

readme

20191618 신혜은

1. Environment

- python 3.9
- pycharm 2022.1
- from socket import *
- from datetime import datetime

2. Files

- tcpClient.py

클라이언트 socket을 생성 후 서버에 요청하여 돌아오는 data를 출력한다.

- tcpServer.py

서버 소켓을 생성 후 클라이언트에서 요청된 명령을 수행하고, 결과 data를 클라이언트로 전송한다.

3. Execute

1) tcpServer.py 실행

2) tcpClient.py 실행

3) tcpClient 쪽에서 명령어 입력

- 소문자로 입력해야 한다.
- 명령어와 파일 이름 등의 구분은 " "(공백)을 기준으로 한다.

- get [file]

ex) get good.html

```
C:\Users\as221\PycharmProjects\tcpProgramming\venv\
-----Client) 연결됨-----
Request: get good.html
-----Client) 전송완료-----

HTTP/1.1 200 ok
1Date: 2022-05-03 14:04:31.716111
Host: 10.30.115.29
Content-Type: text/html
Content-Length: 152

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>
    Hi i am the Genius!!
  </title>
</head>
<body>

</body>
</html>

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
```

- head [file]

ex) head good.html

```
C:\Users\as221\PycharmProjects\tcpProgramming\venv\
-----Client) 연결됨-----
Request: head good.html
-----Client) 전송완료-----

HTTP/1.1 200 ok
1Date: 2022-05-03 14:06:51.025699
Host: 127.0.0.1
Content-Type: text/html

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
|
```

- put [file] [text]

ex) put good.html add the text

```
tcpServer x ! tcpClient x
C:\Users\as221\PycharmProjects\tcpProgramm
-----Client) 연결됨-----
Request: put good.html add the text
-----Client) 전송완료-----

HTTP/1.1 200 ok
1Date: 2022-05-03 14:08:21.334602
Host: 127.0.0.1
Content-Type: text/html
Content-Length: 167

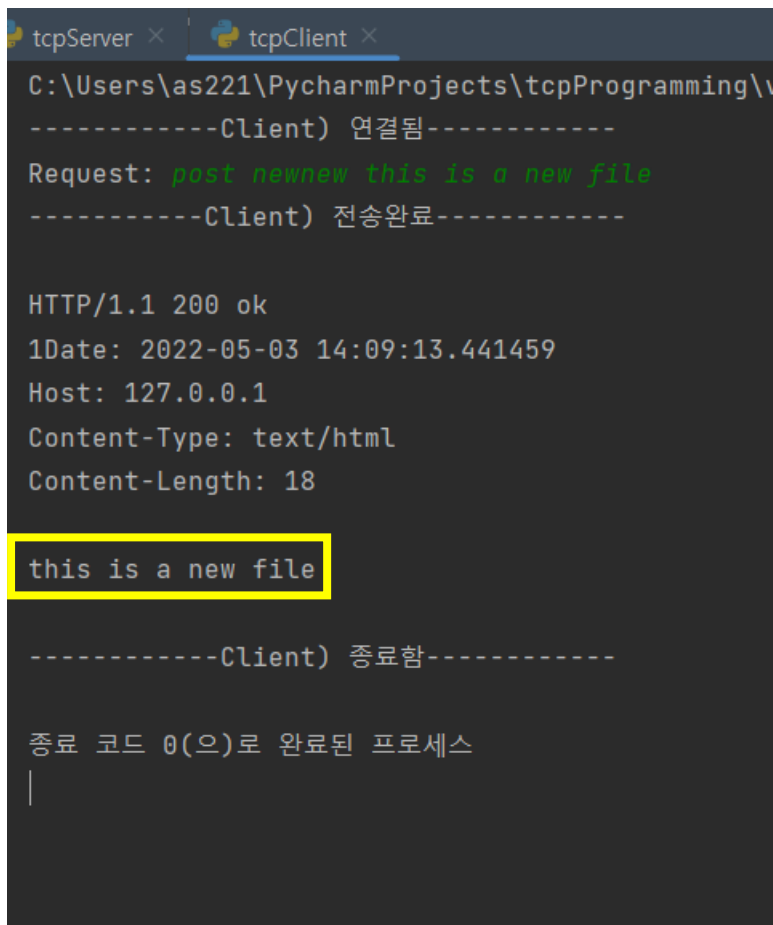
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>
    Hi i am the Genius!!
  </title>
</head>
<body>
  add the text
</body>
</html>

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
```

- post [new file name] [text]

ex) post newnew this is a new file.



```
tcpServer x | tcpClient x
C:\Users\as221\PycharmProjects\tcpProgramming\venv
-----Client) 연결됨-----
Request: post newnew this is a new file
-----Client) 전송완료-----

HTTP/1.1 200 ok
1Date: 2022-05-03 14:09:13.441459
Host: 127.0.0.1
Content-Type: text/html
Content-Length: 18

this is a new file

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
|
```

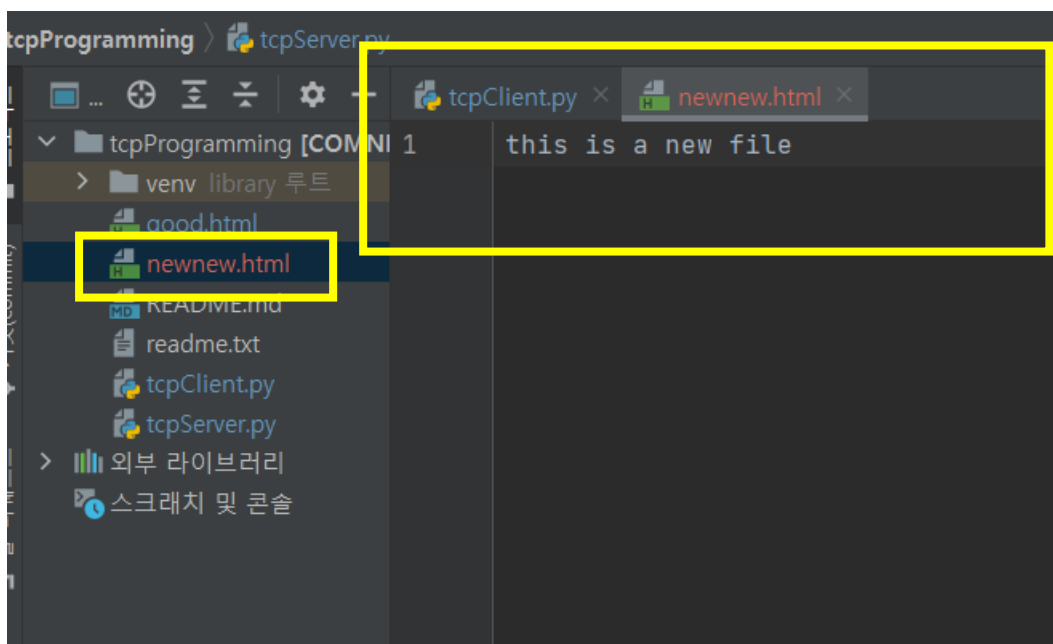
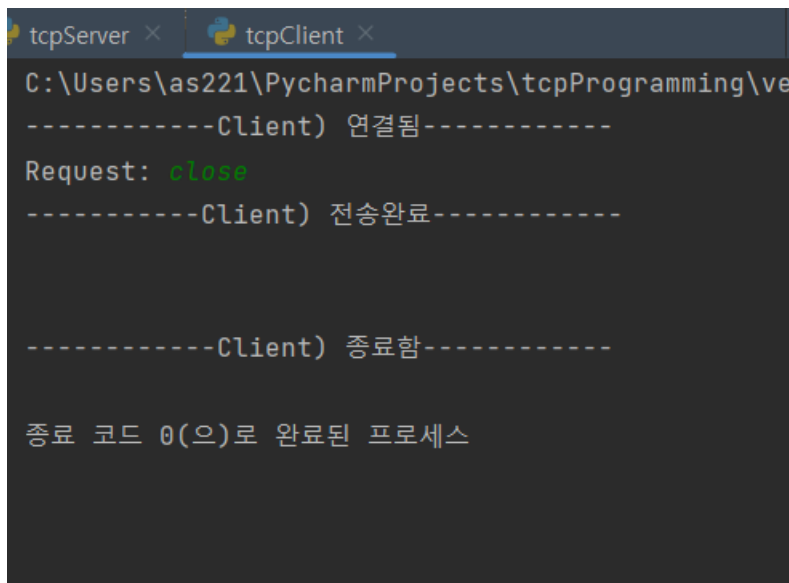


그림 1 파일이 새로 생성됨

- close



```
tcpServer x tcpClient x
C:\Users\as221\PycharmProjects\tcpProgramming\ve
-----Client) 연결됨-----
Request: close
-----Client) 전송완료-----

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
```

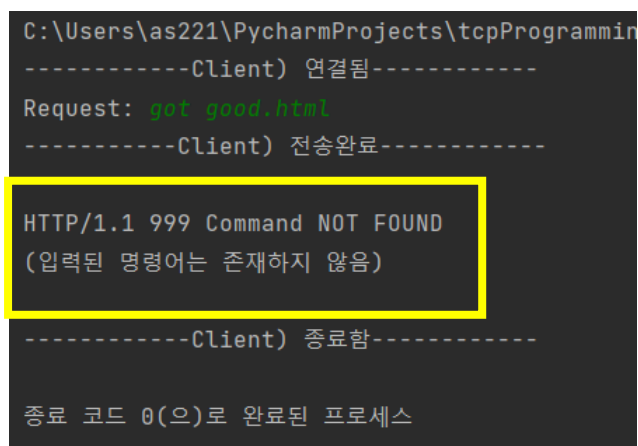
4. 출력 메시지 코드

<기본 형식>

```
response = "\nHTTP/1.1 {header[0]} {header[1]}\n1Date: {date}\nHost: {url}\n Content-
Type: text/html\n"
```

- 200 ok : 정상 실행

- 999 Command NOT FOUND : 잘못된 명령어를 입력했을 경우



```
C:\Users\as221\PycharmProjects\tcpProgrammin
-----Client) 연결됨-----
Request: get good.html
-----Client) 전송완료-----

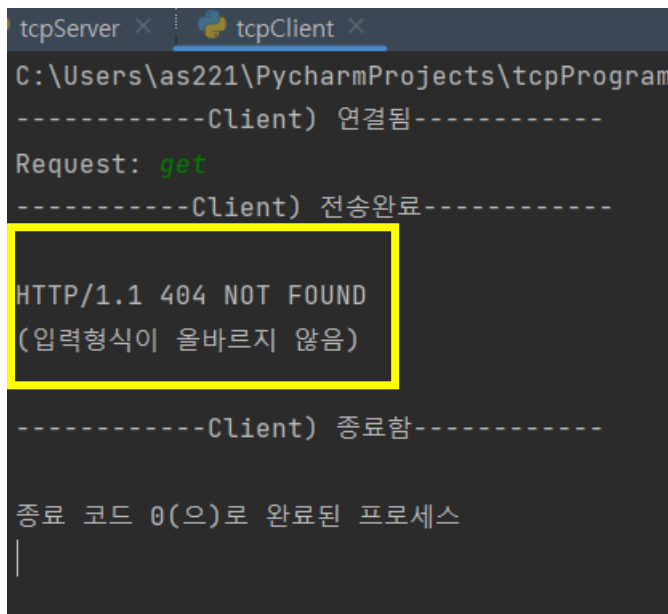
HTTP/1.1 999 Command NOT FOUND
(입력된 명령어는 존재하지 않음)

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
```

"HTTP/1.1 999 Command NOT FOUND (입력된 명령어는 존재하지 않음)"

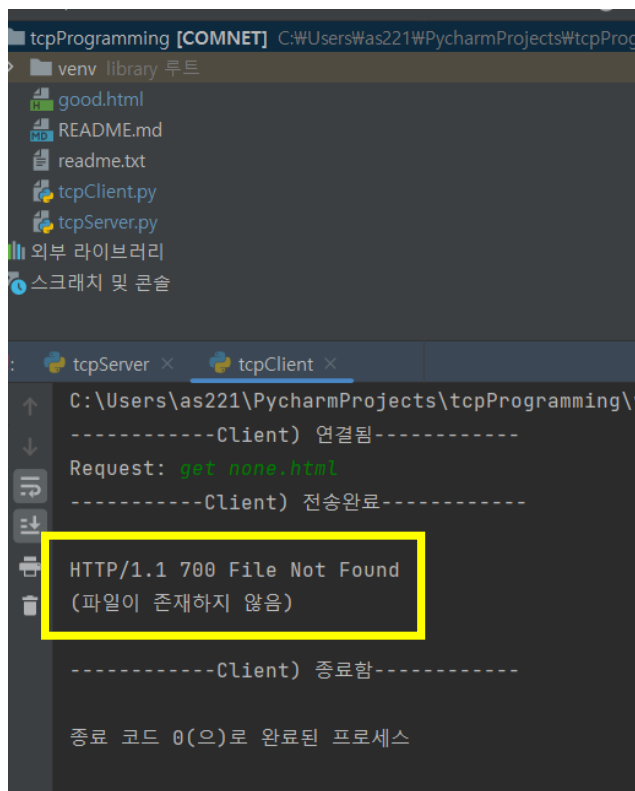
- 404 NOT FOUND : 명령어 입력시, 형식이 잘못되었을 경우



The screenshot shows a terminal window with two tabs: 'tcpServer' and 'tcpClient'. The 'tcpClient' tab is active, displaying the following text: 'C:\Users\as221\PycharmProjects\tcpProgram', '-----Client) 연결됨-----', 'Request: get', '-----Client) 전송완료-----', 'HTTP/1.1 404 NOT FOUND (입력형식이 올바르지 않음)', '-----Client) 종료함-----', and '종료 코드 0(으)로 완료된 프로세스'. The error message 'HTTP/1.1 404 NOT FOUND (입력형식이 올바르지 않음)' is highlighted with a yellow box.

"HTTP/1.1 404 NOT FOUND (입력형식이 올바르지 않음)"

- 700 File Not Found : read할 파일이 존재하지 않을 경우



The screenshot shows a PyCharm IDE with a project named 'tcpProgramming'. The file explorer on the left shows files like 'good.html', 'README.md', 'readme.txt', 'tcpClient.py', and 'tcpServer.py'. The terminal window at the bottom has two tabs: 'tcpServer' and 'tcpClient'. The 'tcpClient' tab is active, displaying the following text: 'C:\Users\as221\PycharmProjects\tcpProgramming\...', '-----Client) 연결됨-----', 'Request: get none.html', '-----Client) 전송완료-----', 'HTTP/1.1 700 File Not Found (파일이 존재하지 않음)', '-----Client) 종료함-----', and '종료 코드 0(으)로 완료된 프로세스'. The error message 'HTTP/1.1 700 File Not Found (파일이 존재하지 않음)' is highlighted with a yellow box.

"HTTP/1.1 700 File Not Found (파일이 존재하지 않음)"

<가산점 부분>

*Wi-Fi						
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help						
ip.addr == 10.30.116.152						
No.	Time	Source	Destination	Protocol	Length	Info
548	6.153592	10.30.116.152	10.30.115.29	TCP	66	57056 → 999 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
549	6.153763	10.30.115.29	10.30.116.152	TCP	66	999 → 57056 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM=1
550	6.156156	10.30.116.152	10.30.115.29	TCP	54	57056 → 999 [ACK] Seq=1 Ack=1 Win=131328 Len=0
2431	21.614895	10.30.116.152	10.30.115.29	TCP	67	57056 → 999 [PSH, ACK] Seq=1 Ack=1 Win=131328 Len=13
2432	21.616005	10.30.115.29	10.30.116.152	TCP	321	999 → 57056 [PSH, ACK] Seq=1 Ack=14 Win=525568 Len=267
2433	21.620551	10.30.116.152	10.30.115.29	TCP	54	57056 → 999 [FIN, ACK] Seq=14 Ack=268 Win=131072 Len=0
2434	21.620606	10.30.115.29	10.30.116.152	TCP	54	999 → 57056 [ACK] Seq=268 Ack=15 Win=525568 Len=0
2435	21.622469	10.30.115.29	10.30.116.152	TCP	54	999 → 57056 [FIN, ACK] Seq=268 Ack=15 Win=525568 Len=0
2436	21.625422	10.30.116.152	10.30.115.29	TCP	54	57056 → 999 [ACK] Seq=15 Ack=269 Win=131072 Len=0
7575	88.688335	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
7661	89.708090	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
7735	90.739115	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
7828	91.759368	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
26429	208.717129	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
26977	210.752399	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
27066	211.769877	10.30.116.152	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
> Frame 548: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface \Device\NPF_{587F4806-3B60-48BB-8AFA-62133EF44612}, id 0						
> Ethernet II, Src: IntelCor_ef:29:37 (64:bc:58:ef:29:37), Dst: IntelCor_7d:8e:ee (ec:63:d7:7d:8e:ee)						
> Internet Protocol Version 4, Src: 10.30.116.152, Dst: 10.30.115.29						
> Transmission Control Protocol, Src Port: 57056, Dst Port: 999, Seq: 0, Len: 0						
0000	ec 63 d7 7d 8e ee 64 bc	58 ef 29 37 08 00 45 00	·c·}··d· X·)7··E·			
0010	00 34 af 7b 40 00 80 06	4f 57 0a 1e 74 98 0a 1e	·4·{@··· OW··t···			
0020	73 1d de e0 03 e7 d8 59	5b 28 00 00 00 00 80 02	s·····Y [(·····			
0030	fa f0 61 e4 00 00 02 04	05 b4 01 03 03 08 01 01	··a····· ······			
0040	04 02		··			

Ip address = 10.30.116.152의 환경에서 wireShark를 이용하였다.