## CT5106 Software Engineering II

## Assignment 6 – WebSocket

In this assignment, you are asked to create a multi-user chat web application using WebSocket. I started with the WebSocketTest application I showed in the lecture:

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I was able to reuse a lot of the structure there to build it, particularly on the server side, such as the session handler class. And of course the initial code to handle the 4 event types are already there too.

I do not expect you to include any styling / CSS, unless you feel like it.

The application is based around forums. When the user opens the app (index.html) in the browser, they are presented with a choice of forums (these can be fixed / hardcoded).

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When the user chooses a forum and clicks on the 'Join' button, the javascript on the page should request to open a websocket with the server application. The server keeps track of the list of connected sessions (e.g. using a Set):

```
// contains the sessions connected
private final Set<Session> sessions = new HashSet<>();
```



If the websocket opens successfully, the onopen() method on the client side should send a (JSON) message request for that client to join the chosen forum, e.g.:

{action = "join", forum : "Politics"}

So the server keeps track of which forum a session is associated with (e.g. HashMap of session id (String) and forum name (String)):

```
// key = session id, value = forum name
private final HashMap<String, String> sessionForums = new HashMap<>();
```

The javascript should then hide the first form, and present the user with a text field containing posts from the forum, and a text input where they can create new posts.



When the user inputs a comment and clicks on 'Post' button, this sends a message to the server to add this post to the posts for that forum. So the server keeps track of the posts for each forum (I used a HashMap<String, ArrayList<String>>, where the key is the forum name, and the value is the ArrayList of posts:

```
// key = forum name, value = posts on that forum
private final HashMap<String, ArrayList<String>> forumPosts = new
HashMap<>();
```

Every time a new post comes in for a forum, I retrieve the ArrayList of posts for that forum from the HashMap, add the new post to it, and then put it back in the HashMap using the put() method.

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Post a comment on the forum					
Hi I just joined the forum Post					



Every time a user posts on their forum, the message is sent to the server and added to the messages for that forum. The server then sends a message back to the client, which it simply adds to the text area.

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## When a new user joins a forum

The server should send them all the messages already posted on that forum.

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To which of course they can then add:

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ann: Hi I just joined the forum ann: anyone else here? ann: guess I'll wait then fez: nice to meet you			
Post a comment on the forum			
Post			

So we should have a multi-user, multi-forum chat application using WebSocket:



To submit your assignment:

- Perform a 'Clean' on the project
- Zip the project folder
- Submit the Zip file on Blackboard for the assignment