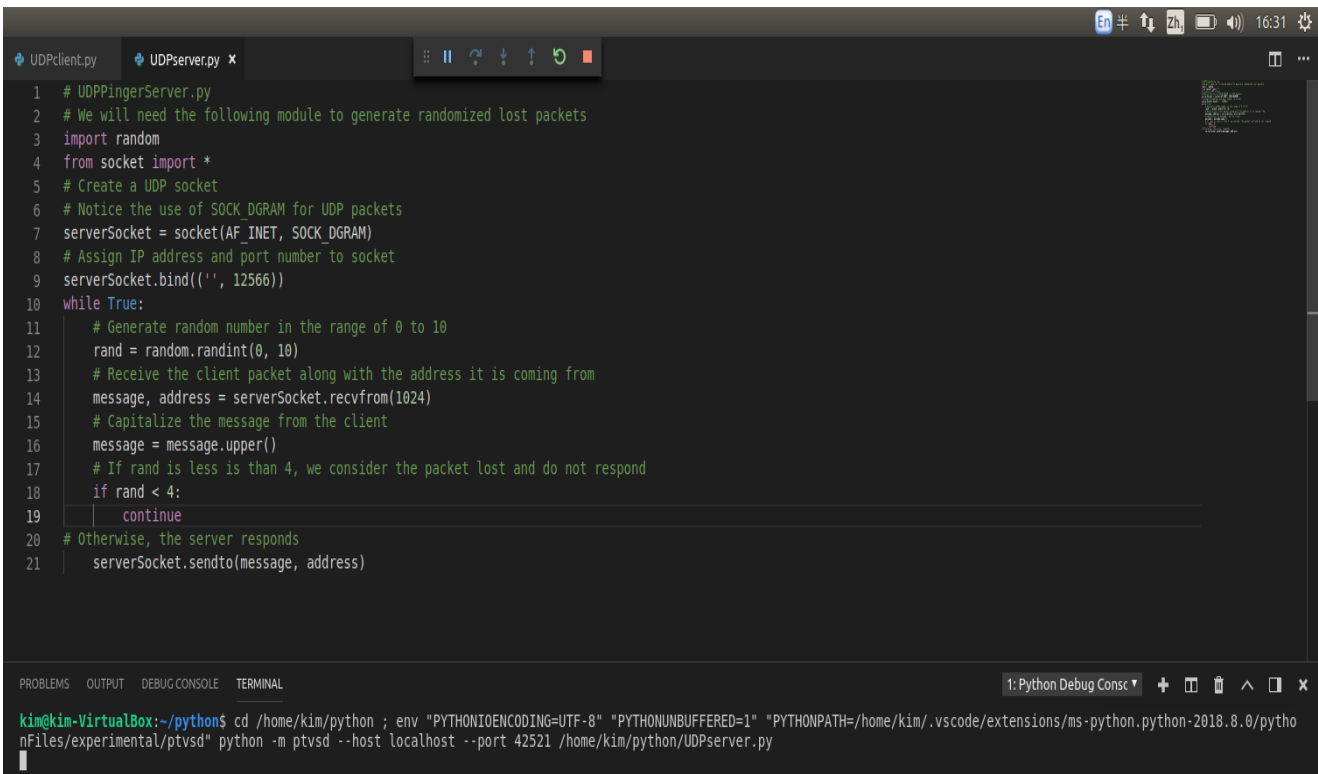


(1) 開始 UDPserver



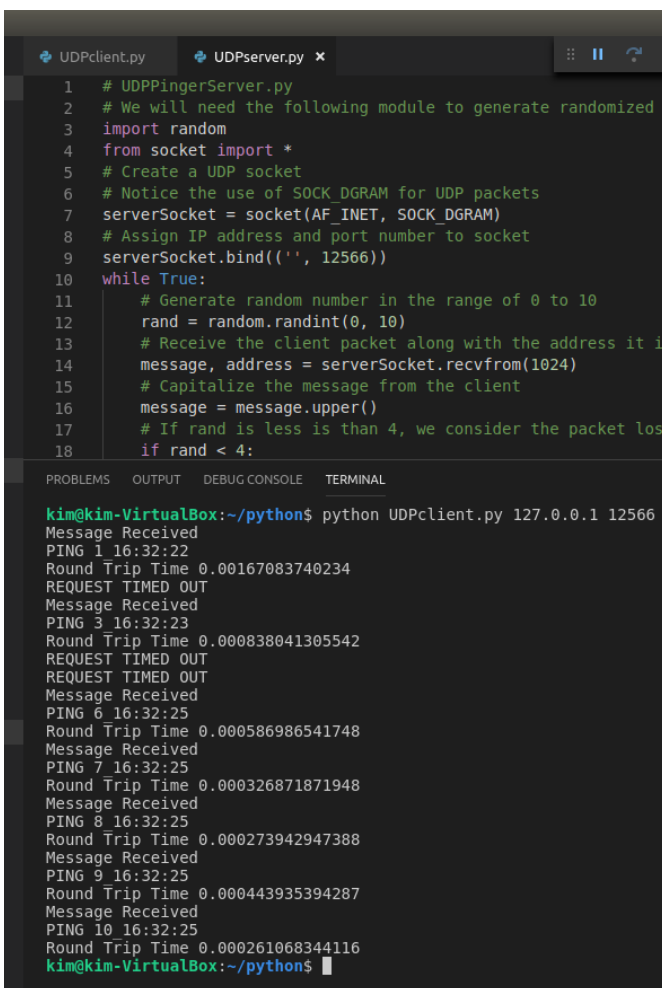
```
1 # UDPPingerServer.py
2 # We will need the following module to generate randomized lost packets
3 import random
4 from socket import *
5 # Create a UDP socket
6 # Notice the use of SOCK_DGRAM for UDP packets
7 serverSocket = socket(AF_INET, SOCK_DGRAM)
8 # Assign IP address and port number to socket
9 serverSocket.bind('', 12566)
10 while True:
11     # Generate random number in the range of 0 to 10
12     rand = random.randint(0, 10)
13     # Receive the client packet along with the address it is coming from
14     message, address = serverSocket.recvfrom(1024)
15     # Capitalize the message from the client
16     message = message.upper()
17     # If rand is less than 4, we consider the packet lost and do not respond
18     if rand < 4:
19         continue
20     # Otherwise, the server responds
21     serverSocket.sendto(message, address)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python Debug Console

kim@kim-VirtualBox:~/python\$ cd /home/kim/python ; env "PYTHONIOENCODING=UTF-8" "PYTHONUNBUFFERED=1" "PYTHONPATH=/home/kim/.vscode/extensions/ms-python.python-2018.8.0/pythonFiles/experimental/ptvsd" python -m ptvsd --host localhost --port 42521 /home/kim/python/UDPserver.py

(2) client send 10 pings to the server(測試兩次)

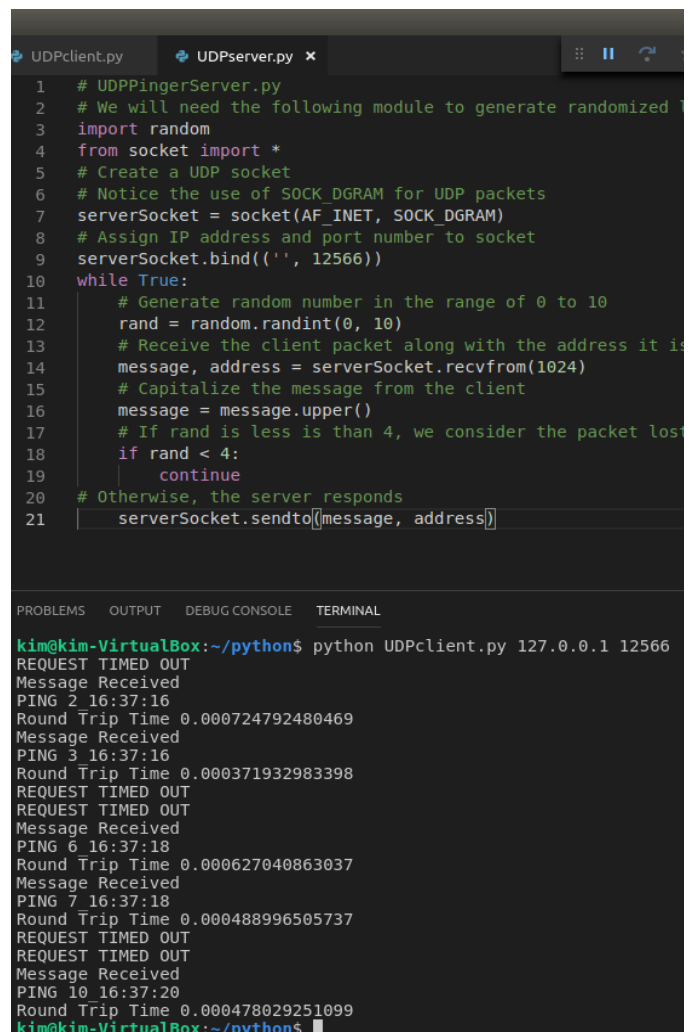


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16     message = message.upper()
17     # If rand is less than 4, we consider the packet lost
18     if rand < 4:
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

kim@kim-VirtualBox:~/python\$ python UDPclient.py 127.0.0.1 12566

Message Received
PING 1 16:32:22
Round Trip Time 0.00167083740234
REQUEST TIMED OUT
Message Received
PING 3 16:32:23
Round Trip Time 0.000838041305542
REQUEST TIMED OUT
REQUEST TIMED OUT
Message Received
PING 6 16:32:25
Round Trip Time 0.000586986541748
Message Received
PING 7 16:32:25
Round Trip Time 0.000326871871948
Message Received
PING 8 16:32:25
Round Trip Time 0.000273942947388
Message Received
PING 9 16:32:25
Round Trip Time 0.000443935394287
Message Received
PING 10 16:32:25
Round Trip Time 0.000261068344116
kim@kim-VirtualBox:~/python\$



```
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21     serverSocket.sendto(message, address)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

kim@kim-VirtualBox:~/python\$ python UDPclient.py 127.0.0.1 12566

REQUEST TIMED OUT
Message Received
PING 2 16:37:16
Round Trip Time 0.000724792480469
Message Received
PING 3 16:37:16
Round Trip Time 0.000371932983398
REQUEST TIMED OUT
REQUEST TIMED OUT
Message Received
PING 6 16:37:18
Round Trip Time 0.000627040863037
Message Received
PING 7 16:37:18
Round Trip Time 0.000488996505737
REQUEST TIMED OUT
REQUEST TIMED OUT
Message Received
PING 10 16:37:20
Round Trip Time 0.000478029251099
kim@kim-VirtualBox:~/python\$