

Praticale 4: Write a program to implement the echo client

- **Server**

```
import socket

HOST = "127.0.0.1"
PORT = 65432

# Create a TCP/IP socket
with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
    try:
        s.bind((HOST, PORT)) # Bind the socket to the address and port
        s.listen()           # Enable the server to accept connections
        print(f"Server listening on {HOST}:{PORT}...")

        # Accept an incoming connection
        conn, addr = s.accept()
        with conn:
            print(f"Connected by {addr}")
            while True:
                data = conn.recv(1024)
                if not data:
                    print("Connection closed by the client.")
                    break
                print(f"Received: {data}")
                conn.sendall(data)
    except Exception as e:
        print(f"An error occurred: {e}")
```

- **Client**

```
import socket

HOST = "127.0.0.1"
PORT = 65432

try:
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as s:
        s.connect((HOST, PORT))
        s.sendall(b'Hello, world')
        data = s.recv(1024)

        print('Received:', data.decode())

except ConnectionRefusedError:
    print(f"Could not connect to the server at {HOST}:{PORT}")
```

```
except Exception as e:  
    print(f"An error occurred: {e}")
```

Output:

Server:

```
ubuntu@ubuntulinux: ~/Documents/CN  
ubuntu@ubuntulinux:~/Documents/CN$ gedit server.py  
ubuntu@ubuntulinux:~/Documents/CN$ python3 server.py  
Server listening on 127.0.0.1:65432...  
Connected by ('127.0.0.1', 50128)  
Received: b'Hello, world'  
Connection closed by the client.  
ubuntu@ubuntulinux:~/Documents/CN$
```

Client:

```
ubuntu@ubuntulinux:~/Documents/CN$ python3 client.py  
Received: Hello, world  
ubuntu@ubuntulinux:~/Documents/CN$
```