

## Network final project rebort

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## **Introduction:**

**We made 3 classes using python in our project first one for server and second one for PNG files and the third for client and we achieved concept of concurrency and multi-threading and persistence connection in our server and server process GET and POST requests and send response 200 ok or 404 not found(in case of GET request) it also can deal with .txt files and .html files and .PNG files and we made heuristic function for persistence connection by number of threads active now and when thread timeout it print that client disconnected now .**

**And we made a bonus part (caching) in client by making a file store list of operations that client will make and response in same line if client found that operations that will done now we made it before it print the response without making connection to server.**

## **We will run three terminals to try project:**

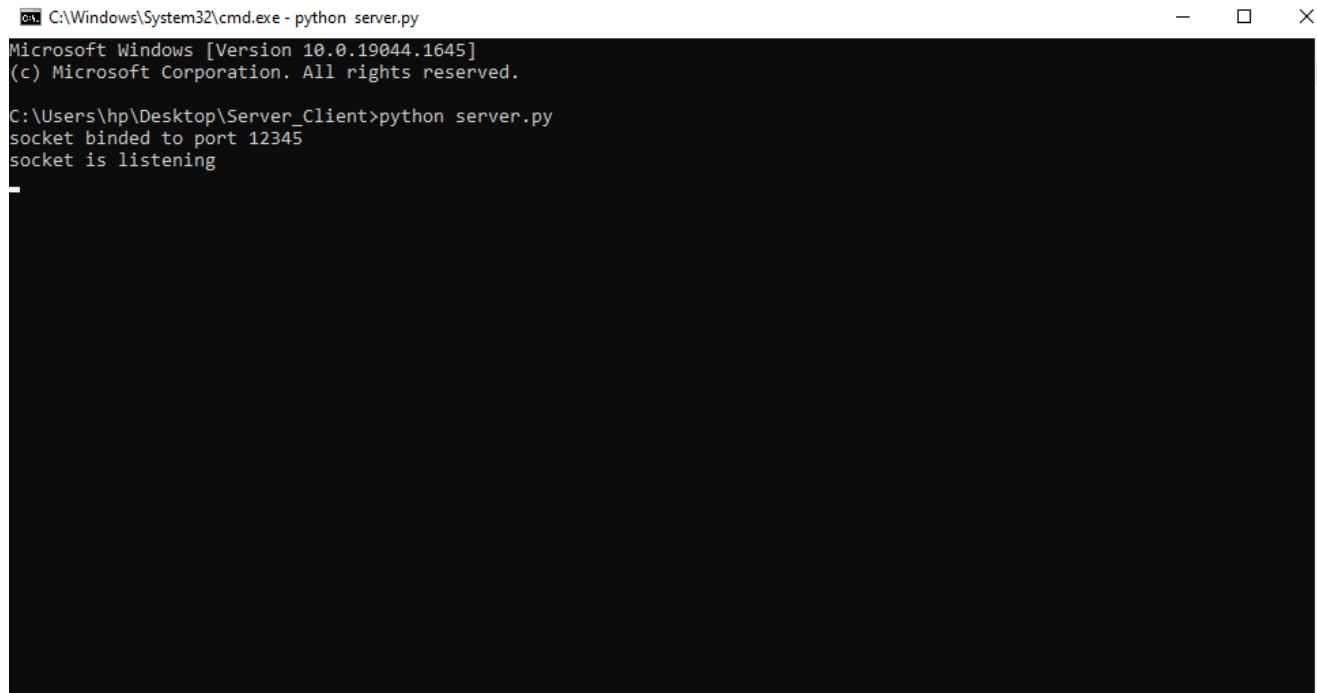
**We run server by ( python server.py )**

**We run serverPNG by ( python serverPNG.py )**

**And we made bash arguments in client (python client.py operations.txt).**

**And now let's try our project:**

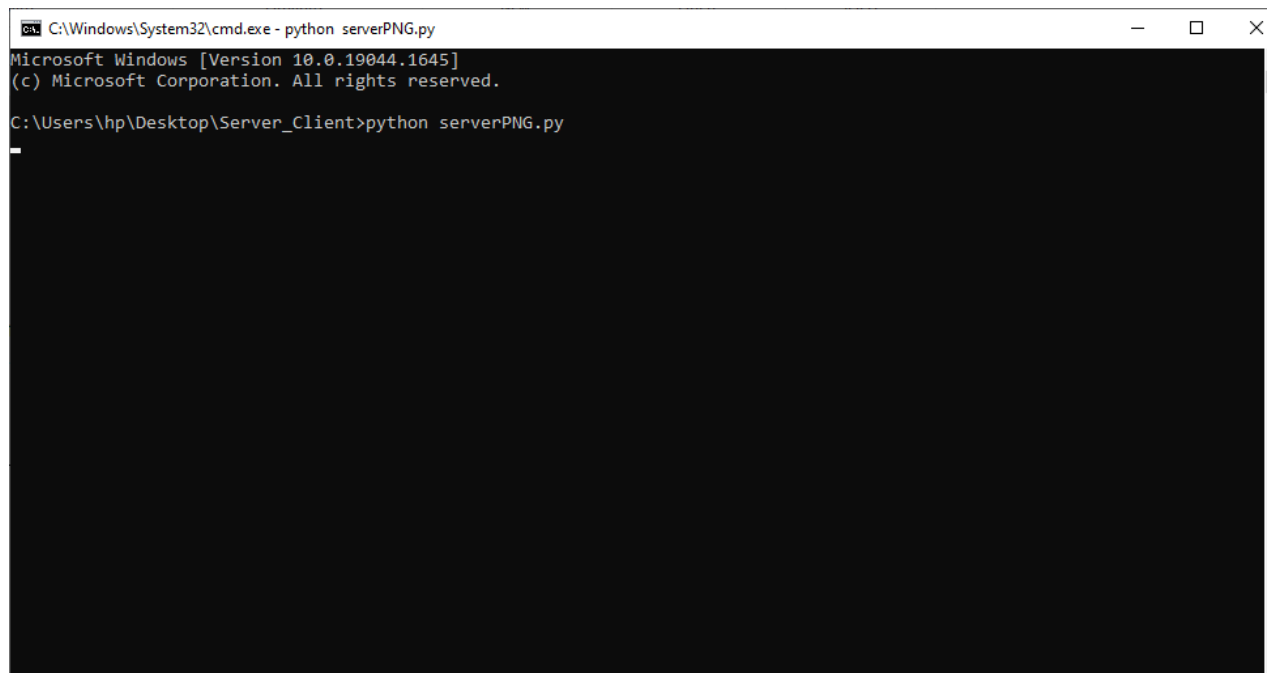
**In the first we will run our server:**



```
C:\Windows\System32\cmd.exe - python server.py
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp\Desktop\Server_Client>python server.py
socket binded to port 12345
socket is listening
```

**Now we will run PNG server:**



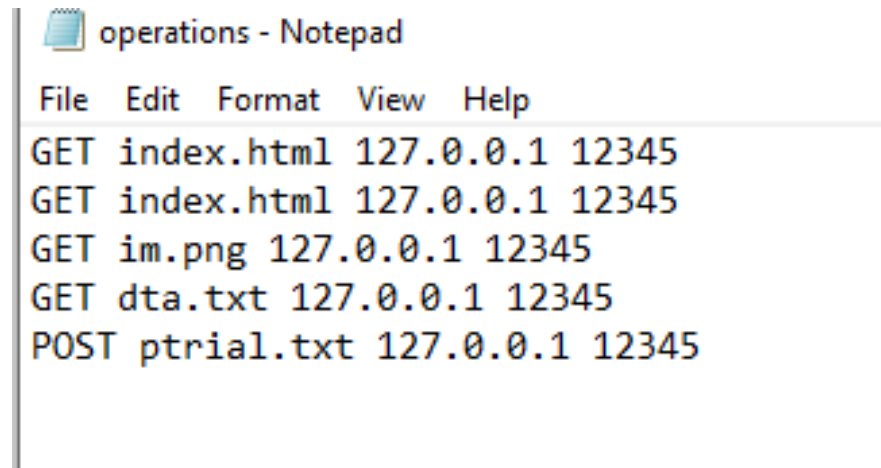
```
C:\Windows\System32\cmd.exe - python serverPNG.py
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp\Desktop\Server_Client>python serverPNG.py
```

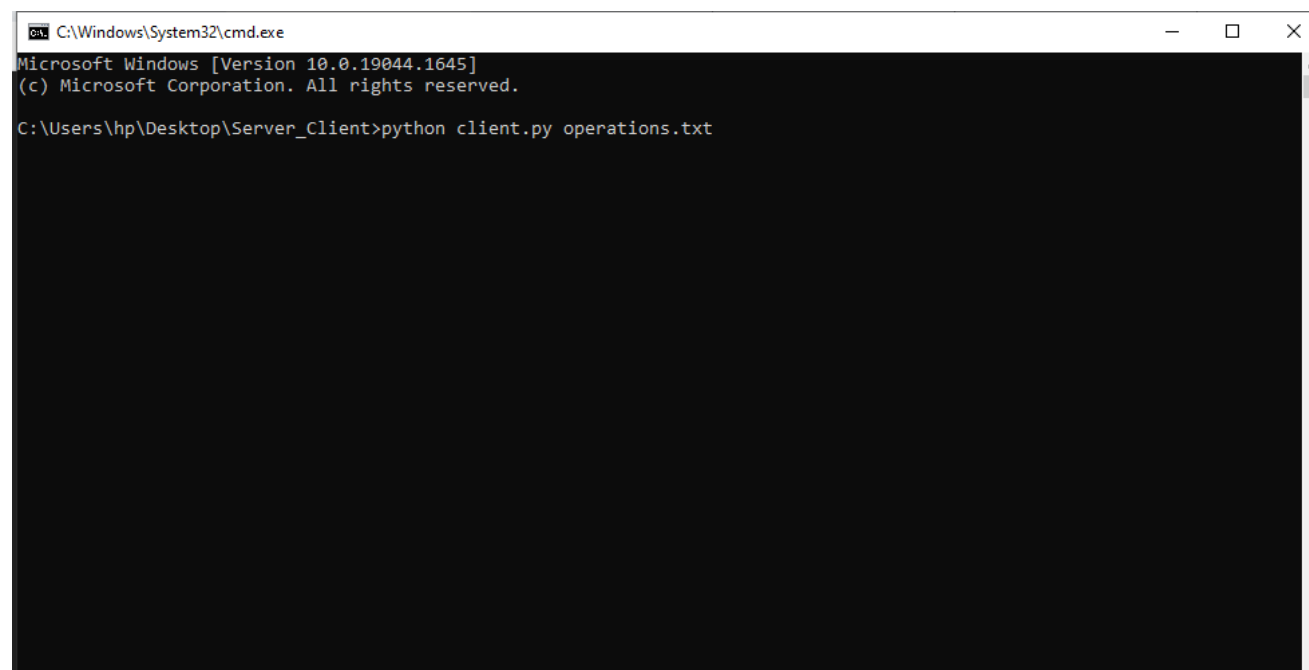
Now we will run client:

The file that we read operations from it is called operations.txt

And it is file content:



```
File Edit Format View Help
GET index.html 127.0.0.1 12345
GET index.html 127.0.0.1 12345
GET im.png 127.0.0.1 12345
GET dta.txt 127.0.0.1 12345
POST ptrial.txt 127.0.0.1 12345
```



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp\Desktop\Server_Client>python client.py operations.txt
```

C:\Windows\System32\cmd.exe

Request:

GET dta.txt HTTP/1.0

Host: 127.0.0.1:12345

Request sent successfully

No response from server

Connected to server successfully

Request:

GET index.html HTTP/1.0

Host: 127.0.0.1:12345

Request sent successfully

Connected to server successfully

Request:

GET im.png HTTP/1.0

Host: 127.0.0.1:12345

Request sent successfully

Connected to server successfully

Request:

POST ptrial.txt HTTP/1.0

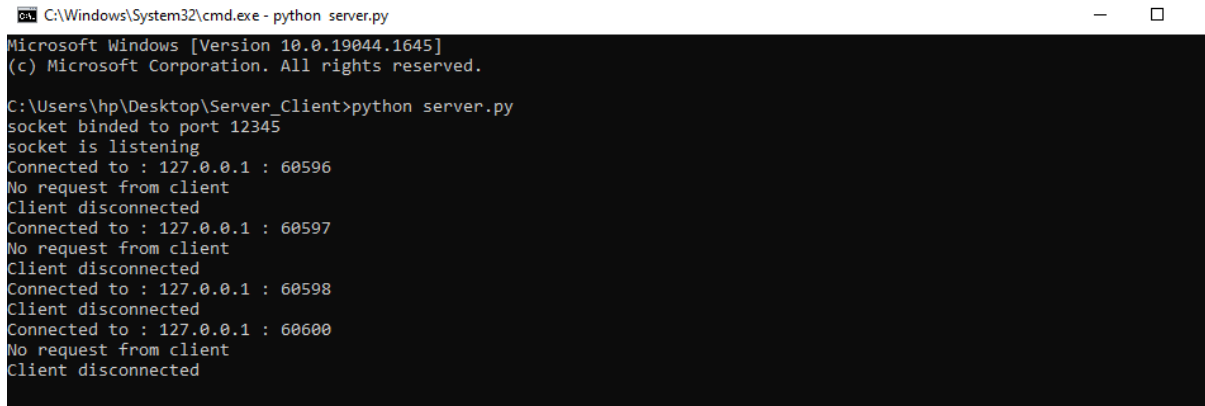
Host: 127.0.0.1:12345

['Adel Ashraf\n', 'Good morning']

Request sent successfully

C:\Users\hp\Desktop\Server\_Client>\_

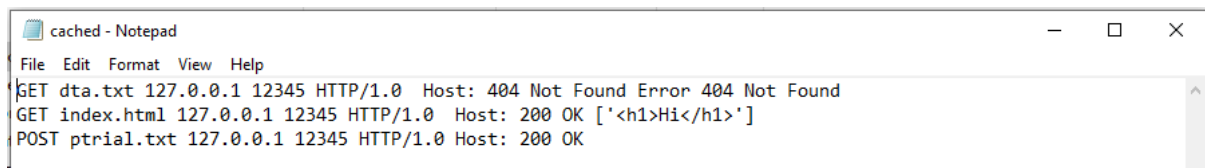
Now we will look at server:



```
C:\Windows\System32\cmd.exe - python server.py
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

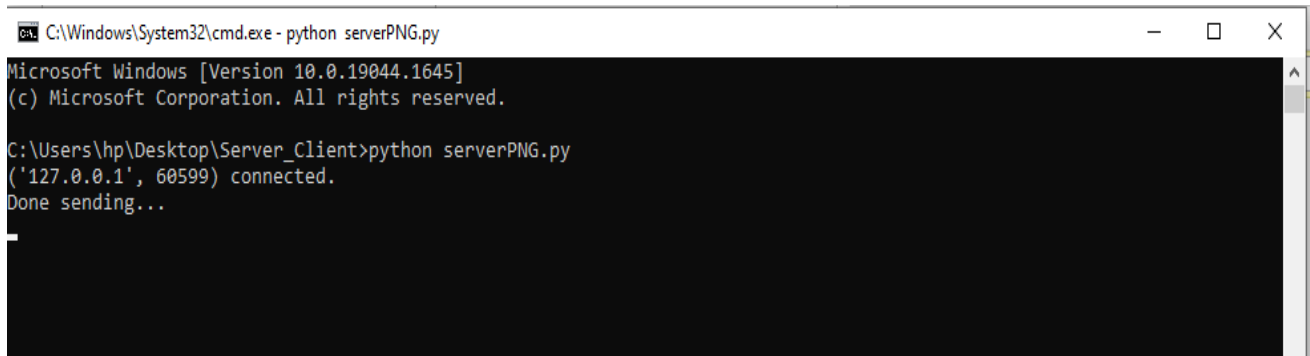
C:\Users\hp\Desktop\Server_Client>python server.py
socket binded to port 12345
socket is listening
Connected to : 127.0.0.1 : 60596
No request from client
Client disconnected
Connected to : 127.0.0.1 : 60597
No request from client
Client disconnected
Connected to : 127.0.0.1 : 60598
Client disconnected
Connected to : 127.0.0.1 : 60600
No request from client
Client disconnected
```

Now we will look at cash file:



```
cached - Notepad
File Edit Format View Help
GET dta.txt 127.0.0.1 12345 HTTP/1.0 Host: 404 Not Found Error 404 Not Found
GET index.html 127.0.0.1 12345 HTTP/1.0 Host: 200 OK ['<h1>Hi</h1>']
POST ptrial.txt 127.0.0.1 12345 HTTP/1.0 Host: 200 OK
```

Now we will look at png server:



```
C:\Windows\System32\cmd.exe - python serverPNG.py
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp\Desktop\Server_Client>python serverPNG.py
('127.0.0.1', 60599) connected.
Done sending...
```

Now we will run client to try caching:

```
C:\Windows\System32\cmd.exe

C:\Users\hp\Desktop\Server_Client>python client.py operations.txt
GET dta.txt 127.0.0.1 12345

POST ptrial.txt 127.0.0.1 12345

Connected to server successfully
Request:
GET im.png HTTP/1.0
Host: 127.0.0.1:12345

Request sent sucessfully

GET index.html 127.0.0.1 12345

C:\Users\hp\Desktop\Server_Client>
```

And response is here:

```
C:\Windows\System32\cmd.exe - python server.py
Microsoft Windows [Version 10.0.19044.1645]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp\Desktop\Server_Client>python server.py
socket binded to port 12345
socket is listening
Connected to : 127.0.0.1 : 56993
HTTP/1.0
Host: 200 OK

No request from client
Client disconnected
Connected to : 127.0.0.1 : 56994
HTTP/1.0
Host: 404 Not Found

Error 404 Not Found

No request from client
Client disconnected
Connected to : 127.0.0.1 : 56995
HTTP/1.0
Host: 200 OK

['<h1>Hi</h1>']

No request from client
Client disconnected
Connected to : 127.0.0.1 : 56996
Client disconnected
```