

Java Full Stack Lab Manual - JDBC Experiment

Aim

To create a login form and perform session management using Cookies, HttpSession, and URL Rewriting.

Technologies Used

Java, JSP, Servlets, Apache Tomcat, HTML

Directory Structure

```
LoginDemo/  
|  
+- login.html  
+- loginServlet.java  
+- welcome.jsp  
+- logout.jsp  
+- WEB-INF/  
    +- web.xml
```

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login.html

```
<html>
<head><title>Login Page</title></head>
<body>
  <form action="login" method="post">
    Username: <input type="text" name="uname" /><br>
    Password: <input type="password" name="pass" /><br>
    <input type="submit" value="Login" />
  </form>
</body>
</html>
```

loginServlet.java

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

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

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

        String uname = request.getParameter("uname");
        String pass = request.getParameter("pass");

        if (pass.equals("admin123")) {
            Cookie ck = new Cookie("username", uname);
            response.addCookie(ck);

            HttpSession session = request.getSession();
            session.setAttribute("username", uname);

            response.sendRedirect("welcome.jsp?user=" + uname);
        } else {
            out.println("Invalid credentials!");
            RequestDispatcher rd = request.getRequestDispatcher("login.html");
            rd.include(request, response);
        }
    }
}
```

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welcome.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" %>
<html>
<body>
<%
    String userFromCookie = null;
    Cookie[] cks = request.getCookies();
    if (cks != null) {
        for (Cookie ck : cks) {
            if (ck.getName().equals("username")) {
                userFromCookie = ck.getValue();
                break;
            }
        }
    }

    HttpSession session = request.getSession(false);
    String userFromSession = (session != null) ? (String) session.getAttribute("username") : null;

    String userFromURL = request.getParameter("user");
%>

<h2>Welcome <%= userFromURL %> (via URL Rewriting)</h2>
<h3>From Session: <%= userFromSession %></h3>
<h3>From Cookie: <%= userFromCookie %></h3>

<a href="logout.jsp">Logout</a>
</body>
</html>
```

logout.jsp

```
<%@ page import="javax.servlet.http.*, javax.servlet.*" %>
<%
    HttpSession session = request.getSession(false);
    if (session != null) {
        session.invalidate();
    }

    Cookie ck = new Cookie("username", "");
    ck.setMaxAge(0);
    response.addCookie(ck);
%>

<h2>You have successfully logged out!</h2>
<a href="login.html">Login Again</a>
```

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web.xml

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

  <servlet>
    <servlet-name>login</servlet-name>
    <servlet-class>loginServlet</servlet-class>
  </servlet>

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

  <welcome-file-list>
    <welcome-file>login.html</welcome-file>
  </welcome-file-list>
</web-app>
```

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Expected Output

```
Welcome Madhu (via URL Rewriting)
From Session: Madhu
From Cookie: Madhu
```

Result

Successfully implemented state management in Servlets using Cookies, HttpSession, and URL Rewriting.