# Networks
# Week 6
# Client Server

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**TCP client :**

```
import socket

host_ip, server_port = "127.0.0.1", 9999
data = input("Enter data to be sent: ")
tcp_client = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

try:
    tcp_client.connect((host_ip, server_port))
    tcp_client.sendall(data.encode())
    received = tcp_client.recv(1024)
finally:
    tcp_client.close()

print("Sent:     {}".format(data))
print("Received: {}".format(received.decode()))
```

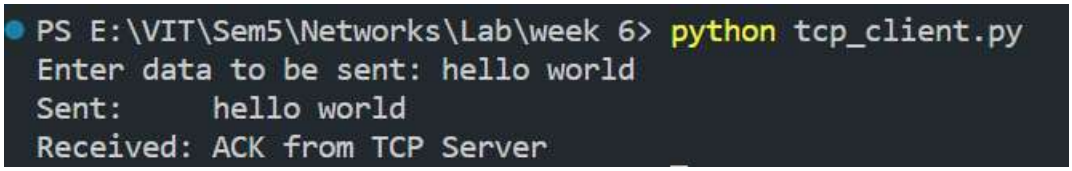
**TCP server:**

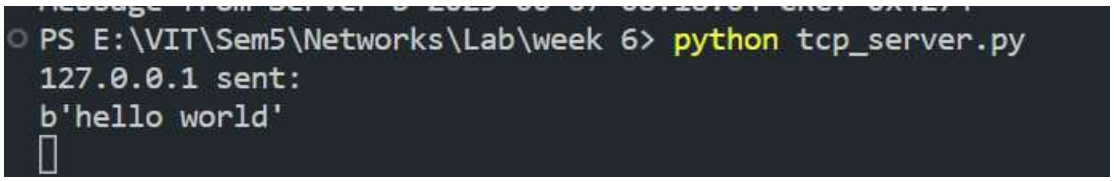
```
import socketserver


class Handler_TCPServer(socketserver.BaseRequestHandler):
    def handle(self):
        self.data = self.request.recv(1024).strip()
        print("{} sent:".format(self.client_address[0]))
        print(self.data)
        self.request.sendall("ACK from TCP Server".encode())


if __name__ == "__main__":
    HOST, PORT = "localhost", 9999
    tcp_server = socketserver.TCPServer((HOST, PORT), Handler_TCPServer)
    tcp_server.serve_forever()
    # To abort the TCP server, press Ctrl-C.
    tcp_server.serve_forever()
```

O/P :



**UDP Client :**

```
import socket
import datetime

now = datetime.datetime.now()

msgFromClient = now.strftime("%Y-%m-%d %H:%M:%S")
bytesToSend = str.encode(msgFromClient)
serverAddressPort = ("127.0.0.1", 20001)
bufferSize = 1024

UDPClientSocket = socket.socket(family=socket.AF_INET, type=socket.SOCK_DGRAM)
UDPClientSocket.sendto(bytesToSend, serverAddressPort)
msgFromServer = UDPClientSocket.recvfrom(bufferSize)
msg = "Message from Server {}".format(msgFromServer[0])

print(msg)
```

**UDP Server :**

```
import socket
import datetime

localIP = "127.0.0.1"
localPort = 20001
bufferSize = 1024

now = datetime.datetime.now()

msgFromServer = now.strftime("%Y-%m-%d %H:%M:%S")
bytesToSend = str.encode(msgFromServer)

UDPServerSocket = socket.socket(family=socket.AF_INET, type=socket.SOCK_DGRAM)
UDPServerSocket.bind((localIP, localPort))
print("UDP server up and listening")
while True:
    bytesAddressPair = UDPServerSocket.recvfrom(bufferSize)
    message = bytesAddressPair[0]
    address = bytesAddressPair[1]
    clientMsg = "Message from Client:{}".format(message)
    clientIP = "Client IP Address:{}".format(address)
    print(clientMsg)
    print(clientIP)
    UDPServerSocket.sendto(bytesToSend, address)
```

O/P :

```
PS E:\VIT\Sem5\Networks\Lab\week 6> python udp_client.py
Message from Server b'2023-06-07 08:25:05'
```

```
PS E:\VIT\Sem5\Networks\Lab\week 6> python udp_server_0.py
UDP server up and listening
Message from Client:b'2023-06-07 08:25:11'
Client IP Address:('127.0.0.1', 49869)
```