Curriculum
SE Foundations ⌃
Average: **137.49%** ⌄

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0x11. Python - Network #1

Python   Scripting   Back-end   API

⚙ Weight: 1

📅 Project over - took place from Jan 26, 2024 6:00 AM to Jan 27, 2024 6:00 AM

☑ An auto review will be launched at the deadline

In a nutshell…

- **Auto QA review:** 75.0/75 mandatory & 8.0/8 optional
- **Altogether: 200.0%**
  - Mandatory: 100.0%
  - Optional: 100.0%
  - Calculation: 100.0% + (100.0% * 100.0%) == **200.0%**

Resources

Read or watch:

- HOWTO Fetch Internet Resources Using urllib Package (/rltoken/KoRrs5dVWsb-B82e-M1TQQ)
- Quickstart with Requests package (/rltoken/OGcRGPr7TSWtzypDd0ZibQ)
- Requests package (/rltoken/dUNaNQrV2bMSstILitQbXQ)

Learning Objectives

At the end of this project, you are expected to be able to explain to anyone (/rltoken/kn48lNAWMEoi1DysNqM6bg), **without the help of Google**:

General

- 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

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`
- All your files will be interpreted/compiled on Ubuntu 20.04 LTS using python3 (version 3.8.5)
- All your files should end with a new line
- The first line of all your files should be exactly `#!/usr/bin/python3`
- A `README.md` file at the root of the repo, containing a description of the repository
- A `README.md` file, at the root of the folder of *this* project, is mandatory
- Your code should use the pycodestyle (version `2.8.*`)
- All your files must be executable
- The length of your files will be tested using `wc`
- All your modules should have a documentation (`python3 -c 'print(__import__("my_module").__doc__)'`)
- You must use get (/rltoken/ddDVKG3F084DP9byugbABw) to access to dictionary value by key (it won't throw an exception if the key doesn't exist in the dictionary)
- 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__":`)

Tasks

0. What's my status? #0

Score: 100.0% (*Checks completed: 100.0%*)

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

- You must use the package `urllib`
- You are not allowed to import any packages other than `urllib`
- The body of the response must be displayed like the following example (tabulation before `-`)
- You must use a `with` statement

```
guillaume@ubuntu:~/0x11$ ./0-hbtn_status.py | cat -e
Body response:$
    - type: <class 'bytes'>$
    - content: b'OK'$
    - utf8 content: OK$
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `0-hbtn_status.py`

☑ Done! | Check your code | >_ Get a sandbox | QA Review

1. Response header value #0

Score: 100.0% (*Checks completed: 100.0%*)

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

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

```
guillaume@ubuntu:~/0x11$ ./1-hbtn_header.py https://alx-intranet.hbtn.io
ade2627e-41dd-4c34-b9d9-a0fa0f47b237
guillaume@ubuntu:~/0x11$
guillaume@ubuntu:~/0x11$ ./1-hbtn_header.py https://alx-intranet.hbtn.io
6593e1f5-1b4b-4c9f-9c0e-72ab525b850f
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `1-hbtn_header.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

2. POST an email #0   `mandatory`

Score: 100.0% (*Checks completed: 100.0%*)

Write a Python script that takes in a URL and an email, sends a `POST` request to the passed URL with the email as a parameter, and displays the body of the response (decoded in `utf-8`)

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

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

```
guillaume@ubuntu:~/0x11$ ./2-post_email.py http://0.0.0.0:5000/post_email hr@holbertonschoo
l.com
Your email is: hr@holbertonschool.com
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `2-post_email.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

3. Error code #0

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a Python script that takes in a URL, sends a request to the URL and displays the body of the response (decoded in `utf-8`).

- You have to manage `urllib.error.HTTPError` exceptions and print: `Error code:` followed by the HTTP status code
- You must use the packages `urllib` and `sys`
- You are not allowed to import other packages than `urllib` and `sys`
- You don't need to check arguments passed to the script (number or type)
- You must use the `with` statement

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

```
guillaume@ubuntu:~/0x11$ ./3-error_code.py http://0.0.0.0:5000
Index
guillaume@ubuntu:~/0x11$ ./3-error_code.py http://0.0.0.0:5000/status_401
Error code: 401
guillaume@ubuntu:~/0x11$ ./3-error_code.py http://0.0.0.0:5000/doesnt_exist
Error code: 404
guillaume@ubuntu:~/0x11$ ./3-error_code.py http://0.0.0.0:5000/status_500
Error code: 500
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `3-error_code.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

4. What's my status? #1

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a Python script that fetches `https://alx-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:~/0x11$ ./4-hbtn_status.py | cat -e
(7)
Body response:$
    - type: <class 'str'>$
    - content: OK$
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `4-hbtn_status.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

5. Response header value #1   `mandatory`

Score: 100.0% (*Checks completed: 100.0%*)

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:~/0x11$ ./5-hbtn_header.py https://alx-intranet.hbtn.io
5e52e160-c822-4669-8b3a-8b3bbca7b090
guillaume@ubuntu:~/0x11$
guillaume@ubuntu:~/0x11$ ./5-hbtn_header.py https://alx-intranet.hbtn.io
eaceaf35-bc0f-4f74-994a-7be0728ec654
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `5-hbtn_header.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

6. POST an email #1

mandatory

> Score: 100.0% (*Checks completed: 100.0%*)

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 sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x11$ ./6-post_email.py http://0.0.0.0:5000/post_email hr@holbertonschoo
l.com
Your email is: hr@holbertonschool.com
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `6-post_email.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

7. Error code #1

mandatory

> Score: 100.0% (*Checks completed: 100.0%*)

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 sandbox provided, using the web server running on port 5000

```
guillaume@ubuntu:~/0x11$ ./7-error_code.py http://0.0.0.0:5000
(7)
Index
guillaume@ubuntu:~/0x11$ ./7-error_code.py http://0.0.0.0:5000/status_401
Error code: 401
guillaume@ubuntu:~/0x11$ ./7-error_code.py http://0.0.0.0:5000/doesnt_exist
Error code: 404
guillaume@ubuntu:~/0x11$ ./7-error_code.py http://0.0.0.0:5000/status_500
Error code: 500
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `7-error_code.py`

☑ Done!   Check your code   >_ Get a sandbox   QA Review

8. Search API   `mandatory`

Score: 100.0% (*Checks completed: 100.0%*)

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:
  - 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 sandbox provided, using the web server running on port 5000. All JSON generated by this server are random.

```
guillaume@ubuntu:~/0x11$ ./8-json_api.py
No result
guillaume@ubuntu:~/0x11$ ./8-json_api.py a
[8446] amnirqhtfjq
guillaume@ubuntu:~/0x11$ ./8-json_api.py 2
No result
guillaume@ubuntu:~/0x11$ ./8-json_api.py b
[7094] bmofakakhke
guillaume@ubuntu:~/0x11$
```

(/)
Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `8-json_api.py`

☑ Done! | Check your code | >_ Get a sandbox | QA Review

9. My GitHub!

mandatory

Score: 100.0% (*Checks completed: 100.0%*)

Write a Python script that takes your GitHub credentials (username and password) and uses the GitHub API (/rltoken/LjPfW9hW_55YwijGVofyTQ) to display your `id`

- You must use Basic Authentication (/rltoken/ECKUmLiAk_k2G0NPzqdykQ) with a personal access token as password (/rltoken/Kz4UM-V_bcwrcWajaCAVtQ) 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/Kz4UM-V_bcwrcWajaCAVtQ))
- 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:~/0x11$ ./10-my_github.py papamuziko cisfun
2531536
guillaume@ubuntu:~/0x11$ ./10-my_github.py papamuziko wrong_pwd
None
guillaume@ubuntu:~/0x11$
```

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `10-my_github.py`

☑ Done! | Check your code | >_ Get a sandbox | QA Review

🔍

10. Time for an interview!

#advanced

The Holberton School staff evaluates candidates applying for a back-end position with multiple technical challenges, like this one:

```
Please list 10 commits (from the most recent to oldest) of the repository "rails" by the use
r "rails"
You must use the GitHub API, here is the documentation https://developer.github.com/v3/repo
s/commits/
Print all commits by: `<sha>: <author name>` (one by line)
```

Write a Python script that takes 2 arguments in order to solve this challenge.

- The first argument will be the `repository name`
- The second argument will be the `owner name`
- 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)

Only 17% of applicants for a backend position at Holberton finished this task in less than 15 minutes.

```
guillaume@ubuntu:~/0x11$ ./100-github_commits.py rails rails
3b5a6dfb18f33c373a89760c60d741f34206f23b: Jon Moss
f785ad786ae49dd6f7a2f1d77c44ea17008c6656: Jon Moss
bb13c37fefdc8b5699918b38eff84751c2899ad5: Rafael França
f5d880866917724217eae9785a3ccd3f806c5aaf: Rafael França
0da696a5e3cee87a996a020b664caa1eabd66220: Ryuta Kamizono
24eb450d7599bab1f5863e0578a21c65ca42a915: Matthew Draper
668f8691f1017042e238497d1a5b7b8bf1c43819: Matthew Draper
a76f5189f6cec4b3e6d9035e2b55dcda6050dfdb: Ryuta Kamizono
28079868d0e70bdac80c76cf806afd517edfe1e7: Rafael França
8f0d8551893789f26e5d6b82ccef00779296818f: Rafael Mendonça França
guillaume@ubuntu:~/0x11$
```

Be careful: only 60 requests by hour by IP for unauthenticated requests Rate limit (/rltoken/S2DhgB0xP5lPy_93vBcRhw)

Repo:

- GitHub repository: `alx-higher_level_programming`
- Directory: `0x11-python-network_1`
- File: `100-github_commits.py`

[☑ Done!] [Check your code] [>_ Get a sandbox] [QA Review]