Computer Networks Lab PUCIT Omer Nawaz

**Instructions:**

 It is an individual assignment.

 Implemented in any language.

 Assignment should be in zip file named as your\_roll\_number\_underscore\_name\_cn\_lab.zip i.e., bitf19m501\_ali\_ahmad\_cn\_lab.zip

 Assignment should reach on **bitf18a544@pucit.edu.pk** before deadline i.e., **Thursday 20th January, 2022(23:59).** Late submissions will not be entertained.

 Email subject must contain ***cn\_lab***. preferred subject is your\_roll\_number\_underscore\_name\_cn\_lab

 Feel free to ask any question.

**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. Modify (implemented in task 1) 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.
* Perform some sort of encryption.
* Send the encrypted data to the server for decryption.

Requirements for the server are as follows:

* Receive data from the client.
* Perform decryption
* 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 serve a new Client request.