ELEC 4120 PROGRAMMING ASSIGNMENT GUIDELINES

Socket Programming Assignment:

Write a chatroom program in which a client sends a message to the server program of the chatroom. The server broadcasts the received messages back to all participating clients. You can use either TCP or UDP to do it (UDP is much simpler). The provided sample program, based on UDP, shows how to do it. Of course, you need to modify the program to meet the requirements of our assignment.

(1) One thing you need to add is a table tracking the clients that are active at the moment. You can use either TCP or UDP to do it.

> **TCP:** If you choose to use the TCP protocol, the connection setup and tearing down will make the tracking easy to implement. But writing a TCP server is more complicated than a UDP server (you need to use the fork system call).

> **UDP:** You need to build a table tracking the current users. The server program needs to check if an incoming packets source address is already in the table. If not, the message is from a new client and we need to add a new entry into the tracking table. You also needs to set a timer to each entry. If the timer times out and no activities from that source address have been detected, then the entry will be considered inactive and should be removed.

(2) Note that the server will not forward a message back to the client who generated the message (this is different from the sample program).

(3) You also needs to divide the screen into two parts: one more typing the sending messages, and one for displaying received messages.