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EXPT: 3 UDP CLIENT-SERVER COMMUNICATION USING SOCKET PROGRAMMING IN PYTHON

AIM:

Develop a simple UDP server and client using Python's socket module to exchange messages.

ALGORITHM:

UDP SERVER:

1. Start
2. Import the socket module.
3. Create a UDP socket using socket(AF_INET, SOCK_DGRAM).
4. Display message: **"UDP Socket Created"**.
5. Bind the socket to host localhost and port 55555.
6. Display **"Waiting for messages"**.
7. Repeat forever:
    - Receive data from client using recvfrom().
    - Decode the received data to string.
    - Display sender's address and received message.
    - Send the same message back to the client using sendto().
    - Display confirmation message.
    - Ask user whether to continue (y/n).
    - If user enters **n**, break the loop.
8. Close the server socket using close().
9. Stop

UDP CLIENT:

1. Start
2. Import the socket module.

3. Create a UDP socket using socket(AF_INET, SOCK_DGRAM).
4. Store server address as (localhost, 55555).
5. Accept a message from the user.
6. Convert the message to bytes and send to server using sendto().
7. Receive the reply from server using recvfrom().
8. Decode and display the received message.
9. Close the client socket.
10. Stop

OUTPUT:

CODE:

UDP SERVER:

```
import socket
sockfd = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
print('UDP Socket Created')
sockfd.bind(('localhost', 55555))
print('Waiting for messages')
while True:
    data, addr = sockfd.recvfrom(1024)
    receivedMsg = data.decode()
    print("Received message from", addr)
    print("Message:", receivedMsg)
      # Send the same message back to client
    sockfd.sendto(data, addr)
    print("Message reply sent to Client!")
    choice = input("Do you want to continue (type y or n): ")
    if choice == 'n':
```

```
    break
sockfd.close()
```

UDP CLIENT:

```
import socket
clientfd = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
server_address = ('localhost', 55555)
name = input("Enter your message: ")
clientfd.sendto(name.encode(), server_address)
data, _ = clientfd.recvfrom(1024)
print("Message Received from Server:", data.decode())
clientfd.close()
```

OUTPUT:

```
C:\Users\Mahalaxmi\OneDrive\Desktop>python udp_client.py
Enter your message:HELLO
Message Received from Server:  HELLO

C:\Users\Mahalaxmi\OneDrive\Desktop>python udp_client.py
Enter your message:BYE
Message Received from Server:  BYE
```

```
========== RESTART: C:\Users\Mahalaxmi\OneDrive\Desktop\udp_server.py ==========
Socket Created
Waiting for connections
Connected with  ('127.0.0.1', 55163)
Message Received from Client:  HELLO
Message reply sent to Client!
Do you want to continue(type y or n):
y
Connected with  ('127.0.0.1', 55165)
Message Received from Client:  BYE
Message reply sent to Client!
Do you want to continue(type y or n):
n
```

RESULT:

The UDP client successfully sent messages to the server, and the server received and replied to each message.