

TESTS

1. 3 Clients chatting:

Server-

```
^C
[kjyothsna@hera Assignment2]$ clear
[kjyothsna@hera Assignment2]$ ./server 127.0.0.1 7000 3
Waiting for connection...
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
New connection from 127.0.0.1; Socket: 5
Client name: Tong
ACK has been created!
FWD has been created!
ONLINE has been created!
FWD has been created!
Message received!
IDLE has been created!
FWD has been created!
Message received!
IDLE has been created!
FWD has been created!
New connection from 127.0.0.1; Socket: 6
Client name: thirduser
ACK has been created!
FWD has been created!
ONLINE has been created!
FWD has been created!
FWD has been created!
Message received!
FWD has been created!
FWD has been created!
Message received!
IDLE has been created!
FWD has been created!
FWD has been created!
Message received!
FWD has been created!
FWD has been created!
```

User1:

```
[kjoythsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna

***Tong has joined the chatroom.***
Tong is idle.

***thirduser has joined the chatroom.***
Hi everyone
thirduser is idle.
Tong: Hello everybody

thirduser: How are you all

Tong is idle.
Tong: Lets go out today

thirduser is idle.
Tong is idle.
```

User 2:

```
[kjoythsna@hera Assignment2]$ ./client Tong 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 2 members in the chatroom - Jyothsna, Tong
Jyothsna is idle.

***thirduser has joined the chatroom.***
Jyothsna: Hi everyone

Hellthirduser is idle.
o everybody
Jyothsna is idle.
thirduser: How are you all

Lets go out today
thirduser is idle.
```

User 3:

```
[kjoythsna@hera Assignment2]$ ./client thirduser 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 3 members in the chatroom - Jyothsna, Tong, thirduser
Jyothsna: Hi everyone

Tong: Hello everybody

Jyothsna is idle.
How are you all
Tong is idle.
Tong: Lets go out today

Tong is idle.
```

2. Server rejects a client with a duplicate username:

Server:

```
[kjoythsna@hera Assignment2]$ ./server 127.0.0.1 7000 3
Waiting for connection...
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
Client already exists.
NAK has been created!
NAK sent
```

User1:

```
[kjoythsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna
```

User2:

```
[kjoythsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Username already exist!
Closing client socket[kjoythsna@hera Assignment2]$
```

3. User exits and again comes back

Server:

```
[k@jyothsna@hera Assignment2]$ ./server 127.0.0.1 7000 2
Waiting for connection...
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
Socket 4 hung up
OFFLINE has been created!
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
```

Client:

```
[k@jyothsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna
^C
[k@jyothsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna
```

4. Reject clients because it exceeds maximum number of clients

Server:

```
[kjoythsna@hera Assignment2]$ ./server 127.0.0.1 7000 2
Waiting for connection...
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
New connection from 127.0.0.1; Socket: 5
Client name: Tong
ACK has been created!
FWD has been created!
ONLINE has been created!
FWD has been created!
NAK has been created!
FWD has been created!
Message received!
IDLE has been created!
FWD has been created!
Message received!
IDLE has been created!
FWD has been created!
```

User1:

```
[kjoythsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna
Connection closed by the server
Closing client socket[kjoythsn./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna

***Tong has joined the chatroom.***
Tong is idle.
```

User 2:

```
[kjoythsna@hera Assignment2]$ ./client Tong 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 2 members in the chatroom - Jyothsna, Tong
Jyothsna is idle.
```

User 3:

```
[kjoythsna@hera Assignment2]$ ./client thirduser 127.0.0.1 7000
Client sends a request to join the chatroom.
Too many users in the chat room!
Closing client socket[kjoythsna@hera Assignment2]$
```

5. Bonus parts

ACK:

In test case 4 screenshots, we can see that when each user joins chat room, server sends the username with the client count present in chatroom

*NAK:

From test case 2 and 4, we see server sends NAK to deny admission to chatroom

ONLINE:

From test case 4 screenshots, we see that whenever other user joins, the message "**** has joined the chatroom" is printed

OFFLINE:

Server:

```
[kjoythsna@hera Assignment2]$ ./server 127.0.0.1 7000 2
Waiting for connection...
New connection from 127.0.0.1; Socket: 4
Client name: Jyothsna
ACK has been created!
FWD has been created!
ONLINE has been created!
New connection from 127.0.0.1; Socket: 5
Client name: Tong
ACK has been created!
FWD has been created!
ONLINE has been created!
FWD has been created!
Socket 5 hung up
OFFLINE has been created!
FWD has been created!
Message received!
IDLE has been created!
```

User:

```
[kjoythsna@hera Assignment2]$ ./client Jyothsna 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 1 members in the chatroom - Jyothsna

***Tong has joined the chatroom.***
***Tong has left the chatroom.***
```

User2:

```
[kjoythsna@hera Assignment2]$ ./client Tong 127.0.0.1 7000
Client sends a request to join the chatroom.
Client has joined the chatroom. There are 2 members in the chatroom - Jyothsna, Tong
^C
[kjoythsna@hera Assignment2]$
```

IDLE:

From all the test cases, we see that the server sends the IDLE messages to all the clients and hence every other client receive IDLE messages