Comp 4981 School Of Computing March 2012

Data Communication and Internetworking Option

Assignment #3

Due: March 22, 2012 - 0930 hrs. You may work in groups of two.

Objective: To become familiar with asynchronous socket communication using ***select***.

Assignment:

Write and test a simple chat client/server application. This server accepts connections on a specified port and once clients have established a connection with it, it will echo whatever it receives to all other connected clients.

You will also design and implement a chat client that really is no more complex in this case then an echo client. Each client will have the ability to send text strings to the server and will also be able to see the text sent by all other clients. Note that I am not requiring you to do this as a GUI (you can do that for bonus marks). This can be a console application.

Constraints:

- Use ***select()*** or system calls to design and implement multiplexed I/O in your application.
- The server will maintain a list of all connected clients (host names) and display the updated list at the server end.
- The server will echo the text strings it receives from each client to all other clients except the one that sent it.
- Each chat participant will not only see the text string but also the client (hostname) it was from.
- Optionally, a client can specify (command line argument) that the chat session also be dumped to a file. This is just a flat text file with CR-LF terminated records.

Submision Requirements:

- You are required to demonstrate your working programs during the lab the day the assignment is due.
- Ensure that you clearly explain testing procedures for your programs and provide test programs if necessary.
- Hand in complete and well-documented design work and listings of your program.
- Provide all your code listings and executable file on a disk.

Evaluation

(1). Design Work:	/ 15
(2). Test and Verification Document:	/ 15
(3). Documentation/Instructions:	/ 10
(4). Functionality:	/ 60
Total:	/ 100