CSC645/745 COMPUTER NETWORKS
Project 1

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This project consists of two folders. One is Server including:
Server.c
HandleTCPClient.c
DieWithError.c
getMyMessages.c
sendAMessage.c
sendAndReceive.c
createAndListen.c
getUserList.c
userinfo.h
specialDisconnect.c
Server.exec

The other is Client folder which includes:
Client.c
DieWithError.c
ClientOption0.c
ClientOption1.c
ClientOption2.c
ClientOption3.c
ClientOption4.c
ClientOption5.c
sendAndReceive.c

doGetline.c
createAndConnect.c
createAndListen.c
Client.exec

The compilation:
For the Server:

Server$ sudo cc -Wall -o Server Server.c HandleTCPClient.c DieWithError.c getMyMessages.c sendAMessage.c sendAndReceive.c createAndListen.c getUserList.c userinfo.h specialDisconnect.c -lm

For the Client:

Client$ sudo cc -Wall -o Client Client.c DieWithError.c ClientOption0.c ClientOption1.c ClientOption2.c ClientOption3.c ClientOption4.c ClientOption5.c sendAndReceive.c doGetline.c createAndConnect.c createAndListen.c -lm

What I improved/changed from the given demo:
1. If username is correct but password is not correct, the Server would prompt.
2. new user could login. (If the username is new, the Server would register the new username as well as the password.)
3. Exit by the user
4. Prompt the user if the login space has been full.
5. Prompt the user if the message box has been full.
6. When the user check the message box, each message would also show the username from whom the message has been sent.

Initially, I set the space/number of login users and message box is 8, and initial login users 4:
       {"Alice", "12345"},
       {"Bob", "56789"},
       {"Peter", "13579"},
       {"Diana", "24680"}
If wanting to try the improved/changed function 4 or 5 above quickly, you could modify some parameters. All the constant number are defined in the "userinfo.h". If you want to check the function 4 or 5 above, just modify

"#define MAXUSERS 8" and "#define MSGSBOXSIZE 8" to some smaller number such as 4 or 2 respectively.