

Experiment No. 1b

Implement a Java Servlet (`SessionServlet`) to demonstrate session tracking using cookies and session objects. The servlet should:

- Display a login form when accessed initially.
- Handle login functionality via a POST request, validating username and password.
- Upon successful login, store username in a session attribute and display a welcome message with logout option.
- Implement logout functionality to invalidate the session upon user request.

Display session information including session ID, creation time, and last accessed time on the response page.

```
package com.example;
```

```
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("/ServletDemo/SessionServlet")
public class SessionServlet extends HttpServlet {
```

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

        // Check if the logout action is requested
        String action = request.getParameter("action");
```

```

if ("logout".equals(action)) {
    HttpSession session = request.getSession(false);
    if (session != null) {
        session.invalidate(); // Invalidate the session
    }
    response.sendRedirect("SessionServlet"); // Redirect to the login page
    return;
}

// Check if session exists
HttpSession session = request.getSession(false);
if (session != null && session.getAttribute("username") != null) {
    // User is logged in, display welcome message and session info
    out.println("<html><head><title>Welcome</title></head><body>");
    out.println("<h2>Welcome, " + session.getAttribute("username") + "!</h2>");
    out.println("<p><a href='SessionServlet?action=logout'>Logout</a></p>");
    out.println("<h3>Session Information:</h3>");
    out.println("<p>Session ID: " + session.getId() + "</p>");
    out.println("<p>Creation Time: " + new java.util.Date(session.getCreationTime()) + "</p>");
    out.println("<p>Last Accessed Time: " + new java.util.Date(session.getLastAccessedTime()) + "</p>");
    out.println("</body></html>");
}
else {
    // User is not logged in, display login form
    out.println("<html><head><title>Login</title></head><body>");
    out.println("<h2>Login</h2>");
    out.println("<form method='post' action='SessionServlet'>");
    out.println("Username: <input type='text' name='username'> <br><br>");
}

```

```
        out.println("Password: <input type='password' name='password'> <br><br>");
        out.println("<input type='submit' value='Login'>");
        out.println("</form>");
        out.println("</body> </html>");
    }
}
```

```
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    // Process login form submission
    String username = request.getParameter("username");
    String password = request.getParameter("password");

    // For demonstration purposes, validate against hardcoded credentials
    if (username != null && username.equals("admin") && password != null && password.equals("password")) {
        // Login successful, create session and store username
        HttpSession session = request.getSession(true); // create new session if not exists
        session.setAttribute("username", username);

        // Redirect to doGet to display welcome message and session info
        response.sendRedirect("SessionServlet");
    }
    else {
        // Login failed, redirect back to login page
        response.sendRedirect("SessionServlet");
    }
}
} // end of SessionServlet class
```