WEB TECHNOLOGY AND MOBILE APPLICATION
REGISTRATION NUMBER: 231501102
DEPT AND SECTION: AIML- "FA"
SUBJECT CODE : AI234231

6) Write a Servlet to demonstrate session tracking using HttpSession. Implement a simple login system
where the user's session is tracked.

AIM:

The aim of this Servlet is to demonstrate session tracking in a Java web application by implementing a simple login system where the user's session is managed using HttpSession to maintain state across multiple requests.

ALGORITHM :

- **LoginServlet**:
  - Handles GET requests by displaying a login form.
  - Handles POST requests by verifying user credentials and creating a session for the user.
- **WelcomeServlet**:
  - Displays a welcome message if the user is logged in by checking the session. If not logged in, it redirects the user to the login page.
- **LogoutServlet**:
  - Invalidates the session and redirects the user to the login page.

SOURCE CODE:

Step 1: Create the LoginServlet (Servlet for handling login)

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


public class LoginServlet extends HttpServlet {
  // Handle GET requests
  protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
      // Get the session object. If no session exists, create a new one.
      HttpSession session = request.getSession(true);
```

```
    // Check if the user is already logged in by checking the session
    if (session.getAttribute("username") != null) {
        response.sendRedirect("welcome");  // Redirect to welcome page if already logged in
    } else {
        // Display login form if the user is not logged in
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.println("<h2>Login</h2>");
        out.println("<form method='POST' action='login'>");
        out.println("Username: <input type='text' name='username'><br>");
        out.println("Password: <input type='password' name='password'><br>");
        out.println("<input type='submit' value='Login'>");
        out.println("</form>");
        out.println("</body></html>");
    }
}


// Handle POST requests
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
    String username = request.getParameter("username");
    String password = request.getParameter("password");


    // For this example, we are using a hardcoded username/password check
    if ("admin".equals(username) && "password".equals(password)) {
        // Create session for the user
        HttpSession session = request.getSession(true);
        session.setAttribute("username", username);


        // Redirect to the welcome page after successful login
```

```
        response.sendRedirect("welcome");
    } else {
        // If login fails, show error message
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.println("<h2>Login Failed</h2>");
        out.println("<p>Invalid username or password. Please try again.</p>");
        out.println("<a href='login'>Go back to login page</a>");
        out.println("</body></html>");
    }
  }
}
```

Step 2: Create the WelcomeServlet (Servlet for displaying a welcome message after login)

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


public class WelcomeServlet extends HttpServlet {
  protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
    // Get the session object
    HttpSession session = request.getSession(false); // false means do not create if doesn't exist


    if (session != null && session.getAttribute("username") != null) {
```

```
        // User is logged in, display the welcome message
        String username = (String) session.getAttribute("username");


        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.println("<h2>Welcome, " + username + "!</h2>");
        out.println("<a href='logout'>Logout</a>");
        out.println("</body></html>");
    } else {
        // If session is not valid, redirect to login page
        response.sendRedirect("login");
    }
  }
}
```

Step 3: Create the LogoutServlet (Servlet for logging out and invalidating session)

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


public class LogoutServlet extends HttpServlet {
  protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
    // Get the session object
    HttpSession session = request.getSession(false); // false means do not create if doesn't exist
```

```
    if (session != null) {
        session.invalidate(); // Invalidate the session on logout
    }


    // Redirect to login page after logout
    response.sendRedirect("login");
  }
}
```

RESULT:

The result of this servlet-based login system is that it tracks the user's session and, upon successful login with valid credentials, redirects to a welcome page displaying a personalized message, while invalid login attempts prompt an error and a retry option.

OUTPUT: