

For running code, server.py and client.py host and port are given through command line argument

For client.py after giving a message **none** then connection get's closed from client.py

Keep it in mind no spaces in input input should be integerOperatorinteger

Like 78*78,89/89 no spaces between integer and operator only two integers

For server1.py

Ans: run server1.py and client.py

As there were no clients first it will accept request and rest of the clients will be in hang mode

Screenshots:

```
PS E:\6th sem\computer networks\assignment 3> python server1.py 127.0.0.1 5000
connected to the client socket number ('127.0.0.1', 54170)
█
```

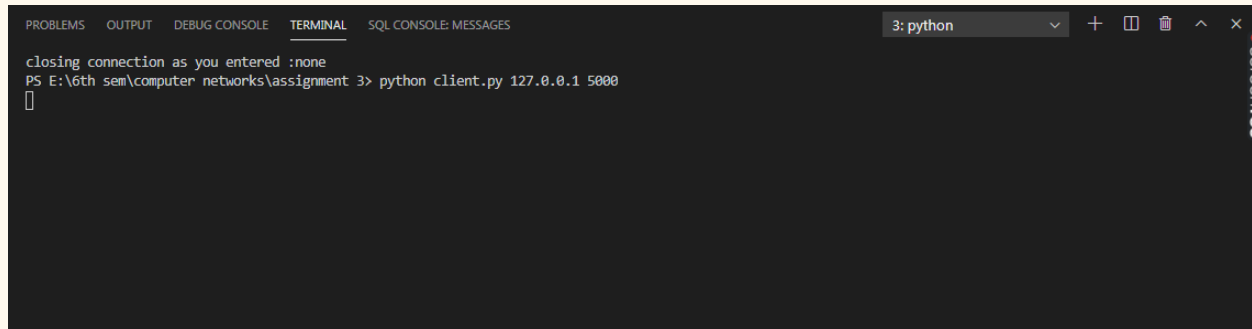
```
connectionreseterror: [WinError 10054] An existing connection was forcibly closed by the remote host
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to the server'
Enter a message to the server: █
```

Inputs are given to server and responses got down screenshot is down

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to the server'
Enter a message to the server: 67+78
Server Replied: 145
Enter a message to the server: 78*78
Server Replied: 6084
Enter a message to the server: █
```

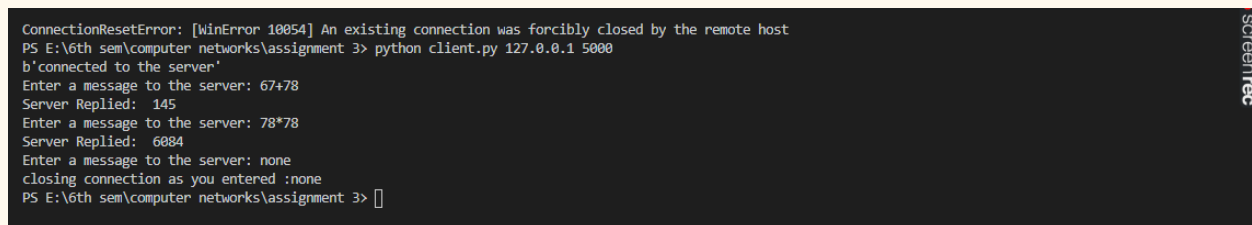
Now if 2nd client wants to join

It will be in hang mode no message form server



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL SQL CONSOLE: MESSAGES 3: python
closing connection as you entered :none
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
█
```

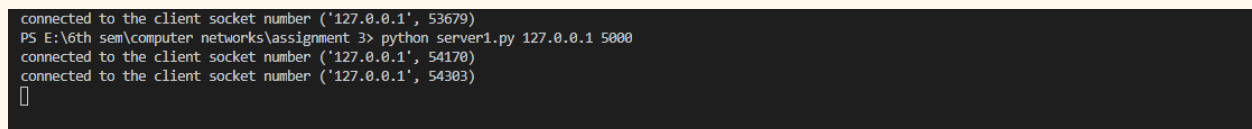
If i close 1st client 2nd will be able to join



```
ConnectionResetError: [WinError 10054] An existing connection was forcibly closed by the remote host
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to the server'
Enter a message to the server: 67+78
Server Replied: 145
Enter a message to the server: 78*78
Server Replied: 6084
Enter a message to the server: none
closing connection as you entered :none
PS E:\6th sem\computer networks\assignment 3> █
```

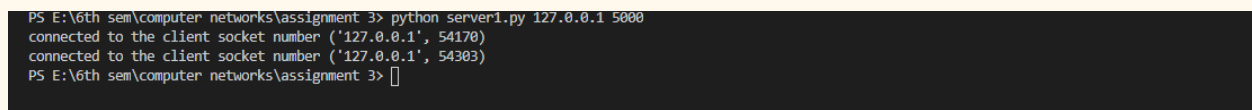


```
closing connection as you entered :none
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to the server'
Enter a message to the server: 78*78
Server Replied: 6084
Enter a message to the server: █
```



```
connected to the client socket number ('127.0.0.1', 53679)
PS E:\6th sem\computer networks\assignment 3> python server1.py 127.0.0.1 5000
connected to the client socket number ('127.0.0.1', 54170)
connected to the client socket number ('127.0.0.1', 54303)
█
```

After ctrl-c interrupt occurs screenshot down below server ended



```
PS E:\6th sem\computer networks\assignment 3> python server1.py 127.0.0.1 5000
connected to the client socket number ('127.0.0.1', 54170)
connected to the client socket number ('127.0.0.1', 54303)
PS E:\6th sem\computer networks\assignment 3> █
```

For Server2.py

Run server2.py and clients through client.py and you can see results in the command line parallelly ,multithreading

Server result

```
PS E:\6th sem\computer networks\assignment 3> python server2.py 127.0.0.1 5000
connected to client having port number: ('127.0.0.1', 54435)
Connection from : ('127.0.0.1', 54435)
connected to client having port number: ('127.0.0.1', 54440)
Connection from : ('127.0.0.1', 54440)
[]
```

Clients result

1st

```
ConnectionResetError: [WinError 10054] An existing connection was forcibly closed by the remote host
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to server'
Enter a message to the server: 78*78
Server Replied: 6084
Enter a message to the server: []
```

2nd

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'connected to server'
Enter a message to the server: 78-89
Server Replied: -11
Enter a message to the server: 67+90
Server Replied: 157
Enter a message to the server: []
```

```
connected to the client socket number ('127.0.0.1', 54303)
PS E:\6th sem\computer networks\assignment 3> python server2.py 127.0.0.1 5000
connected to client having port number: ('127.0.0.1', 54435)
Connection from : ('127.0.0.1', 54435)
connected to client having port number: ('127.0.0.1', 54440)
Connection from : ('127.0.0.1', 54440)
disconnecting client: ('127.0.0.1', 54440) disconnected
disconnecting client: ('127.0.0.1', 54440) disconnected
Traceback (most recent call last):
  File "server2.py", line 48, in <module>
    clientsock, addr = server.accept()
  File "C:\Users\Admin\AppData\Local\Programs\Python\Python38\lib\socket.py", line 292, in accept
    fd, addr = self._accept()
KeyboardInterrupt
PS E:\6th sem\computer networks\assignment 3> []
```

For server3.py

Now the same result as server2.py with the help of select

Server result:2 connetions running parallelly

```
PS E:\6th sem\computer networks\assignment 3> python server3.py 127.0.0.1 5000
Connection accepted for: ('127.0.0.1', 54940)
Connection accepted for: ('127.0.0.1', 54950)
connection closed: <socket.socket fd=184, family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM, proto=0, laddr=('127.0.0.1', 5000), raddr=('127.0.0.1', 54950)>
connection closed: <socket.socket fd=140, family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM, proto=0, laddr=('127.0.0.1', 5000), raddr=('127.0.0.1', 54940)>
[]
```

Clients results: running parallely

1st client

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'you are connected to network'
Enter a message to the server: 89*98
Server Replied: 8722
Enter a message to the server: 45+89
Server Replied: 134
Enter a message to the server: 45/87
Server Replied: 0.5172413793103449
Enter a message to the server: none
closing connection as you entered :none
PS E:\6th sem\computer networks\assignment 3> []
```

2nd client

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'you are connected to network'
Enter a message to the server: 34+98
Server Replied: 132
Enter a message to the server: 43+98
Server Replied: 141
Enter a message to the server: 34*67
Server Replied: 2278
Enter a message to the server: 34/89
Server Replied: 0.38202247191011235
Enter a message to the server: none
closing connection as you entered :none
PS E:\6th sem\computer networks\assignment 3> []
```

For server4.py

Same message sending back echoing back parallely running clients

Run server4.py and client.py any number of times

Server Result:

```
PS E:\6th sem\computer networks\assignment 3> python server4.py 127.0.0.1 5000
Connection accepted for: ('127.0.0.1', 55101)
Connection accepted for: ('127.0.0.1', 55113)
[]
```

Clients Result:

1st

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'you are connected to network'
Enter a message to the server: oh hii what are you doing
Server Replied:  oh hii what are you doing
Enter a message to the server: oh yeah
Server Replied:  oh yeah
Enter a message to the server: 
```

2nd

```
PS E:\6th sem\computer networks\assignment 3> python client.py 127.0.0.1 5000
b'you are connected to network'
Enter a message to the server: oh hey what's up
Server Replied:  oh hey what's up
Enter a message to the server: oh nothing
Server Replied:  oh nothing
Enter a message to the server: 
```