

Computer Networks LAB (CS3P004)

Spring Semester 2024-25

Lab Sheet 5

Socket Programming in C:

1) Recall the previous lab on TCP sockets:

a) Server program:

https://drive.google.com/file/d/1ppx6mQDSq_WOjC18qo752c2bqTMFMio9/view?usp=sharing

b) Client Program:

<https://drive.google.com/file/d/16goEugVs9e3kokbj6s8tyKgtWoUwPdZP/view?usp=sharing>

Web Resources: Beej's Guide to Network Programming: <https://beej.us/guide/bgnet/html/>

2) In this assignment we design the client-server chat programs as follows:

i) Develop a Chat Server program using threads which can:

- (1) Handle multiple clients at the same time.
- (2) A client can join/disconnect from the chat.
- (3) Two clients can chat via server.
- (4) A client can choose to broadcast the message to all clients alive.
- (5) Add more functionalities, like timeout, etc., it is up to your creativity.

ii) Design the Chat Server program (in place of threads) use select() system call to connect multiple clients.

iii) Design the Client program for the chat-server.

Note:

- (1) Server is up and running at the known port, client can join and disconnect.
- (2) Please write your code in C/C++ . All the codes must be properly indented and commented.
- (3) Please submit a report which contains:
 - (a) Group details: Name and Roll no. of all the members;
 - (b) Readme file;
 - (c) Images of running server and multiple clients in the separate hosts; and
 - (d) Clearly mention the additional functionalities in your codes;
- (4) Please submit all the codes in a zip file.