

Simple Network Chat Program

The assignment is to write simple network client and server applications using socket programming.

The client will take three command-line arguments, a host name or IP address (both forms must be accepted), a port number, and a "username" (you can use your name but it should accept any alphanumeric string).

The client initiates the connection to the IP address of the server. Upon connection it will transmit a single line containing the username. After that it will read characters from the standard input (keyboard) and it will transmit them to the server program via the network. Anything it receives from the network connection transmitted by the server, it is displayed on the screen.

The server listens for and accepts a single connection. When a client connects, it writes the client's username on screen and displays what the client is sending him on the screen. In addition, for all the received messages, it replies back to the client adding "username said: " where username is the client's username.

Extra Credit

- a) Extend the server to accept many connections (clients), when a new client connects everything that this client is typing has to be transmitted to all other clients (use non-blocking read/writes).
- b) Create an application that is both a client and a server allowing other clients to connect to it and being able to connect to many servers.
- c) Add an extra optional command line argument that will allow the transfer of a file from the client to all other clients connected to the server.