

PING PROGRAM

AIM:

Implement your own ping program

CODE:

```
import socket
import os
import time
import struct
import select
```

def checksum(data):

```
    if len(data) % 2 != 0
        data += b'\0'
```

```
    total = 0
```

```
    for i in range(0, len(data), 2):
```

```
        word = data[i] + data[i+1] << 8
```

```
        total += word
```

```
    total = (total >> 16) + (total & 0xFFFF)
```

```
    total += total >> 16
```

```
    return ~total & 0xFFFF
```

def ping(host):

```
    icmp = socket.getprotobyname('icmp')
```

```
    s = socket.socket(socket.AF_INET, socket.SOCK_RAW, icmp)
```

```
    s.settimeout(1)
```

```
    packet_id = os.getpid() & 0xFFFF
```

```
    header = struct.pack('bBHh', 8, 0, checksum_value, packet_id, 1)
```

```
    start_time = time.time()
```

```
    s.sendto(packet, (host, 1))
```


try:

```
reply, - = s.recvfrom(1024)
```

```
end_time = time.time()
```

```
rtt = (end_time - start_time) * 1000
```

```
print(f" Ping to {host} took {rtt:.2f} ms")
```

```
except socket.timeout:
```

```
    print(f" Request timed out.")
```

```
s.close()
```

```
if __name__ == "__main__":
```

```
    ping("8.8.8.8")
```

INPUT:

```
ping("8.8.8.8")
```

OUTPUT:

```
ping to 8.8.8.8 took 13.25 ms
```

RESULT:

Ping program implemented successfully

14/11/24