

Assignment #4d

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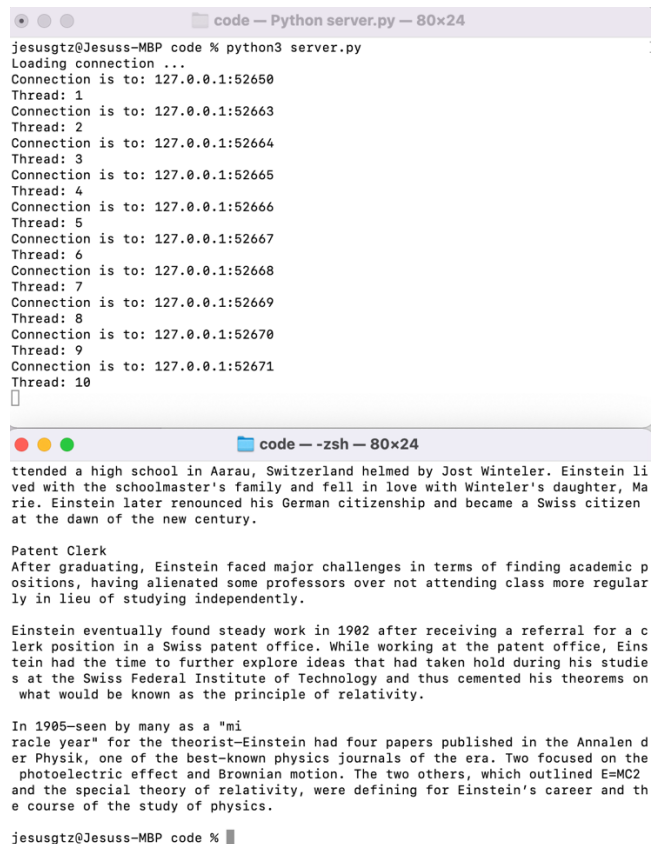
This program will implement a scenario in which there will be one server that can handle multiple clients, by using multithreading. The server will read the text file 'bio.txt' and will send this file of 10MB for each request. The client will be able to send multiple requests for that same file, this is done correctly by generating multiple threads.

1. TCP sockets were used for both programs code&server:

```
import socket
"""
Create the socket for the client
"""
clientSocket = socket.socket()

import socket
from _thread import *
"""
Create the socket for the server
"""
serverSocket = socket.socket()
```

2. Server handles multiple clients through threading as shown:



```
code — Python server.py — 80x24
jesusgtz@Jesuss-MBP code % python3 server.py
Loading connection ...
Connection is to: 127.0.0.1:52650
Thread: 1
Connection is to: 127.0.0.1:52663
Thread: 2
Connection is to: 127.0.0.1:52664
Thread: 3
Connection is to: 127.0.0.1:52665
Thread: 4
Connection is to: 127.0.0.1:52666
Thread: 5
Connection is to: 127.0.0.1:52667
Thread: 6
Connection is to: 127.0.0.1:52668
Thread: 7
Connection is to: 127.0.0.1:52669
Thread: 8
Connection is to: 127.0.0.1:52670
Thread: 9
Connection is to: 127.0.0.1:52671
Thread: 10
█

code — -zsh — 80x24
ttended a high school in Aarau, Switzerland helmed by Jost Winteler. Einstein li
ved with the schoolmaster's family and fell in love with Winteler's daughter, Ma
rie. Einstein later renounced his German citizenship and became a Swiss citizen
at the dawn of the new century.

Patent Clerk
After graduating, Einstein faced major challenges in terms of finding academic p
ositions, having alienated some professors over not attending class more regular
ly in lieu of studying independently.

Einstein eventually found steady work in 1902 after receiving a referral for a c
lerk position in a Swiss patent office. While working at the patent office, Eins
tein had the time to further explore ideas that had taken hold during his studie
s at the Swiss Federal Institute of Technology and thus cemented his theorems on
what would be known as the principle of relativity.

In 1905—seen by many as a "mi
racle year" for the theorist—Einstein had four papers published in the Annalen d
er Physik, one of the best-known physics journals of the era. Two focused on the
photoelectric effect and Brownian motion. The two others, which outlined E=MC2
and the special theory of relativity, were defining for Einstein's career and th
e course of the study of physics.

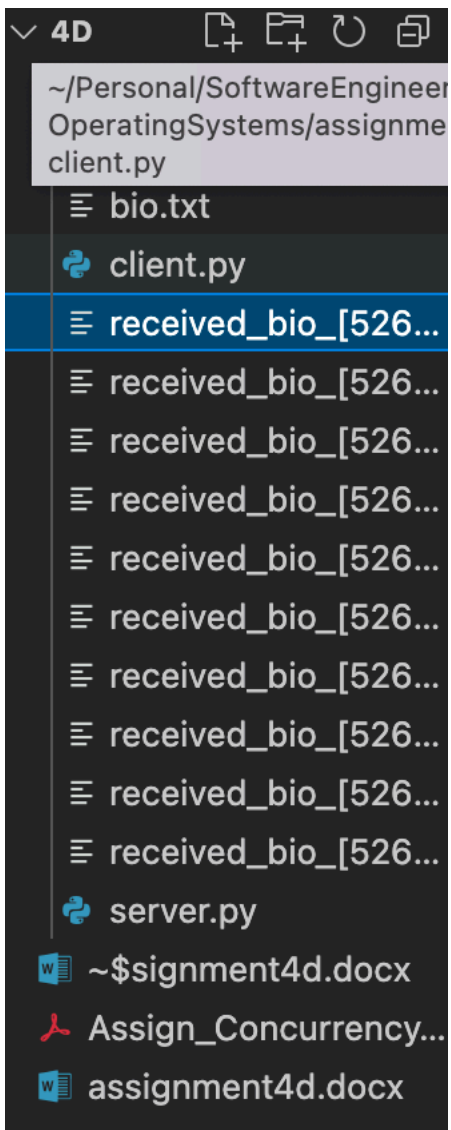
jesusgtz@Jesuss-MBP code % █
```

3. Server reads the text file and will send 1000bytes of data at a time as shown below in code:

```
.....  
Opens File & Receives 1024bytes  
.....  
reply = clientSocket.recv(1024)  
.....
```

```
.....  
While loop to send '1024' bytes  
.....  
while len(buffer) > 0:  
    connection.send(buffer[:1024].encode())  
    buffer = buffer[1024:]  
connection.close()
```

4. Client Receives the data bytes and appends into a file called “receive_bio_[clientid].txt”:



A screenshot of a code editor with a dark theme. The top bar shows several open files: 'server.py', 'client.py', and four 'received_bio_...' files with different IDs. The 'server.py' file is active, showing a Python script with 20 lines of text. The text is a biographical snippet about Albert Einstein. To the right of the code editor, there is a small window titled 'threaded_client' which displays 'No results'.

HOW TO RUN CODE:

- First run
 - o Python3 server.py
- Secondly run
 - o Python3 client.py

REFERENCES: <https://codezup.com/socket-server-with-multiple-clients-model-multithreading-python/>