Project : Wild Fires in France

In France, wild fires are more and more important phenomenom over years, and you will use your data analyst skills to understand it better.

You will work on the Prometheus database which store all wild fires in France from 1973 to now to analyze how and where this phenomena evolves.

1) **Data cleansing**

Create a function allowing to :

- Open a csv (here “liste_incendies_12_08_2022.csv”)
- Rename variables and set the right type
- Use the right index (“Numéro”)
- Clean text variables (“Communes” and “Lieux dit), i.e. deal with missing values and capitalized each words in those columns
- Split date creating 2 columns (date and hours)
- Convert m2 in ha

Then apply this function to the input dataset.

2) **Some key indicators**

Create 3 functions :

- A function to count the number of fires by year and by department allowing the user to choose the department (or all departments) and the year.
- A function to sum the burnt area by year and by department allowing the user to choose the department (or all departments) and the year.

- A function which computes the mean, median, Q1, and Q3 of the burnt area by year and by department allowing the user to choose the departement (or all departments) and the year.

3) Graph functions

Create 2 functions that allow to save graph in a folder :

- A function to do a graph of the evolution of the total burnt area by department over years
- A function to do a pie chart of the total burnt area for one year with all departments allowing the user to choose the year)

Bonus : Make a interactive graph

Please be creative :)

4) Build a library

Build python library called “PrometheusLib” allowing you to call all the function you have done until there in this project.

Then, import the library in the notebook and test all the functions.

5) Command line

Create a command line that you will execute in the terminal. This command line has to show the key indicators computed in the section 2 and store the graph of the section 3.
The user should be able to choose a year and a department (or all) to be executed in the command line.

6) BONUS

- Perform a statistical test to know if the alert type is relevant to impact the burn area
- Perform a statistical test to know if the department is relevant to impact the burn area