

Task 1. Your task is to add required socket API calls TCP and UDP server & client. After that, compile and run both server & client and understand the code.

Task 2. Add the code (implemented in task 1) to TCP socket in the following tasks.

Task 2 a). The client reads the text from file (line by line) and sends it to the server; the server sends an acknowledgement after receiving each line.

Task 2 b). In this task, the client needs to read the data from the file and encrypt it.

Requirements are:

- Read data from the file named as fileData.txt.
- Add 3 in all the lowercase letters of the data.
- Add 2 in all the uppercase letters of the data.
- Add 1 in the numeric letter of the data.
- Send the encrypted data to the server for decryption.

Requirements for the server are as follows:

- Receive data from the client.
- subtract 3 in all lowercase letters of the data.
- subtract 2 in all the uppercase letters of the data.
- subtract 1 in all the numeric letters of the data.
- Send back the decrypted data to the client. In the end, the client will show the decrypted data on the terminal sent by the server.

Task 3. In this task, you are now required to write the code for a TCP iterative Server and Client, following the steps from flow, and run the TCP Client-Server programs.

- When the client is connected to Server, show its Port number in the terminal window.
- Client sends a file name to Server.
- Server sends the file to Client.
- After receiving the file, Client closes its connection with Server.
- But Server should keep running and now be ready to service a new Client request.