

# IP Addresses':

I have taken ip address based on the free ports available in my laptop.

By typing netstat in cmd we will get out available ports in out laptop.

```
Command Prompt - netstat
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

C:\Users\karna>netstat

Active Connections

    Proto Local Address           Foreign Address         State
    TCP    127.0.0.1:49736         Prash:49737            ESTABLISHED
    TCP    127.0.0.1:49737         Prash:49736            ESTABLISHED
    TCP    127.0.0.1:49738         Prash:49739            ESTABLISHED
    TCP    127.0.0.1:49739         Prash:49738            ESTABLISHED
    TCP    127.0.0.1:49740         Prash:49741            ESTABLISHED
    TCP    127.0.0.1:49741         Prash:49740            ESTABLISHED
    TCP    127.0.0.1:49742         Prash:49743            ESTABLISHED
    TCP    127.0.0.1:49743         Prash:49742            ESTABLISHED
    TCP    127.0.0.1:49744         Prash:49745            ESTABLISHED
    TCP    127.0.0.1:49745         Prash:49744            ESTABLISHED
    TCP    127.0.0.1:49746         Prash:49747            ESTABLISHED
```

## String Reversal Server using TCP Sockets

The problem is to implement a client - server user-level application using sockets API in Python. The Server application must support at least five clients simultaneously. Server accepts strings from clients (even multiple strings from each client) and replies with reverse strings. For example, when client sends “ICN,” Server replies with “NCI.” Both server and client(s) must output both sending & receiving strings on the terminal.

The below screen shot contains the server and the corresponding clients 1 , 2 ,3 and 4.

We can see the input in the server as well as the client. The reversed string is also printed in all the both the server and the client.

C1 corresponds to the client 1 output and the reset are taken respectively.

```
C:\Windows\System32\cmd.exe - py q1server.py
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

D:\Py_codes\SOCKET>py q1server.py
Server is running and listening ...
connection is established with ('127.0.0.1', 59787)
b"the send message is : b'prash'"
b"The reversed Message is : client b'hsarp'"
Server is running and listening ...
connection is established with ('127.0.0.1', 59805)
b"the send message is : b'karnati'"
b"The reversed Message is : client b'itanrak'"
Server is running and listening ...
connection is established with ('127.0.0.1', 59815)
b"the send message is : b'sai'"
b"The reversed Message is : client b'ias'"
Server is running and listening ...
connection is established with ('127.0.0.1', 59822)
b"the send message is : b'KSP'"
b"The reversed Message is : client b'PSK'"
Server is running and listening ...

C:\Windows\System32\cmd.exe - py q1client.py
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

D:\Py_codes\SOCKET>py q1client.py
Send a message :) prash
The reversed Message : server b'hsarp'

C:\Windows\System32\cmd.exe - py q1client.py
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

D:\Py_codes\SOCKET>py q1client.py
Send a message :) karnati
The reversed Message : server b'itanrak'

C:\Windows\System32\cmd.exe - py q1client.py
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

D:\Py_codes\SOCKET>py q1client.py
Send a message :) sai
The reversed Message : server b'ias'

C:\Windows\System32\cmd.exe - py q1client.py
Microsoft Windows [Version 10.0.19044.1706]
(c) Microsoft Corporation. All rights reserved.

D:\Py_codes\SOCKET>py q1client.py
Send a message :) KSP
The reversed Message : server b'PSK'
```