

1. WRITE A PROGRAM TO DEMONSTRATE THE DIFFERENCES BETWEEN GET AND POST USING SERVLET.

HTML FILE :

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>GetVsPost</title>
</head>
<body>

<a href="getHandler?name=krish+radha&address=123+gokul+mandir">Do a Servlet
GET</a><br><br>
<form name=frm method=post action="postHandler">
    Name <input name="name" id="name" maxlength=50 required><br><br>
    Address <input name="address" id="address" maxlength=100 required><br><br>
    <button>Submit</button>
</form>

</body>
</html>
```

SERVLET :

GETHANDLER SERVLET:

```
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 GetPost
 */
@WebServlet("/GetPost")
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 {
        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);
    }
}

```

POSTHANDLER SERVLET:

```

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 PostServlet
 */
@WebServlet("/PostServlet")
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 {

    }

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

```

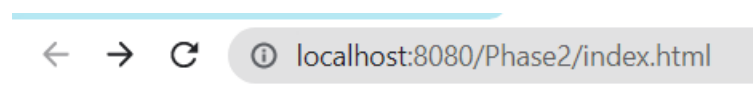
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>
        <servlet-name>GetHandler</servlet-name>
        <servlet-class>GetHandler</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>PostHandler</servlet-name>
        <servlet-class>PostHandler</servlet-class>
    </servlet>

```

```
<servlet-mapping>
  <servlet-name>GetHandler</servlet-name>
  <url-pattern>/gethandler</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>PostHandler</servlet-name>
  <url-pattern>/posthandler</url-pattern>
</servlet-mapping>
```

</web-app>

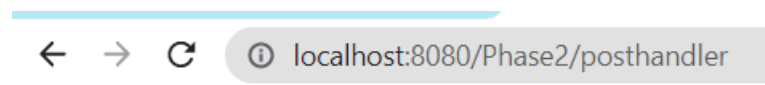
OUTPUT:



Do a Servlet GET

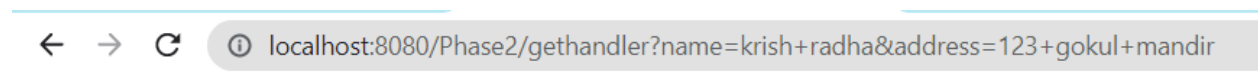
Name

Address



Name=radhika

Address=karnataka

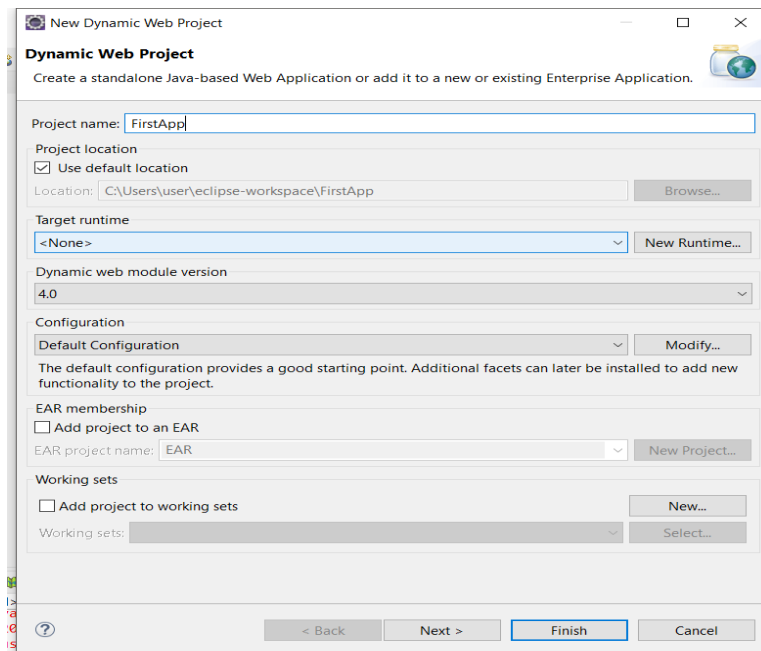
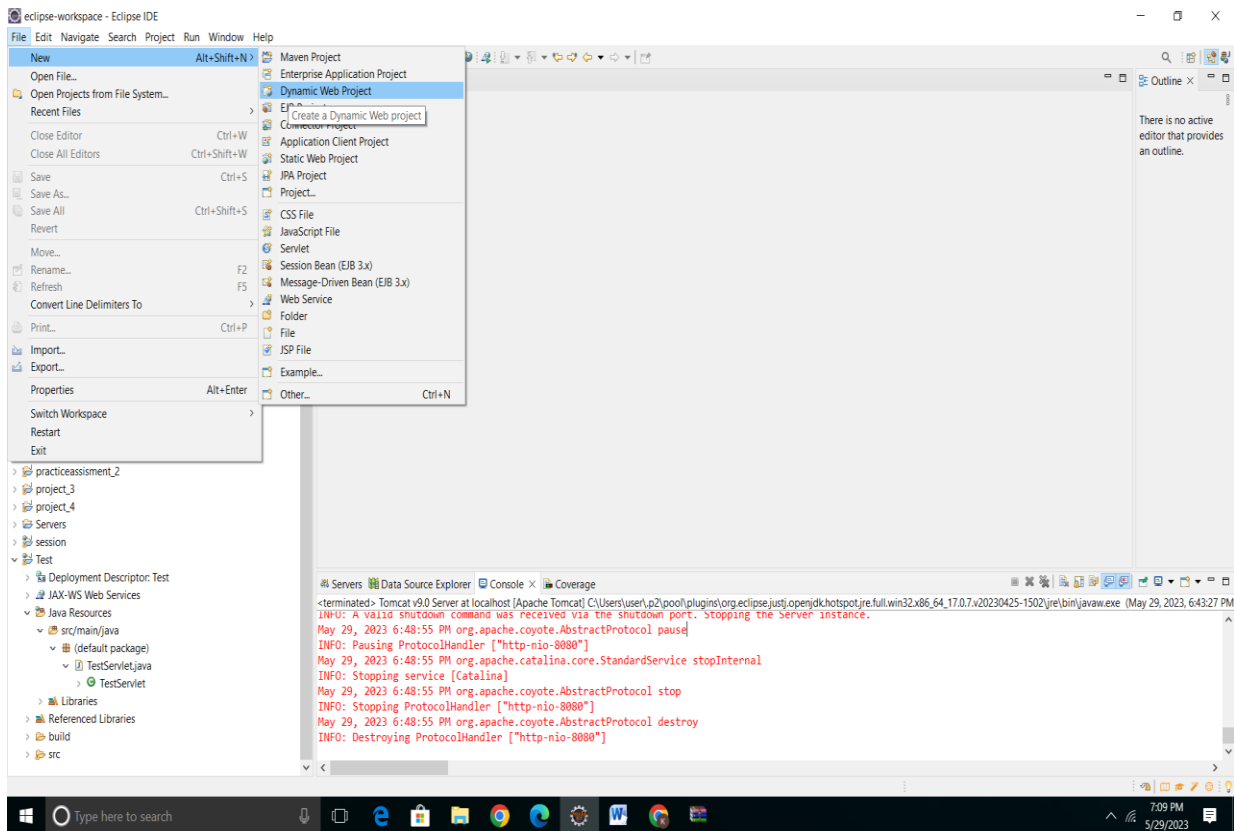


Name=krish radha

Address=123 gokul mandir

2. CONFIGURE A SERVLET IN ECLIPSE IDE.

a) create a dynamic web project in eclipse



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

New Dynamic Web Project

Web Module

Configure web module settings.

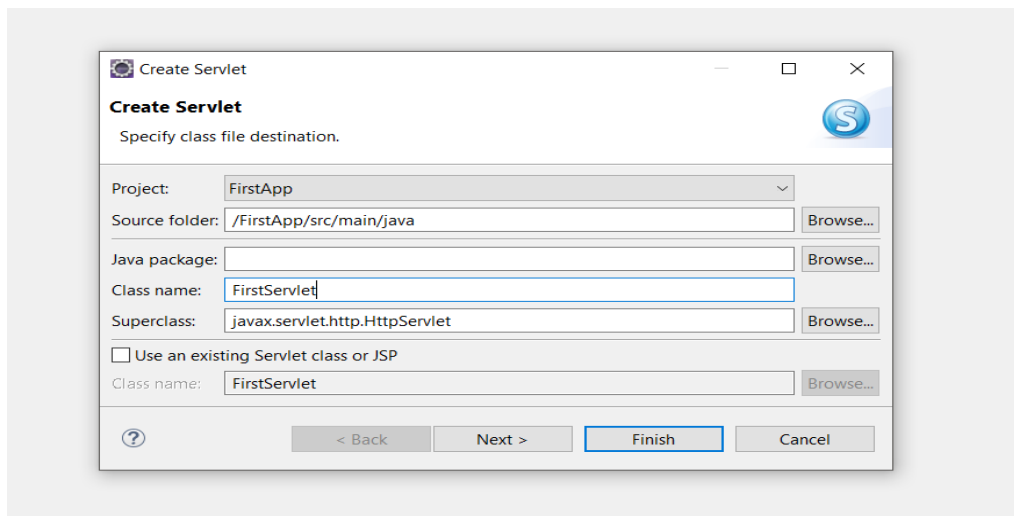
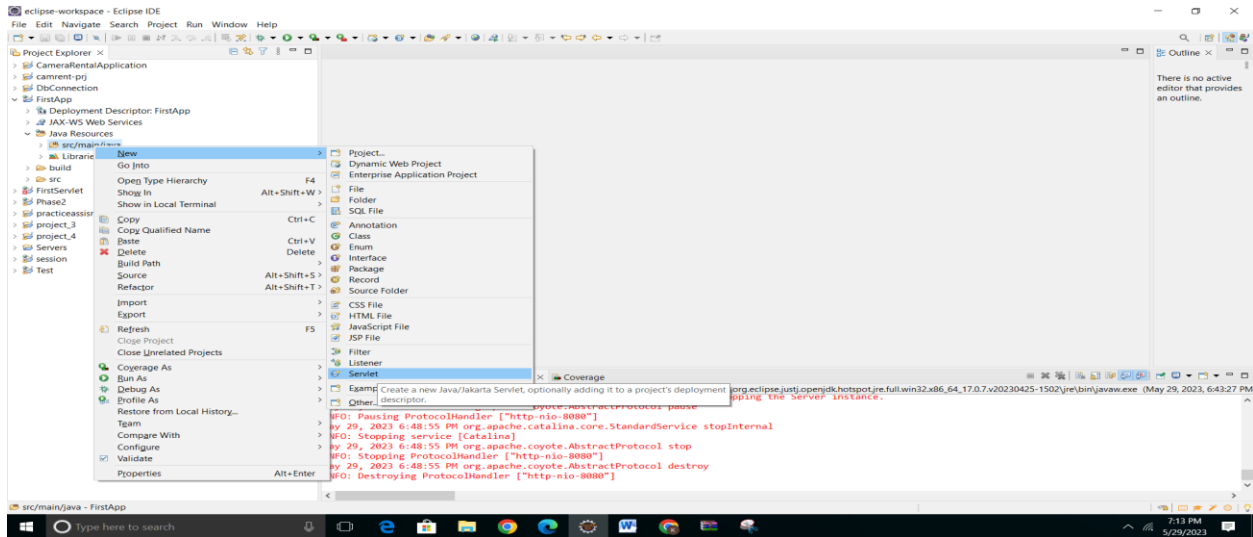
Context root: FirstApp

Content directory: src/main/webapp

☒ Generate web.xml deployment descriptor

< Back Next > Finish Cancel

b)now go to java folder and create servlet



Create Servlet

Create Servlet

Enter servlet deployment descriptor specific information.

Name: FirstServlet

Description:

Initialization parameters:

Name	Value	Description
------	-------	-------------

Add...

Edit...

Remove

URL mappings:

/FirstServlet

Add...

Edit...

Remove

☐ Asynchronous Support

?

< Back

Next >

Finish

Cancel

rs Data
ted> Tomc

A valid shutdown command was received via the shutdown port. Stopping the Server Instance.

spot.jre.full

Create Servlet

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

☐ init

☐ getServletInfo

☒ doPost

☐ doHead

☐ destroy

☒ service

☐ doPut

☐ doOptions

☐ getServletConfig

☒ doGet

☐ doDelete

☐ doTrace

?

< Back

Next >

Finish

Cancel

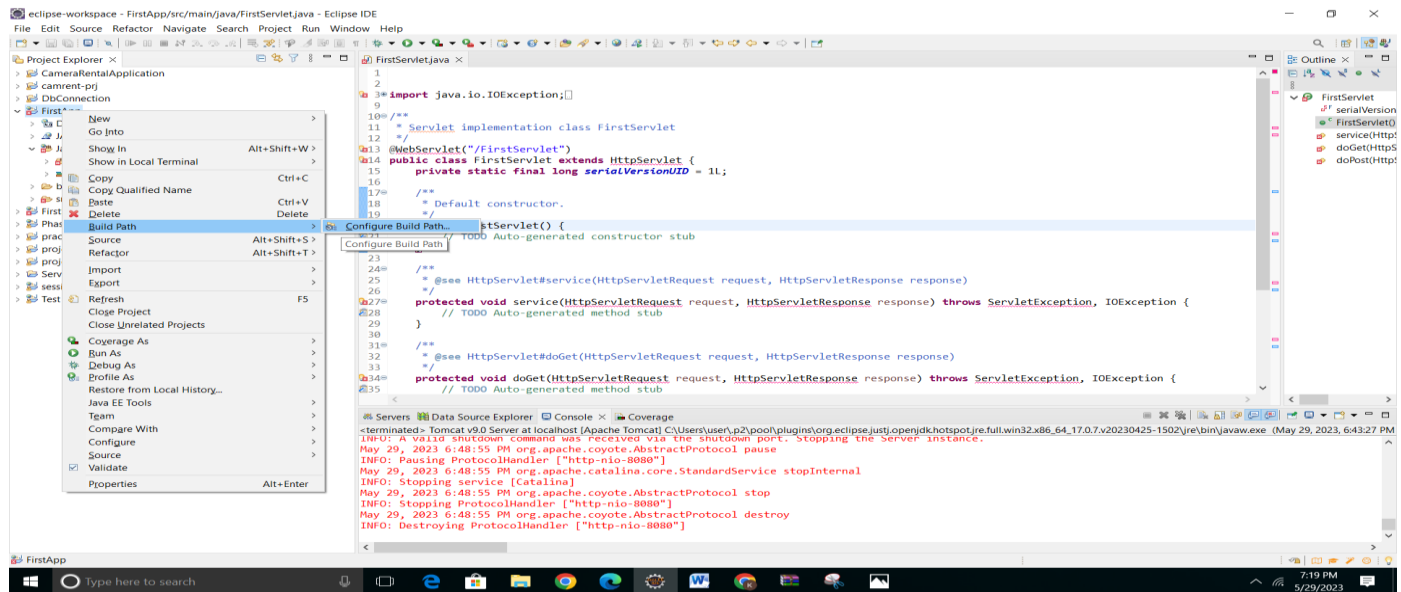
rs Data
ted> Tomc

A valid shutdown command was received via the shutdown port. Stopping the Server Instance.

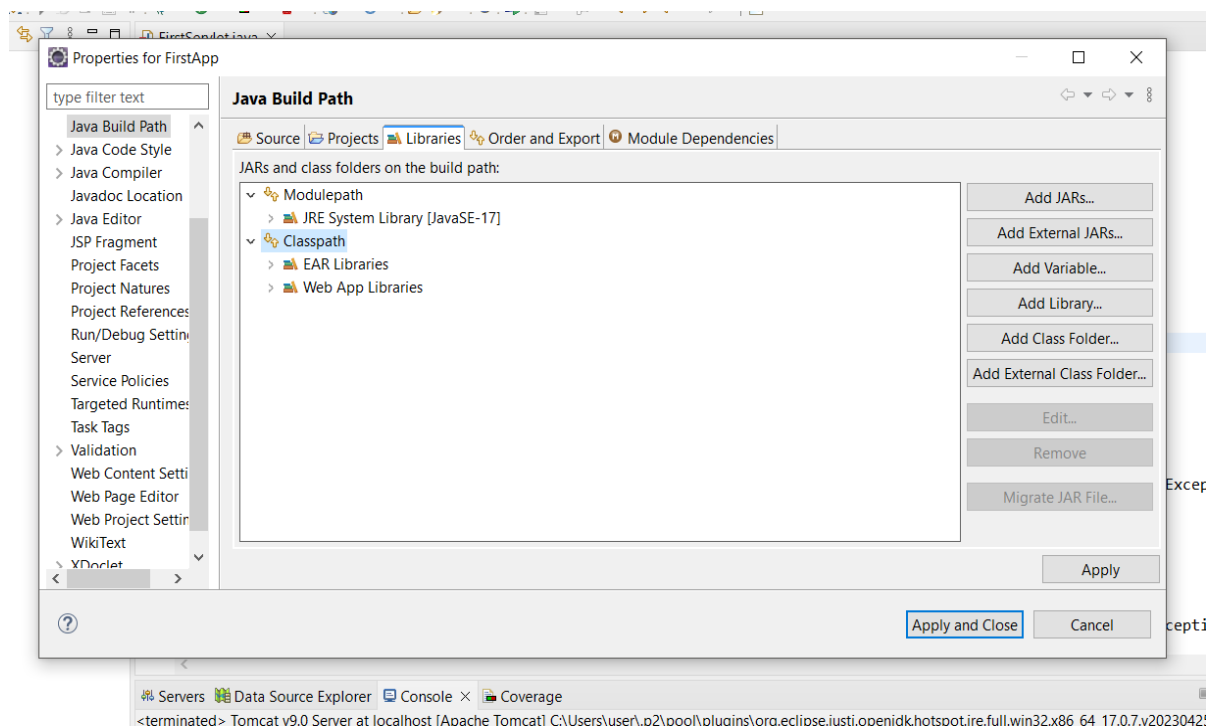
, 2023 6:48:55 PM org.apache.coyote.AbstractProtocol pause
Pausing ProtocolHandler ["http-nio-8080"]

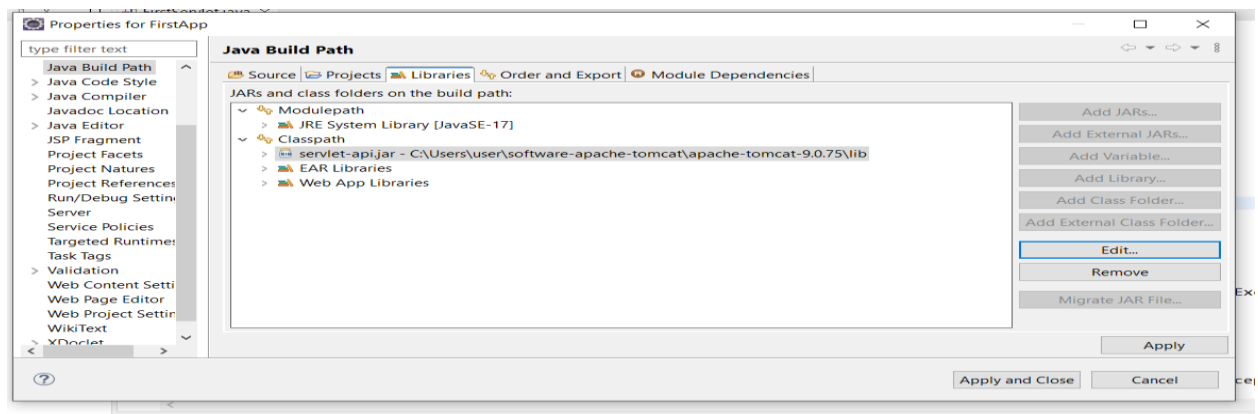
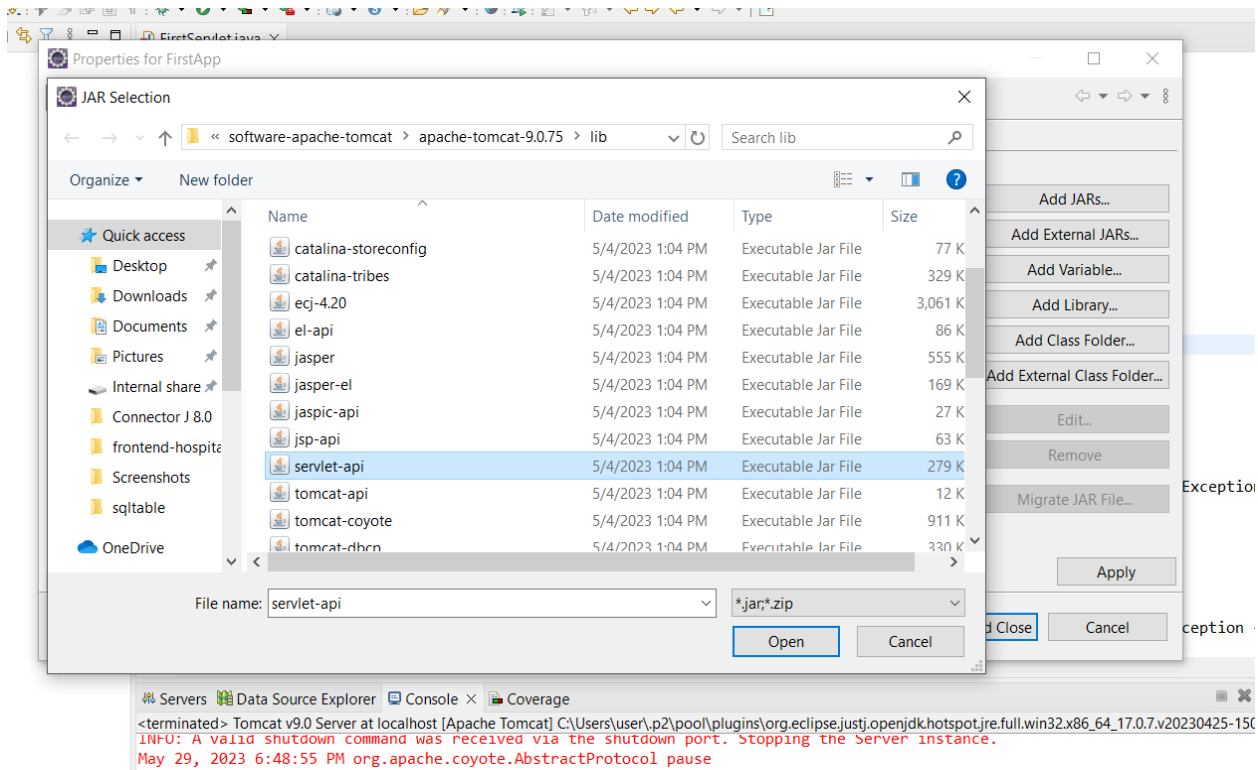
, 2023 6:48:55 PM org.apache.catalina.core.StandardService stopInternal
Stopping service [catalina]

spot.jre.full.win32.x86



c)add jar file to project





```
FirstServlet.java ×
1
2
3*import java.io.IOException;
9
10/**
11 * Servlet implementation class FirstServlet
12 */
13@WebServlet("/FirstServlet")
14public class FirstServlet extends HttpServlet {
15    private static final long serialVersionUID = 1L;
16
17    /**
18     * Default constructor.
19     */
20    public FirstServlet() {
21        // TODO Auto-generated constructor stub
22    }
23
24    /**
25     * @see HttpServlet#service(HttpServletRequest request, HttpServletResponse response)
26     */
27    protected void service(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
28        // TODO Auto-generated method stub
29    }
30
31    /**
32     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
33     */
34    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
35        // TODO Auto-generated method stub

```

3. WRITE A PROGRAM TO DEMONSTRATE THE CONCEPT OF GENERIC SERVLETS.

HTML FILE :-

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>GENERIC 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 name</td>
                    <td><input name="fname" id="fname"
maxlength=30></td>
                </tr>
                <tr valign="top">
                    <td width="40%">Enter rollno</td>
                    <td><input name="rname" id="lname"
maxlength=30></td>
                </tr>
                <tr valign="top">
                    <td colspan=2 width="100%">
                        <button>Submit</button>
                    </td>
                </tr>
            </table>
        </form>
    </center>

</body>
</html>
```

SERVLET FILE :

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

```

/**
 * @see HttpServlet#HttpServlet()
 */
public GenericServlet() {
    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 rname = request.getParameter("rname");

    PrintWriter out = response.getWriter();

    out.println("<html> your Name is " + fname + "</html>");
    out.println("<html> your Roll No is " + rname + "</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);
}
}

```

WEB.XML file :

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</display-name>
    <welcome-file-list>
        <welcome-file>index.html</welcome-file>
        <welcome-file>index.jsp</welcome-file>
    </welcome-file-list>
</web-app>

```

```
<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>
    <servlet-name>GenericServlet</servlet-name>
    <servlet-class>GenericServlet</servlet-class>
</servlet>

<servlet-mapping>
    <servlet-name>GenericServlet</servlet-name>
    <url-pattern>/name</url-pattern>
</servlet-mapping>

</web-app>
```

OUTPUT :

localhost:8080/Phase2/index.html

Enter your name

krishna

Enter rollno

123

Submit

← → ↻ ⓘ localhost:8080/Phase2/name?fname=krishna&rname=123

your Name is krishna your Roll No is 123

4.WRITE A PROGRAM TO DEMONSTRATE THE CONCEPT OF SERVLET CLASSES AND INTERFACES.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>ServletInterfaces</title>
</head>
<body>

<a href="Interface">Show Servlet Interface</a>

</body>
</html>
```

SERVLET FILE:

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

import javax.servlet.ServletConfig;
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 Interface
 */
@WebServlet("/Interface")
public class Interface extends HttpServlet {
    ServletConfig config=null;
    public void init(ServletConfig config){
        this.config=config;
        System.out.println("Initialization complete");
    }

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

    /**
```

```

    * @see Servlet#destroy()
    */
    public void destroy() {
        System.out.println("In destroy() method");
    }

    /**
     * @see Servlet#getServletConfig()
     */
    public ServletConfig getServletConfig() {
        // TODO Auto-generated method stub
        return config;
    }

    /**
     * @see Servlet#getServletInfo()
     */
    public String getServletInfo() {
        // TODO Auto-generated method stub
        return "This is a sample servlet info";
    }

    /**
     * @see HttpServlet#service(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void service(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter pwriter=response.getWriter();

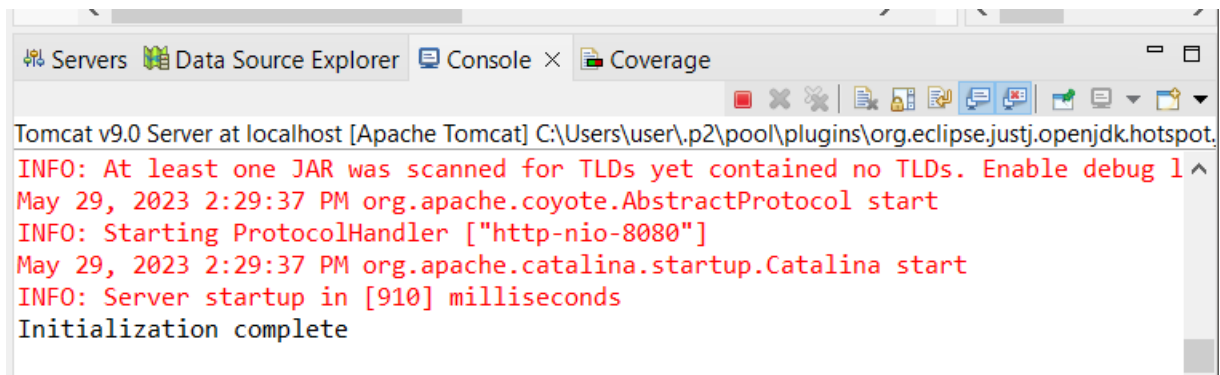
        pwriter.print("<html>");
        pwriter.print("<body>");
        pwriter.print("In the service() method<br>");
        pwriter.print("</body>");
        pwriter.print("</html>");

    }

}

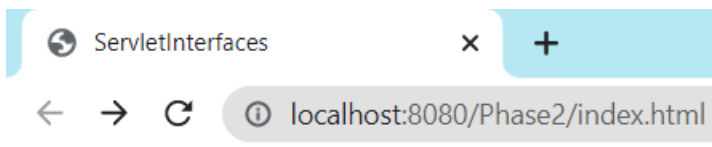
```

OUTPUT:

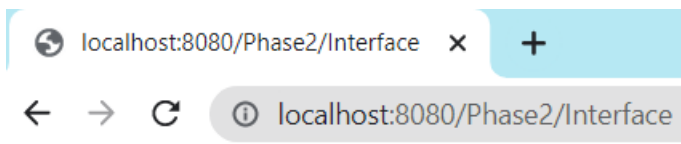


The screenshot shows the Eclipse IDE's Console window. The title bar includes tabs for 'Servers', 'Data Source Explorer', 'Console', and 'Coverage'. The console output shows the following logs:

```
Tomcat v9.0 Server at localhost [Apache Tomcat] C:\Users\user\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.  
INFO: At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug 1  
May 29, 2023 2:29:37 PM org.apache.coyote.AbstractProtocol start  
INFO: Starting ProtocolHandler ["http-nio-8080"]  
May 29, 2023 2:29:37 PM org.apache.catalina.startup.Catalina start  
INFO: Server startup in [910] milliseconds  
Initialization complete
```



[Show Servlet Interface](#)



In the service() method

5.WRITE A PROGRAM TO DEMONSTRATE A SERVLET FILTER.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>SERVLET FILTER</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>
```

SERVLET:

ACCOUNTDASHBOARD SERVLET:

```
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, HttpServletResponse response)
throws ServletException, IOException {
        // TODO Auto-generated method stub
    }
}
```

```

        response.getWriter().write("I am in Account Dashboard 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 stub
        doGet(request, response);
    }
}

```

ACCOUNTPROFILE SERVLET:

```

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 stub
            doGet(request, response);
        }
    }
}

```

INFOPAGE SERVLET:

```

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);
    }
}

```

LOGIN SERVLET:

```
import java.io.IOException;
import javax.servlet.Filter;
import javax.servlet.FilterChain;
import javax.servlet.FilterConfig;
import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;
import javax.servlet.annotation.WebServlet;
import javax.servlet.annotation.WebFilter;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

/**
 * Servlet implementation class LoginFilter
 */
@WebServlet("/LoginFilter")
public class LoginFilter implements Filter {
    private static final long serialVersionUID = 1L;

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

    /**
     * @see Servlet#init(ServletConfig)
     */
    public void init(FilterConfig fconfig) throws ServletException {
        // TODO Auto-generated method stub
    }

    /**
     * @see Servlet#destroy()
     */
    public void destroy() {
        // TODO Auto-generated method stub
    }

    /**
     * @see HttpServlet#doHead(HttpServletRequest, HttpServletResponse)
     */
    public void doFilter(ServletRequest request, ServletResponse response,
        FilterChain chain) throws IOException, ServletException {
        // TODO Auto-generated method stub
        // place your code here

        String userId = request.getParameter("userid");
```

```

        if( userId != null){
            chain.doFilter(request, response);
        }
    }
}

```

WEB.XML:

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>

    <filter>
        <filter-name>loginFilter</filter-name>
        <filter-class>LoginFilter</filter-class>
    </filter>
    <filter-mapping>
        <filter-name>loginFilter</filter-name>
        <url-pattern>/dashboard</url-pattern>
        <url-pattern>/profile</url-pattern>
    </filter-mapping>

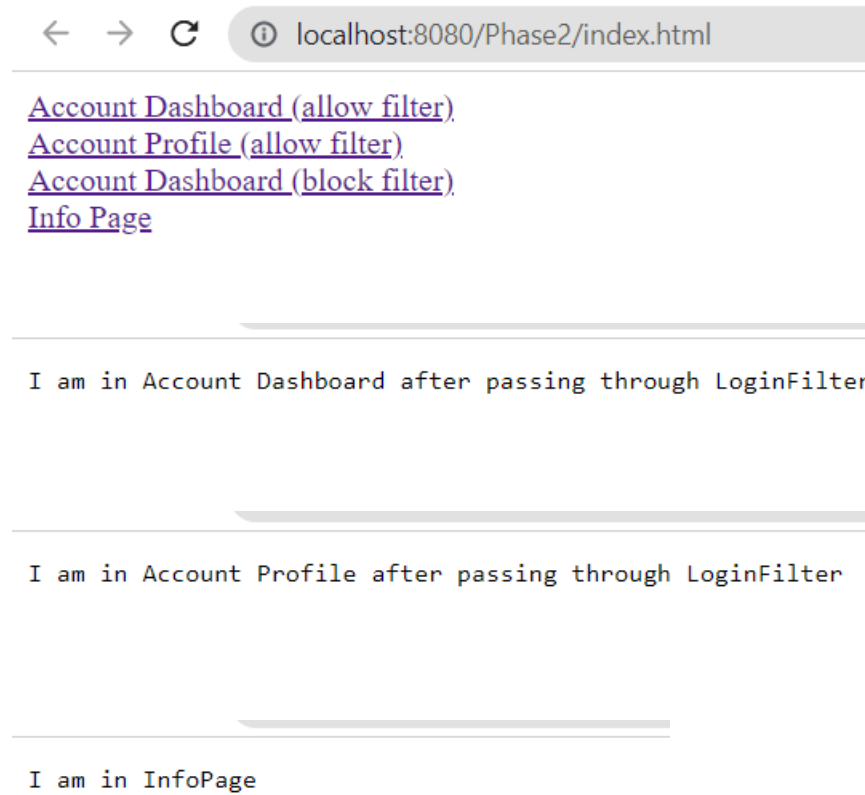
    <servlet>
        <servlet-name>AccountDashboard</servlet-name>
        <servlet-class>AccountDashboard</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>AccountProfile</servlet-name>
        <servlet-class>AccountProfile</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>InfoPage</servlet-name>
        <servlet-class>InfoPage</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>AccountDashboard</servlet-name>
        <url-pattern>/dashboard</url-pattern>
    </servlet-mapping>
    <servlet-mapping>
        <servlet-name>AccountProfile</servlet-name>
        <url-pattern>/profile</url-pattern>
    </servlet-mapping>

```

```
<servlet-mapping>
  <servlet-name>InfoPage</servlet-name>
  <url-pattern>/info</url-pattern>
</servlet-mapping>
```

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

OUTPUT:



6.WRITE A PROGRAM TO DEMONSTRATE A SESSION TRACKING USING COOKIES.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Cookies</title>
```



```

</head>
<body>

    <a href="Login?userid=admin">Dashboard with cookie login</a><br>
    <a href="dashboard">Dashboard without cookie login</a>

</body>
</html>

```

SERVLET:

LOGIN SERVLET:

```

import java.io.IOException;
import javax.servlet.http.Cookie;
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
 * @param <Cookie>
 */
@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
        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 stub
            doGet(request, response);
        }
    }
}

```

DASHBOARD SERVLET:

```

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, HttpServletResponse response)
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);
}
}

```

WEB.XML:

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Dashboard</servlet-name>
        <servlet-class>Dashboard</servlet-class>
    </servlet>
    <servlet-mapping>

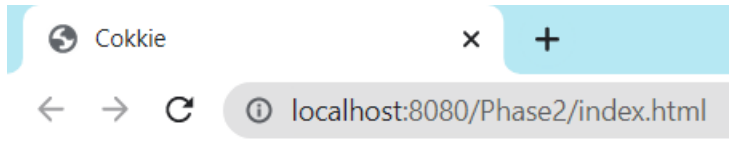
```

```

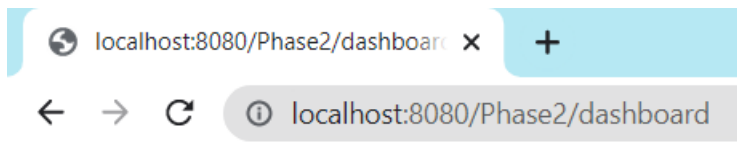
        <servlet-name>Dashboard</servlet-name>
        <url-pattern>/dashboard</url-pattern>
    </servlet-mapping>
    <servlet-mapping>
        <servlet-name>LoginServlet</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
</web-app>

```

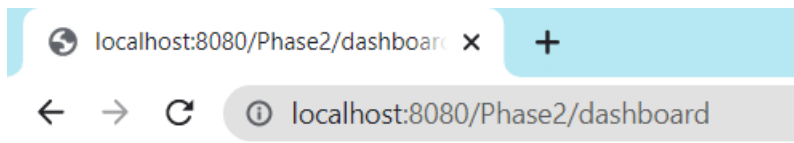
OUTPUT:



[Dashboard with cookie login](#)
[Dashboard without cookie login](#)



UserId read from cookie:admin



UserId read from cookie:admin

7.WRITE A PROGRAM TO DEMONSTRATE A SESSION TRACKING USING URL REWRITE.

HTML FILE:

```

<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>url rewrite</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>

```

SERVLET:

LOGIN SERVLET:

```

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
 * @param <Cookie>
 */
@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 stub
            doGet(request, response);
        }
    }
}

```

DASHBOARD SERVLET:

```

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);
    }
}

```

WEB.XML:

```

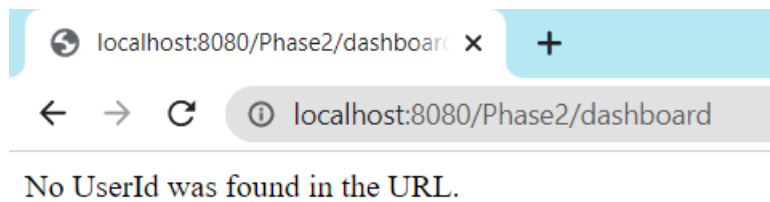
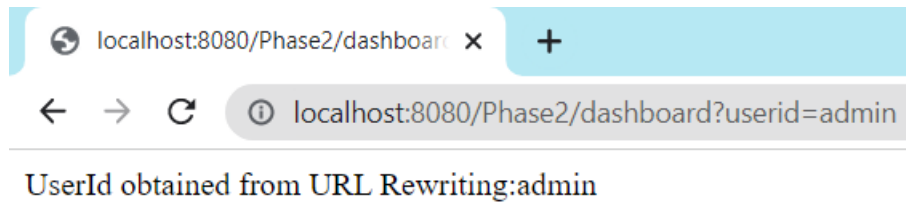
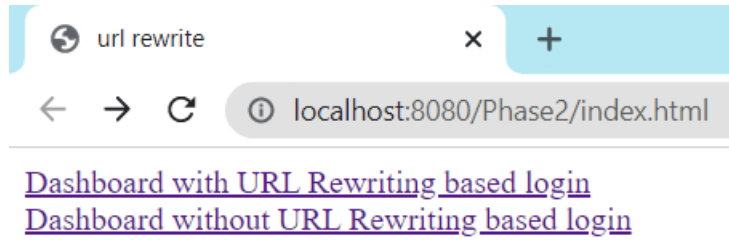
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Dashboard</servlet-name>
        <servlet-class>Dashboard</servlet-class>
    </servlet>

    <servlet-mapping>
        <servlet-name>Dashboard</servlet-name>
        <url-pattern>/dashboard</url-pattern>
    </servlet-mapping>
    <servlet-mapping>
        <servlet-name>LoginServlet</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>

</web-app>

```

OUTPUT:



8. WRITE A PROGRAM TO DEMONSTRATE SESSION TRACKING USING HIDDEN FORM FIELDS.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
```



```

<title>HIDDEN FORM FIELDS</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>

```

SERVLET:

LOGIN SERVLET:

```

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
 * @param <Cookie>
 */
@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
        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 stub
        doGet(request, response);
    }
}

```

DASHBOARD SERVLET:

```

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);
        }
    }
}

```

WEB.XML:

```

<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Dashboard</servlet-name>

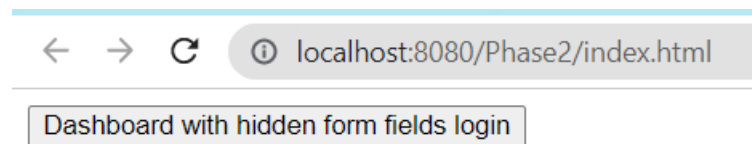
```

```
<servlet-class>Dashboard</servlet-class>
</servlet>

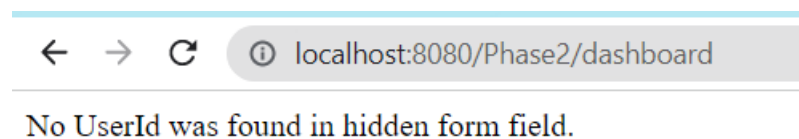
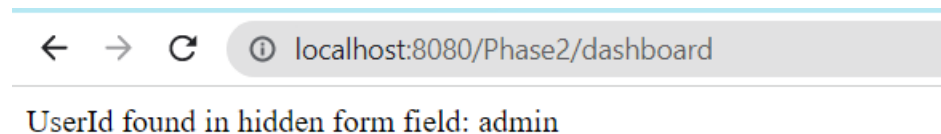
<servlet-mapping>
  <servlet-name>Dashboard</servlet-name>
  <url-pattern>/dashboard</url-pattern>
</servlet-mapping>
<servlet-mapping>
  <servlet-name>LoginServlet</servlet-name>
  <url-pattern>/login</url-pattern>
</servlet-mapping>
```

</web-app>

OUTPUT:



[Dashboard without hidden form fields login](#)



9. WRITE A PROGRAM TO DEMONSTRATE SESSION TRACKING USING AN HTTP SESSION.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>HTTP SESSION</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>
```

SERVLET FILE:

LOGIN SERVLET:

```
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
 * @param <Cookie>
 */
@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 stub
            doGet(request, response);
        }
    }
}

```

DASHBOARD SERVLET:

```

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);
    }
}

```

WEB.XML:

```

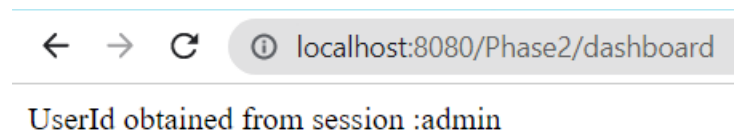
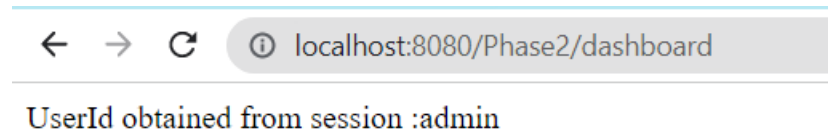
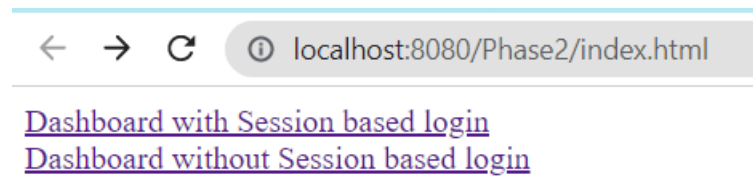
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</display-name>
    <welcome-file-list>
        <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>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Dashboard</servlet-name>
        <servlet-class>Dashboard</servlet-class>
    </servlet>

    <servlet-mapping>
        <servlet-name>Dashboard</servlet-name>
        <url-pattern>/dashboard</url-pattern>
    </servlet-mapping>
    <servlet-mapping>
        <servlet-name>LoginServlet</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>

</web-app>

```


OUTPUT:



10. WRITE A PROGRAM TO DEMONSTRATE SESSION LOGIN AND LOGOUT.

HTML FILE:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>LOGIN AND LOGOUT</title>
</head>
```

```

<body>

        <a href="Login?userid=admin">Dashboard with Login</a><br>
</body>
</html>

```

SERVLET FILE:

LOGIN SERVLET:

```

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
 * @param <Cookie>
 */
@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 {
        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 stub
            doGet(request, response);
        }
    }
}

```

DASHBOARD SERVLET:

```

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 {
        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);
    }
}

```

LOGOUT:

```

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);
    }
}

```

WEB.XML:


```

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd" id="WebApp_ID" version="4.0">
    <display-name>Phase2</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>
        <servlet-name>LoginServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Dashboard</servlet-name>
        <servlet-class>Dashboard</servlet-class>
    </servlet>
    <servlet>
        <servlet-name>Logout</servlet-name>
        <servlet-class>Logout</servlet-class>
    </servlet>
    <servlet-mapping>
        <servlet-name>Logout</servlet-name>
        <url-pattern>/logout</url-pattern>
    </servlet-mapping>
    <servlet-mapping>

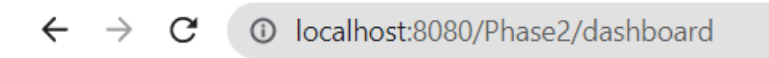
```

```
        <servlet-name>LoginServlet</servlet-name>
        <url-pattern>/login</url-pattern>
    </servlet-mapping>
    <servlet-mapping>
        <servlet-name>Dashboard</servlet-name>
        <url-pattern>/dashboard</url-pattern>
    </servlet-mapping>
</web-app>
```

OUTPUT:

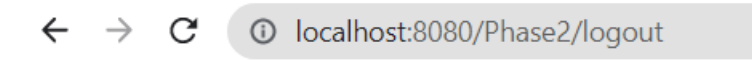
A browser address bar with navigation buttons (back, forward, refresh) and an information icon. The address is localhost:8080/Phase2/index.html.

[Dashboard with Login](#)

A browser address bar with navigation buttons and an information icon. The address is localhost:8080/Phase2/dashboard.

UserId obtained from session :admin

[Logout of session](#)

A browser address bar with navigation buttons and an information icon. The address is localhost:8080/Phase2/logout.

Logged out of session.