Homework 5

Due: Wednesday 11/4 at 11:59pm

Complete the following and submit via handin as assignment hwk5.

1. (20 points) Complete and extend the instant messaging program you began in lab 7. Specifically, the result should be a single program that behaves as either the server or client depending on the number of command-line arguments it is invoked with. When the program is run as the server, it should take the port number to listen on and the user’s “handle”, a single word they will use to identify themselves. When it is run as the client, it should take these, plus the IP address of the client (as the new last argument). The programs should exchange handles once a connection is established but before the exchange of messages begins. First, the client sends the server its user’s handle, terminated with a string-terminating 0. Then the server sends its user’s handle to the client, again terminated with a string-terminating 0. (Note that 0 is just another character to send and recv; it has no effect on the transmission.) After this, the messages strictly alternate, with the client sending the first message. Each message should be terminated with a 0. When a message is printed, it should print the other user’s handle and a colon before printing the message. In addition, each program should print its user’s handle and a colon before reading an input line.

For example, the following is what the user may see from a session where Alice (client) is messaging with Bob (server):

Alice: Hello Bob
Bob: Hi there Alice
Alice: Isn’t this class cool?
Bob: Yep. I can’t wait for the next assignment.