Homework: TCP Socket

Assignment 1 Write a client program connecting to a server program by TCP. Client sends a string, which are inputted from user, to server. Server will convert all letters of this string to upper-case letters and send back to Client. Client will print the data received from Server to Console.

Note: The code of this assignment is included in lecture, you can copy and run it.

Assignment 2 Write a client program connecting to a server program by TCP. Client sends two integers (a, and b), which are inputted from user, to server. Server will send **Least common multiple of a and b back to Client.** Client will print this number received from Server to Console.

Assignment 3 Write a client program connecting to a server program by TCP. Client send two integers to Server and 1 arithmetic operation (addition, subtraction, multiplication, or division) to Server. After receiving the data, Server will implement the arithmetic operation and send result back to Client. Client will print this result to Console.

Assignment 4 Write client and server programs to simulate the RFC862-Echo Protocol by using TCP (RFC862 - Echo Protocol http://www.faqs.org/rfcs/rfc862.html)

Assignment 5 Write client and server programs which allow a user at client side can chat with a user at server side one after another. In other words, firstly user at client side will input a string and send the string to server, server will display it on screen. Secondly, server will allow user input a string and send back to client. The process is repeated until the client or server send a string “bye”.

Note: The chat program is not parallel. We will improve it later.

Assignment 6 Write a client program connecting to a server program by TCP. Client send 2 integers a, b to Server (assuming a <b). After receiving, Server send the even numbers in range [a, b].

For example, if Client send 2 and 9 to Server. Server will send one after another each number 2, 4, 6, and 8 to Client.

(Extra) **Assignment 7** Write a client program connecting to a server program by TCP. After connection, Server sends to Client a menu:

1. Input two integer numbers
2. Maximum value of two numbers
3. Minimum value of two numbers
4. Exit

User at client side will input a number from 1 to 4 and send to Server. If user enters 1, Server will receive two integers from Client. If user enters number 2 or 3, Server will send the appropriate result. However, if user forgets to input two integers but choose 2 or 3, Server return string “please enter two integers firstly”. If user enters 4, both client and server program exit