Exercise 1 - Downloading Files with Python.

Problems Statement

You need to download the files that are sitting at the following specified **HTTP** urls. You will use the **Python** package **requests** to do this work. The files are **zip** files that will also need to be unzipped into their csv format. They should be downloaded into a folder called 'downloads' which may not exist in your working folder. You should use **Python** to create the directory, do not do it manually.

Generally, your script should do the following …

1. Create the directory 'downloads' if it doesn't exist. Download the files one by one. Split out the filename from the uri, so the file keeps its original filename.
2. Each file is a **zip**, extract the csv from the **zip** and delete the **zip** file.
3. Look at the data you downloaded.
    a. What kind of data is?
        i. The data downloaded belongs to…
    b. Can you think of analyses that can be made with this?
        i. Looking at the fields of the data one can infer…
    c. Is the data normalized or denormalized?
    d. It's needed any processing before we use it?
    e. Are there null values? In which fields? Measure how many and guess a reason.
4. Get the mean trip time for each quarter. Track how it evolves over time. For this, create a new file that reads the downloads directory and computes the mean. This file can be called 'processor.py', and the output should be another folder called 'processed'.
5. Propose and develop any extra analysis you consider. You can use any visualization tool from python, or any external free tool like Google Data Studio. Focus on the columns of the file.
6. EXTRA: download the files asynchronously.
7. Think of the need of delivery the data. How you will do it?

Conditions

- Do not use any notebook type interpreter (Jupiter, Collab, etc).
- You must follow Python best practices.

Hints

- Don't assume all the uri's are valid.
- One approach would be the Python method **split ()** to retrieve filename for uri, or maybe find the last occurrence of / and take the rest of the string.
- You will need to learn how to unzip or make an api request. A rapid google search will give you what you want.

URIS

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2018_Q4.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2019_Q1.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2019_Q2.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2019_Q3.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2019_Q4.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2020_Q1.zip",

"https://divvy-tripdata.s3.amazonaws.com/Divvy_Trips_2220_Q1.zip",