

GOA COLLEGE OF ENGINEERING

“Bhausahab Bhandodkar Technical Education Complex”

Experiment No: 1

Socket Programming TCP using Python

Aim: To implement socket programming using TCP connection between client and server.

Theory:

TCP Server –

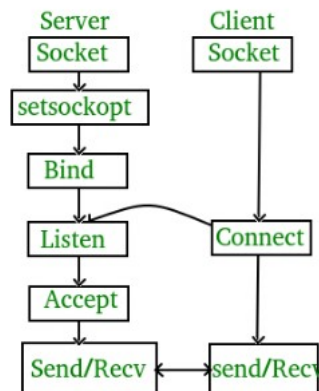
1. using create(), Create TCP socket.
2. using bind(), Bind the socket to server address.
3. using listen(), put the server socket in a passive mode, where it waits for the client to approach the server to make a connection
4. using accept(), At this point, connection is established between client and server, and they are ready to transfer data.
5. Go back to Step 3.

TCP Client –

1. Create TCP socket.
2. connect newly created client socket to server.

Client: When we talk the word Client, it means to talk of a person or an organization using a particular service. Similarly in the digital world a client is a computer (Host) i.e., capable of receiving information or using a particular service from the service providers (Servers).

Servers: Similarly, when we talk the word Servers, it means a person or medium that serves something. Similarly in this digital world a Server is a remote computer which provides information (data) or access to particular services.



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Program:

```
//server code
import socket
s = socket.socket(socket.AF_INET,socket.SOCK_STREAM)

print("Socket successfully created!") port = 700
s.bind(("", port))
print("Socket binded to %s" %(port)) s.listen(5)

print("Socket is listening...")

while True:
    c, addr = s.accept()
    print('Connected ', addr)
    c.send("Thank you for connecting!".encode())

    c.close()

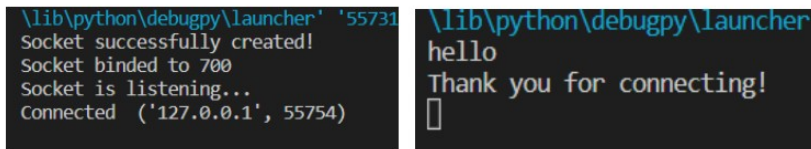
//client code
import socket
while True:
    s = socket.socket(socket.AF_INET,socket.SOCK_STREAM) serverAddressPort = ("127.0.0.1", 700)
    msgFromClient = input()
    if msgFromClient == "exit":
        break

    else:
        s.connect(serverAddressPort)

        print(s.recv(1024).decode())

        s.close()
```

Output:



```
\lib\python\debugpy\launcher' '55731
Socket successfully created!
Socket binded to 700
Socket is listening...
Connected ('127.0.0.1', 55754)

\lib\python\debugpy\launcher'
hello
Thank you for connecting!
█
```

Conclusion: Socket Programming TCP using python was successfully implemented.

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