Ex-13

Date: 19/10/24

AIM:

To implement your own ping program.

Algorithm:

UDP Server:

→ Create UDP socket & bind it to a specific address & port

→ Wait for message

→ Print message & client address.

→ Send back ping to client.

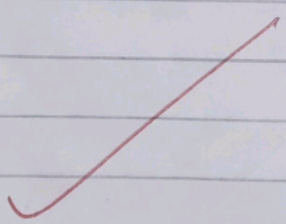
UDP client:

→ Create UDP socket & set a 2 sec timeout

→ Send 'ping' to server

→ If a respone (ping received - print response & calculate RTT)

→ If no response within 2 sec print request Time out.



Code :

server.py :

```
import socket
def start_server(host='127.0.0.1',
                 port=12345):
    with socket.socket(socket.AF_INET,
socket.SOCK_DGRAM) as s:
        s.bind((host, port))
        print(f"UDP server running
on {host}:{port}")
        while True:
            data, addr = s.received(1024)
            print(f"Received message from
{addr}: {data.decode()}")
            s.sendto(b'pong', addr)
if __name__ == "__main__":
    start_server()
```

client.py :

```
import time
import socket
def ping_server(host='127.0.0.1',
                port=12345)
    with socket.socket(socket.AF_INET,
        socket.SOCK_DGRAM) as s:
        try:
            s.settime(2)
            start = time.time()
            s.sendto(b'ping', (host, port))
            data, addr = s.recvfrom(1024)
            end = time.time()
```

```
        print(f"Received {data.decode()} {
from {addr} in {end - start:.2f} seconds");
    except socket.timeout:
        print("Request timed out")
if __name__ == "__main__":
    ping_server()
```

OUTPUT:

Terminal

```
> python server.py
UDP server running
on 127.0.0.1:12345

Received message from
('127.0.0.1', 50001): ping
```

Terminal

```
> python client.py
Received ping
from (127.0.0.1,
(12345) in 0.00
seconds).
```

RESULT:

Thus a ping program has been executed successfully.