

Phase 2 : Practice Assisted Project

1. Write a program to demonstrate the differences between GET and POST using Servlet.

Source Code:

Get Handler:

```
package com;

import java.io.*;

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

/**
 * Servlet implementation class GetHandler
 */
@WebServlet("/GetHandler")
public class GetHandler extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public GetHandler() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request,
    HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse
    response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub
        PrintWriter out = response.getWriter();
        out.println("<html><body>");

        String name = request.getParameter("name");
        String address = request.getParameter("address");
        out.println("Name=" + name + "<br>Address=" + address);
        out.println("</body></html>");
    }

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

```

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

```

Post Handler:

```

package com;

import java.io.*;
import java.io.PrintWriter;

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

/**
 * Servlet implementation class PostHandler
 */
@WebServlet("/PostHandler")
public class PostHandler extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public PostHandler() {
        super();
        // TODO Auto-generated constructor stub
    }

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

    }

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

```

```

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

        String name = request.getParameter("name");
        String address = request.getParameter("address");

        out.println("Name=" + name + "<br>Address=" + address);
        out.println("</body></html>");
    }
}

```

Web.xml:

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID"
version="2.5">
    <display-name>ServletDemo</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
    <servlet>
        <description></description>
        <display-name>GetHandler</display-name>
        <servlet-name>GetHandler</servlet-name>
        <servlet-class>com.GetHandler</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>GetHandler</servlet-name>
        <url-pattern>/gethandler</url-pattern>
    </servlet-mapping>
    <servlet>
        <description></description>
        <display-name>PostHandler</display-name>
        <servlet-name>PostHandler</servlet-name>
        <servlet-class>com.PostHandler</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>PostHandler</servlet-name>
        <url-pattern>/posthandler</url-pattern>
    </servlet-mapping>
</web-app>

```

Index.xml:

```

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>GET vs POST Demo</title>
</head>
<body>

```

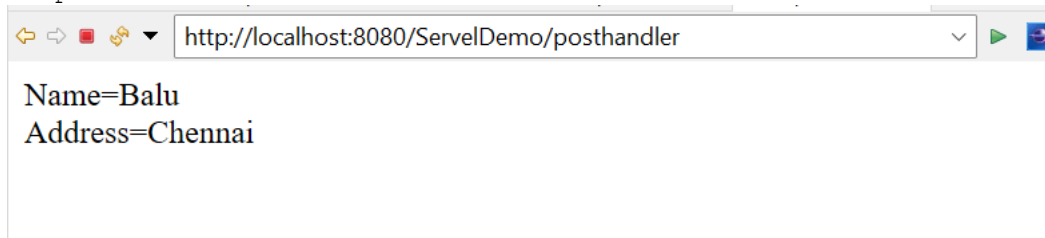
```

<a href="gethandler?name=John+Doe&address=145+Lake+Avenue">Do a Servlet
GET</a><br><br>
<form name=frm method=post action="posthandler">
  Name <input name="name" id="name" maxlength=50><br>
  Address <input name="address" id="address" maxlength=100><br>
  <button>Submit</button>
</form>

</body>
</html>

```

Output:

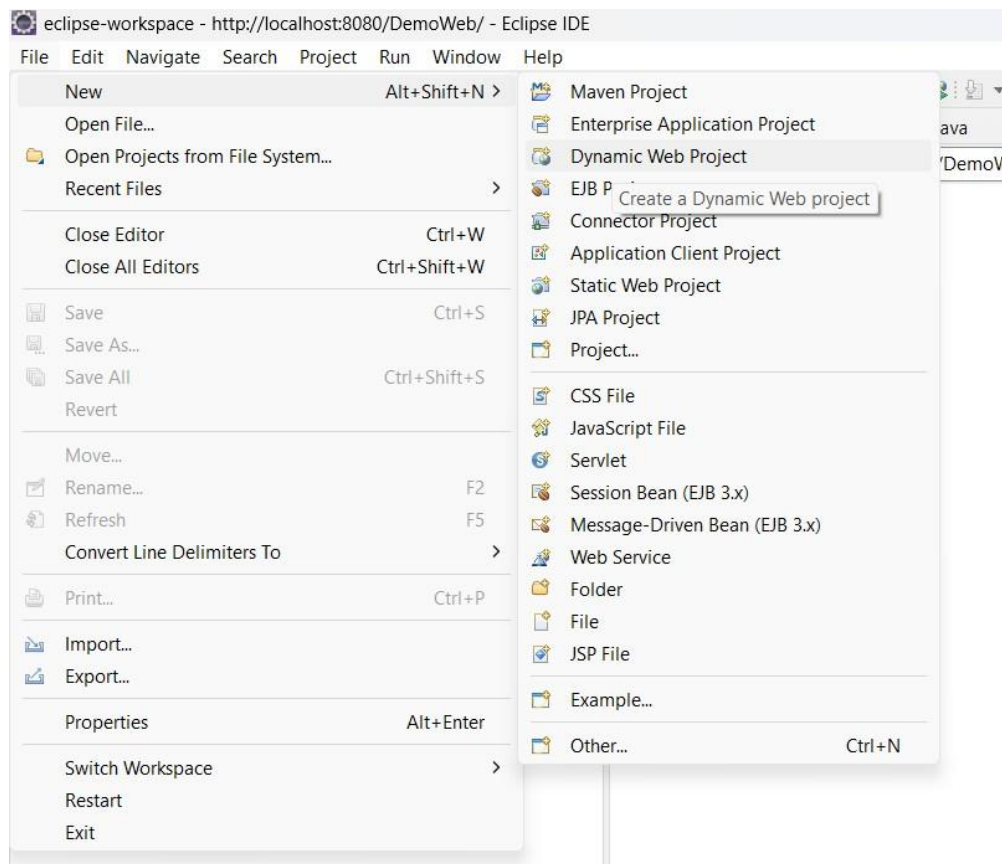


2. Configure a servlet in

Eclipse IDE.creating a

dynamic web project:

Step1:



Step 2:

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:

Project location

☒ Use default location

Location:

Target runtime

Dynamic web module version

Configuration

A good starting point for working with Apache Tomcat v8.5 runtime. Additional facets can later be installed to add new functionality to the project.

EAR membership

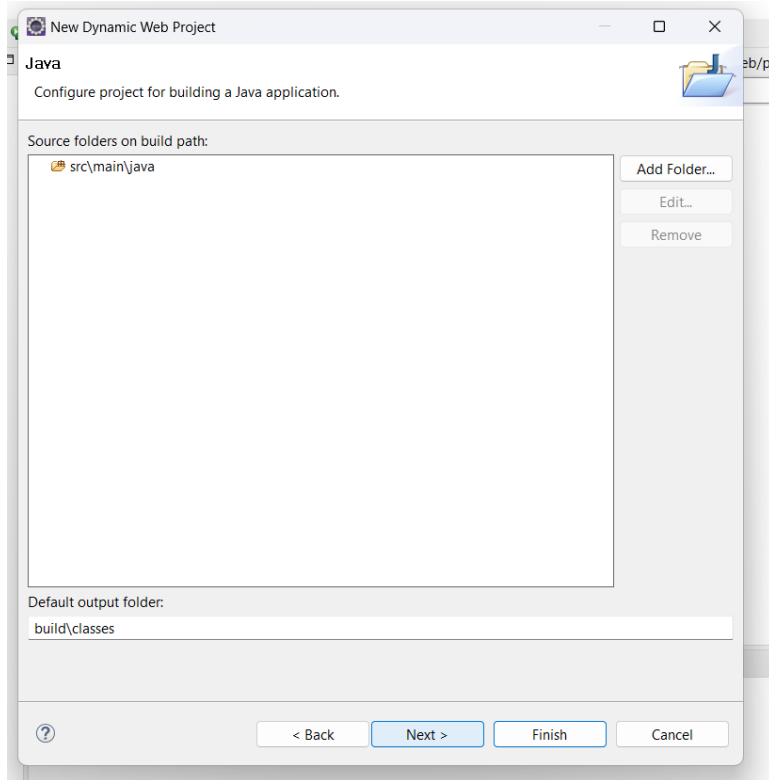
☐ Add project to an EAR

EAR project name:

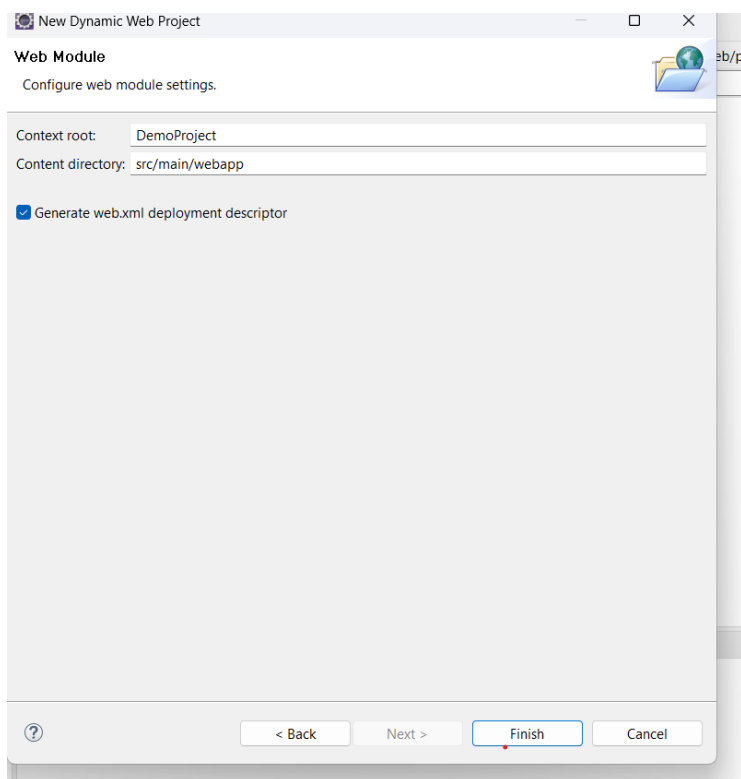
Working sets

☐ Add project to working sets

Step3:

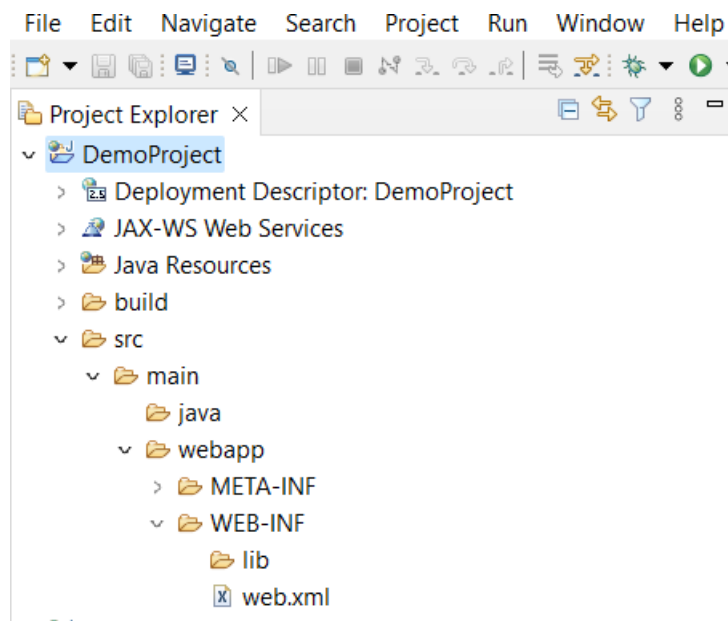


Step4:



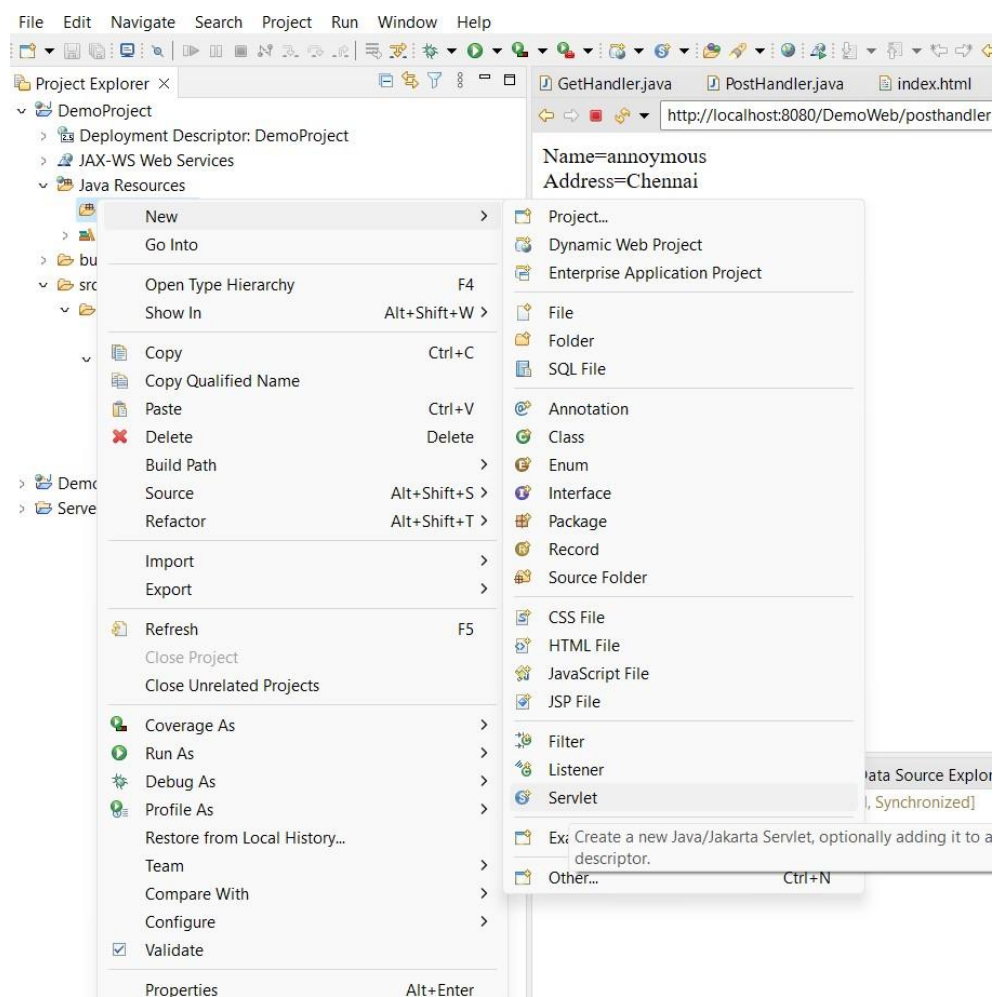
Configure a Servlet with Eclipse

Step5:

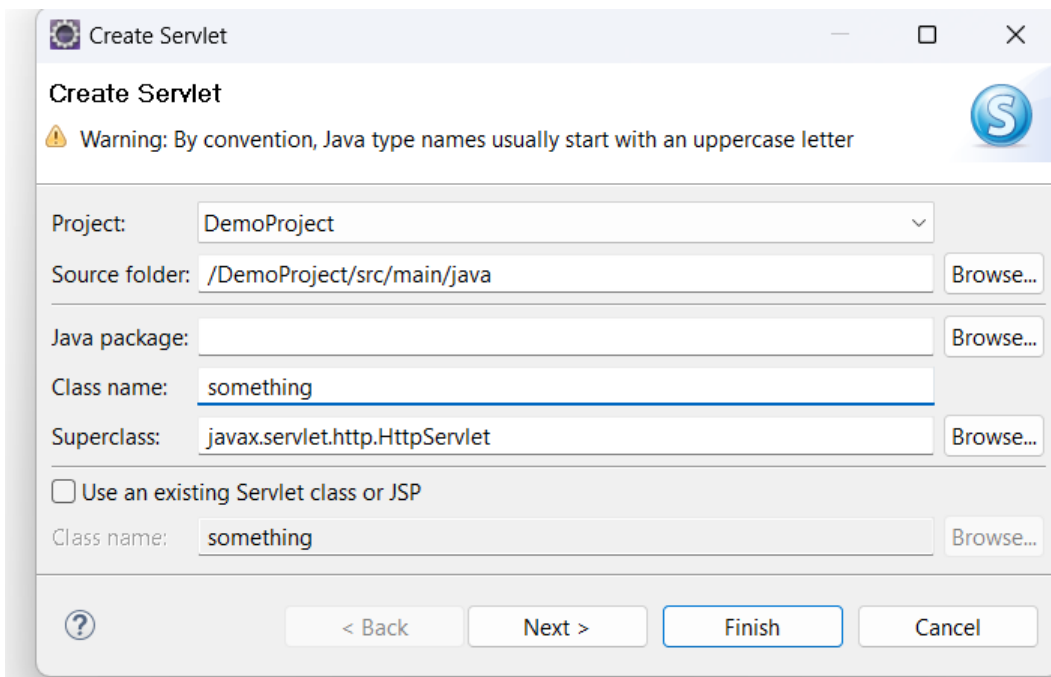


Creating a servlet:

Step1:



Step2:



Create Servlet

Warning: By convention, Java type names usually start with an uppercase letter

Project: DemoProject

Source folder: /DemoProject/src/main/java Browse...

Java package: Browse...

Class name: something

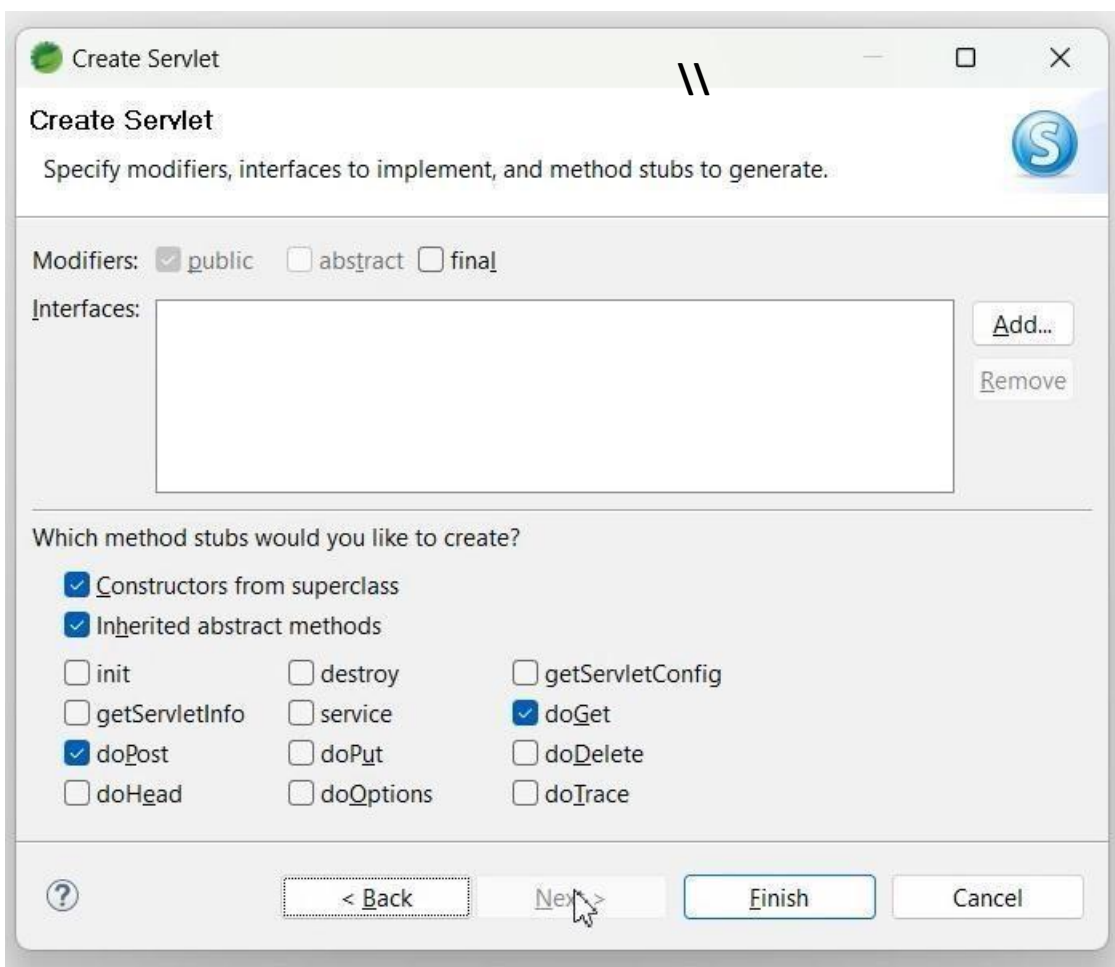
Superclass: javax.servlet.http.HttpServlet Browse...

☐ Use an existing Servlet class or JSP

Class name: something Browse...

? < Back Next > Finish Cancel

Step3:



Create Servlet

Specify modifiers, interfaces to implement, and method stubs to generate.

Modifiers: ☒ public ☐ abstract ☐ final

Interfaces: Add...
Remove

Which method stubs would you like to create?

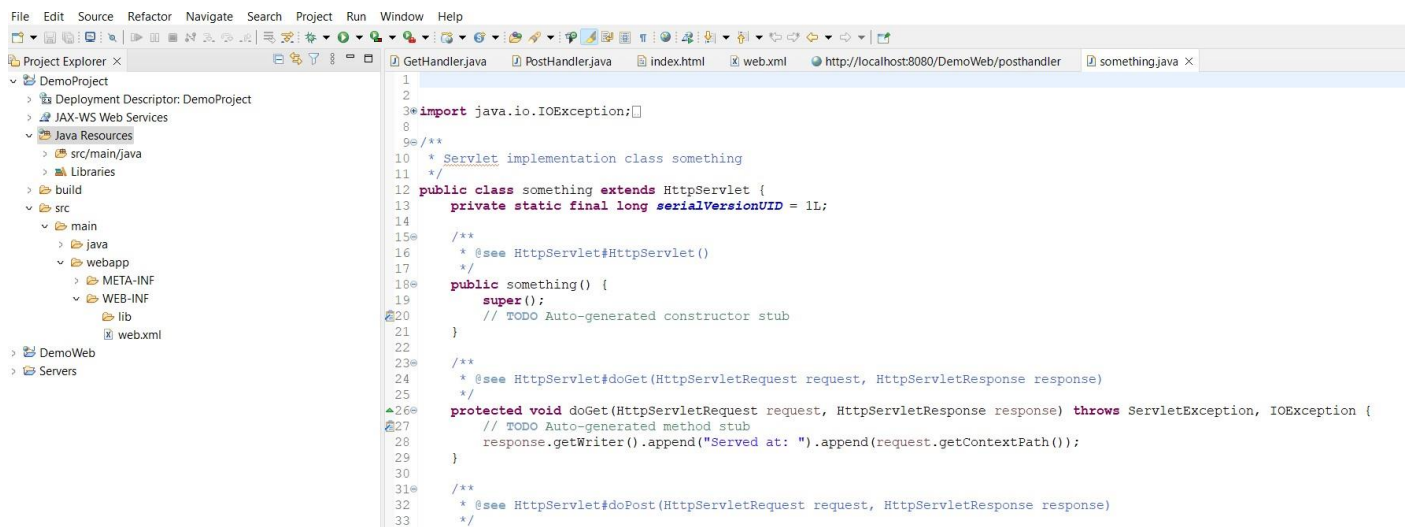
☒ Constructors from superclass

☒ Inherited abstract methods

<input type="checkbox"/> init	<input type="checkbox"/> destroy	<input type="checkbox"/> getServletConfig
<input type="checkbox"/> getServletInfo	<input type="checkbox"/> service	<input checked="" type="checkbox"/> doGet
<input checked="" type="checkbox"/> doPost	<input type="checkbox"/> doPut	<input type="checkbox"/> doDelete
<input type="checkbox"/> doHead	<input type="checkbox"/> doOptions	<input type="checkbox"/> doTrace

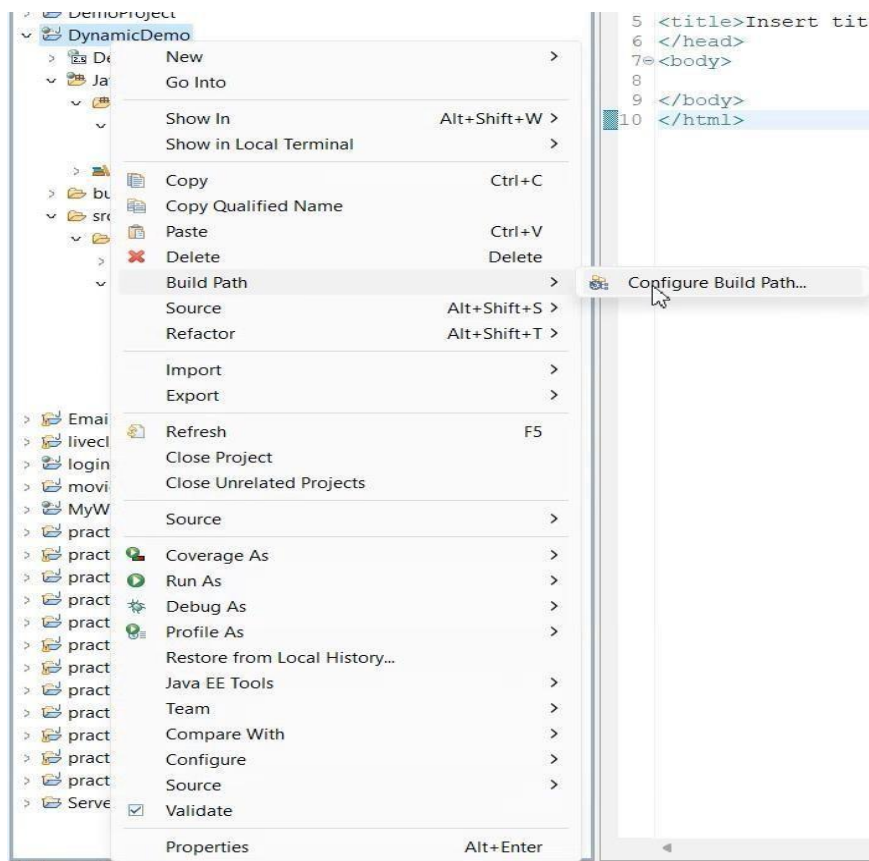
? < Back Next > Finish Cancel

Step4:

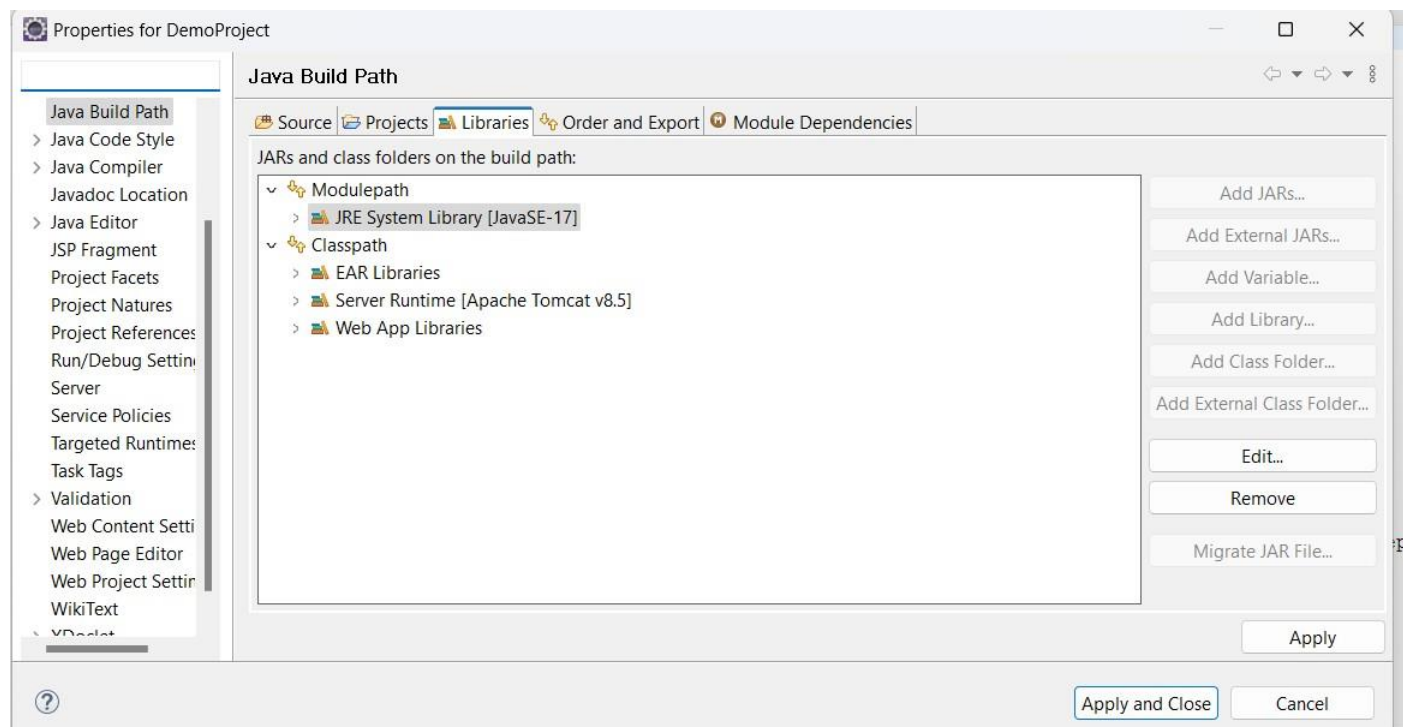


Checking for servlet-api.jar :

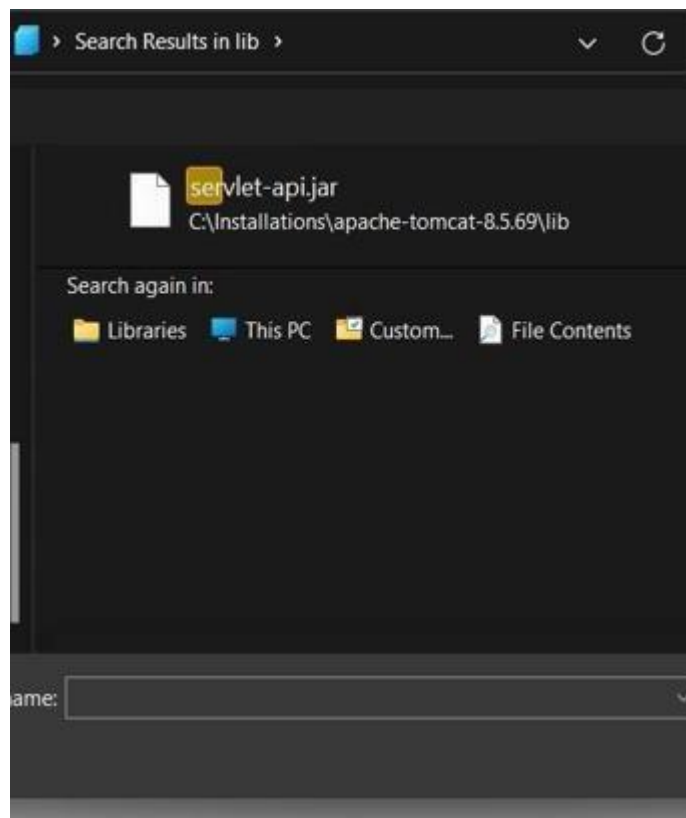
Step1 :



Step2:

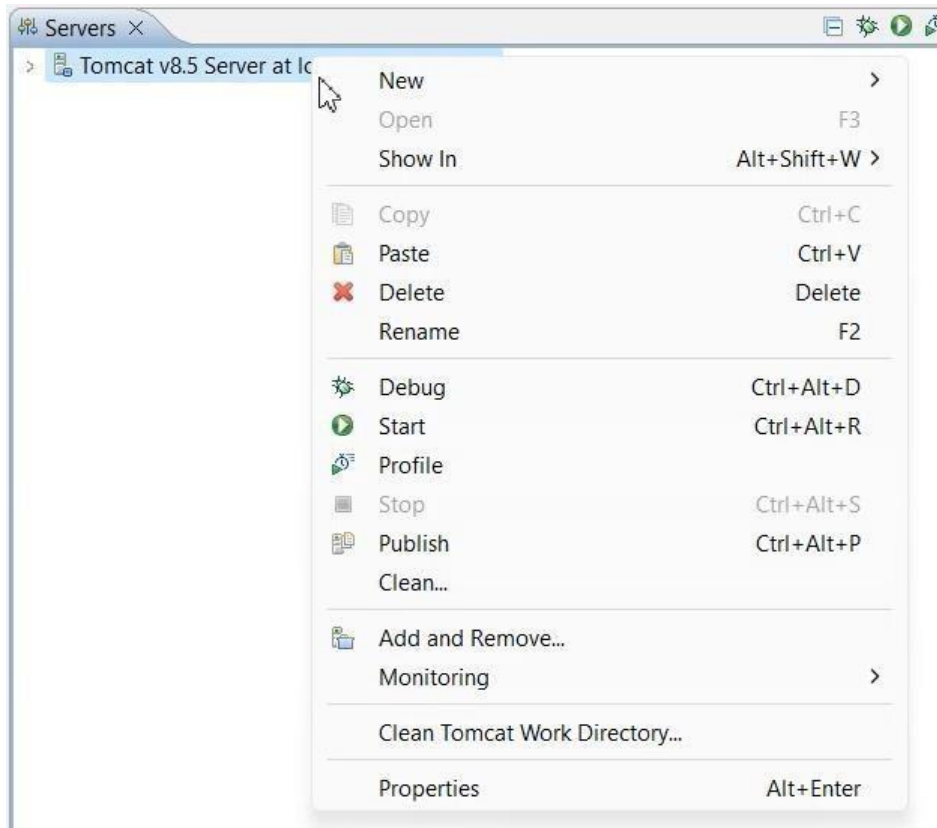


Step3:

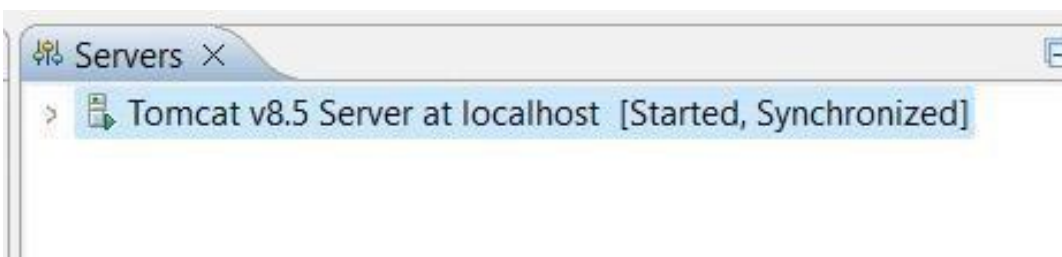


**Publishing and
starting the project:**

Step1:



Step2:



3. Write a program to demonstrate the concept of

Generic Servlets.Source Code:

NameServlet.java:

```
import java.io.IOException;  
import java.io.PrintWriter;
```

```

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

/**
 * Servlet implementation class NameServlet
 */
@WebServlet(
    name="/NameServlet")
public class NameServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public NameServlet() {
        super();
    }

    // TODO Auto-generated constructor stub

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
    // TODO Auto-generated method stub
        String fname =
            request.getParameter("fname");
        String lname =
            request.getParameter("lname");
        PrintWriter out =

```

```

        response.getWriter();
        out.println("<html><body>");
        out.println("Your full name is " + fname
+ " " + lname);
        out.println("</body></html>");
    }

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

```

Index.html:

```

<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<title>Name Servlet</title>

</head>

<body>

<center>

```

```

<form name=frmName method="GET" action="name">
<table width="50%" border="0">
<tr valign="top">
<td width="40%">Enter your firstname</td>
<td><input name="fname" id="fname" maxlength=30></td>
</tr>
<tr valign="top">
<td width="40%">Enter your lastname</td>
<td><input name="lname" id="lname" maxlength=30></td>
</tr>
<tr valign="top">
<td colspan=2 width="100%">
<button>Submit</button>
</td>
</tr>
</table>
</form>
</center>
</body>
</html>

```

Web.xml:

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">
    <display-name>DemoProject</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
    <servlet>

```

```

<description></description>

<display-name>NameServlet</display-name>

<servlet-name>NameServlet</servlet-name>

<servlet-class>NameServlet</servlet-class>

</servlet>

<servlet-mapping>

    <servlet-name>NameServlet</servlet-name>

    <url-pattern>/name</url-pattern>

</servlet-mapping>

```

</web-app>.4. Write a program to demonstrate the concept of Servlet Classes and Interfaces.Source Code:

InterfaceDemo.java:

```

import java.io.IOException; import java.io.PrintWriter;
import javax.servlet.Servlet;

import javax.servlet.ServletConfig; import
javax.servlet.ServletException;import
javax.servlet.ServletRequest; import
javax.servlet.ServletResponse;
import javax.servlet.annotation.WebServlet;
/**
 * Servlet implementation class InterfaceDemo
 */ @WebServlet("/InterfaceDemo")
public class InterfaceDemo implements Servlet {ServletConfig config = null;

public void init(ServletConfig config) { this.config = config;
System.out.println("Initialization complete");
}

public void service(ServletRequest req, ServletResponse res) throws
IOException, ServletException {
res.setContentType("text/html"); PrintWriter pwriter =
res.getWriter();pwriter.print("<html>");
pwriter.print("<body>");
pwriter.print("In the service() method<br>");
pwriter.print("</body>"); pwriter.print("</html>");
}

public void destroy() { System.out.println("In destroy() method");
}

public ServletConfig getServletConfig() {
return config;
}

public String getServletInfo() {

```

```
return "This is a sample servlet info";  
}  
}
```

Index.html:

```
<!DOCTYPE html>  
<html>  
<head>  
  <meta charset="UTF-8">  
<title>Servlet Interfaces</title>  
</head>  
<body>  
  <a href="interface">Show Servlet Interface</a>  
  
</body>  
</html>
```


Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```
xmlns="http://java.sun.com/xml/ns/javaee" xsi:schemaLocation="http://java.sun.com/xml/ns/javaee  
http://java.sun.com/xml/ns/javaee/webapp_2_5.xsd" id="WebApp_ID" version="2.5">
```

```
<display-name>ServletInterfaces</display-name>
```

```
<welcome-file-list>
```

```
<welcome-file>index.html</welcome-file>
```

```
<welcome-file>index.jsp</welcome-file>
```

```
<welcome-file>index.htm</welcome-file>
```

```
<welcome-file>default.html</welcome-file>
```

```
<welcome-file>default.jsp</welcome-file>
```

```
<welcome-file>default.htm</welcome-file>
```

```
</welcome-file-list>
```

```
<servlet>
```

```
<description></description>
```

```
<display-name>InterfaceDemo</display-name>
```

```
<servlet-name>InterfaceDemo</servlet-name>
```

```
<servlet-class>com.InterfaceDemo</servlet-class>
```

```
</servlet>
```

```
<servlet-mapping>
```

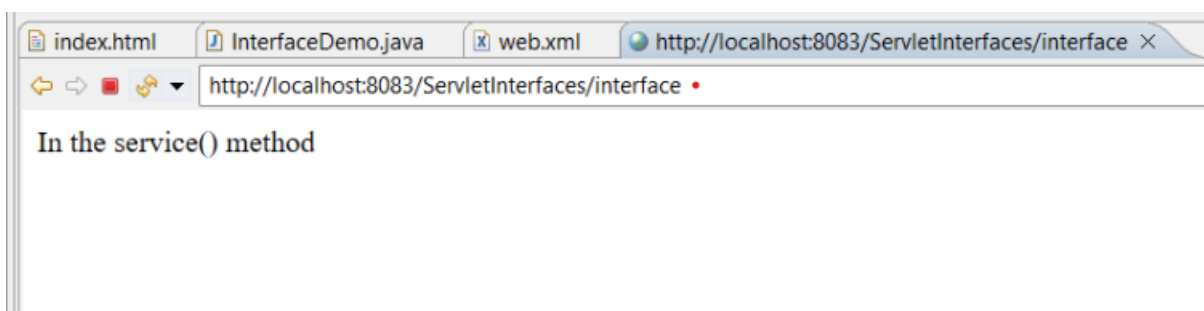
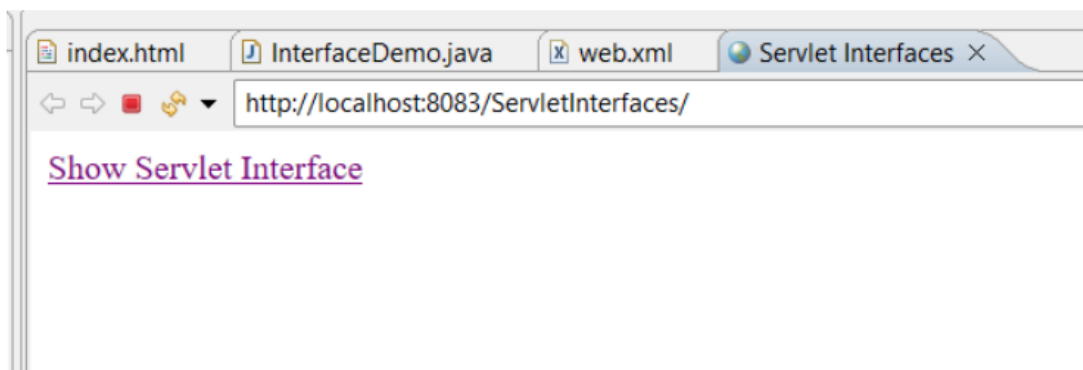
```
<servlet-name>InterfaceDemo</servlet-name>
```

```
<url-pattern>/interface</url-pattern>
```

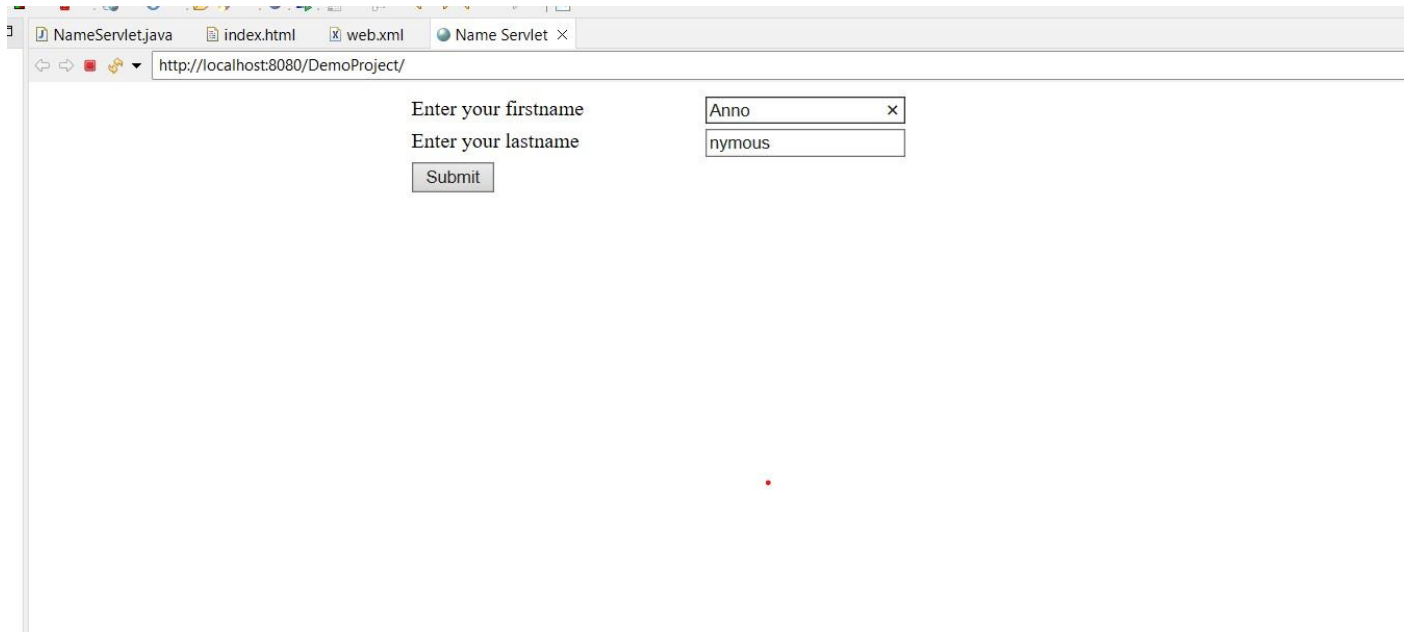
```
</servlet-mapping>
```

```
</web-app>
```

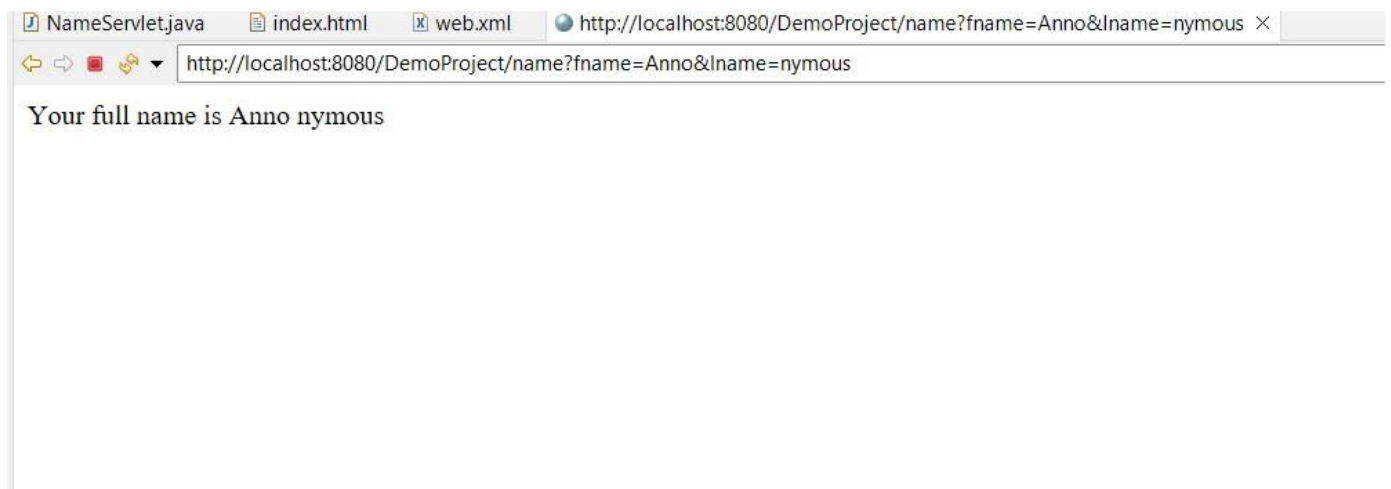
Outputs :



Outputs :



A screenshot of a web browser window. The address bar shows 'http://localhost:8080/DemoProject/'. The page contains a form with two text input fields. The first field is labeled 'Enter your firstname' and contains the text 'Anno'. The second field is labeled 'Enter your lastname' and contains the text 'nymous'. Below the fields is a 'Submit' button. The browser's tab bar shows 'NameServlet.java', 'index.html', 'web.xml', and 'Name Servlet'.



A screenshot of a web browser window showing the result of the form submission. The address bar shows 'http://localhost:8080/DemoProject/name?fname=Anno&lname=nymous'. The page displays the text 'Your full name is Anno nymous'. The browser's tab bar shows 'NameServlet.java', 'index.html', 'web.xml', and 'http://localhost:8080/DemoProject/name?fname=Anno&lname=nymous'.

5. Write a program to demonstrate a

Servlet Filter.Source Code:

AccountProfile.java:

```
import java.io.IOException;  
import javax.servlet.ServletException;  
import
```

```

javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class AccountProfile
 */
@WebServlet("/AccountProfile")
public class AccountProfile extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public AccountProfile() {

        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub
        response.getWriter().write("I am in Account Profile after passing
        through
        LoginFilter");
    }

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

```

}

AccountDashboard.java :

```
import java.io.IOException;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class AccountDashboard
 */ @WebServlet("/AccountDashboard")
public class AccountDashboard extends HttpServlet {

    private static final long serialVersionUID = 1L;

/**
 * @see HttpServlet#HttpServlet()
 */
public AccountDashboard() {

    super();

// TODO Auto-generated constructor stub
}
/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
protected void doGet(HttpServletRequest request, HttpServletResponseresponse)
throws ServletException, IOException {
// TODO Auto-generated method stub
response.getWriter().write("I am in Account Dashboard after passingthrough
LoginFilter");
}
/**
 * @see HttpServlet#doPost(HttpServletRequest request,
HttpServletResponse
 * response)
 */
protected void doPost(HttpServletRequest request, HttpServletResponseresponse)
throws ServletException, IOException {
// TODO Auto-generated method stub
doGet(request, response);
}
}
```

InfoPage.java:

```
import java.io.IOException;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet;import
javax.servlet.http.HttpServlet;
```

```
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
/**  
 * Servlet implementation class InfoPage
```

```

*/ @WebServlet("/InfoPage")
public class InfoPage extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public InfoPage() {

        super();

        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub response.getWriter().write("I am in
        InfoPage");
    }

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

```

LoginFilter.java:

```

import java.io.IOException; import
javax.servlet.Filter; import
javax.servlet.FilterChain;

import javax.servlet.FilterConfig; import
javax.servlet.ServletException; import
javax.servlet.HttpServletRequest; import
javax.servlet.HttpServletResponse;
import javax.servlet.annotation.WebFilter;
/**
 * Servlet Filter implementation class LoginFilter
 */ @WebFilter("/LoginFilter")
public class LoginFilter implements Filter {

    public LoginFilter() {

        // TODO Auto-generated constructor stub
    }
}

```

```
}  
/**  
 * @see Filter#destroy()  
 */  
public void destroy() {
```



```
// TODO Auto-generated method stub
}
/**
 * @see Filter#doFilter(ServletRequest, ServletResponse, FilterChain)
 */
public void doFilter(ServletRequest request, ServletResponse response,
FilterChain
chain)
throws IOException, ServletException {
String userId = request.getParameter("userid");
if (userId != null) { chain.doFilter(request, response);
}
}
/**
 * @see Filter#init(FilterConfig)
 */
public void init(FilterConfig fConfig) throws ServletException {
// TODO Auto-generated method stub
}
}
```

Index.html :

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Filter Demo</title>
</head>
<body>
<a href="dashboard?userid=johndoe">Account Dashboard (allow filter)</a>
<br>
<a href="profile?userid=johndoe">Account Profile (allow filter)</a>
<br>
<a href="dashboard">Account Dashboard (block filter)</a>
<br>
<a href="info">Info Page </a>
<br>
</body>
</html>
```

Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID"version="2.5">

<display-name>FilterDemo</display-name>
```

<welcome-file-list>

<welcome-file>index.html</welcome-file>

<welcome-file>index.jsp</welcome-file>

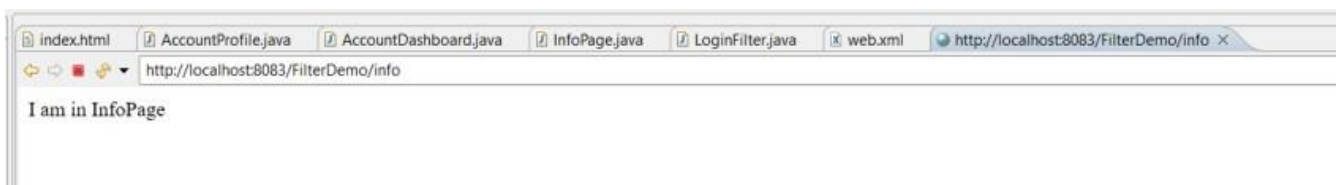
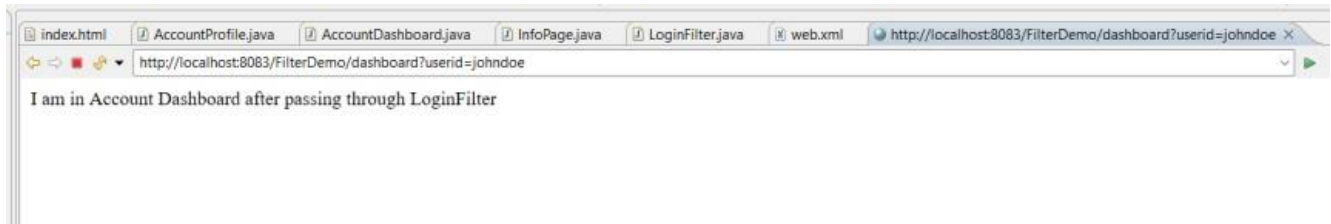
<welcome-file>index.htm</welcome-file>

<welcome-file>default.html</welcome-file>

<welcome-file>default.jsp</welcome-file>

```
<welcome-file>default.htm</welcome-file>
</welcome-file-list>
<servlet>
<description></description>
<display-name>AccountProfile</display-name>
<servlet-name>AccountProfile</servlet-name>
<servlet-class>com.AccountProfile</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>AccountProfile</servlet-name>
<url-pattern>/profile</url-pattern>
</servlet-mapping>
<servlet>
<description></description>
<display-name>AccountDashboard</display-name>
<servlet-name>AccountDashboard</servlet-name>
<servlet-class>com.AccountDashboard</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>AccountDashboard</servlet-name>
<url-pattern>/dashboard</url-pattern>
</servlet-mapping>
<servlet>
<description></description>
<display-name>InfoPage</display-name>
<servlet-name>InfoPage</servlet-name>
<servlet-class>com.InfoPage</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>InfoPage</servlet-name>
<url-pattern>/info</url-pattern>
</servlet-mapping>
<filter>
<display-name>LoginFilter</display-name>
<filter-name>LoginFilter</filter-name>
<filter-class>com.LoginFilter</filter-class>
</filter>
<filter-mapping>
<filter-name>LoginFilter</filter-name>
<url-pattern>/LoginFilter</url-pattern>
</filter-mapping>
<filter-mapping>
<filter-name>LoginFilter</filter-name>
<servlet-name>AccountDashboard</servlet-name>
<dispatcher>REQUEST</dispatcher>
</filter-mapping>
</web-app>
```

Outputs:



6. Write a program to demonstrate a Session Tracking using Cookies.Source Code:

LoginServlet.java:

```
import java.io.IOException;

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

```

import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class LoginServlet
 */
@WebServlet("/LoginServlet")
public class LoginServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LoginServlet() {

        super();
    }
    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub
        Cookie userId = new Cookie("userid", request.getParameter("userid"));
        response.addCookie(userId);
        response.sendRedirect("dashboard");
    }
    /**
     * @see HttpServlet#doPost(HttpServletRequest request,
     HttpServletResponse
     response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
        response)
        throws ServletException, IOException {
        // TODO Auto-generated
        method stubdoGet(request,
        response);
    }
}

```

Dashboard.java:

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet;import
javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class Dashboard
 */ @WebServlet("/Dashboard")
public class Dashboard extends HttpServlet {

    private static final long serialVersionUID = 1L;

/**
 * @see HttpServlet#HttpServlet()
 */
    public Dashboard() {

        super();

// TODO Auto-generated constructor stub
    }

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
    protected void doGet(HttpServletRequest request, HttpServletResponseresponse)
throws ServletException, IOException {
// TODO Auto-generated method stub
    Cookie cookie = null;
    Cookie[] cookies = null;boolean
    found = false;

    PrintWriter out = response.getWriter();
    out.println("<html><body>");
    cookies = request.getCookies();
    if (cookies != null) {

        for (int i = 0; i < cookies.length; i++) {cookie =
            cookies[i];
            if (cookie.getName().contentEquals("userid") &&
                cookie.getValue() != null) { out.println("UserId read from
                cookie:" + cookie.getValue() + "<br>");
                found = true;
            }
        }
    }
    if (!found) {
```

```
out.println("No UserId was found in cookie.<br>");
}
out.println("</body></html>");
}
/**
 * @see HttpServlet#doPost(HttpServletRequest request,
 * HttpServletResponse
```

```

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

```

Index.html:

```

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">

<title>Insert title here</title>
</head>
<body>
<a href="login?userid=admin">Dashboard with cookie login</a>

<br>
<a href="dashboard">Dashboard without cookie login</a>

</body>
</html>

```

web.xml:

```

<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">

    <display-name>CookieTrackingDemo</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
        <welcome-file>index.htm</welcome-file>
        <welcome-file>default.html</welcome-file>
        <welcome-file>default.jsp</welcome-file>
        <welcome-file>default.htm</welcome-file>
    </welcome-file-list>
    <servlet>
        <description></description>
        <display-name>LoginServlet</display-name>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>com.LoginServlet</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>LoginServlet</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>

```



```
</servlet-mapping>  
<servlet>  
<description></description>  
<display-name>Dashboard</display-name>  
<servlet-name>Dashboard</servlet-name>
```

```

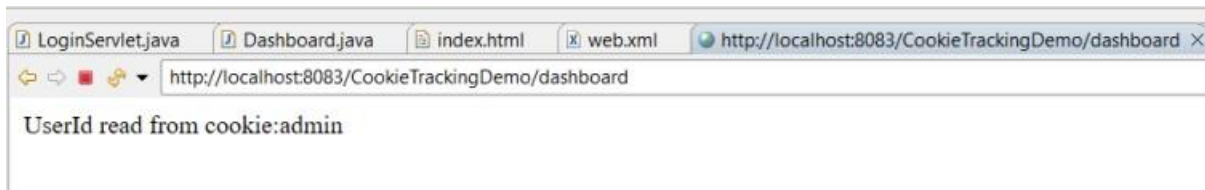
<servlet-class>com.Dashboard</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>Dashboard</servlet-name>
<url-pattern>/dashboard</url-pattern>
</servlet-mapping>
</web-app>

```

Outputs:



With Cookies Login:



Without Cookies Login:



7. Write a program to demonstrate a Session Tracking

using Cookies. Source Code:

LoginServlet.java:

```

import java.io.IOException;

import javax.servlet.ServletException;
import

```

```

javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class LoginServlet
 */
@WebServlet("/LoginServlet")
public class LoginServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LoginServlet() {

        super();
    }
    // TODO Auto-generated constructor stub
}

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
protected void doGet(HttpServletRequest request,
HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    String userId = request.getParameter("userid");
    response.sendRedirect("dashboard?userid=" + userId);
}

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

```

Dashboard.java:

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class Dashboard
 */ @WebServlet("/Dashboard")
public class Dashboard extends HttpServlet {

    private static final long serialVersionUID = 1L;

/**
 * @see HttpServlet#HttpServlet()
 */
    public Dashboard() {

        super();
    }
    // TODO Auto-generated constructor stub
}
/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    PrintWriter out = response.getWriter();
    out.println("<html><body>");
    String userId = request.getParameter("userid");
    if (userId == null) {
        out.println("No UserId was found in the URL.<br>");
    } else {
        out.println("UserId obtained from URL Rewriting:" + userId + "<br>");
    }
    out.println("</body></html>");
}
/**
 * @see HttpServlet#doPost(HttpServletRequest request,
HttpServletResponse
 * response)
 */
protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    doGet(request, response);
}
```

}
}

Index.html:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">

<title>URL Rewriting Demo</title>
</head>
<body>
  <a href="login?userid=admin">Dashboard with URL Rewriting based login</a><br>

  <a href="dashboard">Dashboard without URL Rewriting based login</a>
</body>
</html>
```

web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://java.sun.com/xml/ns/javaee"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
  http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">

  <display-name>URLRewriteDemo</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>LoginServlet</display-name>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>com.LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>Dashboard</display-name>
    <servlet-name>Dashboard</servlet-name>
    <servlet-class>com.Dashboard</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>Dashboard</servlet-name>
    <url-pattern>/dashboard</url-pattern>
```

```
</servlet-mapping>  
</web-app>
```

Outputs:



With URL Rewriting:



Without URL Rewriting:



8. Write a program to demonstrate Session Tracking using Hidden Form Fields.Source Code:

LoginServlet.java:

```
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import
javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 * Servlet implementation class LoginServlet
 */
@WebServlet("/LoginS
```



```

ervlet")
    public class LoginServlet extends HttpServlet {

        private static final long serialVersionUID = 1L;

        /**
         * @see HttpServlet#HttpServlet()
         */
        public LoginServlet() {

            super();

            // TODO Auto-generated constructor stub
        }

        /**
         * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
         * response)
         */
        protected void doGet(HttpServletRequest request,
            HttpServletResponse response)
            throws ServletException, IOException {
            // TODO Auto-generated method
            stub PrintWriter out =
            response.getWriter();
            out.println("<html><body>");
            String userId = request.getParameter("userid");
            // creating a new hidden form field
            out.println("<form action='dashboard' method='post'>");
            out.println("<input type='hidden' name='userid' id='userid' value='" +
            userId +
            "'>");
            out.println("<input type='submit' value='submit' >");
            out.println("</form>");
            out.println("<script>document.forms[0].submit();</script>");
        }

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

```

response);

```
}  
}
```

Dashboard.java:

```
import java.io.IOException;  
import java.io.PrintWriter;  
  
import javax.servlet.ServletException; import  
javax.servlet.annotation.WebServlet;import  
javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
/**  
 * Servlet implementation class Dashboard  
 */ @WebServlet("/Dashboard")  
public class Dashboard extends HttpServlet {  
  
    private static final long serialVersionUID = 1L;  
  
    /**  
     * @see HttpServlet#HttpServlet()  
     */  
    public Dashboard() {  
  
        super();  
    }  
    // TODO Auto-generated constructor stub  
}  
/**  
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse  
 * response)  
 */  
protected void doGet(HttpServletRequest request, HttpServletResponse response)  
throws ServletException, IOException {  
    // TODO Auto-generated method stub  
    PrintWriter out = response.getWriter();  
    out.println("<html><body>");  
    String userId = request.getParameter("userid");  
    if (userId == null) {  
        out.println("No UserId was found in hidden form field.<br>");  
    } else {  
        out.println("UserId found in hidden form field: " + userId + "<br>");  
    }  
    out.println("</body></html>");  
}  
/**  
 * @see HttpServlet#doPost(HttpServletRequest request,  
 * HttpServletResponse  
 * response)  
 */  
protected void doPost(HttpServletRequest request, HttpServletResponse response)  
throws ServletException, IOException {
```

```
// TODO Auto-generated method stub
doGet(request, response);
}
}
```

Index.html:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">

<title>Insert title here</title>
</head>
<body>
  <form action="login" method="post">

    <input type="hidden" name="userid" id="userid" value="admin">

<button>Dashboard with hidden form fields login</button>
</form>
<br>
<br>
<a href="dashboard">Dashboard without hidden form fields login</a>
</body>
</html>
```

Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>

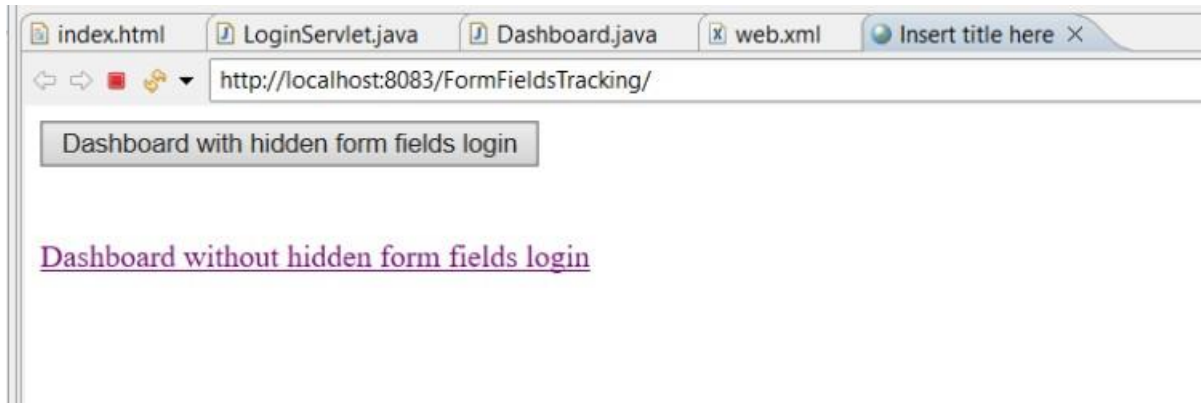
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://java.sun.com/xml/ns/javaee"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
  http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">

  <display-name>FormFieldsTracking</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>LoginServlet</display-name>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>com.LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
```

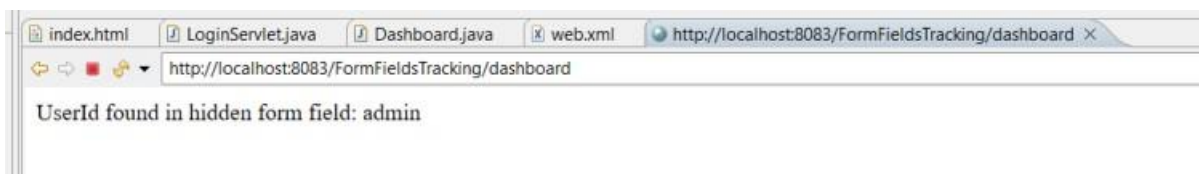
```
<display-name>Dashboard</display-name>  
<servlet-name>Dashboard</servlet-name>  
<servlet-class>com.Dashboard</servlet-class>  
</servlet>  
<servlet-mapping>  
<servlet-name>Dashboard</servlet-name>
```

```
<url-pattern>/dashboard</url-pattern>
</servlet-mapping>
</web-app>
```

Output:



Dashboard with hidden:



Dashboard without hidden:



9. Write a program to demonstrate Session Tracking using an

HTTP Session.Source Code:

LoginServlet.java:

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

```

import
javax.servlet.http.HttpServletRequest;
import
javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
 * Servlet implementation class LoginServlet
 */
@WebServlet("/LoginServlet")
public class LoginServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LoginServlet() {

        super();

        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub
        String userId =
            request.getParameter("userid");HttpSession
            session = request.getSession();
            session.setAttribute("userid", userId);
            response.sendRedirect("dashboard");
        }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request,
        HttpServletResponse
        response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse
        response)
        throws ServletException, IOException {

```



```
// TODO Auto-generated  
method stubdoGet(request,  
response);  
}  
}
```

Dashboard.java:

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet; import
javax.servlet.http.HttpServlet; import
javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
 * Servlet implementation class Dashboard
 */ @WebServlet("/Dashboard")
public class Dashboard extends HttpServlet {

    private static final long serialVersionUID = 1L;

/**
 * @see HttpServlet#HttpServlet()
 */
    public Dashboard() {

        super();

// TODO Auto-generated constructor stub
    }

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
// TODO Auto-generated method stub
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        HttpSession session = request.getSession(false);String
        userId = null;
        if (session.getAttribute("userid") != null) userId = (String)
        session.getAttribute("userid");if (userId == null) {
        out.println("No UserId was found in session.<br>");
        } else {

        out.println("UserId obtained from session : " + userId + "<br>");
        }
        out.println("</body></html>");
        }

/**
 * @see HttpServlet#doPost(HttpServletRequest request,
        HttpServletResponse
        response)
 */
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
```

```
// TODO Auto-generated method stub
doGet(request, response);
}
}
```

Index.html:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">

<title>HTTPSession Demo</title>
</head>
<body>
  <a href="login?userid=admin">Dashboard with Session based login</a>

<br>
  <a href="dashboard">Dashboard without Session based login</a>
</body>
</html>
```

web.xml:

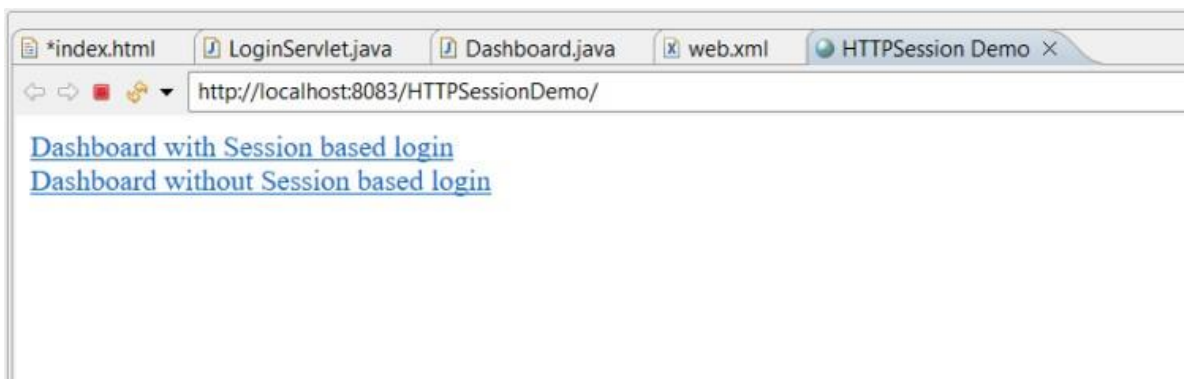
```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://java.sun.com/xml/ns/javaee"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
  http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID" version="2.5">

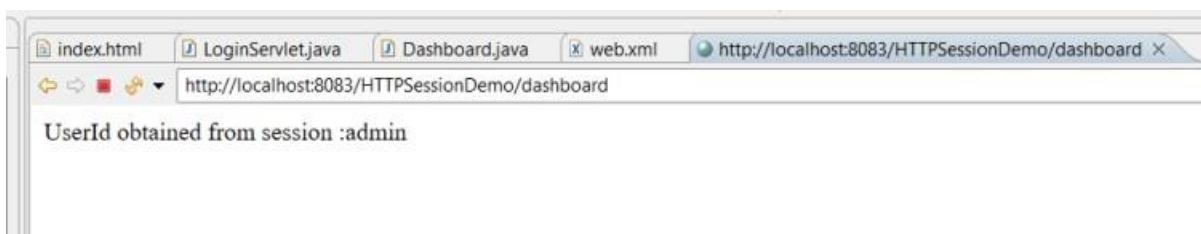
  <display-name>HTTPSessionDemo</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>LoginServlet</display-name>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>com.LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>Dashboard</display-name>
    <servlet-name>Dashboard</servlet-name>
```

```
<servlet-class>com.Dashboard</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>Dashboard</servlet-name>
<url-pattern>/dashboard</url-pattern>
</servlet-mapping>
</web-app>
```

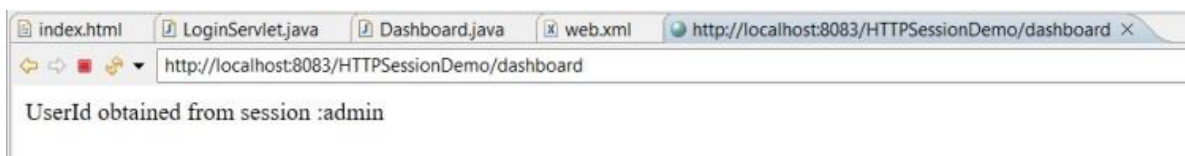
Output:



Dashboard with Session:



Dashboard without Session:



10. Write a program to demonstrate Session Login

and Logout.Source Code:

LoginServlet.java:

```
import java.io.IOException;

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

```

import
javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
 * Servlet implementation class LoginServlet
 */
@WebServlet("/LoginServlet")
public class LoginServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LoginServlet() {

        super();

        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        // TODO Auto-generated method stub
        String userId =
            request.getParameter("userid");HttpSession
            session = request.getSession();
            session.setAttribute("userid", userId);
            response.sendRedirect("dashboard");
        }

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

```

```
response);  
}  
}
```


Dashboard.java:

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet; import
javax.servlet.http.HttpServlet; import
javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;
/**
 * Servlet implementation class Dashboard
 */ @WebServlet("/Dashboard")
public class Dashboard extends HttpServlet {

    private static final long serialVersionUID = 1L;

/**
 * @see HttpServlet#HttpServlet()
 */
    public Dashboard() {

        super();

// TODO Auto-generated constructor stub
    }

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 * response)
 */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
// TODO Auto-generated method stub
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        HttpSession session = request.getSession(false);String
        userId = null;
        if (session.getAttribute("userid") != null) userId = (String)
        session.getAttribute("userid");if (userId == null) {
        out.println("No UserId was found in session.<br>");
        } else {

        out.println("UserId obtained from session : " + userId + "<br>");out.println("<a
        href='logout'>Logout of session</a><br>");
        }
        out.println("</body></html>");
        }

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

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

```
}
```

LogoutServlet.java:

```
import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException; import
javax.servlet.annotation.WebServlet;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;import
javax.servlet.http.HttpSession;
/**
 * Servlet implementation class Logout
 */ @WebServlet("/Logout")
public class Logout extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public Logout() {

        super();

        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
        // TODO Auto-generated method stub HttpSession
        session = request.getSession();session.invalidate();
        PrintWriter out = response.getWriter();
        out.println("<html><body>"); out.println("Logged
        out of session.<br>");
        out.println("</body></html>");
    }

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

}

}

Index.html:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">

<title>Login Logout</title>
</head>
<body>
  <a href="login?userid=admin">Dashboard with Login</a>

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

web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" id="WebApp_ID"version="2.5">

  <display-name>LoginLogout</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.jsp</welcome-file>
    <welcome-file>default.htm</welcome-file>
  </welcome-file-list>
  <servlet>
    <description></description>
    <display-name>LoginServlet</display-name>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>com.LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
  <servlet>
    <description></description>
    <display-name>Dashboard</display-name>
    <servlet-name>Dashboard</servlet-name>
    <servlet-class>com.Dashboard</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>Dashboard</servlet-name>
```

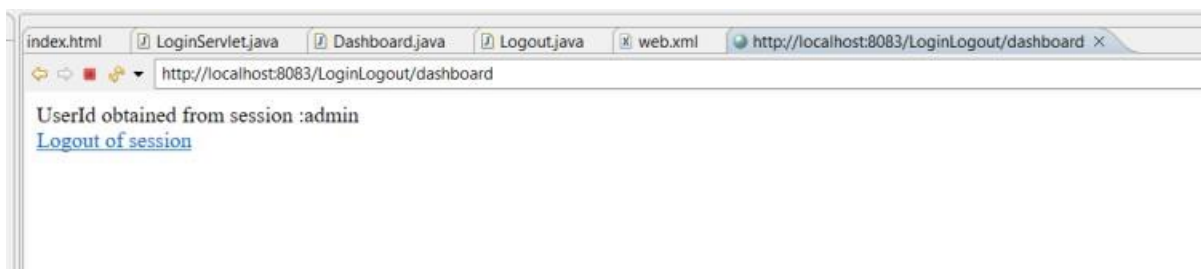
```
<url-pattern>/dashboard</url-pattern>  
</servlet-mapping>  
<servlet>  
<description></description>  
<display-name>Logout</display-name>  
<servlet-name>Logout</servlet-name>
```

```
<servlet-class>com.LoginServlet</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>LoginServlet</servlet-name>
<url-pattern>/login</url-pattern>
</servlet-mapping>
</web-app>
```

Output:



Dashboard with Login:



Logout of Session:

