

EX:10B

DATE: 24/09/2024

### **PING TO TEST SERVER CONNECTIVITY USING SOCKETS**

**AIM:** To develop ping program to test server connectivity using sockets.

#### **ALGORITHM:**

##### **Server.py**

1. Import the socket package
2. Initialize local IP address and local port.
3. Create a socket using socket() function
4. Bind the IP address and port number.
5. Accept client request for connection.
6. Print the received connection details
7. Send reply message to the client.
8. Close the connection.

##### **Client.py**

1. Import the socket package
2. Initialize server IP address and local port.
3. Create a socket using socket() function.
4. Start the timer.
5. Send message to the server.
6. The reply message of the server is received.
7. The timer is stopped.
8. Print the round trip time statistics.

#### **Ping to test server connectivity using sockets**

##### **Client code:**

```
from socket import *
import os
import system

s = socket(AF_INET, SOCK_STREAM)
s.connect(("127.0.0.1",8000)) # Connect
op='connect'
s.send(op.encode('utf-8')) # Send request
```

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```
data = s.recv(100).decode()# Get response print(data)
system("ping "+ gethostname()) s.close()
```

**Server Code:**

```
from socket import * from os import
system
s =
socket(AF_INET,SOCK_STREAM)
s.bind(("",8000))
s.listen(5)
while True:
    c,a = s.accept() print("Received
    connection from", a)
    data=c.recv(100).decode()
    print(data)
    c.send(data.encode('utf-8'))
    system("ping "+ a)

c.close()
```

```
C:\Users\LENOVO>python server.py
python: can't open file 'C:\Users\LENOVO\server.py': [Errno 2] No such file or directory

C:\Users\LENOVO>cd desktop

C:\Users\LENOVO\Desktop>python server.py
Server listening on port 8000...
Received connection from ('127.0.0.1', 54832)
connect

Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\LENOVO\Desktop>

Microsoft Windows [Version 10.0.22631.4317]
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C:\Users\LENOVO>cd desktop

C:\Users\LENOVO\Desktop>python client.py
connect

Pinging TharunH [fe80::e1a:2ece:9c44:eec1%5] with 32 bytes of data:
Reply from fe80::e1a:2ece:9c44:eec1%5: time<1ms
Reply from fe80::e1a:2ece:9c44:eec1%5: time<1ms
Reply from fe80::e1a:2ece:9c44:eec1%5: time<1ms
Reply from fe80::e1a:2ece:9c44:eec1%5: time<1ms

Ping statistics for fe80::e1a:2ece:9c44:eec1%5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\LENOVO\Desktop>
```

**RESULT:** server connectivity using sockets has been tested using ping command