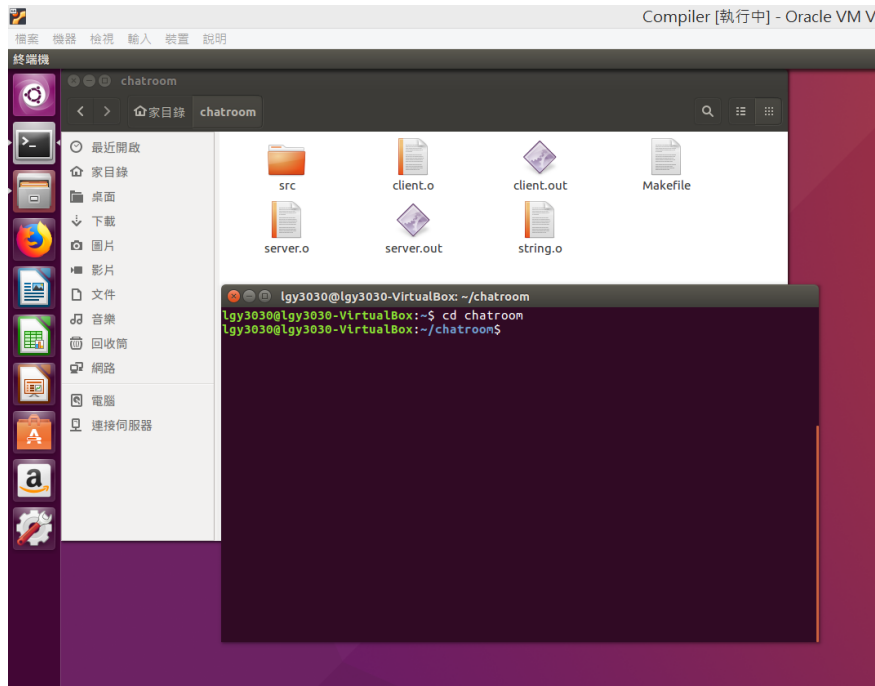
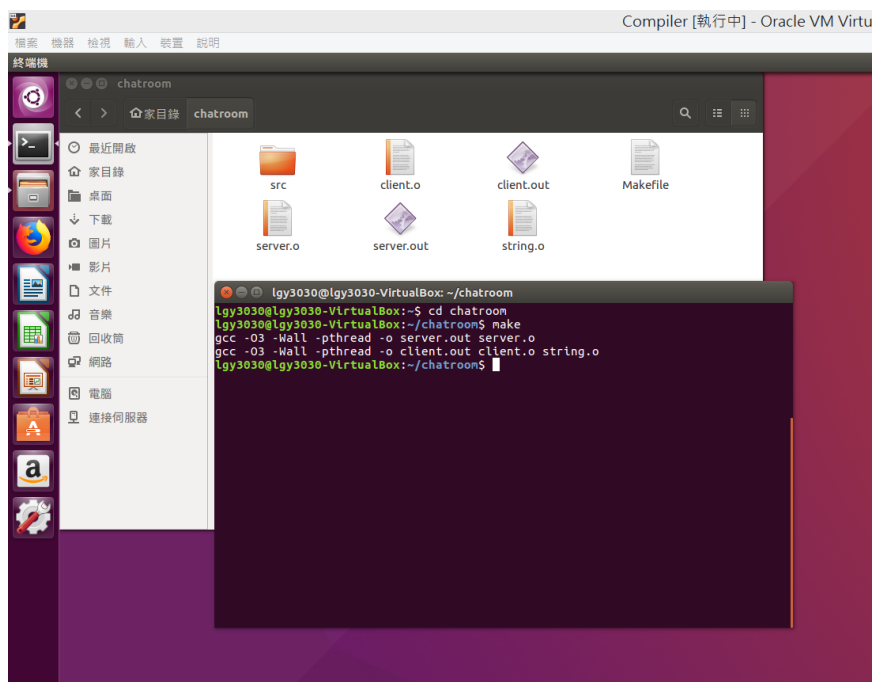


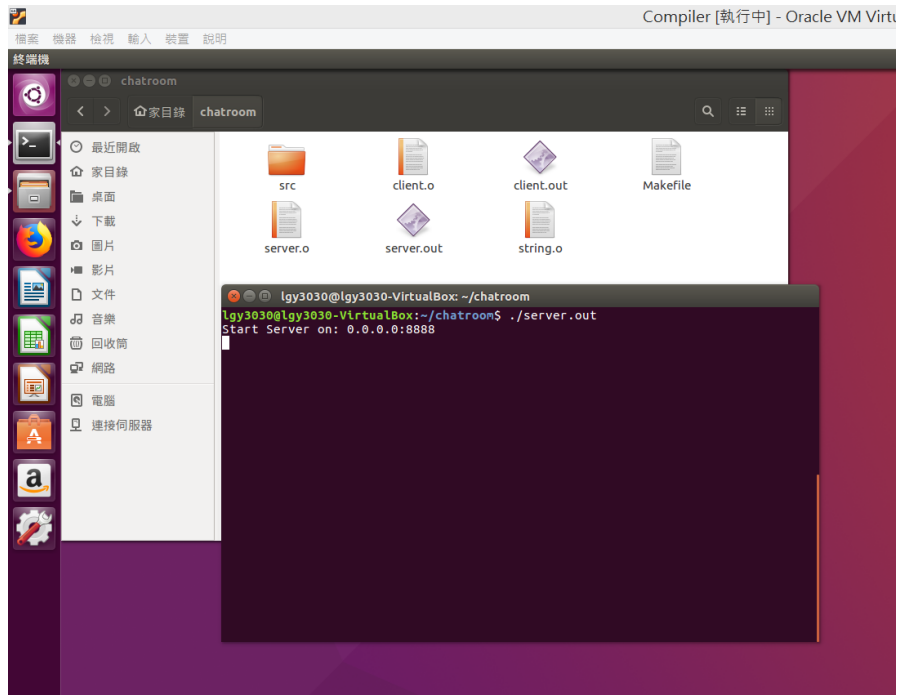
1. `cd chatroom` (進入 chatroom 資料夾)



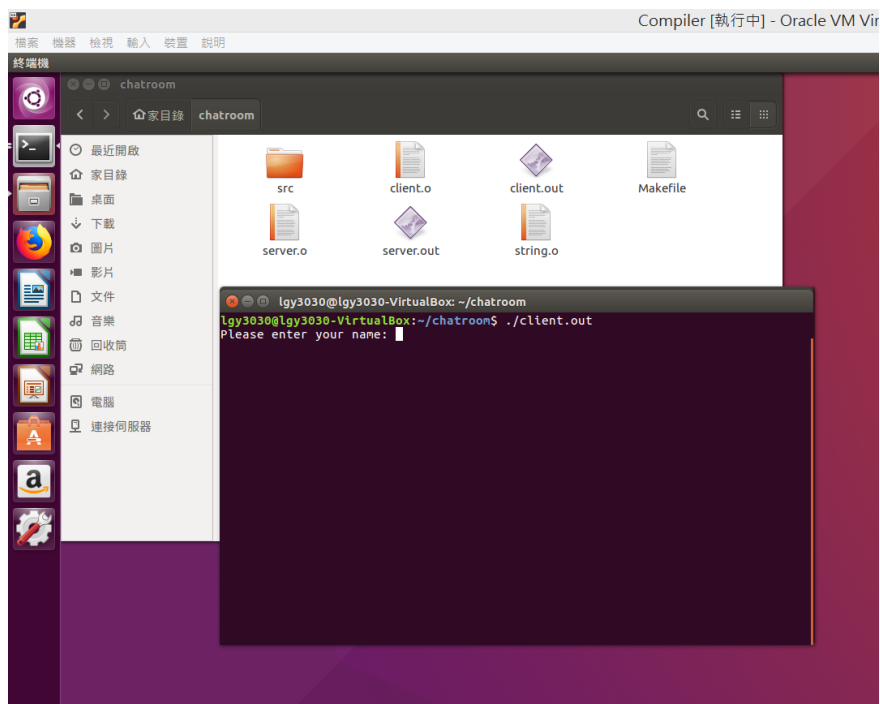
2. `make` (產生 server.out 和 client.out)



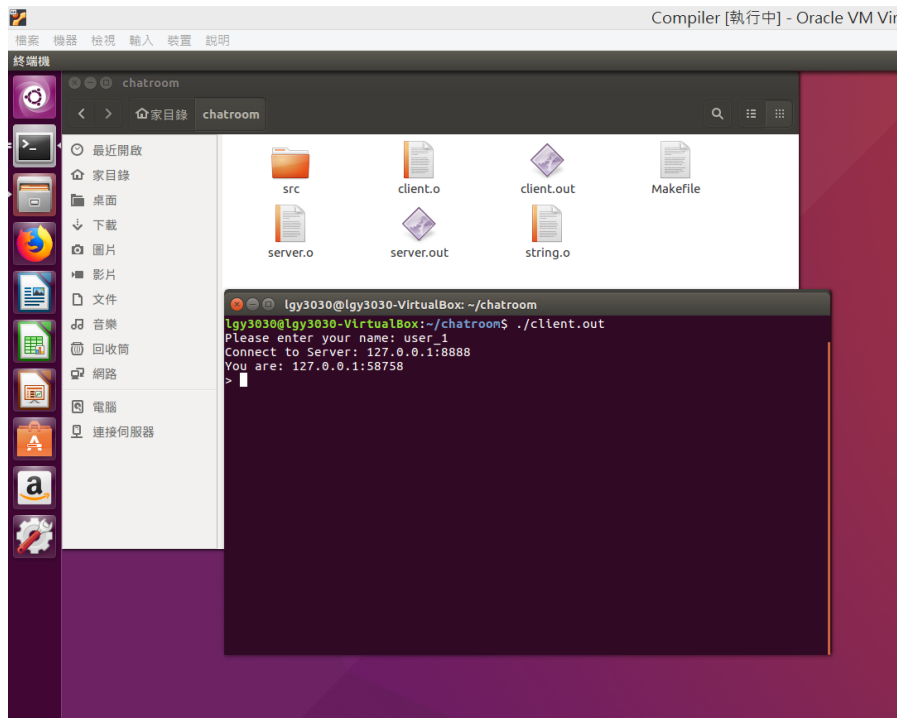
3. `./server.out` (執行 server.out)



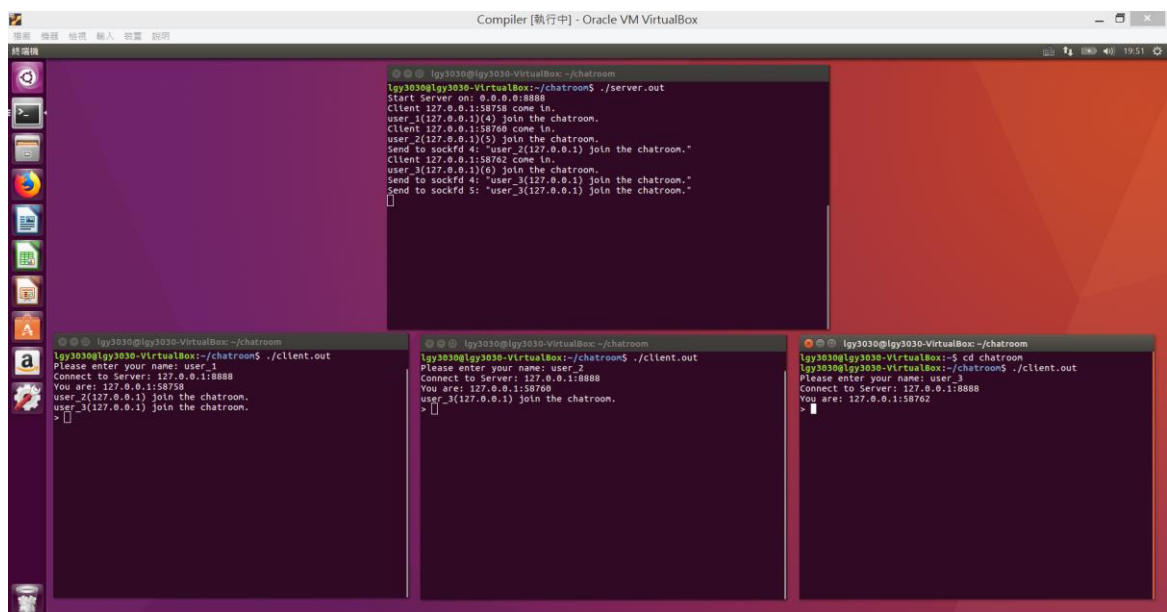
4. `./client.out` (執行 client.out)



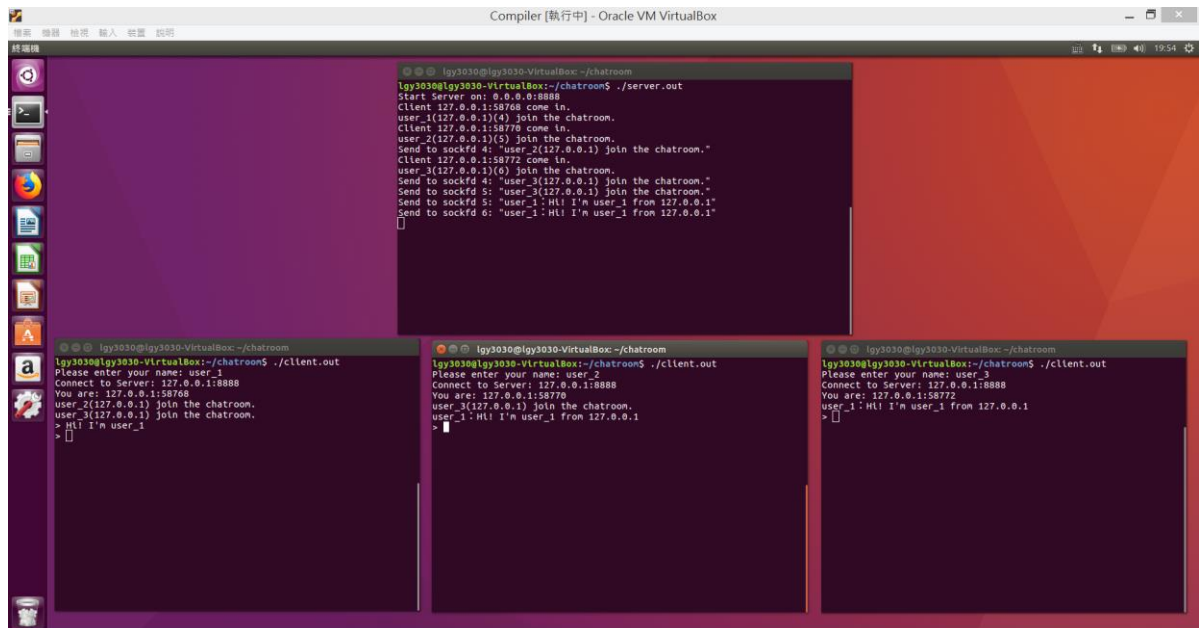
5. 輸入 client 的名字



6. 總共開 1 個 server, 3 個 client



7. 在 user_1 輸入 Hi! I'm user_1,其他 client 也會接收到



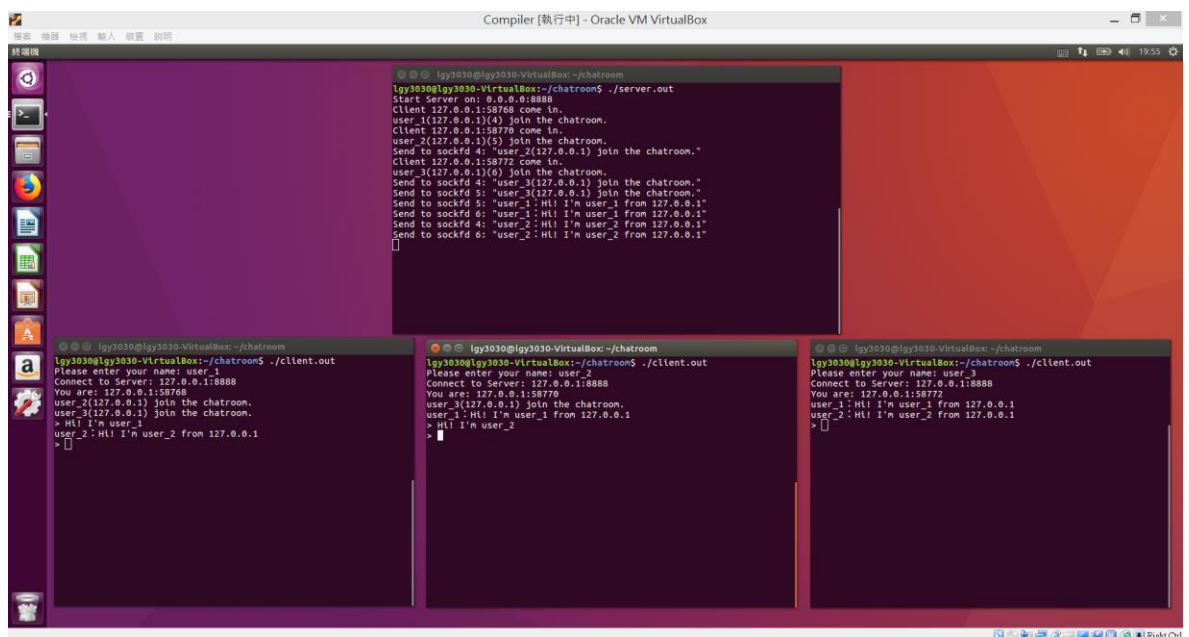
```
lgy3030@lgy3030-VirtualBox: ~/chatroom
lgy3030@lgy3030-VirtualBox:~/chatroom$ ./server.out
Start Server on: 0.0.0.0:8888
Client 127.0.0.1:58768 come in.
user_1(127.0.0.1)(4) join the chatroom.
Client 127.0.0.1:58770 come in.
user_2(127.0.0.1)(5) join the chatroom.
Send to sockfd 4: "user_2(127.0.0.1) join the chatroom."
Client 127.0.0.1:58772 come in.
user_3(127.0.0.1)(6) join the chatroom.
Send to sockfd 4: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_1: Hi! I'm user_1 from 127.0.0.1"
Send to sockfd 6: "user_1: Hi! I'm user_1 from 127.0.0.1"

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_1
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58768
user_2(127.0.0.1) join the chatroom.
user_3(127.0.0.1) join the chatroom.
> Hi! I'm user_1
>

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_2
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58770
user_3(127.0.0.1) join the chatroom.
user_1: Hi! I'm user_1 from 127.0.0.1
>

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_3
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58772
user_1: Hi! I'm user_1 from 127.0.0.1
>
```

8. 在 user_2 輸入 Hi! I'm user_2,其他 client 也會接收到



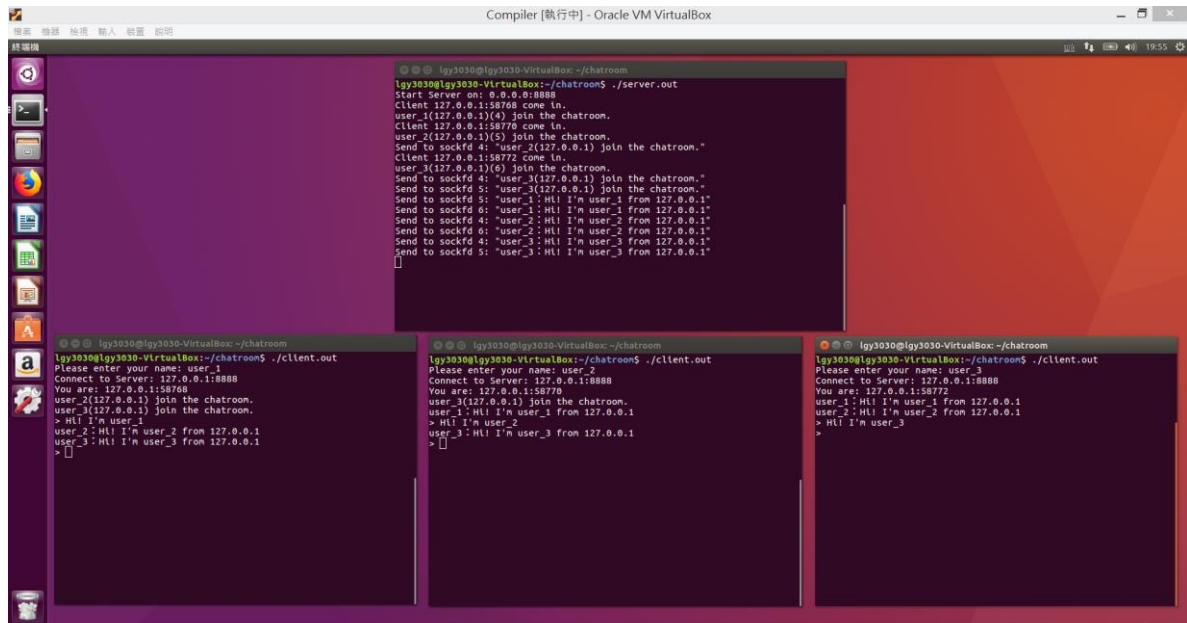
```
lgy3030@lgy3030-VirtualBox: ~/chatroom
lgy3030@lgy3030-VirtualBox:~/chatroom$ ./server.out
Start Server on: 0.0.0.0:8888
Client 127.0.0.1:58768 come in.
user_1(127.0.0.1)(4) join the chatroom.
Client 127.0.0.1:58770 come in.
user_2(127.0.0.1)(5) join the chatroom.
Send to sockfd 4: "user_2(127.0.0.1) join the chatroom."
Client 127.0.0.1:58772 come in.
user_3(127.0.0.1)(6) join the chatroom.
Send to sockfd 4: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_1: Hi! I'm user_1 from 127.0.0.1"
Send to sockfd 6: "user_1: Hi! I'm user_1 from 127.0.0.1"
Send to sockfd 4: "user_2: Hi! I'm user_2 from 127.0.0.1"
Send to sockfd 6: "user_2: Hi! I'm user_2 from 127.0.0.1"

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_1
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58768
user_2(127.0.0.1) join the chatroom.
user_3(127.0.0.1) join the chatroom.
> Hi! I'm user_1
user_2: Hi! I'm user_2 from 127.0.0.1
>

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_2
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58770
user_3(127.0.0.1) join the chatroom.
user_1: Hi! I'm user_1 from 127.0.0.1
user_2: Hi! I'm user_2
>

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_3
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58772
user_1: Hi! I'm user_1 from 127.0.0.1
user_2: Hi! I'm user_2 from 127.0.0.1
>
```

9. 在 user_3 輸入 Hi! I'm user_3,其他 client 也會接收到



```
lgy3030@lgy3030-VirtualBox:~/chatroom$ ./server.out
Start Server on: 0.0.0.0:8888
Client 127.0.0.1:58768 come in.
user_1(127.0.0.1)(0) join the chatroom.
Client 127.0.0.1:58770 come in.
user_2(127.0.0.1)(5) join the chatroom.
Send to sockfd 4: "user_2(127.0.0.1) join the chatroom."
Client 127.0.0.1:58772 come in.
user_3(127.0.0.1)(0) join the chatroom.
Send to sockfd 4: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_3(127.0.0.1) join the chatroom."
Send to sockfd 5: "user_1: Hi! I'm user_1 from 127.0.0.1"
Send to sockfd 4: "user_2: Hi! I'm user_2 from 127.0.0.1"
Send to sockfd 4: "user_2: Hi! I'm user_2 from 127.0.0.1"
Send to sockfd 4: "user_3: Hi! I'm user_3 from 127.0.0.1"
Send to sockfd 5: "user_3: Hi! I'm user_3 from 127.0.0.1"
^

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_1
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58768
user_2(127.0.0.1) join the chatroom.
> Hi! I'm user_1
user_2: Hi! I'm user_2 from 127.0.0.1
user_3: Hi! I'm user_3 from 127.0.0.1
> ^

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_2
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58770
user_3(127.0.0.1) join the chatroom.
user_1: Hi! I'm user_1 from 127.0.0.1
> Hi! I'm user_2
user_3: Hi! I'm user_3 from 127.0.0.1
> ^

lgy3030@lgy3030-VirtualBox:~/chatroom$ ./client.out
Please enter your name: user_3
Connect to Server: 127.0.0.1:8888
You are: 127.0.0.1:58772
user_1: Hi! I'm user_1 from 127.0.0.1
user_2: Hi! I'm user_2 from 127.0.0.1
> Hi! I'm user_3
>
```