

Network and Communication

CSE 1004

Socket Programming – Multiple Clients

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20BCE1370

Code:

Server.py

```
import socket
import os
from _thread import *

ServerSocket = socket.socket()
host = '127.0.0.1'
port = 2233
ThreadCount = 0
try:
    ServerSocket.bind((host, port))
except socket.error as e:
    print(str(e))

print('Waiting for a Connection..')
ServerSocket.listen(5)

def threaded_client(connection):
    connection.send(str.encode('Welcome to the Servern'))
    while True:
        data = connection.recv(2048)
        reply = 'Server Reply: ' + data.decode('utf-8') + "+" +
str(len(data.decode('utf-8')))
        if not data:
            break
        connection.sendall(str.encode(reply))
    connection.close()

while True:
    Client, address = ServerSocket.accept()
    print('Connected to: ' + address[0] + ':' + str(address[1]))
    start_new_thread(threaded_client, (Client, ))
```

```
ThreadCount += 1
print('Thread Number: ' + str(ThreadCount))
ServerSocket.close()
```

Client.py

```
import socket

ClientSocket = socket.socket()
host = '127.0.0.1'
port = 2233

print('Waiting for connection')
try:
    ClientSocket.connect((host, port))
except socket.error as e:
    print(str(e))

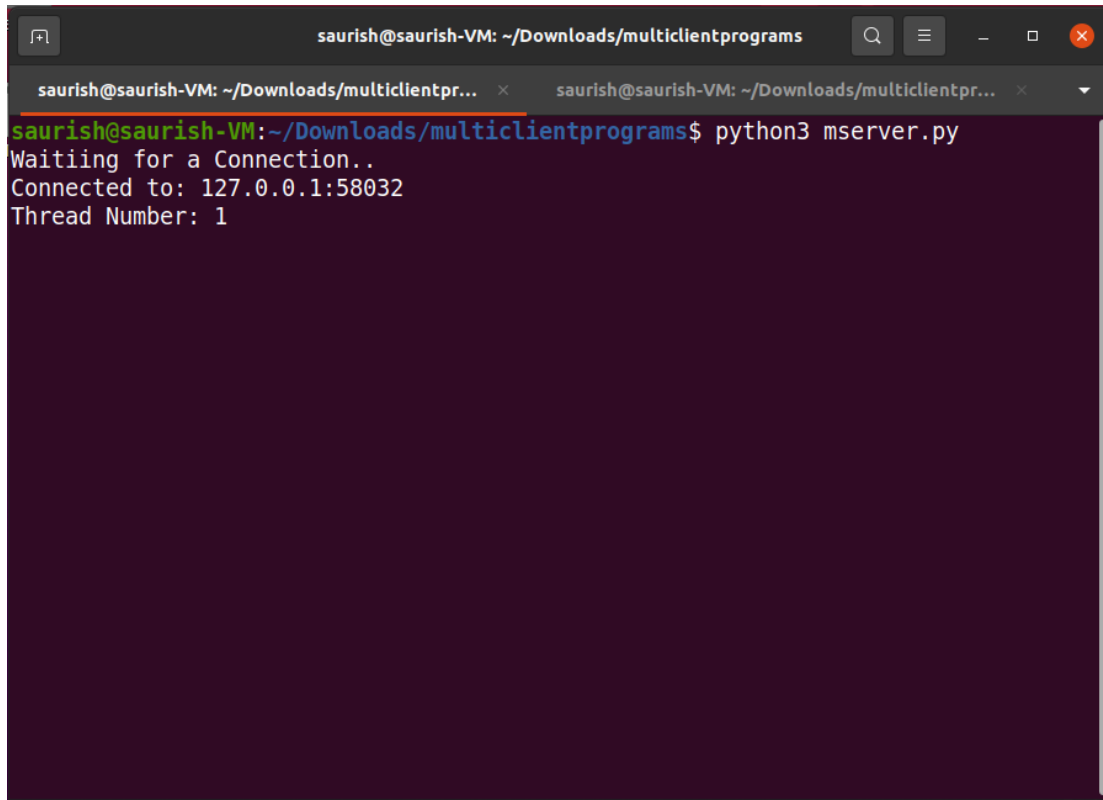
Response = ClientSocket.recv(1024)
while True:
    Input = input('Enter your Data: ')
    ClientSocket.send(str.encode(Input))
    Response = ClientSocket.recv(1024)
    print(Response.decode('utf-8'))

ClientSocket.close()
```

Output:

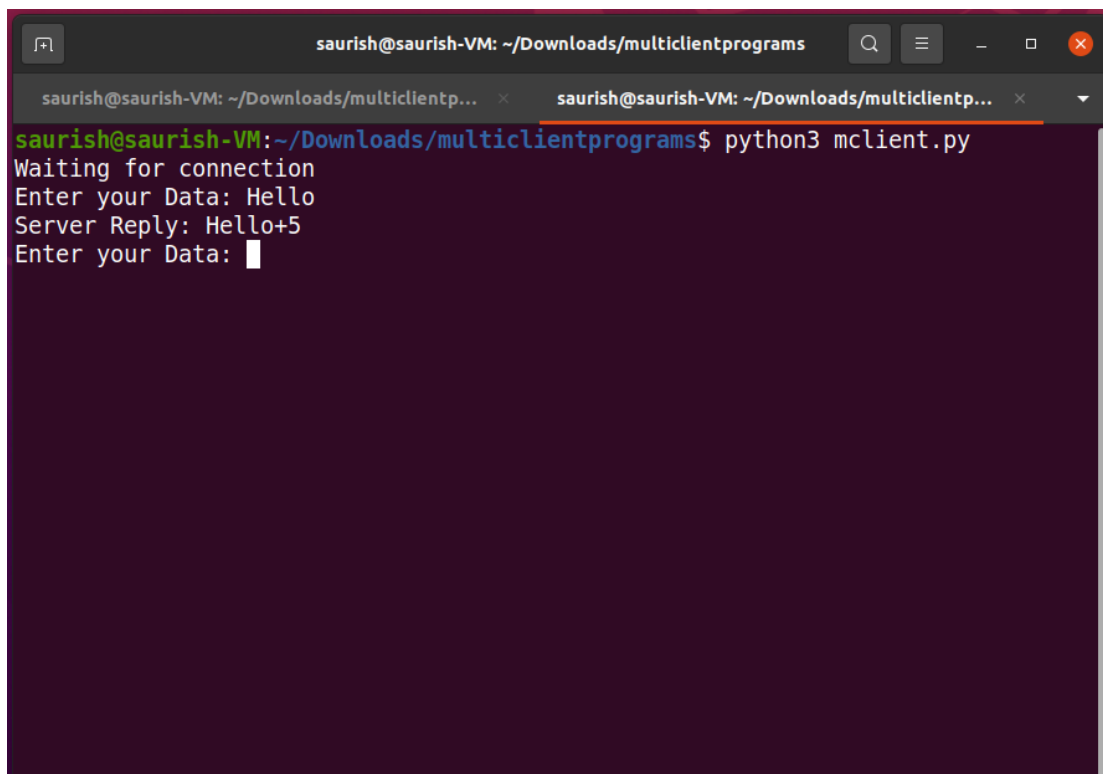
1st Connection

Server

A terminal window titled 'saurish@saurish-VM: ~/Downloads/multiclientprograms' with two tabs. The active tab shows the command 'python3 mserver.py' being executed. The output is: 'Waiting for a Connection..', 'Connected to: 127.0.0.1:58032', and 'Thread Number: 1'.

```
saurish@saurish-VM: ~/Downloads/multiclientprograms$ python3 mserver.py
Waiting for a Connection..
Connected to: 127.0.0.1:58032
Thread Number: 1
```

Client

A terminal window titled 'saurish@saurish-VM: ~/Downloads/multiclientprograms' with two tabs. The active tab shows the command 'python3 mclient.py' being executed. The output is: 'Waiting for connection', 'Enter your Data: Hello', 'Server Reply: Hello+5', and 'Enter your Data: ' followed by a cursor.

```
saurish@saurish-VM: ~/Downloads/multiclientprograms$ python3 mclient.py
Waiting for connection
Enter your Data: Hello
Server Reply: Hello+5
Enter your Data: 
```

2nd Connection

Server

```
saurish@saurish-VM: ~/Downloads/multiclientprograms
saurish@saurish-VM: ~/Downloads/multiclientprograms$ python3 mserver.py
Waiting for a Connection..
Connected to: 127.0.0.1:58032
Thread Number: 1
Connected to: 127.0.0.1:58034
Thread Number: 2
```

Client

```
saurish@saurish-VM: ~/Downloads/multiclientprograms
saurish@saurish-VM: ~/Downloads/multiclientprograms$ python3 mclient.py
Waiting for connection
Enter your Data: Algorithm
Server Reply: Algorithm+9
Enter your Data: 
```

3rd Connection

Server

```
saish@saurish-VM: ~/Downloads/multiclientprograms
saish@saurish-VM:~/Downloads/multiclientprograms$ python3 mserver.py
Waiting for a Connection..
Connected to: 127.0.0.1:58032
Thread Number: 1
Connected to: 127.0.0.1:58034
Thread Number: 2
Connected to: 127.0.0.1:58036
Thread Number: 3
█
```

Client

```
saish@saurish-VM: ~/Downloads/multiclientprograms
saish@saurish-VM:~/Downloads/multiclientprograms$ python3 mclient.py
Waiting for connection
Enter your Data: Tic Tac Toe
Server Reply: Tic Tac Toe+11
Enter your Data: █
```