ASSIGNMENT 2
Python

(handout for students)

Total: 34 marks

This Python Assignment is **creative**. We will look for and mark:

1. Good code practices (e.g. comments, variable naming, formatting)
2. Creativity that is taken to implement the answer
3. Using constructs taught in all Python lessons
4. Effective use of coding constructs (correct location, choice makes sense)

Total marks will be awarded for demonstrating concepts fully, there will be partial marks available for attempts.

There is 1 creative coding question for this assignment.

How to submit:

- Within your *CFG-Assignments* repository, create a branch including the assignment number and title eg (assignment-2-python) where you will be adding your assignment work.

- You will need to export your py or sql files and upload them to your assignment branch on GitHub.

- Finally, you will need to make a PR request against your main branch, please include in your request a title and a description of the assignment that you are submitting, so your instructor can easily review it.

- If you are struggling to submit via GitHub within the given time, you can submit your files via Slack and then follow up with an identical GitHub submission shortly after.

Top tips:

- Read all requirements carefully before starting
- Check the mark distributions as provided below
- Session 6 will cover APIs, but you can start working on this project earlier, making sure other requirements are met, figuring out a scenario, and more.

Question 1
(34 marks)

Create a console app that interacts with an API of your choice, gets some data out of it and does a meaningful transformation. You can pick one of the suggested APIs which are free and beginner-friendly, this will not impact creativity points. Make sure your API is free to use and do not share your private access key.

Remember to come up with a unique creative problem or scenario!

Marks:
A. Knowledge and demonstrated use of Python (13 marks)
B. Knowledge and demonstrated use of an API (12 marks)
C. Code readability, layout, and use of best practices (4 marks)
D. Creativity (5 marks)

You should:

+ Use **boolean** values and **if..else** statements to branch logic of your program
+ Use a **data structure** like a list, dictionary, set or tuple to store values
+ Use a **for loop or a while loop** to reduce repetition
+ Use **functions with returns** to make code reusable
+ Use **string slicing**
+ Use at least two **inbuilt functions**
+ Use any free **API** to get some information as json.
+ Add comments to explain how your instructor can set up any necessary API keys and briefly how you are using the API
+ **Import an additional module** you have not used in this assignment yet and use it. If it needs to be installed, explain how to do that in the comments, and briefly note what it is for.
+ **Write** your final results **to a file**

Suggested APIs:

1. 'Open Notify' - http://open-notify.org/
2. 'Pokéapi' - https://pokeapi.co/
3. 'Open Trivia Database' - https://opentdb.com/api_config.php
4. 'Open Weather - https://openweathermap.org/api
5. 'MyAnimeList' - https://jikan.moe
6. 'Star Wars' - https://pipedream.com/apps/swapi

If you cannot come up with a creative idea you can use this scenario, but **5 points out of the total mark are for creativity** and you will receive 0 for creativity:
"Create a program that can retrieve multiple Pokémons and save only their names and moves only to a file in a nice, readable format. At first, we want to ask the user what Pokémons to get and have a choice to get a random one. We want to check they have picked Pikachu as one of the Pokémons. The program should guide users to pick the best Pokémons and have nice messages as we run our program."