

## Assignment 2

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### 1. Make a Multi-threaded Server-Client Network

Server Code:

```
import socket, threading

class ClientThread(threading.Thread):

    def __init__(self, clientAddress, clientsocket):
        threading.Thread.__init__(self)
        self.csocket = clientsocket
        print ("New connection added: ", clientAddress)

    def run(self):
        print ("Connection from : ", clientAddress)
        #self.csocket.send(bytes("Hi, This is from Server..", 'utf-8'))
        msg = ''
        while True:
            data = self.csocket.recv(2048)
            msg = data.decode()
            if msg=='bye':
                break
            print ("from client", msg)
            self.csocket.send(bytes(msg, 'UTF-8'))
        print ("Client at ", clientAddress , " disconnected...")

LOCALHOST = "127.0.0.1"
PORT = 8080
server = socket.socket()
server.bind((LOCALHOST, PORT))
print("Server started")
print("Waiting for client request..")

while True:
    server.listen(1)
    clientsock, clientAddress = server.accept()
    newthread = ClientThread(clientAddress, clientsock)
    print(f"No. of active connection: {threading.active_count()}")
    newthread.start()
```

Client Code:

```

import socket

SERVER = "127.0.0.1"
PORT = 8080
client = socket.socket()
client.connect((SERVER, PORT))
client.sendall(bytes("This is from Client", 'UTF-8'))

while True:
    in_data = client.recv(1024)
    print("From Server :", in_data.decode())
    out_data = input()
    client.sendall(bytes(out_data, 'UTF-8'))
    if out_data=='bye':
        break
client.close()

```

## Output:

```

A hobbist ~/MyFiles/Assignments/6th_Sem/CSS652_Networks_Lab/Lab_2 >> python server3.py
Server started
Waiting for client request..
New connection added: ('127.0.0.1', 41432)
No. of active connection: 1
Connection from : ('127.0.0.1', 41432)
from client This is from Client
New connection added: ('127.0.0.1', 59906)
No. of active connection: 2
Connection from : ('127.0.0.1', 59906)
from client This is from Client
from client hello1
from client hello2
Client at ('127.0.0.1', 59906) disconnected...
Client at ('127.0.0.1', 59906) disconnected...
_

```

```

A hobbist ~/MyFiles/Assignments/6th_Sem/CSS652_Networks_Lab/Lab_2 >> python client3.py
From Server : This is from Client
hello1
From Server : hello1
bye
A hobbist ~/MyFiles/Assignments/6th_Sem/CSS652_Networks_Lab/Lab_2 >> _

```

```

A hobbist ~/MyFiles/Assignments/6th_Sem/CSS652_Networks_Lab/Lab_2 >> python client3.py
From Server : This is from Client
hello2
From Server : hello2
bye
A hobbist ~/MyFiles/Assignments/6th_Sem/CSS652_Networks_Lab/Lab_2 >> _

```