

Network Communication Using Sockets

This project is about socket programming. Here, we are allowing two or more clients to communicate via one server. The server keeps track of the messages of known users and currently online users.

The client first logs to the server and enters his name. Then he sees the menu and chooses his option. Then server responds accordingly to the chosen option and present further options to the client. The menu offers client to

- a. Display the names of all known users.
- b. Display the names of all currently connected users.
- c. Send a text message to a particular user.
- d. Send a text message to all currently connected users.
- e. Send a text message to all known users.
- f. Get my messages.
- g. Exit

There can be more than one client connected to the server. This is managed through multithreading. The messages are stored with the help of hashmap. The hashmap has key value pair. The key is the user's name while the value is the message object. Message object contains 3 variables, sender, date, actual message.

The difficult part was to maintain the communication in between all the clients and manage the concurrency of the hashmap. I spent couple of hours on thinking over this issue and finally came upon the solution. Due to short of time, I couldn't implement all the error conditions though. The most important thing I learnt in this project was inter process communication via sockets. I chose java for this project as there are many inbuilt libraries for socket programming.