# Practical 1

Aim: To set up Eclipse for developing dynamic web projects and configure tomcat server

## Procedure:

Download and run Eclipse:

- Go to eclipse.org and acquire the Eclipse IDE suitable for your operating system.
- Extract the Eclipse package to a location on your computer.
- Navigate to the extracted Eclipse folder and execute eclipse.exe

Creating a Dynamic Web Project:

- After launching Eclipse, you have two options:
- Option 1: Navigate to File > New > Other > Web > Dynamic Web Project.
- Option 2: Select Dynamic Web Project from the welcome screen.
- Provide a project name and proceed to the next step.
- Configure project settings such as Target Runtime and Dynamic Web Module version before proceeding.
- Click Finish to finalize the project creation.

Generating a JSP File:

- Right-click on the webapp folder within the project displayed in the Project Explorer.
- Choose New > JSP File.
- Specify a file name (e.g., index.jsp) and confirm to create the file.
- Inside the JSP file, you can incorporate HTML content as desired.

Configuring Build Path:

- Right-click on the project in the Project Explorer and select Properties.
- Within the properties window, locate Java Build Path.
- Access the Source tab and proceed to click Add Folder.
- Choose webapp/WEB-INF/classes (create if not available) and confirm the selection.
- Apply the changes by clicking OK and subsequently close the properties window.

Server Setup:

- Download tomcat installation files from the official website
- Within the Servers perspective of Eclipse, select the create new server option.
- Configure tomcat version, downloaded binaries location and ports.

- Click Finish. Add new projects to the server as required.

Output:



**Hello**

Conclusion: In this practical, we learnt to set up a dynamic web project using Eclipse and Tomcat Server

# Practical 2

Aim: To create and configure servlets and perform request forwarding.

Code:

**HelloServlet.java**

```java
package com;

import java.io.*;

import javax.servlet.*;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.*;

/**
 * Servlet implementation class hello
 */
@WebServlet("/HelloServlet")
public class HelloServlet extends HttpServlet {
	private static final long serialVersionUID = 1L;
  /**
   * @see HttpServlet#HttpServlet()
   */
  public HelloServlet() {
    super();
    // TODO Auto-generated constructor stub
  }
	/**
	 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
response)
	 */
	protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
```

```java
        // TODO Auto-generated method stub

        response.getWriter().append("Served at: ").append(request.getContextPath());

        response.setContentType("text/html");

        PrintWriter out = response.getWriter();

    out.println("<html>");

    out.println("<head>");

    out.println("<title>Hola</title>");

    out.println("</head>");

    out.println("<body>");

    out.println("<h1>Running on servlet</h1>");

    out.println("</body>");

    out.println("</html>");

    }
    /**

     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)

     */

    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        // TODO Auto-generated method stub

        doGet(request, response);

    }
}
```

**SecondServlet.java**

```java
package com;

import java.io.*;

import javax.servlet.*;
```

```java
import javax.servlet.http.*;
/**
 * Servlet implementation class SecondServlet
 */
@WebServlet("/SecondServlet")
public class SecondServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;
    /**
     * @see HttpServlet#HttpServlet()
     */
    public SecondServlet() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        // TODO Auto-generated method stub
        response.getWriter().append("Served at: ").append(request.getContextPath());
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
//        out.print("<html><body>servlet 2</body></html>");
        RequestDispatcher rd = request.getRequestDispatcher("/a");
        rd.forward(request, response);
    }
```

```
/**
 * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
 */
protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        // TODO Auto-generated method stub
        doGet(request, response);
    }
}
```

**Web.xml**
```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://xmlns.jcp.org/xml/ns/javaee"
    xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd"
    id="WebApp_ID" version="3.1">
    <display-name>prac</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
    <servlet>
        <servlet-name>myservlet</servlet-name>
        <servlet-class>com.HelloServlet</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>myservlet</servlet-name>
        <url-pattern>/a</url-pattern>
    </servlet-mapping>

    <servlet>
```

```
        <servlet-name>sservlet</servlet-name>
        <servlet-class>com.SecondServlet</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>sservlet</servlet-name>
        <url-pattern>/b</url-pattern>
    </servlet-mapping>
</web-app>
```

Output:



Served at: /prac

**Running on HelloServlet**

Conclusion: In this practical, we learnt to create servlets and forward a request from one servlet to another.

# Practical 3

Aim: To create dynamic web pages using JSP and perform calculations:

1. Sum of digits in a number.
2. Sum of square, cube or 1 to n numbers.
3. Square the first and last digit of a 3 digit number and subtract the middle digit.

## Code:

**Input.jsp**

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <form action="process.jsp">
                <h3>Enter a number</h3>
                <input type="text" name="usernumber"/><br>
                <p>Select formula (Sum of)</p>
                <select name="formula">
                        <option value="cube">Cube</option>
                        <option value="square">Square</option>
                        <option value="numbers">Numbers</option>
                </select>
                <input type="submit">
        </form>
</body>
</html>
```

**q1.jsp**

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
```

```html
</head>
<body>
<form action = "q1process.jsp" method="post">
Enter number : <input type = "number" name = "userinput"><br>
<input type="submit">
</form>
</body>
</html>
```

**q1process.jsp**
```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String num = request.getParameter("userinput");
int n = Integer.parseInt(num);
int m = 0;
int sum = 0;
while(n>0){
        m = n%10;
        sum = sum + m;
        n=n/10;
}
%>
<h1> The sum is : <%=sum %></h1>
</body>
</html>
```

**process.jsp**

```jsp
<!-- Accept last number from user, also accept options for sum of squares, cubes or numbers in
combobox -->
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
```

```
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <%
        String num = request.getParameter("usernumber");
        String formula = request.getParameter("formula");
        double result = 0;
        int n = Integer.parseInt(num);
        if (formula.equals("cube")) {
                result = (n * (n + 1) / 2)*(n * (n + 1) / 2);
        } else if (formula.equals("square")) {
                result = (n * (n + 1) * (2 * n + 1)) / 6;
        } else if (formula.equals("numbers")) {
                result = (n * (n + 1)) / 2;
        }
        int sum = 0;
        int m = 1;
        while (m > 0) {
                m = n % 10;
                sum = sum + m;
                m = n / 10;
                n = m;
        }
        %>
        <p>
                Selected formula is :
                <%=formula%></p>
        <b>Result : <%=result%></b>
</body>
</html>
```

**q3.jsp**

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
```

```
<body>
        <form action="q3_process.jsp">
                <label>Enter 3 digit number</label>
                <input type="number" min="100" max="999" name="unum"/>
                <input type="submit">
        </form>
</body>
</html>
```

**q3_process.jsp**
```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
   pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <%
                String num = request.getParameter("unum");
                String[] num_arr = num.split("");
                double result = Integer.parseInt(num_arr[0])*Integer.parseInt(num_arr[0]);
                result -= Integer.parseInt(num_arr[1]);
                result += Integer.parseInt(num_arr[2])*Integer.parseInt(num_arr[2]);
        %>
        <p>result is: <%=result %></p>
</body>
</html>
```

Output:



localhost:8080/prac/jsp/input.jsp

**Enter a number**

22

Select formula (Sum of)

Numbers ⌄  Submit

localhost:8080/prac/jsp/process.jsp?user

Selected formula is : numbers

**Result : 253.0**

Enter number : 533
Submit

# The sum is : 11

Enter 3 digit number 425 ⬍ Submit

result is: 39.0

**Conclusion:** In this practical, we performed various calculations using JSP.

# Practical 4

Aim: To perform login authentication using jsp and mariadb database

Code:

**data.jsp**
```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <form action="login.jsp">
                <p>Enter uid</p>
                <input type="text" name="uid"/><br>
                <p>Enter pwd</p>
                <input type="password" name="pwd"/><br>
                <input type="submit">
        </form>
</body>
</html>
```

**login.jsp**
```
<%@page import="java.sql.*"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
        PreparedStatement pst;
        ResultSet rs;
        try {
                Class.forName("org.mariadb.jdbc.Driver");
```

```
                Connection cn =
DriverManager.getConnection("jdbc:mariadb://localhost:3306/mydb","root","root");
                String uid=(String) request.getParameter("uid");
                int u=Integer.parseInt(uid);
                String pwd=(String) request.getParameter("pwd");
                pst=cn.prepareStatement("select * from usertable where uid=? and
password=?");
                pst.setInt(1, u);
                pst.setString(2, pwd);
                rs=pst.executeQuery();
                boolean found=false;
                String role=null;
                String nm = null;
                while (rs.next()) {
                        role=rs.getString("role");
                        nm=rs.getString("name");
                        found = true;
                        break;
                }
                if (found == false)
                        out.print("user not in db");
                else
                        out.print("user exist with name and role --> "+nm+" : "+ role);
                session.setAttribute("username", nm);
        } catch (Exception e) {
            //  Block of code to handle errors
            e.printStackTrace();
        }
%>
</body>
</html>
```
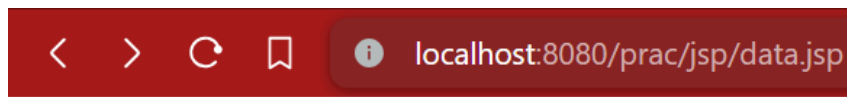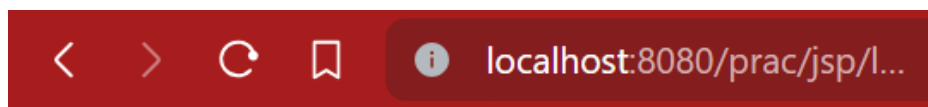
user exist with name and role --> john : admin

Conclusion: In this practical, we learnt how to connect to a mariadb database and perform login authentication.

# Practical 5

Aim: To fetch and display data from a web page and add to the database. To use getparameternames() for capturing data

Code:

**form.jsp**

```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
rel="stylesheet"
integrity="sha384-T3c6CoIi6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEV/Dwwykc2MP
K8M2HN" crossorigin="anonymous">
</head>
<body>
    <div class="container">
        <form method="post" action="addusertask.jsp">
            <div class="mb-3"><br><br>
                <label for="uid" class="form-label">Enter UID</label>
                <input type="text" class="form-control" id="uid" name="uid">
            </div>
            <div class="mb-3">
                <label for="pwd" class="form-label">Enter Password</label>
                <input type="password" class="form-control" id="pwd" name="pwd">
            </div>
            <div class="mb-3">
                <label for="role" class="form-label">Enter Role</label>
                <input type="text" class="form-control" id="role" name="role">
            </div>
            <div class="mb-3">
                <label for="name" class="form-label">Enter Name</label>
                <input type="text" class="form-control" id="name" name="name">
            </div>
            <div class="mb-3">
                <input type="submit" class="btn btn-primary" value="Add User" name="addUserBtn">
            </div>
```

```html
        <div class="row mb-3">
          <div class="col-6">
            <div class="form-check">
              <input class="form-check-input" type="checkbox" id="displayall"
name="displayall">
              <label class="form-check-label" for="displayall">Display All</label>
          </div>
        </div>
        <div class="col-6">
            <input type="submit" class="btn btn-primary" value="Display">
        </div>
      </div>
    </form>

    <hr>
  </div>

  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"
integrity="sha384-C6RzsynM9kWDrMNeT87bh95OGNyZPhcTNXj1NW7RuBCsyN/o0jlpcV8Qyq
46cDfL" crossorigin="anonymous"></script>
</body>
</html>
```

**addusertask.jsp**
```jsp
<%@page import="java.sql.*"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

<%
  PreparedStatement ps=null;
  ResultSet rs=null;

  try {
    Class.forName("org.mariadb.jdbc.Driver");
```

```java
    Connection cn =
DriverManager.getConnection("jdbc:mariadb://localhost:3306/mydb","root","root");

    String uid=request.getParameter("uid");
    String pwd=request.getParameter("pwd");
    String role=request.getParameter("role");
    String name=request.getParameter("name");

    // Add user only if "Add User" button is clicked
    if (request.getParameter("addUserBtn") != null && uid != null && pwd != null && role != null
&& name != null) {
        ps=cn.prepareStatement("Insert into usertable values (?,?,?,?)");
        ps.setString(1, uid);
        ps.setString(2, pwd);
        ps.setString(3, role);
        ps.setString(4, name);

        ps.execute();

        out.print("Record added successfully<br>");
    }

    // Display users if "Display all" checkbox is checked
    String cb=request.getParameter("displayall");
    if(cb != null) {
        ps=cn.prepareStatement("select * from usertable");
        rs=ps.executeQuery();

        out.println("<table>");
        while(rs.next()) {
            out.println("<tr>");
            out.println("<td>" + rs.getString("uid") + "</td>");
            out.println("<td>" + rs.getString("role") + "</td>");
            out.println("<td>" + rs.getString("name") + "</td>");
            out.println("</tr>");
        }
        out.println("</table>");
    } else {
        // Display user if uid is provided
        if (uid != null && !uid.isEmpty()) {
            ps=cn.prepareStatement("select * from usertable where uid=?");
            ps.setString(1, uid);
```

```
            rs=ps.executeQuery();

            out.println("<table>");
            while(rs.next()) {
                out.println("<tr>");
                out.println("<td>" + rs.getString("uid") + "</td>");
                out.println("<td>" + rs.getString("role") + "</td>");
                out.println("<td>" + rs.getString("name") + "</td>");
                out.println("</tr>");
            }
            out.println("</table>");
        }
    }

    } catch (Exception e) {
        e.printStackTrace();
    }
%>

</body>
</html>
```

**paramnames.jsp**
```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <form action="capture.jsp" method="post">
                Name : <input type="text" name="nm"> <br>
                <br> Gender : <input type="radio" name="gender" value="Male">Male
                <input type="radio" name="gender" value="Female">Female <br>
                <br> Age : <input type="number" name="age"> <br>
                <br> Course : <select name="course">
                        <option value="arts">Arts</option>
                        <option value="science">Science</option>
                        <option value="commerce">Commerce</option>
                </select><br>
```

```
            <br> <input type="submit" value="Done">
        </form>
</body>
</html>
```

**capture.jsp**
```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1" import="java.util.*"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <%
        Enumeration<String> e = request.getParameterNames();
        while (e.hasMoreElements()) {
                String var = e.nextElement();
                String value = request.getParameter(var);
                out.print("<p>" + value + "</p>");
        }
        %>
</body>
</html>
```

Output:



Before adding user                              After adding user

Record added successfully
4 client Tom



Name : _____

Gender : ○ Male ○ Female

Age : _____

Course : Arts ▾

Done

Ron

Male

24

arts

Conclusion: In this practical, we created a form to add users to the database. We also learnt to use getParameterNames() to use enumeration and access all the params sent to us from the form.

# Practical 6

Aim: To perform add and search operations using AJAX.

Code:
**validationUI.jsp**

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Form</title>
<link
	href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
	rel="stylesheet"

integrity="sha384-T3c6CoIi6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEV/Dwwykc2MP
K8M2HN"
	crossorigin="anonymous">
</head>
<body class="p-4">
	<form class="row g-3">
		<div class="row g-3 align-items-center">
			<div class="col-2">
				<label for="" class="col-form-label">UID</label>
			</div>
			<div class="col-3">
				<input type="text" id="uid" name="uid" class="form-control">
			</div>
		</div>
		<div class="row g-3 align-items-center">
			<div class="col-2">
				<label for="" class="col-form-label">Name</label>
			</div>
			<div class="col-3">
				<input type="text" id="name" name="name" class="form-control">
			</div>
		</div>
		<div class="row g-3 align-items-center">
			<div class="col-2">
				<label for="inputPassword6"
class="col-form-label">Password</label>
```

```
                    </div>
                    <div class="col-3">
                            <input type="password" name="pwd" id="pwd"
                                    class="form-control"
aria-describedby="passwordHelpInline">
                    </div>
                    <div class="col-auto">
                            <span id="passwordHelpInline" class="form-text"> Must be 8-20
                                    characters long. </span>
                    </div>
            </div>
            <div class="row g-3 align-items-center">
                    <div class="col-2">
                            <label for="" class="col-form-label">Role</label>
                    </div>
                    <div class="col-3">
                            <select class="form-select" aria-label="Default select example"
id='userrole'>
                                    <option value="" id="currentRole" selected
disabled></option>
                                    <option value="admin">Admin</option>
                                    <option value="user">User</option>
                                    <option value="other">Other</option>
                            </select>
                    </div>
            </div>
            <div class="row g-3 align-items-center">
                    <div class="col-auto">
                            <button type="button" class="btn btn-primary"
                                    onclick="searchprocess()">Search</button>
                    </div>
                    <div class="col-auto">
                            <button type="button" class="btn btn-primary"
onclick="addUser()">Add</button>
                    </div>
                    <br><br>
                    <div id="responseMsg"></div>
                    <!-- <div class="col-auto">
                            <button type="submit" class="btn btn-primary">Delete</button>
                    </div> -->

            </div>
```

```
        </form>
        <div id="output"></div>
        <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.7.1/jquery.min.js"
integrity="sha512-v2CJ7UaYy4JwqLDIrZUI/4hqeoQieOmAZNXBeQyjo21dadnwR+8ZaIJVT8EE
2iyl61OV8e6M8PP2/4hpQINQ/g==" crossorigin="anonymous"
referrerpolicy="no-referrer"></script>
        <script type="text/javascript">
          function searchprocess() {
            $.ajax({
                type: "post",
                url: "processdata.jsp",
                data: "op=search&uid=" + $('#uid').val(),
                success: function (msg) {

                        var res = msg.split("&");
                        console.log(res);
                    $('#uid').val(res[0]);
                    $('#name').val(res[1]);
                    $('#pwd').val(res[2]);
                    $('#currentRole').html(res[3]);
                }
            });
          }


        function addUser() {
            $.ajax({
                type: "post",
                url: "processdata.jsp",
                data: "op=add&uid=" + $('#uid').val() + "&name=" + $('#name').val() + "&pwd=" +
$('#pwd').val() + "&role=" + $('#userrole').val(),
                success: function (msg) {
                    $('#responseMsg').html(msg); // Update HTML element with id "responseMsg"
                }
            });
          }
        </script>
        <script
                src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"

integrity="sha384-C6RzsynM9kWDrMNeT87bh95OGNyZPhcTNXj1NW7RuBCsyN/o0jlpcV8Qyq
46cDfL"
                crossorigin="anonymous"></script>
```

```
</body>
</html>

Processdata.jsp
<%@page import="java.sql.*"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1"%>

<%
PreparedStatement ps;
ResultSet rs;

try {
        Class.forName("org.mariadb.jdbc.Driver");
        Connection cn = DriverManager.getConnection("jdbc:mariadb://localhost:3306/mydb",
"root", "maria");

        String operation = request.getParameter("op");

        if ("search".equals(operation)) {
                String uid = (String) request.getParameter("uid");
                int u = Integer.parseInt(uid);
                //String pwd=(String) request.getParameter("pwd");

                ps = cn.prepareStatement("select * from usertable where uid=?");
                ps.setInt(1, u);

                rs = ps.executeQuery();

                boolean found = false;
                String role = null;
                String nm = null;
                String pwd = null;

                while (rs.next()) {
                        role = rs.getString("role");
                        pwd = rs.getString("password");
                        nm = rs.getString("name");
                        found = true;
                        break;
                }
```

```
                out.print(uid + "&" + nm + "&" + pwd + "&" + role);

                session.setAttribute("username", nm);

        } else {

                String uid=request.getParameter("uid");
                int u = Integer.parseInt(uid);
                String pwd=request.getParameter("pwd");
                String role=request.getParameter("role");
                String name=request.getParameter("name");

                ps=cn.prepareStatement("Insert into usertable values (?,?,?,?)");
                ps.setInt(1, u);
                ps.setString(2, pwd);
                ps.setString(3, role);
                ps.setString(4, name);

                ps.execute();

                out.print("Records added successfully");
        }



} catch (Exception e) {
        //  Block of code to handle errors
        e.printStackTrace();
} finally {

}
%>
```

## Output:



Conclusion: In this practical, we made use of AJAX to search and add users while remaining on the same page.

# Practical 7

Aim: To perform edit and delete operations using AJAX

Code:

**validationUI.jsp**
```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Form</title>
<link
        href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
        rel="stylesheet"

integrity="sha384-T3c6CoIi6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEV/Dwwykc2MP
K8M2HN"
        crossorigin="anonymous">
</head>
<body class="p-4">
        <form class="row g-3">
                <input type="hidden" name="submitType">
                <div class="row g-3 align-items-center">
                        <div class="col-2">
                                <label for="" class="col-form-label">UID</label>
                        </div>
                        <div class="col-3">
                                <input type="text" id="uid" name="uid" class="form-control">
                        </div>
                </div>
                <div class="row g-3 align-items-center">
                        <div class="col-2">
                                <label for="" class="col-form-label">Name</label>
                        </div>
                        <div class="col-3">
                                <input type="text" id="name" name="name" class="form-control">
                        </div>
                </div>
```

```html
<div class="row g-3 align-items-center">
    <div class="col-2">
        <label for="inputPassword6" class="col-form-label">Password</label>
    </div>
    <div class="col-3">
        <input type="password" name="pwd" id="pwd"
            class="form-control"
            aria-describedby="passwordHelpInline">
    </div>
    <div class="col-auto">
        <span id="passwordHelpInline" class="form-text"> Must be 8-20
            characters long. </span>
    </div>
</div>
<div class="row g-3 align-items-center">
    <div class="col-2">
        <label for="" class="col-form-label">Role</label>
    </div>
    <div class="col-3">
        <select class="form-select" aria-label="Default select example"
            id='userrole'>
            <option value="" id="currentRole" selected
                disabled></option>
            <option value="admin">Admin</option>
            <option value="user">User</option>
            <option value="other">Other</option>
        </select>
    </div>
</div>
<div class="row g-3 align-items-center">
    <div class="col-auto">
        <button type="button" class="btn btn-primary"
            onclick="searchprocess()">Search</button>
    </div>
    <div class="col-auto">
        <button type="button" class="btn btn-primary"
            onclick="addUser()">Add</button>
    </div>
    <div class="col-auto">
        <button type="button" class="btn btn-primary"
            onclick="deleteUser()">Delete</button>
```

```
                            </div>
                            <div class="col-auto">
                                      <button type="button" class="btn btn-primary"
onclick="editUser()">Edit</button>
                            </div>
                            <br><br>
                            <div id="responseMsg"></div>



                  </div>
            </form>
            <div id="output"></div>
            <script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.7.1/jquery.min.js"
integrity="sha512-v2CJ7UaYy4JwqLDIrZUI/4hqeoQieOmAZNXBeQyjo21dadnwR+8ZaIJVT8EE
2iyl61OV8e6M8PP2/4hpQINQ/g==" crossorigin="anonymous"
referrerpolicy="no-referrer"></script>
            <script type="text/javascript">
              function searchprocess() {
                 $.ajax({
                    type: "post",
                    url: "processdata.jsp",
                    data: "op=search&uid=" + $('#uid').val(),
                    success: function (msg) {


                             var res = msg.split("&");
                             console.log(res);
                        $('#uid').val(res[0]);
                        $('#name').val(res[1]);
                        $('#pwd').val(res[2]);
                        $('#currentRole').html(res[3]);
                    }
                 });
              }

              function deleteUser() {
                 $.ajax({
                    type: "post",
                    url: "processdata.jsp",
                    data: "op=delete&uid=" + $('#uid').val(),
                    success: function (msg) {
                       $('#responseMsg').html(msg); // Update HTML element with id "responseMsg"
                    }
```

```
                });
              }

            function editUser() {
                $.ajax({
                    type: "post",
                    url: "processdata.jsp",
                    data: "op=edit&uid=" + $('#uid').val() + "&name=" + $('#name').val() + "&pwd=" +
$('#pwd').val() + "&role=" + $('#userrole').val(),
                    success: function (msg) {
                        $('#responseMsg').html(msg); // Update HTML element with id "responseMsg"
                    }
                });
            }


            function addUser() {
                $.ajax({
                    type: "post",
                    url: "processdata.jsp",
                    data: "op=add&uid=" + $('#uid').val() + "&name=" + $('#name').val() + "&pwd=" +
$('#pwd').val() + "&role=" + $('#userrole').val(),
                    success: function (msg) {
                        $('#responseMsg').html(msg); // Update HTML element with id "responseMsg"
                    }
                });
            }
        </script>
        <script
                src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js"

integrity="sha384-C6RzsynM9kWDrMNeT87bh95OGNyZPhcTNXj1NW7RuBCsyN/o0jlpcV8Qyq
46cDfL"
                crossorigin="anonymous"></script>

</body>
</html>

Processdata.jsp
<%@page import="java.sql.*"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
```

```jsp
<%
PreparedStatement ps;
ResultSet rs;

try {
    Class.forName("org.mariadb.jdbc.Driver");
    Connection cn = DriverManager.getConnection("jdbc:mariadb://localhost:3306/mydb", "root",
"maria");

    String operation = request.getParameter("op");

    if ("search".equals(operation)) {
        // Search operation
        String uid = request.getParameter("uid");
        int u = Integer.parseInt(uid);

        ps = cn.prepareStatement("select * from usertable where uid=?");
        ps.setInt(1, u);

        rs = ps.executeQuery();

        boolean found = false;
        String role = null;
        String nm = null;
        String pwd = null;

        while (rs.next()) {
            role = rs.getString("role");
            pwd = rs.getString("password");
            nm = rs.getString("name");
            found = true;
            break;
        }

        if (found) {
            out.print(uid + "&" + nm + "&" + pwd + "&" + role);
            session.setAttribute("username", nm);
        } else {
            out.print("Record not found");
        }
    } else if ("add".equals(operation)) {
```

```java
    // Add operation
    String uid = request.getParameter("uid");
    int u = Integer.parseInt(uid);
    String pwd = request.getParameter("pwd");
    String role = request.getParameter("role");
    String name = request.getParameter("name");

    ps = cn.prepareStatement("Insert into usertable values (?,?,?,?)");
    ps.setInt(1, u);
    ps.setString(2, pwd);
    ps.setString(3, role);
    ps.setString(4, name);

    ps.execute();

    out.print("Records added successfully");
} else if ("delete".equals(operation)) {
    // Delete operation
    String uid = request.getParameter("uid");
    int u = Integer.parseInt(uid);

    ps = cn.prepareStatement("delete from usertable where uid=?");
    ps.setInt(1, u);

    int deletedRows = ps.executeUpdate();
    if (deletedRows > 0) {
        out.print("Record with UID " + uid + " deleted successfully");
    } else {
        out.print("Record with UID " + uid + " not found");
    }
} else if ("edit".equals(operation)) {
    // Edit operation
    String uid = request.getParameter("uid");
    int u = Integer.parseInt(uid);
    String pwd = request.getParameter("pwd");
    String role = request.getParameter("role");
    String name = request.getParameter("name");

    ps = cn.prepareStatement("update usertable set password=?, role=?, name=? where
uid=?");
    ps.setString(1, pwd);
    ps.setString(2, role);
```

```
    ps.setString(3, name);
    ps.setInt(4, u);

    int updatedRows = ps.executeUpdate();
    if (updatedRows > 0) {
        out.print("Record with UID " + uid + " updated successfully");
    } else {
        out.print("Record with UID " + uid + " not found");
    }
  }

} catch (Exception e) {
    e.printStackTrace();
} finally {
    // Close resources if needed
}
%>
```

Output:



Conclusion: In this practical, we made use of AJAX to edit and delete users while remaining on the same page.

# Practical 8

Aim: To create a stored procedure and retrieve results from Resultset.

Code:

**MariaDB code to execute in CLI**
```sql
CREATE TABLE employee (
  empid INT,
  name VARCHAR(20),
  role VARCHAR(20),
  city VARCHAR(20),
  country VARCHAR(20),
  PRIMARY KEY (empid)
);
INSERT INTO employee (empid, name, role) VALUES
  (1, 'Rahul', 'Student'),
  (2, 'Priya', 'Teacher'),
  (3, 'Rajesh', 'Student'),
  (4, 'Sita', 'Teacher'),
  (5, 'Akash', 'Student');
UPDATE employee SET city = 'Mumbai', country = 'India' WHERE city IS NULL;
```

**Stored procedure**
```sql
delimiter //
create or replace procedure empdisplay(IN eid int)
begin
select * from employee where empid = eid;
end
```

**displayrec.jsp**
```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
    pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<form action="storedprocedurecall.jsp">
        <label>Employee id</label>
```

```html
        <input type="text" name="empid"/>
        <button type="submit">Submit</button>
</form>
</body>
</html>
```

**storedprocedurecall.jsp**
```jsp
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1" import="java.sql.*"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
        <%
        CallableStatement cs;
        ResultSet rs;
        try {
                Class.forName("org.mariadb.jdbc.Driver");
                Connection cn =
DriverManager.getConnection("jdbc:mariadb://localhost:3306/mydb", "root", "root");
                int ueid = Integer.parseInt(request.getParameter("empid"));
                cs = cn.prepareCall("{call empdisplay(?)}");
                cs.setInt(1, ueid);
                rs = cs.executeQuery();
                while (rs.next()) {
                        out.print(rs.getString("name") + " " + rs.getString("role") + " " +
rs.getString("city"));
                }
        } catch (Exception e) {
                e.printStackTrace();
        }
        %>
</body>
</html>
```

Output:

```
MariaDB [mydb]> call empdisplay(1);
+-------+-------+---------+--------+---------+
| empid | name  | role    | city   | country |
+-------+-------+---------+--------+---------+
|     1 | Rahul | Student | Mumbai | India   |
+-------+-------+---------+--------+---------+
1 row in set (0.001 sec)

Query OK, 0 rows affected (0.002 sec)

MariaDB [mydb]>
```

<  >  C              localhost:8080/prac/jsp/displayrec.jsp

Employee id 1                              Submit


<  >  C          localhost:8080/prac/jsp/storedprocedurecall.jsp?empid=1

Rahul Student Mumbai


Conclusion: In this practical, we learnt to create a stored procedure to display employee details.