

Basic computer network (socket) programming exercise.

You need to design a simple chat program on the lines of IRC. The program would involve a central chat portal, a server listening on two ports (let's say ports X and Y). The use of the two ports would be clear in the next few sentences. The program supports multiple users communicating through the portal. The clients use their client version to connect to the portal and communicate to other users. Before communicating, the users need to register to the chat portal. To achieve this they clients connect to port X, the registration service, and register their username and password. You may design the interface of the client and the registration service as you please. Once registered, the username and password are stored in plaintext in a local file at the server. Thereafter, the client connects to the chat server (through port Y) which authenticates users based on username and password, previously registered. Once authenticated the user sees a portal prompt wherein he can type commands to chat with other users, transfer files etc. The following commands must be supported:

"/who" : Who all are logged in.

"/msg": Send message to particular user.

"/create_grp": Create a group.

"/join_grp": Join a group.

"/send" : Send file to another user.

"/msg_group" : Broadcast message to a particular group once you have joined it.

"/recv" : Receive the file that is being sent by someone.

NOTE: Communication between peers is via the chat portal and not through direct p2p communication.

What you are supposed to submit:

1. C source code for the aforementioned shell server and client programs.
2. Makefile through which one could compile these programs.