

Chat Application

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Q.Handling user disconnection in the Ctrl+C scenario?

We will handle this in the catch block of socket exception. There we will check in the global hashtable whether a user with the username of current thread exists or not. If it exists then we will first close the socket of the user and then remove the user from the global hashtable. After all that we will finally interrupt the current thread.

Q.Handling message sending to offline users?

We can add a buffer with each registered client in the server where the incoming messages can be stored and flushed when the client comes online.

Q. Why encode the message in base64 and not just send it in binary format?

This is not desirable because, in binary format, it will be very difficult to see if the data we're getting at the server is correct or not. In base64, one digit represents exactly 6bits of data(i.e. 3 bytes(ASCII) are represented by 4 Base64 digits) using the letters 0-9, a-z, A-Z, +, / and =(padding). Hence base64 is much more human-readable and hence we can test at the server if the encrypted data is correct-ish or not. Also, sometimes while sending encrypted data in binary encoding, some protocols may interpret special characters like line endings incorrectly and hence the data ends up corrupted on the receiver's side, while this doesn't happen in base64.