

Before you start your assignment you **must** read the following instructions.

1. 1 mark for writing your names/roll-numbers, -1 for not writing your name/roll-number in the **email**.
2. For this assignment your best reference will be "*Beej's Guide to Network Programming*".
3. I humbly request you **again** to not copy answers from your fellows.  
Why ?
  - You will be **penalized** if caught.
  - This assignment will give you a push for your term project.
4. **Due Date : Wednesday 15<sup>th</sup> April 2015 Time: 2300**



I have made an assumption.  
You have to prove it right.

**Assumption :**

*You all are ideal (wo)men ! "Hainnnnnnnn" who an ideal man is ?*  
(s)He possesses :

- *High Spirit*
- *Self Esteem*
- *Persistent & Relentless Struggle Towards Higher Ends*
- *Respect For One's Promise*

*He is like an eagle rather than a vulture or a crow that is parasitic upon others life.*

*An eagle is superior to all other birds because it is an amalgamation of independence, individuality, bravery, distinct recognition and unflinching spirit to succeed.*

*So be like Iqbal ka Shaheen and face network programming head on !*

**Assignment:**

You have the simple TCP Server and Client program in C. (Consult : Beej Network Programming Guide). First try to understand the code completely. I have already discussed the algorithm with you in class.

First Step:

Did you know you can also connect with your server using Telnet Program !

Run your server on a network on one host and try to telnet to your server from other host.

Of course when you telnet you will need to tell the identifier (IP address, Port Number ) the same way you do in your client.

Second Step:

In this assignment you will code the Server Side using Socket Programming in C.

You will NOT code the client side. This means you could test your Server by Telnet'ing it !

You need to create a Chat Server with the following features:

- Clients should be able to do a private chat.

- Server has some special words like
  - \SHOW
  - \PVT
  - \END

Whenever a client writes \SHOW in the telnet program the Server responds with the active list of clients at that moment. This means if you have the list of clients connected with the Server, you could telnet "\PVT somemsg clientname" and do a private chat. Like wise if you write \END in the telnet window that specific client connection should close.

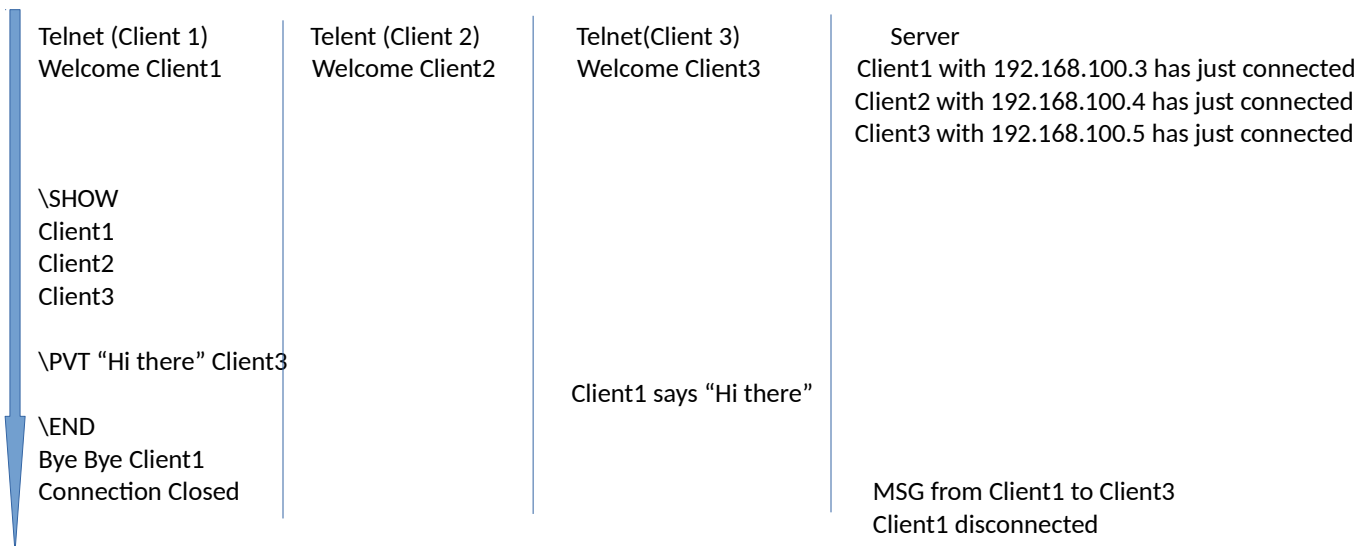
You need to make it console based.

As I love my students, so some pseudo code for your Server :

Flow of Server will be like this

- socket
- bind
- listen
- accept
- After accepting the connection run it in a new thread using pthread\_create function in C.
- In the thread which you just created you would take an appropriate action when the client types those special words.

Console Windows (Blue arrow shows you the timeline)



**PLEASE NOTE :** You have to send ONLY one (*server.c*) file as an attachment to [fccbrains@gmail.com](mailto:fccbrains@gmail.com). Your programs **must** be **error free** if you want to get some credit.