

# 0x10. Python - Network #0

## BashPythonScriptingBack-endAPI

- By: Guillaume
- Weight: 1
- Project over - took place from Sep 22, 2022 6:00 AM to Sep 23, 2022 6:00 AM
- An auto review will be launched at the deadline

### *In a nutshell...*

- **Auto QA review:** 40.0/47 mandatory & 17.0/23 optional
- **Altogether: 148.01%**
  - Mandatory: 85.11%
  - Optional: 73.91%
  - Calculation:  $85.11\% + (85.11\% * 73.91\%) == 148.01\%$

## Resources

### Read or watch:

- **HTTP (HyperText Transfer Protocol)** (except: “TRACE” Request Method, “CONNECT” Request Method, Language Negotiation and “Options MultiView” and Character Set Negotiation)
- **HTTP Cookies**

## Learning Objectives

At the end of this project, you are expected to be able to **explain to anyone**, **without the help of Google**:

### General

- What a URL is
- What HTTP is
- How to read a URL
- The scheme for a HTTP URL
- What a domain name is
- What a sub-domain is
- How to define a port number in a URL
- What a query string is
- What an HTTP request is
- What an HTTP response is

- What HTTP headers are
- What the HTTP message body is
- What an HTTP request method is
- What an HTTP response status code is
- What an HTTP Cookie is
- How to make a request with cURL
- What happens when you type google.com in your browser (Application level)

## Copyright - Plagiarism

- You are tasked to come up with solutions for the tasks below yourself to meet with the above learning objectives.
- You will not be able to meet the objectives of this or any following project by copying and pasting someone else's work.
- You are not allowed to publish any content of this project.
- Any form of plagiarism is strictly forbidden and will result in removal from the program.

## Requirements

### General

- Allowed editors: `vi`, `vim`, `emacs`
- - A `README.md` file, at the root of the folder of the project, is mandatory
- All your scripts will be tested on Ubuntu 20.04 LTS
- All your Bash scripts should be exactly 3 lines long (`wc -l file` should print 3)
- All your files should end with a new line
- All your files must be executable
- The first line of all your bash files should be exactly `#!/bin/bash`
- The second line of all your Bash scripts should be a comment explaining what is the script doing
- All `curl` commands must have the option `-s` (silent mode)
- All your files will be interpreted/compiled on Ubuntu 20.04 LTS using `python3` (version 3.8.5)
- The first line of all your Python files should be exactly `#!/usr/bin/python3`
- Your code should use the pycodestyle (version 2.8.\*)
- All your modules should be documented: `python3 -c 'print(__import__("my_module").__doc__)'`
- All your classes should be documented: `python3 -c 'print(__import__("my_module").MyClass.__doc__)'`
- All your functions (inside and outside a class) should be documented: `python3 -c 'print(__import__("my_module").my_function.__doc__)'` and `python3 -c 'print(__import__("my_module").MyClass.my_function.__doc__)'`
- A documentation is not a simple word, it's a real sentence explaining what's the purpose of the module, class or method (the length of it will be verified)

## Quiz questions

Great! You've completed the quiz successfully! Keep going! [\(Show quiz\)](#)

# Tasks

## 0. cURL body size

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that takes in a URL, sends a request to that URL, and displays the size of the body of the response

- The size must be displayed in bytes
- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./0-body_size.sh 0.0.0.0:5000
10
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `0-body_size.sh`

Done! Help Check your code Get a sandbox QA Review

## 1. cURL to the end

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that takes in a URL, sends a `GET` request to the URL, and displays the body of the response

- Display only body of a `200` status code response
- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./1-body.sh 0.0.0.0:5000/route_1 ; echo ""
Route 2
```

```
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `1-body.sh`

Done! Help Check your code Get a sandbox QA Review

## 2. cURL Method

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that sends a `DELETE` request to the URL passed as the first argument and displays the body of the response

- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./2-delete.sh 0.0.0.0:5000/route_3 ; echo ""
I'm a DELETE request
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `2-delete.sh`

Done! Help Check your code Get a sandbox QA Review

## 3. cURL only methods

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that takes in a URL and displays all HTTP methods the server will accept.

- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./3-methods.sh 0.0.0.0:5000/route_4
OPTIONS, HEAD, PUT
```

```
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `3-methods.sh`

Done! Help Check your code Get a sandbox QA Review

### 4. cURL headers

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that takes in a URL as an argument, sends a `GET` request to the URL, and displays the body of the response

- A header variable `X-School-User-Id` must be sent with the value `98`
- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./4-header.sh 0.0.0.0:5000/route_5 ; echo ""
Hello School!
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `4-header.sh`

Done! Help Check your code Get a sandbox QA Review

### 5. cURL POST parameters

mandatory

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that takes in a URL, sends a `POST` request to the passed URL, and displays the body of the response

- A variable `email` must be sent with the value `test@gmail.com`
- A variable `subject` must be sent with the value `I will always be here for PLD`
- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./5-post_params.sh 0.0.0.0:5000/route_6 ; echo ""
POST params:
    email: test@gmail.com
    subject: I will always be here for PLD
guillaume@ubuntu:~/0x10$
```

## Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `5-post_params.sh`

Done! Help Check your code Get a sandbox QA Review

## 6. Find a peak

mandatory

Score: 36.36% (Checks completed: 36.36%)

## Technical interview preparation:

- You are not allowed to google anything
- Whiteboard first

Write a function that finds **a peak** in a list of unsorted integers.

- Prototype: `def find_peak(list_of_integers):`
- You are not allowed to import any module
- Your algorithm must have the lowest complexity (*hint: you don't need to go through all numbers to find a peak*)
- `6-peak.py` must contain the function
- `6-peak.txt` must contain the complexity of your algorithm: `O(log(n))`, `O(n)`, `O(nlog(n))` or `O(n2)`
- **Note:** there may be more than one peak in the list

```
guillaume@ubuntu:~/0x10$ cat 6-main.py
#!/usr/bin/python3
""" Test function find_peak """
find_peak = __import__('6-peak').find_peak

print(find_peak([1, 2, 4, 6, 3]))
print(find_peak([4, 2, 1, 2, 3, 1]))
print(find_peak([2, 2, 2]))
```

```
print(find_peak([]))
print(find_peak([-2, -4, 2, 1]))
print(find_peak([4, 2, 1, 2, 2, 2, 3, 1]))
```

```
guillaume@ubuntu:~/0x10$ ./6-main.py
6
3
2
None
2
4
guillaume@ubuntu:~/0x10$ wc -l 6-peak.txt
2 6-peak.txt
guillaume@ubuntu:~/0x10$
```

## Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `6-peak.py`, `6-peak.txt`

Done? Help Check your code Ask for a new correction Get a sandbox QA Review

## 7. Only status code

#advanced

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that sends a request to a URL passed as an argument, and displays only the status code of the response.

- You are not allowed to use any pipe, redirection, etc.
- You are not allowed to use `;` and `&&`
- You have to use `curl`

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./100-status_code.sh 0.0.0.0:5000 ; echo ""
200
guillaume@ubuntu:~/0x10$
guillaume@ubuntu:~/0x10$ ./100-status_code.sh 0.0.0.0:5000/nop ; echo ""
```

```
404
```

```
guillaume@ubuntu:~/0x10$
```

## Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x10-python-network_0`
- File: `100-status_code.sh`

Done! Help Check your code Get a sandbox QA Review

## 8. cURL a JSON file

#advanced

Score: 100.0% (Checks completed: 100.0%)

Write a Bash script that sends a JSON `POST` request to a URL passed as the first argument, and displays the body of the response.

- Your script must send a `POST` request with the contents of a file, passed with the filename as the second argument of the script, in the body of the request
- You have to use `curl`

Please test your scripts in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ cat my_json_0
```

```
{  
  "name": "John Doe",  
  "age": 33  
}
```

```
guillaume@ubuntu:~/0x10$ ./101-post_json.sh 0.0.0.0:5000/route_json my_json_0 ; echo  
""
```

Valid JSON

```
guillaume@ubuntu:~/0x10$
```

```
guillaume@ubuntu:~/0x10$ cat my_json_1
```

I'm a JSON! really!

```
guillaume@ubuntu:~/0x10$ ./101-post_json.sh 0.0.0.0:5000/route_json my_json_1 ; echo  
""
```

Not a valid JSON

```
guillaume@ubuntu:~/0x10$
```

```
guillaume@ubuntu:~/0x10$ cat my_json_2
```

```
{
```



```
"name": "John Doe",
"age": 33,
}
guillaume@ubuntu:~/0x10$ ./101-post_json.sh 0.0.0.0:5000/route_json my_json_2 ; echo ""
Not a valid JSON
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: [alx-higher\\_level\\_programming](#)
- Directory: [0x10-python-network\\_0](#)
- File: [101-post\\_json.sh](#)

Done! Help Check your code Get a sandbox QA Review

### 9. Catch me if you can!

#advanced

Score: 0.0% (Checks completed: 0.0%)

Write a Bash script that makes a request to [0.0.0.0:5000/catch\\_me](#) that causes the server to respond with a message containing [You got me!](#), in the body of the response.

- You have to use [curl](#)
- You are not allow to use [echo](#), [cat](#), etc. to display the final result

Please test your script in the sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x10$ ./102-catch_me.sh ; echo ""
You got me!
guillaume@ubuntu:~/0x10$
```

### Repo:

- GitHub repository: [alx-higher\\_level\\_programming](#)
- Directory: [0x10-python-network\\_0](#)
- File: [102-catch\\_me.sh](#)

Done? Help Check your code Ask for a new correction Get a sandbox QA Review

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