TD 1 - Python bases

MARSEILLE LE VÉLO API MANIPULATION - PART 1

In Marseille we have a bikes floating system in place called LeVélo. The website is available here : http://www.levelo-mpm.fr/.

Bikes are managed by a company called JCDecaux (which managed Vélib' in Paris before) and that have a really nice and concrete API.

But you will say what's an API ?

An API (literally: application programming interface) is an interface developed by programmers that want to expose specific part of a program to someone else. An API can be a module in a Python library that we can call, or it can be a website where URL can be used to query data from the website.

Here we will used the API available here : https://developer.jcdecaux.com/#/opendata/vls?page=getstarted

The aim of this first part is to create a simple program that gets information about LeVélo in Marseille.

Questions

1. Register into the website to get your own apiKey. For instance an apiKey can be something like this: *d98a933280f795e572b6a902565d9d8bi0f76bba.*

2. Create a file named `le_velo.py` in your system to put the program we will write below.

3. Write the code below to start programming.

```
def run():
    print("It's working!")


if __name__ == '__main__':
    run()
```

4. Now you can run you program by typing `python le_velo.py` in you command prompt.

5. Create a constant API_KEY and call the API to get Marseille contract Id (see API documentation).

6. Create a constant CONTRACT_ID to store the result for later use.

7. Now we want to write a command that takes in input a GPS location (latitude, longitude, e.g. 46.21,-2.43) and returns the nearest station with available bikes ;

    a. Use argpase to parse argument from the command line. For instance we want to call our program like this (*a* stands for action).

```
$ python le_velo.py -a find --latitude 46.21 --longitude -2.43
```

b. Do the implementation.

c. Returns the name of the station and the distance in meters from the location you gave.

8. Create a new command that returns the 3 stations with the smallest number of bikes.