Assignment 1 Report

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1.

This simple instant messaging program consists of two parts, Server.java and Client.java. Multiple messaging clients can connect to one server and the clients communicate with the server using TCP. This program does not support peer-to-peer messaging, so that the server must process all the messages between clients.

2.

The application layer message format is:

Client1 send	Client2 receive	Client1 receive
message <Client2> <message>	<Client1>: <message>	
		<Your message could not be delivered as the recipient has blocked you>
broadcast<message>	<Client1>: <message>	
		<Your message could not be

		delivered to some recipients>
whoelse		<Client2>
whoelsesince		<Client2>
block<Client2>		<Client2> is blocked
		<Error>
Unblock<Client2>		<Client2> is unblocked
		<Error>
logout	<Client1> logged out	

3.

This system works in this way:

- Server receives outside input to get ‘timeout’, ‘block duration’ and ‘server port’. Server creates socket and starts to accept clients’ sockets.
- Client receives outside input to get ‘server IP’ and ‘server port’. Client then create socket and connect to server. Client is asked to type in username and password.
- Server creates a new thread for client when server accept socket.

Server deals with all the names and passwords' data. Server then compared data from clients with database. If correct, then clients can communicate through server. Else, clients will be logged out.

- Each client has his/her own thread.
- Server deals with all the process of message and saves all the useful information.

4.

Possible improvements:

- clean some redundancy and useless data after a constant time
- send notification to clients when they type in wrong username (this program only considers of wrong password)
- implement group chat

5.

Unimplemented function:

- automatic logout functionality after inactivity (timeout)
- peer to peer messaging