

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

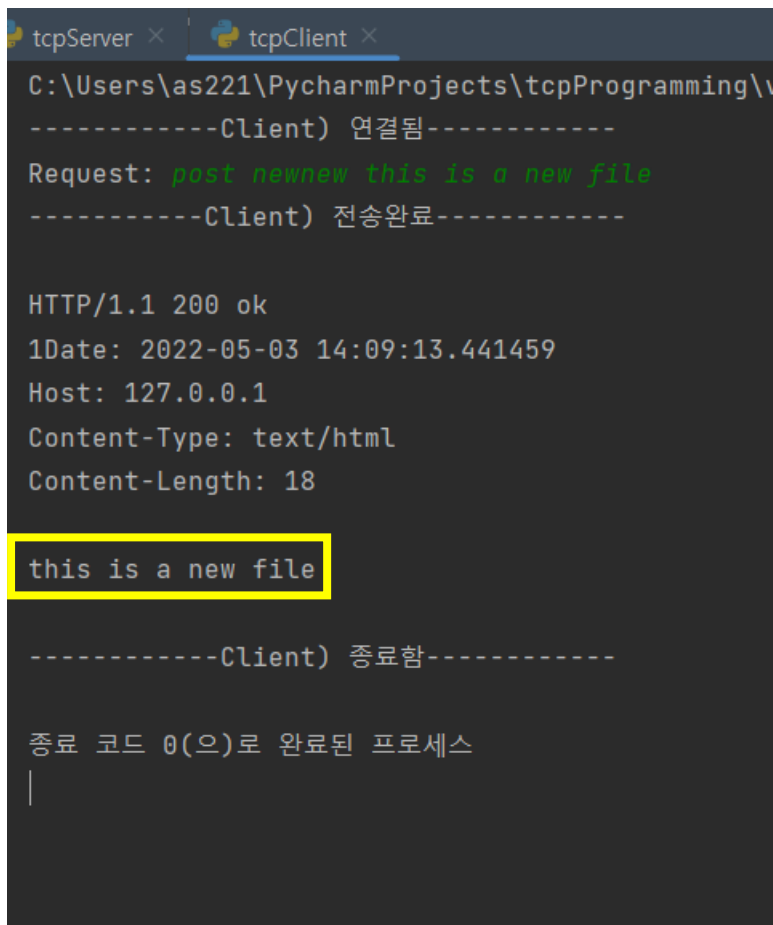
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>
    Hi i am the Genius!!
  </title>
</head>
<body>
  add the text
</body>
</html>

-----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
|
```

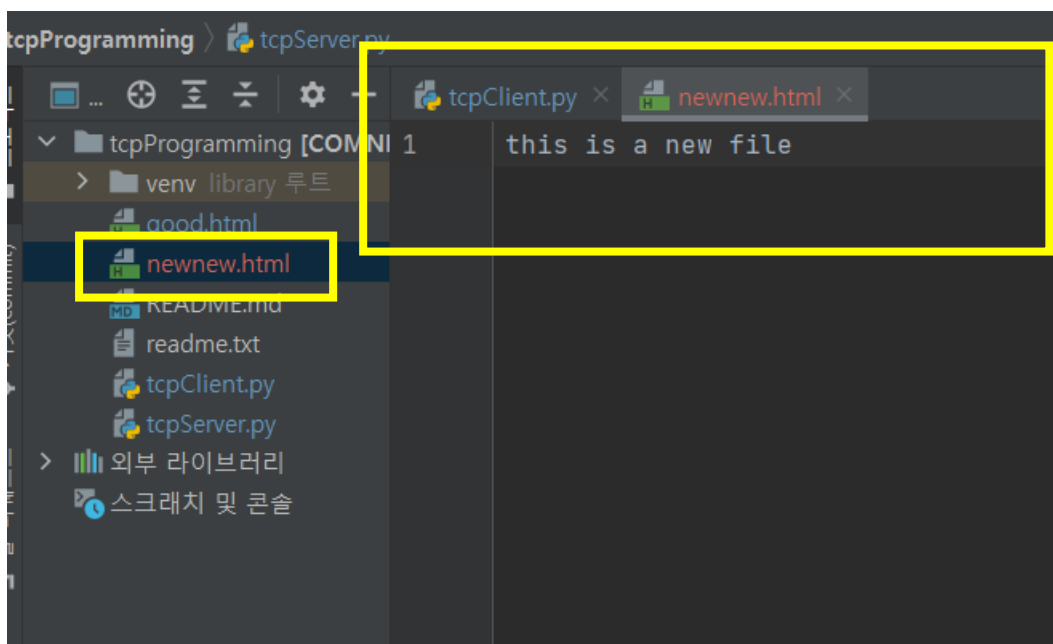
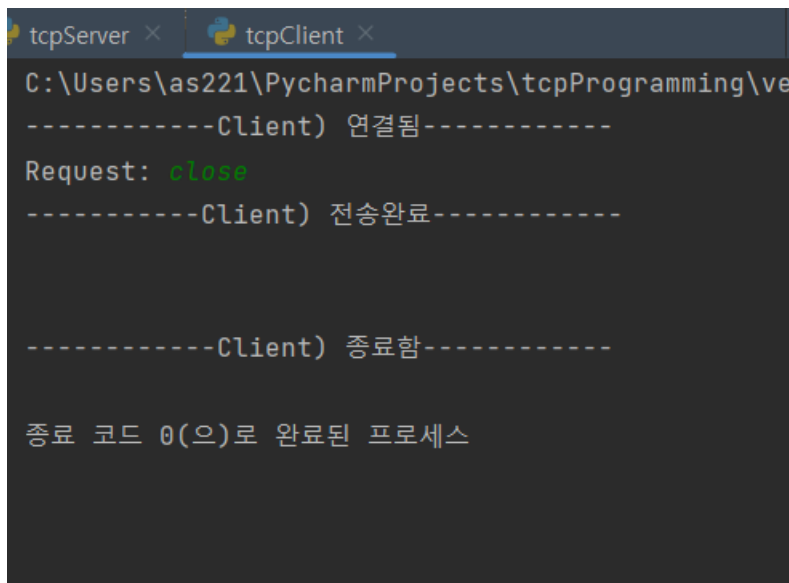


그림 1 파일이 새로 생성됨

- close

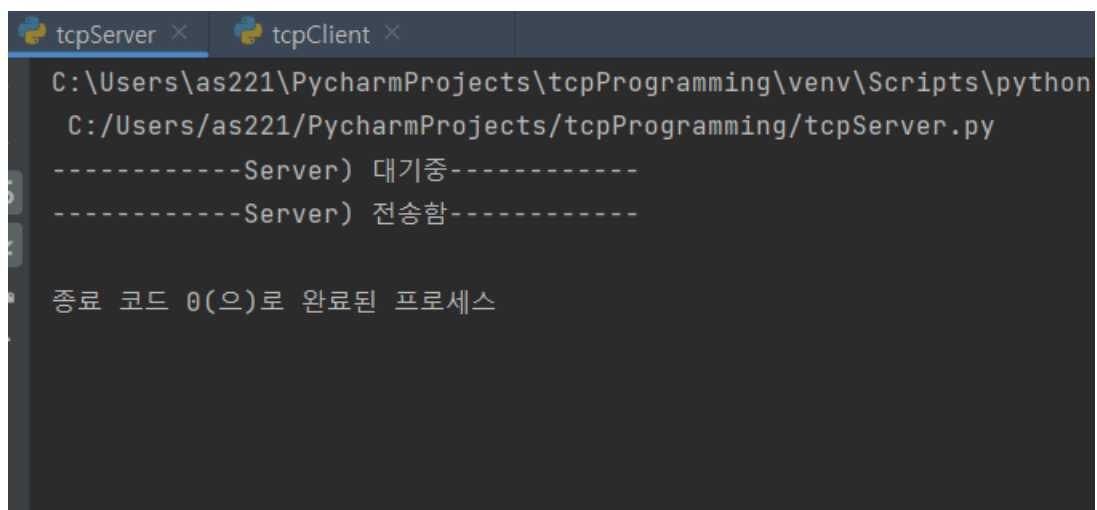


```
tcpServer x tcpClient x
C:\Users\as221\PycharmProjects\tcpProgramming\ve
-----Client) 연결됨-----
Request: close
-----Client) 전송완료-----

-----Client) 종료함-----

종료 코드 0(으)로 완료된 프로세스
```

Server 측 출력화면)



```
tcpServer x tcpClient x
C:\Users\as221\PycharmProjects\tcpProgramming\venv\Scripts\python
C:/Users/as221/PycharmProjects/tcpProgramming/tcpServer.py
-----Server) 대기중-----
-----Server) 전송함-----

종료 코드 0(으)로 완료된 프로세스
```

모든 명령어에 대해서 다음과 같이 출력한다.

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\tcpProgramin  
-----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
```

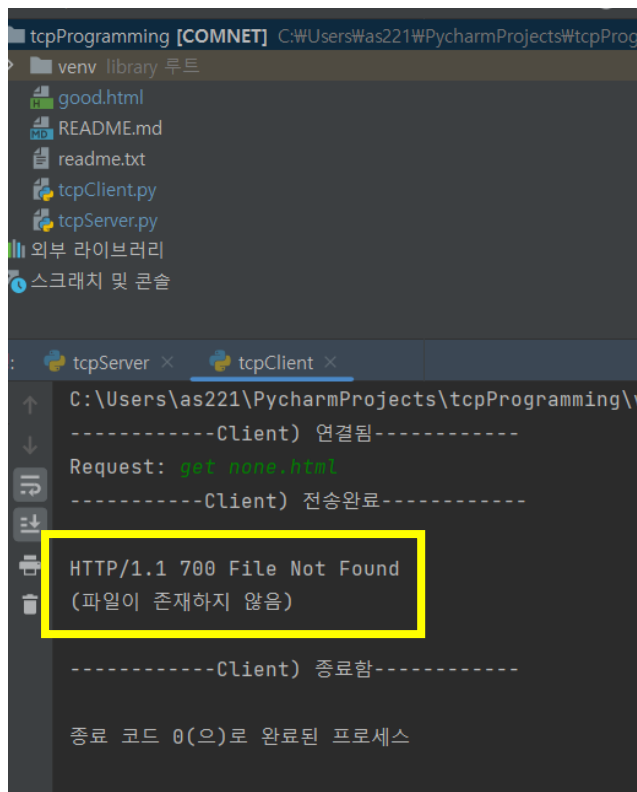
"HTTP/1.1 999 Command NOT FOUND (입력된 명령어는 존재하지 않음)"

- 404 NOT FOUND : 명령어 입력시, 형식이 잘못되었을 경우

```
tcpServer x tcpClient x  
C:\Users\as221\PycharmProjects\tcpProgram  
-----Client) 연결됨-----  
Request: get  
-----Client) 전송완료-----  
  
HTTP/1.1 404 NOT FOUND  
(입력형식이 올바르지 않음)  
  
-----Client) 종료함-----  
  
종료 코드 0(으)로 완료된 프로세스  
|
```

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

- 700 File Not Found : read할 파일이 존재하지 않을 경우



The screenshot shows the PyCharm IDE interface. The top panel displays the project structure for 'tcpProgramming'. The bottom panel shows the console output for the 'tcpClient' tab. The console text is as follows:

```
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-----

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.