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

Servlet :-

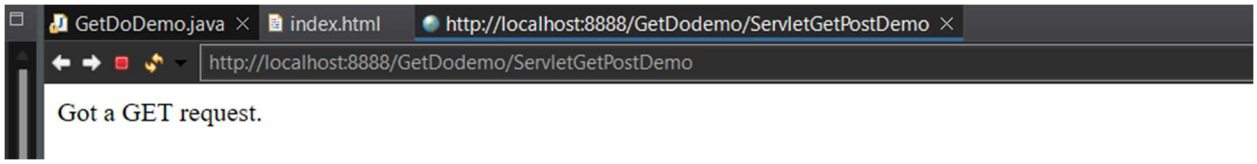
```
package demo;

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

    /**
     * @see HttpServlet#HttpServlet()
     */
    public GetDoDemo() {
        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("Got a GET request.");
      }
    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
      PrintWriter out = response.getWriter();
            out.println("Got a POST request.");
}
}
```

Html

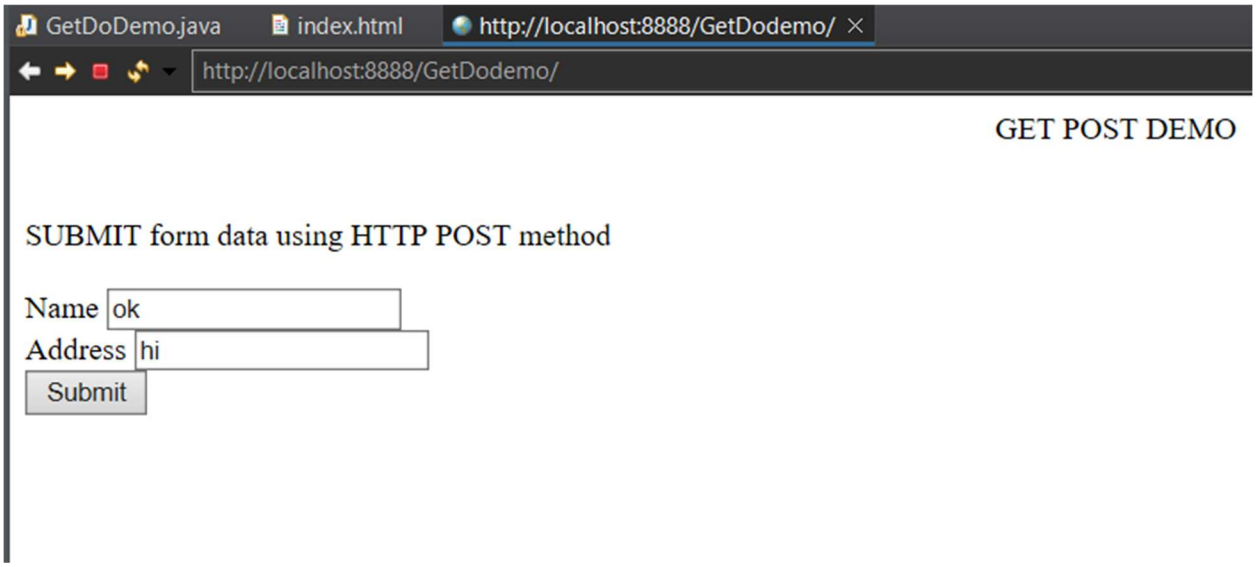
```
<!DOCTYPE html>

<html>

<head>

<meta charset="UTF-8">

<center>GET POST DEMO</center>

</head>

<body>
<br><br>
SUBMIT form data using HTTP POST method

<br><br>

      <form name=frm method=POST action="ServletGetPostDemo">

            Name <input name="name" id="name" maxlenght=50><br>

            Address <input name="address" id="address" maxlength=100><br>

            <button>Submit</button>

      </form>
</body>

</html>
```

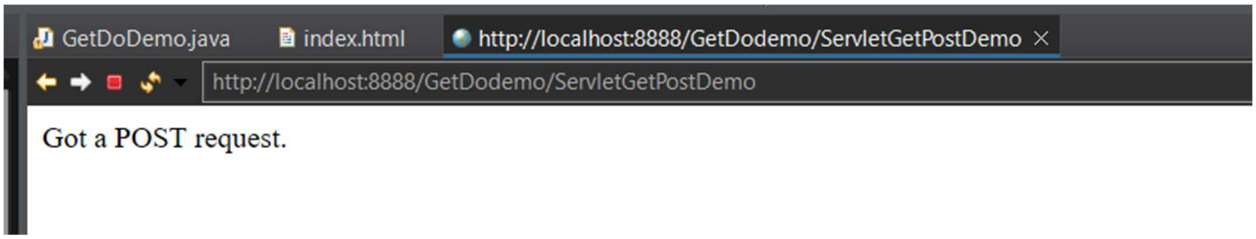
OUTPUT

Get method



Post method


GetDoDemo.java
index.html
http://localhost:8888/GetDodemo/
http://localhost:8888/GetDodemo/
GET POST DEMO
SUBMIT form data using HTTP POST method
Name ok
Address hi
Submit

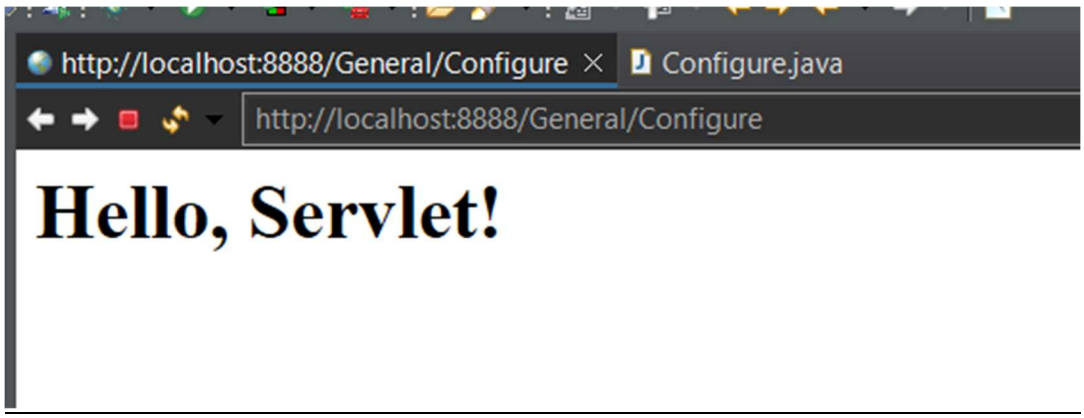

GetDoDemo.java
index.html
http://localhost:8888/GetDodemo/ServletGetPostDemo
http://localhost:8888/GetDodemo/ServletGetPostDemo
Got a POST request.

2. Configure a servlet in Eclipse IDE.

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

    public Configure() {
        super();
        // TODO Auto-generated constructor stub
    }
	protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
		response.setContentType("text/html");
        response.getWriter().println("<h1>Hello, Servlet!</h1>");
	}
}
```

OUTPUT



3.Write a program to demonstrate the concept of Generic Servlets.

Servlet

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

import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;

@WebServlet("/MyGenericServlet")
public class MyGenericServlet extends HttpServlet {
	private static final long serialVersionUID = 1L;
	  /*  public MyGenericServlet() {
	        super();
	        // TODO Auto-generated constructor stub
	    }*/

	@Override

	public void service(ServletRequest req, ServletResponse res) throws
ServletException, IOException {

		PrintWriter out = res.getWriter();

		out.println("I am a Generic servlet. Got a request. ");



	}

}
```

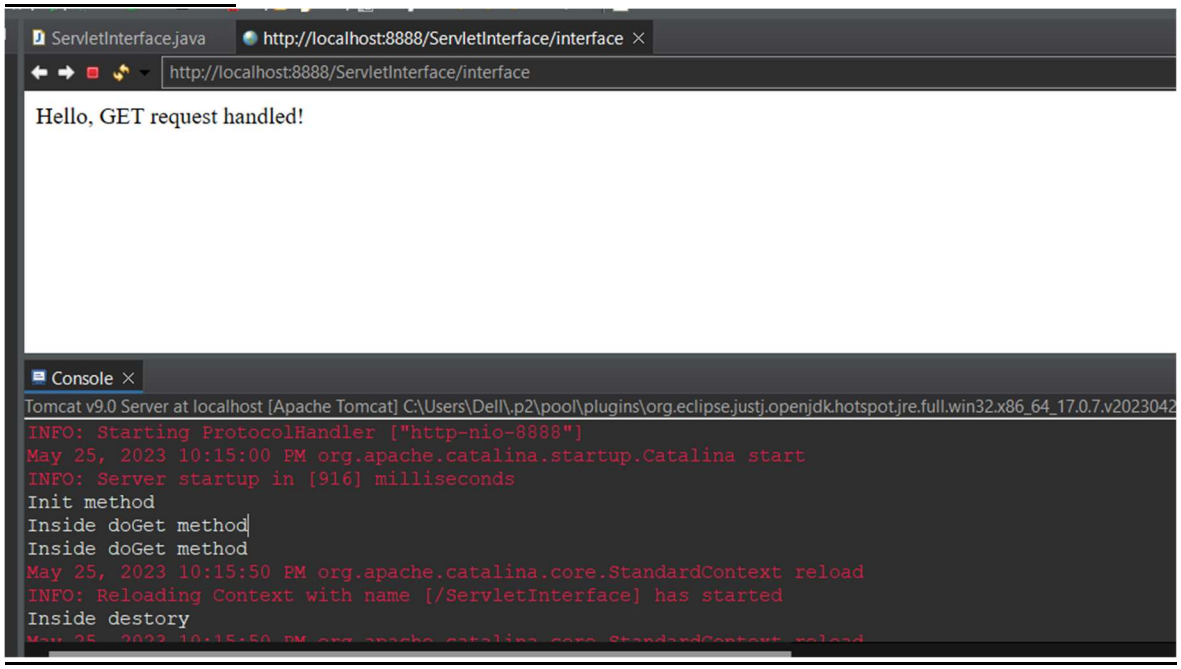
OUTPUT

4.Write a program to demonstrate the concept of Servlet Classes and Interfaces

ServletInterface: -

```
package interface1;
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;
@WebServlet("/interface")
public class ServletInterface extends HttpServlet {
    private static final long serialVersionUID = 1L;
     public void init() throws ServletException {
       System.out.println("Init method");
    }
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.getWriter().println("Hello, GET request handled!");
        System.out.println("Inside doGet method");
    }
     public void destroy() {
      System.out.println("Inside destory");
    }
}
```

OUTPUT: -



5. Write a program to demonstrate a Servlet Filter.

Index.html

```
<center><h2>Servlet Filter Demo</h2></center>

<a href="dashboard?userid=johndoe">Account Dashboard (allow filter)</a>
<br><br>
<a href="profile?userid=johndoe">Account Profile (allow filter)
</a>
<br><br>
<a href="dashboard">Account Dashboard (block filter)</a>
<br><br>
<a href="info">Info Page </a>
<br>
```

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_3_1.xsd" id="WebApp_ID"
version="3.1">
  <display-name>FilterDemo</display-name>
  <welcome-file-list>
    <welcome-file>index.html</welcome-file>
    <welcome-file>index.htm</welcome-file>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>default.html</welcome-file>
    <welcome-file>default.htm</welcome-file>
    <welcome-file>default.jsp</welcome-file>
  </welcome-file-list>

  <filter>
  <filter-name>LoginFilter</filter-name>
  <filter-class>filterdemof.LoginFilter</filter-class>
  </filter>

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

</web-app>
```

AccountDashboard

```
package filterDemo;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.*;

@WebServlet("/dashboard")

public class AccountDashboard extends HttpServlet {


	protected void doGet(HttpServletRequest request, HttpServletResponse
response)

			throws ServletException, IOException {

		PrintWriter out = response.getWriter();

		out.println("I am in Account Dashboard after passing through
LoginFilter");



	}

	protected void doPost(HttpServletRequest request, HttpServletResponse
response)

			throws ServletException, IOException {


		doGet(request, response);

	}

}
```

AccountProfile

```
package filterDemo;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.*;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.*;

@WebServlet("/profile")

public class AccountProfile extends HttpServlet {

	private static final long serialVersionUID = 1L;

	protected void doGet(HttpServletRequest request, HttpServletResponse
response)

			throws ServletException, IOException {

		PrintWriter out = response.getWriter();

		out.println("I am in Account Profile after passing through
LoginFilter");

	}

	protected void doPost(HttpServletRequest request, HttpServletResponse
response)

			throws ServletException, IOException {

		doGet(request, response);

	}

}
```

Infoservlet

```
package filterDemo;

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/info")
public class InfoServlet extends HttpServlet {

	private static final long serialVersionUID = 1L;

	protected void doGet(HttpServletRequest request, HttpServletResponse response)
				throws ServletException, IOException {
		PrintWriter out = response.getWriter();
		out.println("I am in Info Servlet. No filter is in front of me");

	}

	protected void doPost(HttpServletRequest request, HttpServletResponse response)
				throws ServletException, IOException {

		doGet(request, response);
	}
}
```

FILTER

LoginFilter

```
package filterdemof;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.Filter;
import javax.servlet.FilterChain;
import javax.servlet.FilterConfig;
import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;
```

```
public class LoginFilter implements Filter {

	public void doFilter(ServletRequest request, ServletResponse response, FilterChain chain)
			throws IOException, ServletException {
		PrintWriter out = response.getWriter();

		// Business logic
		String userId = request.getParameter("userid");

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

		else
			out.println("Userid not present. So request is blocked!");

	}

	public void init(FilterConfig fConfig) throws ServletException {

	}

	public void destroy() {

	}
}
```

OUTPUT

6.Write a program to demonstrate a Session Tracking using Cookies.

CookieCreatorServlet

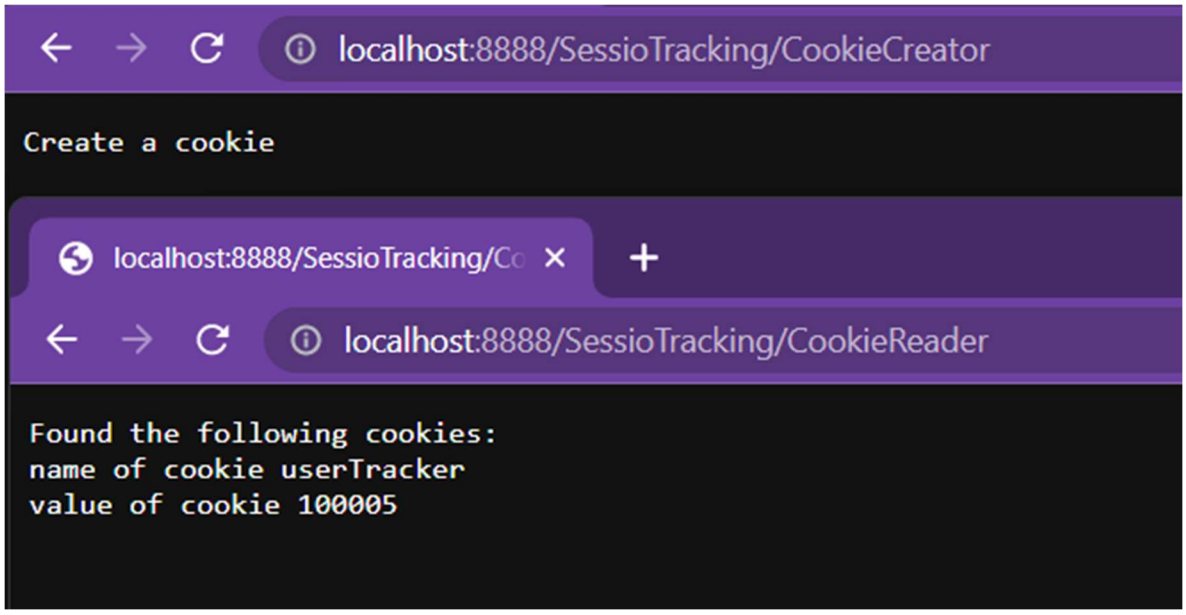
```
package cookieCreater;
import java.io.*;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

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

	protected void doGet(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {


		PrintWriter out = response.getWriter();

		// Create the cookies.
		Cookie c1 = new Cookie("userTracker","100005");
		response.addCookie(c1);

		out.println("Create a cookie");

	}

}
```

CookieReaderServlet

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

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

```
	protected void doGet(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {
		PrintWriter out = response.getWriter();

		// read the cookies coming from the browser request
		Cookie[] cookies = request.getCookies();

		out.println("Found the following cookies:");
		for (Cookie cookie : cookies) {
			out.println("name of cookie " + cookie.getName());
			out.println("value of cookie " + cookie.getValue());
			out.println();
		}
	}

}
```

OUTPUT



7. Write a program to demonstrate a Session Tracking using URL Rewrite.

index.html

```
<body>

	<h3>Go to Dashboard with URL Rewriting based login</h3>
	<form method="POST" action="login">
		<br>UserID <input name="userid"> <br> <input
			type=submit>

	</form>

	<br>
	<br>
	<h3>Go to Dashboard without URL Rewriting based login by clicking the
link below</h3>
	<a href="dashboard"> Go to Dashboard without URL Rewriting based
		login</a>

</body>
```

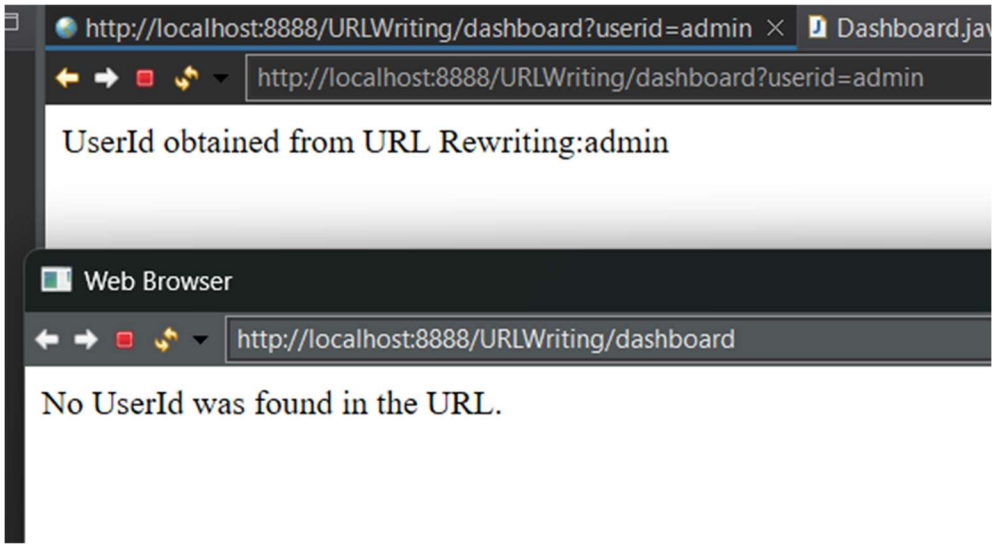
Login servlet

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {

	protected void doPost(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {

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

		response.sendRedirect("dashboard?userid=" + userId);
	}
}
```

Dashboard

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

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

	protected void doGet(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {

		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>");
	}

}
```

OUTPUT


http://localhost:8888/URLWriting/dashboard?userid=admin
Dashboard.jav
http://localhost:8888/URLWriting/dashboard?userid=admin
UserId obtained from URL Rewriting:admin
Web Browser
http://localhost:8888/URLWriting/dashboard
No UserId was found in the URL.

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

Index.html

```
<body>

	<h3>Go to Dashboard with hidden form fields based login</h3>
	<form method="POST" action="login">
		<br>UserID <input name="userid"> <br> <input
			type=submit>

	</form>

	<br>
	<br>
	<h3>Go to Dashboard without hidden form feilds based login by clicking
the link below</h3>
	<a href="dashboard"> Go to Dashboard without Hidden form fields based
		login</a>

</body>
```

Loginservlet

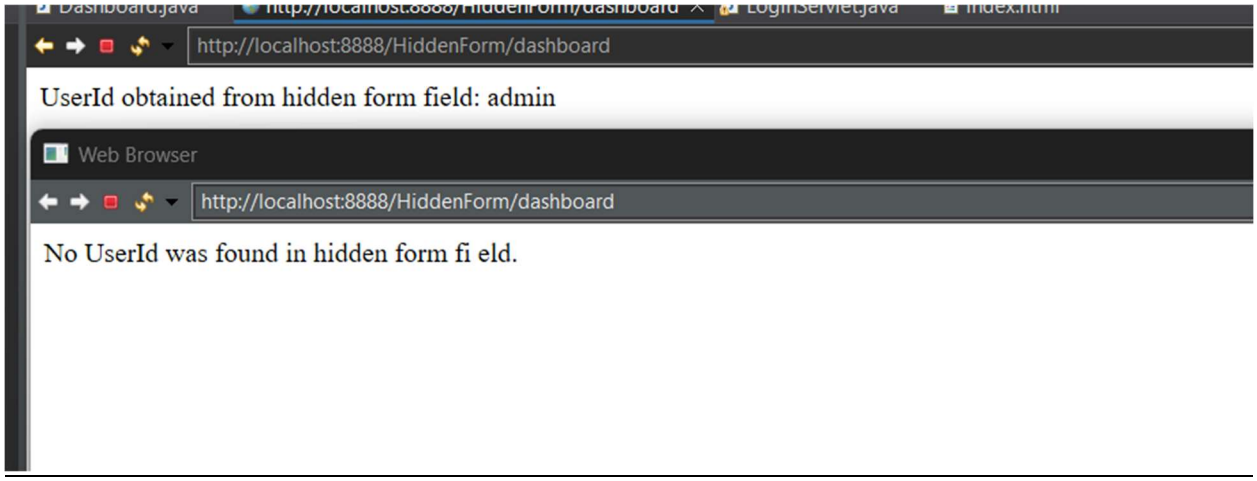
```
package hidden;
import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {

	protected void doPost(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {
		PrintWriter out = response.getWriter();
		out.println("<html><body>");

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

		// Create the form with hidden fields
		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>");

        }

}
```

Dashboard

```
package hidden;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

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

      protected void doGet(HttpServletRequest request, HttpServletResponse
response)
                  throws ServletException, IOException {
            doPost(request, response);
      }
      protected void doPost(HttpServletRequest request, HttpServletResponse
response)
                  throws ServletException, IOException {

            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 fi
eld.<br>");
            } else {
                  out.println("UserId obtained from hidden form field: " +
userId + "<br>");
            }

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

}
```

OUTPUT


Dashboard.java
http://localhost:8888/HiddenForm/dashboard
LoginServlet.java
index.html
http://localhost:8888/HiddenForm/dashboard
UserId obtained from hidden form field: admin
Web Browser
http://localhost:8888/HiddenForm/dashboard
No UserId was found in hidden form fi eld.

9.Write a program to demonstrate Session Tracking using an HTTP Session.

Index.html

```
<body>

	<h3>Login here and then go to Dashboard, to see your userid there</h3>
	<form method="POST" action="login">
		<br>UserID <input name="userid">
		<br> <input type=submit>

	</form>

	<br>
	<br>
	<h3>Go to Dashboard without HTTP Session based login by clicking the
link below</h3>
	<a href="dashboard"> Go to Dashboard without HTTP Session  fields based
login</a>

</body>
```

Loginservlet

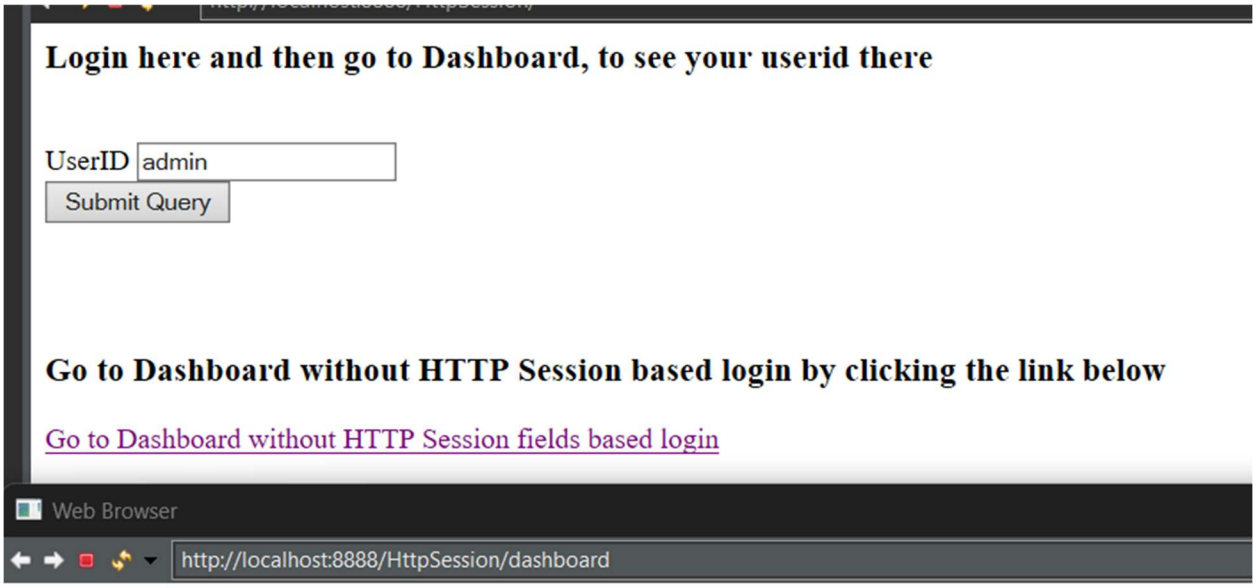
```
package httpSession;

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {

	protected void doPost(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {

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

		// Create the HTTP session
		// and add the user id into it
		HttpSession session = request.getSession(true);
		//getSession(true) means if a session already (someother servlet has created)
		// then use that session object. Otherwise create a new empty session object.

		session.setAttribute("userid", userId);
```

```
		PrintWriter out = response.getWriter();
		out.println("Http Session object has been created."
				+ " You can go to the dashboard and check your userid is there");

	}
}
```

Dashboard

```
package httpSession;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;
@WebServlet("/dashboard")
public class Dashboard extends HttpServlet {
	private static final long serialVersionUID = 1L;

	protected void doGet(HttpServletRequest request, HttpServletResponse response)
			throws ServletException, IOException {
		PrintWriter out = response.getWriter();
		out.println("<html><body>");

		// Retrieve the HTTP session object
		// and extract the userid from it
		HttpSession session = request.getSession(false);
		// getSession(false) means if a session already exist (someother servlet has
		// created it)
		// then use that session object. Otherwise DONT CREATE a new session object,
		// let the session object be null.
if (session == null) {
			out.println("No http session object found");
		}

		else {
			String userId = (String) session.getAttribute("userid");

			if (userId != null) {
				out.println("UserId obtained from session :" + userId + "<br>");
			} else {
				out.println("UserId not found in the  session  object. <br>");
			}
		}
	}
}
```

OUTPUT



UserId obtained from session :admin

10.Write a program to demonstrate Session Login and Logout.

Login.html

```
<!DOCTYPE html>
<html>
<head>

</head>
<body>
<h3>Login Here</h3>
<form method="POST" action="login">
            <br>UserID <input name="userid">
            <br>Password <input type="password" name="pwd">
            <br> <input type=submit>

      </form>


</body>
</html>
```

LoginServlet

```
package loginlogout;

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

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet("/login")
public class LoginServlet extends HttpServlet {

        protected void doPost(HttpServletRequest request, HttpServletResponse response)
                        throws ServletException, IOException {

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


                HttpSession session = request.getSession(true);

                session.setAttribute("userid", userId);

                PrintWriter out = response.getWriter();
                out.println("<html>Http Session object has been created."
```

```
                                        + " You can go to the dashboard<a href='dashboard'>Dashboard </a>
and check your userid is there</html>");
        }

}
```

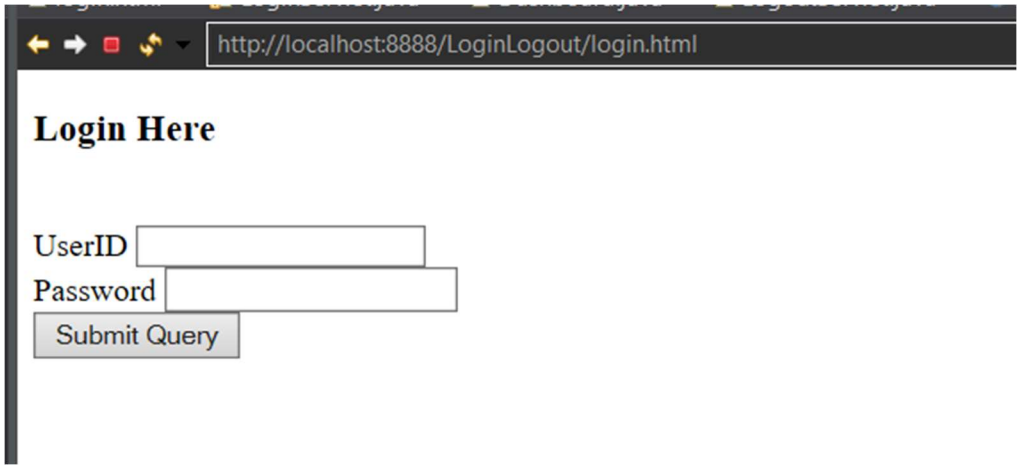
Dashboard

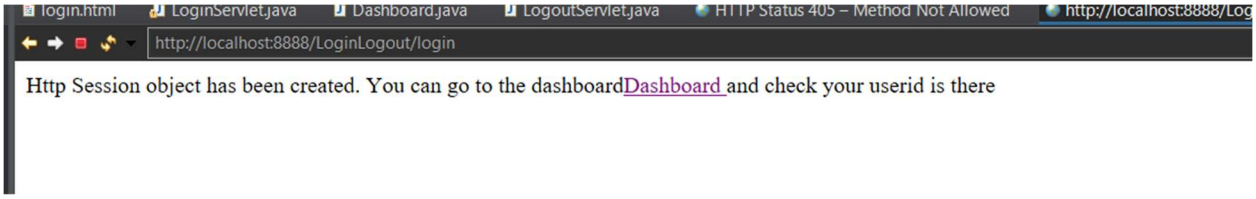
```
package loginlogout;

import java.io.*;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

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

        protected void doGet(HttpServletRequest request, HttpServletResponse response)
                        throws ServletException, IOException {
                PrintWriter out = response.getWriter();
                out.println("<html><body>");

                HttpSession session = request.getSession(false);

                if (session == null) {
                        out.println("No http session object found");
                }
else {
                        String userId = (String) session.getAttribute("userid");

                        if (userId != null) {
                                out.println("UserId obtained from session :" + userId + "<br>");
                                out.println("<a href='logout'>Logout of session</a><br>");

                        } else {
                                out.println("UserId not found in the  session  object. <br>");
                        }
}
        }
}
```

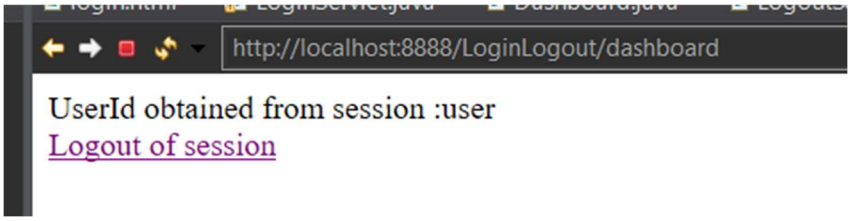
LogoutServlet

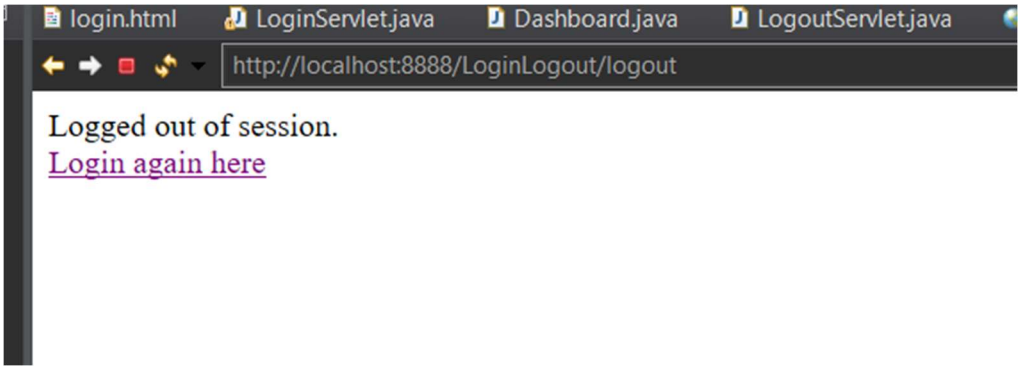
```
package loginlogout;
import java.io.IOException;
import java.io.PrintWriter;

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;

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

	protected void doGet(HttpServletRequest request, HttpServletResponse
response)
			throws ServletException, IOException {

		HttpSession session = request.getSession();
		session.invalidate(); // destroy the session and its contents

		PrintWriter out = response.getWriter();
		out.println("<html><body>");
		out.println("Logged out of session.<br>");
		out.println("<a href='login.html' >Login again here</a> <br>");
		out.println("</body></html>");

	}

}
```

OUTPUT




login.html
LoginServlet.java
Dashboard.java
LogoutServlet.java
HTTP Status 405 – Method Not Allowed
http://localhost:8888/Log
http://localhost:8888/LoginLogout/login
Http Session object has been created. You can go to the dashboardDashboard and check your userid is there


http://localhost:8888/LoginLogout/dashboard
UserId obtained from session :user
Logout of session


login.html
LoginServlet.java
Dashboard.java
LogoutServlet.java
http://localhost:8888/LoginLogout/logout
Logged out of session.
Login again here