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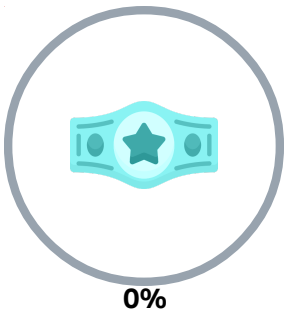
Python - Network

Python



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Amateur

By: Guillaume, CTO at Holberton School

Weight: 1

Your score will be updated once you launch the project review.

Project over - took place from Aug 4, 2023 10:00 PM to Aug 10, 2023 9:59 PM

Resources

Read or watch:

- HTTP (HyperText Transfer Protocol) (/rltoken/tYPTzv8GHxmn-yrxcFFiZA) (*except: "TRACE" Request Method, "CONNECT" Request Method, Language Negotiation and "Options MultiView" and Character Set Negotiation*)
- HTTP Cookies (/rltoken/dalGO0O8XN74F-hZL6dq-Q)
- Quickstart with Requests package (/rltoken/rRENV6xmTTLZNiHvAo0Bjg)
- Requests package (/rltoken/VZ6qSA7VrjR4gQqtknnc3Q)

Learning Objectives

At the end of this project, you are expected to be able to explain to anyone (/rltoken/U0EsouXEpDJAY3xuyAhWVQ), **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)
- How to fetch internet resources with the Python package `urllib`
- How to decode `urllib` body response
- How to use the Python package `requests` #requestsiswaysimplerthanurllib
- How to make HTTP `GET` request
- How to make HTTP `POST` / `PUT` /etc. request
- How to fetch JSON resources
- How to manipulate data from an external service

Requirements

Python Scripts

- Recommended editors: `Visual studio code`
- All your files will be interpreted/compiled on Ubuntu 20.04 LTS using `python3` (version 3.4.3)
- All your files should end with a new line
- A `README.md` file, at the root of the folder of the project, is mandatory
- Your code should use the `PEP 8` style (version 1.7.*)
- The length of your files will be tested using `wc`
- 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)
- Your code should not be executed when imported (by using `if __name__ == "__main__":`)

Live learning session for this project

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Tasks

0. What's my status? #1

mandatory

Write a Python script that fetches `https://alu-intranet.hbtn.io/status`

- You must use the package `requests`
- You are not allow to import packages other than `requests`
- The body of the response must be display like the following example (tabulation before `-`)

```
guillaume@ubuntu:~/$ ./0-hbtn_status.py | cat -e
Body response:$
    - type: <class 'str'>$
    - content: OK$
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`
- Directory: `python-network_1`
- File: `0-hbtn_status.py`

Help | Check your code | >_ Get a sandbox

0/3 pts

1. Response header value #1

mandatory

Write a Python script that takes in a URL, sends a request to the URL and displays the value of the variable `X-Request-Id` in the response header

- You must use the packages `requests` and `sys`
- You are not allow to import other packages than `requests` and `sys`
- The value of this variable is different for each request
- You don't need to check script arguments (number and type)

```
guillaume@ubuntu:~/$ ./1-hbtn_header.py https://intranet.hbtn.io
5e52e160-c822-4669-8b3a-8b3bbca7b090
guillaume@ubuntu:~/$
guillaume@ubuntu:~/$ ./1-hbtn_header.py https://intranet.hbtn.io
eaceaf35-bc0f-4f74-994a-7be0728ec654
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`
- Directory: `python-network_1`
- File: `1-hbtn_header.py`

Help | Check your code | >_ Get a sandbox

0/7 pts

2. POST an email #1

mandatory

Write a Python script that takes in a URL and an email address, sends a `POST` request to the passed URL with the email as a parameter, and finally displays the body of the response.

- The email must be sent in the variable `email`
- You must use the packages `requests` and `sys`
- You are not allowed to import packages other than `requests` and `sys`
- You don't need to error check arguments passed to the script (number or type)

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

```
guillaume@ubuntu:~/$ ./2-post_email.py http://0.0.0.0:5000/post_email hr@holbertonschool.com
Your email is: hr@holbertonschool.com
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`

- Directory: `python-network_1`
- File: `2-post_email.py`

Help | Check your code

0/5 pts

3. Error code #1

mandatory

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

- If the HTTP status code is greater than or equal to 400, print: `Error code:` followed by the value of the HTTP status code
- You must use the packages `requests` and `sys`
- You are not allowed to import packages other than `requests` and `sys`
- You don't need to check arguments passed to the script (number or type)

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

```
guillaume@ubuntu:~/$ ./4-error_code.py http://0.0.0.0:5000
Index
guillaume@ubuntu:~/$ ./4-error_code.py http://0.0.0.0:5000/status_401
Error code: 401
guillaume@ubuntu:~/$ ./4-error_code.py http://0.0.0.0:5000/doesnt_exist
Error code: 404
guillaume@ubuntu:~/$ ./4-error_code.py http://0.0.0.0:5000/status_500
Error code: 500
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`
- Directory: `python-network_1`
- File: `4-error_code.py`

Help | Check your code

0/3 pts

4. Search API

mandatory

Write a Python script that takes in a letter and sends a `POST` request to `http://0.0.0.0:5000/search_user` with the letter as a parameter.

- The letter must be sent in the variable `q`
- If no argument is given, set `q=""`
- If the response body is properly JSON formatted and not empty, display the `id` and `name` like this: `[<id>] <name>`
- Otherwise:

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- Display `Not a valid JSON` if the JSON is invalid
- Display `No result` if the JSON is empty

- You must use the package `requests` and `sys`
- You are not allowed to import packages other than `requests` and `sys`

Please test your script in the container provided, using the web server running on port 5000. All JSON generated by this server are random.

```
guillaume@ubuntu:~/$ ./5-json_api.py
No result
guillaume@ubuntu:~/$ ./5-json_api.py a
[8446] amnirqhtfjq
guillaume@ubuntu:~/$ ./5-json_api.py 2
No result
guillaume@ubuntu:~/$ ./5-json_api.py b
[7094] bmofakakhke
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`
- Directory: `python-network_1`
- File: `5-json_api.py`

Help | Check your code

0/9 pts

5. My GitHub!

mandatory

Write a Python script that takes your GitHub credentials (username and password) and uses the GitHub API (/rltoken/JCpFttOsrM4O0YrdMr1s0w) to display your `id`

- You must use Basic Authentication (/rltoken/z5FCktrogqtSgOo5ElWNQw) with a personal access token as password (/rltoken/Wg1gDSfLJmPmJNpu9VVTiA) to access to your information (only `read:user` permission is needed)
- The first argument will be your `username`
- The second argument will be your `password` (in your case, a personal access token as password (/rltoken/Wg1gDSfLJmPmJNpu9VVTiA))
- You must use the package `requests` and `sys`
- You are not allowed to import packages other than `requests` and `sys`
- You don't need to check arguments passed to the script (number or type)

```
guillaume@ubuntu:~/$ ./6-my_github.py papamuziko cisfun
2531536
guillaume@ubuntu:~/$ ./6-my_github.py papamuziko wrong_pwd
None
guillaume@ubuntu:~/$
```

Repo:

- GitHub repository: `alx_python`
- Directory: `python-network_1`
- File: `6-my_github.py`

Help | Check your code | Get a sandbox

0/6 pts

Score

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Your score will be updated once you launch the project review.

Please review **all the tasks** before you start the peer review.

Review all the tasks | Skip this project

Previous project (/projects/2068)