CSE471: DATA COMMUNICATIONS AND COMPUTER NETWORKS

YEDITEPE UNIVERSITY

FALL 2021

ASSIGNMENT 3 – DUE DATE DECEMBER 1ST, 2021

In this assignment you will implement a chat room application by using the *TCPMultiServer* example that was discussed in your lab. In this context chat rooms are group conversations. In a chat room, all clients are identified by their nickname. Whenever a client sends a message, the server receives it and passes it to all other clients. Here is a representation of a chat scenario with three clients: *John*, *Bob* and B*ill*. Notice their message will not echo on their own screen but just be sent to other clients.

```
Type your nick
john
Start chatting!
Hey
bob : Hey there! What's up?
bill : john, welcome!
bob : John, you there?
```

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bob
Start chatting!
john : Hey
Hey there! What's up?
bill : john, welcome!
John, you there?
```

Clients should see all conversations whenever they are posted. Furthermore, you should implement a private message feature. Private messages will be delivered to the target client rather than being broadcasted to all clients. For instance, when a server receives a message like "PM **john** how's it going?" it should redirect this message to the client whose nickname is **john**. This message should not appear in any client's screen except the client with the nickname **john**. You can assume nicknames do not include space characters.

Additional to the previous laboratory work; you should implement a chat room listing feature. The server should advertise the names of the users in the chat every 30 seconds. Following up from the scenario above; there should be three participants advertised in the list - **John**, **Bob** and **Bill**. The server should simply list their names. Whenever a client disconnects, then the server should remove the relevant nick name from the active participants list and rebroadcast accordingly.

```
Chatroom participants:
john
bob
bill
```

Submit your assignments in a zip file, which has your student number as name, through the YULEARN (https://yulearn.yeditepe.edu.tr) latest by the end of Wednesday, December 1st 2021.