

National Institute of Technology Calicut
Department of Computer Science and Engineering
CS3093D:Networks Laboratory

Assignment #4

1. Implement a **fully concurrent application** with a TCP server acting as a **directory server** and client programs allowing concurrent connection and message transfer (Eg. Chat system).
2. Implement a fully concurrent application with a TCP server acting as a dummy "math" server and client programs allowing concurrent connection and message transfer. The server should be a multi-process server that will fork a process for every new client it receives and it should be able to handle addition, multiplication, subtraction, and division operations **on two integer operands**. The protocol between the client and server is as follows.
 - The client connects to the server, and then asks the user for input. The user enters a simple arithmetic expression string (e.g., "1 + 2", "5 - 6", "3 * 4", "8/2"). The user's input is sent to the server via the connected socket.
 - The server reads the user's input from the client socket, evaluates the expression, and sends the result back to the client.
 - The client should display the server's reply to the user, and prompt the user for the next input, until the user terminates the client program with Ctrl+C.

Server:	Client 1:	Client 2:
Connected with client 1 [Client1]: 22 + 44 [Server]: 66 Connected with client 2 [Client2]: 3 * 4 [Server]: 12	Connected to the server enter the query: 22 + 44 [Server]: 66	 Connected to the server enter the query: 3 * 4 [Server]: 12