Practical-2

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

Index.html :-
```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%;
      }
    </style>
  </head>
  <body>
    <div style="text-align: center">
      <form action="Form" method="get">
        <label>Full Name : </label>
        <input type="text" name="name"><br><br>
        <label>Phone No. : </label>
        <input type="text" maxlength="10" name="number"><br><br>
        <label>Email Address : </label>
        <input type="text" name="email"><br><br>
        <label>Department : </label>
        <input type="text" name="dept"><br><br>
        <input type="submit">
      </form>
    </div>
  </body>
</html>
```

NewServlet :-
```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class Form extends HttpServlet {
  public void init(ServletConfig config){
  }
```
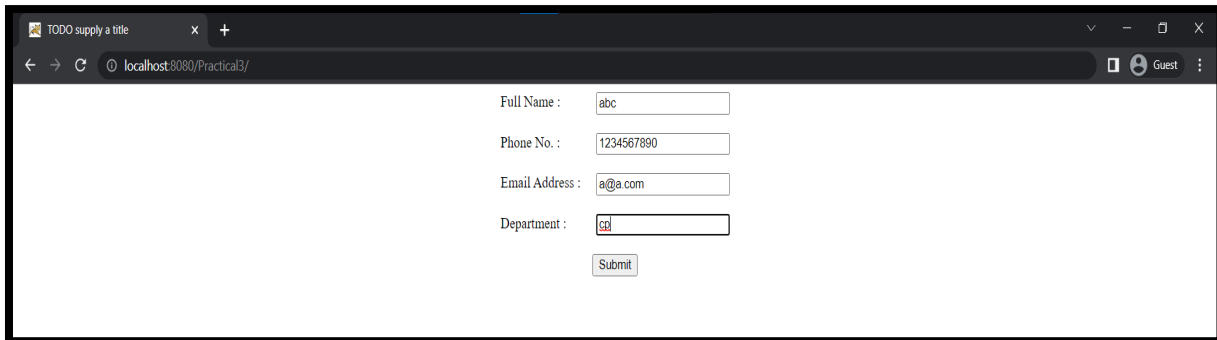
```java
protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    try ( PrintWriter out = response.getWriter()) {
        /* TODO output your page here. You may use following sample code. */
        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title></title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h4>Hello </h4><p>" + request.getParameter("name") + "</p>");
        out.println("<h5>Phone No : </h5><p>"+request.getParameter("number")+"</p>");
        out.println("<h5>Email Adderss : </h5><p>"+request.getParameter("email")+"</p>");
        out.println("<h5>Department  : </h5><p>"+request.getParameter("dept")+"</p>");
        out.println("</body>");
        out.println("</html>");
    }
}
protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    processRequest(request, response);
}
protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    processRequest(request, response);
}
}
```
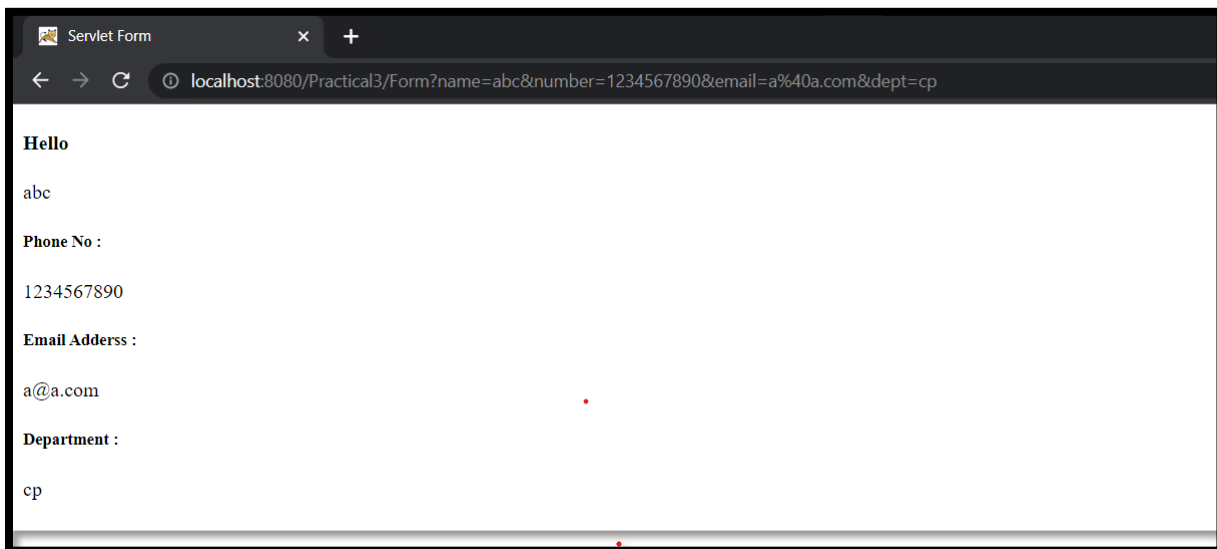
Output :

Practical-3

Aim :-

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

HTML :-

```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 :-

```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.*;
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>");
            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":
```

```java
            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 :-

```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.*;
import javax.servlet.http.HttpSession;

@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()) {
```

```java
    /* 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_student.Java :-

```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.*;
import javax.servlet.http.HttpSession;

@WebServlet(urlPatterns = {"/Update_student"})
public class Update_student extends HttpServlet {
```

```java
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 :-

```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;
```

```java
import javax.servlet.http.HttpServletResponse;
import java.sql.*;
import javax.servlet.http.HttpSession;


@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>");
        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.java :-

```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;
```

```java
import javax.servlet.http.HttpServletResponse;
import java.sql.*;
import javax.servlet.http.HttpSession;

@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>");
        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.getString(4)+"</td><td>"+rs.getString(5)+"</td><td>"+rs.getString(6)+"</td><td>"+rs.getStr
ing(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 :-

```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.getStr
```

```
ing(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>");
    }
  }
}
```

Practical-4

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

HTML :-
```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 :-

```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 :-

```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 :-

```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>");
```

1200204070 1067   30

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

Delete_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 = {"/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 :-

```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.getStr
ing(7)+"</td>");
                        out.println("</tr>");
                    }
                    out.println("</table>");
                }else{
```

```java
                    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 :-

```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'>");
```

```java
            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.getStr
ing(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 :	4
First Name :	Mr. ABC
Last Name :	CBA
Contact :	123456789
Branch :	IT
Address :	XYZ....
DOB :	09-09-2000

Add Update Delete Search Show All

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	XYZ	ZZZ	987654321	CE	abc	25-05-2003
2	PQR	BBB	456789123	CE	def	09-09-2002
3	LMN	CCC	123789465	CE	ghi	27-06-2000
4	Mr. ABC	CBA	123456789	CE	xyz	09-09-2000

localhost:8080/WebApplication3/

Select the operation to perform on student table

Id :	4
First Name :	
Last Name :	
Contact :	
Branch :	
Address :	
DOB :	dd-mm-yyyy

Add Update Delete Search Show All

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

Aim: 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.

Prac5.java:
```java
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.">

```java
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```

Web.xml

```xml
<?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>
```

```xml
    <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>
```
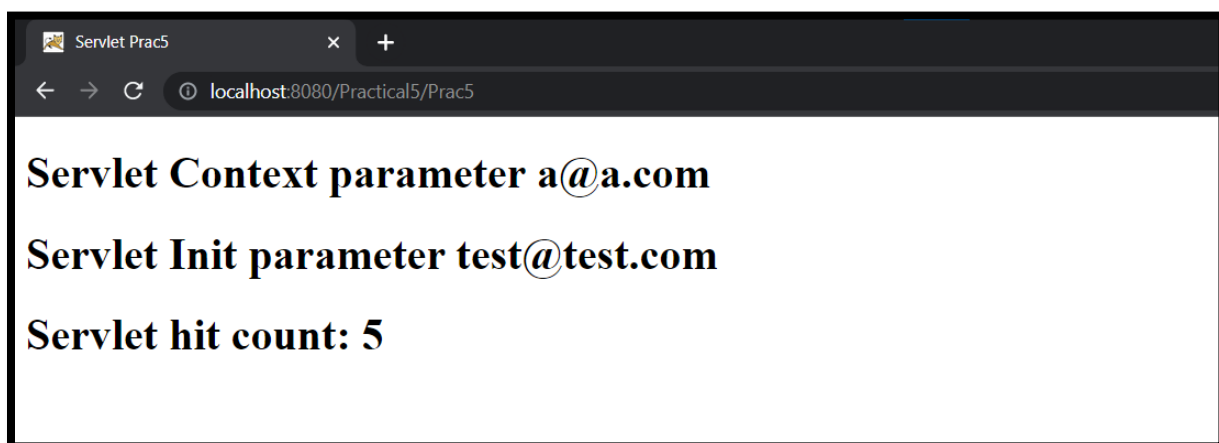
Output:

Practical-6

Aim: 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
package demo;

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

One.java
package demo;

```java
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 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>");
```

```java
            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.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        processRequest(request, response);
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
```

```
    }// </editor-fold>


}
Two.java
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.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
```
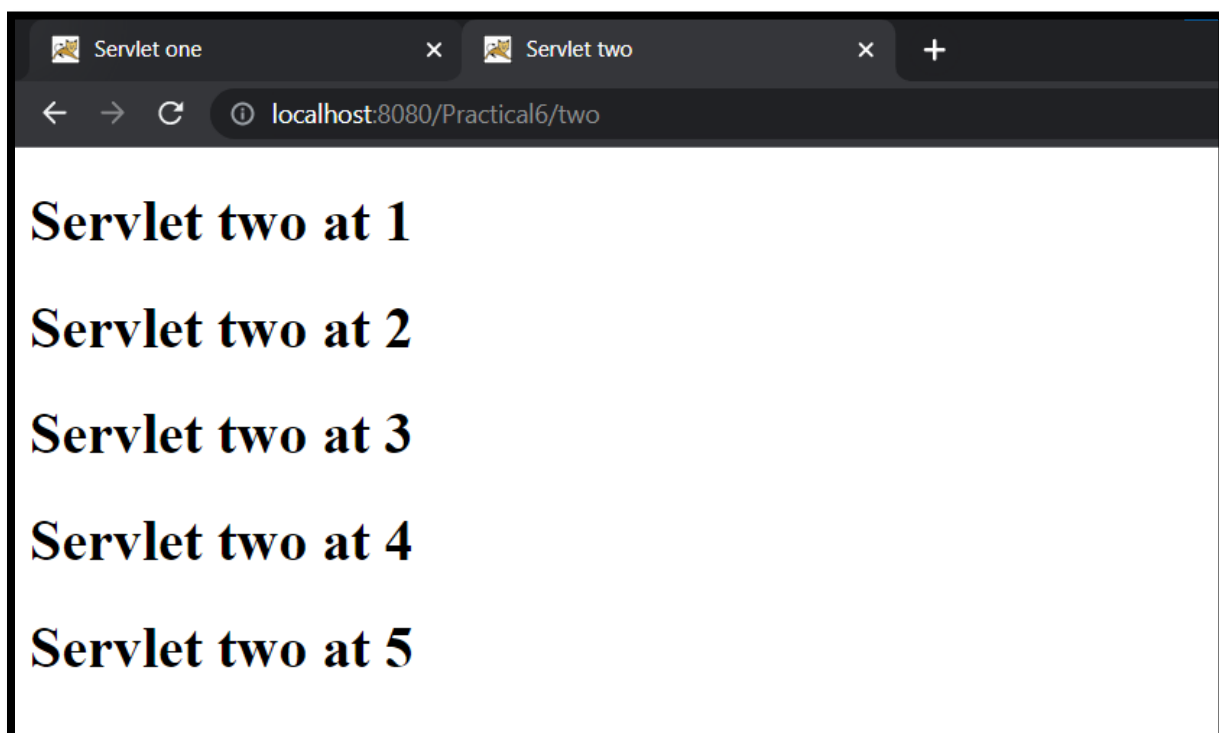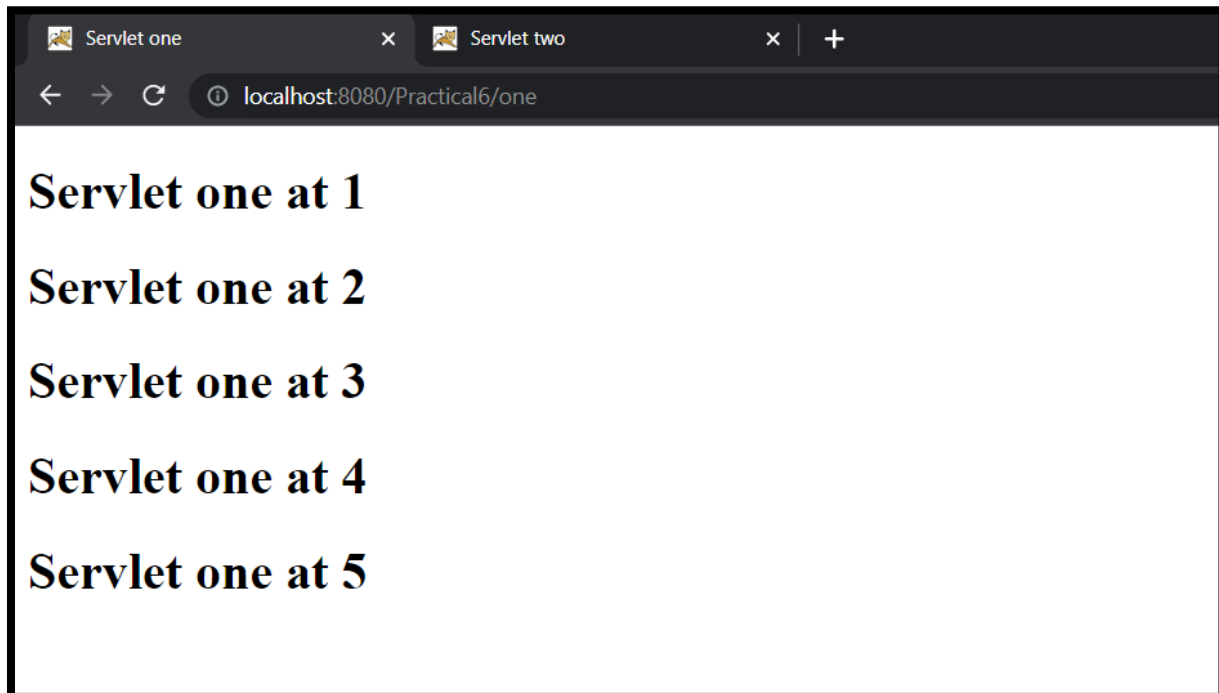
```java
 * @throws ServletException if a servlet-specific error occurs
 * @throws IOException if an I/O error occurs
 */
@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    processRequest(request, response);
}

/**
 * Handles the HTTP <code>POST</code> method.
 *
 * @param request servlet request
 * @param response servlet response
 * @throws ServletException if a servlet-specific error occurs
 * @throws IOException if an I/O error occurs
 */
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    processRequest(request, response);
}

/**
 * Returns a short description of the servlet.
 *
 * @return a String containing servlet description
 */
@Override
public String getServletInfo() {
    return "Short description";
}// </editor-fold>

}
```

Output:

Practical-7

Aim: Develop User registration module using JSP 1. Create a User Page 4of 3 2.
Update a User 3. Delete a User 4. Retrieve a User 5. List of all Users.
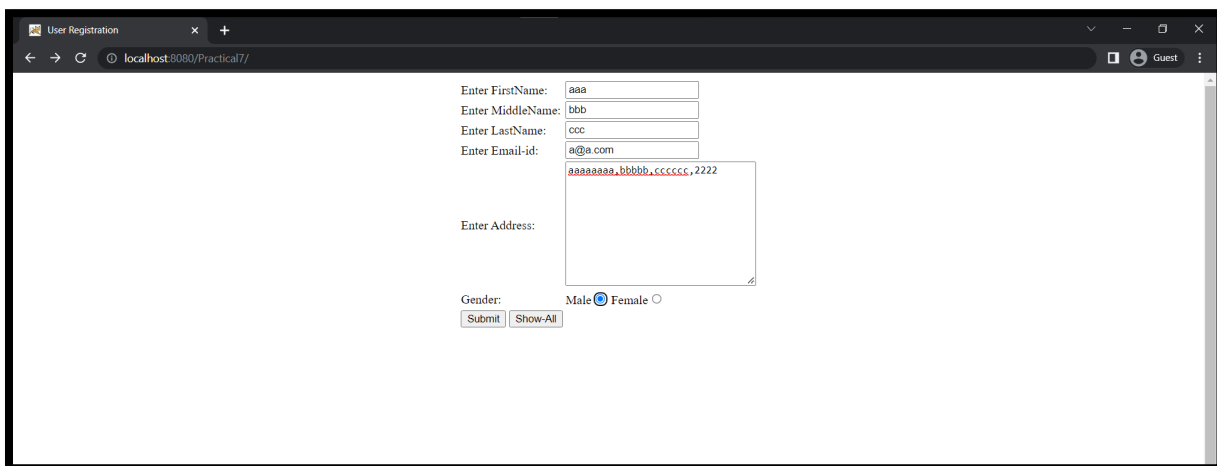
Index.html

```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>
        <td>
          <button type="submit" name="register">Submit</button>
          <a href="display.jsp"><button>Show-All</button></a>
        </td>
      </tr>
    </form>
  </table>
 </body>
</html>
```

Output:

userCreate.jsp

```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);
```
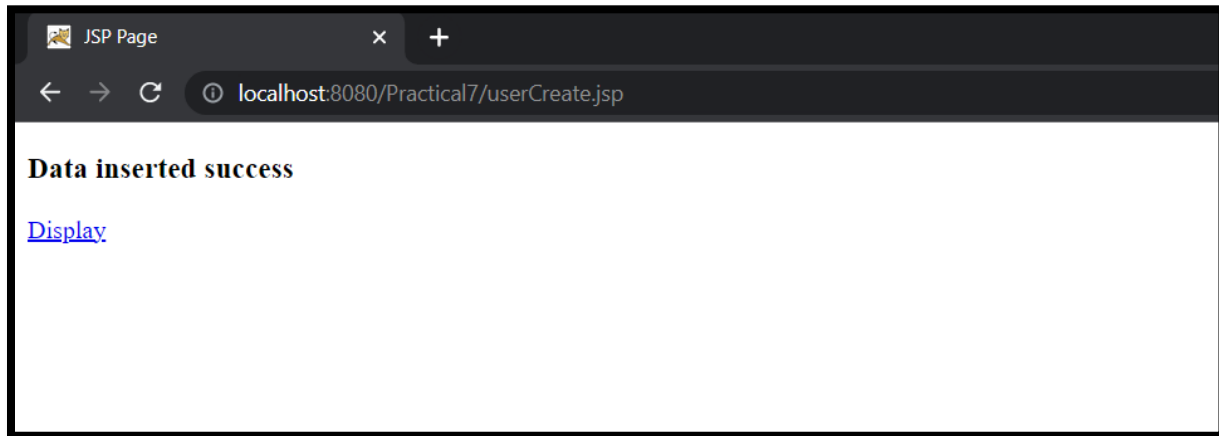
```
      }
   %>
   </body>
</html>
```

Output:

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()) {
```

```java
            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

```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.prepareCall("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);
        }
```
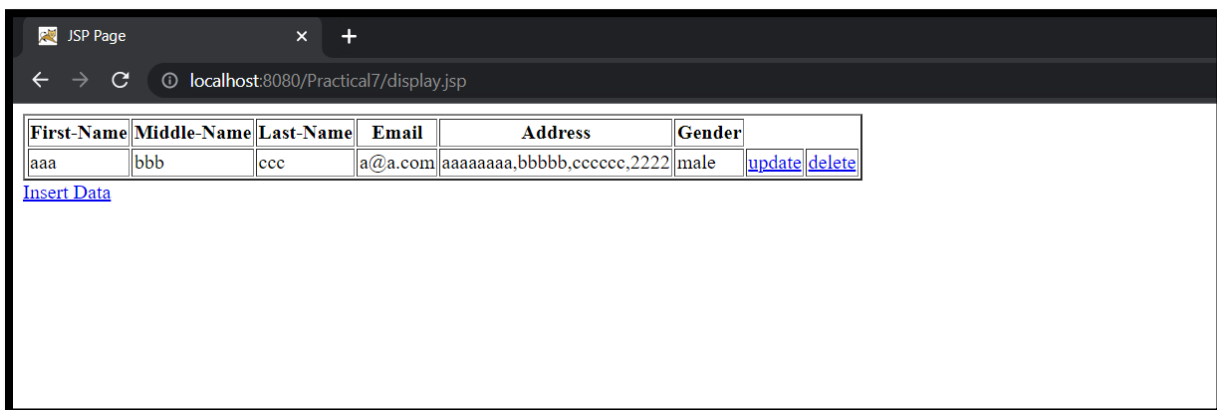
```
    }
%>
<table style="min-height: 100vh;width: 100%;display: grid;justify-content: center;">
    <form action="#"  method="post">
        <%
            try {

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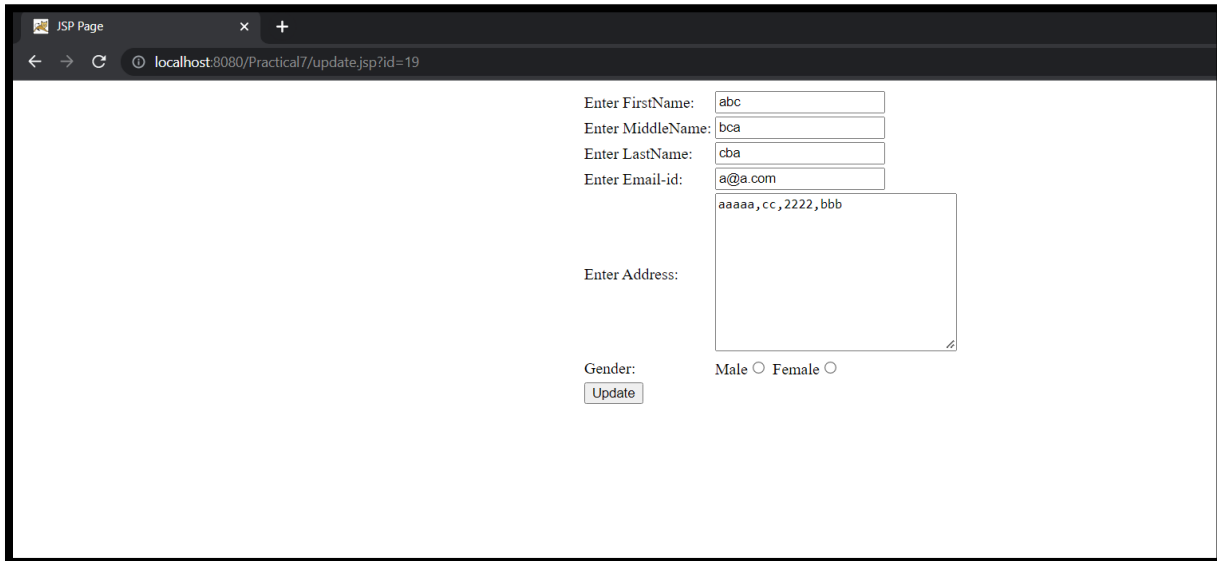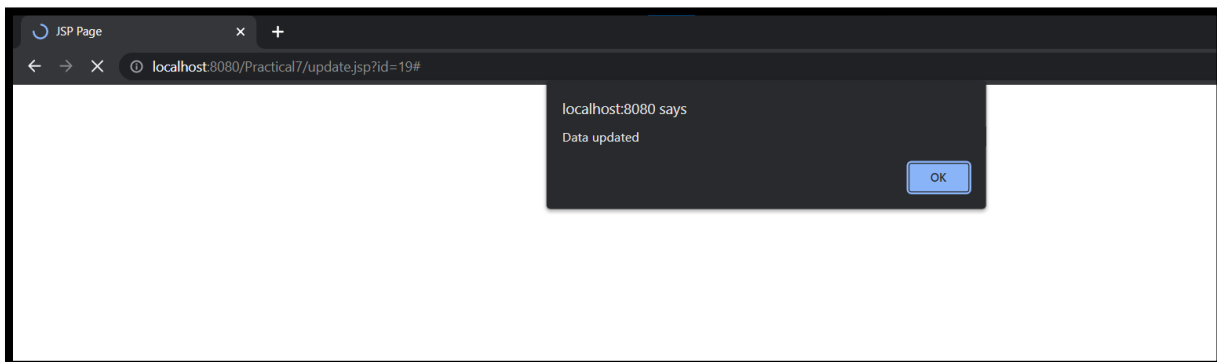
```
              <input type="email" name="email" value="<%= rs.getString(4)%>">
          </td>
      </tr>
      <tr>
        <td>
          <label for="">Enter Address:</label>
        </td>
        <td>
          <textarea name="address" id="" cols="30" rows="10" ><%= rs.getString(5)%></textarea>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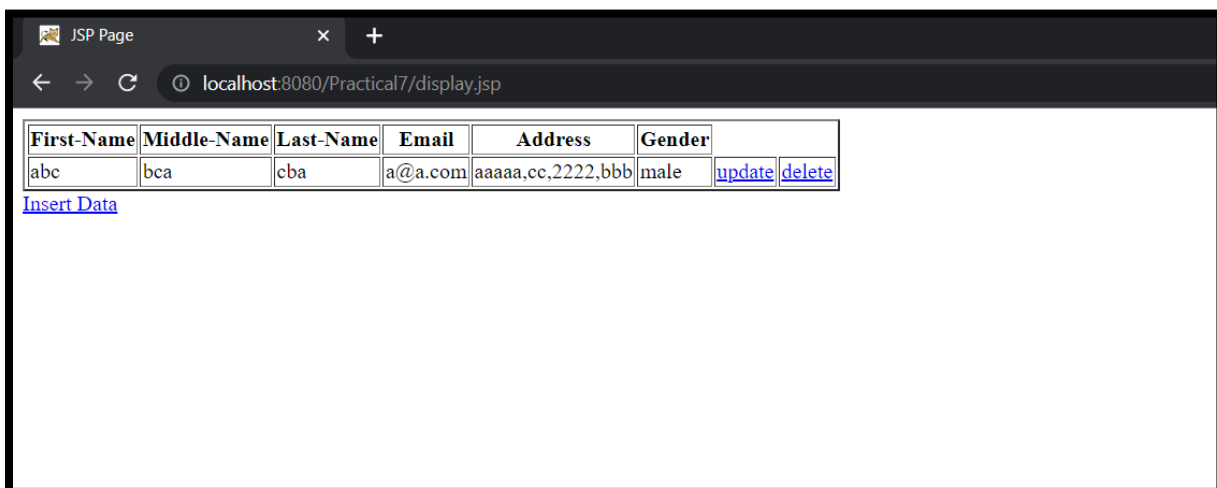
Output:

Delete.jsp

```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 pstm = con.prepareStatement("delete from user where id = ?");
                pstm.setInt(1, id);
                int x = pstm.executeUpdate();
                out.println("Deleted");

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

Output: