GUWAHATI REFINERY

Guwahati, Assam

SUMMER INTERNSHIP PROJECT REPORT

ON

"Online Tender Management System" (OTMS)

SUBMITTED BY:

PRASHANTA RAJON BAROOAH
B.Tech in Computer Science and Engineering (CSE)
KIIT University
21053343

UNDER THE GUIDANCE OF:

Mr. Jon Jonak Phukan
Chief Manager,
Information systems
Indian Oil Corporation
Limited, Guwahati

Indian Oil

Indian Oil Corporation Limited, Guwahati, Assam

CERTIFICATE

This is to certify that the Internship Report on "**Online Tender Management System**" submitted by **Prashanta Rajon Barooah** is a bonafide record of work done by him and submitted during the 2024 Summer Internship for 30 days i.e. June 1st to June 30th.

Mr. Jon Jonak Phukan

Chief Manager,
Department of Information systems
Indian Oil Corporation
Limited, Guwahati

DECLARATION

The project work entitled **"ONLINE TENDER MANAGEMENT SYSTEM"** presented in this report has been submitted to the Guwahati Refinery, (INDIAN OIL CORPORATION LIMITED), Noonmati, Guwahati, in fulfilment for completion of the Summer Internship undergone from 01/06/2024 to 30/06/2024 for the year 2024

This report has not been submitted for any other examination and does not form part of any other course undergone by us.

Sincerely**,**

PRASHANTA RAJON BAROOAH

ACKNOWLEDGEMENT

We are thankful to IOCL, Guwahati Refinery, Noonmati, Guwahati, for providing us an opportunity to undergo the Summer Internship. We perceive this opportunity as a big milestone in our career development. We will strive to use gained skills and knowledge in the best possible way and will continue to work on their improvement, in order to attain desired career objectives.

We articulate our sincere gratitude to our project guide Mr. Jon Jonak Phukan, Chief Manager, Information Systems, Indian Oil Corporation Ltd. who has spent his valuable time and guided us throughout the training process in developing a web-based application titled **"Online Tender Management System**" .

We sincerely thank Mr. Ashim Kumar Deka, CM(IS), IOCL, Guwahati Refinery, for his guidance and encouragement during our internship.

We also express our gratitude to Mr. S Prabhu, SM (MS, L&D), IOCL, Guwahati Refinery, for his guidance and extended support in assigning our guides and also briefing us about IOCL, Guwahati Refinery.

ABSTRACT

The “Online Tender Management System” is an innovative and comprehensive software solution designed to streamline and enhance the efficiency of the tendering process. This project is developed using the Java programming language and utilizes MySQL as the back-end database. In this system, registered organizations can publish tender notices, while registered vendors can submit bids electronically. The system provides a user-friendly web-based interface for both organizations and vendors to interact with the tendering process.

The administrator can create, manage, and publish tender announcements, along with necessary documents and specifications. Vendors can access these announcements, submit bids online, and track the status of their submissions. The core functions of the system include user authentication, tender creation, bid submission, evaluation, and awarding of contracts. User authentication ensures secure access to the system, allowing only authorized users to participate. Tender creation involves specifying detailed information about the project, requirements, submission deadlines, and relevant documents. Suppliers can then submit their bids electronically, eliminating the need for physical submissions. The evaluation process ensures fairness and transparency while assisting organizations in selecting the most suitable bid

Upon evaluation, the system facilitates the contract awarding process to the winning vendor. MySQL, a robust relational database management system, is utilized to store and manage tender-related data, including organization profiles, tender announcements, bid submissions, evaluation criteria, and contract details.

TABLE OF CONTENTS

ABOUT INDIAN OIL CORPORATION LTD

(Indian Oil Corporation) was formed in 1964 as the result of merger of Indian Oil Company

Ltd. (Estd. 1959) and Indian Refineries Ltd. (Estd. 1958).

Indian Oil Corporation Ltd. is the highest ranked Indian company in the prestigious Fortune ‘Global

500’. It is ranked at 109th position in 2010. It is also the 20th largest petroleum company in the world.

Indian Oil and its subsidiaries today account for 49% petroleum products market share in India. In May, 2018, IOCL became India's most profitable state-owned company for the second consecutive year, with a record profit of ₹21,346 crore in 2017-18.

VISION OF IOCL

A major diversified, transnational, integrated energy company, with national leadership and a strong environmental conscience, playing a national role in oil security & public distribution.

BUSINESS DIVISIONS

There are 7 major Business Divisions in the organization: Refineries Division

Pipelines Division

Marketing

Division R&D

Division

Petrochemicals

Division

Exploration & Production (E&P)

Division Explosives and

Cryogenics Division

REFINERY LOCATIONS

- Barauni Refinery
- Bongaigaon Refinery
- CPCL, Chennai
- CPCL, Narimanam
- Digboi Refinery
- Guwahati Refinery
- Haldia Refinery
- Koyali Refinery
- Mathura Refinery
- Panipat Refinery
- Paradip Refinery
- Numaligarh Refinery

PRODUCTS OFFERED BY IOCL

Indian Oil is not only the largest commercial enterprise in the country, it is the flagship corporate of the Indian Nation. Besides having a dominant market share, Indian Oil is widely recognized as

India's dominant energy brand and customers perceive Indian Oil as a reliable symbol for high quality products and services.

Major Products of IOCL are:

- Indane Gas
- Auto Gas
- Natural Gas
- Diesel/Gas oil
- ATF/Jet Fuel
- SERVO lubricants & greases
- Marine Fuels & Lubricants
- Kerosene

PROBLEM STATEMENT

The Information System Department of Guwahati Refinery is ISO 27001:2013 Certified and is one of the refineries in India which has developed in both the web and app technology as well, wherein both provides information and services to staff as well as the public customers. Online Tender Management System will help the supplier to register himself as a vendor in IOCL and it will help the tender management department of IOCL to track the tenders in accordance with their details and furthermore calculate the bids placed by the vendors which can later be used for billing.

1. INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE PROJECT

The Online Tender Management System is an web-based application designed to streamline the tendering process for organizations(IOCL) and vendors. Administrators can use this system to create, manage, and publish tender announcements, while vendors can register and submit bids electronically through a user-friendly web interface.

The system enables both organizations and vendors to interact seamlessly throughout the tendering process. It facilitates the submission of bids, tracks the status of each submission, and provides necessary updates to all parties involved. This ensures that the tendering process is transparent, efficient, and accessible.

This website can be utilized to track the historical data regarding tenders, bids, and contracts through the system. This feature allows for better record-keeping and future reference, aiding in audits and reviews.

1.2 OVERVIEW OF OUR IOCL OTMS

- Landing Pages for Organizations and vendors
- Sufficient fields for entry of tender details and vendor details
- Detailed fields for suppliers to enter their profiles, qualifications and bid details.
- Efficient Tracking System for Bid Submissions and Status Updates
- Functionality for Creating Supplier IDs
    - Automated generation of unique IDs for suppliers upon registration.
    - Secure authentication process to ensure that only authorized users can access the system.
- Operations for maintenance of records and retrieval.
    - Easy retrieval of historical data for tenders, bids, and contracts
    - Efficient search and filter options to quickly find relevant information.

2. SYSTEM REQUIREMENT ANALYSIS

2.1 FUNCTIONAL REQUIREMENT OF THE VENDOR SIDE

Log In-
Input-Email Address, Password.

Output-Logged in!, Incorrect Password or username, Dashboard.

Log out-
Input- Logout

Output- Logged out.

Register-
Input- Email Address, Name, Mobile no., Address, Company, Password

Output- Successfully Registered.

2.2 FUNCTIONAL REQUIREMENT OF THE ADMIN SIDE

Log In-
Input- Email Address, Password.
Output- Logged In, Incorrect Password or username.

Log out-
Input- Logout

Output- Logged out.

2.3 SYSTEM REQUIREMENTS (SERVER)

a) ANY SYSTEM THAT CAN SUPPORT MODERN JAVA-RUNTIME ENVIRONMENT, MYSQL, APACHE AND TOMCAT WEB SERVER.

b) MEMORY: 2GB or MORE

c) PROCESSOR: ANY MODERN QUAD CORE PROCESSOR

d) DISK SPACE: 2GB MINIMUM (EXCLUDING DATABASE)

2.4 SYSTEM REQUIREMENTS (WEB-APP)

DESKTOP RUNNING WINDOWS VER 7.0 or HIGHER WITH CHROME BROWSER AND JAVA DEVELOPMENT KIT (JDK), ECLIPSE DEVELOPMENT ENVIRONMENT, MYSQL INSTALLED.

3. IMPLEMENTATION

IOCL OTMS is a web-based application. It has four main components:

Admin Portal

- The admin portal grants full permissions to administrators for managing the tendering process.
- Admins can create and publish new tender announcements, including project details, requirements, and submission deadlines.
- View and manage a comprehensive list of all published tenders.
- Track the status of all bids submitted by suppliers, including evaluation progress and final contract awarding.

Supplier Portal

- The supplier portal allows registered suppliers to access and interact with tender announcements.
- Suppliers can submit their bids electronically, including all necessary documentation and qualifications.
- Track the status of their submitted bids, including updates on evaluation and selection processes.
- Receive notifications and alerts about new tenders, bid statuses, and other relevant updates.
- Access historical data and records of their previous bid submissions and contracts awarded.

Front-end

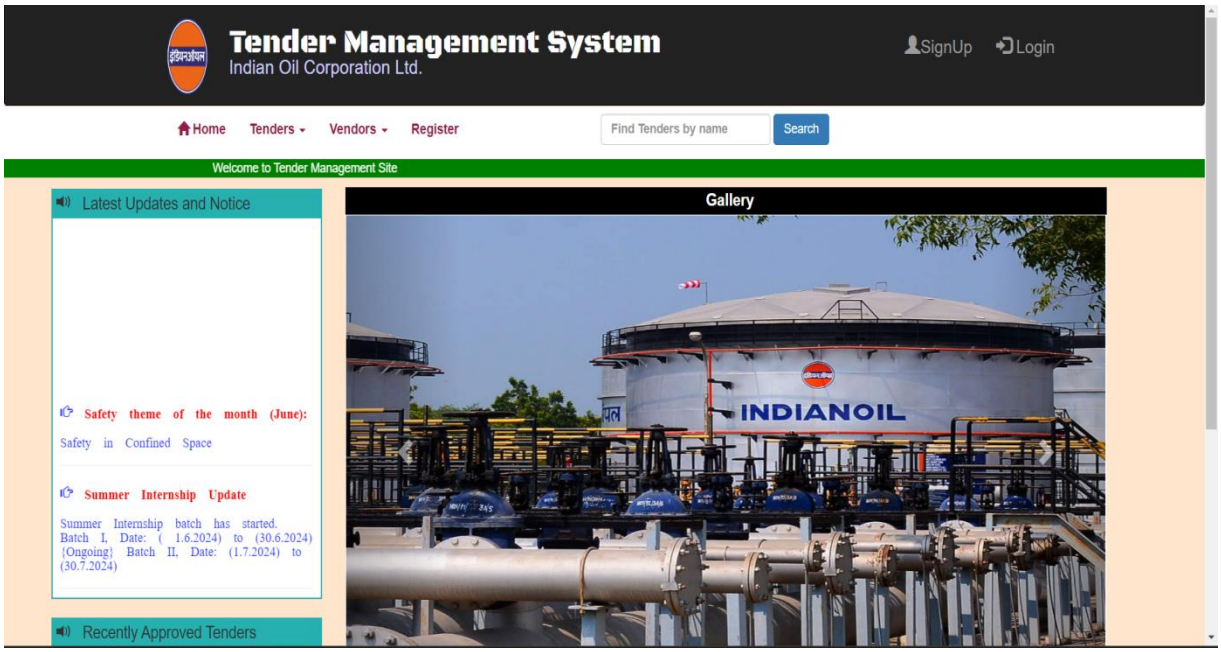
- The frontend of the Online Tender Management System is designed using JSP (JavaServer Pages), providing a dynamic and interactive user experience.
- JSP enables the creation of responsive web pages that interact seamlessly with the backend server, displaying real-time data and updates to users.
- The user interface includes intuitive navigation, clear layouts, and accessible forms for both administrators and suppliers.

Back-end

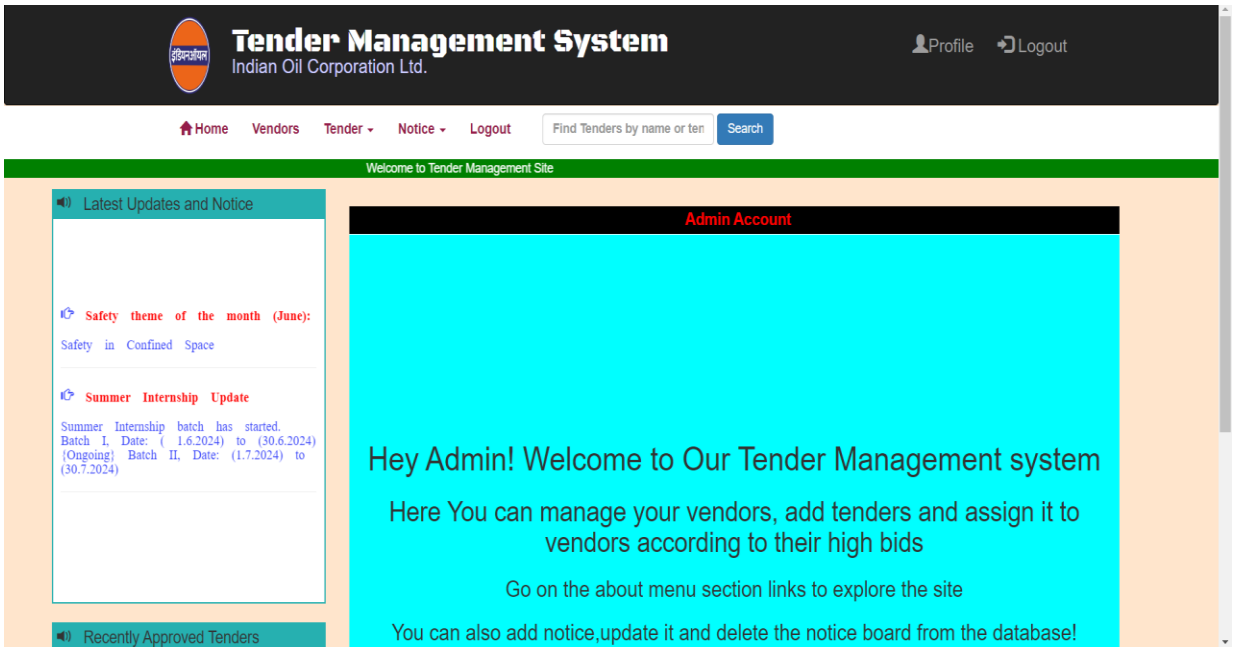
- The backend server for the Online Tender Management System is implemented using Java, utilizing JDBC, Servlets, and JSP.
- Java Servlets handle the request-response cycle, managing the interaction between the user interface and the backend logic.
- JSP (JavaServer Pages) is used for rendering dynamic content on the web pages, enhancing the user experience with a responsive and interactive interface.
- JDBC (Java Database Connectivity) facilitates seamless communication between the Java application and the MySQL database.

3.1 Admin Portal

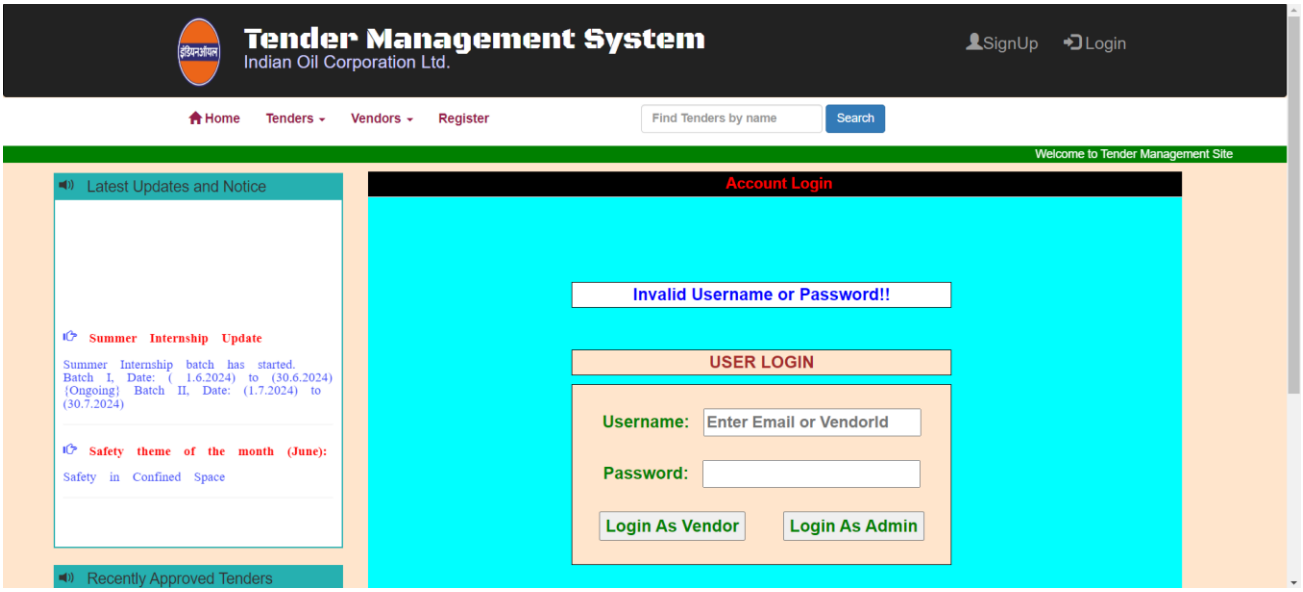
i. First, Admin navigates to the home page.



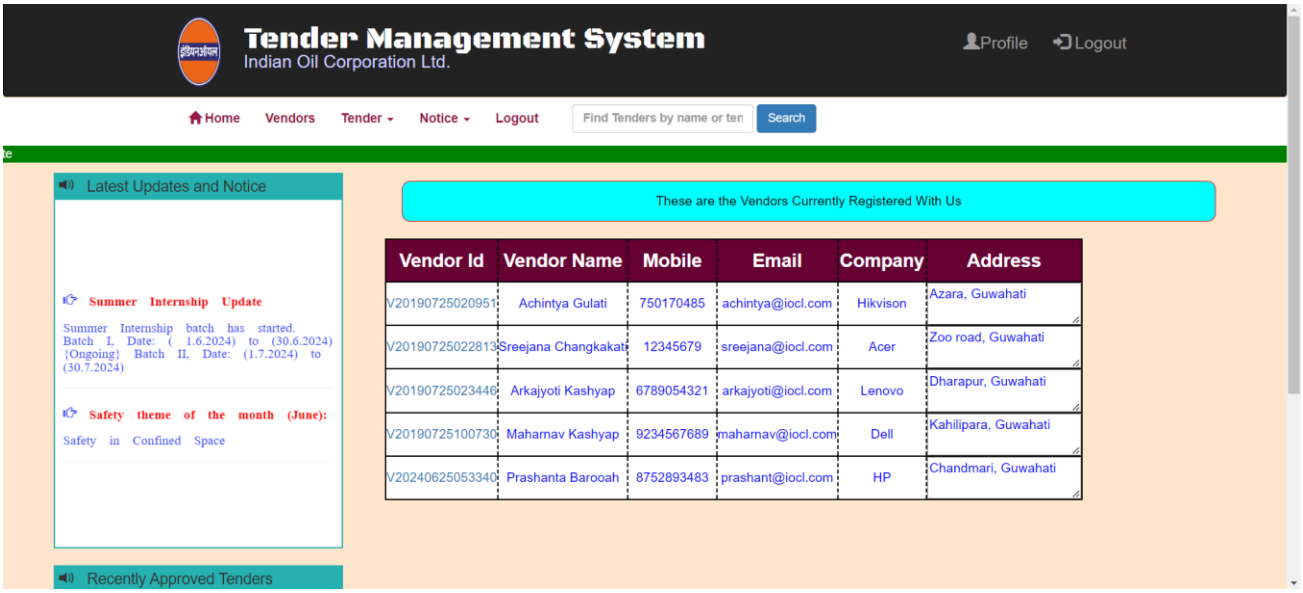
ii. After Successfully logged in the admin will be able to view the actual features of the web-based app.



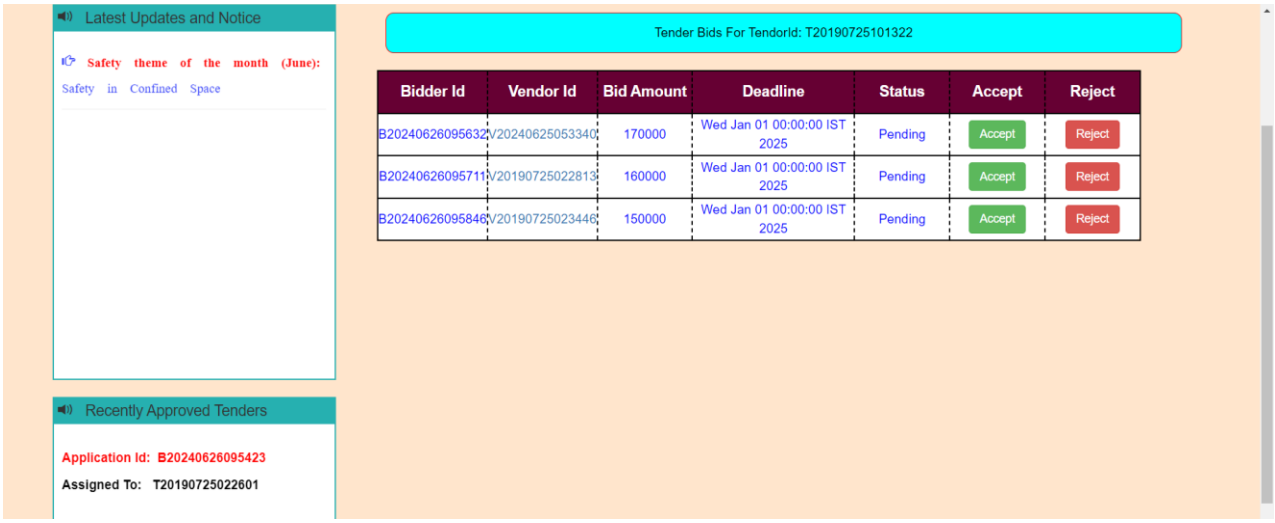
iii . In the admin login page, the user can log on with registered email and password admin can log in.If the given password or email is invalid then it will display' incorrect password' or' wrong details'.



iv . After successfully log in the admin can access various features .For eg: all the registered vendors details



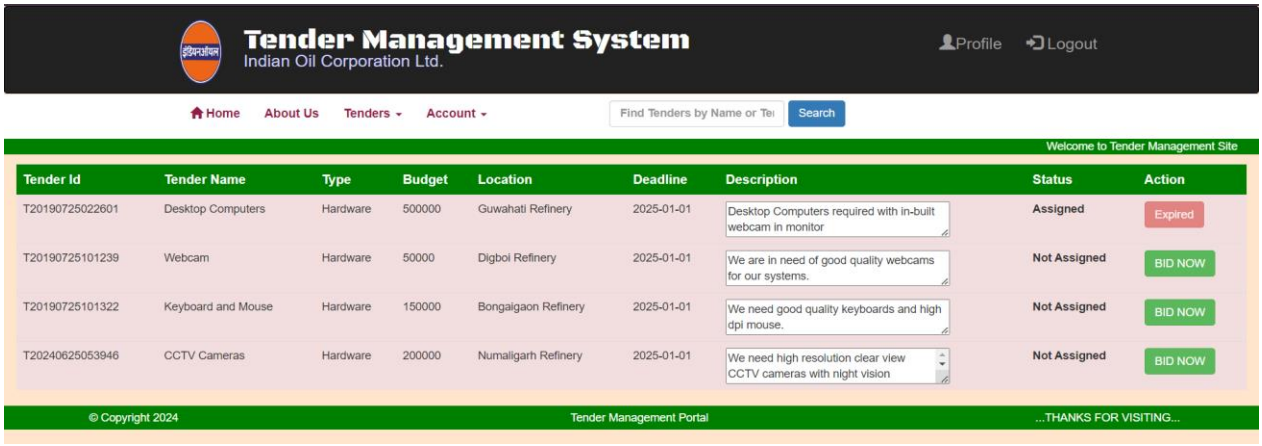
v . After successfully log in if the admin accepts or reject a bid for a particular tender from any vendor it will appear in the recently approved tenders section

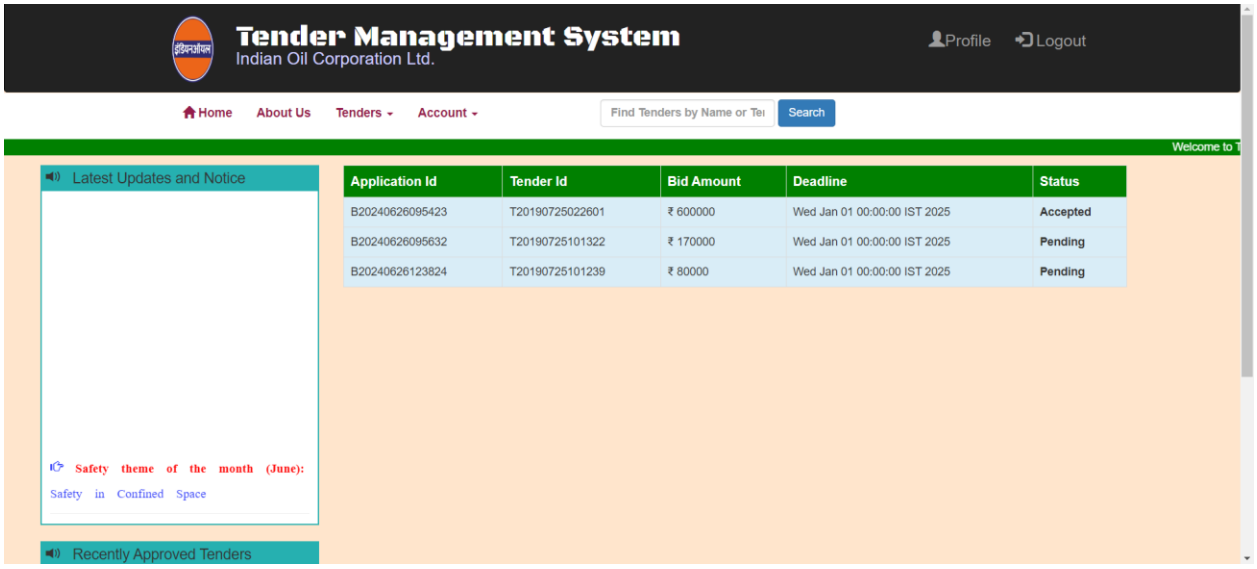


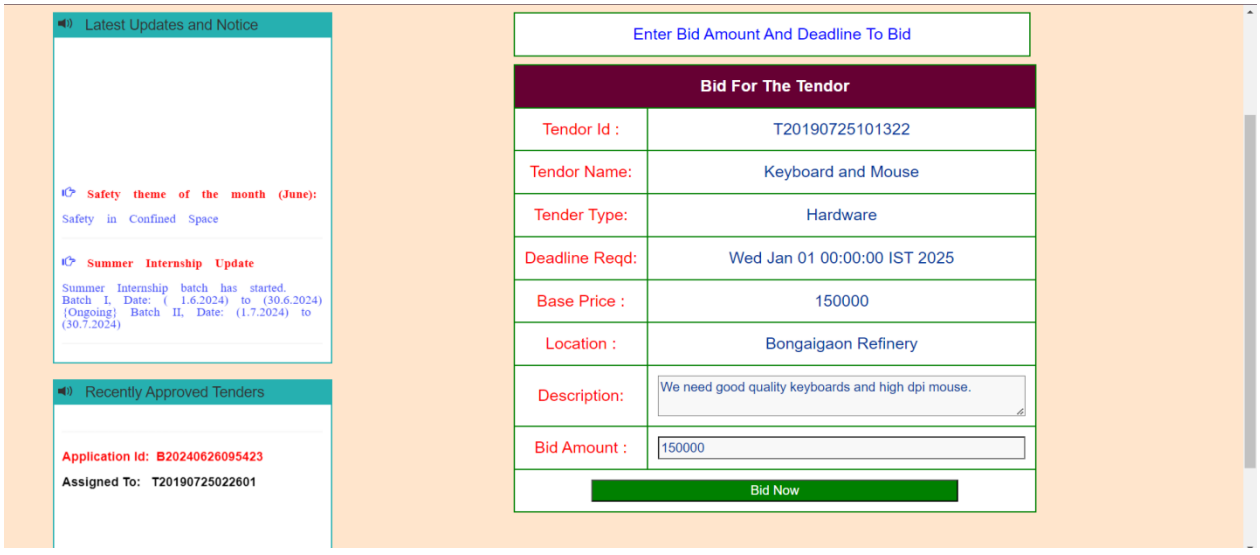
3.2 Vendor Portal

i . First, Vendor navigates to the home page and then register itself in the portal by clicking on sign-up by giving the required details.

ii . After successfully log in the vendor can access various features .For eg: all the tenders placed by admin, bid for a particular tender, view his bidding history and the status of his bids







Realtime Database:

- For storing and retrieving data in real-time, we have implemented an SQL database solution.
- A PHP-based backend running on localhost handles the credential fetching and data storing for the system.

This architecture allows for efficient data operations, including creating, updating, and retrieving records, ensuring the system remains responsive and reliable.

- We have structured our SQL database to handle two main types of data: tender details and user information.

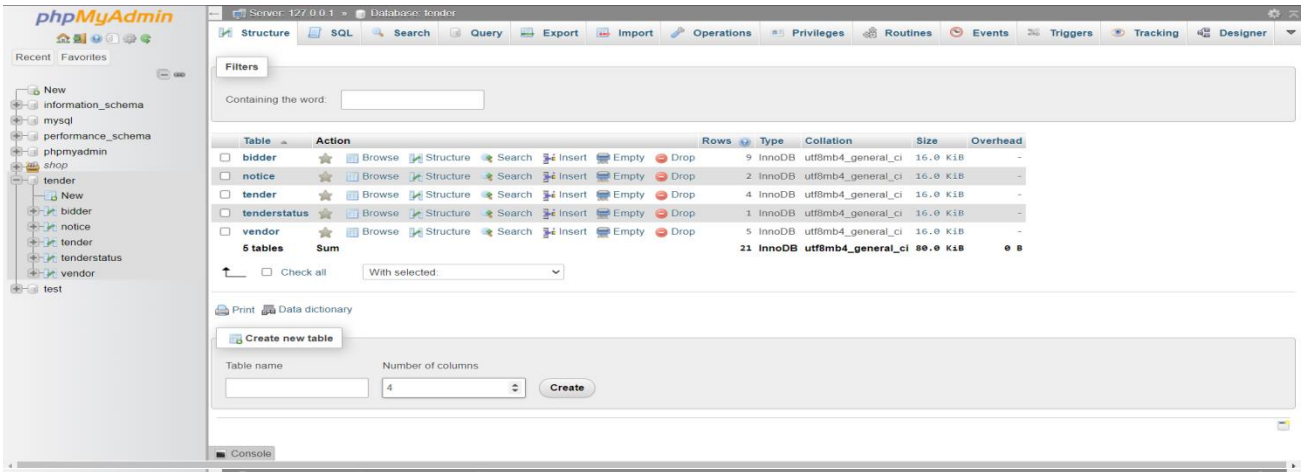
- One part of the database stores organization profiles, tender announcements, and bid submissions, while the other part manages supplier profiles and contract details

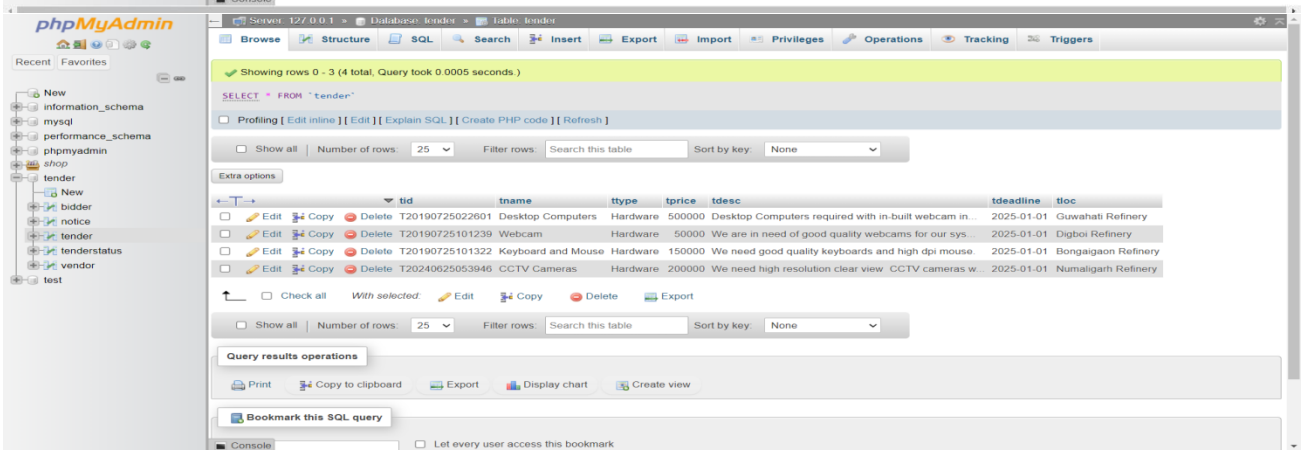
.

- Real-time updates are supported through efficient SQL queries and PHP scripts, ensuring that users receive up-to-date information and can interact with the system without delays.

- By utilizing a local server with PHP and SQL, we ensure that the system runs efficiently with minimal resource requirements.

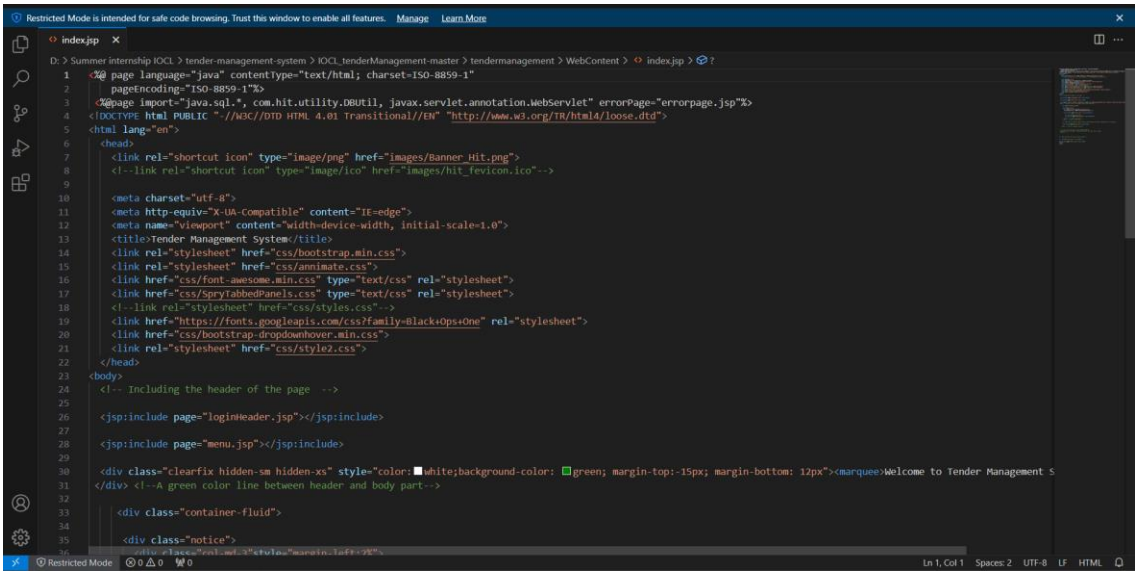
- This setup is both cost-effective and high-performing, making it an ideal solution for managing the tendering process in a streamlined manner.



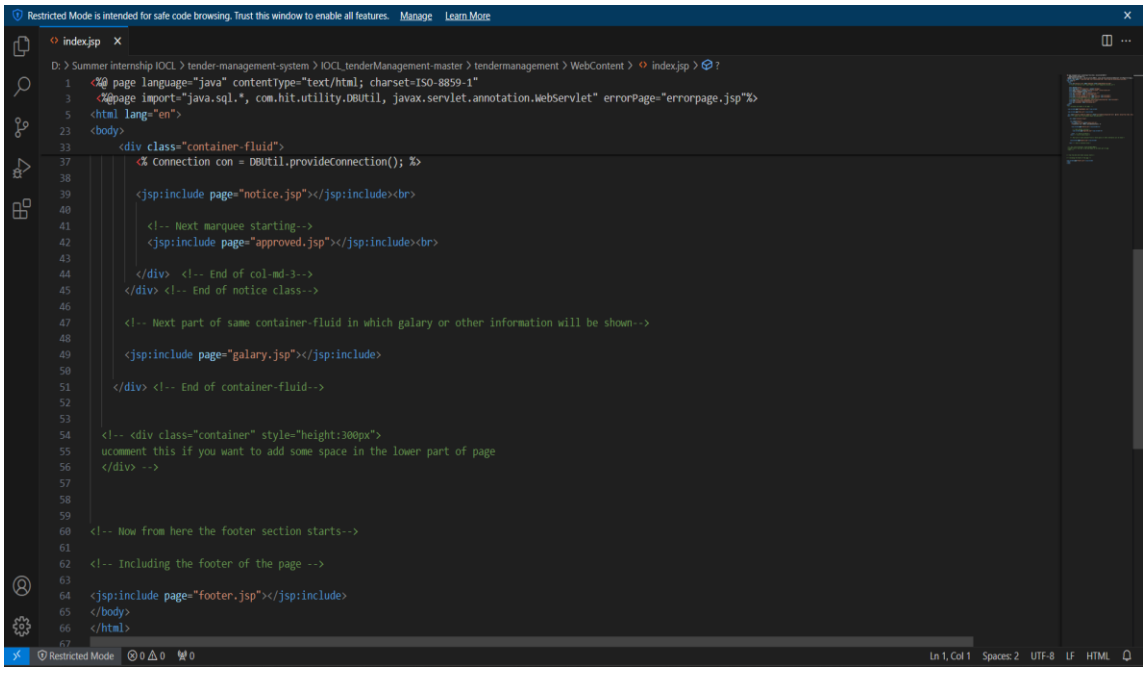


3.3 Code Implementation:

i. The first page **index.jsp** has information about IOCL, Admin login and vendor registration, and a overview of the webpage.

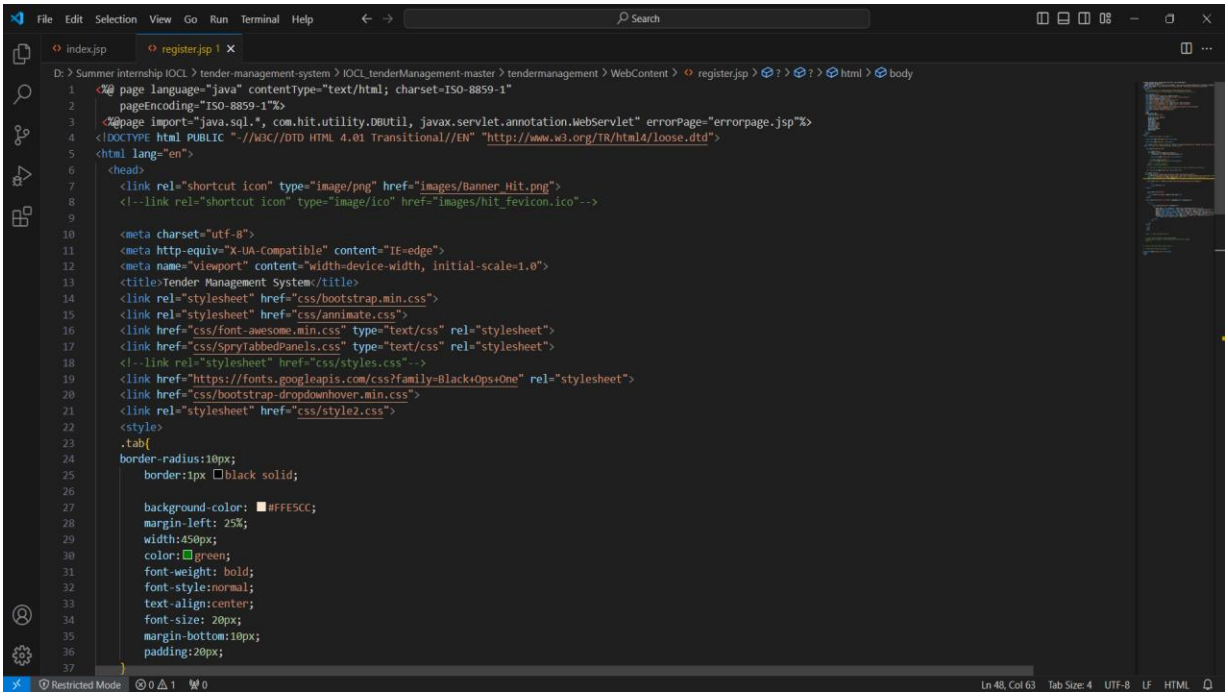


```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@page import="java.sql.*, com.hit.utility.DBUtil, javax.servlet.annotation.WebServlet" errorPage="errorpage.jsp"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html lang="en">
  <head>
    <link rel="shortcut icon" type="image/png" href="images/Banner_Hit.png">
    <!--link rel="shortcut icon" type="image/ico" href="images/hit_fevicon.ico"-->

    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tender Management System</title>
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/annimate.css">
    <link href="css/font-awesome.min.css" type="text/css" rel="stylesheet">
    <link href="css/SpryTabbedPanels.css" type="text/css" rel="stylesheet">
    <!--link rel="stylesheet" href="css/styles.css"-->
    <link href="https://fonts.googleapis.com/css?family=Black+Ops+One" rel="stylesheet">
    <link href="css/bootstrap-dropdownhover.min.css">
    <link rel="stylesheet" href="css/style2.css">
  </head>
<body>
  <!-- Including the header of the page  -->

  <jsp:include page="loginHeader.jsp"></jsp:include>

  <jsp:include page="menu.jsp"></jsp:include>

  <div class="clearfix hidden-sm hidden-xs" style="color: white;background-color: green; margin-top:-15px; margin-bottom: 12px"><marquee>Welcome to Tender Management S
</div> <!--A green color line between header and body part-->

    <div class="container-fluid">

      <div class="notice">
```

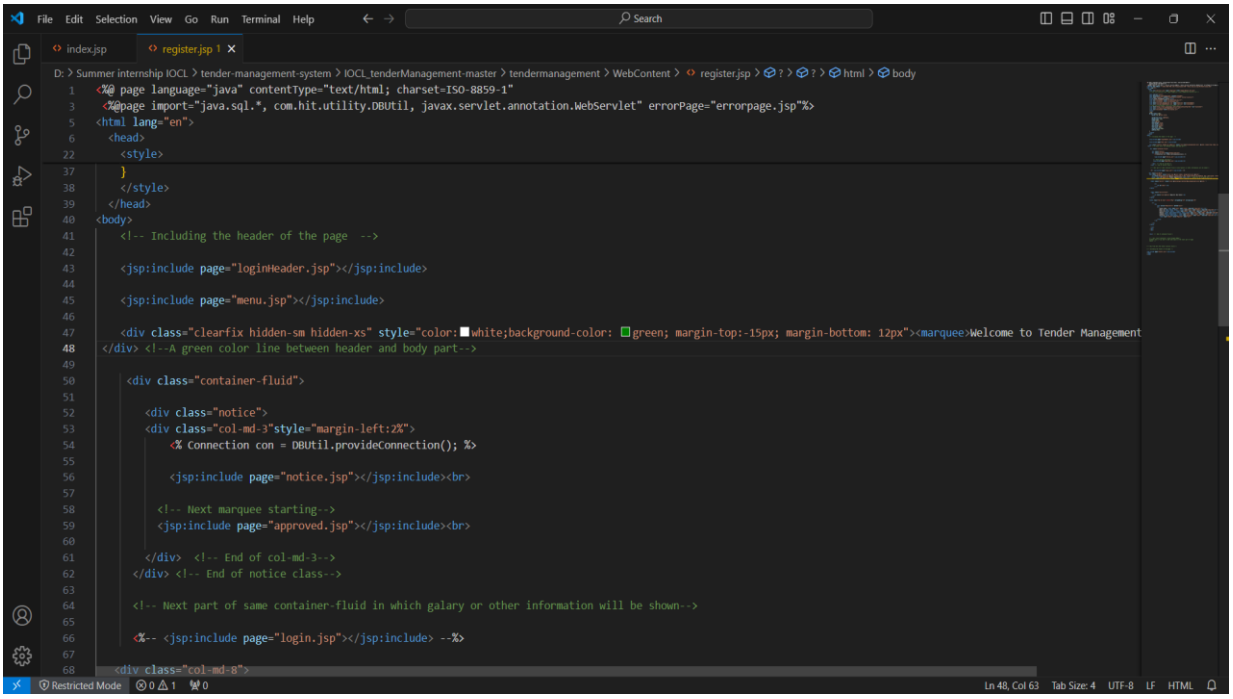


```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
<%@page import="java.sql.*, com.hit.utility.DBUtil, javax.servlet.annotation.WebServlet" errorPage="errorpage.jsp"%>
<html lang="en">
<body>
    <div class="container-fluid">
      <% Connection con = DBUtil.provideConnection(); %>

      <jsp:include page="notice.jsp"></jsp:include><br>

        <!-- Next marquee starting-->
        <jsp:include page="approved.jsp"></jsp:include><br>

      </div>  <!-- End of col-md-3-->
    </div> <!-- End of notice class-->

    <!-- Next part of same container-fluid in which galary or other information will be shown-->

    <jsp:include page="galary.jsp"></jsp:include>

  </div> <!-- End of container-fluid-->


  <!-- <div class="container" style="height:300px">
  ucomment this if you want to add some space in the lower part of page
  </div> -->



<!-- Now from here the footer section starts-->

<!-- Including the footer of the page -->

<jsp:include page="footer.jsp"></jsp:include>
</body>
</html>
```

ii. The **register.jsp** is Vendor registration page where vendor can register their details. And if they have previously registered, they can go directly to the log in page and enter their username and password

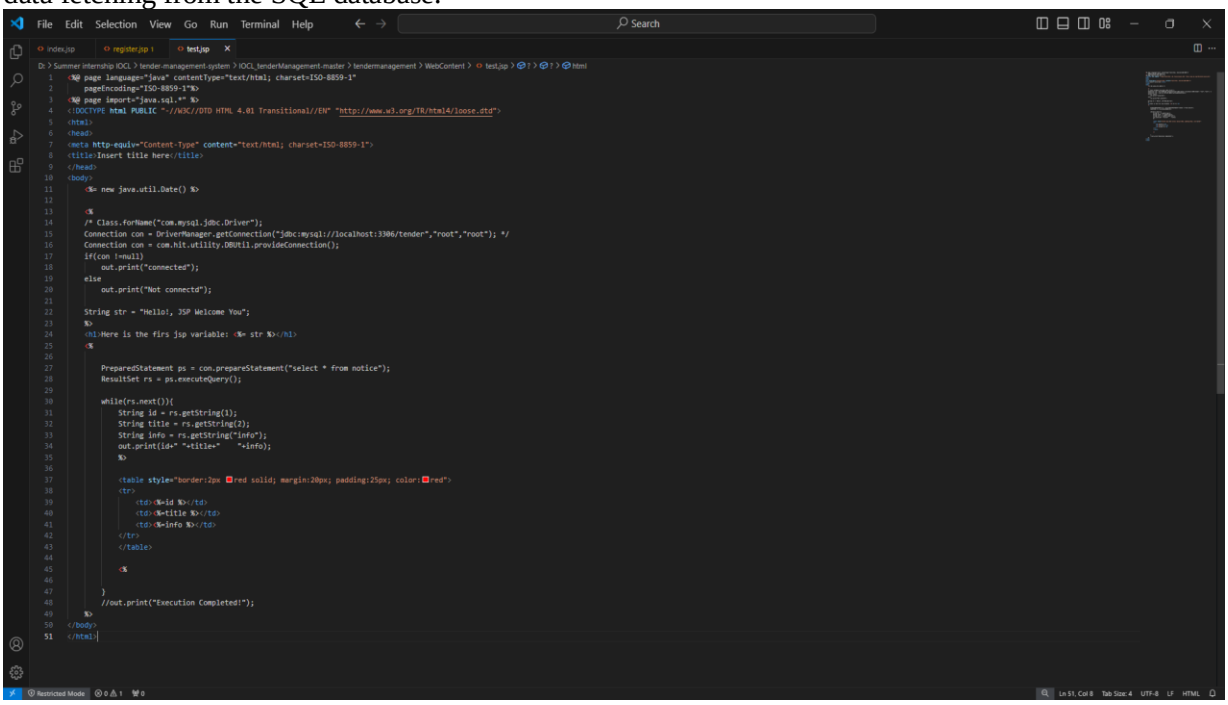


```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@page import="java.sql.*, com.hit.utility.DBUtil, javax.servlet.annotation.WebServlet" errorPage="errorpage.jsp"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html lang="en">
  <head>
    <link rel="shortcut icon" type="image/png" href="images/Banner_Hit.png">
    <!--link rel="shortcut icon" type="image/ico" href="images/hit_fevicon.ico"-->

    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tender Management System</title>
    <link rel="stylesheet" href="css/bootstrap.min.css">
    <link rel="stylesheet" href="css/animate.css">
    <link href="css/font-awesome.min.css" type="text/css" rel="stylesheet">
    <link href="css/SpryTabbedPanels.css" type="text/css" rel="stylesheet">
    <!--link rel="stylesheet" href="css/styles.css"-->
    <link href="https://fonts.googleapis.com/css?family=Black+Ops+One" rel="stylesheet">
    <link href="css/bootstrap-dropdownhover.min.css">
    <link rel="stylesheet" href="css/style2.css">
    <style>
    .tab{
    border-radius:10px;
        border:1px black solid;

        background-color: #FFE5CC;
        margin-left: 25%;
        width:450px;
        color:green;
        font-weight: bold;
        font-style:normal;
        text-align:center;
        font-size: 20px;
        margin-bottom:10px;
        padding:20px;
    }
```



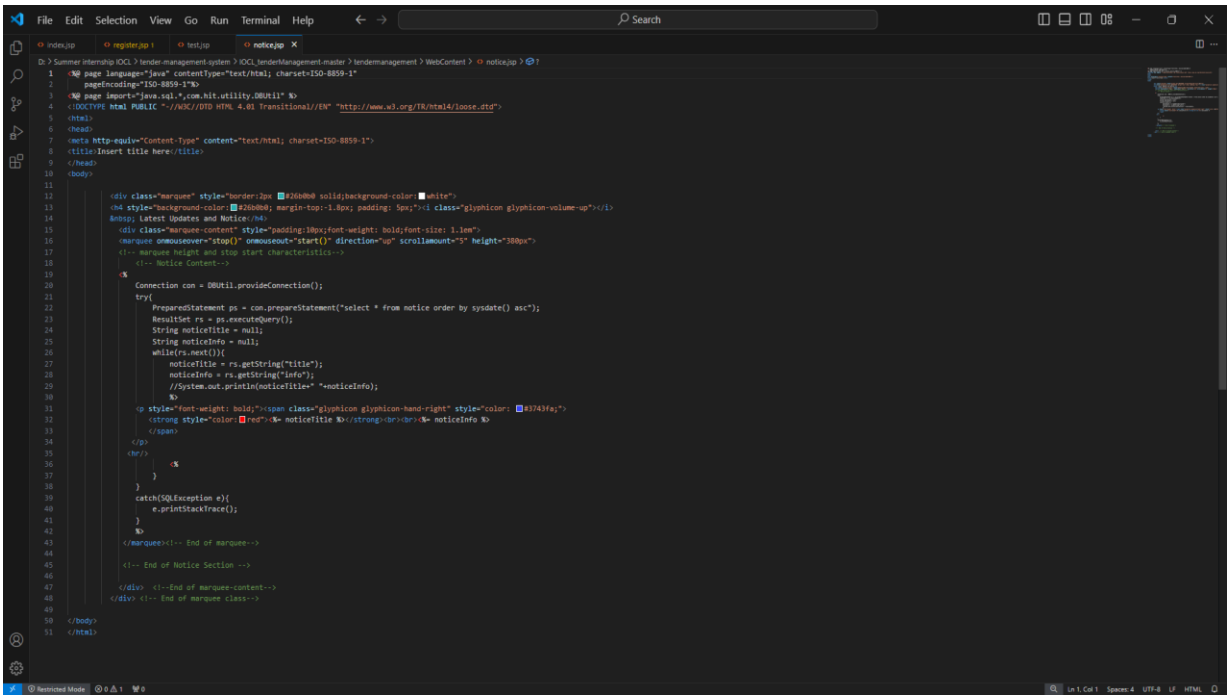
```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
<%@page import="java.sql.*, com.hit.utility.DBUtil, javax.servlet.annotation.WebServlet" errorPage="errorpage.jsp"%>
<html lang="en">
  <head>
    <style>
    }
    </style>
  </head>
<body>
    <!-- Including the header of the page  -->

    <jsp:include page="loginHeader.jsp"></jsp:include>

    <jsp:include page="menu.jsp"></jsp:include>

    <div class="clearfix hidden-sm hidden-xs" style="color:white;background-color: green; margin-top:-15px; margin-bottom: 12px"><marquee>Welcome to Tender Management
</div> <!--A green color line between header and body part-->

    <div class="container-fluid">

       <div class="notice">
       <div class="col-md-3"style="margin-left:2%">
           <% Connection con = DBUtil.provideConnection(); %>

           <jsp:include page="notice.jsp"></jsp:include><br>

         <!-- Next marquee starting-->
         <jsp:include page="approved.jsp"></jsp:include><br>

       </div>  <!-- End of col-md-3-->
     </div> <!-- End of notice class-->

    <!-- Next part of same container-fluid in which galary or other information will be shown-->

    <%-- <jsp:include page="login.jsp"></jsp:include> --%>

   <div class="col-md-8">
```

iii . We have used JSP (JavaServer Pages) as a templating engine to build our dynamic web pages. JSP allows us to integrate seamlessly with the Java-based backend, enabling efficient data fetching from the SQL database.



```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
    <%= new java.util.Date() %>

    <%
    /* Class.forName("com.mysql.jdbc.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/tender","root","root"); */
    Connection con = com.hit.utility.DBUtil.provideConnection();
    if(con !=null)
        out.print("connected");
    else
        out.print("Not connectd");

    String str = "Hello!, JSP Welcome You";
    %>
    <h1>Here is the firs jsp variable: <%= str %></h1>
    <%

        PreparedStatement ps = con.prepareStatement("select * from notice");
        ResultSet rs = ps.executeQuery();

        while(rs.next()){
            String id = rs.getString(1);
            String title = rs.getString(2);
            String info = rs.getString("info");
            out.print(id+" "+title+"    "+info);
            %>

            <table style="border:2px red solid; margin:20px; padding:25px; color:red">
            <tr>
                <td><%=id %></td>
                <td><%=title %></td>
                <td><%=info %></td>
            </tr>
            </table>

            <%

        }
        //out.print("Execution Completed!");
    %>
</body>
</html>
```

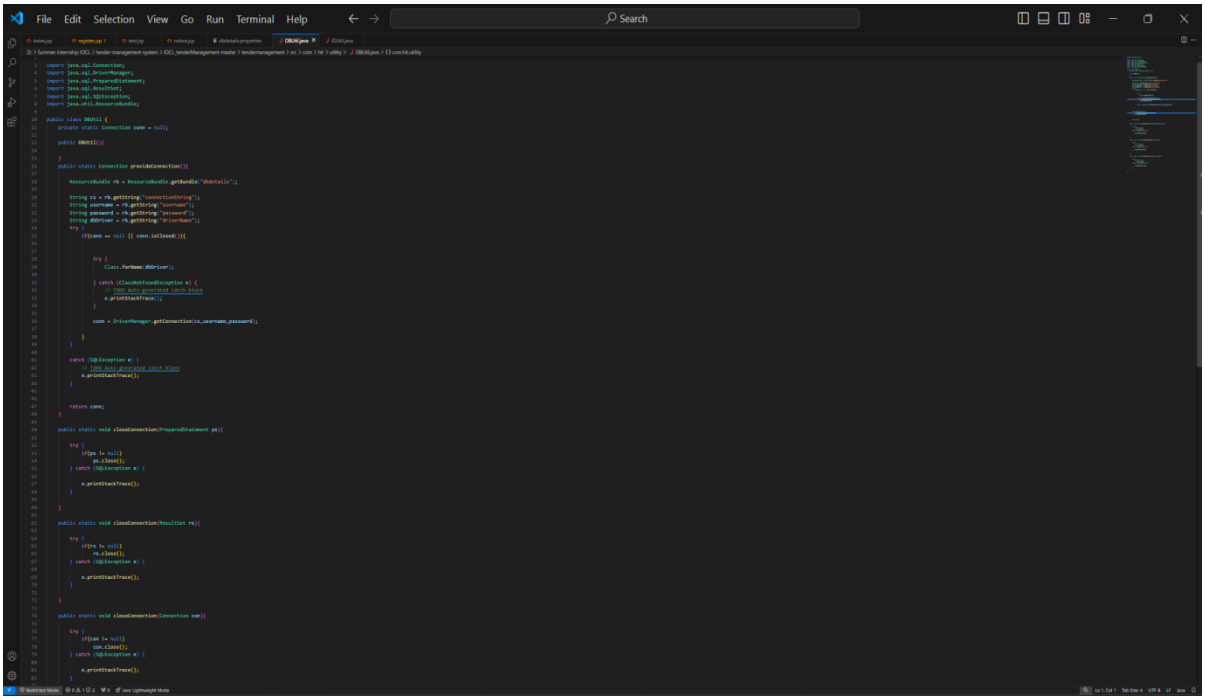
iv . The **notice.jsp** is a Admin site where they can Add new notices, Update Existing notices and delete notices. It will appear in the Latest Updates and Notices Panel.

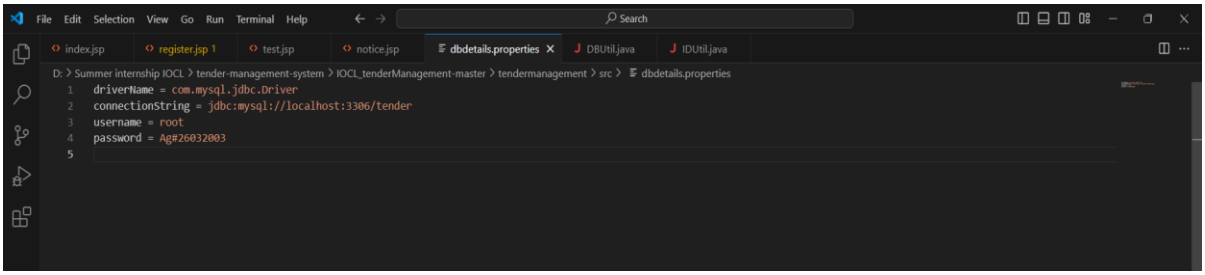


```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<%@ page import="java.sql.*,com.hit.utility.DBUtil" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

        <div class="marquee" style="border:2px #26b0b0 solid;background-color:white">
        <h4 style="background-color:#26b0b0; margin-top:-1.8px; padding: 5px;"><i class="glyphicon glyphicon-volume-up"></i>
          Latest Updates and Notice</h4>
          <div class="marquee-content" style="padding:10px;font-weight: bold;font-size: 1.1em">
          <marquee onmouseover="stop()" onmouseout="start()" direction="up" scrollamount="5" height="300px">
          <!-- marquee height and stop start characteristics-->
              <!-- Notice Content-->
          <%
              Connection con = DBUtil.provideConnection();
              try{
                  PreparedStatement ps = con.prepareStatement("select * from notice order by sysdate() asc");
                  ResultSet rs = ps.executeQuery();
                  String noticeTitle = null;
                  String noticeInfo = null;
                  while(rs.next()){
                      noticeTitle = rs.getString("title");
                      noticeInfo = rs.getString("info");
                      //System.out.println(noticeTitle+" "+noticeInfo);
                      %>
            <p style="font-weight: bold;"><span class="glyphicon glyphicon-hand-right" style="color: #3743fa;">
              <strong style="color:red"><%= noticeTitle %></strong><br><br><%= noticeInfo %>
              </span>
            </p>
           <hr/>
                      <%
                  }
              }
              catch(SQLException e){
                  e.printStackTrace();
              }
              %>
          </marquee><!-- End of marquee-->

          <!-- End of Notice Section -->

          </div>  <!--End of marquee-content-->
        </div> <!-- End of marquee class-->

</body>
</html>
```

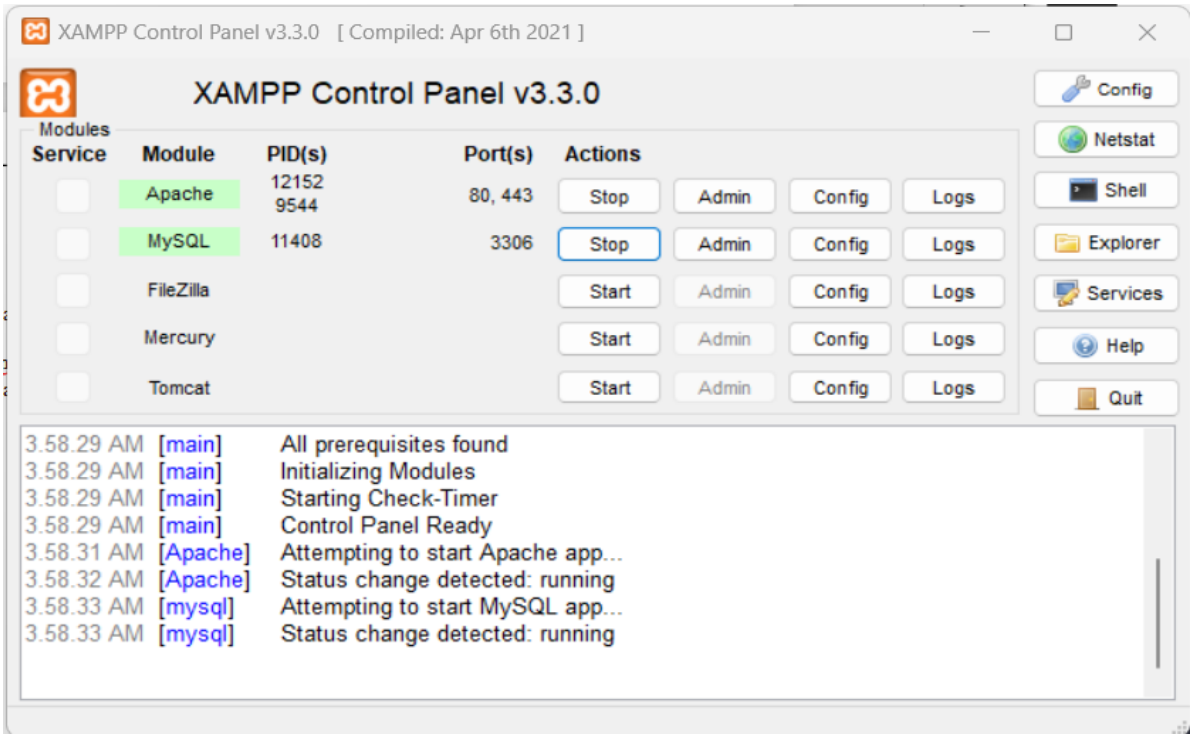
3.4 Backend:

i . In the backend part the SQL Database is implemented for storing the information about Vendors and Admin. The JSP pages interact with Java Servlets, which handle the communication with the SQL database using JDBC (Java Database Connectivity).



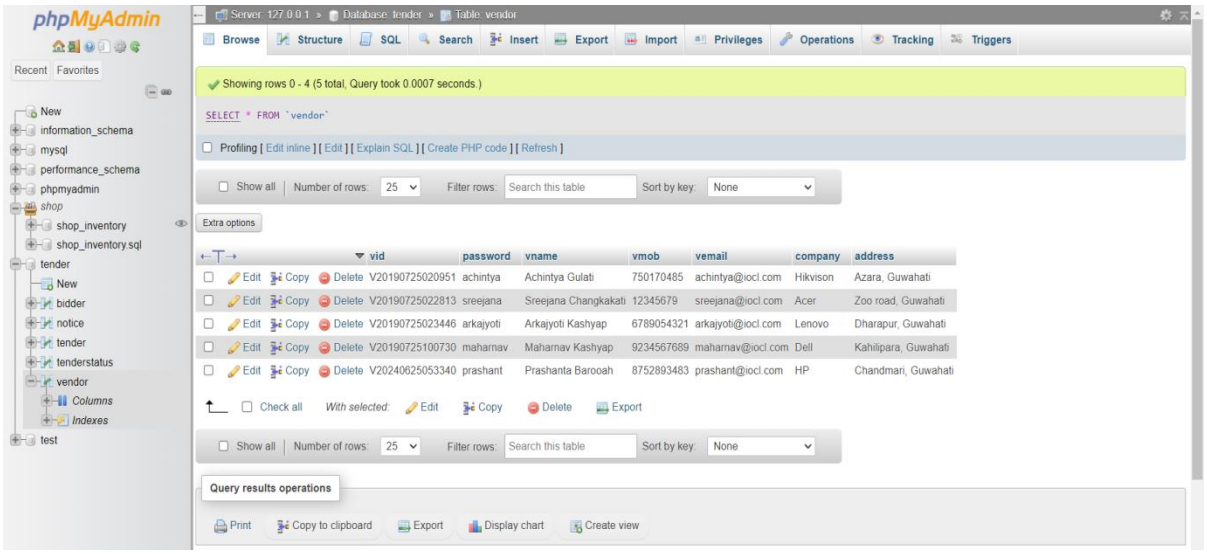


ii . The below image is showing that the database is connected successfully and sql server is running in port number 3306 which is done using XAMPP control Panel to provide a connection with local web server environment for testing and development



Database:

The name of the database is **tender** and here in the column named vendors, all the vendor information are stored here.



4. CONCLUSION

Our commitment to user-friendliness has no bounds. The system's interface exudes elegance, ensuring a seamless experience for every individual who interacts with it. Gone are the days of cumbersome processes and baffling procedures. Our masterpiece is engineered to nurture an ecosystem of user satisfaction, fostering productivity with each interaction.

In conclusion, our Tender Management System represents a pivotal solution for modernizing procurement processes. By leveraging advanced technologies in both frontend and backend development, we have created a platform that enhances transparency, efficiency, and fairness in tendering.
This system not only streamlines bid submission and evaluation but also facilitates real-time updates and secure document management. Organizations benefit from improved decision-making capabilities, ensuring contracts are awarded based on merit and compliance. With a focus on optimizing efficiency and supporting fair competition among vendors, our system sets a new standard in procurement excellence, ultimately driving better project outcomes and operational success.

5. REFERENCES/ TOOLS USED

1. HTML - https://html.com/
2. CSS - https://www.w3schools.com/css/
3. VS Code -https://code.visualstudio.com/
4. BOOTSTRAP - https://www.geeksforgeeks.org/bootstrap/
5. JDBC - https://www.w3schools.blog/jdbc-tutorial
6. MySQL - https://www.w3schools.com/mysql/
7. APACHE-MAVEN - https://www.geeksforgeeks.org/apache-maven/-
8. JAVA APPLET -https://www.geeksforgeeks.org/java-applet-basics/