

**EX:10a****DATE:18.9.24****PING TO TEST SERVER CONNECTIVITY****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.

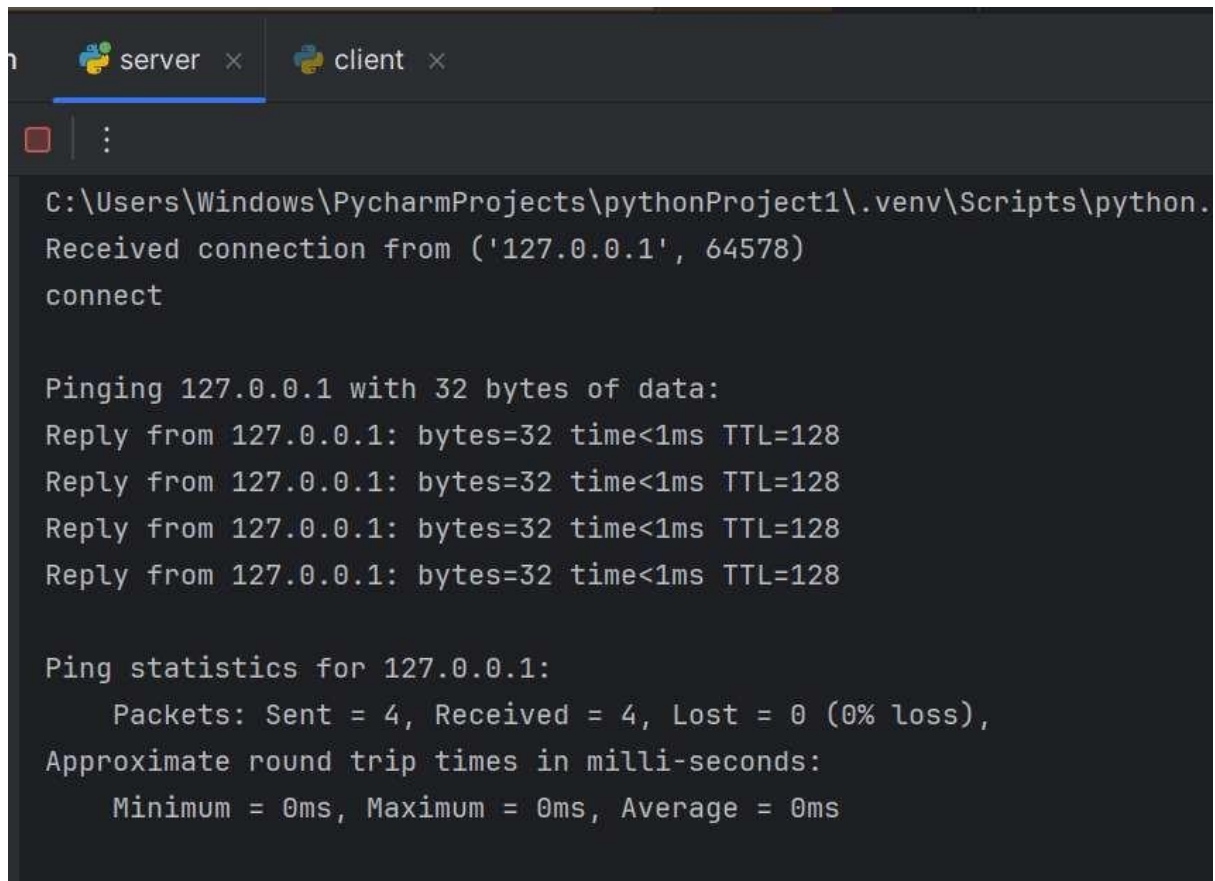
**Client.py**

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 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[0])
    c.close()
```

**Output:**

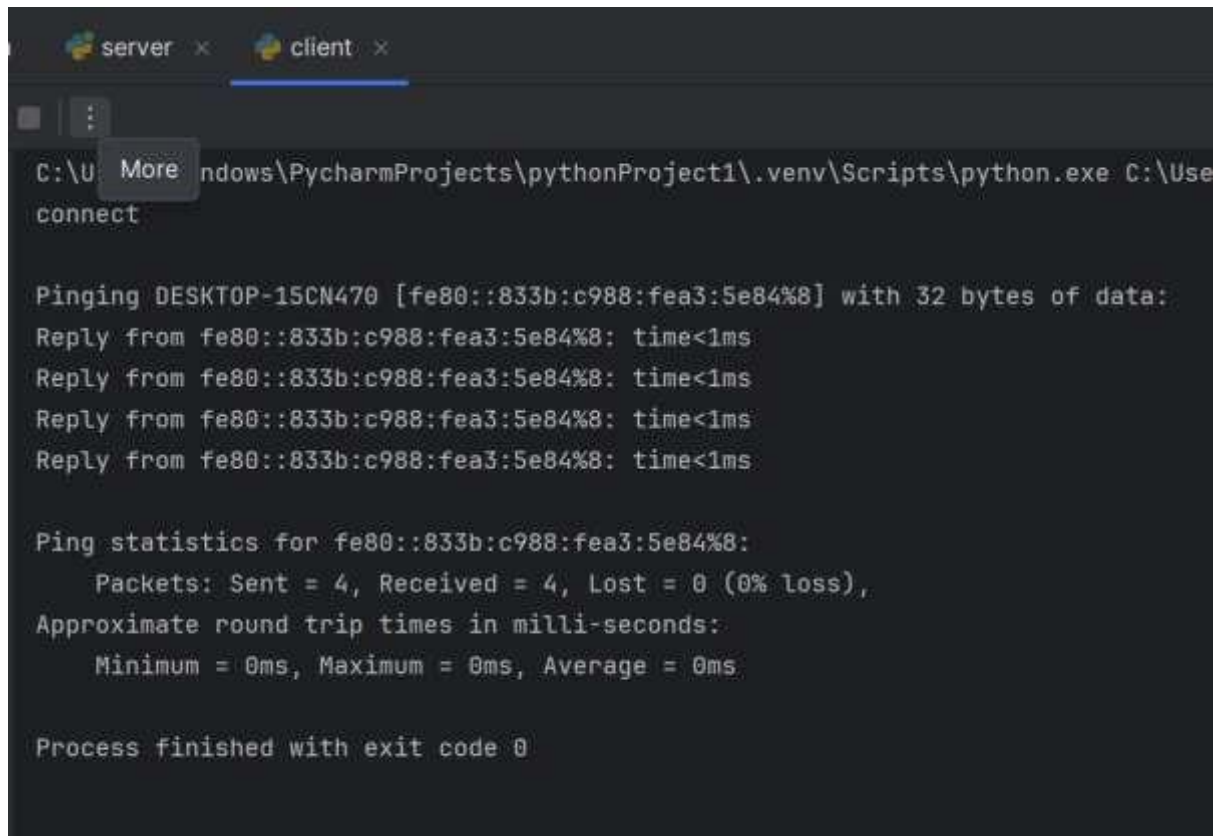
A screenshot of a PyCharm terminal window with two tabs: 'server' and 'client'. The 'server' tab is active. The terminal output shows a connection from '127.0.0.1' on port 64578, followed by a 'connect' message. Then, a ping command is executed to 127.0.0.1 with 32 bytes of data. The output shows four successful replies, each with a time of less than 1ms and a TTL of 128. Finally, ping statistics are displayed, showing 4 packets sent and received with 0% loss and 0ms round trip times.

```
C:\Users\Windows\PycharmProjects\pythonProject1\.venv\Scripts\python.  
Received connection from ('127.0.0.1', 64578)  
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
```

**Client code:**

```
from socket import *  
import sys  
import os  
s = socket(AF_INET, SOCK_STREAM)  
s.connect(("127.0.0.1",8000)) # Connect  
op='connect'  
s.send(op.encode('utf-8')) # Send request  
data = s.recv(100).decode()# Get response  
print(data)  
system("ping "+ gethostname()) s.close()
```

**Output:**



The screenshot shows a terminal window with two tabs: 'server' and 'client'. The 'client' tab is active. The command prompt shows the user is in the directory 'C:\Users\More\PycharmProjects\pythonProject1\venv\Scripts' and has executed the command 'python.exe C:\Users\More\PycharmProjects\pythonProject1\venv\Scripts\python.exe C:\Users\More\PycharmProjects\pythonProject1\venv\Scripts\connect'. The output of the command is a ping command: 'ping -n 4 -l 32 fe80::833b:c988:fea3:5e84%8'. The output shows four successful replies from the specified IPv6 address, each with a time of less than 1ms. The ping statistics show 4 packets sent, 4 received, 0 lost, and 0% loss. The approximate round trip times are all 0ms. The process finished with exit code 0.

```
server x client x
C:\U More ndows\PycharmProjects\pythonProject1\venv\Scripts\python.exe C:\Use
connect

Pinging DESKTOP-15CN470 [fe80::833b:c988:fea3:5e84%8] with 32 bytes of data:
Reply from fe80::833b:c988:fea3:5e84%8: time<1ms
Reply from fe80::833b:c988:fea3:5e84%8: time<1ms
Reply from fe80::833b:c988:fea3:5e84%8: time<1ms
Reply from fe80::833b:c988:fea3:5e84%8: time<1ms

Ping statistics for fe80::833b:c988:fea3:5e84%8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

Process finished with exit code 0
```

**Result:**

Ping program to test server connectivity using sockets is verified.