

## **Assignment - 2**

### **Multi-Client Socket Programming with Multithreading**

#### **Server Implementation**

- Write a server program that listens on a specific port (e.g., 12345).
- Implement a multithreading approach so that the server can handle multiple client connections simultaneously.
- Each thread should handle a specific client and be able to receive and print messages from that client.

#### **Client Implementation**

- Write a simple client program that connects to the server on the specified port.
- The client should send a message to the server upon connection.

#### **Testing the Multi-Client Server**

- Run the server program and ensure it is listening for incoming connections.
- Run multiple instances of the client program and ensure each client can connect to the server concurrently and exchange messages.

#### **Documentation:**

- Create a document summarizing the results of each task. Include screenshots where necessary to illustrate the output.
- Explore the challenges that arise when threading is not used in a multi-client server environment.