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EXERCISE 3

UDP CLIENT-SERVER COMMUNICATION USING SOCKET PROGRAMMING IN PYTHON

AIM:

To implement UDP client-server communication using socket programming in Python.

ALGORITHM:

SERVER:

1. Create a socket using socket.socket().
2. Bind the socket to IP and port using bind().
3. Receive message using recvfrom ().
4. Send response using sendto ().
5. Close connection.

CLIENT:

1. Create a socket using socket.socket().
2. Send a message to the server using sendto ().
3. Receive response using recvform ().
4. Close connection.

CODE:

SERVER:

```
import socket
sockfd = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
print("UDP Socket Created")
sockfd.bind(('localhost', 55555))
print("Waiting for messages on localhost:55555")
while True:
    data, addr = sockfd.recvfrom(1024)
    message = data.decode('utf-8')
    print(f"Received from {addr}: {message}")

    sockfd.sendto(data, addr)
    print(f"Echoed back to {addr}")
    choice = input("Continue receiving? (y/n): ")
    if choice.lower() == 'n':
        break
sockfd.close()
print("Server shutdown")
```

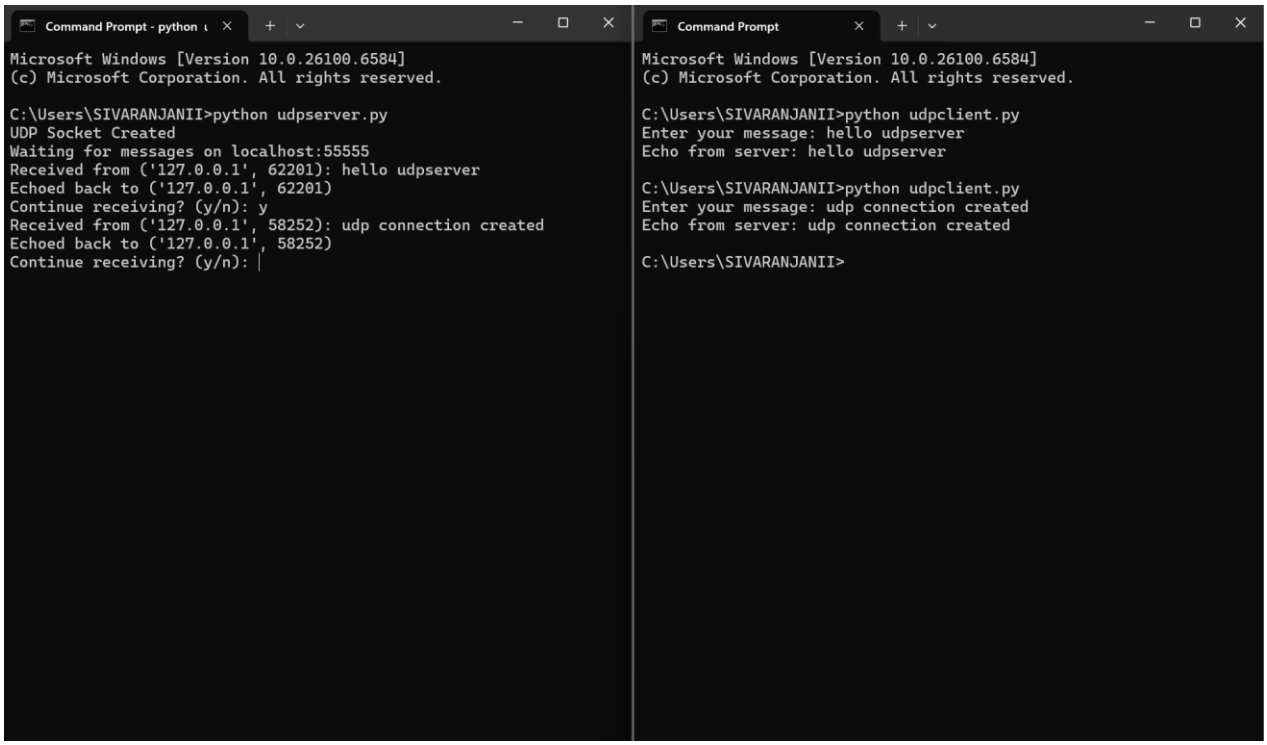
CLIENT:

```
import socket
clientfd = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
server_addr = ('localhost', 55555)
msg = input("Enter your message: ")
clientfd.sendto(msg.encode('utf-8'), server_addr)
data, _ = clientfd.recvfrom(1024)
```

```
print("Echo from server:", data.decode('utf-8'))

clientfd.close()
```

OUTPUT:



RESULT:

Thus, UDP client-server communication was successfully implemented using Python.