Ex. No. 02 **Socket Programming (TPC)**

Date: 08-08-2025

Aim:

To study the concepts of socket programming in python using tcp.

Algoritham:

1. Python core networking library is scoket module.
2. Python scoket module has both class-base and instances-based methods.
3. Class based method is an intutive approach which doesn't need an instance of a socket
4. In instance based method, if some data need to send server application
5. Intvitive to create a scoket object to perform that explicit operation.
6. This module has everything you need to build socket server and clients.

Program:

Server.py

```
import socket
def main():
    # Create socket object
    server = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

    # Bind the socket to localhost on port 9999
    server.bind(('localhost', 9999))
    server.listen(1)
    print("Server is waiting for connection...")

    # Accept client connection
    conn, addr = server.accept()
    print(f"Connected with {addr}")

    # Receive message from client
    data = conn.recv(1024).decode()
```

```
    print("Client says:", data)

    # Send reply to client
    conn.send("Hello Client, message received!".encode())

    # Close connection
    conn.close()
    server.close()

if __name__ == "__main__":
    main()
```

client.py

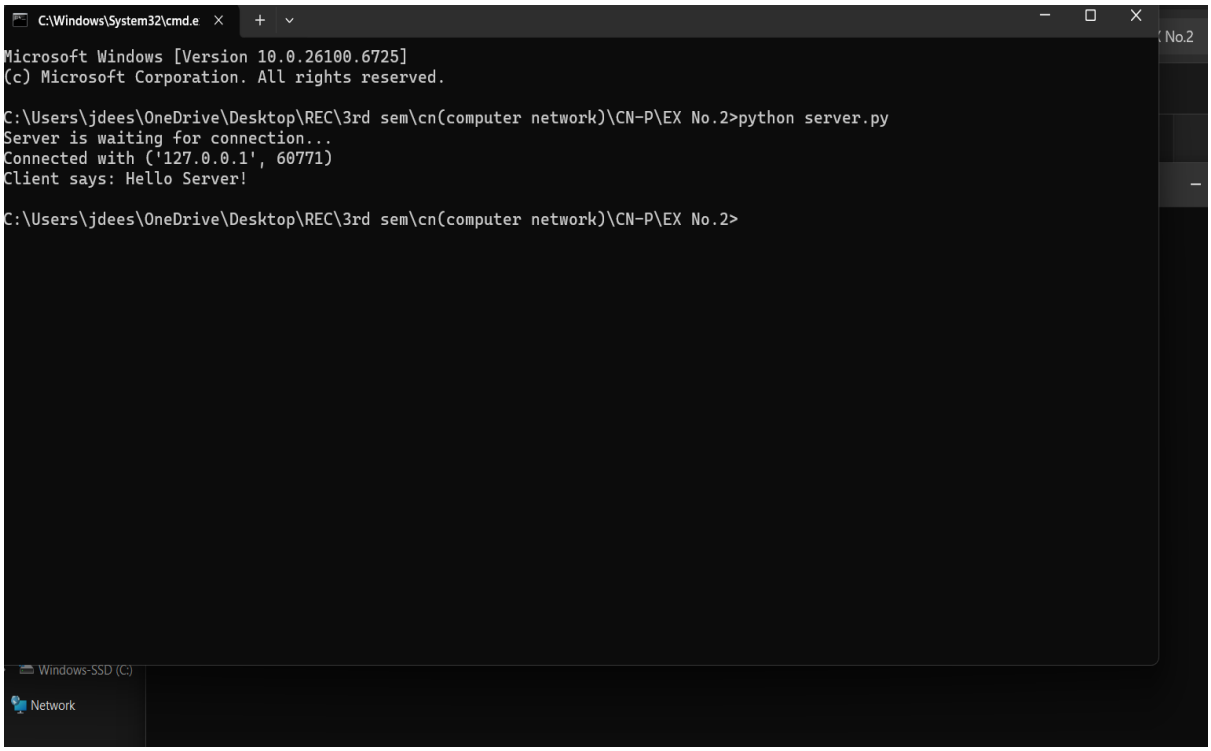
```
import socket

# create socket and connect to server
client = socket.socket()
client.connect(('localhost', 9999))

# send message to server
client.send(b"Hello Server!")

# receive reply
reply = client.recv(1024).decode()
print("Server says:", reply)

# close connection
client.close()
```



Result:

Thus, The socket programming in tcp using python excuted successfully.