

1 Important Information of the project:

The URL of the project http://localhost:8080/CS5300_P1a/

The name of the project is [CS5300_P1a](#).

The servlet of the project is [loginservlet.java](#) under src folder.

The welcome page is [login.html](#), the page show user information is [loginSuccessful.jsp](#)

The class for session information is [UserInfor.java](#) under src folder

The class to garbage collection the time-out session is [MyDaemonServletContextListener.java](#) under source folder

2 The cookie format:

The cookie name is [CS5300PROJ1SESSION](#)

The cookie value is The unique sessionID, in Project 1a I use Integer and increase the ID when there is new user. I will change it in the following project.

3 The Session Table:

I implements session table using UserInfor class under src folder.

There are four attributes for UserInfor class:

- 1) `int userId; //record UserId`
- 2) `int version; //record version of the session`
- 3) `String message; //record message with the session`
- 4) `Calendar Expiration; // record the expiration date`

4 Garbage collection of timeout session:

I use daemon thread method. There is [MyDaemonServletContextListener.java](#) under source code. This is a daemon thread to scan the hashmap which contains all userInformation and delete the time-out user information. In the web.xml file I set [MyDaemonServletContextListener.java](#) as listener, so that when sever begins, this thread can be called and run as daemon thread.

5 Structure of Code:

1) login page

When type in http://localhost:8080/CS5300_P1a/ You could first see a login page which is like the following picture_1, It corresponds to login.html in Webcontent folder of the project.



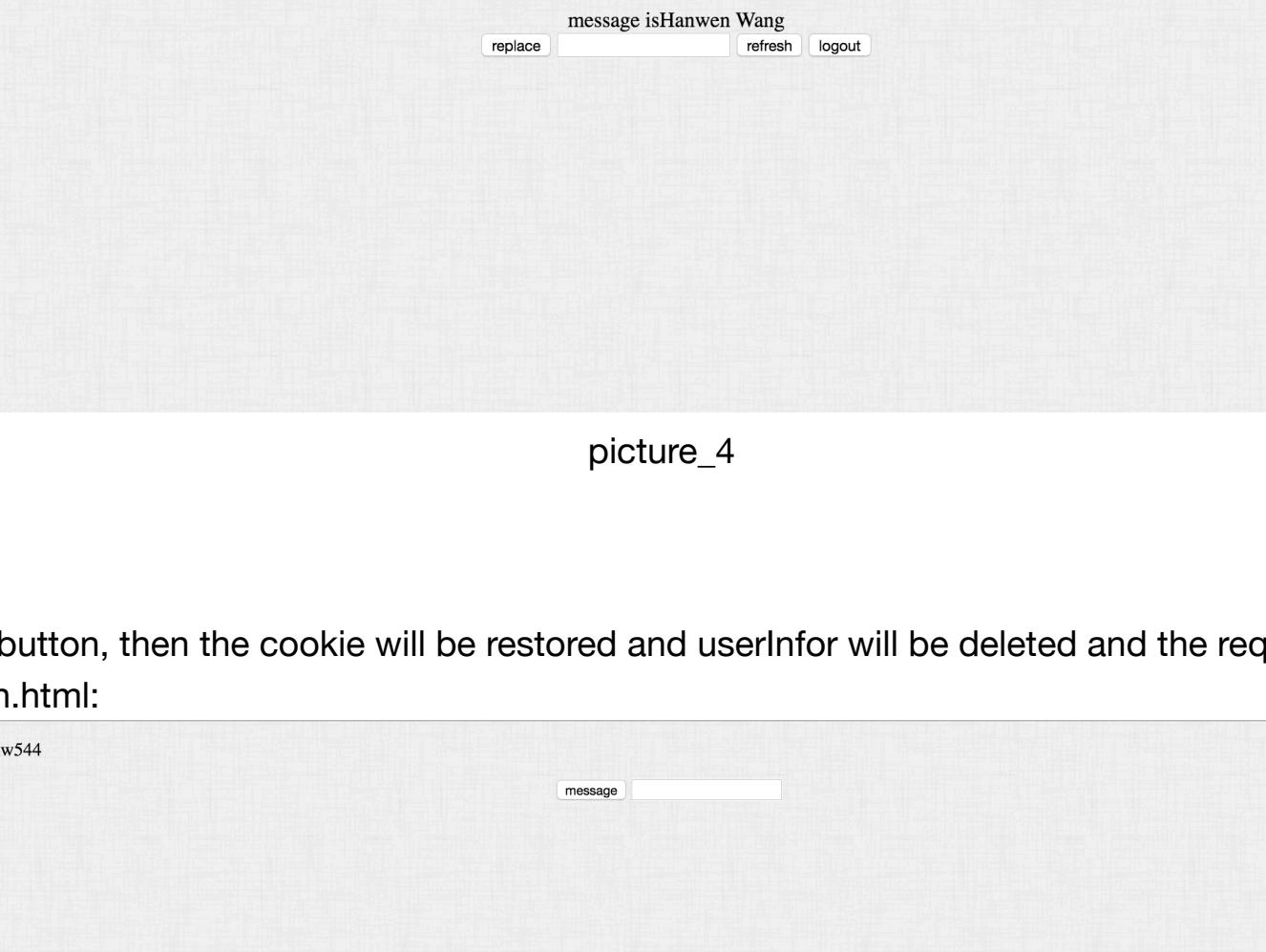
Picture_1

2) servlet and loginSuccessful.jsp page

You can type some message and hit "message button" the request will be directly to loginservlet which is [loginservlet.java](#) under the source folder. Then the loginservlet will create a cookie for the user, create new session and store the session in HashTable. Then the servlet will dispatch the request to loginSuccessful.jsp page, which shows the session information for the user including sessionID, session version and expiration Date of the session.

The loginSuccessful.jsp page looks like picture_2

The message now is "[Hanwen](#)" which is my first name.



picture_2

3) replace function

Then when I enter "[Hanwen Wang](#)" which is my full name as message and hit replace button, the page will becomes like picture_3. We can see the servlet updates the session version, expiration date and message to "[Hanwen Wang](#)".



picture_3

4)refresh

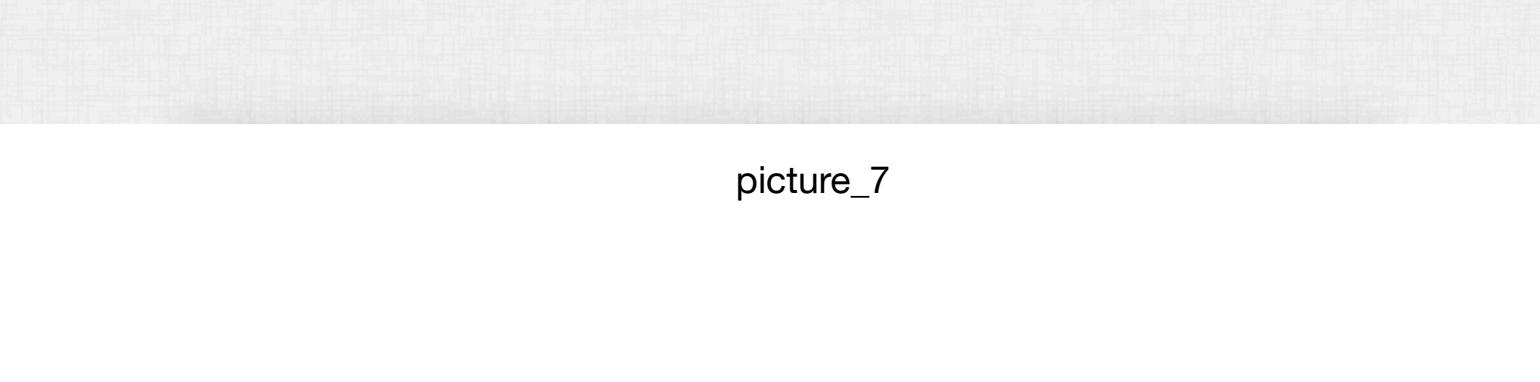
When I hit refresh button, The servlet will update the expiration date and session version from 2 to 3. It shows as picture_4



picture_4

5)logout

when I hit logout button, then the cookie will be restored and userInfor will be deleted and the request will be redirected to login.html:



picture_5

6)clean timeout session

I set the cookie life 1 minute. After one minute, when you do something on this page, the cookie has expired and the servlet will create a new cookie for the request. The old page is as picture_6 and the new page is as picture_7. So we can know that the Daemon thread cleans the timeout session.



picture_6

picture_7