EX.NO:3

UDP CLIENT-SERVER COMMUNICATION USING SOCKET PROGRAMMING IN PYTHON

AIM:

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

SERVER ALGORITHM:

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 ALGORITHM:

1.Create a socket using socket.socket().

2.Send message to server using sendto().

3.Receive response using recvform().

4.close connection.

SERVER PROGRAM:

```
        import socket


# Set up the server

server_ip = "127.0.0.1"  # Localhost for testing

server_port = 12345      # Port for listening

buffer_size = 1024       # Size of the buffer to receive data


# Create a UDP socket
```

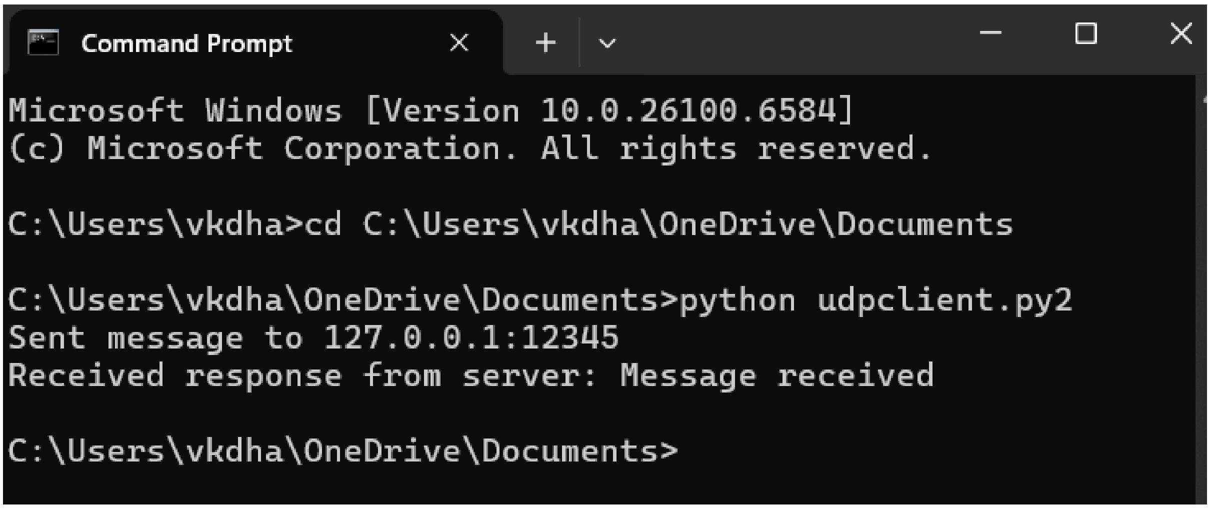
```
server_socket = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)

# Bind the socket to the address and port
server_socket.bind((server_ip, server_port))
print(f"UDP Server listening on {server_ip}:{server_port}")

# Listen for incoming messages
while True:
    message, client_address = server_socket.recvfrom(buffer_size)  # Receive
data from client
    print(f"Received message from {client_address}: {message.decode('utf-8')}")

    # Send a response back to the client
    response = "Message received"
    server_socket.sendto(response.encode('utf-8'), client_address)
```

CLIENT PROGRAM:

```
     import socket

# Set up the client
server_ip = "127.0.0.1"  # The server's IP address
server_port = 12345       # The server's port number
message_to_send = "Hello, UDP Server!"

# Create a UDP socket
client_socket = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
```

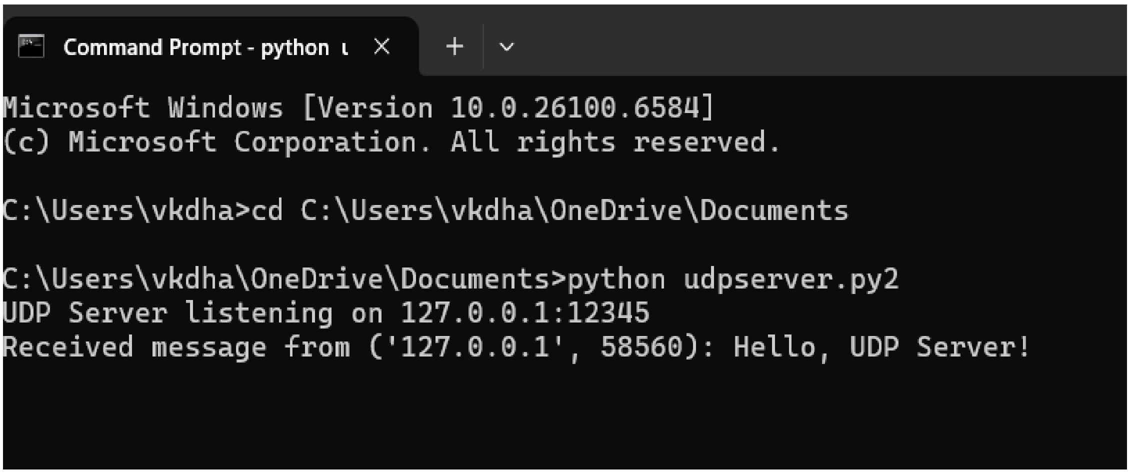
```
# Send message to the server
client_socket.sendto(message_to_send.encode('utf-8'), (server_ip, server_port))
print(f"Sent message to {server_ip}:{server_port}")

# Receive the response from the server
response, server_address = client_socket.recvfrom(1024)
print(f"Received response from server: {response.decode('utf-8')}")

# Close the client socket
client_socket.close()
```

INPUT:



```
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\vkdha>cd C:\Users\vkdha\OneDrive\Documents

C:\Users\vkdha\OneDrive\Documents>python udpclient.py2
Sent message to 127.0.0.1:12345
Received response from server: Message received

C:\Users\vkdha\OneDrive\Documents>
```

OUTPUT:



```
Microsoft Windows [Version 10.0.26100.6584]
(c) Microsoft Corporation. All rights reserved.

C:\Users\vkdha>cd C:\Users\vkdha\OneDrive\Documents

C:\Users\vkdha\OneDrive\Documents>python udpserver.py2
UDP Server listening on 127.0.0.1:12345
Received message from ('127.0.0.1', 58560): Hello, UDP Server!
```

RESULT:

Thus ,UDP client_server communication was successfully implemented using python.

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