

Name: Tanmay Vig

Roll No.: 19BCS061

Class: B. Tech 3rd year, 5th sem

Lab 10: Write a program to connect multiple clients to server.

Answer:

Source code:

Server:

```
import socket
```

```
from datetime import datetime
```

```
import os
```

```
HOST:str='127.0.0.1'
```

```
PORT:int=3000
```

```
thread_count:int=0
```

```
conn_list:list=[]
```

```
def chat(connection,add) -> None :
```

```
    while True:
```

```
        data = connection.recv(2048)
```

```
        if not data or data.decode()=="bye":
```

```
break
```

```
print("{} Client {}: ".format(datetime.now(),str(add[1])) + data.decode())
```

```
connection.sendall(reply:=str.encode(input("{} Server: ".format(datetime.now()))))
```

```
if reply=="bye":
```

```
break
```

```
connection.close()
```

```
with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
```

```
s.bind((HOST, PORT))
```

```
s.listen()
```

```
while True:
```

```
choice= int(input("Enter:\n 1. to add new client\n 2. to chat with client\n 0 to exit\n"))
```

```
if(choice==1):
```

```
conn,add =s.accept()
```

```
print("Connected to:" + add[0]+":"+str(add[1])+" at "+str(datetime.now()))
```

```
conn_list.append((conn,add))
```

```
thread_count+=1
```

```
elif(choice==2):
```

```
if(len(conn_list)<1):
```

```
print("no connections yet!")
```

```
        continue

    chat(conn_list[0][0],conn_list[0][1])

    conn_list.pop(0)

else:

    break
```

client:

```
import socket

from datetime import datetime

HOST:str='127.0.0.1'

PORT:int=3000

with socket.socket(socket.AF_INET,socket.SOCK_STREAM) as s:

    s.connect((HOST,PORT))

    while True:

        s.sendall(reply:=input("{} Client: ".format(datetime.now())).encode());

        if reply=="bye":

            break

        data=s.recv(1024)

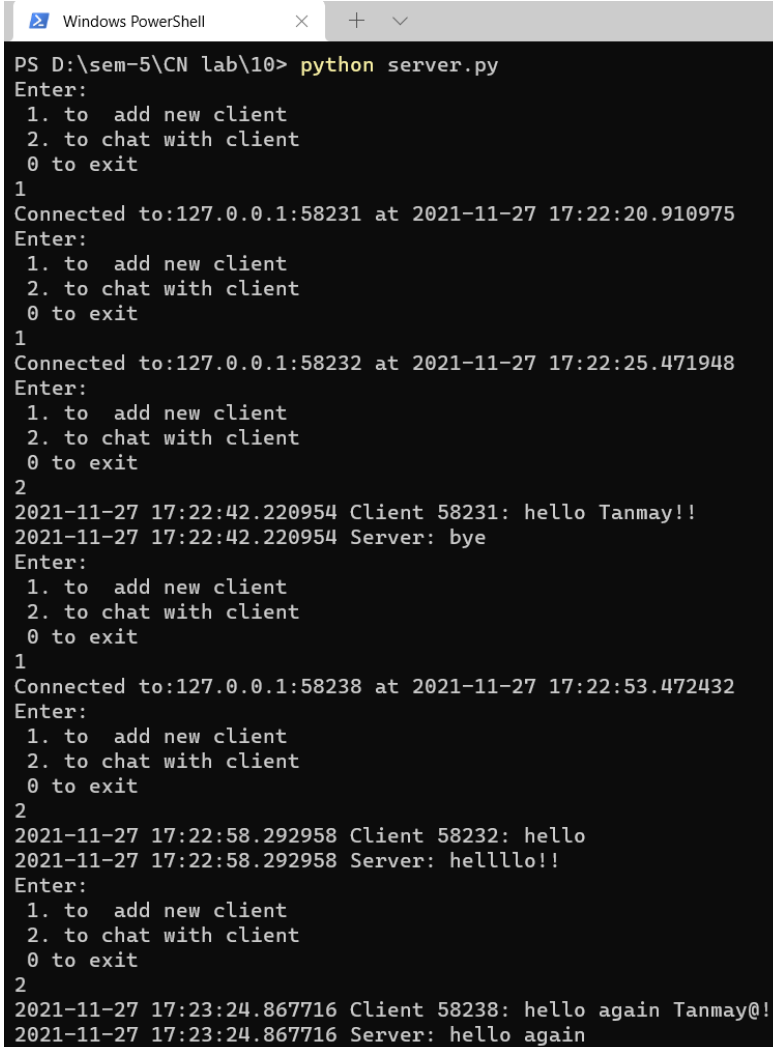
        if not data or data.decode()=="bye":
```

break

```
print("{} Server: {}".format(datetime.now()) + data.decode())
```

Output:

Server:



```
PS D:\sem-5\CN lab\10> python server.py
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
1
Connected to:127.0.0.1:58231 at 2021-11-27 17:22:20.910975
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
1
Connected to:127.0.0.1:58232 at 2021-11-27 17:22:25.471948
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
2
2021-11-27 17:22:42.220954 Client 58231: hello Tanmay!!
2021-11-27 17:22:42.220954 Server: bye
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
1
Connected to:127.0.0.1:58238 at 2021-11-27 17:22:53.472432
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
2
2021-11-27 17:22:58.292958 Client 58232: hello
2021-11-27 17:22:58.292958 Server: hellllo!!
Enter:
 1. to add new client
 2. to chat with client
 0 to exit
2
2021-11-27 17:23:24.867716 Client 58238: hello again Tanmay@!
2021-11-27 17:23:24.867716 Server: hello again
```

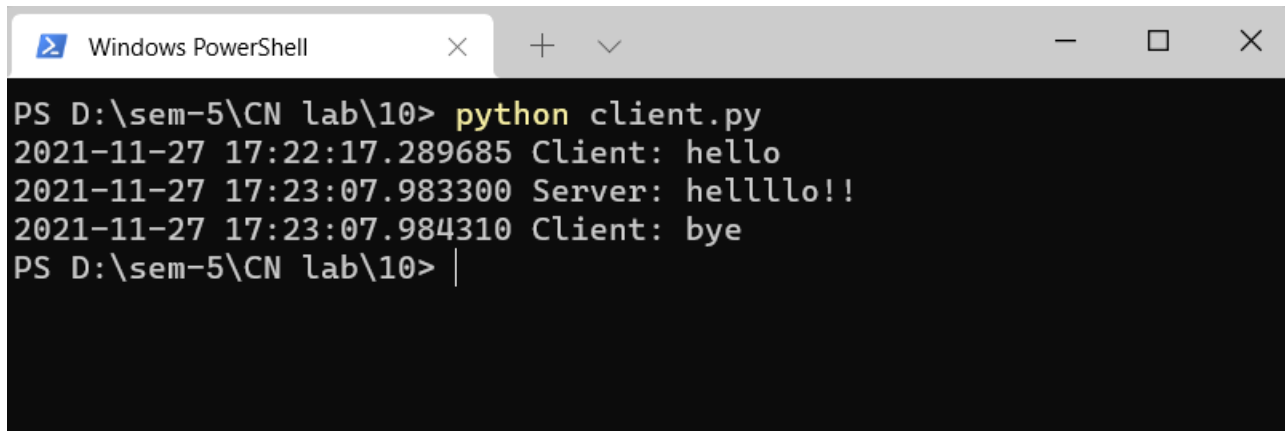
```
Windows PowerShell
0 to exit
1
Connected to:127.0.0.1:58232 at 2021-11-27 17:22:25.471948
Enter:
1. to add new client
2. to chat with client
0 to exit
2
2021-11-27 17:22:42.220954 Client 58231: hello Tanmay!!
2021-11-27 17:22:42.220954 Server: bye
Enter:
1. to add new client
2. to chat with client
0 to exit
1
Connected to:127.0.0.1:58238 at 2021-11-27 17:22:53.472432
Enter:
1. to add new client
2. to chat with client
0 to exit
2
2021-11-27 17:22:58.292958 Client 58232: hello
2021-11-27 17:22:58.292958 Server: hellllo!!
Enter:
1. to add new client
2. to chat with client
0 to exit
2
2021-11-27 17:23:24.867716 Client 58238: hello again Tanmay@!
2021-11-27 17:23:24.867716 Server: hello again
Enter:
1. to add new client
2. to chat with client
0 to exit
0
PS D:\sem-5\CN lab\10> |
```

Client:

1:

```
Windows PowerShell
PS D:\sem-5\CN lab\10> python client.py
2021-11-27 17:22:12.705852 Client: hello Tanmay!!
PS D:\sem-5\CN lab\10> python client.py
2021-11-27 17:22:53.472432 Client: hello again Tanmay@!
2021-11-27 17:23:32.828457 Server: hello again
2021-11-27 17:23:32.828457 Client: bye
PS D:\sem-5\CN lab\10> |
```

2:



```
Windows PowerShell
PS D:\sem-5\CN lab\10> python client.py
2021-11-27 17:22:17.289685 Client: hello
2021-11-27 17:23:07.983300 Server: hellllo!!
2021-11-27 17:23:07.984310 Client: bye
PS D:\sem-5\CN lab\10> |
```