Group assignment

1. Describe the Role of Sessions (1 mark)

Answer: Sessions in web applications are used to maintain state and store user-specific data across multiple HTTP requests. They allow a server to remember information about a user's interactions with a web application, such as login status, user preferences, or shopping cart contents. This helps in providing a consistent and personalized experience as users navigate through different pages of the application.

2. Differentiate HttpSession getSession() with and without the true parameter (2 marks)

Answer:

HttpSession getSession(): This method retrieves the current session associated with the request. If no session exists, it creates a new one.

- **HttpSession getSession(boolean create)**:
  - **getSession(true)**: This method retrieves the current session if it exists. If no session exists, it creates a new one.
  - **getSession(false)**: This method retrieves the current session if it exists. If no session exists, it returns null.

the true parameter ensures that a session will always be created if it doesn't already exist, while the false parameter ensures that no new session will be created if one does not exist.

3. Describe the Methods That Can Be Used by the HttpSession Interface (3 marks)

Answer:

The HttpSession interface provides several methods to manage session data:

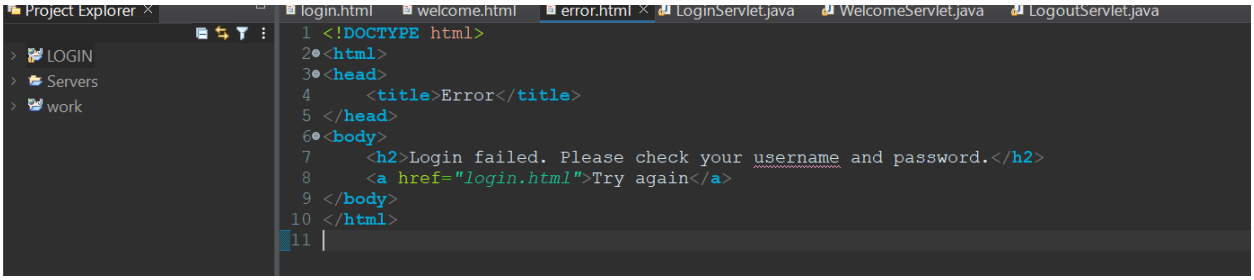
- **getAttribute(String name)**: Retrieves an object bound to this session under the specified name.
- **setAttribute(String name, Object value)**: Binds an object to this session, using the specified name.
- **removeAttribute(String name)**: Removes the object bound to this session under the specified name.
- **invalidate()**: Invalidates this session and unbinds any objects bound to it.
- **getId()**: Returns a string representing the unique identifier assigned to this session.
- **getCreationTime()**: Returns the time when this session was created, measured in milliseconds since midnight January 1, 1970 GMT.
- **getLastAccessedTime()**: Returns the last time the client sent a request associated with this session, measured in milliseconds since midnight January 1, 1970 GMT.
- **getMaxInactiveInterval()**: Returns the maximum time interval, in seconds, that the servlet container will keep this session open between client requests.
- **setMaxInactiveInterval(int interval)**: Sets the maximum time interval, in seconds, that the servlet container will keep this session open between client requests.

4. Implement a Session-Based Authentication System (4 marks)

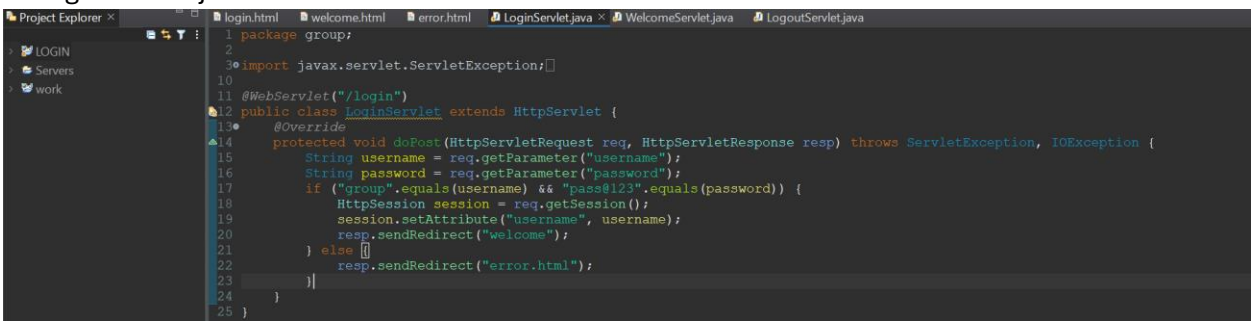
a. create a form login.html

b. then welcome.html page:

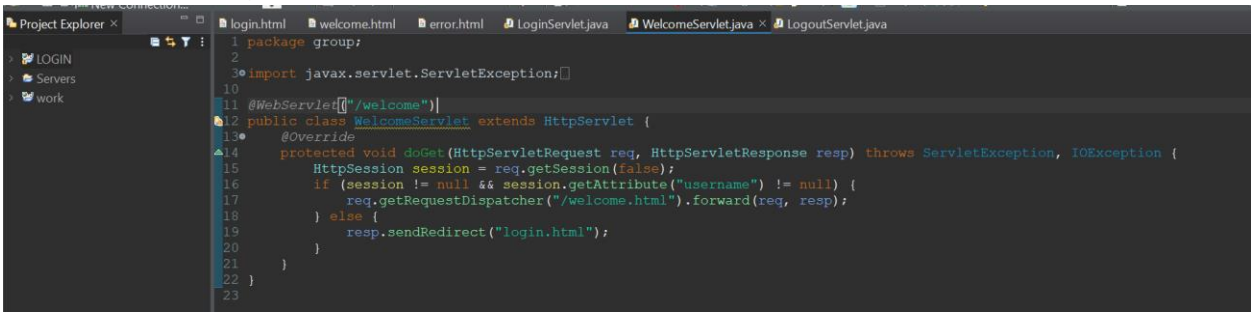
C. Error.html page



d. LoginServlet.java



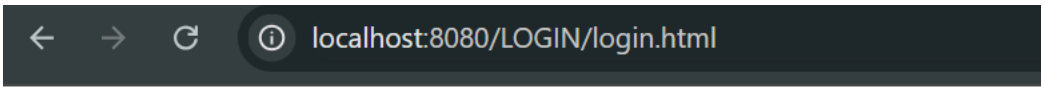
e. WelcomeServlet.java



f. LogoutServlet.java

output:

1.before entering valid credentials:



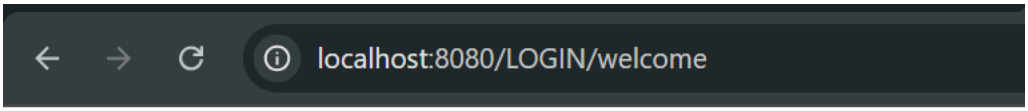
Login

Username: group

Password: ••••••••

Login

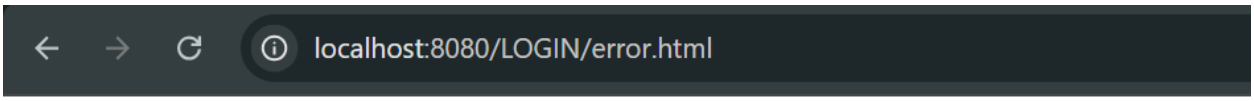
Result:



Welcome, Guest!

Logout

output: of invalid credentials:



Login failed. Please check your username and password.

Try again