

Assignment 2

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Socket

Sockets in computer networks are used for communication between processes on the same machine or on different machines. Sockets consist of two parts IP address and port number. The IP address is used to locate the machine to which communication is to be established and the port number is used to send/receive data from the process.

Types of Sockets:

Characteristic	Stream Socket	Datagram Socket	Raw Socket
Connection oriented	Yes	No	Not
Protocol	TCP	UDP	ICMP
Sequenced	Yes	No	No
Loss less transmission	Yes	No	No
Socket Type	SOCK_STREAM	SOCK_DGRAM	SOCK_RAW

Program

Client

```
import socket

PORT = 9010
IP_ADDRESS = "192.168.6.106"

clientSocket = socket.socket()

clientSocket.connect((IP_ADDRESS,PORT))

clientSocket.send("Hello".encode())

print(f"{clientSocket.recv(1024).decode()}")

clientSocket.close()
```

Server

```
import socket

PORT = 9010
IP_ADDRESS = "192.168.6.106"

serverSocket = socket.socket()

serverSocket.bind((IP_ADDRESS,PORT))

serverSocket.listen(5)
print("Waiting for client")

while True:
    conn , addr = serverSocket.accept()
    print("Client connected from ",addr)

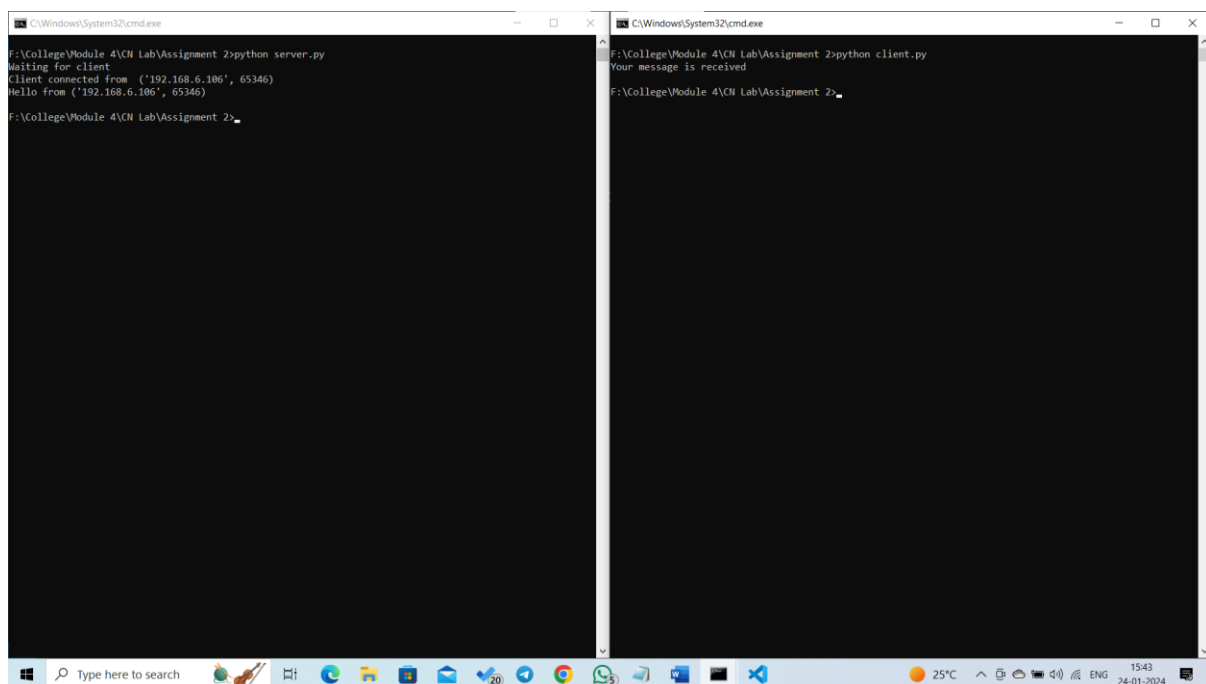
    print(f"{conn.recv(1024).decode()} from {addr}")

    conn.send("Your message is received".encode())

    conn.close()

    break
```

Output:



The screenshot displays two side-by-side Windows command prompt windows. The left window, titled 'C:\Windows\System32\cmd.exe', shows the execution of a server script: `P:\College\Module 4\CN Lab\Assignment 2>python server.py`. The output shows the server waiting for a client, then receiving a connection from ('192.168.6.106', 65346) and printing 'Hello from ('192.168.6.106', 65346)'. The right window, also titled 'C:\Windows\System32\cmd.exe', shows the execution of a client script: `F:\College\Module 4\CN Lab\Assignment 2>python client.py`. The output shows the client sending 'Your message is received' and receiving 'Your message is received' in response. The Windows taskbar at the bottom shows the system clock as 15:43 on 24-01-2024.