

## JSP

**Q.1) Create a Telephone directory using JSP and store all the information within a database, so that later could be retrieved as per the requirement. Make your own assumptions.**

- Create Database table phone in postgres database.

```
CREATE TABLE phone (  
  id SERIAL PRIMARY KEY,  
  name varchar(50),  
  no varchar(50)  
);
```

### Index.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"  
  pageEncoding="UTF8"%>  
  
<%@page import="java.sql.*"%>  
  
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<meta charset="UTF-8">  
  
<title>Phone Directory</title>  
  
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-  
icons@1.4.0/font/bootstrap-icons.css">  
  
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta2/dist/css/bootstrap.min.css"  
  rel="stylesheet" integrity="sha384-  
BmbxuPwQa2lc/FVzBcNJ7UAyJxM6wuuqLj61tLrc4wSX0szH/Ev+nYRRuWlolfffl"  
  crossorigin="anonymous">  
  
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-  
beta2/dist/js/bootstrap.bundle.min.js" integrity="sha384-  
b5kHyXgcpbZJO/tY9UI7kGkf1S0CWuKcCD38l8YkeH8z8QjE0GmW1gYU5S9FOnJ0"  
  crossorigin="anonymous"></script>  
  
</head>  
  
<body>  
  
  <center>  
  
    <nav class="navbar navbar-dark bg-dark p-4">
```

```

<a class="navbar-brand mb-0 h1">BVIMIT</a>

<ul class="navbar-nav">

    <li class="nav-item"><a class="navbar-link text-light text-decoration-none"
href='add.jsp'>Add Phone</a></li>

</ul>

</nav>

<br><br>

<table class="table table-striped">

    <tr class="text-center">

        <th>Id</th>

        <th>Name</th>

        <th>Phone</th>

        <th>Delete</th>

    </tr>

<%

    try {

        String driver = "org.postgresql.Driver";

        String url = "jdbc:postgresql://localhost:5432/postgres";

        String username = "postgres";

        String password = "root@7571";

        Class.forName(driver);

        Connection con = DriverManager.getConnection(url, username, password);

        if (request.getParameter("del") != null) {

            PreparedStatement deleteStmt = con.prepareStatement("DELETE FROM TeleDir
WHERE id = ?");

            deleteStmt.setInt(1, Integer.parseInt(request.getParameter("del")));

            deleteStmt.executeUpdate();

            response.sendRedirect("index.jsp");

        }

        String myQuery = "SELECT * FROM TeleDir ORDER BY id ASC";

```

```

        PreparedStatement myPreparedStatement = con.prepareStatement(myQuery);

        ResultSet rs = myPreparedStatement.executeQuery();

        while (rs.next()) {
%>

<tr class="text-center">

    <td><%= rs.getInt("id") %></td>

    <td><%= rs.getString("name") %></td>

    <td><%= rs.getString("phone") %></td>

    <td>

        <a href="?del=<%= rs.getInt("id") %>">

            <i class="bi bi-trash-fill text-danger"></i>

        </a>

    </td>

</tr>

<%

    }

} catch (Exception e) {

}

%>

</table>

</center>

</body>

</html>

```

### Add.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

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

```

```

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Add Phone</title>

<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.4.0/font/bootstrap-icons.css">

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
BmbxuPwQa2lc/FVzBcNJ7UAyJxM6wuuqLj61tLrc4wSX0szH/Ev+nYRRuWloIfjfl"
crossorigin="anonymous">

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/js/bootstrap.bundle.min.js" integrity="sha384-
b5kHyXgcpbZJO/tY9UI7kGkf1S0CWuKcCD38l8YkeH8z8QjE0GmW1gYU5S9FOnJ0"
crossorigin="anonymous"></script>

</head>

<body>

  <center>

    <nav class="navbar navbar-dark bg-dark p-4">

      <a class="navbar-brand mb-0 h1">BVIMIT</a>

      <ul class="navbar-nav">

        <li class="nav-item"><a class="navbar-link text-light text-decoration-none"
href='index.jsp'>Home</a></li>

      </ul>

    </nav>

    <br><br>

    <h1>Add Phone</h1>

    <br>

    <form action="add.jsp" method="post" class="card p-2" style="width: 400px">

      <div class="form-group m-2">

        <input class="form-control" name="name" type="text" placeholder="Name"
required="required" />

```

```

</div>

<div class="form-group m-2">

    <input class="form-control" name="phone" type="text" placeholder="Phone"
required="required" pattern="\d{10}" title="Ex. 1234567890" />

</div>

<div class="form-group m-2">

    <input class="btn btn-primary px-3" type="submit" value="Add" />

</div>

</form>

<%
try {
    String driver = "org.postgresql.Driver";
    String url = "jdbc:postgresql://localhost:5432/postgres";
    String username = "postgres";
    String password = "root@7571";
    Class.forName(driver);
    Connection con = DriverManager.getConnection(url, username, password);
    if (request.getParameter("phone") != null) {
        PreparedStatement ps = con.prepareStatement("INSERT INTO TeleDir(name,
phone) VALUES(?, ?)");
        ps.setString(1, request.getParameter("name").toUpperCase());
        ps.setString(2, request.getParameter("phone"));
        if (ps.executeUpdate() > 0) {
            %>
            <p class="text-success">Phone Added Successfully.</p>
            <%
                } else {
            %>
            <p class="text-danger">Failed to Add Phone.</p>
            <%

```

```

    }

    }

    } catch (Exception e) {

    }

    %>

</center>

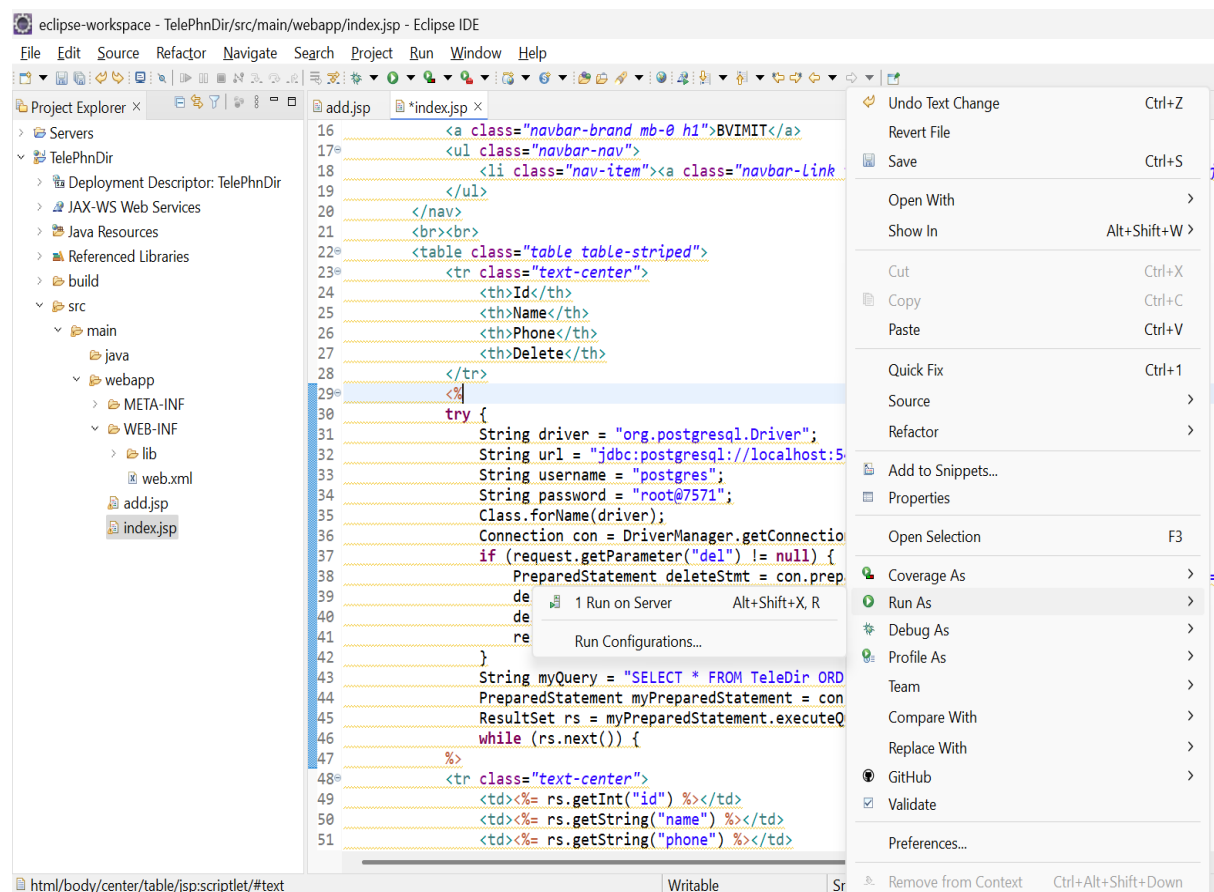
</body>

</html>

```

**Output :**




**Right Click on index.jsp → Run As → Run on server**



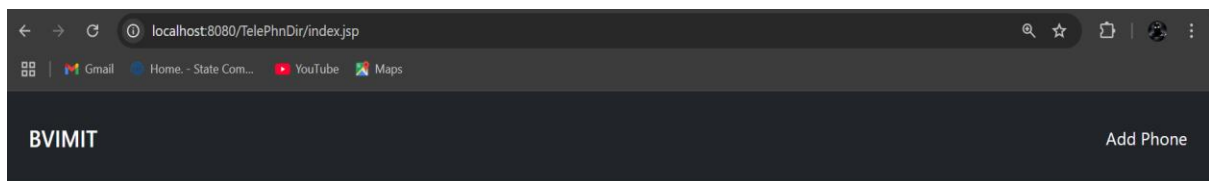
## Add Phone

## Add Phone

Phone Added Successfully.

Id	Name	Phone	Delete
4	SHREE	8928049412	
5	REYNA	9930649315	
6	KLARA	9167976852	

## After deleting one record



Id	Name	Phone	Delete
4	SHREE	8928049412	
5	REYNA	9930649315	

Data Output

Messages

Notifications

SQL

	id [PK] integer	name character varying (20)	phone character varying (10)
1	4	SHREE	8928049412
2	5	REYNA	9930649315



**Q.2) Write a JSP page to display the Registration form (Make your own assumptions).**

**Register\_1.jsp**

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

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Insert title here</title>

</head>

<body>

    <center>

        <h1>Registration Form</h1>

        <form action="register_2.jsp" method="post">

            <table style="width: 50%">

                <tr>

                    <td>First Name</td>

                    <td><input type="text" name="first_name" /></td>

                </tr>

                <tr>

                    <td>Last Name</td>

                    <td><input type="text" name="last_name" /></td>

                </tr>

                <tr>

                    <td>UserName</td>

                    <td><input type="text" name="username" /></td>

                </tr>

                <tr>

                    <td>Password</td>
```

```
 <input type="password" name="password" /></td> </tr> <tr>  confirm Password</td>  <input type="password" name="cpassword"/></td> </tr> <tr>  Address</td>  <input type="text" name="address" /></td> </tr> <tr>  Contact No</td>  <input type="text" name="contact" /></td> </tr> <tr>  <input type="submit" value="Submit Form" /></td> </tr> </table> </center> </body> </html> | | | | | | | | |
```

### Register\_2.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>

```

```
<meta charset="UTF-8">

<title>Insert title here</title>

</head>

<body>

<%

String n=request.getParameter("username");

String str1=request.getParameter("password");

String str2=request.getParameter("cpassword");

if(str1.equals(str2))

{

out.println("<h3>Welcome</h3>" +n);

}

else

{

out.println("<h3>Sorry, your password is mismatched</h3>");

}

%>

</body>

</html>
```

**Ouput :**



## Registration Form

First Name	<input type="text" value="shrijay"/>
Last Name	<input type="text" value="more"/>
UserName	<input type="text" value="shrijay"/>
Password	<input type="password" value="*****"/>
confirm Password	<input type="password" value="*****"/>
Address	<input type="text" value="vitawa"/>
Contact No	<input type="text" value="8928049412"/>
<input type="button" value="Submit Form"/>	



**Welcome**

shrijay

**Q.3) Write a JSP program to add, delete and display the records from StudentMaster (RollNo, Name, Semester, Course) table.**

**Create table student int postgres database**

```
create table student (  
id SERIAL PRIMARY KEY,  
rno varchar(4), name  
varchar(20),  
semester varchar(10),  
course varchar(5)  
);
```

**Index.jsp**

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

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

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Index</title>
```

```
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-  
icons@1.4.0/font/bootstrap-icons.css">
```

```
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-  
beta2/dist/css/bootstrap.min.css" rel="stylesheet">
```

```
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-  
beta2/dist/js/bootstrap.bundle.min.js"></script>
```

```
</head>
```

```
<body>
```

```
    <center>
```

```
        <nav class="navbar navbar-dark bg-dark p-4">
```

```
            <a class="navbar-brand mb-0 h1">BVIMIT</a>
```

```
            <ul class="navbar-nav">
```

```
        <li class="nav-item"><a class="navbar-link text-light text-decoration-none"
href='add.jsp'>Add Student</a></li>
```

```
    </ul>
```

```
</nav>
```

```
<br><br>
```

```
<table class="table table-striped">
```

```
    <tr class="text-center">
```

```
        <th>Id</th>
```

```
        <th>Roll</th>
```

```
        <th>Name</th>
```

```
        <th>Semester</th>
```

```
        <th>Course</th>
```

```
        <th>Update</th>
```

```
        <th>Delete</th>
```

```
    </tr>
```

```
<%
```

```
try {
```

```
    String driver = "org.postgresql.Driver";
```

```
    String url = "jdbc:postgresql://localhost:5432/postgres";
```

```
    String username = "postgres";
```

```
    String password = "root@7571";
```

```
    Connection con = null;
```

```
    Class.forName(driver).newInstance();
```

```
    con = DriverManager.getConnection(url, username, password);
```

```
    // Delete logic
```

```
    if (request.getParameter("del") != null) {
```

```
        PreparedStatement ps = con.prepareStatement("DELETE FROM student WHERE
id = ?");
```

```
        ps.setInt(1, Integer.parseInt(request.getParameter("del")));
```

```

        ps.executeUpdate();

        response.sendRedirect("Index.jsp");
    }

    // Fetching data to display
    PreparedStatement ps = con.prepareStatement("SELECT * FROM student ORDER BY
id ASC");

    ResultSet rs = ps.executeQuery();

    while (rs.next()) {
%>
<tr class="text-center">
    <td><%= rs.getInt("id") %></td>
    <td><%= rs.getString("rno") %></td>
    <td><%= rs.getString("name") %></td>
    <td><%= rs.getString("semester") %></td>
    <td><%= rs.getString("course") %></td>
    <td><a href="update.jsp?id=<%= rs.getInt("id") %>"><i class="bi bi-pencil-
fill"></i></a></td>
    <td><a href="Index.jsp?del=<%= rs.getInt("id") %>"><i class="bi bi-trash-fill text-
danger"></i></a></td>
</tr>
<%
    }
} catch (Exception e) {
    e.printStackTrace();
}
%>
</table>
</center>
</body>

```

</html>

### Add.jsp

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

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

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
    <meta charset="UTF-8">
```

```
    <title>Add</title>
```

```
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.4.0/font/bootstrap-icons.css">
```

```
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/css/bootstrap.min.css" rel="stylesheet">
```

```
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/js/bootstrap.bundle.min.js"></script>
```

```
</head>
```

```
<body>
```

```
    <center>
```

```
        <nav class="navbar navbar-dark bg-dark p-4">
```

```
            <a class="navbar-brand mb-0 h1">BVIMIT</a>
```

```
            <ul class="navbar-nav">
```

```
                <li class="nav-item"><a class="navbar-link text-light text-decoration-none"
href='Index.jsp'>Home</a></li>
```

```
            </ul>
```

```
        </nav>
```

```
        <br><br>
```

```
        <h1>Add Student</h1>
```

```
        <form action="add.jsp" method="post" class="card p-3" style="width: 400px">
```

```
            <div class="form-group m-2">
```



```

        <input class="form-control" name="rno" type="text" placeholder="Roll No"
required>
    </div>
    <div class="form-group m-2">
        <input class="form-control" name="name" type="text" placeholder="Name"
required>
    </div>
    <div class="form-group m-2">
        <select class="form-control" name="sem" required>
            <option value="Sem1">Semester 1</option>
            <option value="Sem2">Semester 2</option>
            <option value="Sem3">Semester 3</option>
            <option value="Sem4">Semester 4</option>
            <option value="Sem5">Semester 5</option>
            <option value="Sem6">Semester 6</option>
        </select>
    </div>
    <div class="form-group m-2">
        <select class="form-control" name="course" required>
            <option value="MCA">MCA</option>
            <option value="MBA">MBA</option>
        </select>
    </div>
    <div class="form-group m-2">
        <input class="btn btn-primary px-3" type="submit" value="Add">
    </div>
</form>
<%
try {
    String driver = "org.postgresql.Driver";

```

```

String url = "jdbc:postgresql://localhost:5432/postgres";
String username = "postgres";
String password = "root@7571";
Connection con = null;
Class.forName(driver).newInstance();
con = DriverManager.getConnection(url, username, password);

if (request.getParameter("rno") != null) {
    PreparedStatement ps = con.prepareStatement("INSERT INTO student (rno, name, semester, course) VALUES (?, ?, ?, ?)");
    ps.setString(1, request.getParameter("rno").toUpperCase());
    ps.setString(2, request.getParameter("name"));
    ps.setString(3, request.getParameter("sem"));
    ps.setString(4, request.getParameter("course"));

    if (ps.executeUpdate() > 0) {
        %>
        <p class="text-success">Student Added Successfully.</p>
        <%
            } else {
        %>
        <p class="text-danger">Failed to Add Student.</p>
        <%
            }
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
    %>
</center>

```

</body>

</html>

## Update.jsp

<%@ page language="java" contentType="text/html; charset=UTF-8"

pageEncoding="UTF-8"%>

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

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Update</title>

<link rel="stylesheet"

href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.4.0/font/bootstrapicons.css">

<link

href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta2/dist/css/bootstrap.min.css"

rel="stylesheet"

integrity="sha384-BmbxuPwQa2lc/FVzBcNJ7UAyJxM6wuqIj61tLrc4wSX0szH/Ev+nYRRuWlolfffl"

crossorigin="anonymous">

<script

src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta2/dist/js/bootstrap.bundle.min.js"

integrity="sha384-b5kHyXgcpbZJO/tY9UI7kGkf1S0CWuKcCD38l8YkeH8z8QjE0GmW1gYU5S9FOnJ0"

crossorigin="anonymous"></script>

</head>

<body>

<center>

<nav class="navbar navbar-dark bg-dark p-4">

```

<a class="navbar-brand mb-0 h1">BVIMIT</a>

<ul class="navbar-nav">
    <li class="nav-item"><a
        class="navbar-link text-light text-decoration: none"
href='Index.jsp'>Home</a>
    </li>
</ul>

</nav>

<br> <br> <br>

<form action="update.jsp" method="post" class="card p-2"
style="width: 400px">
    <%
    try {
        String driver = "org.postgresql.Driver";
        String url = "jdbc:postgresql://localhost:5432/postgres";
        String username = "postgres";
        String password = "root@7571";
        Connection con = null;
        Class.forName(driver).newInstance();
        con = DriverManager.getConnection(url, username, password);
        System.out.println("Opened database successfully");
        if (request.getParameter("id") != null) {
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery("SELECT * FROM
student Where id = " + request.getParameter("id"));
            if (rs.next()) {
                %>
                <input hidden="hidden" name="uid" type="text"
                    value="<%=request.getParameter("id")%>" />
            </div class="form-group m-2">

```

```

        <input class="form-control" name="rno" type="text"
            value="<%=rs.getString(2)%>" placeholder="Roll No"
            required="required" />
    </div>

    <div class="form-group m-2">
        <input class="form-control" name="name" type="text"
            value="<%=rs.getString(3)%>" placeholder="Name"
            required="required" />
    </div>

    <div class="form-group m-2">
        <select class="form-control" name="sem"
required="required"><option
            selected disabled="disabled"
value="<%=rs.getString(4)%>"><%=rs.getString(4)%></option>
            <option value="Sem1">Semester 1</option>
            <option value="Sem2">Semester 2</option>
            <option value="Sem3">Semester 3</option>
            <option value="Sem4">Semester 4</option>
            <option value="Sem5">Semester 5</option>
            <option value="Sem6">Semester 6</option>
        </select>
        <!--<input class="form-control" name="sem"
type="text" placeholder="Semester" required="required" pattern="[Sem0-6]{4}" title="Ex.
Sem2"/> -->
    </div>

    <div class="form-group m-2">
        <select class="form-control" name="course"
required="required">
            <option selected disabled="disabled"
value="<%=rs.getString(5)%>"><%=rs.getString(5)%></option>
            <option value="MCA">MCA</option>

```

```

        <option value="MBA">MBA</option>

    </select>

</div>

<div class="form-group m-2">

    <input class="btn btn-primary px-3" type="submit"
value="Update" />

</div>

<%
} else {
%>
<%
}

} else if (request.getParameter("rno") != null) {
Statement stmt = con.createStatement();
System.out.println(request.getParameter("rno"));
System.out.println(request.getParameter("name"));
System.out.println(request.getParameter("sem"));
System.out.println(request.getParameter("course"));
String query = "";
PreparedStatement ps = null;
if (request.getParameter("sem") == null &&
request.getParameter("course") == null) {
    query = "UPDATE student SET rno= ?, name = ? WHERE id = '" +
request.getParameter("uid") + "'";
    ps = con.prepareStatement(query);
    ps.setString(1, request.getParameter("rno").toString().toUpperCase());
    ps.setString(2, request.getParameter("name").toString());
} else if (request.getParameter("sem") == null) {
    query = "UPDATE student SET rno= ?, name = ?, course = ? WHERE id =
'" + request.getParameter("uid") + "'";
    ps = con.prepareStatement(query);

```

```

        ps.setString(1, request.getParameter("rno").toString().toUpperCase());
        ps.setString(2, request.getParameter("name").toString());
        ps.setString(4, request.getParameter("course").toString());
    } else if (request.getParameter("course") == null) {
        query = "UPDATE student SET rno= ?, name = ?, semester = ? WHERE
id = '" + request.getParameter("uid") + "'";
        ps = con.prepareStatement(query);
        ps.setString(1, request.getParameter("rno").toString().toUpperCase());
        ps.setString(2, request.getParameter("name").toString());
        ps.setString(3, request.getParameter("sem").toString());
    } else {
        query = "UPDATE student SET rno= ?, name = ?, semester = ?, course =
? WHERE id = '" + request.getParameter("uid")
        + "'";
        ps = con.prepareStatement(query);
        ps.setString(1, request.getParameter("rno").toString().toUpperCase());
        ps.setString(2, request.getParameter("name").toString());
        ps.setString(3, request.getParameter("sem").toString());
        ps.setString(4, request.getParameter("course").toString());
    }
    System.out.println(query);
    int val = ps.executeUpdate();
    System.out.println("val : " + val);
    if (val > 0) {
        out.write("<script>alert('Updation Successful.');

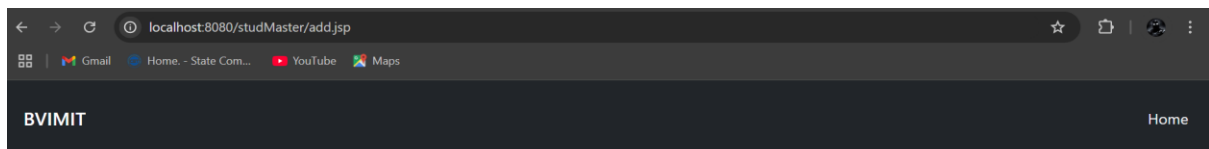
```

```

    }
    } catch (Exception e) {
        e.printStackTrace();
    }
    %>
</form>
</center>
</body>
</html>

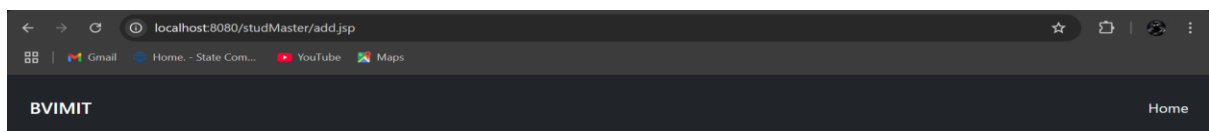
```

## Output :



## Add Student

44
Reyna
Semester 2
MCA
<input type="button" value="Add"/>



## Add Student

Roll No
Name
Semester 1
MCA
<input type="button" value="Add"/>

Student Added Successfully.



localhost:8080/studMaster/index.jsp

☆

Gmail











Home. - State Com...

YouTube

Maps

BVIMIT

Add Student

Id	Roll	Name	Semester	Course	Update	Delete
1	33	shrijay more	Sem1	MCA		
2	44	Reyna	Sem2	MCA		
3	44	himanshu	Sem1	MBA		
4	47	prashant	Sem3	MCA		
5	45	klara	Sem4	MBA		

## Delete one record

localhost:8080/studMaster/index.jsp

☆

Gmail









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YouTube

Maps

BVIMIT

Add Student

Id	Roll	Name	Semester	Course	Update	Delete
2	44	Reyna	Sem2	MCA		
3	44	himanshu	Sem1	MBA		
4	47	prashant	Sem3	MCA		
5	45	klara	Sem4	MBA		

## Update one record

localhost:8080/studMaster/Update.jsp?id=3

☆

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Maps

BVIMIT

[Home](#)

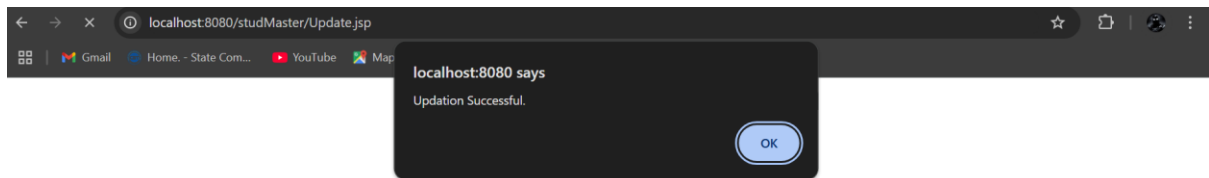
44

hemanshoe

Semester 4

MBA

Update



BVIMIT

Add Student

Id	Roll	Name	Semester	Course	Update	Delete
2	44	Reyna	Sem2	MCA		
3	44	hemanshoe	Sem4	MBA		
4	47	prashant	Sem3	MCA		
5	45	klara	Sem4	MBA		

Data Output Messages Notifications

SQL Showing rows: 1 to 4 Page No:

	id [PK] integer	rno character varying (4)	name character varying (20)	semester character varying (10)	course character varying (5)
1	2	44	Reyna	Sem2	MCA
2	4	47	prashant	Sem3	MCA
3	5	45	klara	Sem4	MBA
4	3	44	hemanshoe	Sem4	MBA

```
Opened database successfully
Opened database successfully
Opened database successfully
44
hemanshoe
Sem4
null
UPDATE student SET rno= ?, name = ?, semester = ? WHERE id = '3'
val : 1
```

**Q.4) Design loan calculator using JSP which accepts Period of Time (in years) and Principal Loan Amount. Display the payment amount for each loan and then list the loan balance and interest paid for each payment over the term of the loan for the following time period and interest rate:**

**a. 1 to 7 year at 5.35%**

**b. 8 to 15 year at 5.5%**

**c. 16 to 30 year at 5.75%**

**Calc.jsp**

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

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Loan Calculator</title>

<link rel="stylesheet"

    href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.4.0/font/bootstrapicons.css">

<link

    href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/css/bootstrap.min.css"

    rel="stylesheet"

    integrity="sha384-
BmbxuPwQa2lc/FVzBcNJ7UAyJxM6wuuqIJl61tLrc4wSX0szH/Ev+nYRRuWlolffj"

    crossorigin="anonymous">

<script

    src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/js/bootstrap.bundle.min.js"

    integrity="sha384-
b5kHyXgcpbZJO/tY9UI7kGkf1S0CWuKcCD38l8YkeH8z8QjE0GmW1gYU5S9FOnJ0"

    crossorigin="anonymous"></script>

</head>

<body>
```

```

<body>

    <br>

    <h1>

        <center>Loan Calculator</center>

    </h1>

    <br>

    <form name="loanca1" action="Test.jsp" method="post"

        class="card p-2 m-auto" style="width:

400px;">

    <div class="form-group m-2">

Principal Loan Amount:

    <input class="form-control" type="text" name="pamt"

        placeholder="Enter Principal

Amount">

    </div>

    <div class="form-group m-2">

Tenure (in years):

    <input class="form-control" type="text" name="time"

        placeholder="Enter period of time">

    </div>

    <input class="form-control p-2" type="submit" value="Calculate">

    </form>

</body>

</html>

```

### Test.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"

    pageEncoding="UTF-8"%>

<!DOCTYPE html>

```

```

<html>

<head>

<meta charset="UTF-8">

<title>Loan Calculator</title>

<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.4.0/font/bootstrapicons.css">

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-beta2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
BmbxuPwQa2lc/FVzBcNJ7UAyJxM6wquIlj61tLrc4wSX0szH/Ev+nYRRuWlolflfl"
crossorigin="anonymous">

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta2/dist/js/bootstrap.bundle.min.js" integrity="sha384-
b5kHyXgcpbZJO/tY9UI7kGkf1S0CWuKcCD38l8YkeH8z8QjE0GmW1gYU5S9FOnJ0"
crossorigin="anonymous"></script>

</head>

<body>

<%

String p_amt = request.getParameter("pamt");

String tenure = request.getParameter("time");

if (p_amt != null && tenure != null) {

    try {

        float pr_amt = Float.parseFloat(p_amt);

        float period = Float.parseFloat(tenure);

        double loan_balance, interest, emi;

        double annualRate = 0;

        if (period >= 1 && period <= 7) {

            annualRate = 0.0535;

        } else if (period >= 8 && period <= 15) {

            annualRate = 0.055;

        } else if (period >= 16 && period <= 30) {

            annualRate = 0.0575;

        }

    } catch (Exception e) {

        // Handle exception
    }

}

%>

```

```

    } else {

        out.println("<div class='alert alert-danger' style='width: 400px; margin: auto;'>Invalid tenure period. Please enter a value between 1 and 30 years.</div>");

        return;

    }

    double monthlyRate = annualRate / 12;

    int months = (int) (period * 12);

    emi = (pr_amt * monthlyRate * Math.pow(1 + monthlyRate, months)) / (Math.pow(1 + monthlyRate, months) - 1);

    interest = (emi * months) - pr_amt;

    loan_balance = pr_amt + interest;

    out.println("<br><br><div class='card p-3 m-auto' style='width:400px;'><center><h1>Loan Details</h1><hr>");

    out.println("EMI: " + String.format("%.2f", emi) + " Rs.<br>");

    out.println("Total Interest: " + String.format("%.2f", interest) + " Rs.<br>");

    out.println("Loan Balance: " + String.format("%.2f", loan_balance) + " Rs.<br>");

    out.println("</center></div>");

    } catch (NumberFormatException e) {

        out.println("<div class='alert alert-danger' style='width: 400px; margin: auto;'>Invalid input. Please enter numeric values for principal amount and tenure.</div>");

    }

    } else {

        out.println("<div class='alert alert-warning' style='width: 400px; margin: auto;'>Please provide both principal amount and tenure.</div>");

    }

    %>

</body>

</html>

```

Output :

# Loan Calculator

Principal Loan Amount:

Tenure (in years):

Calculate

---

## Loan Details

EMI: 2573.04 Rs.

Total Interest: 876.46 Rs.

Loan Balance: 30876.46 Rs.

**Q.5) Write a program using JSP that displays a webpage consisting Application form for change of Study Center which can be filled by any student who wants to change his/ her study center. Make necessary assumptions.**

**Study\_center.jsp**

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<body>
    <h1>
        <center>Study Center</center>
    </h1>
    <hr>
    <form action="register.jsp" method="post">
        <fieldset>
            <legend>Personal Details</legend>
            <table style="width: 50%">
                <tr>
                    <td>Register No:</td>
                    <td><input type="number" /></td>
                </tr>
                <tr>
                    <td>Name:</td>
                    <td><input type="text" placeholder="first Name"
/></td>
```



```

        <td>Middle:
        <td>
        <td><input type="text" placeholder="middle Name"
/></td>

        <td>Last:</td>
        <td><input type="text" placeholder="last Name"
/></td>

    </tr>
    <tr>
        <td>Address:</td>
        <td><input type="text" /></td>
    </tr>
    <tr>
        <td>Email-id:</td>
        <td><input type="text"
placeholder="brucewayne123@gmail.com" /><br>
        <br></td>
    </tr>
    <tr>
        <td>Password</td>
        <td><input type="password" name="password" /></td>
    </tr>
    <tr>
        <td>confirm Password</td>
        <td><input type="password" name="cpassword"
/></td>

    </tr>
    <tr>
        <td>Contact No:</td>
        <td><input type="text" /></td>

```

```

        </tr>
        <tr>
            <td>DOB:</td>
            <td><input type="text" placeholder="4/11/1999"
/><br>
            <br></td>
        </tr>
        <tr>
            <td>Gender:</td>
            <td>Male:</td>
            <td><input type="radio" Name="Gender" /></td>
            <td>Female:</td>
            <td><input type="radio" Name="Gender" /></td>
        </tr>
        <tr>
            <td>City</td>
            <td><select name="City">
                <option value="-1"
selected>select..</option>
                <option value="New
Delhi">PANVEL</option>
                <option
value="Mumbai">KAMOTHE</option>
                <option value="Goa">NERUL</option>
                <option value="Patna">VASHI</option>
            </select></td>
        </tr>
    </table>
</fieldset>
<fieldset>
    <legend>Educational details</legend>

```

```

<table style="width: 50%">
    <tr>
        <td>Qualification</td>
    </tr>
    <tr>
        <td>SSC:</td>
        <td><input type="checkbox"></td>
        <td>HSC:</td>
        <td><input type="checkbox"></td>
        <td>Post Graduation:</td>
        <td><input type="checkbox"></td>
    </tr>
    <tr>
        <td>Course</td>
        <td><select name="Course">
            <option
                value="-1"
                selected>select..</option>
            <option
                value="B.Tech">B.TECH</option>
            <option value="MCA">MCA</option>
            <option value="MBA">MBA</option>
            <option value="BCA">BCA</option>
        </select></td>
    </tr>
    <tr>
        <td>Message:</td>
        <td><textarea rows="3"></textarea></td>
    </tr>
    <tr>

```

```
 <input type="submit" value="Submit Form" /></td>  </tr>  </table>  </fieldset>  <br>  </form>  </body>  </html> | |
```

### Register.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Insert title here</title>

</head>

<body>

    <%

        String n = request.getParameter("first name");

        String str1 = request.getParameter("password");

        String str2 = request.getParameter("cpassword");

        if (str1.equals(str2)) {

            out.println("Your request to change Study Center from has been sent to the
Administrator.");

        } else {

            out.println("<h3>Sorry, your password is mismatched</h3>");

        }

    }

```

```
%>

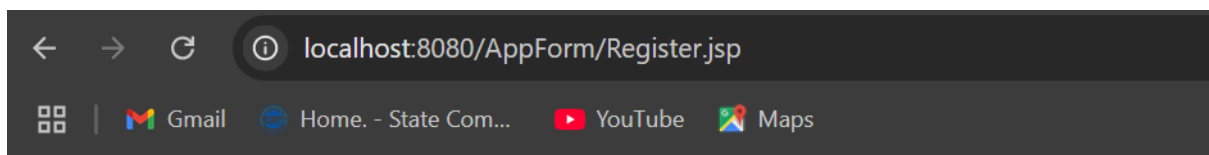
</body>

</html>
```

**Output :**

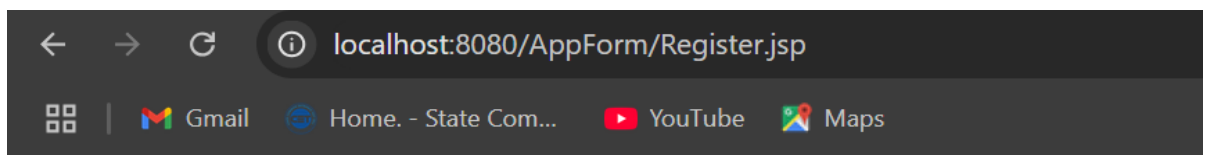
## Study Center

Personal Details			
Register No:	<input type="text" value="1"/>		
Name:	<input type="text" value="bruce"/>	Middle:	<input type="text" value="thomas"/>
Address:	<input type="text" value="gotham"/>		
Email-id:	<input type="text" value="brucewayne123@gmail.com"/>		
Password	<input type="password" value="*****"/>		
confirm Password	<input type="password" value="*****"/>		
Contact No:	<input type="text" value="892804942"/>		
DOB:	<input type="text" value="23/08/2002"/>		
Gender:	Male: <input checked="" type="radio"/> Female: <input type="radio"/>		
City	<input type="text" value="PANVEL"/>		
Educational details			
Qualification	SSC: <input type="checkbox"/> HSC: <input checked="" type="checkbox"/> Post Graduation: <input checked="" type="checkbox"/>		
Course	<input type="text" value="MCA"/>		
Message:	<input type="text" value="I'm Batman"/>		
<input type="button" value="Submit Form"/>			



Your request to change Study Center from has been sent to the Administrator.

If password is incorrect.



**Sorry, your password is mismatched**

**Q.6) Write a JSP program that demonstrates the use of JSP declaration, scriptlet, directives, expression, header and footer.**

**main.jsp**

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>JSP declaration, scriptlet, directives, expression, header and footer Example</title>
</head>
<body>
    <%@ include file="header.jsp"%>
    <center>
        <%!int data = 50;%>
        <%= "Value of the variable is: " + data%>
        <%!double circle(int n) {
            return 3.14 * n * n;
        }%></br>
        <%= "Area of circle is: " + circle(3)%></br>
        <%!int rectangle(int l, int b) {
            return l * b;
        }%>
        <%= "Area of rectangle is: " + rectangle(3, 4)%></br>
        <%!int perimeter(int x, int y) {
            int peri = 2 * (x + y);
            return peri;
        }%>
        <%= "Perimeter of rectanlge: " + perimeter(5, 6)%></br>
        <p>Thanks for visiting my page.</p>
```

```
        </center>

        <%@ include file="footer.jsp"%>

</body>

</html>
```

### header.jsp

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

<!DOCTYPE html>

<%!int pageCount = 0;

    void addCount() {
        pageCount++;
    }%>

<%
addCount();
%>

<html>

<head>

<meta charset="UTF-8">

<title>JSP declaration, scriptlet, directives, expression,
    header and footer Example</title>

</head>

<body>

    <center>

        <h2>The include Directive Example</h2>

        <p>

            This site has been visited

            <%=pageCount%> times.

        </p>
```

```

        </center>

        <br />

        <br />
</body>
</html>

footer.jsp

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Footer</title>

</head>

<body>

        <br />

        <br />

        <center>

                <p>Copyright 2021</p>

        </center>

</body>
</html>

```

### Output :



### The include Directive Example

This site has been visited 1 times.

Value of the variable is: 50  
Area of circle is: 28.259999999999998  
Area of rectangle is: 12  
Perimeter of rectangle: 22

Thanks for visiting my page.

Copyright 2021



**Q.7) Write a JSP program that demonstrates the use of Cookies and session tracking in java.**

**SessionCookie.jsp**

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Session and Cookie Example</title>
</head>
<body>
    <form action="SessionCookie.jsp" method="post">
        <table>
            <tr>
                <td>UserName:</td>
                <td><input type="text" name="username"></td>
            </tr>
            <tr>
                <td>Email:</td>
                <td><input type="text" name="email" /></td>
            </tr>
            <tr>
                <td colspan="2">
                    <input type="submit" value="Submit Form" />
                </td>
            </tr>
        </table>
    </form>
    <%
        if (request.getParameter("username") != null && request.getParameter("email") !=
null) {
            Cookie usernameCookie = new Cookie("username",
request.getParameter("username"));
```

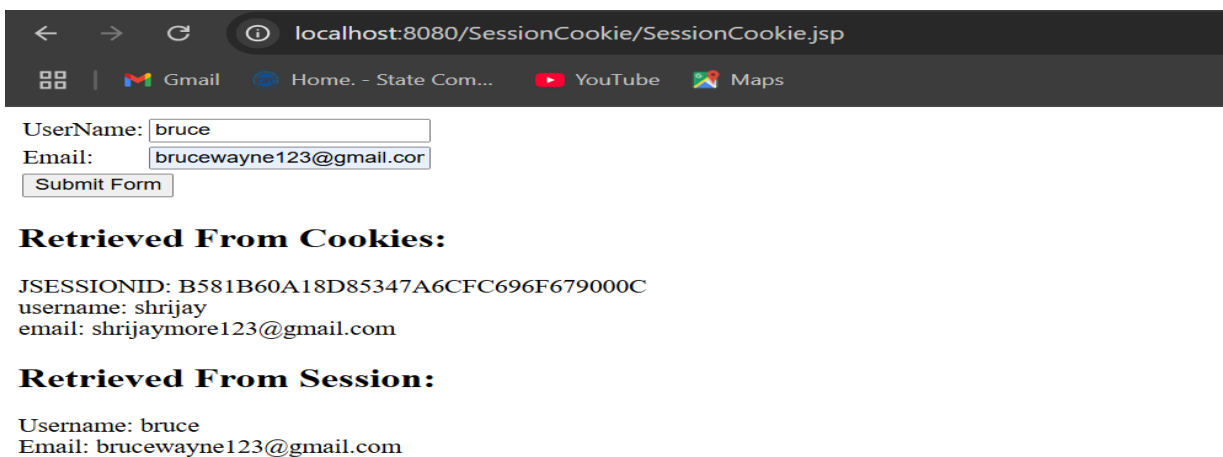
```

        Cookie emailCookie = new Cookie("email", request.getParameter("email"));
        response.addCookie(usernameCookie);
        response.addCookie(emailCookie);
        session.setAttribute("username", request.getParameter("username"));
        session.setAttribute("email", request.getParameter("email"));
    }
    Cookie[] cookies = request.getCookies();
    if (cookies != null) {
        out.println("<h2>Retrieved From Cookies:</h2>");
        for (Cookie cookie : cookies) {
            out.println(cookie.getName() + ": " + cookie.getValue() + "<br>");
        }
    } else {
        out.println("<h2>No cookies found.</h2>");
    }
    out.println("<h2>Retrieved From Session:</h2>");
    out.println("Username: " + session.getAttribute("username") + "<br>");
    out.println("Email: " + session.getAttribute("email") + "<br>");

%>
</body>
</html>

```

### Output :



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/SessionCookie/SessionCookie.jsp'. The browser's taskbar includes icons for Gmail, Home, State Com..., YouTube, and Maps. Below the browser window, a form is displayed with two input fields: 'UserName:' containing 'bruce' and 'Email:' containing 'brucewayne123@gmail.cor'. A 'Submit Form' button is located below these fields. The output of the form submission is shown below the form, consisting of two sections: 'Retrieved From Cookies:' and 'Retrieved From Session:'. The 'Retrieved From Cookies:' section displays 'JSESSIONID: B581B60A18D85347A6CFC696F679000C', 'username: shrijay', and 'email: shrijaymore123@gmail.com'. The 'Retrieved From Session:' section displays 'Username: bruce' and 'Email: brucewayne123@gmail.com'.

UserName:

Email:

**Retrieved From Cookies:**

JSESSIONID: B581B60A18D85347A6CFC696F679000C  
 username: shrijay  
 email: shrijaymore123@gmail.com

**Retrieved From Session:**

Username: bruce  
 Email: brucewayne123@gmail.com