CECS 327 Intro to Networking and Distributed System Assignment 5

Socket Programming (100 points)

Due Date: 04/24/2022 @ 10:00 PM

Notes:

1. This is an individual assignment.
   a) Each team member needs to complete the assignment on their own and collaborate with their group mates if necessary. (The same group that you did the presentation with)
   b) All group members need to demo the work in the class or at an announced date and time on Beachboard. Failure to demo the assignment will make you lose points.
   c) The demo will include testing your client and server against each other.
   d) You can do the demo virtually, however you may need to configure your local router by opening a port number that will be used for your teammates to communicate with you.
2. Assignment 3 is due by 04/24/2021 @ 10:00 PM (Sunday). Late assignments are not accepted.
3. Lecture notes can be used as a starting point for the answers, however, the code needs to be modified to meet the requirements.

Requirements:

You are required to write an Echo Client and an Echo Server program. The echo client communicates with the echo server using UDP. The programs should fulfill the following requirements:

Client:

1. Prompts the user to input the IP address, port number of the server, and a message to send to that server.
2. Sends the message to the server.
3. Display the server replay by using the same socket.
4. Displays an error message if the IP address or port number were entered incorrectly.

5. The client should be able to send multiple messages to the server. You may need to consider using the infinite loop as we discussed in the class.

Server

1. Receives the message from the client.
2. Change the letters of the message to “capital letters” and send it back to the client by using the same socket.
3. The server should be able to send multiple messages to the client. You may need to consider using the infinite loop as we discussed in the class.

Note:

1. Java language should be used.
2. Do NOT hard code the server address and port number in your source code.
3. Your program should work under MS-DOS window (command line). You need to compile your code by using JavaC.
4. Try to get your partner’s IP address and make your client send a message to his/her server. Are you able to send the message? If no, why is that? What do you need to do to make it work? Support your answers with screenshots.

Deliverables:

1. Java source files for the client program and server program
2. An “Instructions for Users” CLEARLY describing how to compile and run your client and server program.

Marking Scheme:

1. Completeness (all required deliverables are included)
2. Correctness (the required items in the “requirements” section)
3. Documentation (descriptive in-line code comments)