

### Practical 1

Write a JDBC desktop program to perform following CRUD and Search operation. Create appropriate table in database to store objects of Student class.

1. Add Student. (Create)
2. View Students. (Display all students)
3. Edit Student. (Update)
4. Delete Student. (Delete)
5. Search Student (Find student based on enrolment No)

#### **CODE ->**

```
import java.sql.*;
import java.util.Scanner;
public class Book
{
    Scanner sc = new Scanner(System.in);
    public void printTable(ResultSet rs) throws SQLException
    {
        System.out.println("\n-----");
        System.out.println("Id\tFirst Name\tLast Name\tContact\t\tBranch\t\tAddress\t\tDOB"); while(rs.next())
        System.out.println(rs.getInt(1)+"\t"+rs.getString(2)+"\t"+rs.getString(3)+"\t"+rs.getString(4)+
            "\t"+rs.getString(5)+"\t"+rs.getString(6)+"\t"+rs.getString(7));
        System.out.println("-----");
    }
    public int updateCommon(PreparedStatement update,String column) throws SQLException
    {
        int i = 0;
        Book obj = new Book();
        System.out.println("\nEnter "+column+" Value : ");
        update.setString(1, obj.sc.next());
        System.out.println("\nEnter Id : ");
        update.setInt(2, obj.sc.nextInt());
        i = update.executeUpdate();
        return i;
    }
    public static void main(String[] args)
    {
        Book obj = new Book();
        try{
            boolean flag = true;
            int choice=0;
            Class.forName("com.mysql.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/test", "root", "");
            PreparedStatement insert = con.prepareStatement("insert into student values(?,?,?,?)");

            PreparedStatement updateFname = con.prepareStatement("update student set Fname=? where id=?");
            PreparedStatement updateLname = con.prepareStatement("update student set Lname=? where id=?");
            PreparedStatement updateContact = con.prepareStatement("update student set Contactno=?
                where id=?");
            PreparedStatement updateBranch = con.prepareStatement("update student set Branch=? where id=?");
            PreparedStatement delete = con.prepareStatement("delete from student where id = ?");
```

```
PreparedStatement view = con.prepareStatement("select * from student where id = ?");
```

```
PreparedStatement viewAll = con.prepareStatement("select * from student");
```

```
while(flag){
```

```
    System.out.println("\nEnter 1 For Insert");  
    System.out.println("Enter 2 For Update");  
    System.out.println("Enter 3 For Delete");  
    System.out.println("Enter 4 For View");  
    System.out.println("Enter 5 For ViewAll");  
    System.out.println("Enter 6 For Exit");  
    System.out.println("\nEnter Your Choice : ");
```

```
    if(obj.sc.hasNextInt()){  
        choice = obj.sc.nextInt();  
    }
```

```
switch(choice){  
    case 1:
```

```
        System.out.println("Enter Student Id : ");  
        insert.setInt(1, obj.sc.nextInt());  
        System.out.println("Enter First Name : ");  
        insert.setString(2, obj.sc.next());  
        System.out.println("Enter Last Name : ");  
        insert.setString(3, obj.sc.next());  
        System.out.println("Enter Contact No : ");  
        insert.setString(4, obj.sc.next());  
        System.out.println("Enter Branch : ");  
        insert.setString(5, obj.sc.next());  
        int i = insert.executeUpdate();  
        System.out.println("\n"+i+ " Row Inserted");  
        break;
```

```
    case 2:
```

```
        int upadatecol = 0;  
        String column="";  
        do{  
            System.out.println("-----Which Field You Want To Update-----");  
            System.out.println("\nEnter 1 For First Name");  
            System.out.println("Enter 2 For Last Name");  
            System.out.println("Enter 3 For Contact No");  
            System.out.println("Enter 4 For Branch");  
            System.out.println("Enter Your Choice : ");  
            upadatecol = obj.sc.nextInt();  
            if(upadatecol>0 && upadatecol <= 4)  
                break; }while(true);  
        int up=0;  
        switch(upadatecol){  
            case 1:
```

```
        column = "Fname";
        up = obj.updateCommon(updateFname, column);
        break;

    case 2:
        column = "Lname";
        up = obj.updateCommon(updateLname, column); break;

    case 3:
        column = "Contactno";
        up = obj.updateCommon(updateContact, column); break;

    case 4:
        column = "Branch";
        up = obj.updateCommon(updateBranch, column); break;

    }
    System.out.println(up+" Row Updated"); break;

    case 3:
        System.out.println("Enter Id : "); delete.setInt(1, obj.sc.nextInt()); int del =
delete.executeUpdate();
        System.out.println(del+" Row Deleted"); break;

    case 4:
        System.out.println("Enter Id : "); view.setInt(1, obj.sc.nextInt()); ResultSet rs =
view.executeQuery();
        obj.printTable(rs); rs.close(); break;

    case 5:
        System.out.println();
        ResultSet r = viewAll.executeQuery(); obj.printTable(r); r.close(); break;

    case 6: flag = false; break; default:
        System.out.println("Enter Valid Choice -_-"); break;
    }
}
}
catch(Exception e){
    System.out.println(e);
}
}
```

**OUTPUT ->**

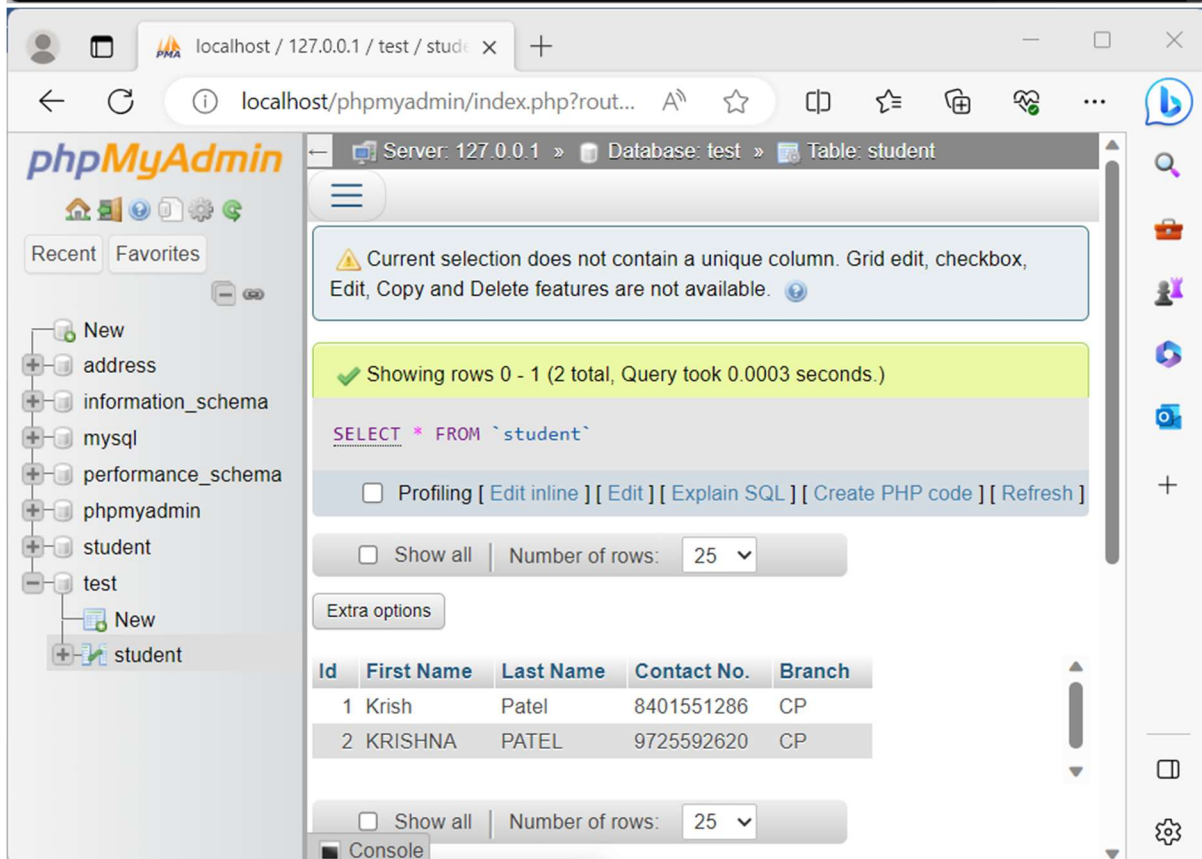
```
C:\Windows\System32\cmd.e x + v

C:\Users\Admin\Desktop\SEM 5\AJAVA\J>java Book
Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class
is 'com.mysql.cj.jdbc.Driver'. The driver is automatically registered via the SP
I and manual loading of the driver class is generally unnecessary.

Enter 1 For Insert
Enter 2 For Update
Enter 3 For Delete
Enter 4 For View
Enter 5 For ViewAll
Enter 6 For Exit

Enter Your Choice :
1
Enter Student Id :
2
Enter First Name :
KRISHNA
Enter Last Name :
PATEL
Enter Contact No :
9725592620
Enter Branch :
CP

1 Row Inserted
```



localhost / 127.0.0.1 / test / student x +

localhost/phpmyadmin/index.php?rout...

Server: 127.0.0.1 » Database: test » Table: student

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 1 (2 total, Query took 0.0003 seconds.)

`SELECT * FROM `student``

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25

Extra options

Id	First Name	Last Name	Contact No.	Branch
1	Krish	Patel	8401551286	CP
2	KRISHNA	PATEL	9725592620	CP

☐ Show all | Number of rows: 25

Console

## Practical 2

Write servlet which get data from html form and display all data into servlet.

### CODE->

#### JAVA CODE

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
class HelloServlet extends HttpServlet
{
    public void processRequest(HttpServletRequest req, HttpServletResponse res)
        throws ServletException, IOException
    {
        res.setContentType("text/html");
        String id = req.getParameter("id");
        String name = req.getParameter("name");
        String email = req.getParameter("email");
        String dob = req.getParameter("dob");
        String description = req.getParameter("desc");
        PrintWriter out = res.getWriter();
        out.println(
            "<html><head>"
            + "<style>p{font-weight:200;font-size:20px;}span{font-weight:700;font-
size:20px;}</style>" +
            "</head><body>");
        out.println("<p><span>ID : </span>" + id + "</p>" + "<p><span>Name : </span>"
+ name + "</p>"
            + "<p><span>Email : </span>" + email + "</p>"
            + "<p><span>DOB : </span>" + dob + "</p>"
            + "<p><span>Description : </span>" + description + "</p>"
            + "<hr><br>");
        out.println("</body></html>");
    }
    public void doGet(HttpServletRequest req, HttpServletResponse res) throws
ServletException, IOException {
        processRequest(req, res);
    }
    public void doPost(HttpServletRequest req, HttpServletResponse res) throws
ServletException, IOException {
        processRequest(req, res);
    }
}
```

#### HTML CODE ->

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

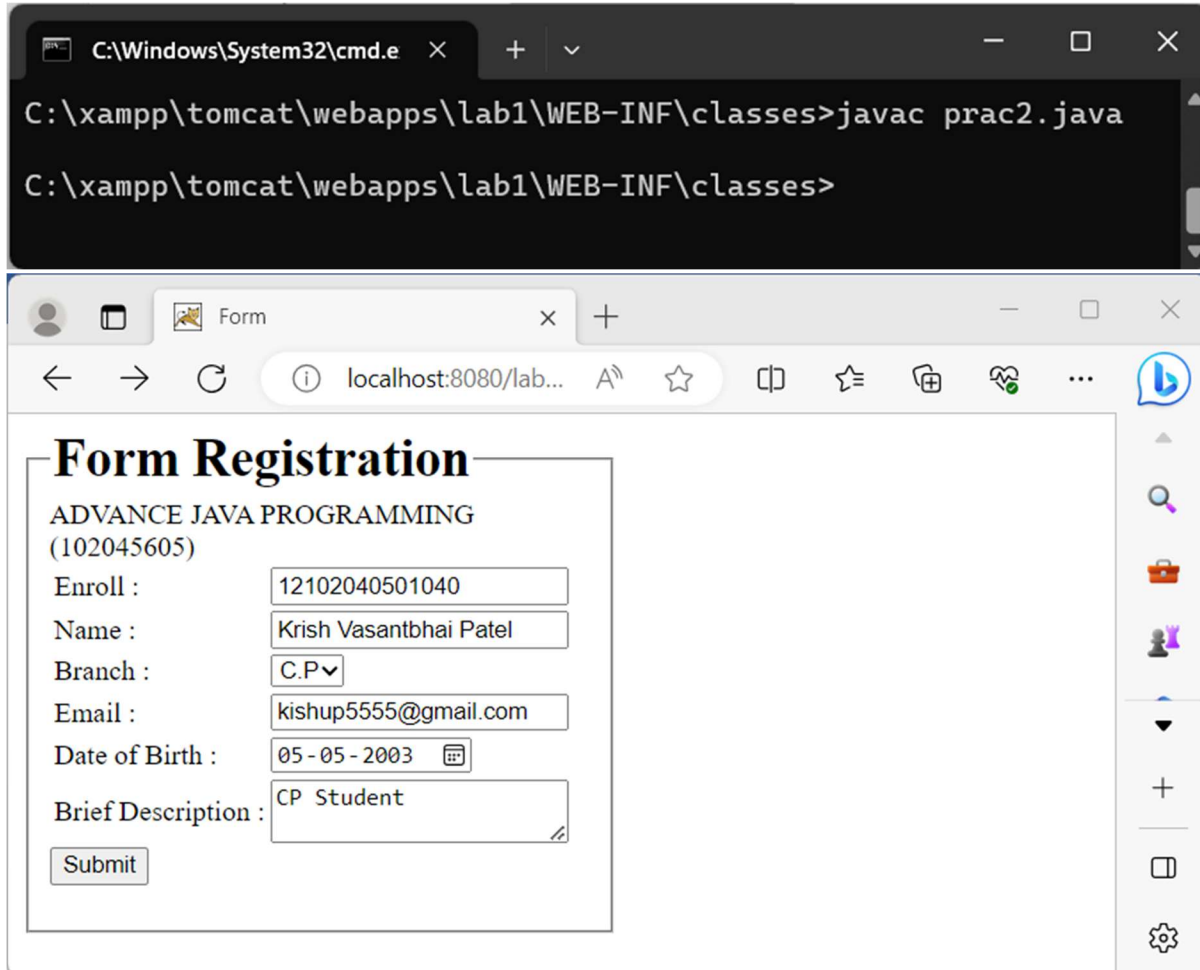
```

<title>Form </title>

</head>
<body>
<div id="body">
<fieldset style="width:50%;">
<legend style="font-weight: 800;font-size: 30px;">Form Registration</legend>
<form action="HelloServlet" method="get">
<table class="table">
<tr>
<td><span>Enroll : </span></td>
<td><input type="number" name="id" placeholder="Enter Your Enrollment"></td>
</tr>
<tr>
<td><span>Name : </span></td>
<td><input type="text" name="name" placeholder="Enter Your Name"></td>
</tr>
<tr>
<td><span>Branch : </span></td>
<td><select style="width:24.5%;" name="select">
<option>C.P</option>
<option>CSD</option>
<option>ME</option>
<option>IT</option>
<option>IOT</option>
</select></td>
</tr>
<tr>
<td><span>Email : </span></td>
<td><input type="email" name="email" placeholder="Enter Your Email"></td>
</tr>
<tr>
<td colspan="2">ADVANCE JAVA PROGRAMMING (102045605)</td>
</tr>
<tr>
<td><span>Date of Birth : </span></td>
<td>
<input type="date" name="dob">
</td>
</tr>
<tr>
<td><span>Brief Description : </span></td>
<td>
<textarea name="desc"></textarea>
</td>
</tr>
</table>
<button class="submitBtn" type="submit">Submit</button>
</form>
</fieldset>
</div>
</body>
</html>

```

OUTPUT ->



C:\Windows\System32\cmd.e x + v

```
C:\xampp\tomcat\webapps\lab1\WEB-INF\classes>javac prac2.java
```

```
C:\xampp\tomcat\webapps\lab1\WEB-INF\classes>
```

Form

localhost:8080/lab...

## Form Registration

ADVANCE JAVA PROGRAMMING  
(102045605)

Enroll :

Name :

Branch :

Email :

Date of Birth :

Brief Description :



### Practical 3

❖ Convert following servlets in MVC architecture. Write different servlets which get data from html form and perform following database operations.

1. Add Student. (Create)
2. Edit Student. (Update)
3. Delete Student. (Delete)
4. Search Student (Find student based on enrolment No)
5. View All Students

#### **JAVA MAIN CODE:-**

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.*;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(urlPatterns = {"/Process"})
class Process extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response) throws
    ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet Process</title>");
            out.println("</head>"); out.println("<body>");
            String btn = request.getParameter("submit");
            out.println("<h1>You Are Click : " + btn+ "</h1>");
            HttpSession session = request.getSession();
            switch (btn) {
                case "Add":
                    session.setAttribute("id", request.getParameter("id"));
                    session.setAttribute("fname", request.getParameter("fname"));
                    session.setAttribute("lname", request.getParameter("lname"));
                    session.setAttribute("contact", request.getParameter("contact"));
                    session.setAttribute("branch", request.getParameter("branch"));
                    session.setAttribute("address", request.getParameter("address"));
                    session.setAttribute("dob", request.getParameter("dob"));
                    response.sendRedirect("Add_student");
                    break;
                case "Update":
                    session.setAttribute("id", request.getParameter("id"));
                    session.setAttribute("fname", request.getParameter("fname"));
                    session.setAttribute("lname", request.getParameter("lname"));
                    session.setAttribute("contact", request.getParameter("contact"));
                    session.setAttribute("branch", request.getParameter("branch"));
```



```

        session.setAttribute("address", request.getParameter("address"));
        session.setAttribute("dob", request.getParameter("dob"));
        response.sendRedirect("Update_student");
        break;
    case "Delete":
        session.setAttribute("id", request.getParameter("id"));
        response.sendRedirect("Delete_Student");
        break;
    case "Search":
        session.setAttribute("id", request.getParameter("id"));
        response.sendRedirect("Search_Student");
        break;
    case "Show All":
        request.getRequestDispatcher("ShowAll_Student").forward(request, response);
        break;
    default:
        break;
    }
    out.println("</body>");
    out.println("</html>");
}
}
}

```

#### **ADD STUDENT JAVA CODE:-**

```

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
@WebServlet(urlPatterns = {"/Add_student"})
class Add_student extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet Add_student</title>");
            out.println("</head>");
            out.println("<body>");
            HttpSession session = request.getSession(false);

```

```

        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
            PreparedStatement stmt = con.prepareStatement("insert into student
values(?,?,?,?,?,?,?)");
            stmt.setInt(1, Integer.parseInt((String) session.getAttribute("id")));
            stmt.setString(2, (String) session.getAttribute("fname"));
            stmt.setString(3, (String) session.getAttribute("lname"));
            stmt.setString(4, (String) session.getAttribute("contact"));
            stmt.setString(5, (String) session.getAttribute("branch"));
            stmt.setString(6, (String) session.getAttribute("address"));
            stmt.setString(7, (String) session.getAttribute("dob"));
            int i = stmt.executeUpdate();
            if(i==0){
                out.println("<Center><p>Data Is Not Inserted</p></Center>");
            }
            else{
                out.println("<Center><p>Data Is Inserted</p></ Center>");
            }
        }catch(Exception e)
        {
            out.println("<p>"+e+"</p>");
        }
        out.println("</body>");
        out.println("</html>");
    }
}
}

```

#### **UPDATE\_DATA CODE :-**

```

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
@WebServlet(urlPatterns = {"/Update_student"})
class Update_student extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");

```

```

        out.println("<title>Servlet Update_student</title>");
        out.println("</head>");
        out.println("<body>");
        HttpSession session = request.getSession(false);
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
            PreparedStatement stmt = con.prepareStatement("update student set
First_name=?,Last_name=?,Contact_no=?,Branch=?,Address=?,DOB=? where Id=?");
            stmt.setString(1, (String) session.getAttribute("fname"));
            stmt.setString(2, (String) session.getAttribute("lname"));
            stmt.setString(3, (String) session.getAttribute("contact"));
            stmt.setString(4, (String) session.getAttribute("branch"));
            stmt.setString(5, (String) session.getAttribute("address"));
            stmt.setString(6, (String) session.getAttribute("dob"));
            stmt.setInt(7, Integer.parseInt((String) session.getAttribute("id")));
            int i = stmt.executeUpdate();
            if(i!=0){
                out.println("<Center><p>Data Is Updated</p></Center>");
            }
            else{
                out.println("<Center><p>Data Is Not Update</p></Center>");
            }
        }
        catch(Exception e)
        {
            out.println("<p>"+e+"</p>");
        }
        out.println("</body>");
        out.println("</html>");
    }
}
}

```

#### **DELETE\_STUDENT CODE :-**

```

import java.io.IOException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(urlPatterns = {"/Delete_Student"})
class Delete_Student extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
    }
}

```

```

        try ( PrintWriter out = response.getWriter()) {
/* TODO output your page here. You may use following sample code. */
out.println("<!DOCTYPE html>");
out.println("<html>");
out.println("<head>");
out.println("<title>Servlet Delete_Student</title>");
out.println("</head>");
out.println("<body>");
HttpSession session = request.getSession(false);
try{
    Class.forName("com.mysql.jdbc.Driver");
    Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
    PreparedStatement stmt = con.prepareStatement("delete from student where id =?");
    stmt.setInt(1,Integer.parseInt((String) session.getAttribute("id")));
    int i = stmt.executeUpdate();
    if(i!=0)
    {
        out.println("<Center><p>Data Is Deleted</p></Center>");
    }
    else
    {
        out.println("<Center><p>Data Is Not Deleted</p></Center>");
    }
}
catch(Exception e)
{
    out.println("<p>"+e+"</p>");
}
out.println("</body>");
out.println("</html>");
}
}
}

```

#### **SEARCH\_STUDENT CODE:-**

```

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(urlPatterns = {"/Search_Student"})
class Search_Student extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try ( PrintWriter out = response.getWriter())

```

```

        {
        /* TODO output your page here. You may use following sample code. */
        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet Search_Student</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<center>");
        HttpSession session = request.getSession(false);
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
            DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
            PreparedStatement stmt = con.prepareStatement("select * from student where id =?");
            stmt.setInt(1,Integer.parseInt((String) session.getAttribute("id")));
            ResultSet rs = stmt.executeQuery();
            if(rs!=null)
            {
                out.println("<table style='width:auto' border= '1px solid black'>");
                out.println("<th>ID</th><th>First Name</th><th>Last Name</th><th>Contact  
No</th><th>Branch</th><th>Address</th><th>DOB</th>");
                while(rs.next()){
                    out.println("<tr>");

                    out.println("<td>"+rs.getInt(1)+"</td><td>"+rs.getString(2)+"</td><td>"+rs.getString(3)+"</td><td>"+rs.get  
String(4)+"</td><td>"+rs.getString(5)+"</td><td>"+rs.getString(6)+"</td><td>"+rs.getString(7)+"</td>");
                    out.println("</tr>");
                }
                out.println("</table>");
            }else{
                out.println("<p>Data Is Not Found</p>");
            }
        }
        catch(Exception e)
        {
            out.println("<p>"+e+"</p>");
        }
        out.println("</center>");
        out.println("</body>");
        out.println("</html>");
    }
}
}

```

#### **SHOWALL\_STUDENT CODE :-**

```

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;

```

```

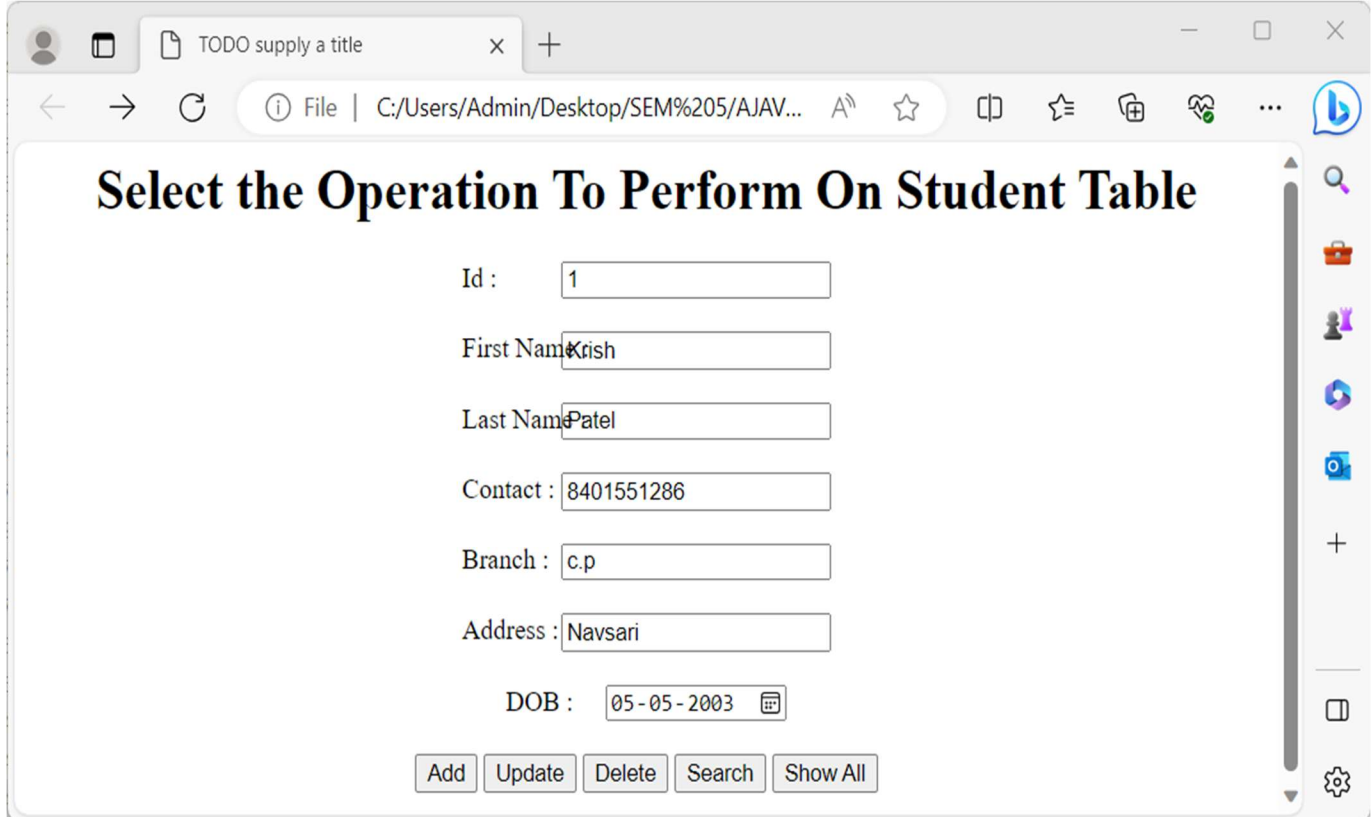
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(urlPatterns = {"/ShowAll_Student"})
class ShowAll_Student extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet ShowAll_Student</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<center>");

            try{
                Class.forName("com.mysql.jdbc.Driver");
                Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
                PreparedStatement stmt = con.prepareStatement("select * from student");
                ResultSet rs = stmt.executeQuery();
                if(rs!=null){
                    out.println("<table style='width:auto' border= '1px solid black'>");
                    out.println("<th>ID</th><th>First Name</th><th>Last Name</th><th>Contact  
No</th><th>Branch</th><th>Address</th><th>DOB</th>");
                    while(rs.next()){
                        out.println("<tr>");

                        out.println("<td>"+rs.getInt(1)+"</td><td>"+rs.getString(2)+"</td><td>"+rs.getString(3)+"</td><td>"+rs.get  
String(4)+"</td><td>"+rs.getString(5)+"</td><td>"+rs.getString(6)+"</td><td>"+rs.getString(7)+"</td>");
                        out.println("</tr>");
                    }
                    out.println("</table>");
                }else{
                    out.println("<p>Data Is Not Found</p>");
                }
            }
            catch(Exception e)
            {
                out.println("<p>"+e+"</p>");
            }
            out.println("</center>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}

```

**OUTPUT:-**



The screenshot shows a web browser window with a single tab titled "TODO supply a title". The address bar shows the file path "C:/Users/Admin/Desktop/SEM%205/AJAV...". The page content is a form titled "Select the Operation To Perform On Student Table". The form contains several input fields for student information: Id (1), First Name (Krish), Last Name (Patel), Contact (8401551286), Branch (c.p), Address (Navsari), and DOB (05-05-2003). At the bottom of the form are five buttons: Add, Update, Delete, Search, and Show All.

**Select the Operation To Perform On Student Table**

Id :

First Name

Last Name

Contact :

Branch :

Address :

DOB :



### Practical:-4

**Aim :- Create and maintain HttpSession in all servlets written in previous labs.**

#### **HTML :-**

```
<html>
<head>
<title>TODO supply a title</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<style>
label{
position: absolute; float: left;
}
input[type="text"]{ margin-left: 8%;
}
input[type="date"]{ margin-left: 8%;
}
</style>
</head>
<body>
<form action="Process" method="get">
<center>
<h1>Select the operation to perform on student table</h1>
<label>Id : </label>
<input type="text" name="id" required><br><br>
<label>First Name : </label>
<input type="text" name="fname"><br><br>

<label>Last Name : </label>
<input type="text" name="lname"><br><br>
<label>Contact : </label>
<input type="text" name="contact"><br><br>
<label>Branch : </label>
<input type="text" name="branch"><br><br>
<label>Address : </label>
<input type="text" name="address"><br><br>
<label>DOB : </label>
<input type="date" name="dob"><br><br>
<input type="submit" name="submit" value="Add">
```

```
<input type="submit" name="submit" value="Update">
<input type="submit" name="submit" value="Delete">
<input type="submit" name="submit" value="Search">
<input type="submit" name="submit" value="Show All">
</center>
</form>
</body>
</html>
```

### **Process.Java :-**

```
import java.io.IOException; import java.io.PrintWriter;
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;

@WebServlet(urlPatterns = {"/Process"}) public class Process extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =
response.getWriter()) {
/* TODO output your page here. You may use following sample code. */
out.println("<!DOCTYPE html>");
out.println("<html>"); out.println("<head>"); out.println("<title>Servlet Process</title>");
out.println("</head>"); out.println("<body>");
String btn = request.getParameter("submit"); out.println("<h1>You Are Click : " + btn+
"</h1>"); switch (btn) {
case "Add":
request.getRequestDispatcher("Add_student").forward(request, response); break;
case "Update":
request.getRequestDispatcher("Update_student").forward(request, response); break;
case "Delete": request.getRequestDispatcher("Delete_Student").forward(request,
response); break;
case "Search": request.getRequestDispatcher("Search_Student").forward(request,
response); break;
case "Show All": request.getRequestDispatcher("ShowAll_Student").forward(request,
response); break;
default:
```

```
        break;
    }
    out.println("</body>"); out.println("</html>");
}
}
}
```

#### **Add\_student.Java :-**

```
import java.io.IOException; import java.io.PrintWriter;
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse; import java.sql.*;
```

```
@WebServlet(urlPatterns = {"/Add_student"}) public class Add_student extends
HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =
response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>"); out.println("<head>");
            out.println("<title>Servlet Add_student</title>"); out.println("</head>");
            out.println("<body>"); try{
                Class.forName("com.mysql.jdbc.Driver");
                Connection con =
                DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
                PreparedStatement stmt = con.prepareStatement("insert into student
                values(?,?,?,?,?,?,?)");
                stmt.setInt(1,Integer.parseInt(request.getParameter("id")));
                stmt.setString(2,request.getParameter("fname"));
                stmt.setString(3,request.getParameter("lname"));
                stmt.setString(4,request.getParameter("contact"));
                stmt.setString(5,request.getParameter("branch"));
                stmt.setString(6,request.getParameter("address"));
                stmt.setString(7,request.getParameter("dob"));
                int i = stmt.executeUpdate(); if(i==0){
                    out.println("<Center><p>Data Is Not Inserted</p></Center>");
                }else{
```

```
out.println("<Center><p>Data Is Inserted</p></ Center>");
```

```
}  
}catch(Exception e){ out.println("<p>"+e+"</p>");  
}  
out.println("</body>"); out.println("</html>");  
}  
}  
}
```

### **Update\_student.Java :-**

```
import java.io.IOException; import java.io.PrintWriter;  
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest; import  
javax.servlet.http.HttpServletResponse; import java.sql.*;  
  
@WebServlet(urlPatterns = {"/Update_student"}) public class Update_student extends  
HttpServlet {  
    protected void processRequest(HttpServletRequest request, HttpServletResponse  
    response) throws ServletException, IOException {  
        response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =  
        response.getWriter()) {  
            /* TODO output your page here. You may use following sample code. */  
            out.println("<!DOCTYPE html>");  
            out.println("<html>");  
  
            out.println("<head>");  
            out.println("<title>Servlet Update_student</title>"); out.println("</head>");  
            out.println("<body>"); try{  
                Class.forName("com.mysql.jdbc.Driver");  
                Connection con =  
                DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");  
                PreparedStatement stmt = con.prepareStatement("update student set  
                First_name=?,Last_name=?,Contact_no=?,Branch=?,Address=?,DOB=? where Id=?");  
                stmt.setString(1,request.getParameter("fname"));  
                stmt.setString(2,request.getParameter("lname"));  
                stmt.setString(3,request.getParameter("contact"));
```

```
stmt.setString(4,request.getParameter("branch"));
stmt.setString(5,request.getParameter("address"));
stmt.setString(6,request.getParameter("dob"));
stmt.setInt(7,Integer.parseInt(request.getParameter("id"))); int i = stmt.executeUpdate();
if(i!=0){
out.println("<Center><p>Data Is Updated</p></Center>");
}else{
out.println("<Center><p>Data Is Not Update</p></Center>");
}
}catch(Exception e){ out.println("<p>"+e+"</p>");
}
out.println("</body>"); out.println("</html>");
}
}
}
```

### **Delete\_Student :-**

```
import java.io.IOException; import java.io.PrintWriter;
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse; import java.sql.*;

@WebServlet(urlPatterns = {"/Delete_Student"}) public class Delete_Student extends
HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =
response.getWriter()) {
/* TODO output your page here. You may use following sample code. */
out.println("<!DOCTYPE html>");
out.println("<html>"); out.println("<head>");
out.println("<title>Servlet Delete_Student</title>"); out.println("</head>");
out.println("<body>"); try{
Class.forName("com.mysql.jdbc.Driver");
Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
```

```
PreparedStatement stmt = con.prepareStatement("delete from student
where id =
?");

stmt.setInt(1,Integer.parseInt(request.getParameter("id"))); int i = stmt.executeUpdate();
if(i!=0){
out.println("<Center><p>Data Is Deleted</p></Center>");
}else{
out.println("<Center><p>Data Is Not Deleted</p></Center>");
}
}catch(Exception e){ out.println("<p>"+e+"</p>");
}
out.println("</body>"); out.println("</html>");
}
}
}
```

### **Search\_Student.java :-**

```
import java.io.IOException; import java.io.PrintWriter;
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse; import java.sql.*;

@WebServlet(urlPatterns = {"/Search_Student"}) public class Search_Student extends
HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)

throws ServletException, IOException {
response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =
response.getWriter()) {
/* TODO output your page here. You may use following sample code. */
out.println("<!DOCTYPE html>");
out.println("<html>"); out.println("<head>");
out.println("<title>Servlet Search_Student</title>"); out.println("</head>");
out.println("<body>"); out.println("<center>"); try{
Class.forName("com.mysql.jdbc.Driver");
```

```
Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
PreparedStatement stmt = con.prepareStatement("select * from student where id =

?");

stmt.setInt(1,Integer.parseInt(request.getParameter("id"))); ResultSet rs =
stmt.executeQuery();
if(rs!=null){
out.println("<table style='width:auto' border= '1px solid black'>");
out.println("<th>ID</th><th>First Name</th><th>Last Name</th><th>Contact

No</th><th>Branch</th><th>Address</th><th>DOB</th>"); while(rs.next()){
out.println("<tr>");

out.println("<td>" +rs.getInt(1)+"</td><td>" +rs.getString(2)+"</td><td>" +rs.getString(3)+"
<
/td><td>" +rs.getString(4)+"</td><td>" +rs.getString(5)+"</td><td>" +rs.getString(6)+"</td>
>
<td>" +rs.getString(7)+"</td>");
out.println("</tr>");
}
out.println("</table>");

}else{
out.println("<p>Data Is Not Found</p>");
}
}catch(Exception e){ out.println("<p>" +e+"</p>");
}
out.println("</center>"); out.println("</body>"); out.println("</html>");
}
}
}
```

ShowAll\_Student.Java :-

```
import java.io.IOException; import java.io.PrintWriter; import java.sql.Connection; import
java.sql.DriverManager;
```



```
import java.sql.PreparedStatement; import java.sql.ResultSet;
import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;
```

```
@WebServlet(urlPatterns = {"/ShowAll_Student"}) public class ShowAll_Student
extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
```

```
throws ServletException, IOException {
response.setContentType("text/html;charset=UTF-8"); try ( PrintWriter out =
response.getWriter()) {
/* TODO output your page here. You may use following sample code. */
out.println("<!DOCTYPE html>");
out.println("<html>"); out.println("<head>");
out.println("<title>Servlet ShowAll_Student</title>"); out.println("</head>");
out.println("<body>");
```

```
out.println("<center>"); try{
Class.forName("com.mysql.jdbc.Driver");
Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/test","root","");
PreparedStatement stmt = con.prepareStatement("select * from student"); ResultSet rs
= stmt.executeQuery();
if(rs!=null){
out.println("<table style='width:auto' border= '1px solid black'>");
out.println("<th>ID</th><th>First Name</th><th>Last Name</th><th>Contact
No</th><th>Branch</th><th>Address</th><th>DOB</th>");
while(rs.next()){ out.println("<tr>");

out.println("<td>"+rs.getInt(1)+"</td><td>"+rs.getString(2)+"</td><td>"+rs.getString(3)+"
<
/td><td>"+rs.getString(4)+"</td><td>"+rs.getString(5)+"</td><td>"+rs.getString(6)+"</td>
<td>"+rs.getString(7)+"</td>");
out.println("</tr>");
}
out.println("</table>");
```

```

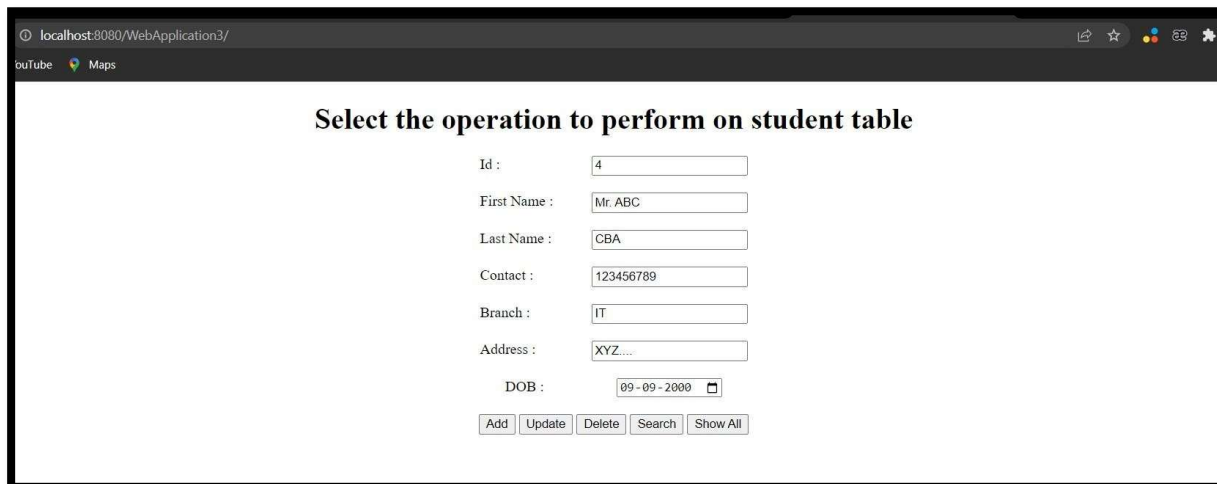
    }else{

out.println("<p>Data Is Not Found</p>");
    }
}catch(Exception e){ out.println("<p>"+e+"</p>");
}
out.println("</center>");

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

```

### Output :-



localhost:8080/WebApplication3/

Select the operation to perform on student table

Id :

First Name :

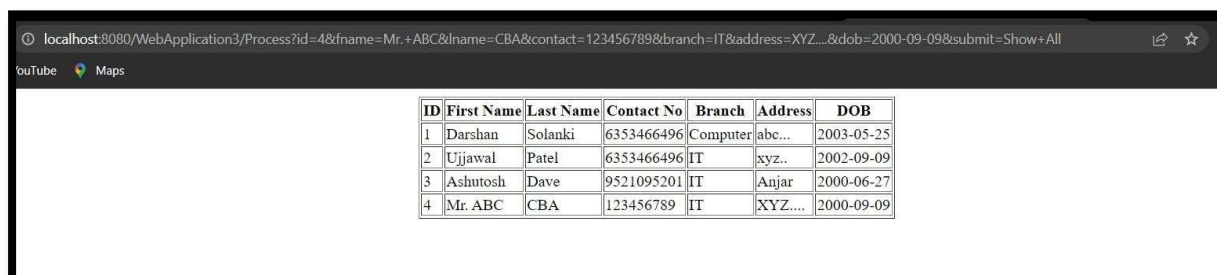
Last Name :

Contact :

Branch :

Address :

DOB :



localhost:8080/WebApplication3/Process?id=4&fname=Mr.+ABC&lname=CBA&contact=123456789&branch=IT&address=XYZ....&dob=2000-09-09&submit=Show+All

ID	First Name	Last Name	Contact No	Branch	Address	DOB
1	Darshan	Solanki	6353466496	Computer	abc...	2003-05-25
2	Ujjawal	Patel	6353466496	IT	xyz..	2002-09-09
3	Ashutosh	Dave	9521095201	IT	Anjar	2000-06-27
4	Mr. ABC	CBA	123456789	IT	XYZ....	2000-09-09

localhost:8080/WebApplication3/

Select the operation to perform on student table

Id :

First Name :

Last Name :

Contact :

Branch :

Address :

DOB :

localhost:8080/WebApplication3/Search\_Student

ID	First Name	Last Name	Contact No	Branch	Address	DOB
4	Mr. ABC	CBA	123456789	IT	XYZ....	2000-09-09

### Practical 5

- ❖ Write simple web application in which display email address from servlet init parameter and context init parameter.

Write a Servlet which display no of hits of

1. Particular servlet
2. Your web application.

JAVA CODE:-

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.*;
import javax.servlet.http.*;

public class prac5 extends HttpServlet {
    private int hitCounter;
    static int ahitCounter = 1;
    public void init()
    {
        hitCounter = 0;
    }
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        hitCounter++;
        try (PrintWriter out = response.getWriter())
        {
            /* TODO output your page here. You may use following sample code. */
            ServletContext scont = getServletContext();
            String emailcont = scont.getInitParameter("email");
            String n = String.valueOf(ahitCounter);
            Cookie c = new Cookie("visit", n);
            response.addCookie(c);
            int j = Integer.parseInt(c.getValue());
            System.out.println(ahitCounter++);
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet Prac5</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Servlet Context parameter " + emailcont + "</h1>");
            out.println("<h1>Servlet Init parameter " + getInitParameter("email") + "</h1>");
            out.println("<h1>Servlet hit count: " + hitCounter + "</h1>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}

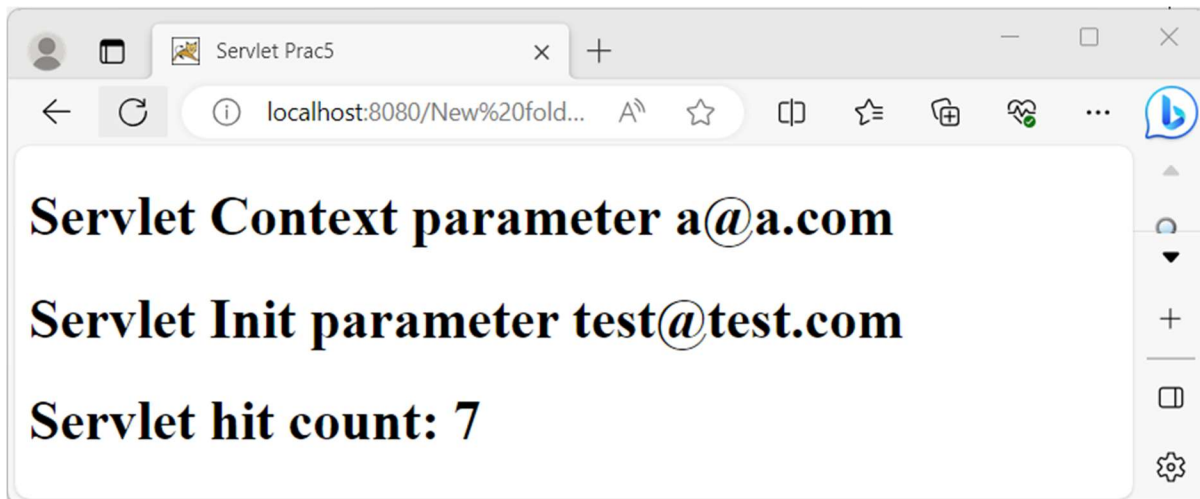
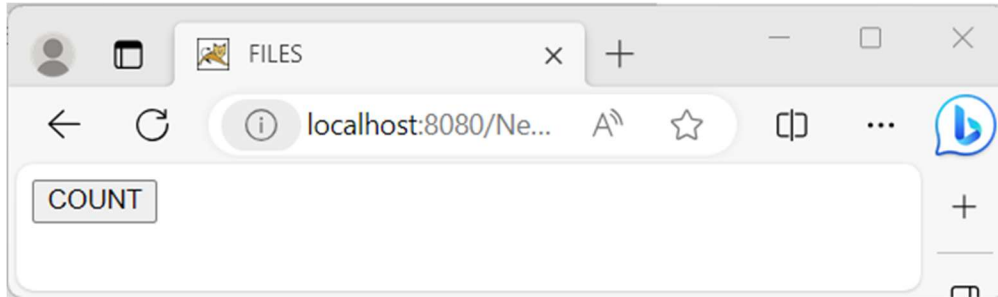
// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to
edit the code.">
@Override
```

```
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}
@Override
public String getServletInfo()
{
    return "Short description";
}
}
```

XML CODE:-

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee http://xmlns.jcp.org/xml/ns/javaee/web-
app_3_1.xsd">
<servlet>
<servlet-name>Prac5</servlet-name>
<servlet-class>Prac5</servlet-class>
<init-param>
<param-name>email</param-name>
<param-value>test@test.com</param-value>
</init-param>
</servlet>
<servlet-mapping>
<servlet-name>Prac5</servlet-name>
<url-pattern>/Prac5</url-pattern>
</servlet-mapping>
<session-config>
<session-timeout> 30
</session-timeout>
</session-config>
<context-param>
<param-name>email</param-name>
<param-value>a@a.com</param-value>
</context-param>
</web-app>
```

OUTPUT :-



### Practical 6

- ❖ **Write small web application with at least 2 servlets which share the common object of Student class. Student class is having instance variable roll no, assign the five rollnos and display all in both servlets.**

#### **Student Java Code :-**

```
package demo;
```

```
public class Student
{
    int roll[] = new int[5];
}
```

#### **First Java Code :-**

```
package demo;
```

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
class Student
{
    int roll[] = new int[5];
}
public class one extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter())
        {
            Student s = new Student();
            int n1 = s.roll[0] = 1;
            int n2 = s.roll[1] = 2;
            int n3 = s.roll[2] = 3;
            int n4 = s.roll[3] = 4;
            int n5 = s.roll[4] = 5;
            HttpSession session = request.getSession();
            session.setAttribute("rollno1", n1);
            session.setAttribute("rollno2", n2);
            session.setAttribute("rollno3", n3);
            session.setAttribute("rollno4", n4);
            session.setAttribute("rollno5", n5);
            out.println("<!DOCTYPE html>");
            out.println("<html>");
```



```

        out.println("<head>");
        out.println("<title>Servlet one</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Servlet one at " + n1 + "</h1>");
        out.println("<h1>Servlet one at " + n2 + "</h1>");
        out.println("<h1>Servlet one at " + n3 + "</h1>");
        out.println("<h1>Servlet one at " + n4 + "</h1>");
        out.println("<h1>Servlet one at " + n5 + "</h1>");
        out.println("</body>");
        out.println("</html>");
    }
}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit
the code.">
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}

@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}

@Override
public String getServletInfo()
{
    return "Short description";
}

// </editor-fold>
}

```

### **Second Java Code :-**

```

package demo;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

public class two extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)

```

```

        throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        try ( PrintWriter out = response.getWriter())
        {
            HttpSession session = request.getSession(false);
            int one = (int) session.getAttribute("rollno1");
            int two = (int) session.getAttribute("rollno2");
            int th = (int) session.getAttribute("rollno3");
            int fo = (int) session.getAttribute("rollno4");
            int five = (int) session.getAttribute("rollno5");
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet two</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Servlet two at " + one + "</h1>");
            out.println("<h1>Servlet two at " + two + "</h1>");
            out.println("<h1>Servlet two at " + th + "</h1>");
            out.println("<h1>Servlet two at " + fo + "</h1>");
            out.println("<h1>Servlet two at " + five + "</h1>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit
the code.">
@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}

@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException
{
    processRequest(request, response);
}

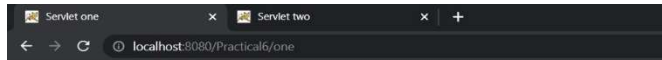
@Override
public String getServletInfo()
{
    return "Short description";
}

// </editor-fold>

}

```

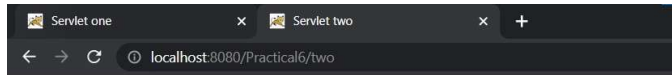
**OUTPUT :-**



**Servlet one at 1**

**Servlet one at 2**

**Servlet one at 3**



**Servlet two at 1**

**Servlet two at 2**

**Servlet two at 3**

**Servlet two at 4**

**Servlet two at 5**

## Practical 7

### ❖ Develop User registration module using JSP

1. Create a User Page 4 of 3
2. Update a User
3. Delete a User
4. Retrieve a User
5. List of all Users.

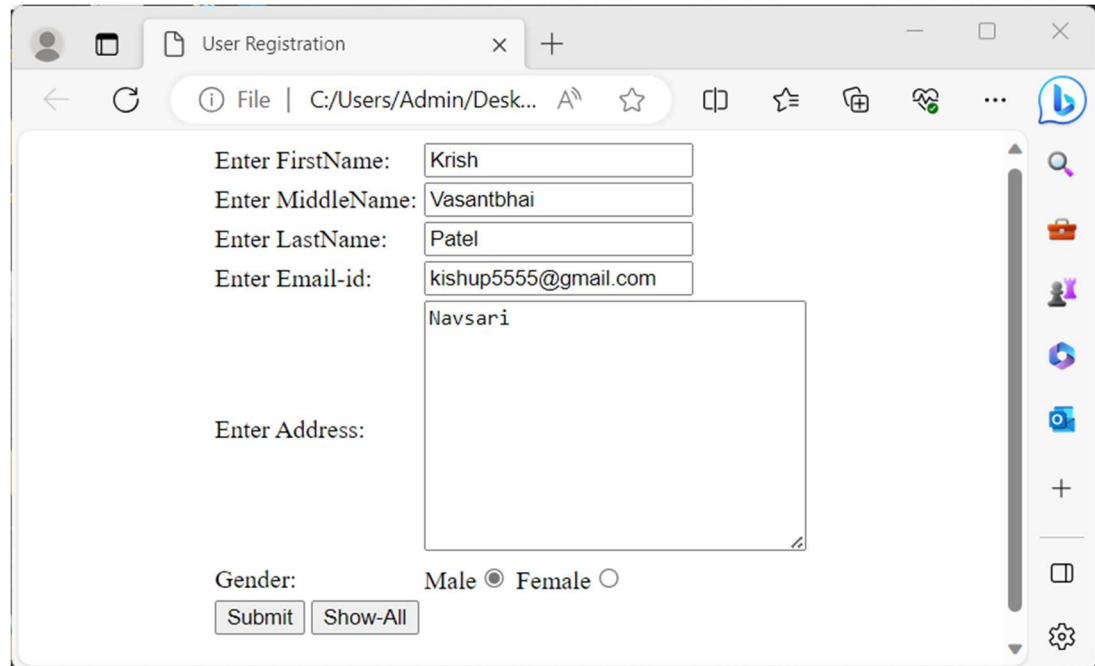
#### Index.html

```
<!DOCTYPE html>
<!--
Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this template
-->
<html>
  <head>
    <title>User Registration</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <table style="min-height: 100vh;width: 100%;display: grid;justify-content: center;">
      <form action="./userCreate.jsp" method="post">
        <tr>
          <td>
            <label for="">Enter FirstName:</label>
          </td>
          <td>
            <input type="text" name="fname">
          </td>
        </tr>
        <tr>
          <td>
            <label for="">Enter MiddleName:</label>
          </td>
          <td>
            <input type="text" name="mname">
          </td>
        </tr>
        <tr>
          <td>
            <label for="">Enter LastName:</label>
```

```

        </td>
    <td>
        <input type="text" name="lname">
    </td>
</tr>
<tr>
    <td>
        <label for="">Enter Email-id:</label>
    </td>
    <td>
        <input type="email" name="email">
    </td>
</tr>
<tr>
    <td>
        <label for="">Enter Address:</label>
    </td>
    <td>
        <textarea name="address" id="" cols="30" rows="10"></textarea>
    </td>
</tr>
<tr>
    <td>
        <label for="">Gender:</label>
    </td>
    <td>
        Male<input type="radio" name="gen" value="male" id=""> Female<input
        type="radio" name="gen" value="female" id="">
    </td>
</tr>
</tr>
<tr>
    <td>
        <button type="submit" name="register">Submit</button>
        <a href="display.jsp"><button>Show-All</button></a>
    </td>
</tr>
</form>
</table>
</body>

```



### userCreate.jsp

```
<%@page import="java.sql.*,java.io.*"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!--<%@page import="java.sql.*" %>--%>
<!DOCTYPE html>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>JSP Page</title>
</head>
<body>
<%
String fname = request.getParameter("fname"); String mname =
request.getParameter("mname"); String lname =
request.getParameter("lname"); String email =
request.getParameter("email"); String Addresss =
request.getParameter("address"); String gender =
request.getParameter("gen");

try {
Class.forName("com.mysql.cj.jdbc.Driver"); Connection con =
DriverManager.getConnection(
"jdbc:mysql://localhost:3306/java_db", "root",
""

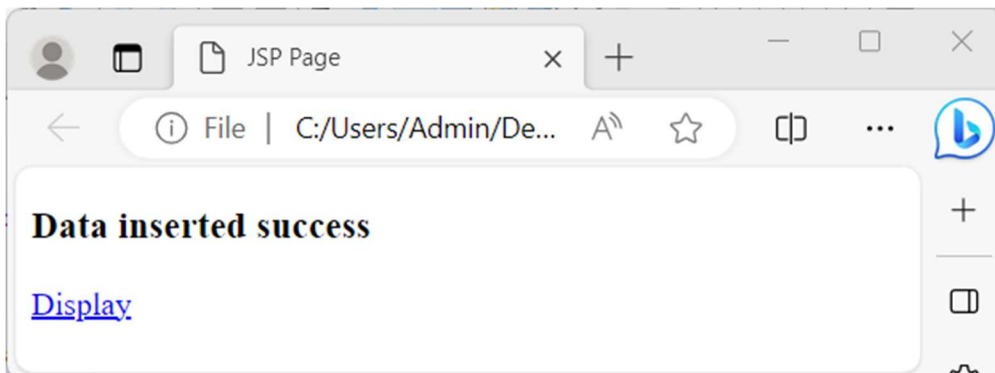
```

```

    );
    if (request.getParameter("register") != null) {
        PreparedStatement pst = con.prepareStatement("insert into user
values(?,?,?,?,?,?,?);");
        pst.setString(1, fname); pst.setString(2,
        mname); pst.setString(3, lname);
        pst.setString(4, email); pst.setString(5,
        Addresss); pst.setString(6, gender);
        pst.setInt(7, 0);
        int x = pst.executeUpdate(); out.println("<h3>Data inserted
        success</h3>"); out.println("<a
        href='display.jsp'>Display</a>");
    } else {
        %>
        <jsp:forward page="display.jsp"></jsp:forward>
        <%
        }

    } catch (Exception e) { out.print(e);
    }
    %>
</body>
</html>

```



### Display.jsp

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



```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <%
      try {
        Class.forName("com.mysql.cj.jdbc.Driver"); Connection con =
        DriverManager.getConnection(
          "jdbc:mysql://localhost:3306/java_db", "root",
          ""
        );
        Statement stm = con.createStatement();
        ResultSet rs = stm.executeQuery("select * from user"); out.println("<table
        border='2'>");
        out.println("<thead><tr><th>First-Name</th><th>Middle-Name</th><th>Last-
        Name</th><th>Email</th><th>Address</th><th>Gender</th></tr></thead>");

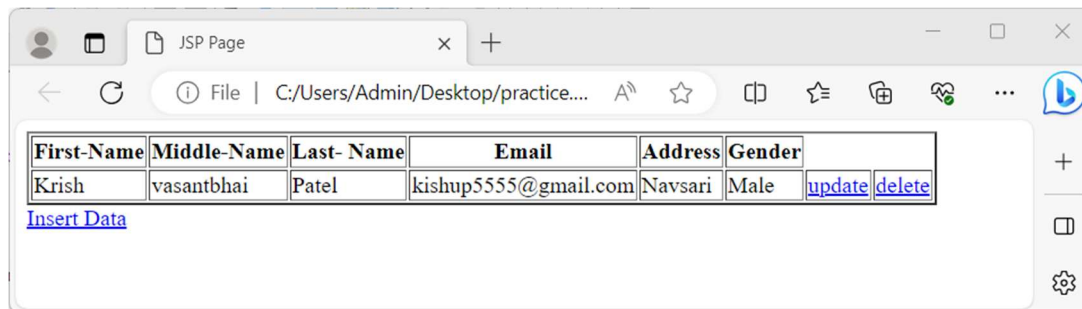
        while (rs.next()) { out.println("<tr>");
          out.println("<td>" + rs.getString(1) + "</td>"
            );
          out.println("<td>" + rs.getString(2) + "</td>"
            );
          out.println("<td>" + rs.getString(3) + "</td>"
            );
          out.println("<td>" + rs.getString(4) + "</td>"
            );
          out.println("<td>" + rs.getString(5) + "</td>"
            );
          out.println("<td>" + rs.getString(6) + "</td>"
            );
          out.println("<td><a href='update.jsp?id=" + rs.getInt(7) + "'>update</td>"
            );
          out.println("<td><a href='delete.jsp?id=" + rs.getInt(7) + "'>delete</td>"
            );
          out.println("</tr>");
        }
        out.println("</table>");
      }
```

```
out.println("<a href='index.html'>Insert Data</a>");
```

```
    } catch (Exception e) { out.println(e);  
    }
```

```
    %>  
</body>  
</html>
```

**Output:**



**Update.jsp**

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

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

```
<!DOCTYPE html>
```

```
<html>
```

```
    <head>
```

```
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
```

```
        <title>JSP Page</title>
```

```
    </head>
```

```
    <body>
```

```
        <% if (request.getParameter("Submit") != null) { String fname =
```

```
            request.getParameter("fname");
```

```
            String mname = request.getParameter("mname"); String lname =
```

```
            request.getParameter("lname"); String email =
```

```
            request.getParameter("email"); String Addresss =
```

```

        request.getParameter("address"); String gender =
        request.getParameter("gen");
        int id = Integer.parseInt(request.getParameter("id")); try {
            Class.forName("com.mysql.cj.jdbc.Driver"); Connection
            con = DriverManager.getConnection(
                "jdbc:mysql://localhost:3306/java_db", "root",
                ""
            );
            PreparedStatement pst = con.prepareStatement("update user set first_name =
            ?,middle_name=?,last_name=?,email=?,Address=?,Gender=? where id=?");

            pst.setString(1, fname);
            pst.setString(2, mname);
            pst.setString(3, lname);
            pst.setString(4, email); pst.setString(5,
            Addresss); pst.setString(6, gender);
            pst.setInt(7, id); int x =
            pst.executeUpdate(); if (x
            == 1) {
                %>
                <script> alert("Data updated");
                </script>
                <%
                out.print("<a href='display.jsp'>Display Page</a>");
                } else { out.print("not updated");
                }

            } catch (Exception e) { out.print(e);
            }
        }
        %>
        <table style="min-height: 100vh;width: 100%;display: grid;justify-content: center;">

        <form action="#" method="post">
        <%
            try {

```

```

Class.forName("com.mysql.cj.jdbc.Driver"); Connection
con = DriverManager.getConnection(
    "jdbc:mysql://localhost:3306/java_db", "root",
    "");

);
int id1 = Integer.parseInt(request.getParameter("id"));

PreparedStatement pst = con.prepareStatement("select * from user where id =
?");

pst.setInt(1, id1);
ResultSet rs = pst.executeQuery(); while
(rs.next()) {

%>
<tr>
<td>
<label for="">Enter FirstName:</label>
</td>
<td>
<input type="text" name="fname" value="<%= rs.getString(1)%>">
</td>
</tr>
<tr>
<td>
<label for="">Enter MiddleName:</label>
</td>
<td>
<input type="text" name="mname" value="<%= rs.getString(2)%>">
</td>
</tr>
<tr>
<td>
<label for="">Enter LastName:</label>
</td>
<td>
<input type="text" name="lname" value="<%= rs.getString(3)%>">
</td>
</tr>
<tr>
<td>

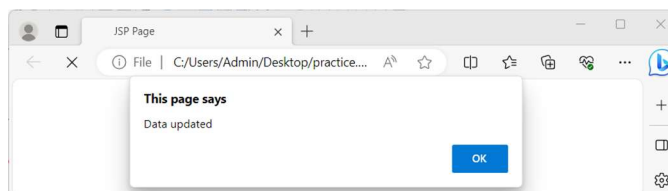
```

```

        <label for="">Enter Email-id:</label>
    </td>
    <td>
        <input type="email" name="email" value="<%= rs.getString(4)%>">
    </td>
</tr>
<tr>
    <td>
        <label for="">Enter Address:</label>
    </td>
    <td>
        <textarea name="address" id="" cols="30" rows="10" ><%=
rs.getString(5)%></textarea>
    </td>
</tr>
<tr>
    <td>
        <label for="">Gender:</label>
    </td>
    <td>
        Male<input type="radio" name="gen" value="male" id="" > Female<input
        type="radio" name="gen" value="female" id="" >
    </td>
</tr>
</tr>
<tr>
    <td>
        <button type="submit" name="Submit">Update</button>
    </td>
</tr>
<%}
} catch (Exception e) {
    out.print(e);
}%>
</form>
</table>
</body>
</html>

```

**Output:**



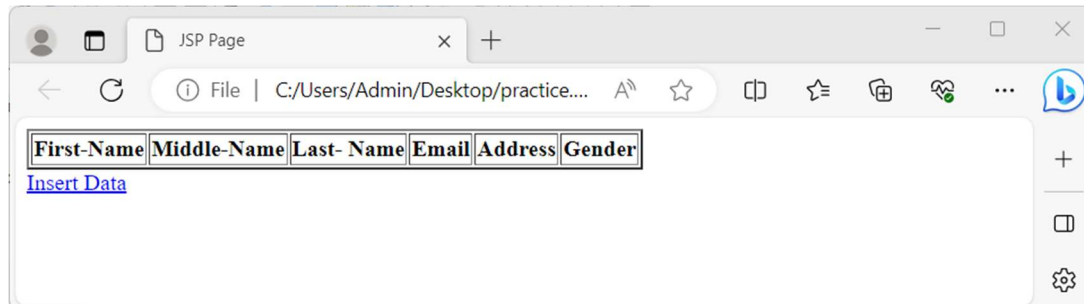
```
Delete.jsp <%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*,java.io.*"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <%
            int id = Integer.parseInt(request.getParameter("id")); out.print(id);

            try {
                Class.forName("com.mysql.cj.jdbc.Driver"); Connection con =
                    DriverManager.getConnection(
                        "jdbc:mysql://localhost:3306/java_db", "root",
                        ""
                    );
                PreparedStatement pstmt = con.prepareStatement("delete from user where id = ?");

                pstmt.setInt(1, id); int x =
                    pstmt.executeUpdate();
                out.println("Deleted");

            } catch (Exception e) {
                out.print(e);
            }
        %>
        <jsp:forward page="display.jsp" ></jsp:forward>

    </body>
</html>
```



The screenshot shows a web browser window titled "JSP Page". The address bar shows the file path "C:/Users/Admin/Desktop/practice...". The page content includes a form with the following fields: First-Name, Middle-Name, Last- Name, Email, Address, and Gender. Below the form is a link labeled "Insert Data".

### Practical:-8

#### **Aim:**

**Reuse Student class as bean. Write JSP page to set and display all property.**

#### **Index.html:-**

```
<!DOCTYPE html>
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
  <title>JSP CRUD Example</title>
</head>
<body>
  <h1>JSP CRUD Example</h1>
  <a href="adduserform.jsp">Add User</a>
  <a href="viewusers.jsp">View Users</a>
</body>
</html>
```

#### **adduserform.jsp**

```
<!DOCTYPE html>
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
  <title>Add User Form</title>
</head>
<body>
  <jsp:include page="userform.html"></jsp:include>
</body>
</html>
```

#### **userform.html**

```
<a href="viewusers.jsp">View All Records</a><br/>
<h1>Add New User</h1>

<form action="adduser.jsp" method="post">
  <table>
    <tr>
      <td>Name:</td>
      <td><input type="text" name="name"/></td>
    </tr>
    <tr>
```

```

        <td>Password:</td>
        <td><input type="password" name="password"/></td>
    </tr>
    <tr>
        <td>Email:</td>
        <td><input type="email" name="email"/></td>
    </tr>
    <tr>
        <td>Sex:</td>
        <td>
            <input type="radio" name="sex" value="male"/>Male
            <input type="radio" name="sex" value="female"/>Female
        </td>
    </tr>
    <tr>
        <td>Country:</td>
        <td>
            <select name="country" style="width:155px">
                <option>India</option>
                <option>Pakistan</option>
                <option>Afghanistan</option>
                <option>Berma</option>
                <option>Other</option>
            </select>
        </td>
    </tr>
    <tr>
        <td colspan="2">
            <input type="submit" value="Add User"/>
        </td>
    </tr>
</table>
</form>

```

### **adduser.jsp**

```

<%@page import="com.javatpoint.dao.UserDao"%>
<jsp:useBean id="u" class="com.javatpoint.bean.User"></jsp:useBean>
<jsp:setProperty property="*" name="u"/>

<%
    int i = UserDao.save(u);

```



```
        if (i > 0) {  
            response.sendRedirect("adduser-success.jsp");  
        } else {  
            response.sendRedirect("adduser-error.jsp");  
        }  
    }  
%>
```

### **User.java**

```
package com.javatpoint.bean;  
  
public class User {  
    private int id;  
    private String name;  
    private String password;  
    private String email;  
    private String sex;  
    private String country;  
  
    // Generate getters and setters  
    public int getId() {  
        return id;  
    }  
    public void setId(int id) {  
        this.id = id;  
    }  
  
    public String getName() {  
        return name;  
    }  
    public void setName(String name) {  
        this.name = name;  
    }  
  
    public String getPassword() {  
        return password;  
    }  
    public void setPassword(String password) {  
        this.password = password;  
    }  
  
    public String getEmail() {
```

```
        return email;
    }
    public void setEmail(String email) {
        this.email = email;
    }

    public String getSex() {
        return sex;
    }
    public void setSex(String sex) {
        this.sex = sex;
    }

    public String getCountry() {
        return country;
    }
    public void setCountry(String country) {
        this.country = country;
    }
}
```

### **UserDao.java**

```
package com.javatpoint.dao;
```

```
import java.sql.*;
import java.util.ArrayList;
import java.util.List;
import com.javatpoint.bean.User;
```

```
public class UserDao {

    public static Connection getConnection() {
        Connection con = null;
        try {
            Class.forName("com.mysql.jdbc.Driver");
            con = DriverManager.getConnection("jdbc:mysql://localhost:3306/test", "", "");
        } catch (Exception e) {
            System.out.println(e);
        }
        return con;
    }
}
```

```
public static int save(User u) {
    int status = 0;
    try {
        Connection con = getConnection();
        PreparedStatement ps = con.prepareStatement(
            "insert into register(name, password, email, sex, country) values(?,?,?,?,?)");
        ps.setString(1, u.getName());
        ps.setString(2, u.getPassword());
        ps.setString(3, u.getEmail());
        ps.setString(4, u.getSex());
        ps.setString(5, u.getCountry());
        status = ps.executeUpdate();
    } catch (Exception e) {
        System.out.println(e);
    }
    return status;
}

public static int update(User u) {
    int status = 0;
    try {
        Connection con = getConnection();
        PreparedStatement ps = con.prepareStatement(
            "update register set name=?, password=?, email=?, sex=?, country=? where id=?");
        ps.setString(1, u.getName());
        ps.setString(2, u.getPassword());
        ps.setString(3, u.getEmail());
        ps.setString(4, u.getSex());
        ps.setString(5, u.getCountry());
        ps.setInt(6, u.getId());
        status = ps.executeUpdate();
    } catch (Exception e) {
        System.out.println(e);
    }
    return status;
}

public static int delete(User u) {
    int status = 0;
    try {
```

```
        Connection con = getConnection();
        PreparedStatement ps = con.prepareStatement("delete from register where id=?");
        ps.setInt(1, u.getId());
        status = ps.executeUpdate();
    } catch (Exception e) {
        System.out.println(e);
    }
    return status;
}

public static List<User> getAllRecords() {
    List<User> list = new ArrayList<User>();
    try {
        Connection con = getConnection();
        PreparedStatement ps = con.prepareStatement("select * from register");
        ResultSet rs = ps.executeQuery();
        while (rs.next()) {
            User u = new User();
            u.setId(rs.getInt("id"));
            u.setName(rs.getString("name"));
            u.setPassword(rs.getString("password"));
            u.setEmail(rs.getString("email"));
            u.setSex(rs.getString("sex"));
            u.setCountry(rs.getString("country"));
            list.add(u);
        }
    } catch (Exception e) {
        System.out.println(e);
    }
    return list;
}

public static User getRecordById(int id) {
    User u = null;
    try {
        Connection con = getConnection();
        PreparedStatement ps = con.prepareStatement("select * from register where id=?");
        ps.setInt(1, id);
        ResultSet rs = ps.executeQuery();
        while (rs.next()) {
            u = new User();
        }
    }
}
```

```
        u.setId(rs.getInt("id"));
        u.setName(rs.getString("name"));
        u.setPassword(rs.getString("password"));
        u.setEmail(rs.getString("email"));
        u.setSex(rs.getString("sex"));
        u.setCountry(rs.getString("country"));
    }
} catch (Exception e) {
    System.out.println(e);
}
return u;
}
}
```

### **adduser-success.jsp**

```
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>Add User Success</title>
</head>
<body>
    <p>Record successfully saved!</p>
    <jsp:include page="userform.html"></jsp:include>
</body>
</html>
```

### **adduser-error.jsp**

```
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>Add User Error</title>
</head>
<body>
    <p>Sorry, an error occurred!</p>
    <jsp:include page="userform.html"></jsp:include>
</body>
</html>
```

### **adduser-error.jsp**

```
<!DOCTYPE html>
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
  <title>Add User Error</title>
</head>
<body>
  <p>Sorry, an error occurred!</p>
  <jsp:include page="userform.html"></jsp:include>
</body>
</html>
```

### **viewusers.jsp**

```
<!DOCTYPE html>
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
  <title>View Users</title>
</head>
<body>
  <%@page import="com.javatpoint.dao.UserDao, com.javatpoint.bean.User, java.util.List"%>
  <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

  <h1>Users List</h1>

  <%
    List<User> list = UserDao.getAllRecords();
    request.setAttribute("list", list);
  %>

  <table border="1" width="90%">
    <tr>
      <th>Id</th>
      <th>Name</th>
      <th>Password</th>
      <th>Email</th>
      <th>Sex</th>
      <th>Country</th>
      <th>Edit</th>
      <th>Delete</th>
```

```

        </tr>
        <c:forEach items="{list}" var="u">
            <tr>
                <td>${u.getId()}</td>
                <td>${u.getName()}</td>
                <td>${u.getPassword()}</td>
                <td>${u.getEmail()}</td>
                <td>${u.getSex()}</td>
                <td>${u.getCountry()}</td>
                <td><a href="editform.jsp?id=${u.getId()}">Edit</a></td>
                <td><a href="deleteuser.jsp?id=${u.getId()}">Delete</a></td>
            </tr>
        </c:forEach>
    </table>
    <br/>
    <a href="adduserform.jsp">Add New User</a>
</body>
</html>

```

### editform.jsp

```

<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
    <title>Edit Form</title>
</head>
<body>
    <%@page import="com.javatpoint.dao.UserDao, com.javatpoint.bean.User"%>

    <%
        String id = request.getParameter("id");
        User u = UserDao.getRecordById(Integer.parseInt(id));
    %>

    <h1>Edit Form</h1>
    <form action="edituser.jsp" method="post">
        <input type="hidden" name="id" value="<%= u.getId() %>" />
        <table>
            <tr>
                <td>Name:</td>
                <td><input type="text" name="name" value="<%= u.getName() %>" /></td>
            </tr>
        </table>
    </form>

```

```

        </tr>
        <tr>
            <td>Password:</td>
            <td><input type="password" name="password" value="<%= u.getPassword()
%>" /></td>
        </tr>
        <tr>
            <td>Email:</td>
            <td><input type="email" name="email" value="<%= u.getEmail() %>" /></td>
        </tr>
        <tr>
            <td>Sex:</td>
            <td>
                <input type="radio" name="sex" value="male" />Male
                <input type="radio" name="sex" value="female" />Female
            </td>
        </tr>
        <tr>
            <td>Country:</td>
            <td>
                <select name="country">
                    <option>India</option>
                    <option>Pakistan</option>
                    <option>Afghanistan</option>
                    <option>Berma</option>
                    <option>Other</option>
                </select>
            </td>
        </tr>
        <tr>
            <td colspan="2"><input type="submit" value="Edit User" /></td>
        </tr>
    </table>
</form>
</body>
</html>

```

**edituser.jsp**



```
<%@page import="com.javatpoint.dao.UserDao"%>
<jsp:useBean id="u" class="com.javatpoint.bean.User"></jsp:useBean>
<jsp:setProperty property="*" name="u"/>
<%
    int i = UserDao.update(u);
    response.sendRedirect("viewusers.jsp");
%>
```

### **deleteuser.jsp**

```
<%@page import="com.javatpoint.dao.UserDao"%>
<jsp:useBean id="u" class="com.javatpoint.bean.User"></jsp:useBean>
<jsp:setProperty property="*" name="u"/>
<%
    UserDao.delete(u);
    response.sendRedirect("viewusers.jsp");
%>
```

**Output:-**

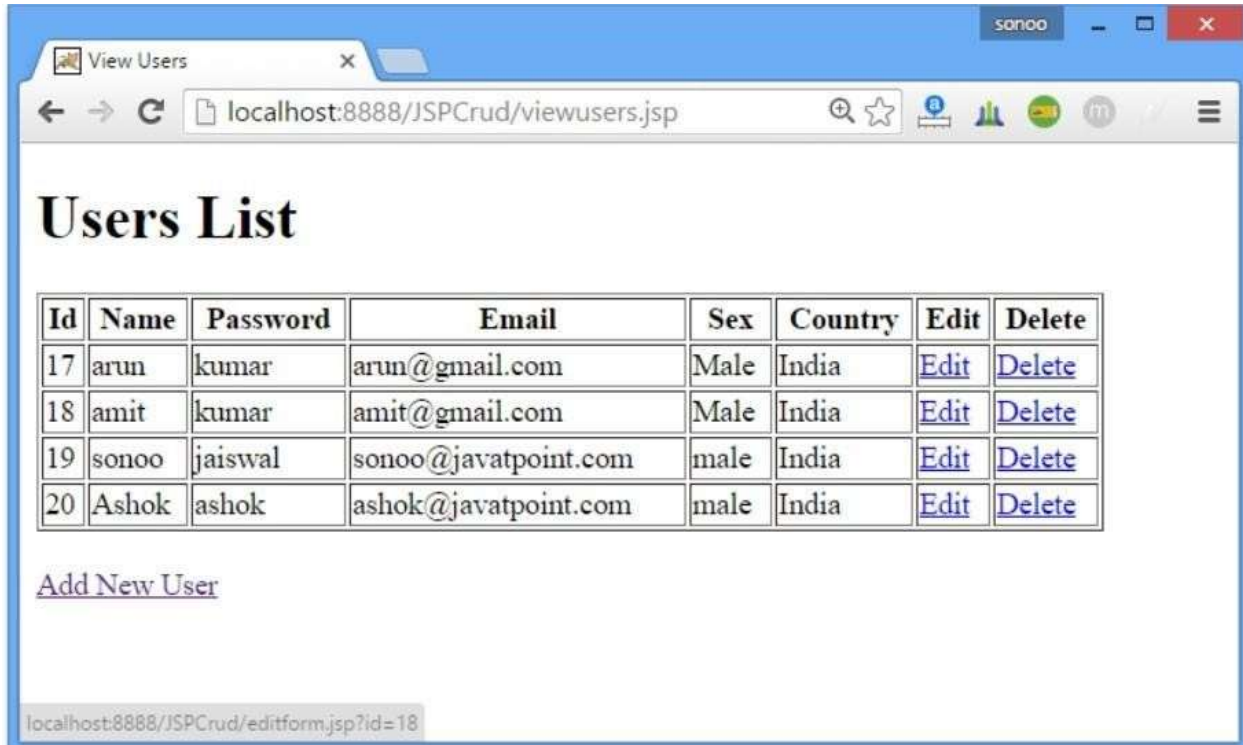




A screenshot of a web browser window titled "Add User Form". The address bar shows "localhost:8888/JSPCrud/adc". The page contains a link "View All Records" and a heading "Add New User". Below the heading is a form with the following fields: "Name:" with the value "Ashok", "Password:" with masked characters "\*\*\*\*\*", "Email:" with the value "ashok@javatpoint.com", "Sex:" with radio buttons for "Male" (selected) and "Female", and "Country:" with a dropdown menu showing "India". At the bottom of the form is a button labeled "Add User".



A screenshot of a web browser window titled "Add User Success". The address bar shows "localhost:8888/JSPCrud/adc". The page displays a message "Record successfully saved!" followed by a link "View All Records". Below this is a heading "Add New User" and a form identical to the one in the previous screenshot, but with empty input fields for "Name:", "Password:", and "Email:", and the "Sex:" radio buttons are unselected.



View Users

localhost:8888/JSPCrud/viewusers.jsp

## Users List

Id	Name	Password	Email	Sex	Country	Edit	Delete
17	arun	kumar	arun@gmail.com	Male	India	<a href="#">Edit</a>	<a href="#">Delete</a>
18	amit	kumar	amit@gmail.com	Male	India	<a href="#">Edit</a>	<a href="#">Delete</a>
19	sonoo	jaiswal	sonoo@javatpoint.com	male	India	<a href="#">Edit</a>	<a href="#">Delete</a>
20	Ashok	ashok	ashok@javatpoint.com	male	India	<a href="#">Edit</a>	<a href="#">Delete</a>

[Add New User](#)

localhost:8888/JSPCrud/editform.jsp?id=18

## Practical – 9

**Aim :-** Rewrite all .jsp pages of previous labs using EL and JSTL.

### Java Bean Class:-

```
package com.journaldev.model;
```

```
public class Employee {

    private int id;
    private String name;
    private String role;

    // Default constructor
    public Employee() {
    }

    // Getter for id
    public int getId() {
        return id;
    }

    // Setter for id
    public void setId(int id) {
        this.id = id;
    }

    // Getter for name
    public String getName() {
        return name;
    }

    // Setter for name
    public void setName(String name) {
        this.name = name;
    }

    // Getter for role
    public String getRole() {
        return role;
    }
}
```

```
// Setter for role
public void setRole(String role) {
    this.role = role;
}
}
```

### **Servlet Class:-**

```
package com.journaldev.servlet;
```

```
import java.io.IOException;
import java.util.ArrayList;
import java.util.List;
```

```
import javax.servlet.RequestDispatcher;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
```

```
import com.journaldev.model.Employee;
```

```
@WebServlet("/HomeServlet")
public class HomeServlet extends HttpServlet {
```

```
    private static final long serialVersionUID = 1L;
```

```
@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
```

```
    // Creating a list of employees
    List<Employee> empList = new ArrayList<>();
```

```
    // Adding employee 1
    Employee emp1 = new Employee();
    emp1.setId(1);
    emp1.setName("Pankaj");
    emp1.setRole("Developer");
```

```
// Adding employee 2
Employee emp2 = new Employee();
emp2.setId(2);
emp2.setName("Meghna");
emp2.setRole("Manager");

// Adding employees to the list
empList.add(emp1);
empList.add(emp2);

// Setting attributes to be forwarded to the JSP page
request.setAttribute("empList", empList);
request.setAttribute("htmlTagData", "<br/> creates a new line.");
request.setAttribute("url", "https://www.journaldev.com");

// Forwarding the request to home.jsp
RequestDispatcher rd = getServletContext().getRequestDispatcher("/home.jsp");
rd.forward(request, response);
}
}
```

### **JSP Page:-**

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!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=UTF-8">
    <title>Home Page</title>
    <style>
        table, th, td {
            border: 1px solid black;
        }
    </style>
    <jsp:taglib uri="https://java.sun.com/jsp/jstl/core" prefix="c"/>
</head>
<body>
    <table>
        <tbody>
            <tr>
```

```

        <th>ID</th>
        <th>Name</th>
        <th>Role</th>
    </tr>
    <c:forEach items="{requestScope.empList}" var="emp">
        <tr>
            <td><c:out value="{emp.id}"/></td>
            <td><c:out value="{emp.name}"/></td>
            <td><c:out value="{emp.role}"/></td>
        </tr>
    </c:forEach>
</tbody>
</table>

<br/><br/>

<c:if test="{requestScope.htmlTagData ne null}">
    <c:out value="{requestScope.htmlTagData}" escapeXml="true"/>
</c:if>

<br/><br/>

<c:set var="id" value="5" scope="request"/>
<c:out value="{requestScope.id}"/>

<br/><br/>

<c:catch var="exception">
    <c:out value="An error occurred"/>
</c:catch>

</body>
</html>

```

**Output:-**





## Practical – 10

**Aim :-** Write Hibernate application to store student records and retrieve the student record including name, enrolment no, sem, div, dept, sgpa, cgpa, etc.

### Emp.java :-

```
package com.javatpoint.beans;
```

```
public class Emp {  
    private int id;  
    private String name;  
    private float salary;  
    private String designation;  
  
    // Getters and Setters  
    public int getId() {  
        return id;  
    }  
  
    public void setId(int id) {  
        this.id = id;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
  
    public float getSalary() {  
        return salary;  
    }  
  
    public void setSalary(float salary) {  
        this.salary = salary;  
    }  
}
```

```
        public String getDesignation() {  
            return designation;  
        }  
  
        public void setDesignation(String designation) {  
            this.designation = designation;  
        }  
    }  
}
```

### **EmpController.java :-**

```
package com.javatpoint.controllers;  
  
import java.util.List;  
import org.springframework.beans.factory.annotation.Autowired;  
import org.springframework.stereotype.Controller;  
import org.springframework.ui.Model;  
import org.springframework.web.bind.annotation.*;  
  
import com.javatpoint.beans.Emp;  
import com.javatpoint.dao.EmpDao;  
  
@Controller  
public class EmpController {  
  
    @Autowired  
    EmpDao dao; // Will inject dao from XML file  
  
    @RequestMapping("/empform")  
    public String showForm(Model m) {  
        m.addAttribute("command", new Emp());  
        return "empform";  
    }  
  
    @RequestMapping(value = "/save", method = RequestMethod.POST)  
    public String save(@ModelAttribute("emp") Emp emp) {  
        dao.save(emp);  
        return "redirect:/viewemp"; // Redirect to viewemp request mapping  
    }  
}
```

```
@RequestMapping("/viewemp")
public String viewEmp(Model m) {
    List<Emp> list = dao.getEmployees();
    m.addAttribute("list", list);
    return "viewemp";
}

@RequestMapping(value = "/editemp/{id}")
public String edit(@PathVariable int id, Model m) {
    Emp emp = dao.getEmpById(id);
    m.addAttribute("command", emp);
    return "empeditform";
}

@RequestMapping(value = "/editsave", method = RequestMethod.POST)
public String editSave(@ModelAttribute("emp") Emp emp) {
    dao.update(emp);
    return "redirect:/viewemp";
}

@RequestMapping(value = "/deleteemp/{id}", method = RequestMethod.GET)
public String delete(@PathVariable int id) {
    dao.delete(id);
    return "redirect:/viewemp";
}
}
```

### **EmpDao.java :-**

```
package com.javatpoint.dao;

import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.List;

import org.springframework.jdbc.core.BeanPropertyRowMapper;
import org.springframework.jdbc.core.JdbcTemplate;
import org.springframework.jdbc.core.RowMapper;

import com.javatpoint.beans.Emp;
```

```
public class EmpDao {

    JdbcTemplate template;

    public void setTemplate(JdbcTemplate template) {
        this.template = template;
    }

    public int save(Emp p) {
        String sql = "insert into Emp99(name, salary, designation) values('" + p.getName() + "', " +
p.getSalary() + ", '" + p.getDesignation() + "')";
        return template.update(sql);
    }

    public int update(Emp p) {
        String sql = "update Emp99 set name='" + p.getName() + "', salary=" + p.getSalary() + ",
designation='" + p.getDesignation() + "' where id=" + p.getId();
        return template.update(sql);
    }

    public int delete(int id) {
        String sql = "delete from Emp99 where id=" + id;
        return template.update(sql);
    }

    public Emp getEmpById(int id) {
        String sql = "select * from Emp99 where id=?";
        return template.queryForObject(sql, new Object[] {id}, new
BeanPropertyRowMapper<>(Emp.class));
    }

    public List<Emp> getEmployees() {
        return template.query("select * from Emp99", new RowMapper<Emp>() {
            public Emp mapRow(ResultSet rs, int row) throws SQLException {
                Emp e = new Emp();
                e.setId(rs.getInt(1));
                e.setName(rs.getString(2));
                e.setSalary(rs.getFloat(3));
                e.setDesignation(rs.getString(4));
                return e;
            }
        });
    }
}
```

```

    }
    });
}
}

```

### **web.xml:-**

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns="http://java.sun.com/xml/ns/javaee"
    xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"
    version="3.0">

    <display-name>SpringMVC</display-name>

    <servlet>
        <servlet-name>spring</servlet-name>
        <servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
        <load-on-startup>1</load-on-startup>
    </servlet>

    <servlet-mapping>
        <servlet-name>spring</servlet-name>
        <url-pattern>/</url-pattern>
    </servlet-mapping>
</web-app>

```

### **spring-servlet.xml:-**

```

<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:context="http://www.springframework.org/schema/context"
    xmlns:mvc="http://www.springframework.org/schema/mvc"
    xsi:schemaLocation="
        http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd
        http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context.xsd"

```

<http://www.springframework.org/schema/mvc>  
[http://www.springframework.org/schema/mvc/spring-mvc.xsd">](http://www.springframework.org/schema/mvc/spring-mvc.xsd)

```
<context:component-scan base-package="com.javatpoint.controllers" />

<bean class="org.springframework.web.servlet.view.InternalResourceViewResolver">
    <property name="prefix" value="/WEB-INF/jsp/" />
    <property name="suffix" value=".jsp" />
</bean>

<bean id="ds" class="org.springframework.jdbc.datasource.DriverManagerDataSource">
    <property name="driverClassName" value="com.mysql.jdbc.Driver" />
    <property name="url" value="jdbc:mysql://localhost:3306/test" />
    <property name="username" value="" />
    <property name="password" value="" />
</bean>

<bean id="jt" class="org.springframework.jdbc.core.JdbcTemplate">
    <property name="dataSource" ref="ds" />
</bean>

<bean id="dao" class="com.javatpoint.dao.EmpDao">
    <property name="template" ref="jt" />
</bean>
</beans>
```

### **index.jsp:-**

```
<a href="empform">Add Employee</a>

<a href="viewemp">View Employees</a>
```

### **empform.jsp:-**

```
<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

<h1>Add New Employee</h1>
<form:form method="post" action="save">
    <table>
        <tr>
```

```

        <td>Name :</td>
        <td><form:input path="name" /></td>
    </tr>
    <tr>
        <td>Salary :</td>
        <td><form:input path="salary" /></td>
    </tr>
    <tr>
        <td>Designation :</td>
        <td><form:input path="designation" /></td>
    </tr>
    <tr>
        <td></td>
        <td><input type="submit" value="Save" /></td>
    </tr>
</table>
</form:form>

```

### **empeditform.jsp:-**

```

<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

```

```

<h1>Add New Employee</h1>
<form:form method="post" action="save">
    <table>
        <tr>
            <td>Name :</td>
            <td><form:input path="name" /></td>
        </tr>
        <tr>
            <td>Salary :</td>
            <td><form:input path="salary" /></td>
        </tr>
        <tr>
            <td>Designation :</td>
            <td><form:input path="designation" /></td>
        </tr>
        <tr>
            <td></td>
            <td><input type="submit" value="Save" /></td>
        </tr>
    </table>
</form>

```

```

        </tr>
    </table>
</form:form>

```

### **empeditform.jsp:-**

```

<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

```

```

<h1>Edit Employee</h1>

```

```

<form:form method="POST" action="/SpringMVCCRUDSimple/editsave">

```

```

    <table>
        <tr>
            <td></td>
            <td><form:hidden path="id" /></td>
        </tr>
        <tr>
            <td>Name:</td>
            <td><form:input path="name" /></td>
        </tr>
        <tr>
            <td>Salary:</td>
            <td><form:input path="salary" /></td>
        </tr>
        <tr>
            <td>Designation:</td>
            <td><form:input path="designation" /></td>
        </tr>
        <tr>
            <td></td>
            <td><input type="submit" value="Edit Save" /></td>
        </tr>
    </table>
</form:form>

```

### **viewemp.jsp:-**

```

<%@ taglib uri="http://www.springframework.org/tags/form" prefix="form"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>

```

```

<h1>Employees List</h1>

```



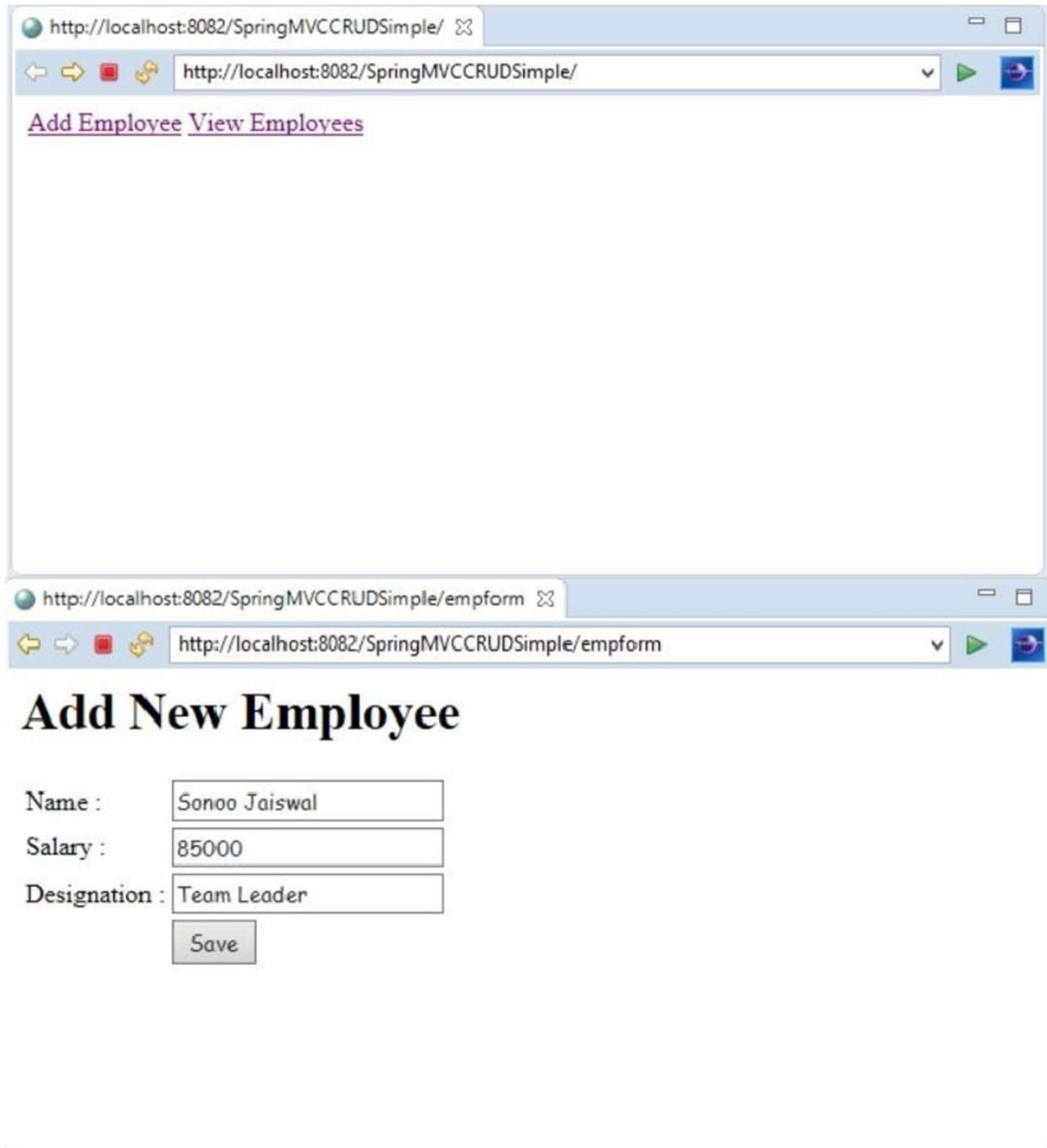
```

<table border="2" width="70%" cellpadding="2">
<tr>
<th>Id</th>
<th>Name</th>
<th>Salary</th>
<th>Designation</th>
<th>Edit</th>
<th>Delete</th>
</tr>

<c:forEach var="emp" items="${list}">
<tr>
<td>${emp.id}</td>
<td>${emp.name}</td>
<td>${emp.salary}</td>
<td>${emp.designation}</td>
<td><a href="editemp/${emp.id}">Edit</a></td>
<td><a href="deleteemp/${emp.id}">Delete</a></td>
</tr>
</c:forEach>
</table>

<br/>
<a href="empform">Add New Employee</a>
Output:-

```



http://localhost:8082/SpringMVCCRUDSimple/

[Add Employee](#) [View Employees](#)

http://localhost:8082/SpringMVCCRUDSimple/empform

## Add New Employee

Name :

Salary :

Designation :

http://localhost:8082/SpringMVCCRUDSimple/viewemp

http://localhost:8082/SpringMVCCRUDSimple/viewemp

## Employees List

Id	Name	Salary	Designation	Edit	Delete
8	Sonoo Jaiswal	85000.0	Team Leader	<a href="#">Edit</a>	<a href="#">Delete</a>
9	Ashutosh Kumar	50000.0	Enginner	<a href="#">Edit</a>	<a href="#">Delete</a>
10	Yash Tyagi	25000.0	Data Entry	<a href="#">Edit</a>	<a href="#">Delete</a>
11	John William	75000.0	Manager	<a href="#">Edit</a>	<a href="#">Delete</a>

[Add New Employee](#)

http://localhost:8082/SpringMVCCRUDSimple/editemp/10

http://localhost:8082/SpringMVCCRUDSimple/editemp/10

## Edit Employee

Name :

Salary :

Designation :

http://localhost:8082/SpringMVCCRUDSimple/viewemp

http://localhost:8082/SpringMVCCRUDSimple/viewemp

## Employees List

Id	Name	Salary	Designation	Edit	Delete
8	Sonoo Jaiswal	85000.0	Team Leader	<a href="#">Edit</a>	<a href="#">Delete</a>
9	Ashutosh Kumar	50000.0	Enginner	<a href="#">Edit</a>	<a href="#">Delete</a>
10	Yash Tyagi	35000.0	Data Entry Operator	<a href="#">Edit</a>	<a href="#">Delete</a>
11	John William	75000.0	Manager	<a href="#">Edit</a>	<a href="#">Delete</a>

[Add New Employee](#)

http://localhost:8082/SpringMVCCRUDSimple/viewemp

http://localhost:8082/SpringMVCCRUDSimple/viewemp

## Employees List

Id	Name	Salary	Designation	Edit	Delete
8	Sonoo Jaiswal	85000.0	Team Leader	<a href="#">Edit</a>	<a href="#">Delete</a>
9	Ashutosh Kumar	50000.0	Enginner	<a href="#">Edit</a>	<a href="#">Delete</a>
11	John William	75000.0	Manager	<a href="#">Edit</a>	<a href="#">Delete</a>

[Add New Employee](#)

## Practical-11

**Aim :- Write an application to keep, update and retrieve record of student. The record includes student name, enrollment no, semester, dept, percentage, etc. Use SPRING MVC architecture**

### Index.jsp

```
<form action="register.jsp" method="post">
    Name: <input type="text" name="name"/><br><br>
    Password: <input type="password" name="password"/><br><br>
    Email ID: <input type="text" name="email"/><br><br>
    <input type="submit" value="register"/>
</form>
```

### Redister.jsp

```
<%@page import="com.javatpoint.mypack.UserDao"%>
<jsp:useBean id="obj" class="com.javatpoint.mypack.User"></jsp:useBean>
<jsp:setProperty property="*" name="obj"/>

<%
    int i = UserDao.register(obj);
    if(i > 0) {
        out.print("You are successfully registered");
    }
%>
```

### User.java

```
package com.javatpoint.mypack;
```

```
public class User {
    private int id;
    private String name;
    private String password;
    private String email;

    // Getters and setters
    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
```

```
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getPassword() {
        return password;
    }

    public void setPassword(String password) {
        this.password = password;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
        this.email = email;
    }
}
```

#### **user.hbm.xml**

```
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE hibernate-mapping PUBLIC "-//Hibernate/Hibernate Mapping DTD
5.3//EN" "http://hibernate.sourceforge.net/hibernate-mapping-5.3.dtd">

<hibernate-mapping>
    <class name="com.javatpoint.mypack.User" table="u400">
        <id name="id">
            <generator class="increment"></generator>
        </id>
        <property name="name"></property>
        <property name="password"></property>
        <property name="email"></property>
    </class>
</hibernate-mapping>
```

UserDao.java

```
package com.javatpoint.mypack;
```

```
import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.Transaction;
```

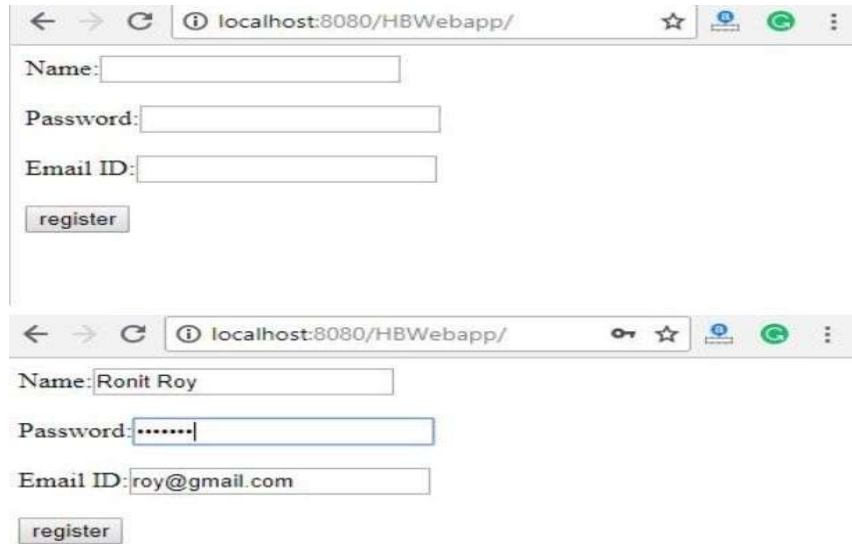
```
import org.hibernate.boot.Metadata;  
import org.hibernate.boot.MetadataSources;  
import org.hibernate.boot.registry.StandardServiceRegistry;  
import org.hibernate.boot.registry.StandardServiceRegistryBuilder;  
  
public class UserDao {  
  
    public static int register(User u) {  
        int i = 0;  
  
        StandardServiceRegistry      ssr      =      new  
StandardServiceRegistryBuilder().configure("hibernate.cfg.xml").build();  
        Metadata meta = new MetadataSources(ssr).getMetadataBuilder().build();  
        SessionFactory factory = meta.getSessionFactoryBuilder().build();  
        Session session = factory.openSession();  
        Transaction t = session.beginTransaction();  
  
        i = (Integer) session.save(u);  
        t.commit();  
        session.close();  
  
        return i;  
    }  
}
```

### **hibernate.cfg.xml**

```
<?xml version='1.0' encoding='UTF-8'?>  
<!DOCTYPE hibernate-configuration PUBLIC "-//Hibernate/Hibernate Configuration  
DTD 5.3//EN" "http://hibernate.sourceforge.net/hibernate-configuration-5.3.dtd">  
  
<hibernate-configuration>  
    <session-factory>  
        <property name="hbm2ddl.auto">create</property>  
        <property name="dialect">org.hibernate.dialect.Oracle9Dialect</property>  
        <property  
name="connection.url">jdbc:oracle:thin:@localhost:1521:xe</property>  
        <property name="connection.username">system</property>  
        <property name="connection.password">jtp</property>  
        <property  
name="connection.driver_class">oracle.jdbc.driver.OracleDriver</property>  
  
        <mapping resource="user.hbm.xml"/>  
    </session-factory>  
</hibernate-configuration>
```



**Output:-**



localhost:8080/HBWebapp/

Name:

Password:

Email ID:

localhost:8080/HBWebapp/

Name:

Password:

Email ID: