This App supports many clients and any client can send messages
to any other client. The server manages all the messages passing
among the clients.
● First, the client connects to the server and then the server asks its
name. These names are used by the clients to message each other.
● The clients can connect to the server at any time and can also leave
at any time they want by sending " quit " to the server.
● When a client wants to know the list of users connected to the server,
the client can send " get_list " to the server and the server sends back
the list of users.
● When a client (c1) wants to send a message to another client (c2), c1
should send a msg to the server with the format " send <c2> : <msg> ".
Then the server will send the msg to the client (c2).
● When a client (c1) wants to send a message to all other clients, c1
should send a msg to the server with the format " send all <msg> ".
Then the server will send the msg to all clients except c1.
● When a client (c1) wants to send a message to some other clients
(c2, c3, c4), c1 should send a msg to the server with the format " send

c2 c3 c4 : <msg> ”. Then the server will send the msg to clients c2,
c3, c4.

● To achieve this, we used multithreading so that the server can do
message passing between the clients smoothly.

● This is somewhat similar to chatting applications like
messenger, WhatsApp .
Because we can receive all messages on one side and we can run
our commands or send messages on the left side

○ Messages sent by single-caste are equivalent to sending
private messages to a single person

○ Messages sent by multi-caste are equivalent to sending
messages privately to multiple recipients at a time(equivalent to
WhatsApp forward)

○ Messages sent by broadcast are equivalent to sending group
messages

○ Just that we have only 1 terminal for getting input and sending
input, we tried our best to give a good interface by classifying
the type of messages that each client received

● In the end, if you want to stop the server then you have to do
“ctrl+c”,
otherwise, it keeps on waiting for the clients. Note : Here we also
added a timestamp for a @message exchange
The following is just a sample to show the working of this feature.
Where
initially three clients connect to the server and send messages to
one

another. After one client quits, and some other client connects
and chat again. At last, all quit.


```
kvkr_3003@kvkr-3003:~/code_files/asgs/comp_net/asg2/question 2/part 2$ python3 multi-client.py localhost
Enter your name: Vamshi
Connected with  Server at date_time =  2020-12-17 20:06:53

Format: >>"get_list" for list of clients
        >>"send all" sends msg for all
        >>"send c1 c2 : msg" sends msg for c1 and c2
        >>"quit" for exiting

get_list
                                2020-12-17 20:07:43
                                Available client: Vamshi Janaki Prashanth
send all hello friends
                                2020-12-17 20:08:03
                                Janaki (broadcasted) : hellooo
                                2020-12-17 20:08:28
                                Prashanth (broadcasted) : when is the asg deadline??
                                2020-12-17 20:09:42
                                Prashanth (broadcasted) : Bye ppl
                                2020-12-17 20:12:53
                                Varshittha (broadcasted) : when would the college reopen 😨
send all mostly by Feb
send all ok I have work now, byee
quit
```



```
kvkr_3003@kvkr-3003:~/code_files/asgs/comp_net/asg2/question 2/part 2$ python3 multi-client.py localhost
Enter your name: Janaki
Connected with  Server at date_time =  2020-12-17 20:06:59

Format: >>"get_list" for list of clients
        >>"send all" sends msg for all
        >>"send c1 c2 : msg" sends msg for c1 and c2
        >>"quit" for exiting

                                2020-12-17 20:07:53
                                Vamshi (broadcasted) : hello friends
send all hellooo
                                2020-12-17 20:08:28
                                Prashanth (broadcasted) : when is the asg deadline??
send Prashanth : Today night 11:59pm
                                2020-12-17 20:09:34
                                Prashanth (singlecasted) : oh no, I need to leave
                                2020-12-17 20:09:42
                                Prashanth (broadcasted) : Bye ppl
                                2020-12-17 20:12:53
                                Varshittha (broadcasted) : when would the college reopen 😨
                                2020-12-17 20:13:25
                                Vamshi (broadcasted) : mostly by Feb
                                2020-12-17 20:13:49
                                Vamshi (broadcasted) : ok I have work now, byee
                                2020-12-17 20:14:37
                                Varshittha (broadcasted) : Bye
quit
```

```
kvkr_3003@kvkr-3003:~/code_files/asgs/comp_net/asg2/question 2/part 2$ python3 multi-client.py localhost
Enter your name: Prashanth
Connected with  Server at date_time =  2020-12-17 20:07:06

Format: >>"get_list" for list of clients
        >>"send all" sends msg for all
        >>"send c1 c2 : msg" sends msg for c1 and c2
        >>"quit" for exiting


                                     2020-12-17 20:07:53
                                     Vamshi (broadcasted) : hello friends
                                     2020-12-17 20:08:03
                                     Janaki (broadcasted) : hellooo
send all when is the asg deadline??

                                     2020-12-17 20:09:11
                                     Janaki (singlecasted) : Today night 11:59pm
send Janaki : oh no, I need to leave
send all Bye ppl
quit
kvkr_3003@kvkr-3003:~/code_files/asgs/comp_net/asg2/question 2/part 2$ python3 multi-client.py localhost
Enter your name: Varshittha
Connected with  Server at date_time =  2020-12-17 20:10:36

Format: >>"get_list" for list of clients
        >>"send all" sends msg for all
        >>"send c1 c2 : msg" sends msg for c1 and c2
        >>"quit" for exiting

send all when would the college reopen 😨
                                     2020-12-17 20:13:25
                                     Vamshi (broadcasted) : mostly by Feb
                                     2020-12-17 20:13:49
                                     Vamshi (broadcasted) : ok I have work now, byee
get_list
                                     2020-12-17 20:14:22
                                     Available client: Janaki Varshittha

send all Bye
quit
```