

TCP CLIENT SERVER USING SOCKET PROGRAMMING IN PYTHON

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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 server using `connect()`.
- 3.Send data using `send()`.
- 4.Receive response using `recv()`.
- 5.Close connection.

Program:

Server

```
import socket

s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

s.bind(('localhost', 12345))

s.listen(1)

print("Server is listening...")

conn, addr = s.accept()

print("Connected by", addr)

while True:

    data = conn.recv(1024)

    if not data:

        break

    print("Client says:", data.decode())

    conn.sendall(b"Server received your message")

conn.close()

s.close()
```

Client

```
import socket

s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

s.connect(('localhost', 12345))

message = input("💬 Enter message to send to server: ")

s.sendall(message.encode())
```

```
data = s.recv(1024)

print("✉ Server says:", data.decode())

s.close()
```

```
Windows PowerShell
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PS C:\Users\user> cd C:\Users\user\Documents
PS C:\Users\user\Documents> python client.py
Enter message to send to server: hello
Server says: Server received your message
PS C:\Users\user\Documents> |
```

```
Windows PowerShell
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PS C:\Users\user> cd C:\Users\user\Documents
PS C:\Users\user\Documents> python server.py
Server is listening...
Connected by ('127.0.0.1', 54384)
Client says: hello
PS C:\Users\user\Documents>
```

Result:

Thus TCP client-server communication was successfully implemented using python.