use cases, actors, and their relationships. They represent the use case view of a system. A use case represents a particular functionality of a system. Hence, use case diagram is used to describe the relationships

## 5.0 Design

### 5.1 Use Case Scenarios

#### 5.1.1 Construction Industry:

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#### 5.1.3 IT Services:

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#### 5.1.4 Nonprofit Fundraising:

A nonprofit organization is planning a fundraising event and needs event management services. They use an e-tendering platform to request proposals from event management companies, ensuring cost-effectiveness for their fundraising efforts.

#### 5.1.5 Legal Services:

A law firm needs to hire outside counsel for a complex litigation case. They use an e-tendering system to invite proposals from law firms, evaluating their expertise and cost structure before making a selection.

These scenarios demonstrate how e-tendering systems can be applied across different industries to streamline procurement processes, ensure transparency, and select the best vendors or contractors for specific projects or needs.

## 5.2 Diagrams

### 5.2.1 Data Flow Diagram:

### 5.2.2 level O DFD:

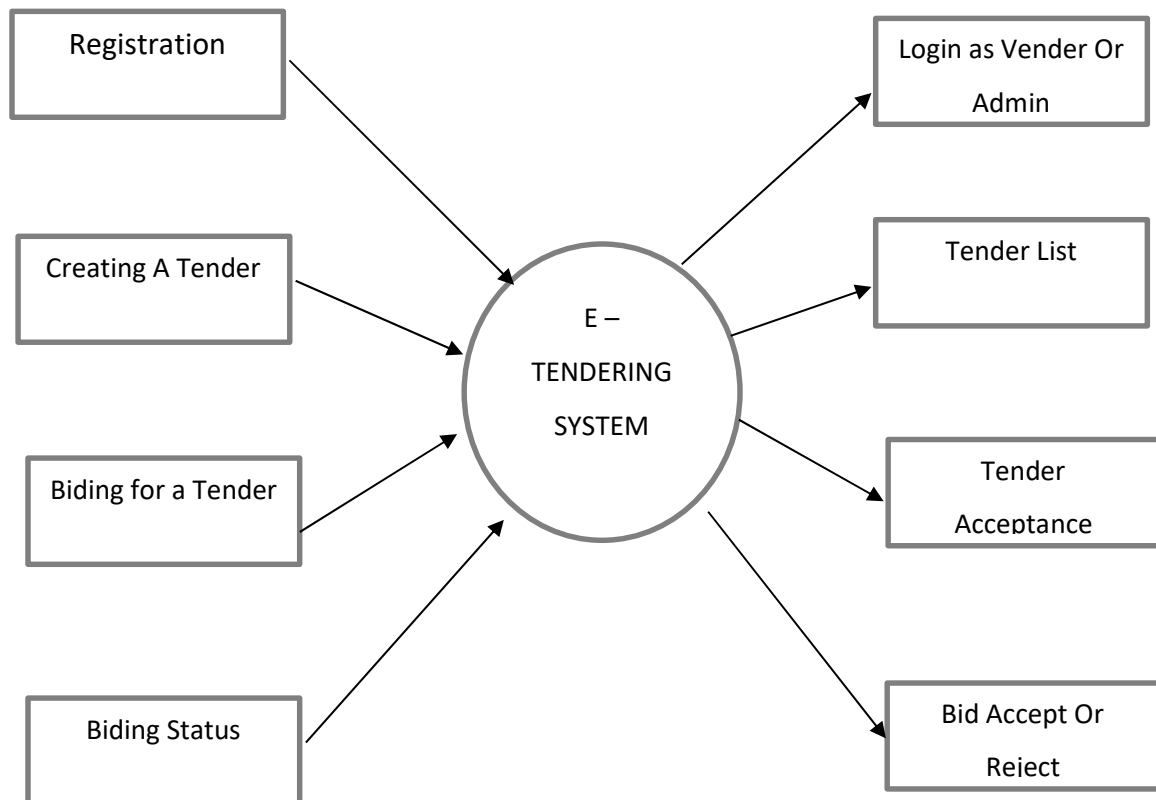
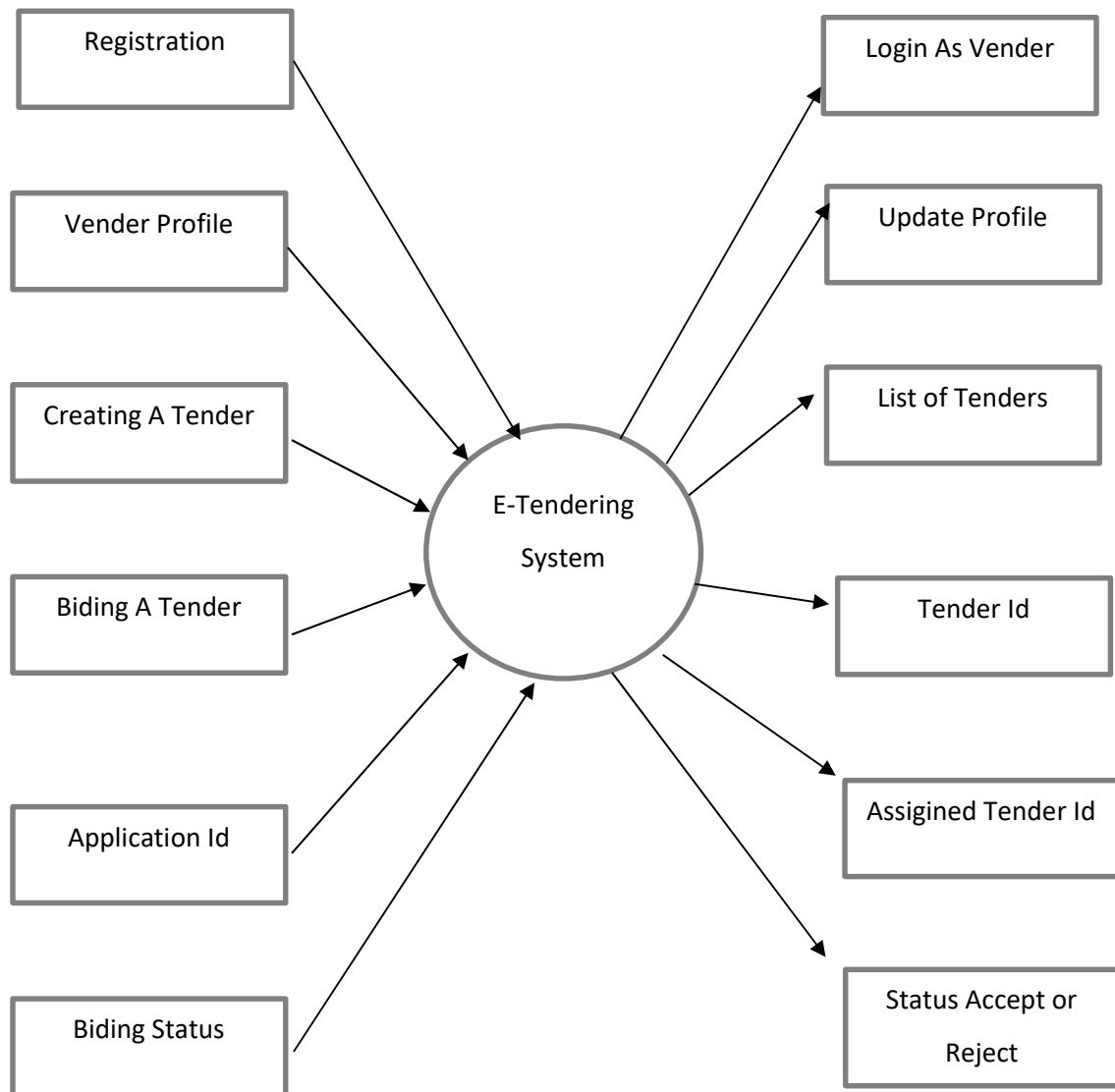


Fig ( 2 ) : level O DFD

**5.2.3 level one DFD:**

Fig(3) : Level one DFD

#### 5.2.4 level Second DFD:

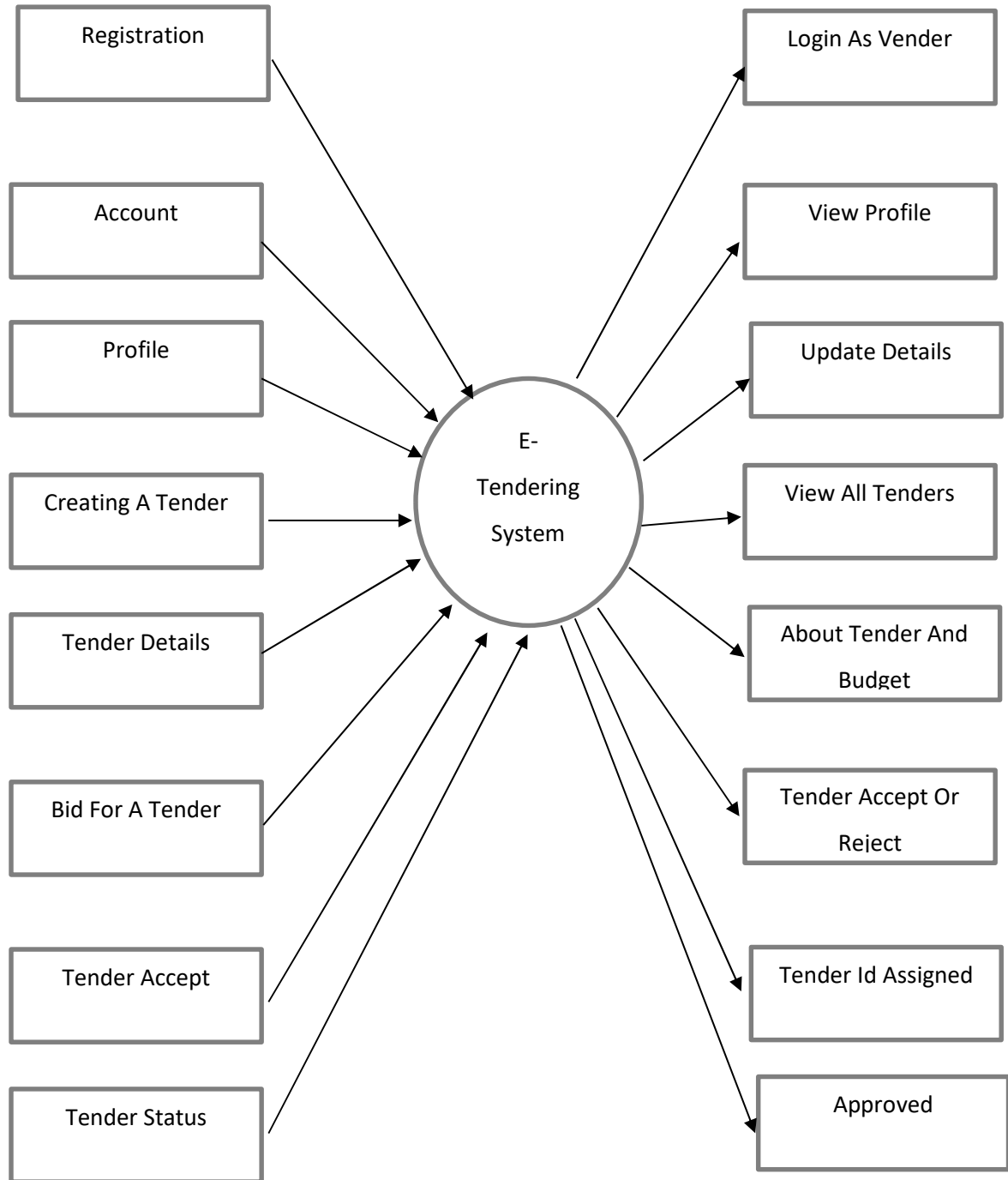
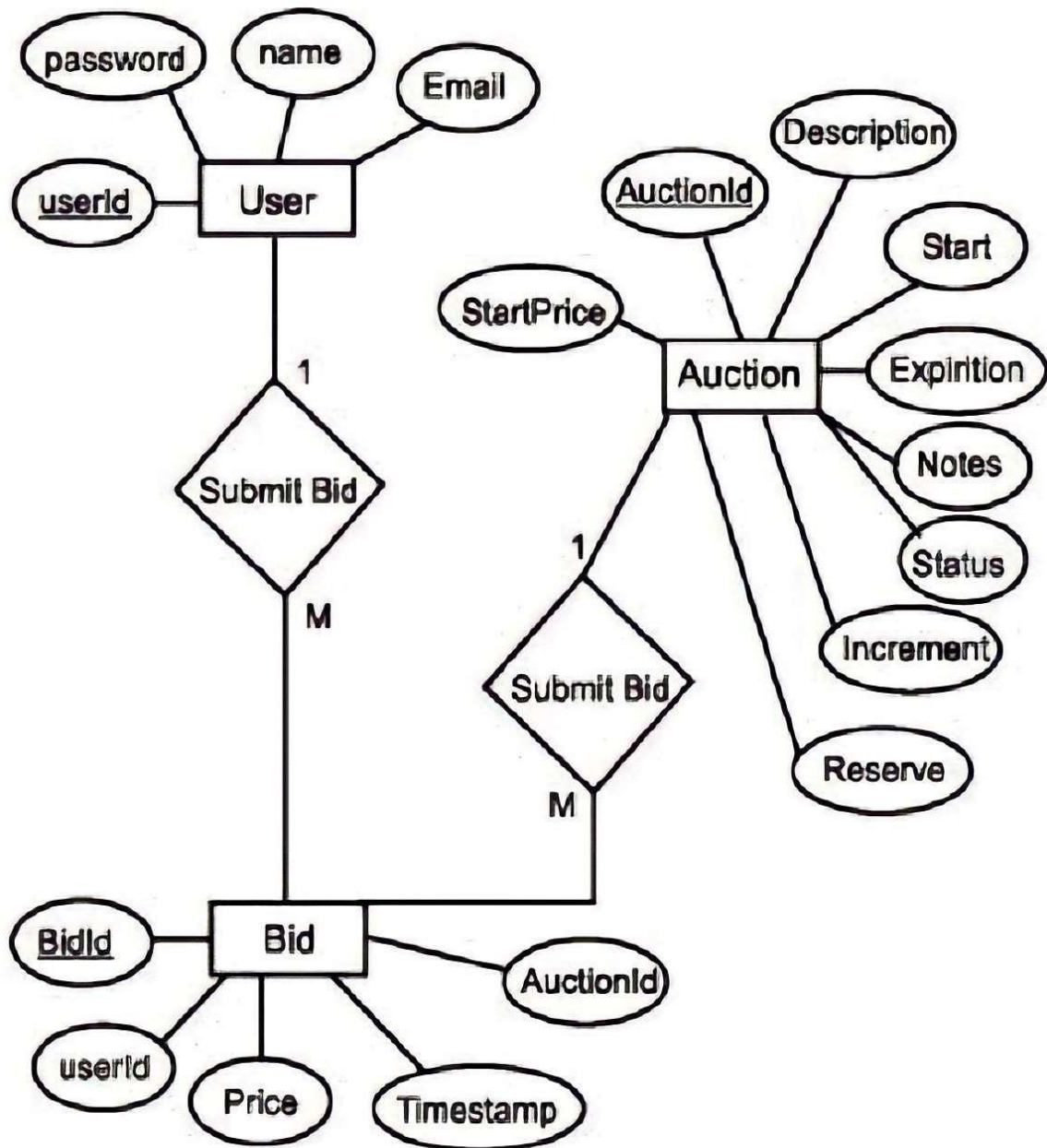


Fig ( 4 ) : Level Second DFD

## 5.2.5 Entity Relationship Diagram:

## Entity Relationship Diagram



Fig(5) : Entity Relationship Diagram



### 5.3 Data Dictionary

The data dictionary of any system is an integral component of structure analysis, since data flow diagrams by themselves do not fully describe the subject under investigation about the system.

A data dictionary is a catalog a repository of the elements in the system. These elements center on data and the way they are structured to meet user requirements and organization needs. This step of creating a data dictionary is simultaneous with the process of making data flow diagram(s). Here all the data fields in their respective tables are allotted so as to access these data in the system. The data tables are created in a back-end tool like Microsoft Access, Oracle, FoxPro, etc. Here in the Billing system for Book stall we using tables created in Access as it are the back-end tool used in the system.

The data dictionary consists of different major elements like Data Elements, Data Store [Tables Used], Data Flow, Processes and other External entities used in the system. The data dictionary stores details and description of these elements.

It is developed during data flow analysis and assists the analysts involved in determining the system requirements. Analysts use data dictionary for the following important reasons:

To manage the details in large system.

To communicate a common meaning for all system elements.

To document the features of the system.

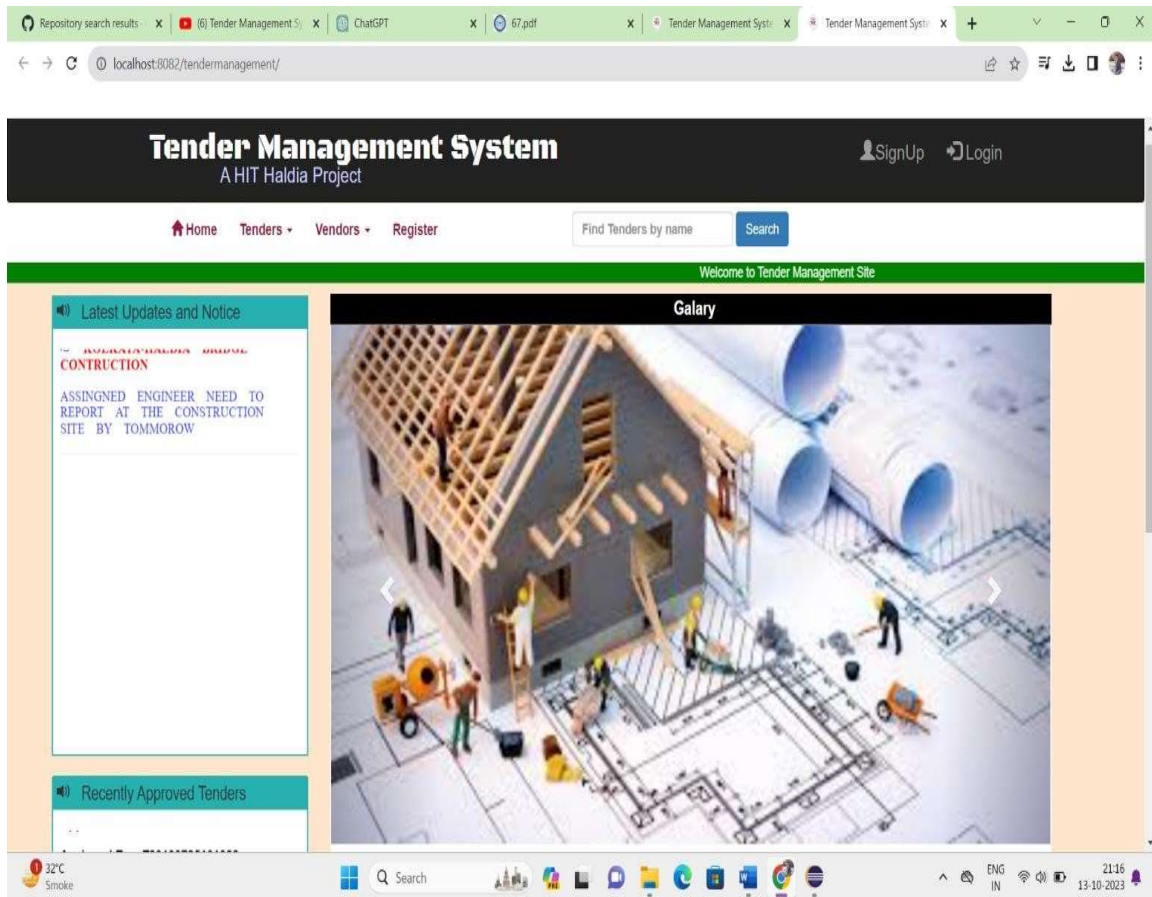
To facilitate analysis of the details in order to evaluate the characteristics and determine where system changes should be made. To locate errors and omissions in the system. The data dictionary contains different types of descriptions for the data flowing through the system.

Data Elements is the most fundamental level which is also considered as the building block for all other data in the system. It refers to all the different data used like fields, data item, etc. to make the system fully functional irrespective to the table used in the system. Here all the different type of fields used to make table are written sequentially without referring to the tables. This process helps in the process of Normalization of tables.

## 6.0 IMPLEMENTATION

### 6.1 Form Layouts:

#### 6.1.2 Home Page



Fig(6) : Home page

**HOME PAGE:** In this page will display the modules of a project. It will contain the various sections like registration , login as ana admin , login as vender etc .

### 6.1.2 Admin login page

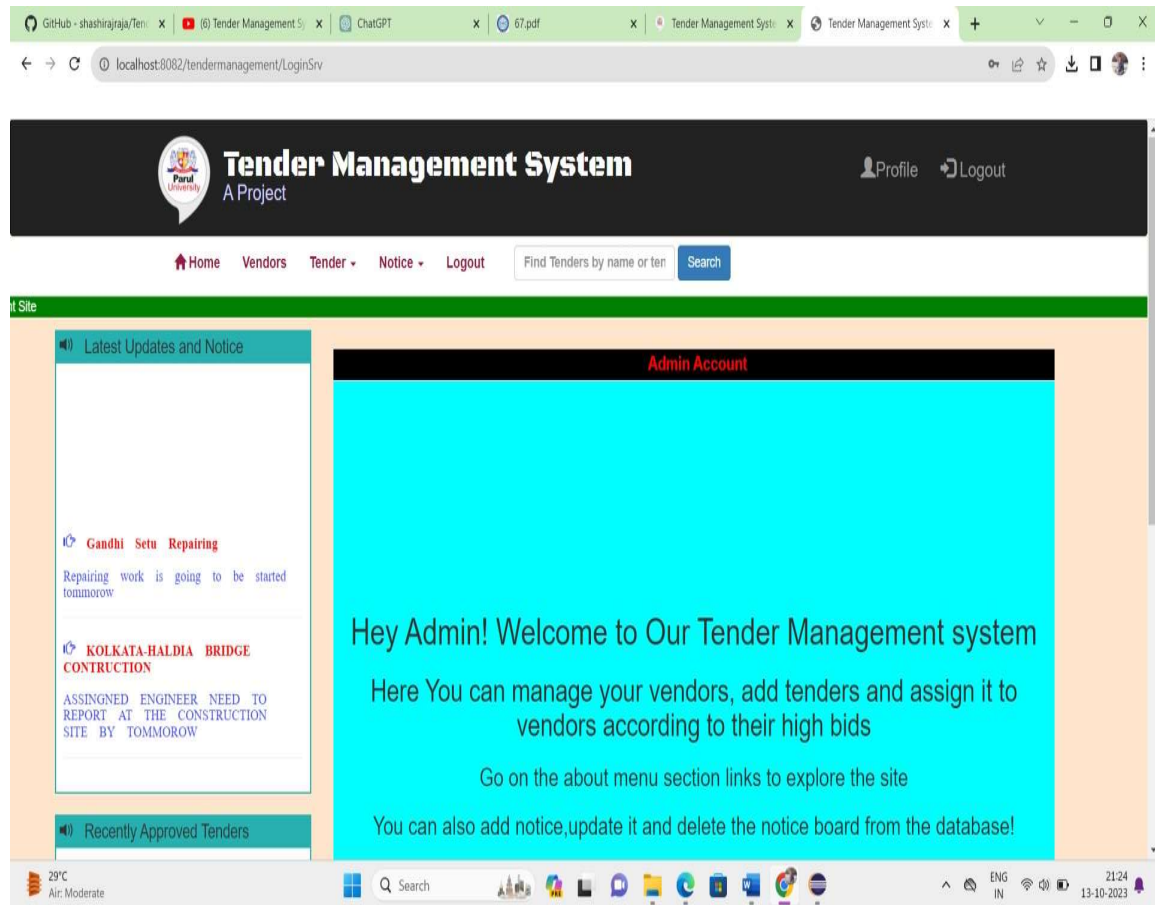


Fig (7) : Admin page

Admin Page : Admin will register with his unique id and password after login he will perform here operations . operations such as

- Vender Details
- Biding Section
- Tender Creation

## 6.2 Report Layouts

### 6.2.1 Creating Tenders

The screenshot displays a web browser window with the URL `localhost:8082/tendermanagement/createTender.jsp`. The application header includes the logo of Parda University, the title "Tender Management System A Project", and links for "Profile" and "Logout". The navigation menu contains "Home", "Vendors", "Tender", "Notice", and "Logout". A search bar is present with the placeholder text "Find Tenders by name or tenderid" and a "Search" button. The main content area is titled "Welcome to Tender Management Site" and features a sidebar with "Latest Updates and Notice" and "Recently Approved Tenders". The "Add New Tenders" form is the central focus, containing the following fields:

Add New Tenders	
Tender Name :	<input type="text"/>
Tender type :	<input type="text" value="Construction"/>
Base Price :	<input type="text"/>
Strict Deadline :	<input type="text" value="dd-mm-yyyy"/>
Location :	<input type="text"/>
Description :	<input type="text"/>
<input type="button" value="Launch This Tender"/>	

The Windows taskbar at the bottom shows the system clock as 21:44 on 13-10-2023, with a temperature of 29°C and a "Smoke" alert.

Fig(8) : Creating Tender

**Creating Tender** : Here admin can submit bid in response to procurement opportunity for creating a tender admin need the full details about the tender like company name , project and money.

### 6.2.2 Accept Bid

The screenshot displays the Tender Management System web application. The browser address bar shows the URL: localhost:8082/tendermanagement/viewTenderBids.jsp. The application header includes the logo of Parul University, the title "Tender Management System A Project", and links for Profile and Logout. The navigation menu includes Home, Vendors, Tender, Notice, and Logout. A search bar is present with the placeholder text "Find Tenders by name or ten" and a Search button. The main content area features a table of tenders with columns: Tender Id, Tender Name, Tender Type, Location, Deadline, Description, and View Bids. A dropdown menu is open under the "Tender" navigation item, showing options: View all Tenders, Create New Tender, View Tender Bids, Accept a bid (highlighted in red), and View Assigned Tenders. The table lists five tenders:

Tender Id	Tender Name	Tender Type	Location	Deadline	Description	View Bids
T20190725022124	Gandhi Setu Highway	maintenance	Patna, Bihar	2019-07-19	Highway	<a href="#">View Bids</a>
T20190725022416	MEGA CITY CONNECTING ROAD CONSTRUCTION	construction	Delhi	2019-09-14	mega city road construction	<a href="#">View Bids</a>
T20190725022601	KOKATA HALDIA BRIDGE CONSTRUCTION	construction	KOLATA-HALDIA	2019-07-28	bridge construction from kolkata to haldia	<a href="#">View Bids</a>
T20190725101239	Game Development	software	Banglore, India	2019-07-19	We are going to start a project on game development using GPS specification.	<a href="#">View Bids</a>
T20190725101322	Game Development	software	Banglore, India	2019-07-19	We are going to start a project on game development using GPS specification.	<a href="#">View Bids</a>

Below the table, there is a section titled "Our Amazing Team Members" with a list of team members. The bottom of the page shows the Windows taskbar with the date 16-10-2023 and time 12:32.

Fig (9) : Accept Bid

Accept Bid : In this section admin has to Decide whether he wants to accept the bid not which is bid by the vender

### 6.2.3 View assigned Section

The screenshot shows the 'View assigned Tenders' section of the Tender Management System. The interface includes a navigation bar with 'Home', 'Vendors', 'Tender', 'Notice', and 'Logout' options. A dropdown menu under 'Tender' shows options like 'View all Tenders', 'Create New Tender', 'View Tender Bids', 'Accept a bid', and 'View Assigned Tenders'. The main content area displays a table titled 'All Assigned Tenders List' with columns for Tender Id, Vendor Id, Application Id, and Status. The table lists four assigned tenders. On the left, there is a 'Latest Updates and Notice' section with a notice about 'Gandhi Setu Repairing'.

Tender Id	Vendor Id	Application Id	Status
T20190725022124	V20190725022813	B20190725023010	Assigned
T20190725022416	V20190725023446	B20190725023512	Assigned
T20190725022601	V20190725022813	B20190725024243	Assigned
T20190725101322	V20190725022813	B20190725101554	Assigned

Fig (10) : View assigned Section

**View assigned Section :** In this Section we can see all the accepted bids



## 6.3 Coding Convention

Coding conventions are important for maintaining consistency and readability in software development. When designing a coding convention for a tendering system, consider the programming language(s) and technologies

you'll be using, as well as any specific coding standards followed within your organization or industry. Below, I'll provide a general set of coding conventions that you can adapt to your specific needs. I'll assume you're using a language like Java as a reference:

### 6.3.1 Naming Conventions

- Use meaningful names for variables, classes, and functions.
- Class names should be in CamelCase (e.g., `Tender`, `Bid`, `User`).
- Variable names should be in camelCase (e.g., `tenderID`, `organizationName`)
- Constants should be in UPPERCASE\_WITH\_UNDERSCORES (e.g., `MAX\_BUDGET`).

Use descriptive and meaningful names, avoid single-letter variable names (e.g., use `startDate` instead of `s`). Document the purpose, parameters, and return values of methods.

### 6.3.2 Indentation and Formatting:

Use consistent indentation (typically 4 spaces) for code blocks. Use braces for all control structures (if, for, while) and place them on new lines. Limit lines to a reasonable length (e.g., 80-120 characters) for readability. Use comments to explain complex algorithms or non-obvious code.

### 6.3.2 Comments:

Use meaningful comments to explain the purpose of classes, methods, and significant code sections. Keep comments up to date; remove obsolete comments that no longer apply. Avoid excessive comments for self-explanatory code.

### 6.3.3 Documentation:

Provide inline documentation for public methods and classes using a tool like Javadoc or Doxygen.

## 7.0 TESTING

### 7.1 Testing Strategy

#### 7.1.1 SYSTEM TESTING

System Testing is a level of testing that validates the complete and fully integrated software product. The purpose of a system test is to evaluate the end-to-end system specifications. Usually, the software is only one element of a larger computer based system. Ultimately, the software is interfaced with other software/hardware systems.

System Testing is actually a series of different tests whose sole purpose is to exercise the full computer-based system.

#### 7.1.2 UNIT TESTING

Unit testing is a software development process in which the smallest testable parts of an application, called units, are individually and independently scrutinized for proper operation. This testing methodology is done during the development process by the software developers and sometimes QA staff. The main objective of unit testing is to isolate written code to test and determine if it works as intended. Unit Testing is defined as a type of software testing where individual components of a software are tested. Unit Testing of software product is carried out during the development of an application. An individual component may be either an individual function or a procedure. Unit Testing is typically performed by the developer.

- Objective of Unit Testing:
- To isolate a section of code.
- To verify the correctness of code.
- To test every function and procedure.
- To fix bug early in development cycle and to save costs.

To help the developers to understand the code base and enable them to make changes.

To help for code reuse.

#### 7.1.3 INTEGRATION TESTING

It aims at finding interfacing issues b/w the modules i.e. if the individual units can be integrated into a sub-system correctly.

Integration testing is the process of testing the interface between two software units or module. It's focus on determining the correctness of the interface. The purpose of the integration testing is to expose faults

in the interaction between integrated units. Once all the modules have been unit tested, integration testing is performed.

Integration test approaches:

There are three types of integration testing approaches. Those approaches are the following:

1. **Big-Bang Integration Testing:** It is the simplest integration testing approach, where all the modules are combining and verifying the functionality after the completion of individual module testing. In simple words, all the modules of the system are simply put together and tested. This approach is practicable only for very small systems. If once an error is found during the integration testing, it is very difficult to localize the error as the error may potentially belong to any of the modules being integrated. So, debugging errors reported during big bang integration testing are very expensive to fix.
2. **Bottom-Up Integration Testing:** In bottom-up testing, each module at lower levels is tested with higher modules until all modules are tested. The primary purpose of this integration testing is, each subsystem is to test the interfaces among various modules making up the subsystem. This integration testing uses test drivers to drive and pass appropriate data to the lower level modules.
3. **Top-Down Integration Testing:** Top-down integration testing technique used in order to simulate the behaviour of the lower level modules that are not yet integrated. In this integration testing, testing takes place from top to bottom. First high-level modules

#### **7.1.4 ACCEPTANCE TESTING**

Acceptance Testing is the final and one of the most important levels of testing on successful completion of which the application is released to production. It aims at ensuring that the product meets the specified business requirements within the defined standard of quality.

## 7.2 Test Cases

Sr. no	Test Case Description	Test Steps	Inputs	Expected Result	Actual Result	pass/Fail
01	User Registration	1. Navigate to the registration page. 2. Enter valid user details. 3. Click the 'Register' button.	Yugandhar <a href="mailto:Yugandhar27@gmail.com">Yugandhar27@gmail.com</a> 8247567892 10-18,Gollagudem,ap5342 27Parul yugandhar@9	User is registered successfully, and a confirmation message is displayed.	Registration Successful. Your Vendor id: V202310112454 Thanks For Registration	Pass
02	User Login	1. Navigate to the login page. 2. Enter valid login credentials. 3. Click the 'Login' submit.	<a href="mailto:yugandhar27@gmail.com">yugandhar27@gmail.com</a> yugandhar@9	User is logged in successfully and redirected to the dashboard.	Hey Dude! Welcome to Our Tender Management system	Pass
03	Create a New Tender	1. Log in as a registered user. 2. Navigate to the "Create New Tender" page. 3. Fill in all required fields.	Building Construction Construction 10000 30-10-2023 Vadodara I need Proper Report on time	New tender is created, and it's listed in the user's dashboard	New Tender Inserted Your Tender id: T20231018095013	Pass

		4. Click 5. Submit.				
04	View Submitted Tenders	1. Log in as a user who has submitted tenders. 2. Navigate to the	List of submitted tenders is displayed.	List of submitted tenders is displayed.	All Assigned Tenders List was displayed	Pass

## 8.0 Future Enhancement

Our project tender management system has successfully created a user friendly environment in tender Management process. our project is flexible and changes can be incorporated easily. It is so designed that the further modifications to the system can be easily done. When it comes to applications such as tender portals, are

where transparency and security are of foremost importance, traditional technologies and design patterns cannot be used as they put a threat to these requirement. As discussed earlier, there are many security requirements are for a tendering framework that cannot be solved just by using a centralized tender portal for creating and bidding

on the contracts. The security requirements and openness required from this type of application can only be solved by using fair, open, decentralized technology such as Smart Contracts. In this paper, how such a system can be they designed by mentioning

## 9.0 Bibliography

**9.1 smith, J. (2020).** "The Evolution of E-Tendering Systems." Journal of Procurement Technology, 15(2), 45-62.

**9.2 Brown, A., & Jones, M. (2018).** "Implementing E-Tendering Systems: Best Practices and Challenges." International

**9.3 Kumar, R., & Gupta, S. (2019).** "Security Measures in E-Tendering Systems: A Comprehensive Review." Journal o

**9.4 Chen, L., & Wang, Y. (2017).** "A Comparative Study of E-Tendering Systems in Different Industries." International Journal of Business Information Systems, 24(4), 321-335.

**9.5 Government of [Your Country]. (Year).** "Guidelines for E-Tendering Implementation." [Government Publishing Offician

<https://nanonets.com/blog/e-tendering/>

<https://in.search.yahoo.com/search?fr=mcafee&type=E211IN714G0&p=we+need+the+links+about+the+e+tendering+management+system>

<https://in.video.search.yahoo.com/search/video?fr=mcafee&ei=UTF-8&p=we+need+the+links+about+the+e+tendering+management+system&type=E211IN714G0#id=2&vid=f0a16beb6c>

