

## EXERCISE 2

### TCP CLIENT – SERVER USING SOCKET PROGRAMMING IN PYTHON

**AIM:**

To implement TCP client–server communication using socket programming in Python.

**ALGORITHM:**SERVER:

1. Create a socket using `socket.socket()`.
2. Bind the socket to an IP and port using `bind ()`.
3. Listen for client connections using `listen ()`.
4. Accept client connection using `accept ()`.
5. Receive data using `recv ()`.
6. Send response using `send ()`.
7. Close connection.

CLIENT:

1. Create a socket using `socket.socket()`.
2. Connect to the server using `connect ()`.
3. Send data using `send ()`.
4. Receive response using `recv ()`.
5. Close connection.

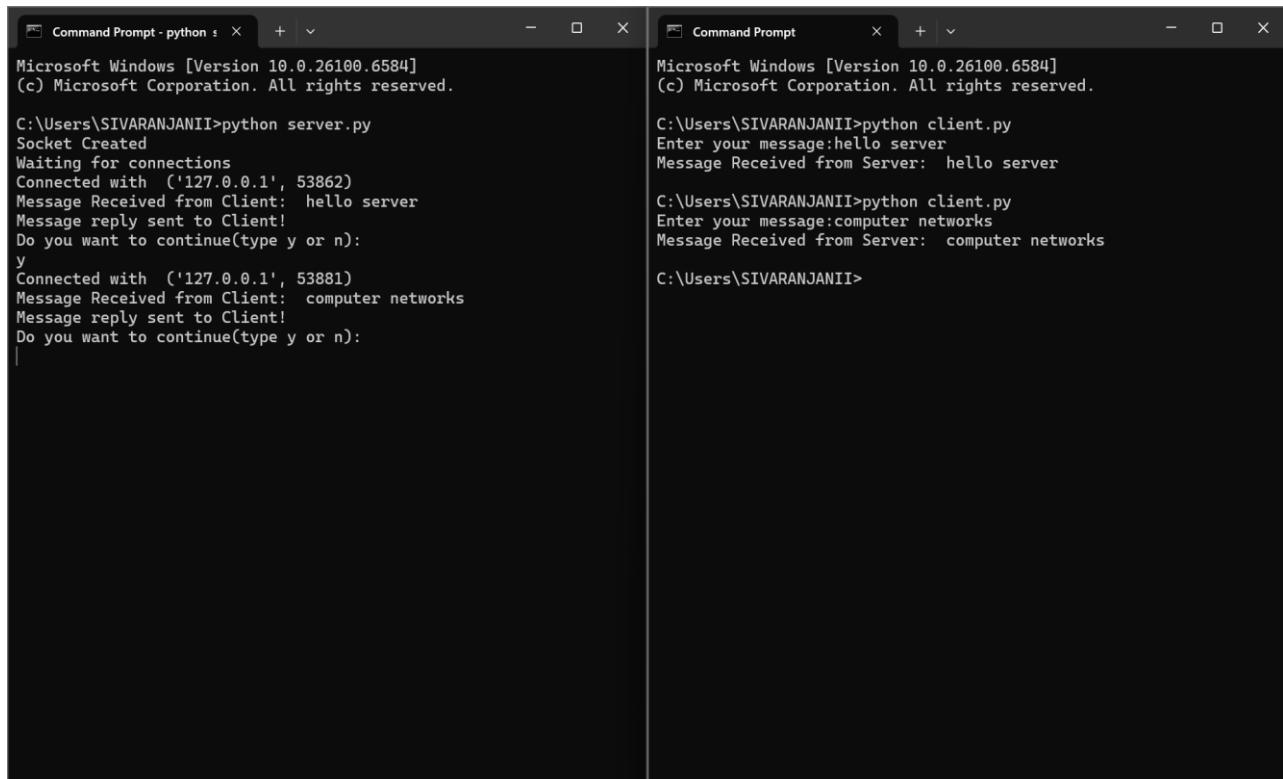
**CODE:**SERVER:

```
import socket
sockfd=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
print('Socket Created')
sockfd.bind(('localhost',55555))
sockfd.listen(3)
print('Waiting for connections')
while True:
    clientfd,addr=sockfd.accept()
    receivedMsg=clientfd.recv(1024).decode()
    print("Connected with ",addr)
    print("Message Received from Client: ",receivedMsg)
    clientfd.send(bytes(receivedMsg,'utf-8'))
    print("Message reply sent to Client!")
    print("Do you want to continue(type y or n):")
    choice=input()
    if choice=='n':
```

**CLIENT:**

```
import socket
clientfd=socket.socket(socket.AF_INET,socket.SOCK_STREAM)
clientfd.connect(('localhost',55555))
name=input("Enter your message:")
clientfd.send(bytes(name,'utf-8'))
print("Message Received from Server: ",clientfd.recv(1024).decode())
```

**OUTPUT:**



The image shows two Microsoft Windows Command Prompt windows side-by-side. The left window represents the server and the right window represents the client.

**Server Side (Left Window):**

```
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\SIVARANJANII>python server.py
Socket Created
Waiting for connections
Connected with ('127.0.0.1', 53862)
Message Received from Client: hello server
Message reply sent to Client!
Do you want to continue(type y or n):
y
Connected with ('127.0.0.1', 53881)
Message Received from Client: computer networks
Message reply sent to Client!
Do you want to continue(type y or n):
```

**Client Side (Right Window):**

```
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\SIVARANJANII>python client.py
Enter your message:hello server
Message Received from Server: hello server

C:\Users\SIVARANJANII>python client.py
Enter your message:computer networks
Message Received from Server: computer networks

C:\Users\SIVARANJANII>
```

**RESULT:**

Thus, TCP client-server communication was successfully implemented using Python.