CS 100
Lab 9: pthreads and Unix sockets

Reminder: find a *new* partner for this lab (50% grade reduction for working with a person ever worked before).
You are allowed to use 1 (one) computer per team (50% grade reduction for using more than 1 computer per team including laptops and tablets).

Grading: 45% each program, 10% attendance.

Do the following exercises using pthreads and unix sockets:

1. Take your server/client program and change it so that the server can speak with multiple clients at once. Use a new thread for each connection. Make sure it does this correctly by having each thread send a message to the client numbered by the order the threads were created. You can do this by having the server keep a counter, incremented as each thread is created, and have the value sent to the newly created thread as an argument.

2. Now, for each client, allow it to write to and read from a single text file (it might be useful to use a large file) on the server. This will require synchronization, for although multiple reads can be done at once, both reading and writing cannot.

Useful tutorial: https://computing.llnl.gov/tutorials/pthreads/#PthreadsAPI

For each of the above, you will need some kind of demonstration submitted which shows that it worked as intended. A simple script containing the output is enough. Please submit this script and your code on iLearn. Once submitted, begin your homework if you have not done so already.