

Exp -06:	Write a Servlet to demonstrate session tracking using HttpSession. Implement a simple login system where the user's session is tracked.
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Aim

To implement session tracking in a Java Servlet using **HttpSession**, demonstrating how a simple login system can maintain user session data across multiple requests for an enhanced user experience.

Algorithm

1. Start

- The user opens the login page in a web browser.

2. Display Login Form

- The HTML page loads a login form with two input fields:
 - Username** (text input)
 - Password** (password input)
- A submit button is provided to send the login credentials.
- The form is styled to be **centered** and visually appealing.
- Aesthetic enhancements like background color, rounded corners, shadow effects, and hover effects for buttons are applied.

4. Submit Form Data

- The user enters their username and password.
- Upon clicking the **Login** button, the form sends the data using the **POST** method to LoginServlet.

5. Handle Request in Java Servlet

- The servlet retrieves the **username** and **password** from the request parameters.
- It verifies the credentials against stored values or a database.

6. Display Response

- If the login is successful:
 - Redirect the user to a **dashboard or homepage**.
- If login fails:
 - Show an **error message** and prompt the user to try again.

7. End

- The user either logs in successfully or is asked to re-enter their credentials.

CODE:

HTML :

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>Login Page</title>
```

```
<style>
  body {
    font-family: Arial, sans-serif;
    background-color: #f4f4f9;
    display: flex;

    justify-content:
    center;    align-items:
    center; height: 100vh;
    margin: 0;
  }
  .login-container { background-color: #fff;
    padding: 30px; border-radius: 10px; box-
    shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
    width: 350px; text-align: center;
  } h2
  {
    color: #333; margin-bottom:
    20px;
  }
  .form-group { margin-
  bottom: 15px; text-
  align: left; } label {
    font-weight: bold;
    display: block;
    margin-bottom:
    5px;
  }
  input[type="text"], input[type="password"] {
    width: 100%;
    padding: 10px; border:
    1px solid #ccc; border-
```

```
        radius: 5px; box-
        sizing: border-box;
    }
    .btn {
        background-color: #4CAF50;
        color: white; padding: 10px
        20px; border: none; border-
        radius: 5px; cursor: pointer;
        width: 100%; font-size:
        16px; transition: 0.3s;
    }
    .btn:hover { background-color:
        #45a049;
    }
</style>
</head>
<body>
    <div class="login-container">
        <h2>Login Form</h2>
        <form action="LoginServlet" method="post">
            <div class="form-group">
                <label for="username">Username:</label>
                <input type="text" id="username" name="username" required>
            </div>
            <div class="form-group">
                <label for="password">Password:</label>
                <input type="password" id="password" name="password" required>
            </div>
            <input type="submit" class="btn" value="Login">
        </form>
    </div>
</body>
```

</html>

Servlet.java:

```
package com.example.session;
import java.io.*; import
javax.servlet.*; import
javax.servlet.http.*;
```

```
public class LoginServlet extends HttpServlet {
    private static final String USERNAME = "admin"; private
    static final String PASSWORD = "password";

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

        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

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

        if(USERNAME.equals(username) && PASSWORD.equals(password)) {
            HttpSession session = request.getSession(true);
            session.setAttribute("username", username);
            response.sendRedirect("WelcomeServlet");
        } else { out.println("<h3>Invalid credentials. Please try
again.</h3>"); out.println("<a href='login.html'>Back to
Login</a>"); }
    }
}
```

```
package com.example.session;
import java.io.*; import
javax.servlet.*; import
javax.servlet.http.*;
```

```
public class LogoutServlet extends HttpServlet { protected void
doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {

    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    HttpSession session = request.getSession(false);

    if(session != null) {
        String username = (String) session.getAttribute("username"); session.invalidate();
        out.println("<h3>" + username + ", you have been logged out.</h3>");
    } else { out.println("<h3>You were not logged
in!</h3>");
    }
}
```

```

        out.println("<a href='login.html'>Login again</a>"); }
    }

package com.example.session; import
java.io.*;
import java.text.SimpleDateFormat;
import java.util.Date; import
javax.servlet.*;
import javax.servlet.http.*;

public class WelcomeServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
        ServletException, IOException {

        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        HttpSession session = request.getSession(false);

        if(session == null || session.getAttribute("username") == null) {
            response.sendRedirect("login.html");
            return;
        }

        String username = (String) session.getAttribute("username");
        SimpleDateFormat sdf = new SimpleDateFormat("MMM dd, yyyy HH:mm:ss");

        out.println("<html><head><title>Welcome</title></head><body>"
        ); out.println("<h2>Welcome, " + username + "!</h2>");
        out.println("<p>Session ID: " + session.getId() + "</p>");
        out.println("<p>Last accessed: " + sdf.format(new
        Date(session.getLastAccessedTime())) + "</p>");
        out.println("<form action='LogoutServlet' method='post'>");
        out.println("<input type='submit' value='Logout'>");
        out.println("</form></body></html>"); }
    }

```

web.xml :

```

<web-app xmlns="http://java.sun.com/xml/ns/javaee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
    http://java.sun.com/xml/ns/javaee/web-app_3_1.xsd"
    version="3.1">

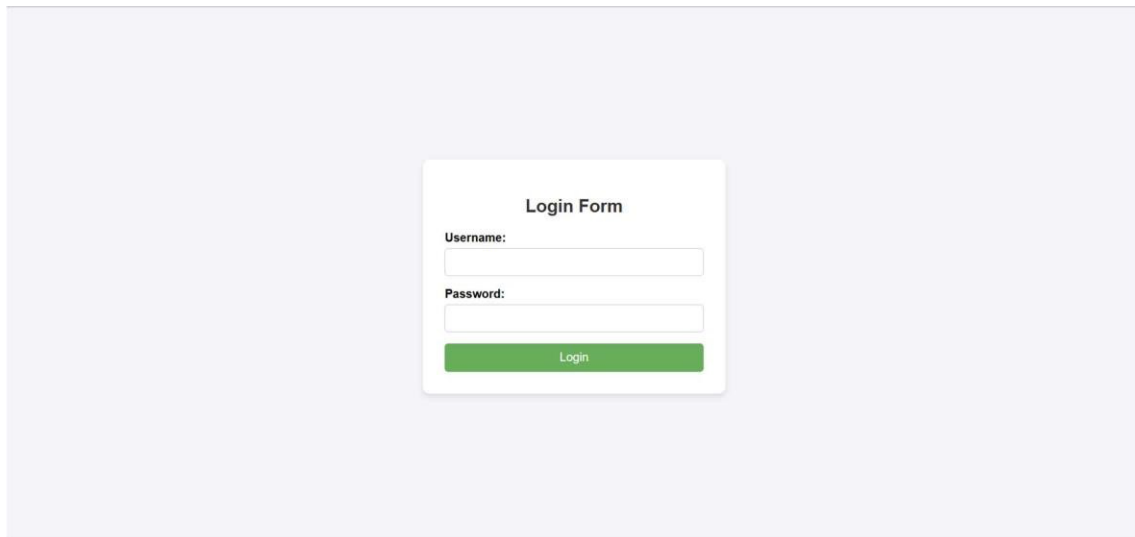
    <servlet>
        <servlet-name>DemoServlet</servlet-name>
        <servlet-class>DemoServlet</servlet-class>
    </servlet>

    <servlet-mapping>

```

```
<servlet-name>DemoServlet</servlet-name>  
<url-pattern>/DemoServlet</url-pattern>  
</servlet-mapping>  
</web-app>
```

OUTPUT :

A screenshot of a web application interface. In the center, there is a white rectangular box with a subtle drop shadow, titled "Login Form". Inside this box, there are two input fields. The first is labeled "Username:" and the second is labeled "Password:". Below these fields is a green rectangular button with the text "Login" in white. The entire form is centered on a light gray background.

RESULT :

Thus the give program is executed successfully

