

CPRG352 - Web Application Programming

Servlet Lab 2

Topic: Servlet Navigation

Problem 1: Choose a page to navigate to (redirect)

Create a web application called **ChoosePage**. The default object in this application should be a servlet called **MakeChoice**. When run this servlet outputs the following HTML form:

Choose the Page to Go To

☒ Page 1
☐ Page 2

Go to page

The user can select either **Page 1** or **Page 2** as the next page to see in the application. When s/he then clicks on the "**Go to page**" button, the application will programmatically navigate them to the selected page using a redirect operation.

The form should submit to a servlet called **Choose**. This servlet does not itself output anything for the browser; it should just look at the page selection, and redirect the user's browser to that page.

Example 1: user chooses Page 1

Page 1

[Back](#)

This output should be produced by another servlet called **Page1**. The **Back** hyperlink is a simple HTML hyperlink, and will direct the user's browser back to the **MakeChoice** servlet.

Example 2: user chooses Page 2



This output is produced by a servlet called **Page2**. The same notes apply for this as for **Page1** above.

Problem 2: Choose a page to navigate to (forward)

Create a web application called **ChoosePage2**. This application is identical in functionality to **ChoosePage**, except that the re-navigation of users should be done using ***forwards*** instead of ***redirects***.

Note: you can copy and paste packages and files between projects in Netbeans... :-)

Problem 3: A simple application with crude login and logout functionality

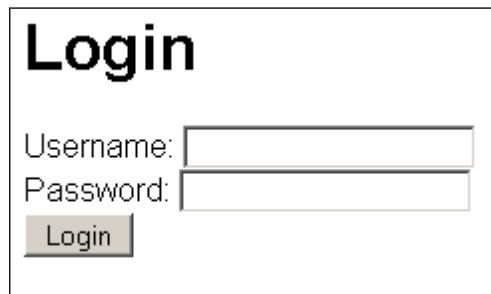
Create a web application called **MyLogin**. Add three servlets to this application:

1. **LoginPage**: displays a login form to the user that can also show messages
2. **Validate**: takes the submitted username and password values from **LoginPage** and checks to see if they are known to the system. If they are then the user will be redirected on to the next servlet (**MainPage**), otherwise the user is redirected back to the **LoginPage** servlet with a message to display, e.g. either “**Invalid username or password!**” or “**Both values are required**”. This servlet does not display anything in the browser, it is purely a *controller* in this application
3. **MainPage**: shows a welcome message to the user including his/her username. Also shows a Logout hyperlink which will take the user back to the **LoginPage** servlet as though the user was logging out of the application

Two user names should validate successfully (and so be taken to **MainPage**): **adam** and **betty**. Both users have a password of **pass**. Any other login data should not be accepted, and should send the user back to the **LoginPage**.

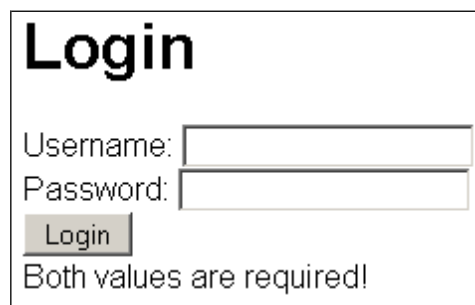
Note: This application should only use **redirects** when programmatically navigating users between servlets.

Example 1: LoginPage initial view (when application is run)



The screenshot shows a web form titled "Login". It contains two input fields: "Username:" and "Password:". Below the "Password:" field is a "Login" button. The form is enclosed in a rectangular border.

Example 2: LoginPage, when user has neglected to fill in one or both of the fields, but submitted the form anyway



The screenshot shows the same "Login" form as in Example 1. However, below the "Login" button, the text "Both values are required!" is displayed. The input fields for "Username:" and "Password:" are empty.

Example 3: Invalid username and/or password value was provided

Login

Username:

Password:

Invalid username or password!

Example 4: LoginPage, when the user has previously successfully logged in, and has now logged out

Login

Username:

Password:

Logged out

Example 4: MainPage, when adam has logged in successfully

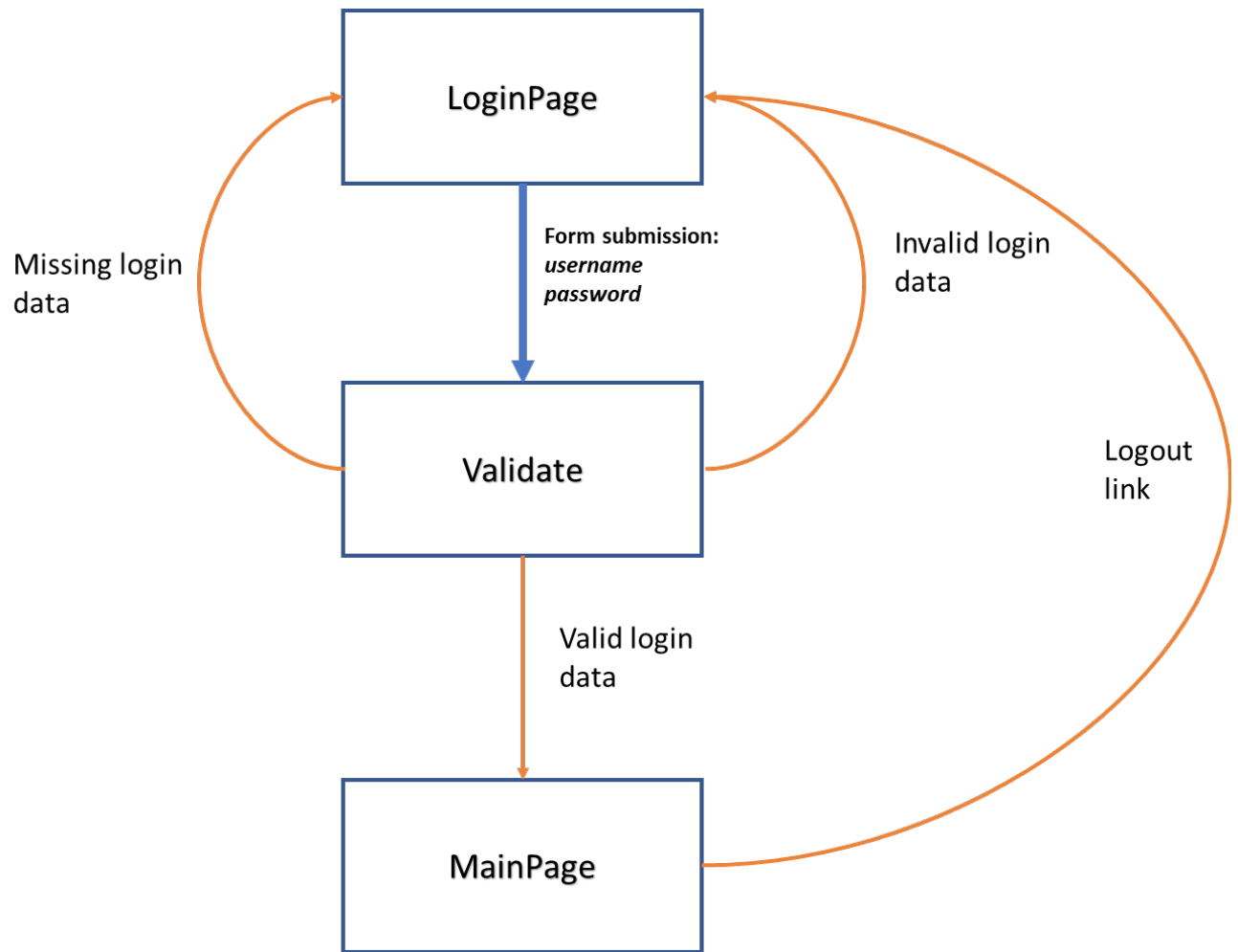
Main Page

Hello, adam [Logout](#)

Clicking on the **Logout** hyperlink simply takes the user back to the **LoginPage** servlet, but it also sends the message "**Logged out**" to that servlet for it to display, e.g. ?
message=Logged out

The username (**adam**, in this case) of the logged-in user should be sent to this servlet from the **Validate** servlet, e.g. if **betty** had logged in instead we would see the message "**Hello, betty**" displayed here. Send the validated username from **Validate** to **MainPage** the same way you send messages to **LoginPage**, e.g. ?username=<the username>

The following diagram shows the navigation required in this application:



Problem 4: rewrite problem 3 using forwards

Create another web application called **MyLogin2**. The functionality of this application must be the same as that for **MyLogin**, but this time all programmatic re-navigations must be done using *forwards*.

All data (messages, username) must be passed between servlets as attributes of the **request** object provided to the **forward** command, not as query string data (as used in problem 3).

This will require a change to the **Logout** hyperlink in **MainPage**. Previously it went directly to the **LoginPage**, and sent the message "**Logged out**" directly to it. This time you will need to do this operation a little differently (and more realistically!):

- The **Logout** hyperlink should take the user to the **Validate** servlet, sending it a notification that the user is now logging out, e.g. **?Logout=true**
- The **Validate** servlet should detect this fact, and store a message of "**Logged out**" as an attribute of the **request** object used in the **forward** command
- The **LoginPage** servlet should look for an attribute called **message** in the **request** object it is given, and if one exists its contents should be displayed. It should no longer look for a **request** parameter value (*query string* value) for this message data

Although this seems much more complex than what you did for problem 3 it is also more realistic in that usually when a user wants to log out the application will need to do some work, e.g. destroying the user's session, recording the logout date and time, etc.