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CS 372

Project 1

1. A) My connect\_socket.py program is running on Python version 3.6.5. I used Pycharm to develop this program. This program can be run using Pycharm's "Run" (Shift + F10) function. It can also be run in the Terminal by typing "python connect\_socket.py" in the command line. I have attached screenshots of both methods.

#### Terminal:

```
(venv) C:\Users\Brendan\PycharmProjects\372>python --version
Python 3.6.5

(venv) C:\Users\Brendan\PycharmProjects\372>python connect_socket.py
Request: GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1
Host:gaia.cs.umass.edu

b'HTTP/1.1 200 OK\r\nDate: Sun, 05 Jul 2020 22:44:35 GMT\r\nServer: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.7 mod_perl/2.0.11 Perl/v5.16.3\r\nLast-Modified: Sun, 05 Jul 2020 05:59:02 GMT\r\nETag: "51-5a9ab747c8026"\r\nAccept-Ranges: bytes\r\nContent-Length: 81\r\nContent-Type: text/html; charset=UTF-8\r\n\r\n<html>\nCongratulations! You\'ve downloaded the first Wireshark lab file!\n</html>\n'

(venv) C:\Users\Brendan\PycharmProjects\372>
```

#### Pycharm Run:

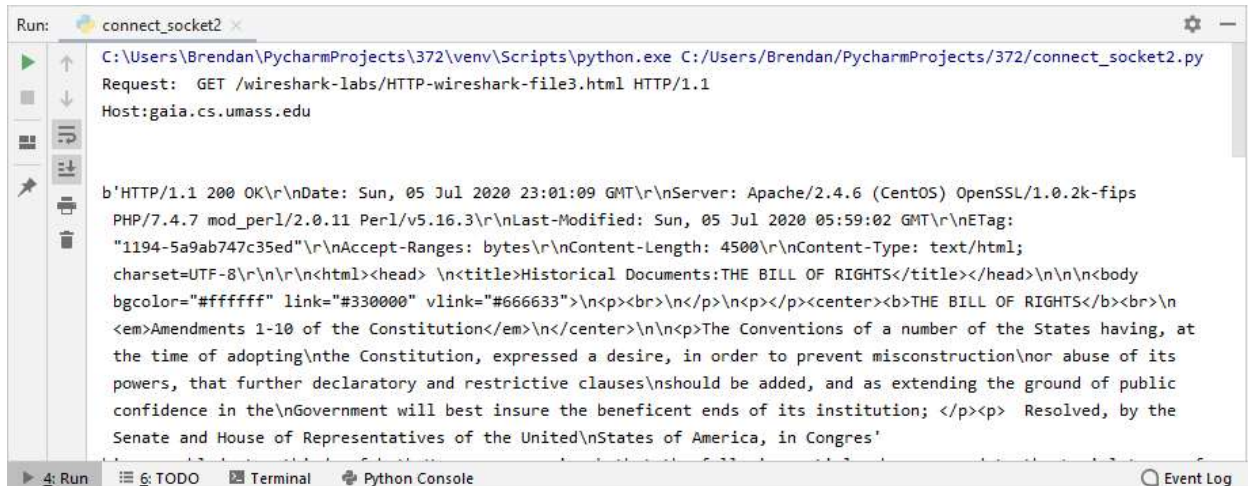
```
C:\Users\Brendan\PycharmProjects\372\venv\Scripts\python.exe C:/Users/Brendan/PycharmProjects/372/connect_socket
.py
Request: GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1
Host:gaia.cs.umass.edu

b'HTTP/1.1 200 OK\r\nDate: Sun, 05 Jul 2020 22:43:59 GMT\r\nServer: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips
PHP/7.4.7 mod_perl/2.0.11 Perl/v5.16.3\r\nLast-Modified: Sun, 05 Jul 2020 05:59:02 GMT\r\nETag:
"51-5a9ab747c8026"\r\nAccept-Ranges: bytes\r\nContent-Length: 81\r\nContent-Type: text/html;
charset=UTF-8\r\n\r\n<html>\nCongratulations! You\'ve downloaded the first Wireshark lab file!\n</html>\n'

Process finished with exit code 0
```

- B) My connect\_socket2.py program is running on Python version 3.6.5. I used Pycharm to develop this program. This program can be run using Pycharm's "Run" (Shift + F10) function. It can also be run in the Terminal by typing "python connect\_socket2.py" in the command line. I have attached the method using the "Run" function.

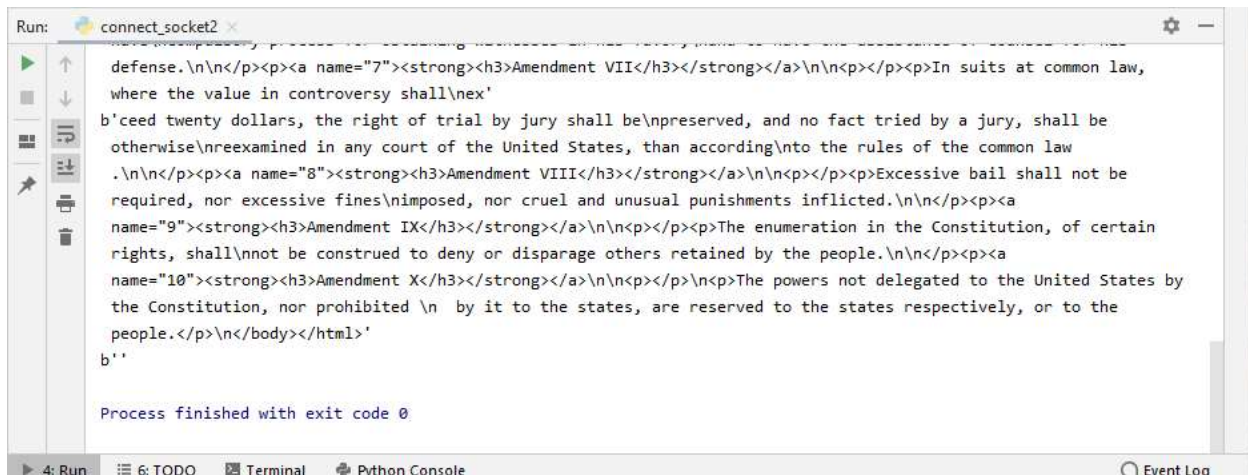
First few lines:



```
Run: connect_socket2
C:\Users\Brendan\PycharmProjects\372\venv\Scripts\python.exe C:/Users/Brendan/PycharmProjects/372/connect_socket2.py
Request: GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1
Host: gaia.cs.umass.edu

b'HTTP/1.1 200 OK\r\nDate: Sun, 05 Jul 2020 23:01:09 GMT\r\nServer: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips
PHP/7.4.7 mod_perl/2.0.11 Perl/v5.16.3\r\nLast-Modified: Sun, 05 Jul 2020 05:59:02 GMT\r\nETag:
"1194-5a9ab747c35ed"\r\nAccept-Ranges: bytes\r\nContent-Length: 4500\r\nContent-Type: text/html;
charset=UTF-8\r\n\r\n<html><head> \n<title>Historical Documents:THE BILL OF RIGHTS</title></head>\n\n<body
bgcolor="#ffffff" link="#330000" vlink="#666633">\n<p><br>\n<p><p><center><b>THE BILL OF RIGHTS</b><br>\n
<em>Amendments 1-10 of the Constitution</em>\n</center>\n\n<p>The Conventions of a number of the States having, at
the time of adopting\nthe Constitution, expressed a desire, in order to prevent misconstruction\nor abuse of its
powers, that further declaratory and restrictive clauses\nshould be added, and as extending the ground of public
confidence in the\nGovernment will best insure the beneficent ends of its institution; </p><p> Resolved, by the
Senate and House of Representatives of the United\nStates of America, in Congres'
```

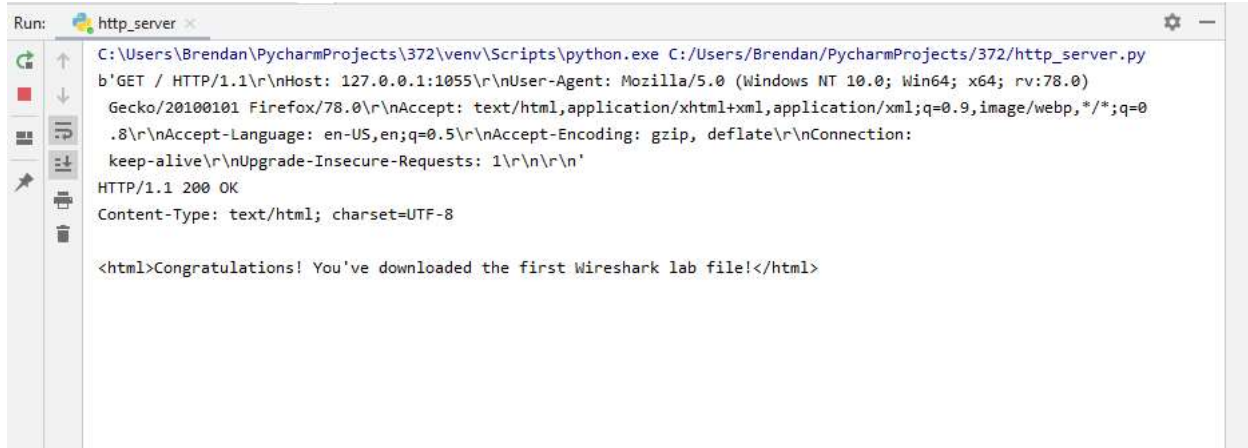
Last few lines:



```
defense.\n\n<p><p><a name="7"><strong><h3>Amendment VII</h3></strong></a>\n\n<p><p>In suits at common law,
where the value in controversy shall\nex'
b'ceed twenty dollars, the right of trial by jury shall be\npreserved, and no fact tried by a jury, shall be
otherwise\nreexamined in any court of the United States, than according\nto the rules of the common law
.\n\n<p><p><a name="8"><strong><h3>Amendment VIII</h3></strong></a>\n\n<p><p>Excessive bail shall not be
required, nor excessive fines\nimposed, nor cruel and unusual punishments inflicted.\n\n<p><p><a
name="9"><strong><h3>Amendment IX</h3></strong></a>\n\n<p><p>The enumeration in the Constitution, of certain
rights, shall\nnot be construed to deny or disparage others retained by the people.\n\n<p><p><a
name="10"><strong><h3>Amendment X</h3></strong></a>\n\n<p><p>\n\n<p>The powers not delegated to the United States by
the Constitution, nor prohibited \n by it to the states, are reserved to the states respectively, or to the
people.</p>\n</body></html>'
b''

Process finished with exit code 0
```

- C) My `http_server.py` program is running on Python version 3.6.5. I used Pycharm to develop this program. This program can be run using Pycharm's "Run" (Shift + F10) function. It can also be run in the Terminal by typing "`python http_server.py`" in the command line. I have attached the method using the "Run" function.

A screenshot of the PyCharm Run console window. The title bar shows 'Run: http\_server'. The console output displays the execution of a Python script. It shows the command being run: 'C:\Users\Brendan\PycharmProjects\372\venv\Scripts\python.exe C:/Users/Brendan/PycharmProjects/372/http\_server.py'. Below this, it shows the raw bytes of an HTTP request: 'b\'GET / HTTP/1.1\r\nHost: 127.0.0.1:1055\r\nUser-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:78.0) Gecko/20100101 Firefox/78.0\r\nAccept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,\*/\*;q=0.8\r\nAccept-Language: en-US,en;q=0.5\r\nAccept-Encoding: gzip, deflate\r\nConnection: keep-alive\r\nUpgrade-Insecure-Requests: 1\r\n\r\n\''. The response is then shown: 'HTTP/1.1 200 OK' followed by 'Content-Type: text/html; charset=UTF-8' and the HTML body: '<html>Congratulations! You\'ve downloaded the first Wireshark lab file!</html>'.

```
Run: http_server
C:\Users\Brendan\PycharmProjects\372\venv\Scripts\python.exe C:/Users/Brendan/PycharmProjects/372/http_server.py
b'GET / HTTP/1.1\r\nHost: 127.0.0.1:1055\r\nUser-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:78.0)
Gecko/20100101 Firefox/78.0\r\nAccept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0
.8\r\nAccept-Language: en-US,en;q=0.5\r\nAccept-Encoding: gzip, deflate\r\nConnection:
keep-alive\r\nUpgrade-Insecure-Requests: 1\r\n\r\n'
HTTP/1.1 200 OK
Content-Type: text/html; charset=UTF-8

<html>Congratulations! You've downloaded the first Wireshark lab file!</html>
```

