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Networks Laboratory

Implement a *chat system* with the following features:

1: Any number of clients (or users) may be able to participate in the chat.

2: All client messages should go through the chat server

3: Each client should register (username and password) with the server and the server needs to verify the existence of same username before allowing the client to register. Username should be like "user-1", "user-2" and so on.

4: When a client is allowed to log into the chat server, server should send the usernames of already logged in clients to the newly logged in client.

5: A sample chat message from "user-3" to "user-1" may looks like:

To user-1: *Here is the message*

where bold face letters represent the receiver username (user-1 here) and the text in italics is the message that the sender (user-3 here) sends.

6: The server should accept the above message from user-3 and forward to user-1 in the following format.

From user-3: *Here is the message*

Note: 1: Use TCP for establishing connections between server and client.

2: You may try to implement the above chat system with multithreading principle.