



Dayananda Sagar College of Engineering

Department of MCA

LABORATORY MANUAL

PROGRAM : MASTER OF COMPUTER APPLICATIONS
COURSE NAME : ENTERPRISE APPLICATION DEVELOPMENT LAB
COURSE CODE : 20MCA37
SEMESTER : 3rd SEMESTER
FACULTY : CHANDRIKA M



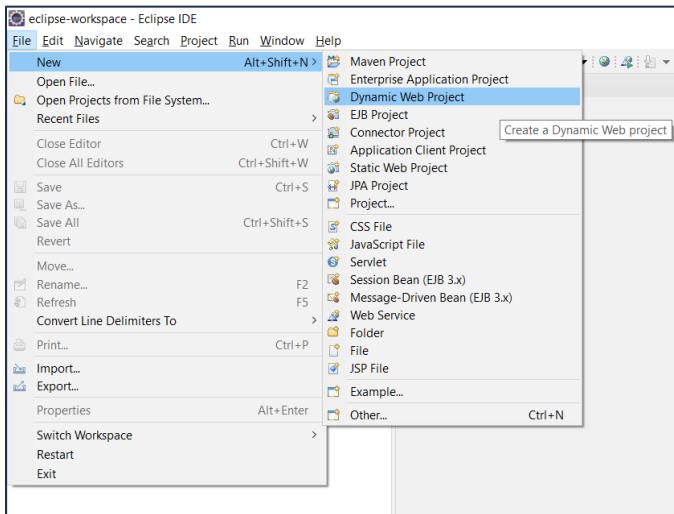
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Creating a Java EE Project in Eclipse

Step 1: File -> New -> Dynamic Web Project



Step 2: Enter Project Name and select the Target runtime/server and click next as highlighted below.

New Dynamic Web Project

Dynamic Web Project

Create a standalone Java-based Web Application or add it to a new or existing Enterprise Application.

Project name: LabsetA1

Project location: Use default location

Location: C:\Users\Chandrika M\workspace\LabsetA1

Target runtime: Apache Tomcat v6.0

Dynamic web module version: 2.5

Configuration: Default Configuration for Apache Tomcat v6.0

EAR membership: Add project to an EAR

Working sets: Add project to working sets

< Back **Next >** Finish Cancel

New Dynamic Web Project

Java

Configure project for building a Java application.

Source folders on build path:

src\main\java

Add Folder... Edit... Remove

Default output folder: build\classes

< Back **Next >** Finish Cancel

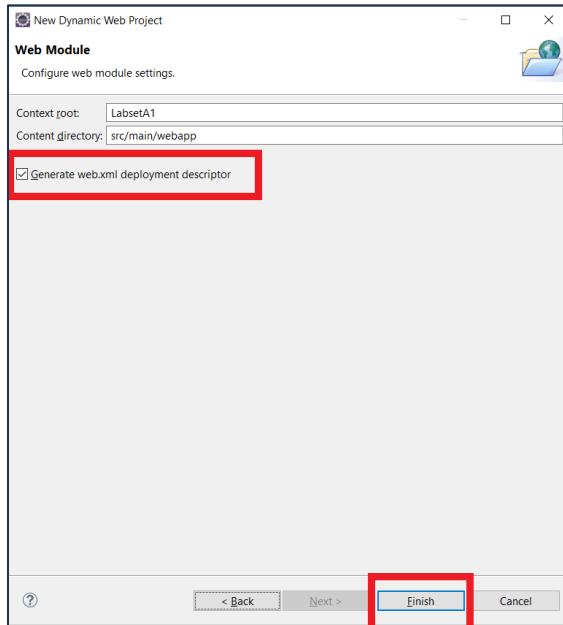


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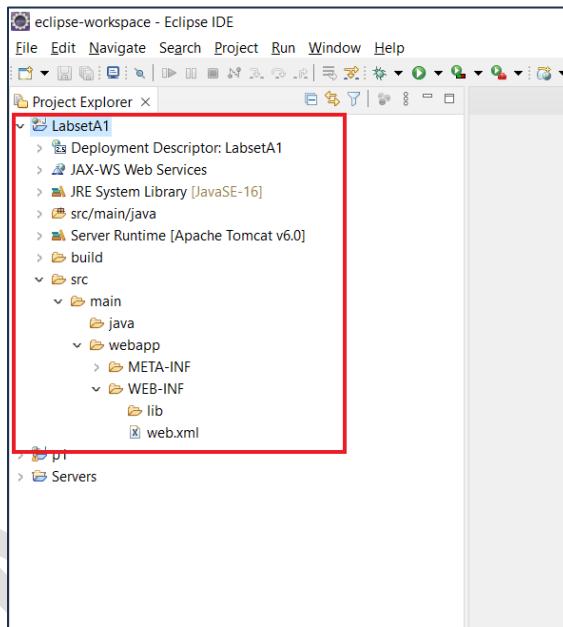
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Step 3: Select the check box for web.xml if unselected and click on Finish.



Step 4: You should be able to see the project created in the project explorer window.





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Remember in Eclipse:

- All the web pages (html, css, Javascript, JSP etc.,) should be created within webapp folder.
- All the Java classes and packages should be created within main folder.
- All resources should be listed under the deployment descriptor web.xml folder.



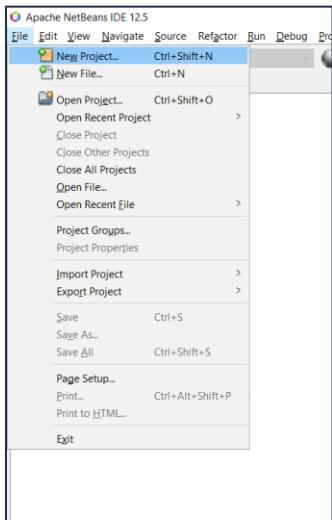
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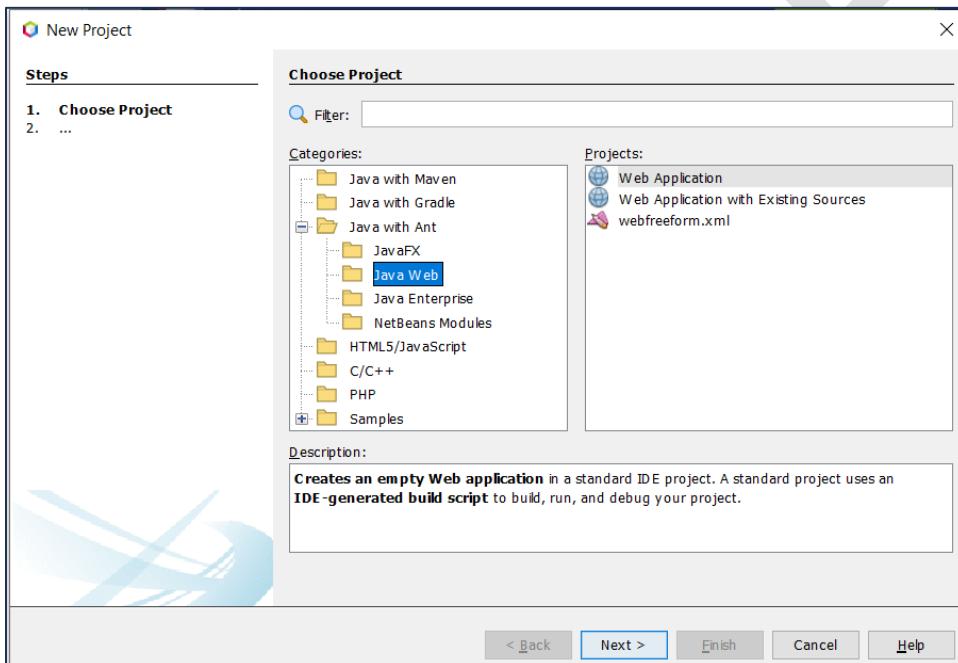
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Creating a Java EE Project in Netbeans

Step 1: File -> New Project



Step 2: Categories -> Java web -> Web Application -> Next





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Step 3: Enter Project Name -> Next

New Web Application

Steps

1. Choose Project
- 2. Name and Location**
3. Server and Settings
4. Frameworks

Name and Location

Project Name: Project Location: Project Folder:

Use Dedicated Folder for Storing Libraries
Libraries Folder:

Different users and projects can share the same compilation libraries
(see Help for details).

< Back

Step 4: Select the server, click on Next -> Finish

New Web Application

Steps

1. Choose Project
2. Name and Location
- 3. Server and Settings**
4. Frameworks

Server and Settings

Add to Enterprise Application:

Server:

Java EE Version:

Context Path:

< Back

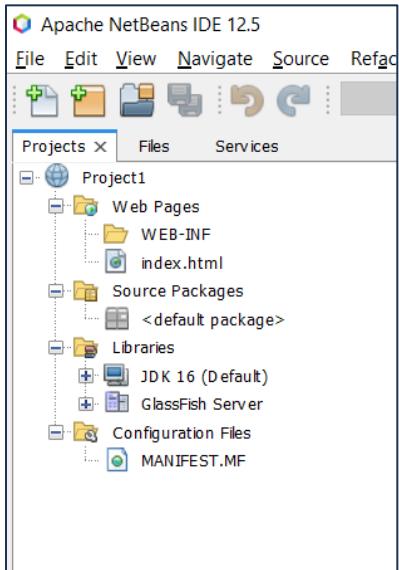


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Step 5: You should be able to see the project created in the project explorer window.



Remember in NetBeans:

- All the web pages (html, css, Javascript, JSP etc.,) should be created within Web Pages folder.
- All the Java classes and packages should be created within Source Packages folder.
- All resources should be listed under the deployment descriptor web.xml folder.



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PART A

1. Design a simple JSP file to take input of text & color and demonstrate request.getParameter.
2. Design a simple login page using jsp and validate a user in java class file using HttpServletRequest/Response.
3. Write a servlet program to get the hobbies of a person demonstrating request.getParameterValues.
4. Write a servlet program to demonstrate GET and POST method.
5. Write a servlet program to demonstrate RESPONSE OBJECTS.
6. Write a servlet program to demonstrate import page directive tags and display data & Time.
7. Write a servlet program to demonstrate Google search using response.sendRedirect.
8. Write a servlet program to demonstrate Java Bean Implementation.

PART B

1. Write a servlet program to illustrate SESSION.
2. Write a servlet program to illustrate COOKIES.
3. Write a servlet program to retrieve data from a database “telephone directory” by taking either phone number or name as input.
4. Write a servlet program to insert student information to the database by taking input from the console by connecting to MYSQL database using servlets.
5. Write a program to demonstrate the search operation of database from jsp page.
6. Write a program to authenticate the user based on the login details in the database and load pages based on the value of session variable.
7. Write a servlet program to update the contents of database from frontend.
8. Write a program to demonstrate pagination in JSP.



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PART A

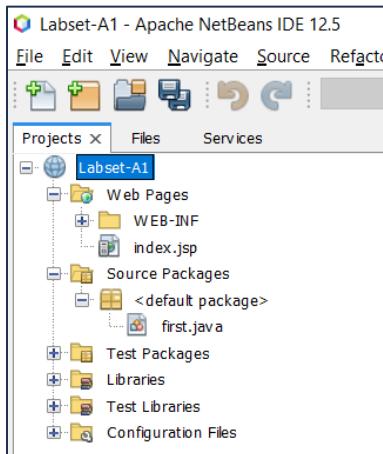
(For demonstration purpose, NetBeans IDE is used in this manual)

1. Design a simple JSP file to take input of text & color and demonstrate request.getParameter.

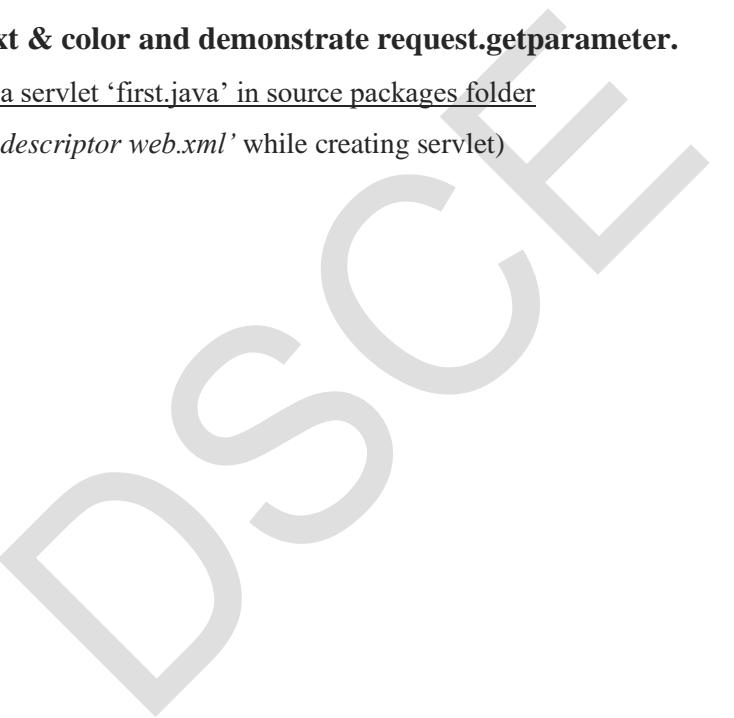
Create index.jsp file in the web pages folder and a java servlet ‘first.java’ in source packages folder

(Remember to check ‘add information to deployment descriptor web.xml’ while creating servlet)

The project structure is given below:



index.jsp



```
<%@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>
        <form action="first">
            <h1>Please Enter The Text and Color</h1><br><br>
            Text: &nbsp;&nbsp; <input type="Text" name="Text1"><br><br>
            Color: &nbsp;&nbsp; <input type="Text" name="Color"><br><br>
            <input type="Submit" value="submit" >
        </form>
    </body>
</html>
```



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first.java

```
first.java x
Source History |<> << >> <<< >>> <<<< >>>> <<<<< >>>>> <<<<<< >>>>>> <<<<<<< >>>>>>> <<<<<<<< >>>>>>>>
1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
7
8 public class first extends HttpServlet {
9
10     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
11         throws ServletException, IOException {
12         response.setContentType("text/html;charset=UTF-8");
13         try ( PrintWriter out = response.getWriter() ) {
14             String Text1=request.getParameter("Text1");
15             String Color=request.getParameter("Color");
16             out.println("<html><head><title>My First JSP</title></head><body>");
17             out.println("<font size=\"12px\"color=\"" + Color + "\">" + Text1 + "<br></font>" + "</body></html>");
18
19         }
20     }
21
22     @Override
23     protected void doGet(HttpServletRequest request, HttpServletResponse response)
24         throws ServletException, IOException [...3 lines...]
25
26     @Override
27     protected void doPost(HttpServletRequest request, HttpServletResponse response)
28         throws ServletException, IOException [...3 lines...]
29
30     @Override
31     public String getServletInfo() {
32         return "Short description";
33     } // </editor-fold>
34
35 }
36
37
38
39 }
```



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web.xml (Code here will be automatically generated if *add information to deployment descriptor* is selected while creating servlet)

The screenshot shows the Apache NetBeans IDE interface. On the left, the 'Projects' panel displays a project named 'Labset-A1' containing 'Web Pages', 'Source Packages', 'Test Packages', 'Libraries', and other files. A red arrow points from the project structure to the 'web.xml' file on the right. The 'web.xml' editor shows the following XML code:

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>first</servlet-name>
        <servlet-class>first</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>first</servlet-name>
        <url-pattern>/first</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
</web-app>
```

Output:

The screenshot shows two browser windows. The left window, titled 'JSP Page', has the URL 'localhost:8080/Labset-A1/'. It contains a form with fields 'Text:' and 'Color:' both set to 'Dayananda Sagar', and a 'submit' button. A red arrow points from this window to the right window. The right window, titled 'My First JSP', has the URL 'localhost:8080/Labset-A1/first?Text1=Dayananda+Sagar&Color=Aqua'. It displays the text 'Dayananda Sagar' in blue.



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JSP Page

localhost:8080/Labset-A1/

Please Enter The Text and Color

Text:

Color:

My First JSP

localhost:8080/Labset-A1/first?Text1=Computer+Applications&Color=%23000000

Computer Applications



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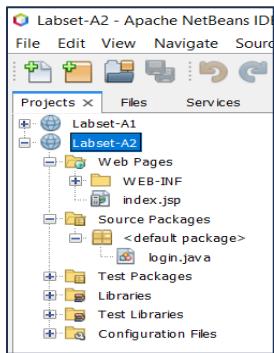
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2. Design a simple login page using jsp and validate a user in java class file using HttpServletRequest/Response.

Project Directory Structure



index.jsp

```
<%@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>
        <form action="login">
            <table style="border-spacing:10px">
                <tr><td>
                    <h1>LOGIN</h1>
                </td></tr>

                <tr>
                    <td>username:</td>
                    <td><input type="Text" name="username"></td>
                </tr>

                <tr>
                    <td>password:</td>
                    <td><input type="password" name="password"></td>
                </tr>

                <tr>
                    <td><input type="Submit" value="submit" ></td>
                    <td><input type="reset" value="reset" ></td>
                </tr>
            </table>
        </form>
    </body>
</html>
```



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login.java



```
login.java X
Source History ||||||||||||||||
```

```
1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
7
8 public class login extends HttpServlet {
9
10     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
11         throws ServletException, IOException {
12         response.setContentType("text/html;charset=UTF-8");
13         try ( PrintWriter out = response.getWriter() ) {
14             String username=request.getParameter("username");
15             String password=request.getParameter("password");
16             if(username.equalsIgnoreCase("DSCE") && password.equalsIgnoreCase("123")){
17                 out.println("login successful.");
18                 out.println("Welcome " + username + "!");
19             }
20             else{
21                 out.println("Invalid username/password. login unsuccessful!");
22                 out.println("Please try again!");
23             }
24         }
25     }
26
27     

HttpServlet methods. Click on the + sign on the left to edit the code.


28 }
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66 }
```



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web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>login</servlet-name>
        <servlet-class>login</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>login</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
</web-app>
```

Output:

The image shows two screenshots of a web browser. The left screenshot displays a 'JSP Page' titled 'LOGIN'. It has input fields for 'username' (containing 'DSCE') and 'password' (containing '...'), and buttons for 'submit' and 'reset'. A red arrow points from this screen to the right screenshot. The right screenshot shows the URL 'localhost:8080/Labset-A2/login?' followed by a query string 'username=DSCE&password=123'. The page content is 'login successful. Welcome DSCE!'



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JSP Page localhost:8080/Labset-A2/

LOGIN

username:

password:

localhost:8080/Labset-A2/login?... localhost:8080/Labset-A2/login?username=DSCE&password=456

Invalid username/password. login unsuccessful! Please try again!

MCA - DSCE



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3. Write a servlet program to get the hobbies of a person demonstrating request.getParametervalues.

Hobbies.jsp

```
hobbies.jsp x
Source History | Q A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | 
7   <%@page contentType="text/html" pageEncoding="UTF-8"%>
8   <!DOCTYPE html>
9   <html>
10  <head>
11    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12    <title>JSP Page</title>
13  </head>
14  <body>
15    <form action="login" method="get">
16      <center>
17        <h1>DESIGN</h1>
18        <table border=1 color="ivory">
19          <tr> <td>NAME:</td>
20            <td><input type="Text" name="name"></td> </tr>
21          <tr> <td>AGE:</td>
22            <td><input type="text" name="age"></td> </tr>
23          <td>GENDER:</td>
24            <td><input type="radio" name="gender" value="male" checked>Male</td> </tr>
25          <td> </td>
26            <td><input type="radio" name="gender" value="female">Female</td> </tr>
27          <td>HOBBIES:</td>
28            <td><input type="checkbox" name="hobbies" value="cricket">Cricket</td> </tr>
29          <td> </td>
30            <td><input type="checkbox" name="hobbies" value="tennis">Tennis</td> </tr>
31          <td> </td>
32            <td><input type="checkbox" name="hobbies" value="movies">Movies</td> </tr>
33          <td> </td>
34            <td><input type="checkbox" name="hobbies" value="music">Music</td> </tr>
35          <tr>
36            <td><input type="Submit" value="submit" ></td>
37            <td><input type="reset" value="clear" ></td> </tr>
38        </table>
39      </form>
40    </body>
</html>
```



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login.java

```
login.java X | Source History |  |  |  |  |  |  |  |  |  | 
```

```
1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
```

```
7
8 public class login extends HttpServlet {
9     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
10        throws ServletException, IOException {
11         response.setContentType("text/html;charset=UTF-8");
12         try { PrintWriter out = response.getWriter() {
13             String name=request.getParameter("name");
14             String age=request.getParameter("age");
15             String[] hobbies=request.getParameterValues("hobbies");
16             String gender=request.getParameter("gender");
17             out.println("<html><head></head><body>"+"<bgcolor=\\"hotpink\\")+"<font size=\\"4px\\\">");
18             out.println("Application Form data accessed from jsp page:<br>"+"</body></html>");
19             out.println("<br><b><u>name</u></b>:"+name);
20             out.println("<br><b><u>age:</u></b>"+age);
21             out.println("<br><b><u>gender:</u></b>"+gender);
22             if(hobbies!=null)
23             {
24                 int length=hobbies.length;
25                 out.println("<br><b><u>Selected hobbies:</u></b>");
26                 for(int i=0;i<length;i++)
27                 { out.println(hobbies[i]);
28                   if(i!=length-1)
29                     out.print(",");
30                   else
31                     out.print(".");
32                 }
33             }
34         }
35     }
```



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web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>login</servlet-name>
        <servlet-class>login</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>login</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>hobbies.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:

The figure shows two screenshots of a web browser. The left screenshot displays a JSP page titled "DESIGN" with form fields for NAME, AGE, GENDER (radio buttons for Male and Female), HOBBIES (checkboxes for Cricket, Tennis, Movies, and Music), and two buttons (submit and clear). The right screenshot shows the browser's output after submission, displaying the application form data accessed from the JSP page. The data includes: name:Archana, age:24, gender:female, and Selected hobbies: movies ,music .



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4. Write a servlet program to demonstrate GET and POST method.

GetPost.jsp



```
GetPost.jsp X
Source History | [File] [Edit] [View] [Insert] [Format] [Search] [Help]
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>Get & Post Method</title>
13 </head>
14 <body>
15     <center>
16         <form action="receive" method="post">
17
18             <h1>Demonstration of Get & Post Method</h1>
19
20             <lable>click here to call POST METHOD:</lable><br><br>
21             Name:<input type="text" name="name">
22             <input type="Submit" value="submit" >
23
24         </form>
25     </center>
26 </body>
27 </html>
```



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receive.java

```
receive.java x
Source History | 
1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
7 public class receive extends HttpServlet {
8     protected void doGet(HttpServletRequest request, HttpServletResponse response)
9             throws ServletException, IOException {
10         response.setContentType("text/html;charset=UTF-8");
11         try ( PrintWriter out = response.getWriter() ) {
12             out.println("<html><head></head><body><center>" + "<form method=\"get\"><bgcolor=\"hotpink\">" + "<font size=\"4px\">");
13             out.println("You are in get method!");
14             String name=request.getParameter("name");
15             String addr=request.getParameter("address");
16             String phone=request.getParameter("phone");
17             out.println(" <br>Data received:<br><br>Name:" + name + "<br>Address:" + addr + "<br><br>Phone No:" + phone);
18             out.println("</center></body></html>");
19         }
20     }
21     protected void doPost(HttpServletRequest request, HttpServletResponse response)
22             throws ServletException, IOException {
23         response.setContentType("text/html;charset=UTF-8");
24         try ( PrintWriter out = response.getWriter() ) {
25             String name=request.getParameter("name");
26             out.println("Hello " + name + "!<br> Your name is received through post method.");
27             out.println("<html><head></head><body><center>" + "<bgcolor=\"hotpink\">" + "<font size=\"4px\">");
28             out.println("<form action=\"receive\" method=\"post\"> <h1>Demonstration of Get & Post Method</h1>");
29             out.println("Name:<input type=\"text\" name=\"name\"><br><br>");
30             out.println("Address:<input type=\"textarea\" name=\"address\"><br><br>");
31             out.println("Phone No.:<input type=\"text\" name=\"phone\"><br><br>");
32             out.println("<label>click here to send the data through get METHOD:</label><br><br>");
33             out.println("<input type=\"Submit\" value=\"submit\"> </form></center></body></html>");
34         }
35     }
36 }
```



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web.xml

```
web.xml x
Source History | 
1  <?xml version="1.0" encoding="UTF-8"?>
2  <web-app version="4.0" xmlns="http://xmlns.jcp.org/xml
3   <servlet>
4     <servlet-name>MyServlet</servlet-name>
5     <servlet-class>MyServlet</servlet-class>
6   </servlet>
7   <servlet>
8     <servlet-name>receive</servlet-name>
9     <servlet-class>receive</servlet-class>
10  </servlet>
11  <servlet-mapping>
12    <servlet-name>MyServlet</servlet-name>
13    <url-pattern>/MyServlet</url-pattern>
14  </servlet-mapping>
15  <servlet-mapping>
16    <servlet-name>receive</servlet-name>
17    <url-pattern>/receive</url-pattern>
18  </servlet-mapping>
19  <session-config>
20    <session-timeout>
21      30
22    </session-timeout>
23  </session-config>
24
25  <welcome-file-list>
26    <welcome-file>GetPost.jsp</welcome-file>
27  </welcome-file-list>
28
29  </web-app>
```



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Output:

Get & Post Method

localhost:8080/Labset-A3/receive

Demonstration of Get & Post Method

click here to call POST METHOD:

Name:



localhost:8080/Labset-A3/receive

Hello Chandrika!
Your name is received through post method.

Demonstration of Get & Post Method

Name:

Address:

Phone No.:

click here to send the data through get METHOD:



localhost:8080/Labset-A3/receive

You are in get method!
Data received:

Name: Chandrika

Address: Bangalore

Phone No: 987654321

NOTE: Notice the structure of address bar every time GET and POST method is called.



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5. Write a servlet program to demonstrate RESPONSE OBJECTS.

response.jsp



```
response.jsp x
Source History | 
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>Response Objects</title>
13 </head>
14 <body>
15     <form action="servletResponse" method="post">
16         <h1>Welcome</h1><br>
17         <label><font size="6">Enter parameter name :</font></label>
18         <input type="text" name="text"><br><br>
19         <input type="submit" value="submit">
20     </form>
21 </body>
22 </html>
```



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servletResponse.java

The screenshot shows a Java code editor with the file 'servletResponse.java' open. The code implements a servlet that processes requests and prints various server and client information to the response. The code uses standard Java and Jakarta Servlet API imports. It overrides the 'processRequest' method to handle both GET and POST requests. For each request, it prints the server port, name, protocol, character encoding, content type, remote address, host, scheme, and parameters. The code uses 'PrintWriter' to output HTML content.

```
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
import java.util.*;

public class servletResponse extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try ( PrintWriter out = response.getWriter() ) {
            String authortname=request.getParameter("text");
            out.println("<html><body><font size=\"5\">");
            out.println("<br>Server port: "+request.getServerPort());
            out.println("<br>Server name: "+request.getServerName());
            out.println("<br>Protocol: "+request.getProtocol());
            out.println("<br>Character encoding: "+request.getCharacterEncoding());
            out.println("<br>Content type: "+request.getContentType());
            out.println("<br>Remote address: "+request.getRemoteAddr());
            out.println("<br>Remote Host: "+request.getRemoteHost());
            out.println("<br>Scheme: "+request.getScheme());
            out.println("</font></body></html>");

            Enumeration parameters=request.getParameterNames();
            String ParameterName=(String)parameters.nextElement();
            out.println("<html><body><font size=\"5\">");
            out.println("<br>Parameter Name: "+ParameterName);
            out.println("<br>Parameter Value: "+request.getParameter(ParameterName));
            out.println("</font></body></html>");
        }
    }
}
```



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web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/ja
    <servlet>
        <servlet-name>ServletResponse</servlet-name>
        <servlet-class>ServletResponse</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>ServletResponse</servlet-name>
        <url-pattern>/ServletResponse</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>response.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:

Welcome

Enter parameter name :



localhost:8080/Labset-A5/servlet

Server port: 8080
Server name: localhost
Protocol: HTTP/1.1
Character encoding: null
Content type: application/x-www-form-urlencoded
Remote address: 0:0:0:0:0:0:1
Remote Host: 0:0:0:0:0:0:1
Scheme: http
Parameter Name: text
Parameter Value: Computer



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LABORATORY MANUAL

6. Write a servlet program to demonstrate import page directive tags and display data & Time.

DateTime.jsp

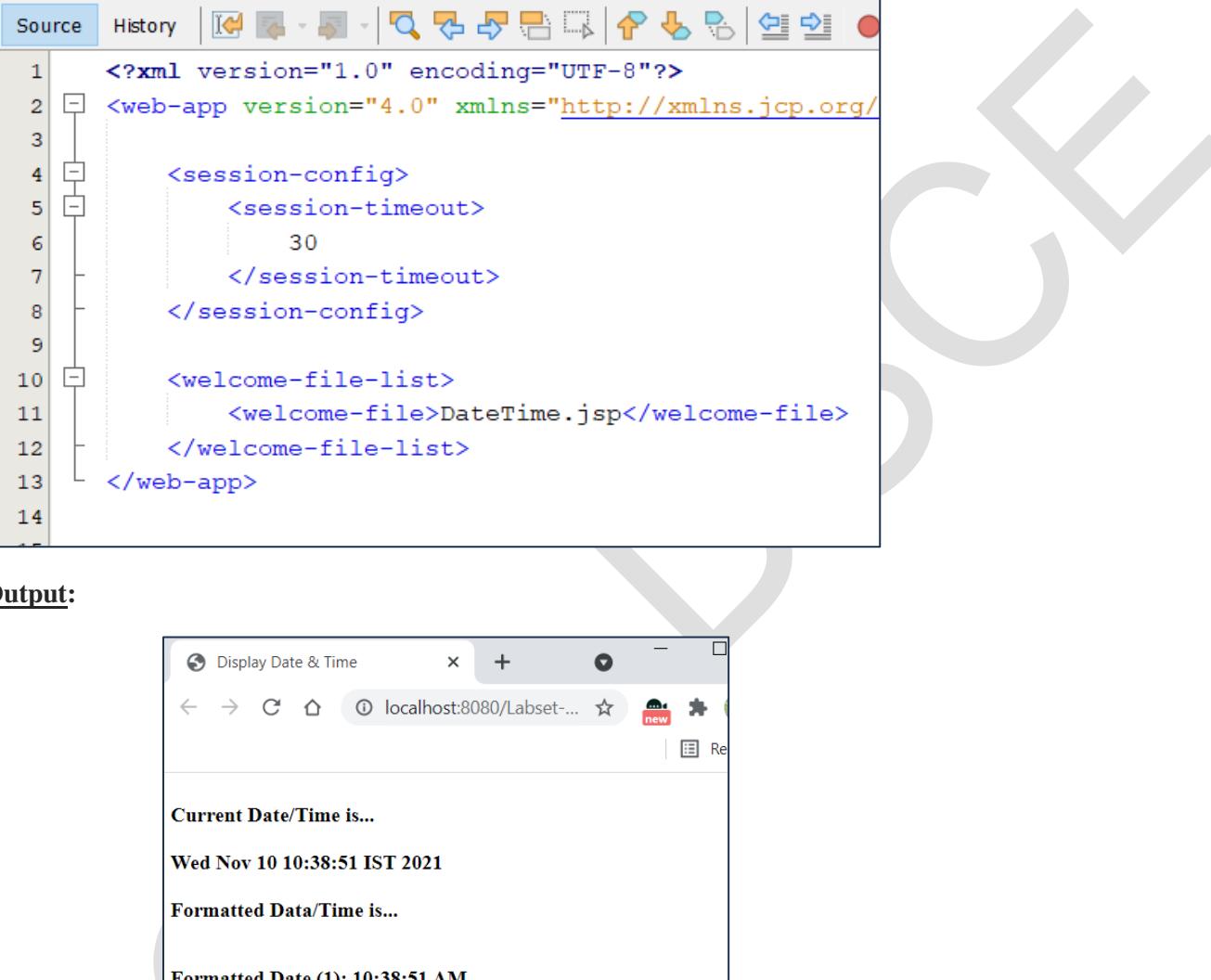


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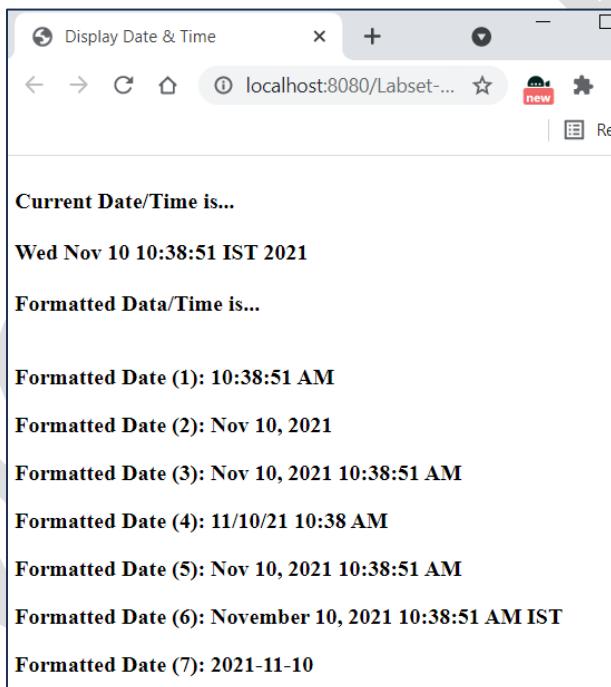
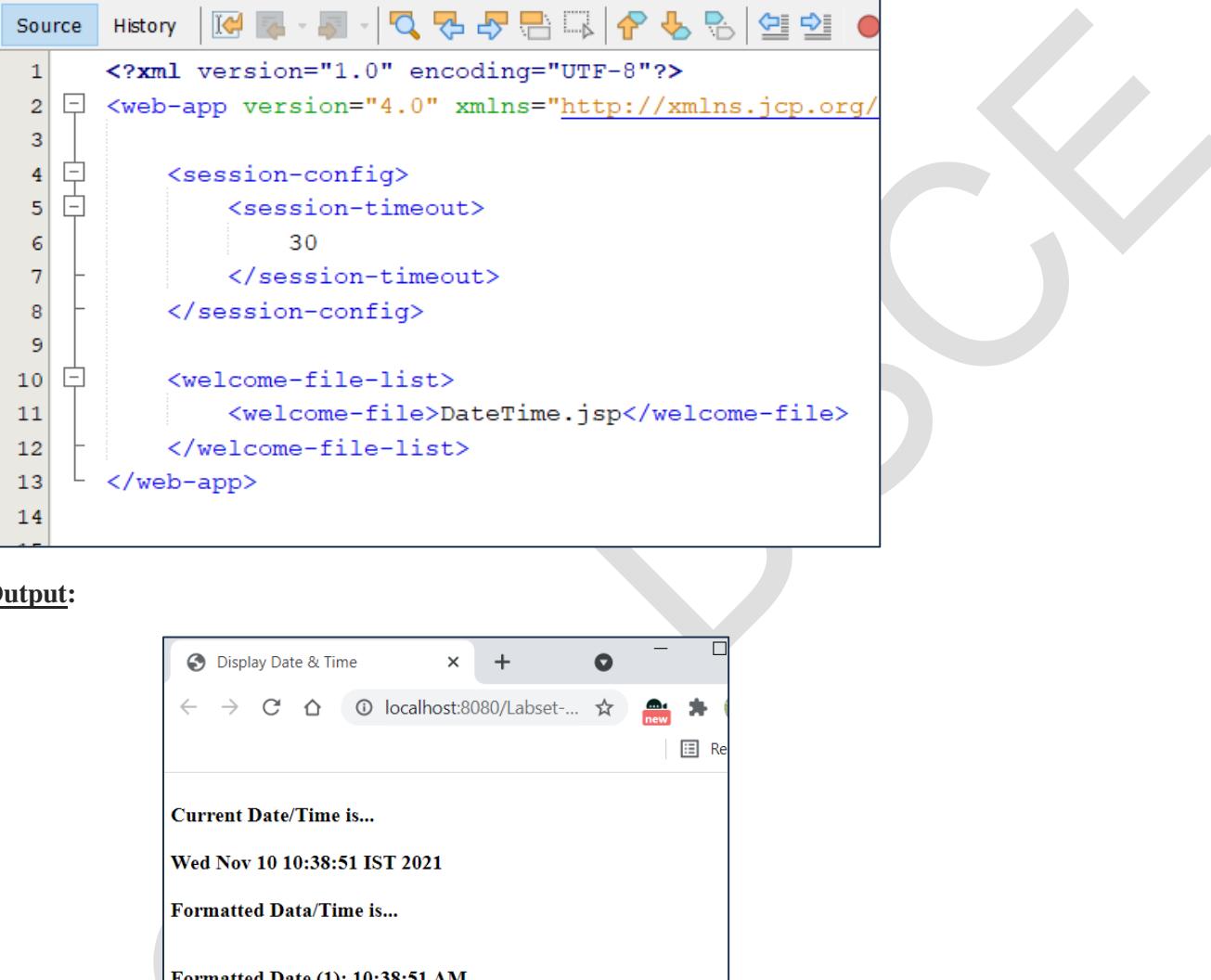
web.xml



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/
    ...
<session-config>
    <session-timeout>
        30
    </session-timeout>
</session-config>

<welcome-file-list>
    <welcome-file>DateTime.jsp</welcome-file>
</welcome-file-list>
</web-app>
```

Output:



Current Date/Time is...

Wed Nov 10 10:38:51 IST 2021

Formatted Data/Time is...

Formatted Date (1): 10:38:51 AM

Formatted Date (2): Nov 10, 2021

Formatted Date (3): Nov 10, 2021 10:38:51 AM

Formatted Date (4): 11/10/21 10:38 AM

Formatted Date (5): Nov 10, 2021 10:38:51 AM

Formatted Date (6): November 10, 2021 10:38:51 AM IST

Formatted Date (7): 2021-11-10



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7. Write a servlet program to demonstrate Google search using response.sendRedirect.

redirect.jsp

```
<%@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>
        <form action="SearchDemo">
            <p> Search Item:<input type="text" name="searchname">
            </p>
            <p><input type="submit" value="submit"></p>
        </form>
    </body>
</html>
```

SearchDemo.java

```
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
import java.util.*;

public class SearchDemo extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try ( PrintWriter out = response.getWriter() ) {
            String name=request.getParameter("searchname");
            response.sendRedirect("https://www.google.co.in/search?q="+name);
        }
    }
}

HttpServlet methods. Click on the + sign on the left to edit the code.
```



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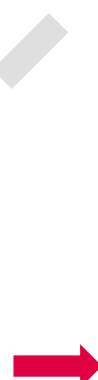
LABORATORY MANUAL

web.xml



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/j2ee"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/j2ee
                             http://xmlns.jcp.org/xml/ns/j2ee/web-app_4_0.xsd">
    <servlet>
        <servlet-name>SearchDemo</servlet-name>
        <servlet-class>SearchDemo</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>SearchDemo</servlet-name>
        <url-pattern>/SearchDemo</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>redirect.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:



JSP Page

localhost:8080/Labset...

Search Item:

submit



MCA DSCE - Google Search

google.co.in/search?q=

Google

About 1,84,000 results (0.87 seconds)

<https://www.dsce.edu.in> › academics › mca

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LABORATORY MANUAL

8. Write a servlet program to demonstrate Java Bean Implementation.

index.html

```
index.html x
Source History | 
1  <!DOCTYPE html>
2  <html>
3      <head>
4          <title>TODO supply a title</title>
5          <meta charset="UTF-8">
6          <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      </head>
8      <body>
9          <center><br/><br/>
10         <h4> Demonstrating Java Bean Implementation </h4>
11         <form action="bean.jsp" method="post">
12             Enter name:<input type="text" name="sname"/><br/><br/>
13             Enter USN:<input type="text" name="susnno"/><br/><br/>
14             Enter branch:<input type="text" name="sbranch"/><br/><br/>
15             <br/>
16             <input type="submit" value="submit"/></center>
17         </body>
18     </html>
```

bean.jsp

```
bean.jsp x
Source History | 
1  <%@page contentType="text/html" pageEncoding="UTF-8"%>
2  <!DOCTYPE html>
3  <html>
4      <head>
5          <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
6          <title>JSP Page</title>
7      </head>
8      <body>
9          <jsp:useBean id="student" scope="request" class="Pkg1.StudentBean"/>
10         <jsp:setProperty name="student" property="*"/>
11         <center><b>STUDENT DETAILS</b><br/>
12             Name:<jsp:getProperty name="student" property="sname"/>
13             <br/>
14             USN:<jsp:getProperty name="student" property="susnno"/><br/>
15
16             Branch:<jsp:getProperty name="student" property="sbranch"/>
17             <br/>
18         </body>
19     </html>
```

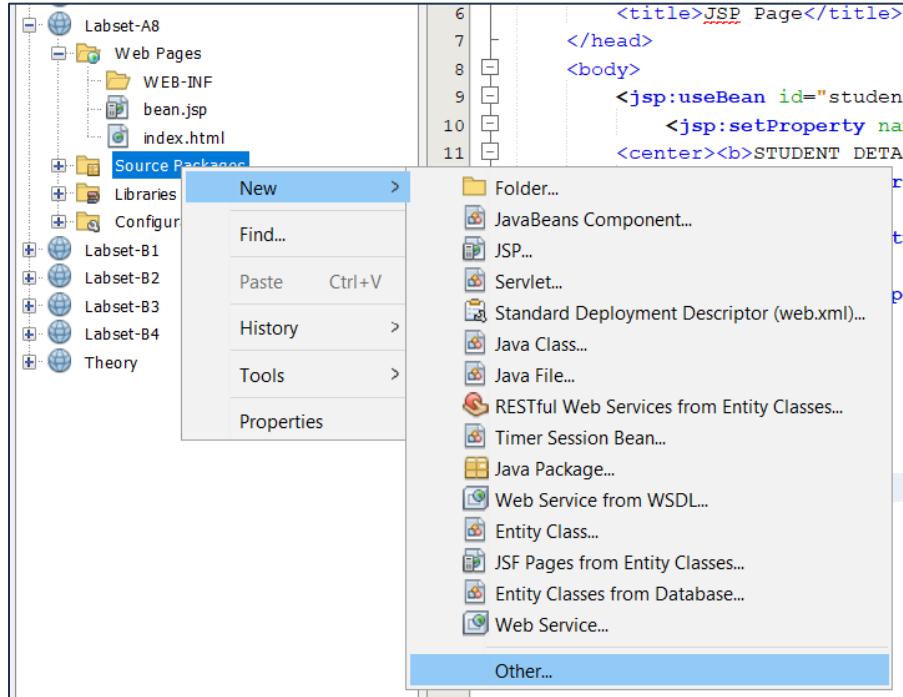


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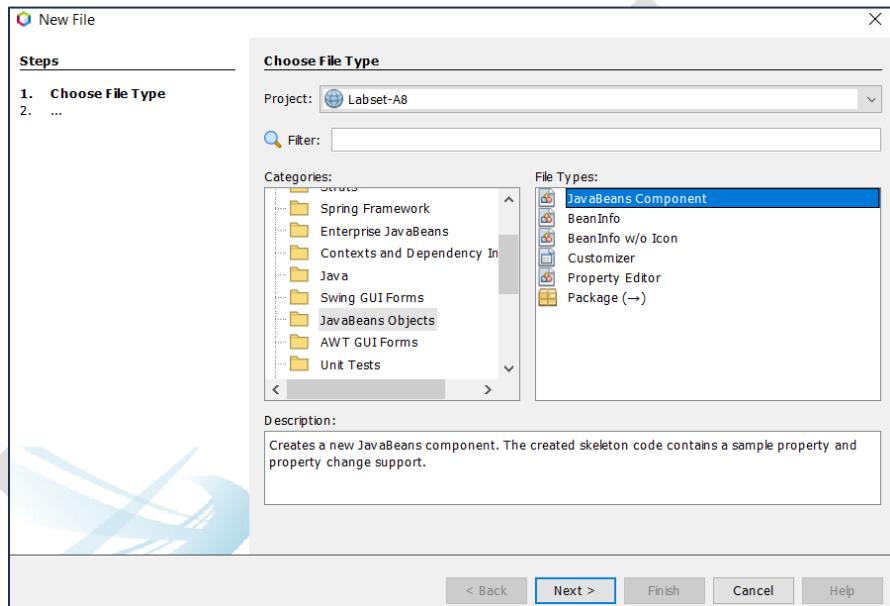
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Source Package -> New ->Other



JavaBeans Objects -> JavaBeansComponent -> Next



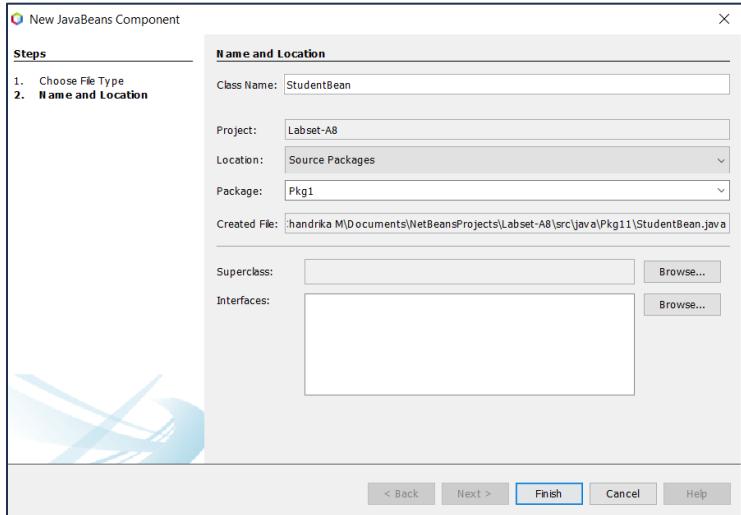


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Name the file as StudentBean under Package Pkg1 -> Finish





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StudentBean.java

The screenshot shows a Java code editor within an IDE. On the left is a project tree titled 'Projects X' containing various projects like 'Labset-A1' through 'Labset-B4' and 'Theory'. Under 'Labset-A8', there's a 'Source Packages' folder containing a package named 'Pkg1'. Inside 'Pkg1', the file 'StudentBean.java' is selected and shown in the main editor area. The code is a Java class definition with methods for getting and setting student details.

```
package Pkg1;
import java.beans.*;

public class StudentBean {

    String sname,susnno,sbranch;

    private String sampleProperty;
    public String getSname() {
        return sname;
    }

    public void setSname(String sname) {
        this.sname = sname;
    }

    public String getSusnno() {
        return susnno;
    }

    public void setSusnno(String susnno) {
        this.susnno = susnno;
    }

    public String getsbranch() {
        return sbranch;
    }

    public void setsbranch(String sbranch) {
        this.sbranch = sbranch;
    }
}
```



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Output:

O supply a title

localhost:8080/Labset-...

Demonstrating Java Bean Implementation

Enter name:

Enter USN:

Enter branch:



ge

localhost:8080/Labset-...

STUDENT DETAILS

Name: Raghav

USN: 1DS20MC062

Branch: MCA

MCA



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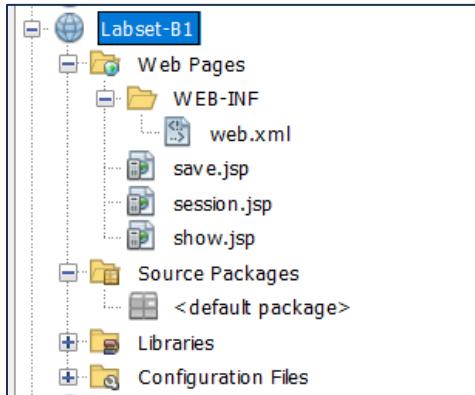
LABORATORY MANUAL

PART B

(For demonstration purpose, NetBeans IDE is used in this manual)

1. Write a servlet program to illustrate SESSION.

Directory Structure



session.jsp

The screenshot shows the NetBeans IDE interface with the 'session.jsp' file open in the editor. The code is as follows:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Session</title>
    </head>
    <body>
        <form action="save.jsp" method="post">
            <h2>Enter the Name for the Session Variable</h2><br>
            <h3>Name:<input type="Text" name="username"><br></h3>
            <input type="Submit" value="submit" >
        </form>
    </body>
</html>
```



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save.jsp

```
<%@page language="java" contentType="text/html" pageEncoding="UTF-8"%>
<%
    String username=request.getParameter("username");
    if(username==null)
        username="";
    session.setAttribute("username",username);
%>

<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Save Session</title>
    </head>
    <body>
        <h2>Session Created!</h2><br>
        <h3><p><a href="show.jsp">Click here to view the session value</a></p></h3>
    </body>
</html>
```

show.jsp

```
<%@page language="java" contentType="text/html" pageEncoding="UTF-8"%>
<%
    String username=(String)session.getAttribute("username");
    if(username==null)
        username="";
%>

<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Show Session</title>
    </head>
    <body>
        <h2>Display Session</h2><br>
        <h3><p> welcome: <%=username %></p></h3>
    </body>
</html>
```



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web.xml

```
web.xml x
Source History | [undo] [redo] [cut] [copy] [paste] [find] [replace] [select] [select all] [cancel] [ok] | [open] [close] [minimize] [maximize] [restore] | [grid] [list] [outline] [tree] | [refresh] [undo] [redo] | [minimize] [maximize] | [grid] [list] [outline] [tree] | [refresh] | [cancel] [ok]
```

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app 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_4_0.xsd"
    version="4.0">
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>session.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output

The image shows three sequential browser windows illustrating the creation and display of a session variable.

- Session**: The URL is `localhost:8080/Labset-B1/`. The page displays a form:

Enter the Name for the Session Variable

Name:
- Save Session**: The URL is `localhost:8080/Labset-B1/save.jsp`. The page displays the confirmation message:

Session Created!

[Click here to view the session value](#)
- Show Session**: The URL is `localhost:8080/Labset-B1/show.jsp`. The page displays the session value:

Display Session

welcome: DSCE

Red arrows indicate the flow from the first window to the second, and from the second to the third.



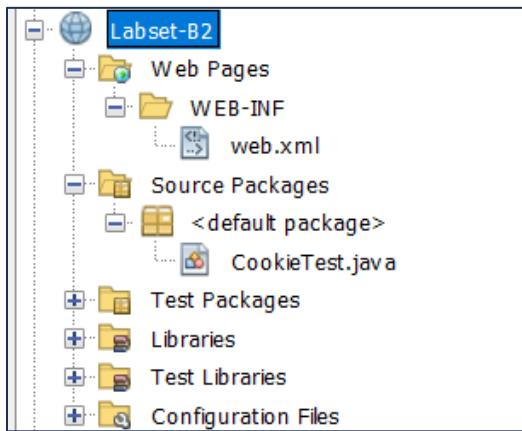
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2. Write a servlet program to illustrate COOKIES.

Directory Structure



CookieTest.java

```
CookieTest.java X
Source History |  |              |  
```

```
1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException;           //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet;          //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest;    //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse;   //import javax.servlet.http.HttpServletResponse;
7 import jakarta.servlet.http.Cookie;              //import javax.servlet.http.Cookie;
8 import java.util.*;
9
10 public class CookieTest extends HttpServlet {
11
12     public void doGet(HttpServletRequest request, HttpServletResponse response)
13         throws ServletException, IOException {
14         try ( PrintWriter out = response.getWriter() ) {
15
16             Cookie c1=new Cookie("username","DSCE");
17             Cookie c2=new Cookie("password","MCA-VTU");
18
19             response.addCookie(c1);
20             response.addCookie(c2);
21
22             response.setContentType("text/html");
23             out.println("<html><head>");
24             out.println("<title>Set cookie</title>");
25             out.println("</head><body><br><h2>please click the button to see the cookies sent to you.</h2><br><br>");
26             out.println("<form method=\"post\"><input type=\"submit\" value=\"submit\"></form></body></html>");
27
28         }
29     }
}
```



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```
30
31
32     public void doPost(HttpServletRequest request, HttpServletResponse response)
33             throws ServletException, IOException {
34
35         try ( PrintWriter out = response.getWriter() ) {
36             response.setContentType("text/html");
37             out.println("<html><head>");
38             out.println("<title>Show cookie</title>");
39             out.println("</head><body><br><h2>Here are all the headers.</h2><br><h3>");  
40             Enumeration enum1=request.getHeaderNames();
41             while(enum1.hasMoreElements())
42             {
43                 String header=(String)enum1.nextElement();
44                 out.print("<b>"+header+"</b>:");
45                 out.print(request.getHeader(header)+"<br>");
46             out.println("</h3><h2><b><br>And here are all the cookies.<br></b></h2><h3>");  
47             Cookie[] Cookies=request.getCookies();
48             int length=Cookies.length;
49             for(int i=0;i<length;i++)
50             {
51                 Cookie cookie=Cookies[i];
52                 out.println("<br>cookie Name:"+cookie.getName());
53                 out.println("<br>cookie Value:"+cookie.getValue());
54             }
55             out.println("</h3></body></html>");  
56         }
57     }
58 }
```

web.xml

```
1  <?xml version="1.0" encoding="UTF-8"?>
2  <web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/
3      <servlet>
4          <servlet-name>CookieTest</servlet-name>
5          <servlet-class>CookieTest</servlet-class>
6      </servlet>
7      <servlet-mapping>
8          <servlet-name>CookieTest</servlet-name>
9          <url-pattern>/CookieTest</url-pattern>
10     </servlet-mapping>
11     <session-config>
12         <session-timeout>
13             30
14         </session-timeout>
15     </session-config>
16
17     <welcome-file-list>
18         <welcome-file>CookieTest</welcome-file>
19     </welcome-file-list>
20 </web-app>
```



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Output

please click the button to see the cookies sent to you.

submit

Here are all the headers.

```
host=localhost:8080
connection:keep-alive
content-length:0
cache-control:max-age=0
sec-ch-ua:"Not A;Brand";v="99", "Chromium";v="96", "Google Chrome";v="96"
sec-ch-ua-mobile:?
sec-ch-ua-platform:"Windows"
upgrade-insecure-requests:1
origin:http://localhost:8080
content-type:application/x-www-form-urlencoded
user-agent:Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/96.0.4664.45 Safari/537.36
accept:text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
sec-fetch-site:same-origin
sec-fetch-mode:navigate
sec-fetch-user:?
sec-fetch-dest:document
referer:http://localhost:8080/Labset-B2/
accept-encoding:gzip, br
accept-language:en-US;q=0.9
cookie:Name=username;DSCE=password=MCA-VTU;username=localhost-8888~"2|1|0|10|1636714742|23;username=localhost-8888|44|YjdmMjA2ZGM5MWU2NGYwMDIIInzhIZWY4Y2MwN2I2NWI=|9dde7e7c60ff038bb0fd3d2d310b567b744ca233b2a2f555c785dbd3c58932b2c";_xrf=2|3ad8769|b71969b63282256352b7d805269435|1636714742;username=localhost-8889~"2|1|0|10|1636745988|23;username=localhost-8889|44|Y2Q3NjkyMTVkZTBkNGJyJhiNzUmN2ZhNWNhMDNjYzg=f458644d68e05c09afe8dd1c0142087b0912bf30fb9a52a9f8dd84167d0c15";username=localhost-8890~"2|1|0|10|1636746086|23;username=localhost-8890|44|ZjRiZWZjN2E0ZTdhNDF1Yig0NDQzYWmMwVjymQwNWY=|dd589fb5210cd9b94716aa4ea1b922b98eeb4ae56d23ad9330ae62f52d5c39e4"
```

And here are all the cookies.

```
cookie Name=username
cookie Value=DSCE
cookie Name=password
cookie Value=MCA-VTU
cookie Name=username-localhost-8888
cookie Value=2|1|0|10|1636714742|23;username=localhost-8888|44|YjdmMjA2ZGM5MWU2NGYwMDIIInzhIZWY4Y2MwN2I2NWI=|9dde7e7c60ff038bb0fd3d2d310b567b744ca233b2a2f555c785dbd3c58932b2c
cookie Name=_xrf
cookie Value=2|3ad8769|b71969b63282256352b7d805269435|1636714742
cookie Name=username-localhost-8889
cookie Value=2|1|0|10|1636745988|23;username=localhost-8889|44|Y2Q3NjkyMTVkZTBkNGJyJhiNzUmN2ZhNWNhMDNjYzg=f458644d68e05c09afe8dd1c0142087b0912bf30fb9a52a9f8dd84167d0c15
cookie Name=username-localhost-8890
cookie Value=2|1|0|10|1636746086|23;username=localhost-8890|44|ZjRiZWZjN2E0ZTdhNDF1Yig0NDQzYWmMwVjymQwNWY=|dd589fb5210cd9b94716aa4ea1b922b98eeb4ae56d23ad9330ae62f52d5c39e4
```



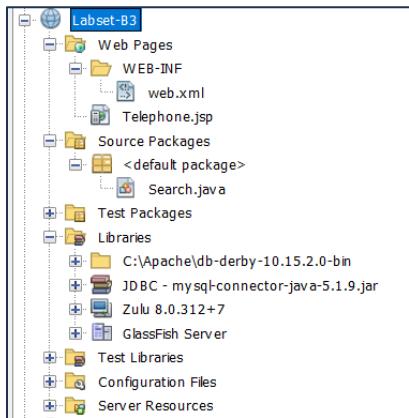
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3. Write a servlet program to retrieve data from a database “telephone directory” by taking either phone number or name as input.

Directory Structure



Creating Database:

```
MySQL 8.0 Command Line Client

mysql> create database telephone;
Query OK, 1 row affected (0.04 sec)

mysql> use telephone;
Database changed
mysql> create table td(name varchar(45) primary key, number bigint, address varchar(45));
Query OK, 0 rows affected (0.09 sec)

mysql> insert into td values('Ani',5461237852,'Bangalore');
Query OK, 1 row affected (0.04 sec)

mysql> insert into td values('Prithi',5458237852,'Mangalore');
Query OK, 1 row affected (0.04 sec)

mysql> insert into td values('Anjali',8759687852,'Mysore');
Query OK, 1 row affected (0.02 sec)

mysql> desc td;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| name  | varchar(45)| NO   | PRI   | NULL    |       |
| number | bigint  | YES  |       | NULL    |       |
| address | varchar(45)| YES  |       | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.04 sec)

mysql> select * from td;
+-----+-----+-----+
| name | number | address |
+-----+-----+-----+
| Ani  | 5461237852 | Bangalore |
| Anjali | 8759687852 | Mysore |
| Prithi | 5458237852 | Mangalore |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```



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LABORATORY MANUAL

Telephone.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Telephone Directory</title>
    </head>
    <body>
        <form action="Search" method="get">
            <h1>click your choice</h1>
            <br>
            <input type="radio" name="name" value="telephone_no" checked>Telephone Number<br>
            <input type="radio" name="name" value="name">Name
            <h1>Enter your choice</h1>
            <input type="text" name="val">
            <input type="submit" value="submit">
        </form>
    </body>
</html>
```

Search.java

```
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;

public class Search extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try ( PrintWriter out = response.getWriter() ) {
            String name=request.getParameter("name");
            String val=request.getParameter("val");
```



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LABORATORY MANUAL

```
20
21
22     try
23     {
24         Class.forName("com.mysql.jdbc.Driver");
25         Connection conn = DriverManager.getConnection("jdbc:mysql://localhost:3306/telephone?characterEncoding=utf8",
26             "root", "123456");
27         Statement stmt = conn.createStatement();
28         String qry1;
29         if(name.equals("name"))
30             qry1="select * from TD where NAME like '%"+val+"%'";
31         else
32             qry1="select * from TD where NUMBER='"+val+"' ";
33         ResultSet rs=stmt.executeQuery(qry1);
34         out.println("<br> Data Retrieved from tp.TD is:<br><br>"+NAME+
35             "&nbsp&nbsp|&nbsp&nbsp"+NUMBER+"&nbsp&nbsp|&nbsp&nbsp"+ADDRESS<br>");
36         while(rs.next())
37         {
38             out.println("| "+rs.getString(1)+"&nbsp&nbsp&nbsp&nbsp|&nbsp&nbsp"+rs.getString(2)+"
39             "&nbsp&nbsp&nbsp&nbsp|"+rs.getString(3)+"<br>");
40         }
41
42         } catch (Exception e) {
43             e.printStackTrace();
44             out.println("In catch block");
45         }
46     }
47     HttpServlet methods. Click on the + sign on the left to edit the code.
48 }
49 }
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>Search</servlet-name>
        <servlet-class>Search</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Search</servlet-name>
        <url-pattern>/Search</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>Telephone.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```



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Output:

The screenshot shows two browser windows. The left window is titled 'Telephone Directory' and has a URL of 'localhost:8080/Labset-B3/'. It contains a form with the text 'click your choice' and two radio buttons: 'Telephone Number' (selected) and 'Name'. Below the form is another section with the text 'Enter your choice' and an input field containing '5461237852' with a 'submit' button next to it. A red arrow points from this input field to the right window. The right window is titled 'localhost:8080/Labset-B3/Search' and has a URL of 'localhost:8080/Labset-B3/Search?name=telephone_no&val=5461237852'. It displays the message 'Data Retrieved from tp.TD is:' followed by a table with three columns: NAME, NUMBER, and ADDRESS. The table contains one row with the values 'Ani', '5461237852', and 'Bangalore'.

NAME	NUMBER	ADDRESS
Ani	5461237852	Bangalore

The screenshot shows two browser windows. The left window is titled 'Telephone Directory' and has a URL of 'localhost:8080/Labset-B3/'. It contains a form with the text 'click your choice' and two radio buttons: 'Telephone Number' (unchecked) and 'Name' (selected). Below the form is another section with the text 'Enter your choice' and an input field containing 'i' with a 'submit' button next to it. A red arrow points from this input field to the right window. The right window is titled 'localhost:8080/Labset-B3/Search' and has a URL of 'localhost:8080/Labset-B3/Search?name=name&val=i'. It displays the message 'Data Retrieved from tp.TD is:' followed by a table with three columns: NAME, NUMBER, and ADDRESS. The table contains three rows with the values 'Ani', '5461237852', 'Bangalore', 'Anjali', '8759687852', 'Mysore', and 'Prithi', '5458237852', 'Mangalore'.

NAME	NUMBER	ADDRESS
Ani	5461237852	Bangalore
Anjali	8759687852	Mysore
Prithi	5458237852	Mangalore



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4. Write a servlet program to insert student information to the database by taking input from the console by connecting to MYSQL database using servlets.

Database

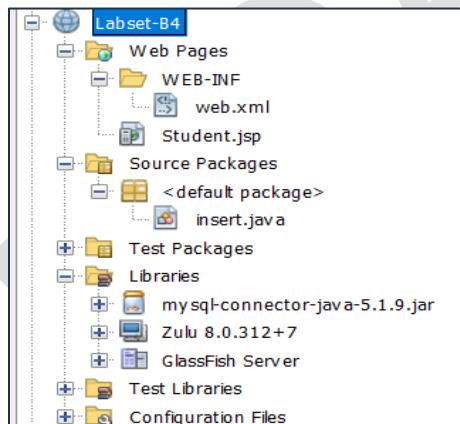
```
mysql> create database lab1;
Query OK, 1 row affected (0.07 sec)

mysql> use lab1;
Database changed
mysql> CREATE TABLE `stu_info` (
    -> `regno` int(10) NOT NULL,
    -> `name` char(10) NOT NULL,
    -> `stuclass` varchar(10) NOT NULL,
    -> `age` int(10) NOT NULL,
    -> `gender` char(10) NOT NULL,
    -> PRIMARY KEY (`regno`)
    -> );
Query OK, 0 rows affected, 2 warnings (0.14 sec)

mysql> desc stu_info;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| regno | int    | NO   | PRI  | NULL    |       |
| name  | char(10)| NO   |       | NULL    |       |
| stuclass | varchar(10) | NO   |       | NULL    |       |
| age   | int    | NO   |       | NULL    |       |
| gender | char(10)| NO   |       | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.04 sec)

mysql>
```

Directory Structure





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LABORATORY MANUAL

Student.jsp

```
Student.jsp X
Source History | 
<%@page language="java" 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>
        <form action="insert">
            <center><h1>STUDENT INFO</h1><br>
            <table border="1">
                <tr>
                    <td>REG_NO:</td>
                    <td><input type="Text" name="regno"></td>
                </tr>
                <tr>
                    <td>NAME:</td>
                    <td><input type="Text" name="name"></td>
                </tr>
                <tr>
                    <td>CLASS:</td>
                    <td><input type="Text" name="stuclass"></td>
                </tr>
                <tr>
                    <td>AGE:</td>
                    <td><input type="Text" name="age"></td>
                </tr>
                <tr>
                    <td>GENDER:</td>
                    <td><input type="Text" name="gender"></td>
                </tr>
                <tr>
                    <td></td><td><input type="Submit" value="submit" ></td>
                </tr>
            </table>
            </center>
        </form>
    </body>
</html>
```



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insert.java

```

1 import java.io.IOException;
2 import java.io.PrintWriter;
3 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
4 import jakarta.servlet.http.HttpServlet; //import javax.servlet.http.HttpServlet;
5 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
6 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
7 import java.sql.*;
8 import java.io.*;
9
10 public class insert extends HttpServlet {
11     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
12         throws ServletException, IOException {
13         response.setContentType("text/html;charset=UTF-8");
14         try ( PrintWriter out = response.getWriter() ) {
15             // Accessing form data
16             String regno = request.getParameter("regno");
17             String name = request.getParameter("name");
18             String stuclass = request.getParameter("stuclass");
19             String age = request.getParameter("age");
20             String gender = request.getParameter("gender");
21             try
22             {
23                 // Establishing Database Connection
24                 Class.forName("com.mysql.jdbc.Driver");
25                 Connection conn=DriverManager.getConnection(
26                     "jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
27                 Statement stmt = conn.createStatement();
28                 // Insert query
29                 int a = stmt.executeUpdate("insert into stu_info "
30                     + "values('"+regno+"','"+name+"','"+stuclass+"','"+age+"','"+gender+"')");
31                 // Select query
32                 ResultSet rs = stmt.executeQuery("Select * from stu_info");
33
34                     // html code
35                     out.println("<html><body bgcolor=gray><center><h2>STUDENT INFO</h2></center><br>");
36                     out.println("<table align=center border=1 bordercolor=green size=3>");
37                     out.println("<tr bgcolor=purple>");
38                     out.println("<th><font color=white>StudentID</font></th>");
39                     out.println("<th><font color=white>StudentName</font></th>");
40                     out.println("<th><font color=white>Class</font></th>");
41                     out.println("<th><font color=white>Age</font></th>");
42                     out.println("<th><font color=white>Gender</font></th>");
43                     out.println("</tr>");
44                     // Display the contents of the resultset
45                     while ( rs.next() )
46                     {
47                         out.println("<tr bgcolor=ivory>");
48                         out.println("<td>" + rs.getString(1) + "</td>");
49                         out.println("<td>" + rs.getString(2) + "</td>");
50                         out.println("<td>" + rs.getString(3) + "</td>");
51                         out.println("<td>" + rs.getString(4) + "</td>");
52                         out.println("<td>" + rs.getString(5) + "</td>");
53                         out.println("</tr>");
54                     }
55                     out.println("</table><br>");
56                     out.println("</body></html>");
57                 }
58             catch (Exception e)
59             {
60                 System.out.println(e);
61             }
62         }
63     }
64     HttpServlet methods. Click on the + sign on the left to edit the code.
65
66 }
67
68 }
```



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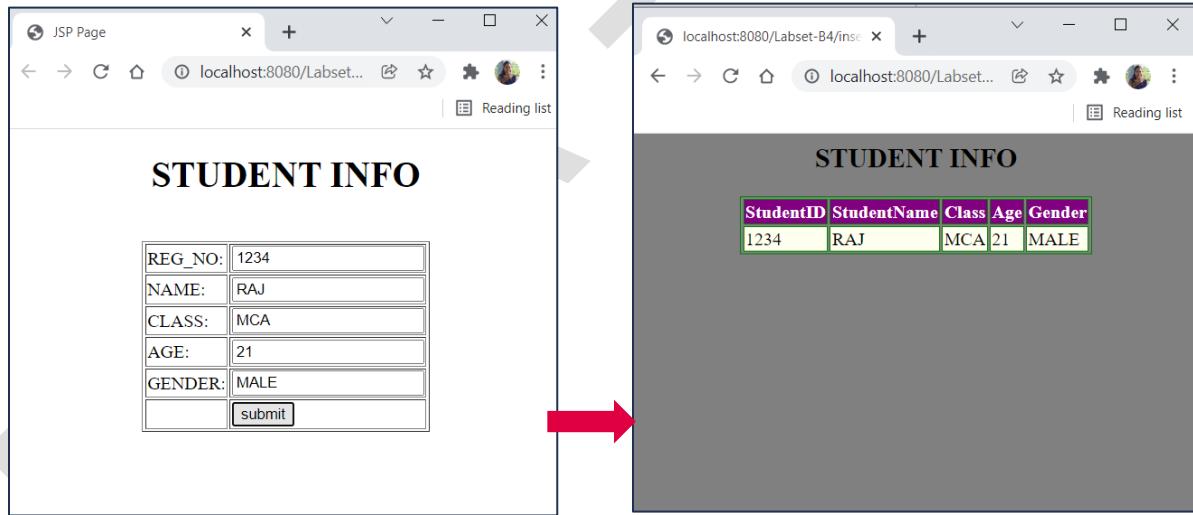
LABORATORY MANUAL

web.xml



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>insert</servlet-name>
        <servlet-class>insert</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>insert</servlet-name>
        <url-pattern>/insert</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>Student.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:



The figure consists of two screenshots of a web browser. The left screenshot shows a form titled "STUDENT INFO" with fields for REG_NO, NAME, CLASS, AGE, and GENDER, each with a corresponding input field. A red arrow points from this screen to the right screenshot. The right screenshot shows the same title "STUDENT INFO" followed by a table with columns: StudentID, StudentName, Class, Age, and Gender. The table contains one row with the values: 1234, RAJ, MCA, 21, and MALE.

StudentID	StudentName	Class	Age	Gender
1234	RAJ	MCA	21	MALE



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LABORATORY MANUAL

JSP Page

localhost:8080/Labset-B4/inse

STUDENT INFO

REG_NO:	1285
NAME:	JANAKI
CLASS:	MCA
AGE:	20
GENDER:	FEMALE
	<input type="button" value="submit"/>

localhost:8080/Labset-B4/inse

STUDENT INFO

StudentID	StudentName	Class	Age	Gender
1234	RAJ	MCA	21	MALE
1285	JANAKI	MCA	20	FEMALE



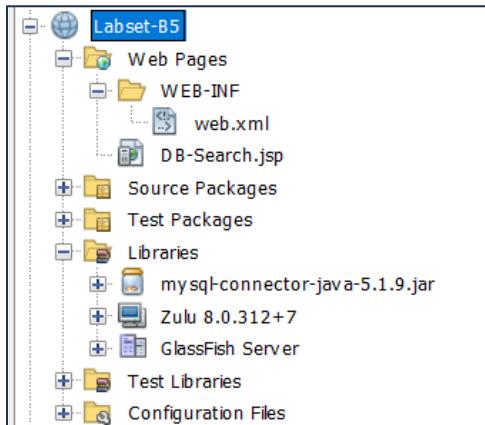
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LABORATORY MANUAL

5. Write a program to demonstrate the search operation of database from jsp page.

Directory Structure



Database Operations

MySQL 8.0 Command Line Client

```
mysql> use lab1;
Database changed
mysql> create table studentinfo(regno int primary key, name varchar(25), gender varchar(15), DOB date, SSLC int, PUC int, Degree int);
Query OK, 0 rows affected (0.10 sec)

mysql> insert into studentinfo values(1234,'Ajay','Male','2000-10-20',75,86,84);
Query OK, 1 row affected (0.04 sec)

mysql> insert into studentinfo values(1245,'Sita','Female','2001-08-08',72,76,88);
Query OK, 1 row affected (0.04 sec)

mysql> select * from studentinfo;
+-----+-----+-----+-----+-----+
| regno | name | gender | DOB      | SSLC | PUC   | Degree |
+-----+-----+-----+-----+-----+
| 1234  | Ajay | Male  | 2000-10-20 | 75  | 86    | 84    |
| 1245  | Sita | Female | 2001-08-08 | 72  | 76    | 88    |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```



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DB-Search.jsp

```
DB-Search.jsp x
Source History |        
<%@page language="java" contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*" %>
<%@page import="jakarta.servlet.*" %>
<%@page import="java.io.*" %>

<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>DB Search</title>
    </head>
    <body>
        <h2> Retrieve the student information from database.</h2>
        <form method="get">
            Enter Register Number: <input type="text" name="regno"><br>
            <input type="Submit" value="GetInfo">
        <%
            String regno=request.getParameter("regno");
            if(regno!=null)
            {
                String qry="select * from studentinfo where regno='"+regno+"'";
                // Establishing Database Connection
                Class.forName("com.mysql.jdbc.Driver");
                Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
                Statement stmt = conn.createStatement();
                ResultSet rs=stmt.executeQuery(qry);
                System.out.println("Outside resultset!");
                if(rs.next())
                    System.out.println("Inside resultset!");
            }
        %>
        <table border="1">
            <tr>
                <th>Student Name</th>
                <th>Gender</th>
                <th>DOB</th>
                <th>SSLC Percentage</th>
                <th>PUC Percentage</th>
                <th>Degree Percentage</th>
            </tr>
            <tr>
                <td><%=rs.getString(2)%></td>
                <td><%=rs.getString(3)%></td>
                <td><%=rs.getString(4)%></td>
                <td><%=rs.getString(5)%></td>
                <td><%=rs.getString(6)%></td>
                <td><%=rs.getString(7)%></td>
            </tr>
        <%
        }
        else
            out.println("<b>Unable to get information. Register number not found!</b>");
        %>
        </table>
    </form>
</body>
</html>
```



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Web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee" xmlns:xsi="http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd">
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>DB-Search.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:

The screenshots show a web application titled "DB Search".

Screenshot 1: The page displays the instruction "Retrieve the student information from database." Below it is a form with a text input field labeled "Enter Register Number:" containing "1234" and a button labeled "GetInfo".

Screenshot 2: The page displays the same instruction and form. Below the form, a table shows student information for a user named "Ajay".

Student Name	Gender	DOB	SSLC Percentage	PUC Percentage	Degree Percentage
Ajay	Male	2000-10-20	75	86	84



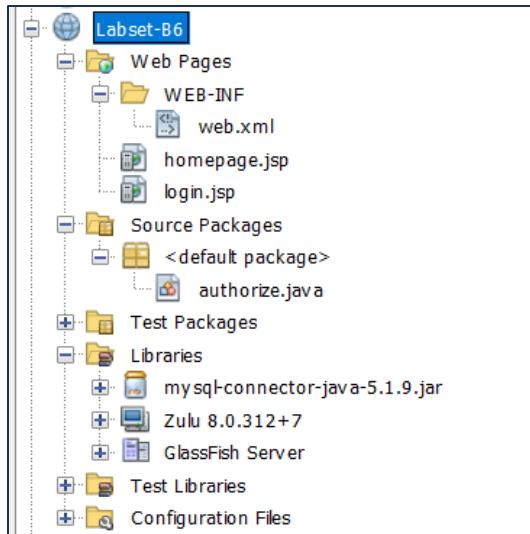
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6. Write a program to authenticate the user based on the login details in the database and load pages based on the value of session variable.

Directory Structure



DSCE

Database

```
MySQL 8.0 Command Line Client

mysql> create table login(UNAME varchar(25) primary key, PWD varchar(15));
Query OK, 0 rows affected (0.09 sec)

mysql> insert into login values('ADMIN','1234');
Query OK, 1 row affected (0.04 sec)

mysql> insert into login values('STAFF','2468');
Query OK, 1 row affected (0.05 sec)

mysql> insert into login values('STUDENT','1357');
Query OK, 1 row affected (0.05 sec)

mysql> SELECT * FROM LOGIN;
+-----+-----+
| UNAME | PWD  |
+-----+-----+
| ADMIN | 1234 |
| STAFF | 2468 |
| STUDENT | 1357 |
+-----+-----+
3 rows in set (0.00 sec)
```



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Login.jsp

A screenshot of a Java IDE showing the code for a JSP file named "Login.jsp". The code handles user login logic, including session management and form submission. It features conditional blocks for session attributes and exception handling, along with HTML forms and CSS styles.

```
<%@page language="java" contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>login Page</title>
    </head>
    <body align="center">
        <h2> Welcome to login page </h2>
        <hr style="background-color:#0080FF; height:5px" align="center"/>
        <br><br>
        <%
            try{
                String username=(String)session.getAttribute("username");
                if(username=="invalid")
                {
                %>
                    <h3 style="color:red"><b>Enter Valid Username & Password!</b></h3>
                <%
                }
                else if (username!=null)
                {
                    response.sendRedirect("homepage.jsp");
                }
            }catch (Exception e)
            {
                System.out.println(e);
            }
        %>
        <form method="post" action="authorize">
            <table align="center" border="1">
                <tr>
                    <td> <h3 style="color:darkmagenta"> Enter Username: </td>
```



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```
36         <td> <input type="text" name="UNAME" align="right" style="width:160px"> </td>
37     </tr>
38     <tr>
39         <td> Enter Password: </td>
40         <td> <input type="password" name="PWD" align="right" style="width:160px"> </td>
41     </tr>
42     <tr>
43         <td align="center"> <input type="submit" value="LOGIN" style="background-color:#0088FF;color:#FFFFFF;font-weight:bolder">
44         <td align="center"> <input type="reset" value="RESET" style="background-color:#0088FF;color:#FFFFFF;font-weight:bolder">
45     </tr>
46   </table>
47 </form>
48 </body>
49 </html>
```

Authorize.java

```
authorizer.java X
Source History | Q A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

1 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
2 import jakarta.servlet.http.*; //import javax.servlet.http.HttpServlet;
3 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
4 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
5 import java.sql.*;
6 import java.io.*;

7
8 public class authorize extends HttpServlet {
9     protected void processRequest(HttpServletRequest request, HttpServletResponse response)
10        throws ServletException, IOException {
11         response.setContentType("text/html;charset=UTF-8");
12         try (PrintWriter out = response.getWriter()){
13             String UNAME = request.getParameter("UNAME");
14             String PWD = request.getParameter("PWD");
15                 // Establishing Database Connection
16                 Class.forName("com.mysql.jdbc.Driver");
17                 Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8",
18                                         "root", "123456");
19                 Statement stmt = conn.createStatement();
20                 // Select query
21                 ResultSet rs = stmt.executeQuery("Select * from login where UNAME='"+UNAME+"' and PWD='"+PWD+"'");
22                 // Redirect to next page based on username and password
23                 if(!rs.next()){
24                     HttpSession session=request.getSession();
25                     session.setAttribute("username","invalid");
26                     response.sendRedirect("login.jsp");
27                 }
}
```



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```
28     .....
29         .....
30             .....
31                 .....
32                     .....
33                         .....
34                             .....
35                                 .....
36                                     .....
37                                         .....
38
39     HttpServlet methods. Click on the + sign on the left to edit the code.
77
78 }
```

homepage.jsp

```
<%@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>
        <%
        String username=(String)session.getAttribute("username");
        if(username==null || username=="invalid")
        {
            response.sendRedirect("login.jsp");
        }
        else
        {
        %>
            <h4>Hello <%=username%>!</h4>
        <%
        }
        %>
    </body>
</html>
```



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LABORATORY MANUAL

web.xml



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
    <servlet>
        <servlet-name>authorize</servlet-name>
        <servlet-class>authorize</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>authorize</servlet-name>
        <url-pattern>/authorize</url-pattern>
    </servlet-mapping>
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
    <welcome-file-list>
        <welcome-file>login.jsp</welcome-file>
    </welcome-file-list>
</web-app>
```

Output:



Login Page

localhost:8080/Labs...

Welcome to login page

Enter Username:	<input type="text" value="ADMIN"/>
Enter Password:	<input type="password" value="...."/>
<input type="button" value="LOGIN"/>	<input type="button" value="RESET"/>

JSP Page

localhost:8080/Labset-B6/homepage.jsp

Hello ADMIN!



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LABORATORY MANUAL

login Page localhost:8080/Labs...

Welcome to login page

Enter Username:	<input type="text" value="USER"/>
Enter Password:	<input type="password" value="...."/>
<input type="button" value="LOGIN"/>	<input type="button" value="RESET"/>

login Page localhost:8080/Labs...

Welcome to login page

Enter Valid Username & Password!

Enter Username:	<input type="text"/>
Enter Password:	<input type="password"/>
<input type="button" value="LOGIN"/>	<input type="button" value="RESET"/>

MCA - DS



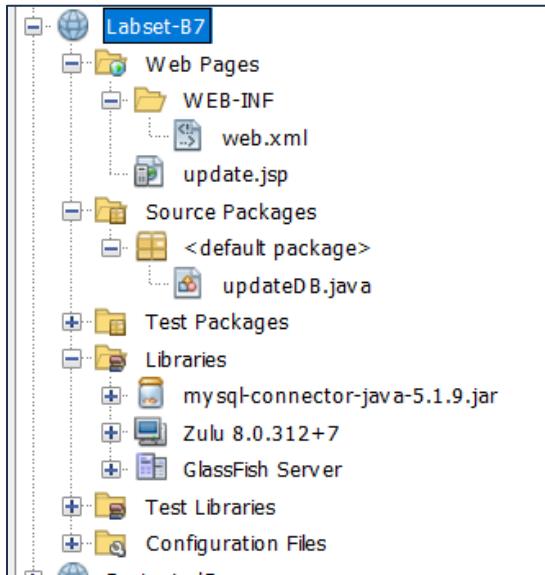
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LABORATORY MANUAL

7. Write a servlet program to update the contents of database from frontend.

Directory structure



Database

```
MySQL 8.0 Command Line Client

mysql> use lab1
Database changed
mysql> create table names(name varchar(25) primary key);
Query OK, 0 rows affected (0.15 sec)

mysql>
```



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LABORATORY MANUAL

update.jsp



```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*" %>
<%@page import="jakarta.servlet.*"%>
<%@page import="java.io.*"%>

<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Update Database</title>
    </head>
    <body>
        <h2 align="center"> Add or Remove Record from Database </h2>
        <form action="updateDB" method="get">
            <b> Enter Name: </b> <input type="text" name="name1"><br>
            <input type="submit" value="Add">
        </form>
        <form action="updateDB" method="post">
            <h3> Select an Item and Click Remove.<br></h3>
            <select style="width:200px" name="list1" multiple="multiple">
                <%
                    Class.forName("com.mysql.jdbc.Driver");
                    Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
                    Statement stmt = conn.createStatement();
                    String qry="select * from names";
                    ResultSet rs=stmt.executeQuery(qry);
                    if(rs!=null)
                    {
                        while(rs.next())
                        {
                            %>
                            <option><%=rs.getString(1)%></option>
                            <%
                                //out.println("<option>" + rs.getString(1) + "</option>");
                            %}
                        }
                %>
                </select><br>
                <input type="submit" value="Remove">
            </form>
        </body>
    </html>
```



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LABORATORY MANUAL

updateDB.java

```
updateDB.java x
Source History | Q A B C D E F G H I J K L M N O P Q R S T U V W X Y Z | 
1 import jakarta.servlet.ServletException; //import javax.servlet.ServletException;
2 import jakarta.servlet.http.*; //import javax.servlet.http.HttpServlet;
3 import jakarta.servlet.http.HttpServletRequest; //import javax.servlet.http.HttpServletRequest;
4 import jakarta.servlet.http.HttpServletResponse; //import javax.servlet.http.HttpServletResponse;
5 import java.sql.*;
6 import java.io.*;

7
8 public class updateDB extends HttpServlet {
9     protected void doGet(HttpServletRequest request, HttpServletResponse response)
10        throws ServletException, IOException {
11         response.setContentType("text/html;charset=UTF-8");
12         try ( PrintWriter out = response.getWriter() ) {
13             try{
14                 String name1 = request.getParameter("name1");
15                 if(name1.length()==0){
16                     response.sendRedirect("update.jsp");
17                 }
18                 else{
19                     // Establishing Database Connection
20                     Class.forName("com.mysql.jdbc.Driver");
21                     Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
22                     Statement stmt = conn.createStatement();
23                     String qry="insert into names values('"+name1+"')";
24                     if(stmt.executeUpdate(qry)==1)
25                     {
26                         System.out.println("Data insertion successful");
27                     }
28                     response.sendRedirect("update.jsp");
29                 }
30             }
31             catch(Exception e){
32                 System.out.println(e);
33             }
34         }
35     }
36 }
```



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```
protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
response.setContentType("text/html;charset=UTF-8");
try ( PrintWriter out = response.getWriter() ) {
try{
String[] list1 = request.getParameterValues("list1");
if(list1==null){
    response.sendRedirect("update.jsp");
}
// Establishing Database Connection
Class.forName("com.mysql.jdbc.Driver");
Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
Statement stmt = conn.createStatement();
String qry;
for(int i=0;i<list1.length;i++)
{
    qry="delete from names where name='"+list1[i]+"'";
    if(stmt.executeUpdate(qry)==1)
    {
        System.out.println(list1[i]"--Data deleted successfully.");
    }
}
response.sendRedirect("update.jsp");
}
catch(Exception e){
    System.out.println(e);
}
}
}
}
```

MCA



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LABORATORY MANUAL

web.xml



```
web.xml x
Source History | | | | | | | | | |
1 <?xml version="1.0" encoding="UTF-8"?>
2 <web-app version="4.0" xmlns="http://xmlns.jcp.org/xml/ns/javaee">
3   <servlet>
4     <servlet-name>updateDB</servlet-name>
5     <servlet-class>updateDB</servlet-class>
6   </servlet>
7   <servlet-mapping>
8     <servlet-name>updateDB</servlet-name>
9     <url-pattern>/updateDB</url-pattern>
10    </servlet-mapping>
11    <session-config>
12      <session-timeout>
13        30
14      </session-timeout>
15    </session-config>
16    <welcome-file-list>
17      <welcome-file>update.jsp</welcome-file>
18    </welcome-file-list>
19  </web-app>
20
```

Output:



Update Database x +

localhost:8080/Labset-B7/

Add or Remove Record from Database

Enter Name:

Select an Item and Click Remove.

➡

Update Database x +

localhost:8080/Labset-B7/update.jsp

Add or Remove Record from Database

Enter Name:

Select an Item and Click Remove.

Rashmi



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LABORATORY MANUAL

Update Database

localhost:8080/Labset-B7/update.jsp

Add or Remove Record from Database

Enter Name:

Add

Select an Item and Click Remove.

Amar
Keerthi
Payal
Rashmi

Remove

Update Database

localhost:8080/Labset-B7/update.jsp

Add or Remove Record from Database

Enter Name:

Add

Select an Item and Click Remove.

Amar
Payal
Rashmi

Remove





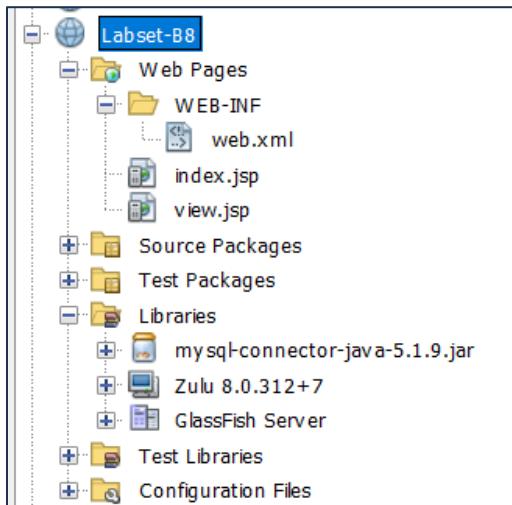
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LABORATORY MANUAL

8. Write a program to demonstrate pagination in JSP.

Directory Structure



Database

MySQL 8.0 Command Line Client

```
mysql> use lab1;
Database changed
mysql> create table emp(id int primary key, name varchar(25), salary float);
Query OK, 0 rows affected (0.08 sec)

mysql> insert into emp values(1001, 'Arjun', 20000);
Query OK, 1 row affected (0.04 sec)

mysql> insert into emp values(1002, 'Karan', 25000);
Query OK, 1 row affected (0.04 sec)

mysql> insert into emp values(1003, 'Payal', 52000);
Query OK, 1 row affected (0.05 sec)
```

mysql> select * from emp;

id	name	salary
1001	Arjun	20000
1002	Karan	25000
1003	Payal	52000
1004	Anita	22000
1005	Rajan	25800
1006	Rajani	28800
1007	Mohan	36500
1008	Keshav	42500
1009	Brunda	35000
1010	Vasant	53000
1011	Sudha	508000
1012	Sudhanva	48000

12 rows in set (0.00 sec)



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LABORATORY MANUAL

index.jsp

```
index.jsp x
Source History | ↗️ ↘️ ⏷ 🔍 🌐 🌐 🌐 🌐 🌐 🌐 
1 <a href="view.jsp?page=1">View Employees</a>
2
3
4
5
6
```

view.jsp

```
view.jsp x
Source History | ↗️ ↘️ ⏷ 🔍 🌐 🌐 🌐 🌐 🌐 🌐 
1 <%@page language="java" contentType="text/html" pageEncoding="UTF-8"%>
2 <%@page import="java.sql.* ,jakarta.servlet.* ,java.io.* "%>
3 <!DOCTYPE html>
4 <html>
5     <head> <title>Pagination in JSP</title> </head>
6     <body> <center>
7         <%
8             String spageid=request.getParameter("page");
9             int pageid=Integer.parseInt(spageid);
10            int total=5;
11            if(pageid==1){}
12            else{
13                pageid=pageid-1;
14                pageid=pageid*total+1;
15            }
16            out.print("<h1>Page No: "+spageid+"</h1>");
17            out.print("<table border='1' cellpadding='4' width='60%'>");
18            out.print("<tr><th>Id</th><th>Name</th><th>Salary</th>" );
19            Class.forName("com.mysql.jdbc.Driver");
20            Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/lab1?characterEncoding=utf8", "root", "123456");
21            Statement stmt = conn.createStatement();
22            String qry=("select * from emp limit "+(pageid-1)+"," +total);
23            ResultSet rs=stmt.executeQuery(qry);
24            while(rs.next()){
25                out.print("<tr><td>"+rs.getInt(1)+"</td><td>" +rs.getString(2)+"</td><td>" +rs.getFloat(3)+"</td></tr>" );
26            }
27            conn.close();
28            out.print("</table>");
29        %
30        <br><br><br>
31        <a href="view.jsp?page=1">1</a>
32        <a href="view.jsp?page=2">2</a>
33        <a href="view.jsp?page=3">3</a>
34    </center></body>
35 </html>
```



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LABORATORY MANUAL

Output:

A screenshot of a web browser window. The address bar shows "localhost:8080/Labset-B8/". Below the address bar, there are navigation buttons (back, forward, home) and a search bar with the same URL. A link labeled "View Employees" is visible on the page.

A screenshot of a web browser window titled "Pagination in JSP". The address bar shows "localhost:8080/Labset-B8/view.jsp?page=1". The page displays a heading "Page No: 1" and a table with 5 rows of employee data. At the bottom, there are navigation links "1 2 3".

ID	Name	Salary
1001	Arjun	20000.0
1002	Karan	25000.0
1003	Payal	52000.0
1004	Anita	22000.0
1005	Rajan	25800.0

A screenshot of a web browser window titled "Pagination in JSP". The address bar shows "localhost:8080/Labset-B8/view.jsp?page=2". The page displays a heading "Page No: 2" and a table with 5 rows of employee data. At the bottom, there are navigation links "1 2 3".

ID	Name	Salary
1006	Rajani	28800.0
1007	Mohan	36500.0
1008	Keshav	42500.0
1009	Brunda	35000.0
1010	Vasant	53000.0

A screenshot of a web browser window titled "Pagination in JSP". The address bar shows "localhost:8080/Labset-B8/view.jsp?page=3". The page displays a heading "Page No: 3" and a table with 2 rows of employee data. At the bottom, there are navigation links "1 2 3".

ID	Name	Salary
1011	Sudha	508000.0
1012	Sudhanva	48000.0