Instructions:

→ It is an individual assignment.
→ Implemented in any language.
→ Deadline of this assignment is **Tuesday 23rd August, 2022.** You are to bring your laptops with the assignment where you will be asked to show the execution of your tasks.
→ 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. Hard code it so the client sends your roll number to the server and the server responds with your name.

Task 2. Modify TCP socket (implemented in task 1) 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 encryption key to the server.
- Send the encrypted data to the server for decryption.

Requirements for the server are as follows:

- Receive encryption key.
- Receive data from the client.
- Perform decryption using the key.
- 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.