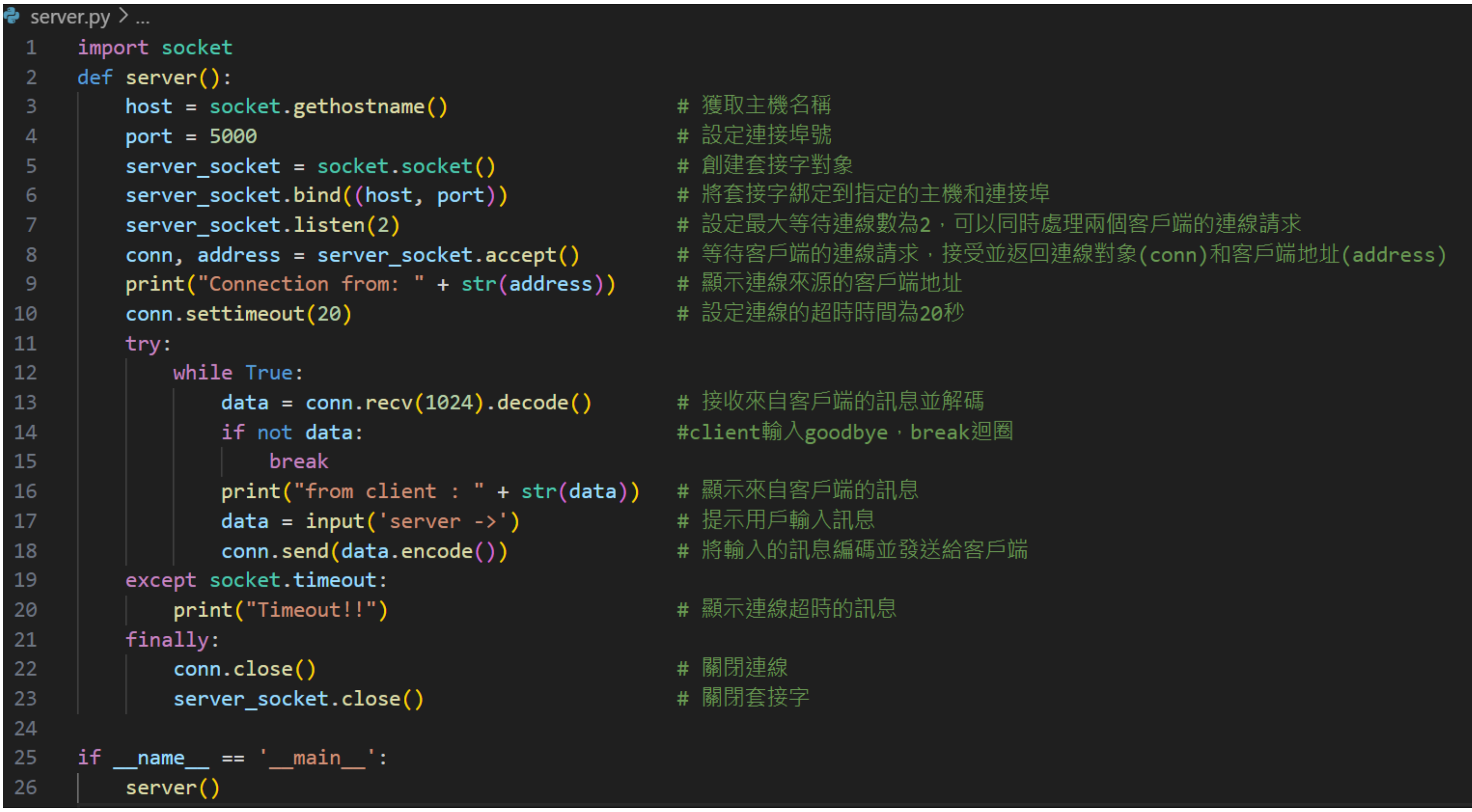
CodingHW_Q36124218

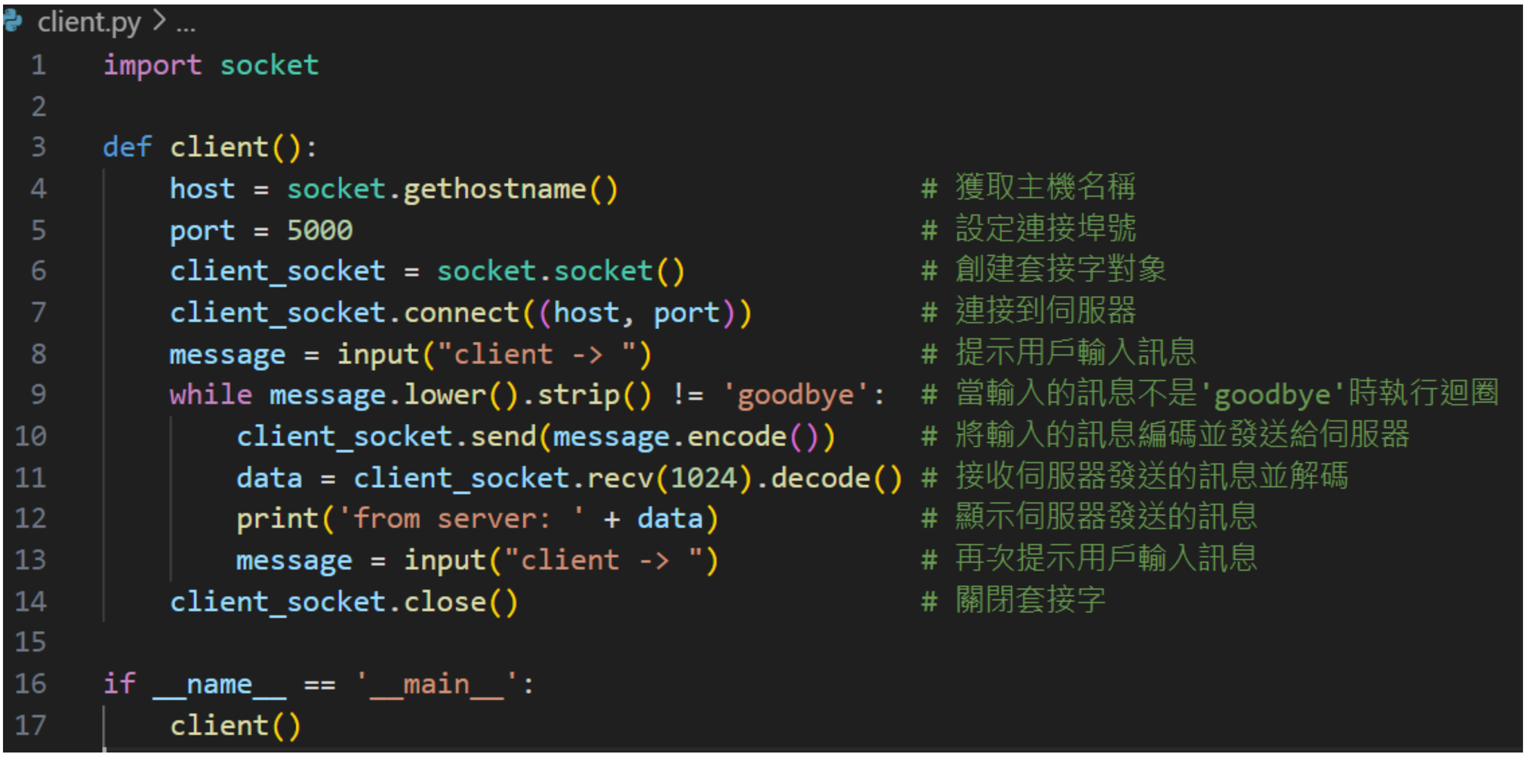
Server.py



```python
import socket
def server():
    host = socket.gethostname()                       # 獲取主機名稱
    port = 5000                                       # 設定連接埠號
    server_socket = socket.socket()                   # 創建套接字對象
    server_socket.bind((host, port))                  # 將套接字綁定到指定的主機和連接埠
    server_socket.listen(2)                           # 設定最大等待連線數為2，可以同時處理兩個客戶端的連線請求
    conn, address = server_socket.accept()            # 等待客戶端的連線請求，接受並返回連線對象(conn)和客戶端地址(address)
    print("Connection from: " + str(address))         # 顯示連線來源的客戶端地址
    conn.settimeout(20)                               # 設定連線的超時時間為20秒
    try:
        while True:
            data = conn.recv(1024).decode()           # 接收來自客戶端的訊息並解碼
            if not data:                              #client輸入goodbye，break迴圈
                break
            print("from client : " + str(data))       # 顯示來自客戶端的訊息
            data = input('server ->')                 # 提示用戶輸入訊息
            conn.send(data.encode())                  # 將輸入的訊息編碼並發送給客戶端
    except socket.timeout:
        print("Timeout!!")                            # 顯示連線超時的訊息
    finally:
        conn.close()                                  # 關閉連線
        server_socket.close()                         # 關閉套接字

if __name__ == '__main__':
    server()
```

Client.py



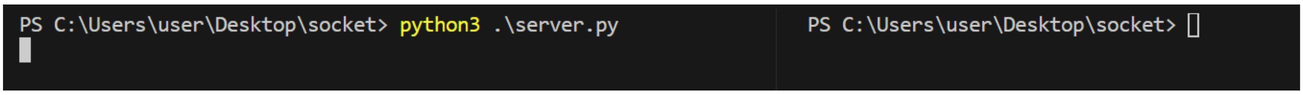
```python
import socket

def client():
    host = socket.gethostname()                       # 獲取主機名稱
    port = 5000                                       # 設定連接埠號
    client_socket = socket.socket()                   # 創建套接字對象
    client_socket.connect((host, port))               # 連接到伺服器
    message = input("client -> ")                     # 提示用戶輸入訊息
    while message.lower().strip() != 'goodbye':       # 當輸入的訊息不是'goodbye'時執行迴圈
        client_socket.send(message.encode())          # 將輸入的訊息編碼並發送給伺服器
        data = client_socket.recv(1024).decode()      # 接收伺服器發送的訊息並解碼
        print('from server: ' + data)                 # 顯示伺服器發送的訊息
        message = input("client -> ")                 # 再次提示用戶輸入訊息
    client_socket.close()                             # 關閉套接字

if __name__ == '__main__':
    client()
```

執行程式成果截圖

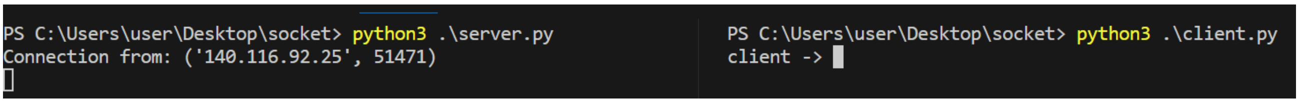
先啟動 server.py



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
```

```
PS C:\Users\user\Desktop\socket>
```

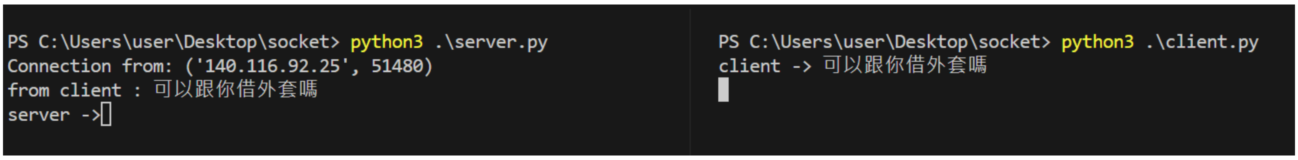
接著啟動 client.py



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
Connection from: ('140.116.92.25', 51471)
```

```
PS C:\Users\user\Desktop\socket> python3 .\client.py
client ->
```

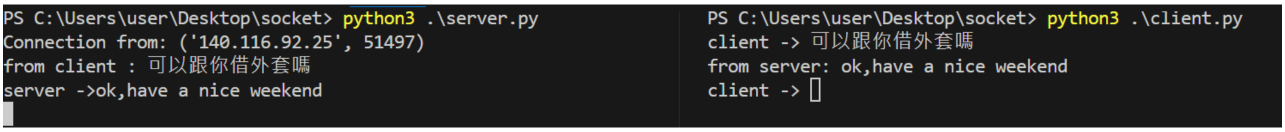
client 傳送訊息，server 接收



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
Connection from: ('140.116.92.25', 51480)
from client : 可以跟你借外套嗎
server ->
```

```
PS C:\Users\user\Desktop\socket> python3 .\client.py
client -> 可以跟你借外套嗎
```

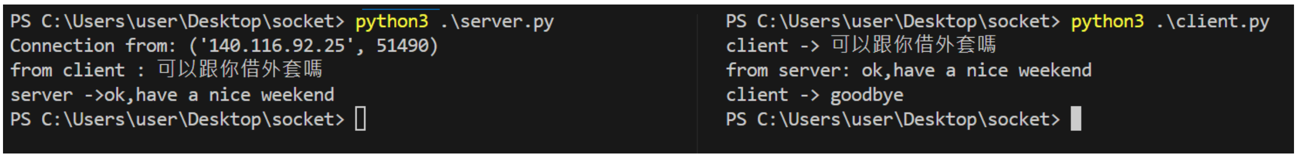
sever 傳送訊息，client 接收



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
Connection from: ('140.116.92.25', 51497)
from client : 可以跟你借外套嗎
server ->ok,have a nice weekend
```

```
PS C:\Users\user\Desktop\socket> python3 .\client.py
client -> 可以跟你借外套嗎
from server: ok,have a nice weekend
client ->
```

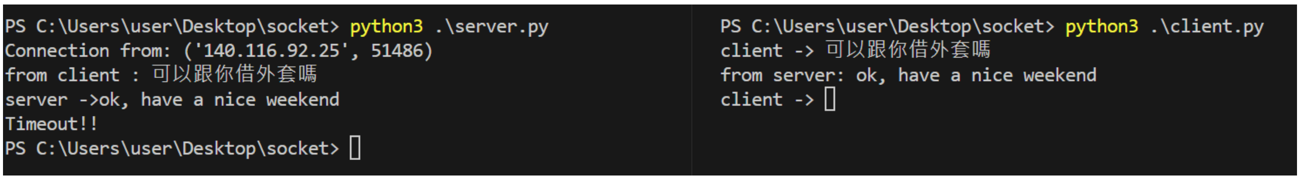
當 client 傳送 goodbye，client 和 server 會各結束程式。



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
Connection from: ('140.116.92.25', 51490)
from client : 可以跟你借外套嗎
server ->ok,have a nice weekend
PS C:\Users\user\Desktop\socket>
```

```
PS C:\Users\user\Desktop\socket> python3 .\client.py
client -> 可以跟你借外套嗎
from server: ok,have a nice weekend
client -> goodbye
PS C:\Users\user\Desktop\socket>
```

如果連線超過 20 秒，server.py 會自動斷開連結。



```
PS C:\Users\user\Desktop\socket> python3 .\server.py
Connection from: ('140.116.92.25', 51486)
from client : 可以跟你借外套嗎
server ->ok, have a nice weekend
Timeout!!
PS C:\Users\user\Desktop\socket>
```

```
PS C:\Users\user\Desktop\socket> python3 .\client.py
client -> 可以跟你借外套嗎
from server: ok, have a nice weekend
client ->
```