

# INTRODUCTION TO PYTHON & PROGRAMMING

## HACKER NIGHT 2

Gaël Guibon

Essec - GBBA - A1

17/11/2020 16:30 - 22:45

## SUBJECT





## Browse and Query Superheroes!

## **The database website**

(this corpus is a subset)

## **Source dataset creation**

## OBJECTIVES

- Create a program that will handle Superhero data from two source files
  1. Implement **required actions**
  2. Merge them into a terminal interface (`input()` function)
  3. Be creative and create **creative actions**

## REQUIRED ACTIONS: TODO LIST

Todo List:

1. open the json file using the `json` module
2. display the `type()` of the root data structure from the json file
3. get the total number of superheroes
4. query a superhero by using it's name: `'Kylo Ren', 'Yoda', ... (name)`

5. create a `summary()` function which only retrieves a subdictionary from a superhero, containing only the following keys: `name`, `creator`, `gender`, `overall_score` (use it later on to easily display smaller info about heroes)

```
summary( hero )
```

6. get summary of all `'Student'` heros (`occupation`)
7. get the total number of superheroes per publisher (`Publisher`)
8. get the number of superhero per gender (`Gender`)

9. get the names of all the villains (**alignment**)
10. get all the different heroes collections (**creator**)
11. get a list of heros names from given a creator:  
    '**Disney**' for instance (**creator, name**)
12. get the weakest superheroes' summary  
    (**overall\_score**)
13. get the hero with the max number of superpowers  
    (**superpowers**)
14. get names of all heros being part of a specific team  
    (**teams**): '**Jedi Order**' for instance



15. get the name and creator of the strongest heroes (be careful of the '∞' value)  
(**name**,creator,overall\_score\*\*)
16. get the counts of villains, heros and neutral males and females(**gender**, **alignment**)

17. Create a random battle between two heros using the parameters you want. for instance: (**strength\_score** x **power\_score** / opponent's **durability\_score**). Use **random.choice(myList)** to randomly get an element from a list

```
random.choice( myList )
```

18. add your team from json files! Create a hero for each team member (a json file each), put your team name inside the **teams** field (list). You can start from a random existing hero to gain ome time.

## REQUIRED ACTIONS: TEXTUAL INTERFACE AND EXPORT

- Each todolist item should be able to print result or export them into a file
- Implement a **quit** command which writes down the results obtained into a text file.

## CREATIVE (BONUS) ACTIONS

Creative actions example ideas:

- Add one of your favorite heroes / fictional main character that is missing ( 'Son Goku', etc. )
- Stats queries : show all kinds of information from basic stats (counts, average, etc.)

You have a superb novel idea? **Just do it**

## FORMAT

- **Small groups** (max 4 students)
- **Location** discord server
- **Work presentation** starting from 21h45 to 22h45  
(online, screen sharing)
- Otherwise **stay in discord**

# EVALUATION

## Presentation Explanations

**Project delivery by email before leaving/presenting**

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- Project presentation (last hour)
- Sparsity of notions used
- Todolist completion
- Creativity actions
- Code clarity and good practices

## ADVISES

- Use local python install + visual studio code
- Use `pprint.pprint()` to better print a dictionary

```
from pprint import pprint
myDict = {'greeting': 'hello A1'}
pprint(myDict)
```

- 
- A problem with your machine set up? Ask for help!
    - ...but for the code you are on your own.

**GOOD LUCK!**