Ex No: 3
M.Dhivya

18.08.2025
241901027

UDP client- server communication using

Programming using 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 socketserver_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)
    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:

```
PS C:\Users\ramyadhivya> cd C:\Users\ramyadhivya\OneDrive\Documents
PS C:\Users\ramyadhivya\OneDrive\Documents> python client3.py
Sent message to 127.0.0.1:12345
Received response from server: Message received
PS C:\Users\ramyadhivya\OneDrive\Documents>
```

Output:

```
C:\Users\ramyadhivya\OneDrive\Documents>cd C:\Users\ramyadhivya\OneDrive\Documents

C:\Users\ramyadhivya\OneDrive\Documents>python serverrr.py
UDP Server listening on 127.0.0.1:12345
Received message from ('127.0.0.1', 51100): Hello, UDP Server!
```

Result:

Thus ,UDP client_server communication was successfully implemented using python.