(a)

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AIM :-

Implement your own ping program.

ALGORITHM :-

```
import socket
import time

def udp_client ():
  server_ip ='127.0.0.1'
  server_port =12345

 client_socket = socket.socket (socket.AF_INFET,
  socket.SOCK_DGRAM)
   client_socket.settimeout (2).

 try:
   message = "Ping"
   start_time =time.time ()
   client_socket.sendto (message.encode(),
                                   (server_ip,
                                    server_port))
 data, address = client_socket.recvfrom
                                        (1024)
 end_time = time.time ()

 print (f "Reply from {address}: {data.
                                  decode()}")
 print (f "Round Trip Time : {(end_time -
   seconds ")                 start_time):3
```

```
except socket.timeout
    print("Request timed out! Server did
                                not respond.")
finally :
    client . socket. close ()


if __name__ == "__main__":
    udp-client()
```

OUTPUT:-

```
Reply from ('127.0.0.1', 12345): Pong
Round Trip Time : 0.002 seconds.
```

RESULT:-

Thus the above code is executed successfully

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(b)

ALGORITHM :-

```
import socket
def udp_server():
    host = '127.0.01'
    Port = 12345

 server_socket = socket.socket(socket.
                    AF_INET, socket.
                    SOCKET_DGRAM)
 server_socket.bind
        ((host, port))
 print(f"UDP server started on {host}:
                          {port}")
 print("Waiting for client messages..\n")
while True:
 data, client_addr = server_socket.
                       recvfrom(1024
 print(f"Received '{data.decode()}' from
     {client_addr}")

 reply = "Pong"
 server_socket.sendto(reply.encoded(),
                       client_addr)
 print(f"Sent reply '{reply}' to {client_
                         addr}\n")
if __name__ = "__main__":
   udp_server().
```

OUTPUT :-

```
UDP Server started on 127.0.0.1:12345
Waiting for client messages

Received 'Ping' from ('127.0.0.1', 50234)
Sent reply 'Pong' to ('127.0.0.1', 50234)
```

RESULT :-

Thus the above code is executed succesfully.

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