Homework #1

Create a simple connectionless echo client/server system that is capable of echoing back any messages that the server has received from its clients.

For the server:
Once it is invoked, it will listen on the designated port, passed in as a commandline argument. Should any message be received from a client, it will echo it back without altering any contents. The server will loop forever until manually terminated by the user. Your server program must reject any port number which is not in the range of 50,000-60,000 until a valid one is provided when the server starts.

For the client:
Each client will be invoked with the server's IP address and its port number. After successfully bringing up the client, your program will then prompt the user for input, send the user input to the server, and display the response received back from the server to the client's screen. The user should be able to enter any number of messages as s/he wishes. Let's assume that a message is delimited by a carriage return. The client will send to the server one message at a time. The client program will terminate only when the user has no more message to send. End of messages may be indicated by pressing <ctrl-d> on a line by itself.

Implement this client/server system in C. Make it two different programs. The server program must be named **hw1Ser.c**, and the client, **hw1Cli.c**. Your program must have appropriate error checking and in-line documentation.

The syntax for invoking the server is: **hw1Ser** *valid-port-number*

The syntax for invoking a client is: **hw1Cli** *server-address server-port-number*

You need to submit only two source files, no binary files to be submitted. You may submit an additional **readme.txt** file if you would like the grader to consider other related issues. No other files are allowed to be submitted. Submission of your files must be done electronically via the instructor's Web page or by accessing the following URL directly. Follow the screen prompts. *http://student.cse.fau.edu/~hwsam/student/index.html*

Due dates:

1. Students taking *live class* please select the **Live-class** option. The due date is September 28, 2010 before 11:30 pm.

2. Distance learning students watching lecture videos from remote sites please select the **Remote-FEEDS** option. The due date is September 30, 2010 before 11:30 pm.

Note: You are encouraged to use C to do your homework assignments in this course. However, other programming languages are also allowed if you feel more comfortable that way. In this case, you still need to submit all your source files to HWSAM, along with a readme file

detailing how to run your programs. In case I don't have the software package you have used, I may ask you to bring your system to my office for run test purposes.