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# Ping Program

## Aim:

To implement your own ping program.

## Algorithm:

### UDP Server

→ Create UDP socket & bind it to a specific address & port.
→ wait for message.
→ Send back ping to client.

## Source Code:

```
import socket
import struct
import time
import os
def checksum(data):
    s = sum((data[i]<<8) + (data[i+1] if i+1<len(
else 0) for i in range(0, len(data), 2))
    s = (s>>16) + (s & 0xFFFF)
    return ~s & (0xFFFF)
def ping(host_addr):
    with socket.socket(socket.AF_INET,
    socket.SOCK_RAW, socket.IPPROTO_ICMP)
    as sock:
```

```
sock.settimeout(1)
pack_id = os.getpid() 0xFFFF
header = struct.pack("!BBHHH", 8,0,0,pack_id,1)
data = struct.pack("d", time.time())
packet = header[:2] + struct.pack("!H", checksum
        (header + data)) + header[4:] + data
sock.sendto(packet, (dest_addr,1))
start = time.time()
try:
    sock.recv(1024)
    print(f" Reply from {dest_addr}:
        time = {(time.time() - start) * 1000:.2f} ms")
except socket.timeout:
    print("Request timeout")
ping("8.8.8.8")
```

OUTPUT:

```
Terminal
> Python server.py
 UDP Server running
    on 127.0.0.1:12345
Recieved message from
('127.0.0.1', 50061: 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 & output is verified.