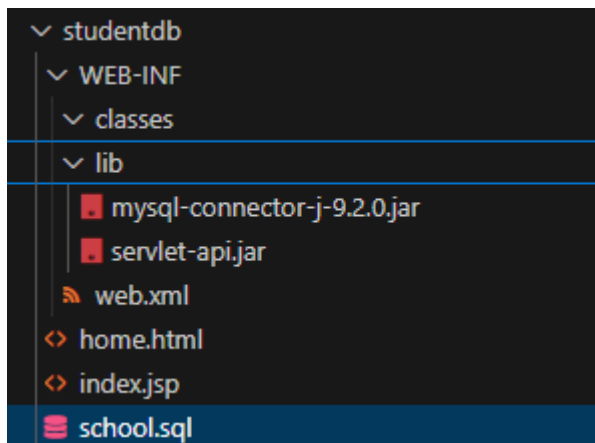Name: **Piyusha Rajendra Supe**

Enrolment Number: **23CO315**

<u>Web Technology Practical 6</u>

Title: Implement the program demonstrating the use of JSP. e.g., Create database table students_info (stud_id, stud_name, class, division, city) using database like Oracle/MySQL etc. and display (use SQL select query) the table content using JSP

The folder structure is as follows:

```
∨ studentdb
  ∨ WEB-INF
    ∨ classes
    ∨ lib
        mysql-connector-j-9.2.0.jar
        servlet-api.jar
      web.xml
  ◇ home.html
  ◇ index.jsp
  school.sql
```

Let us create a database for the JSP retrieval:

School.sql

Create database if not exists school;

CREATE TABLE `students_info` (

 `stud_id` int(11) NOT NULL,

 `stud_name` varchar(100) DEFAULT NULL,

 `class` varchar(20) DEFAULT NULL,

 `division` varchar(5) DEFAULT NULL,

 `city` varchar(50) DEFAULT NULL

);

INSERT INTO `students_info` (`stud_id`, `stud_name`, `class`, `division`, `city`) VALUES

(1, 'Piyusha', '10', 'A', 'New York'),

(2, 'Chinmay', '9', 'B', 'Los Angeles'),

(3, 'Rajendra', '10', 'A', 'Chicago'),

(4, 'Diana Prince', '8', 'C', 'Houston'),

(5, 'Ethan Hunt', '11', 'A', 'Phoenix'),

(6, 'Fiona Glenanne', '10', 'B', 'Philadelphia'),

(7, 'George Miller', '9', 'C', 'San Antonio'),

(8, 'Hannah Lee', '12', 'A', 'San Diego'),

(9, 'Ian Somerhalder', '11', 'B', 'Dallas'),

(10, 'Julia Roberts', '12', 'C', 'San Jose');

The database created will look as follows:

The code is as follows:

Web.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee" version="3.1">
  <!-- Welcome file list to define the landing page -->
  <welcome-file-list>
    <welcome-file>home.html</welcome-file> <!-- This is the first page that loads -->
  </welcome-file-list>
  <!-- Optional: If you want to add specific URL pattern mappings for your JSP -->
  <servlet>
    <servlet-name>indexServlet</servlet-name>
    <jsp-file>/index.jsp</jsp-file>
  </servlet>
```

```xml
  <servlet-mapping>

    <servlet-name>indexServlet</servlet-name>

    <url-pattern>/index.jsp</url-pattern>

  </servlet-mapping>

</web-app>
```

Home.html

```html
<!DOCTYPE html>

<html>

<head>

  <title>Student Information Portal</title>

  <style>

    body {

      font-family: Arial, sans-serif;

      background: #f4f4f9;

      display: flex;

      flex-direction: column;

      align-items: center;

      justify-content: center;

      height: 100vh;

      margin: 0;

    }

    h1 {

      color: #333;

    }

    a.button {

      display: inline-block;

      padding: 12px 25px;

      font-size: 16px;

      color: white;

      background-color: #007BFF;

      text-decoration: none;

      border-radius: 6px;
```

```
      box-shadow: 0 2px 5px rgba(0,0,0,0.1);

      transition: background-color 0.3s ease;

    }

    a.button:hover {

      background-color: #0056b3;

    }

  </style>

</head>

<body>

  <h1>Welcome to the Piyusha's Student Info Portal</h1>

  <a class="button" href="index.jsp">View Student Records</a>

</body>

</html>
```

Index.jsp (actual jsp code that retrieves information form database)

```
<%@ page import="java.sql.*" %>

<html>

<head>

  <title>Student Info</title>

  <style>

    body {

      font-family: Arial, sans-serif;

      margin: 30px;

      background-color: #f4f4f9;

    }

    h1 {

      color: #333;

      text-align: center;

    }

    table {

      width: 80%;

      margin: auto;

      border-collapse: collapse;
```

```
      box-shadow: 0 2px 8px rgba(0,0,0,0.1);

      background-color: white;

    }

    th, td {

      padding: 12px 15px;

      text-align: center;

      border: 1px solid #ccc;

    }

    th {

      background-color: #007BFF;

      color: white;

    }

    tr:nth-child(even) {

      background-color: #f9f9f9;

    }

    tr:hover {

      background-color: #e9f1ff;

    }

    .error {

      color: red;

      text-align: center;

      margin-top: 20px;

    }

  </style>

</head>

<body>

  <h1>Student Information</h1>

  <table>

    <tr>

      <th>ID</th>

      <th>Name</th>

      <th>Class</th>
```

```jsp
      <th>Division</th>
      <th>City</th>
    </tr>
    <%
      try {
        Class.forName("com.mysql.cj.jdbc.Driver");
        Connection con = DriverManager.getConnection(
          "jdbc:mysql://localhost:3306/school?useSSL=false&serverTimezone=UTC", "root", "");
        Statement stmt = con.createStatement();
        ResultSet rs = stmt.executeQuery("SELECT * FROM students_info");

        while(rs.next()) {
    %>
          <tr>
            <td><%= rs.getInt("stud_id") %></td>
            <td><%= rs.getString("stud_name") %></td>
            <td><%= rs.getString("class") %></td>
            <td><%= rs.getString("division") %></td>
            <td><%= rs.getString("city") %></td>
          </tr>
    <%
        }
        con.close();
      } catch(Exception e) {
    %>
        <p class="error">Error: <%= e.getMessage() %></p>
    <%
      }
    %>
  </table>
</body>
</html>
```
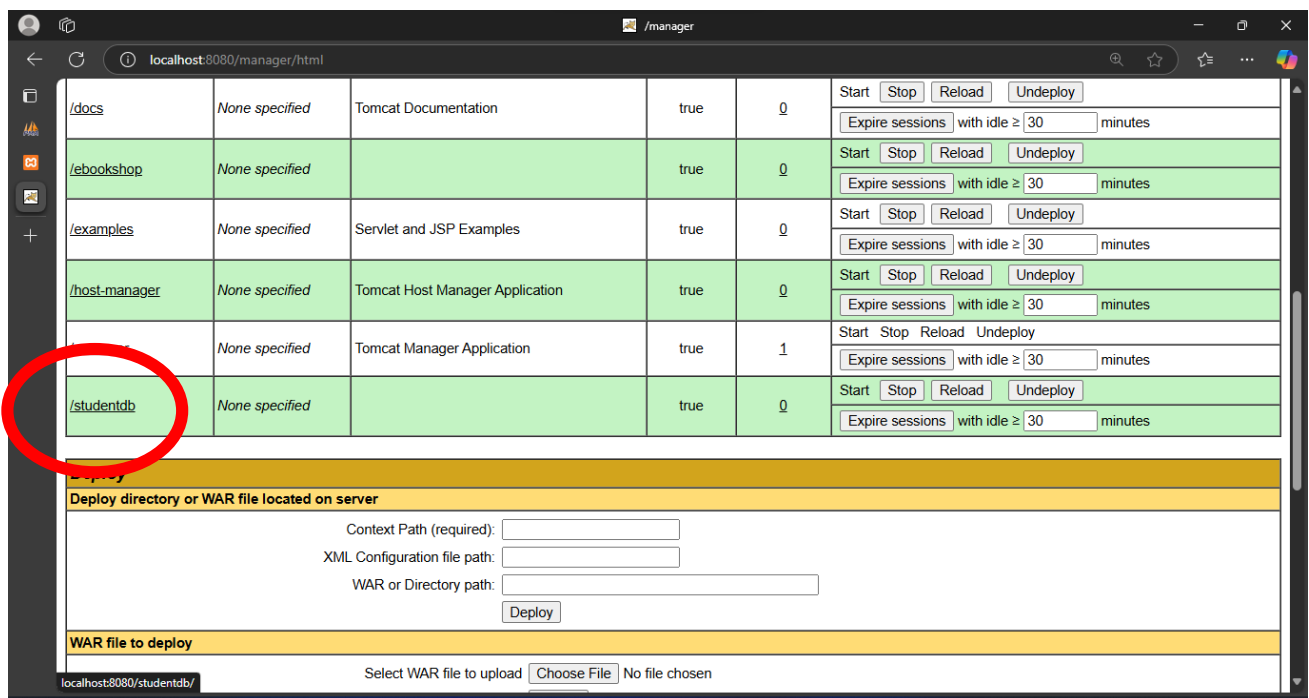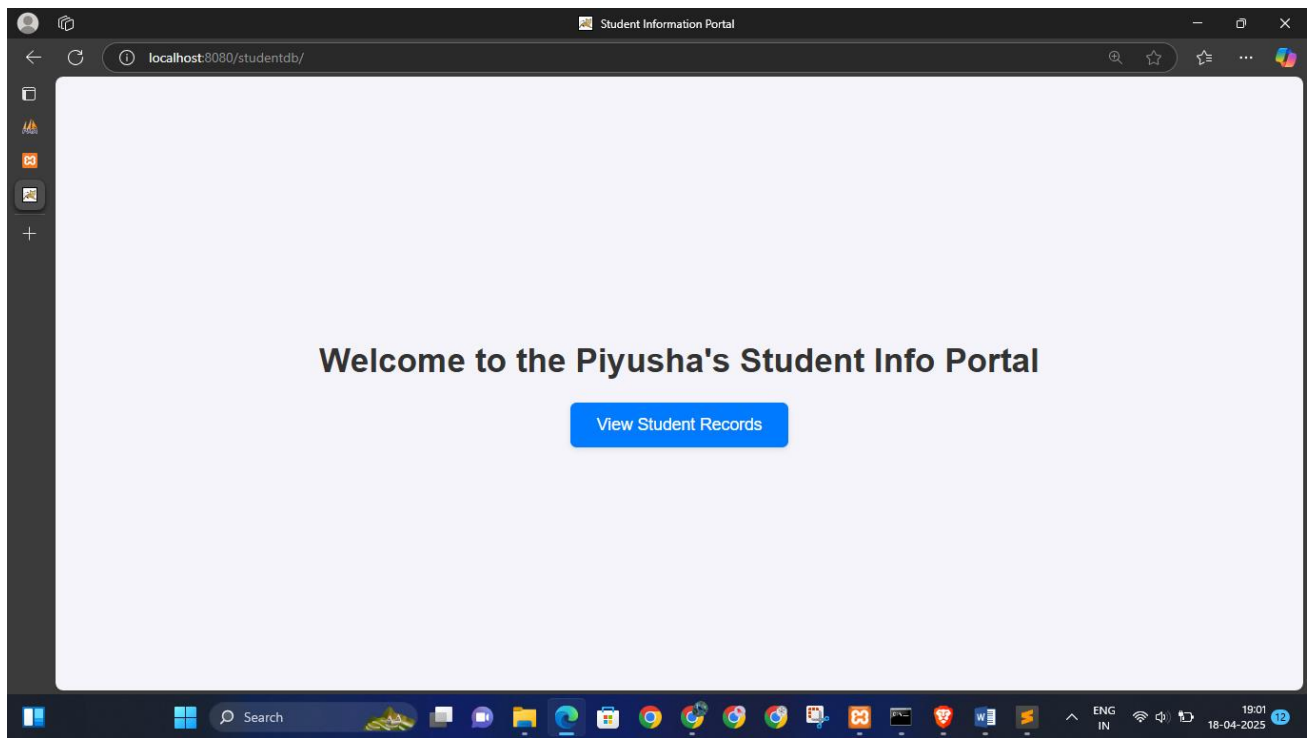
The output is as follows:

Start the tomcat server
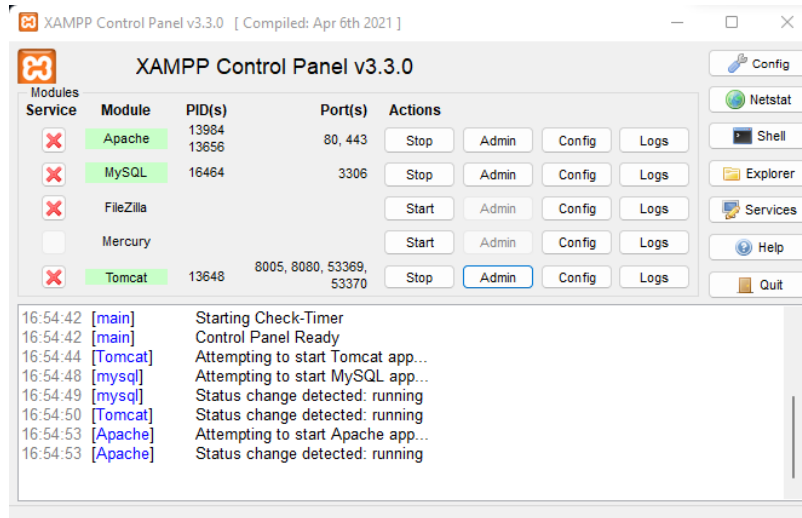
Then go to the tomcat manager admin interface:

The output will look like as follows:

The table is as follows:

Conclusion: Thus I have successfully created JSP pages and retrieved database information using mysql connector and JSP interface