DATA ENGINEER ASSIGNMENT

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Contents

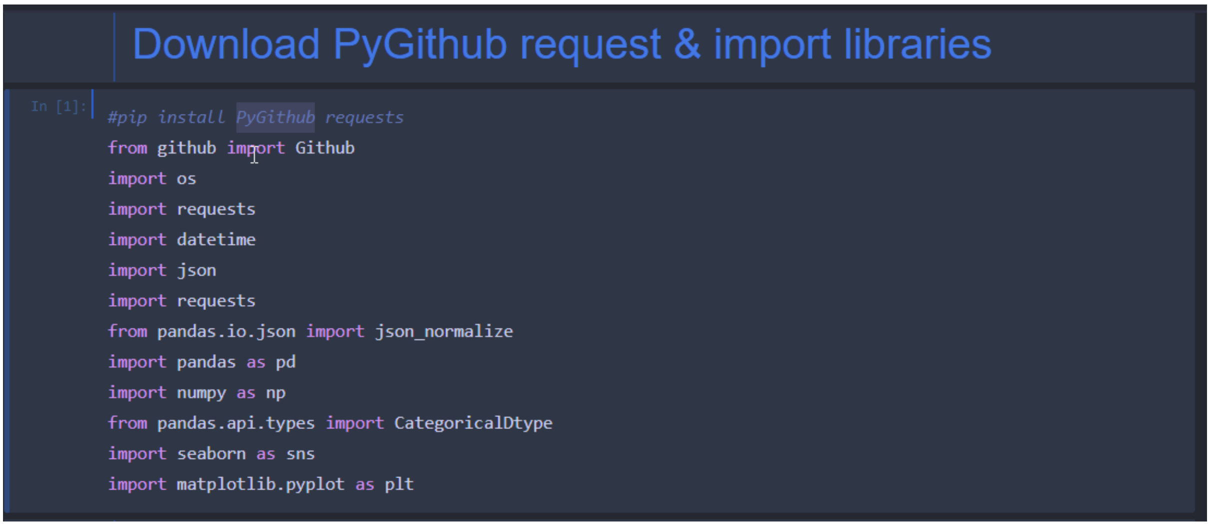
Introduction

In this guide, we will be running thru the python codes and how to operate each section. The requirements needed to run the codes are:

- Python 3
- Juypter Note Book

Open the code py_gitcommit_elt.ipynb in Juypter Note Book.

Libraries and imports

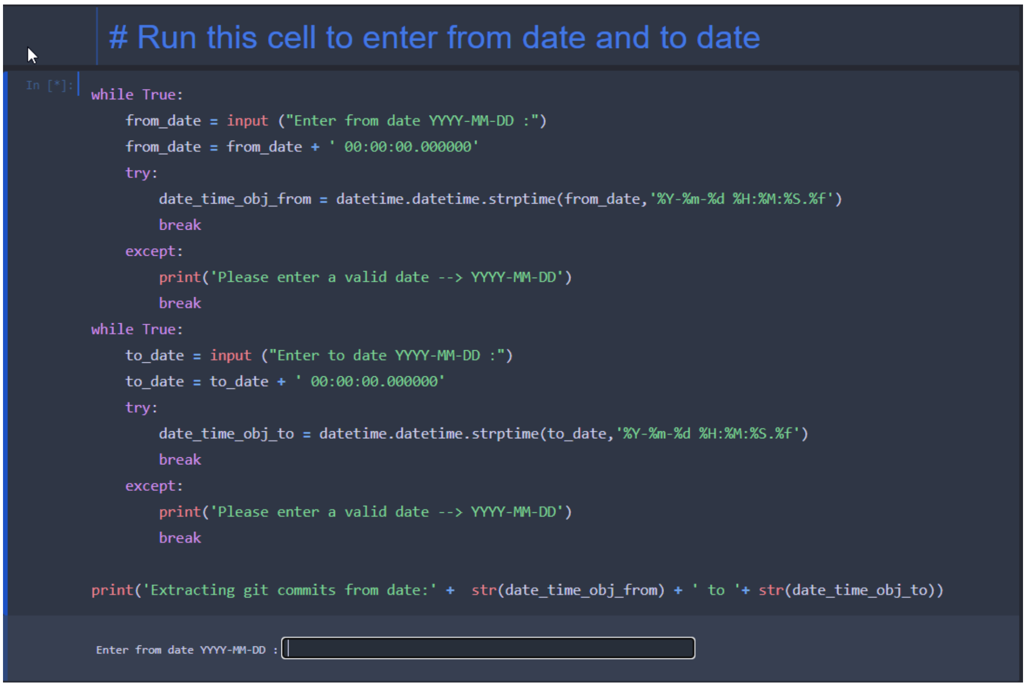


Download PyGithub request & import libraries

In [1]:

```
#pip install PyGithub requests
from github import Github
import os
import requests
import datetime
import json
import requests
from pandas.io.json import json_normalize
import pandas as pd
import numpy as np
from pandas.api.types import CategoricalDtype
import seaborn as sns
import matplotlib.pyplot as plt
```

Dynamic Date of From and To of Git commits



Run this cell to enter from date and to date

In [*]:

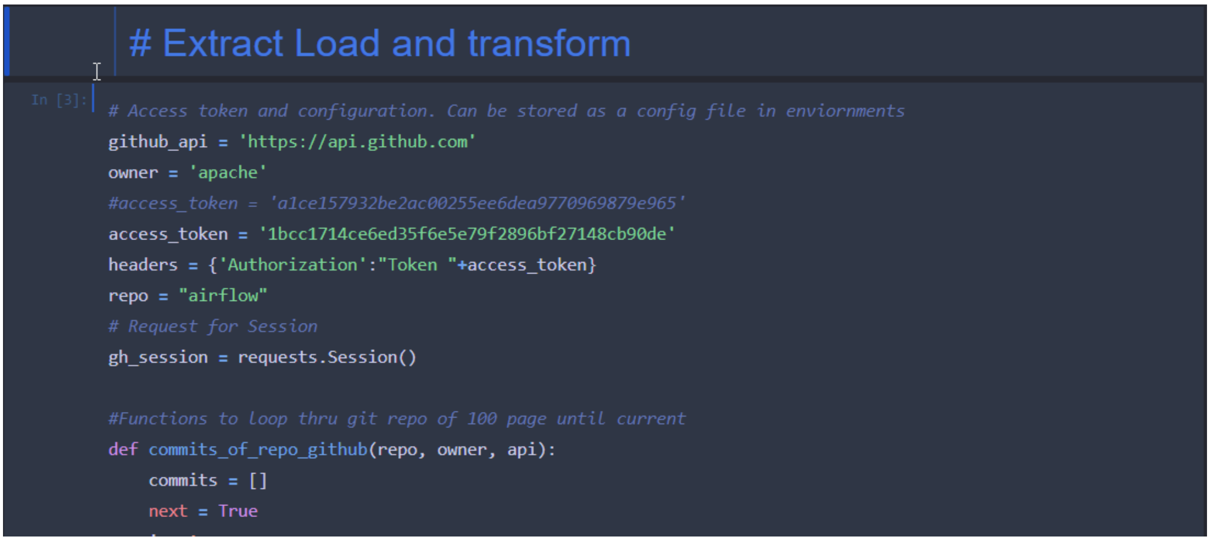
```
while True:
    from_date = input ("Enter from date YYYY-MM-DD :")
    from_date = from_date + ' 00:00:00.000000'
    try:
        date_time_obj_from = datetime.datetime.strptime(from_date,'%Y-%m-%d %H:%M:%S.%f')
        break
    except:
        print('Please enter a valid date --> YYYY-MM-DD')
        break
while True:
    to_date = input ("Enter to date YYYY-MM-DD :")
    to_date = to_date + ' 00:00:00.000000'
    try:
        date_time_obj_to = datetime.datetime.strptime(to_date,'%Y-%m-%d %H:%M:%S.%f')
        break
    except:
        print('Please enter a valid date --> YYYY-MM-DD')
        break

print('Extracting git commits from date:' +  str(date_time_obj_from) + ' to '+ str(date_time_obj_to))
```

```
Enter from date YYYY-MM-DD :
```

Enter date format of YYYY-MM-DD

Extract Load and Transformation



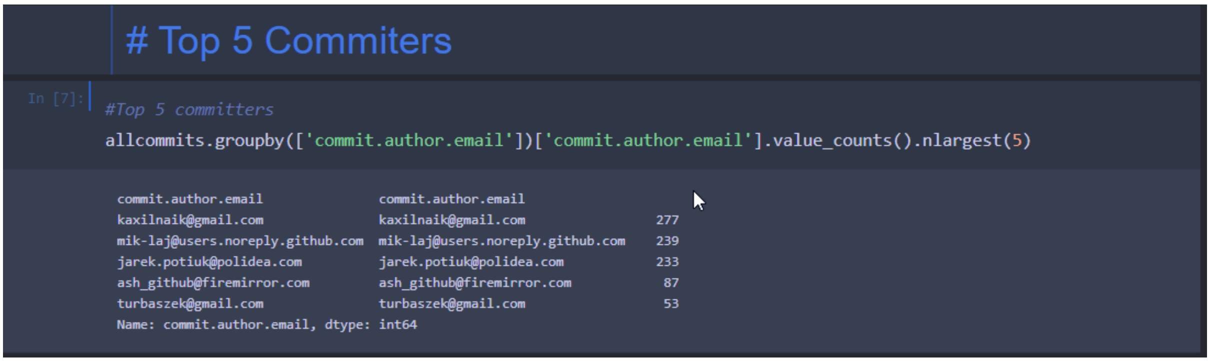
```
# Extract Load and transform
```

In [3]:

```python
# Access token and configuration. Can be stored as a config file in enviornments
github_api = 'https://api.github.com'
owner = 'apache'
#access_token = 'a1ce157932be2ac00255ee6dea9770969879e965'
access_token = '1bcc1714ce6ed35f6e5e79f2896bf27148cb90de'
headers = {'Authorization':"Token "+access_token}
repo = "airflow"
# Request for Session
gh_session = requests.Session()

#Functions to loop thru git repo of 100 page until current
def commits_of_repo_github(repo, owner, api):
    commits = []
    next = True
```

Top 5 commits



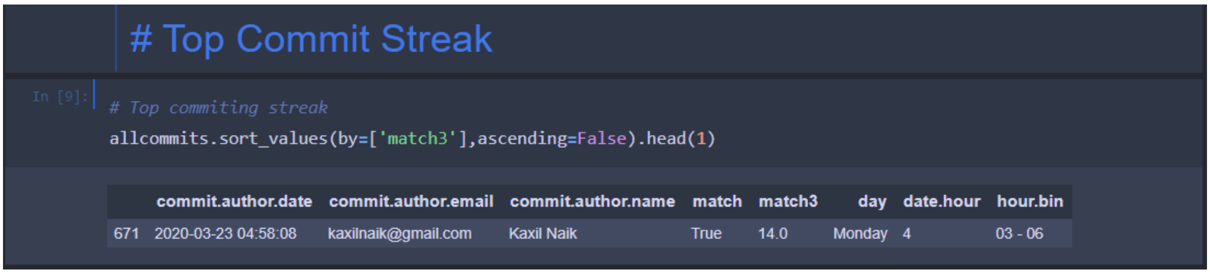
```
# Top 5 Commiters
```

In [7]:

```python
#Top 5 committers
allcommits.groupby(['commit.author.email'])['commit.author.email'].value_counts().nlargest(5)
```

```
commit.author.email               commit.author.email
kaxilnaik@gmail.com               kaxilnaik@gmail.com                  277
mik-laj@users.noreply.github.com  mik-laj@users.noreply.github.com     239
jarek.potiuk@polidea.com          jarek.potiuk@polidea.com             233
ash_github@firemirror.com         ash_github@firemirror.com             87
turbaszek@gmail.com               turbaszek@gmail.com                   53
Name: commit.author.email, dtype: int64
```

Top commit streak



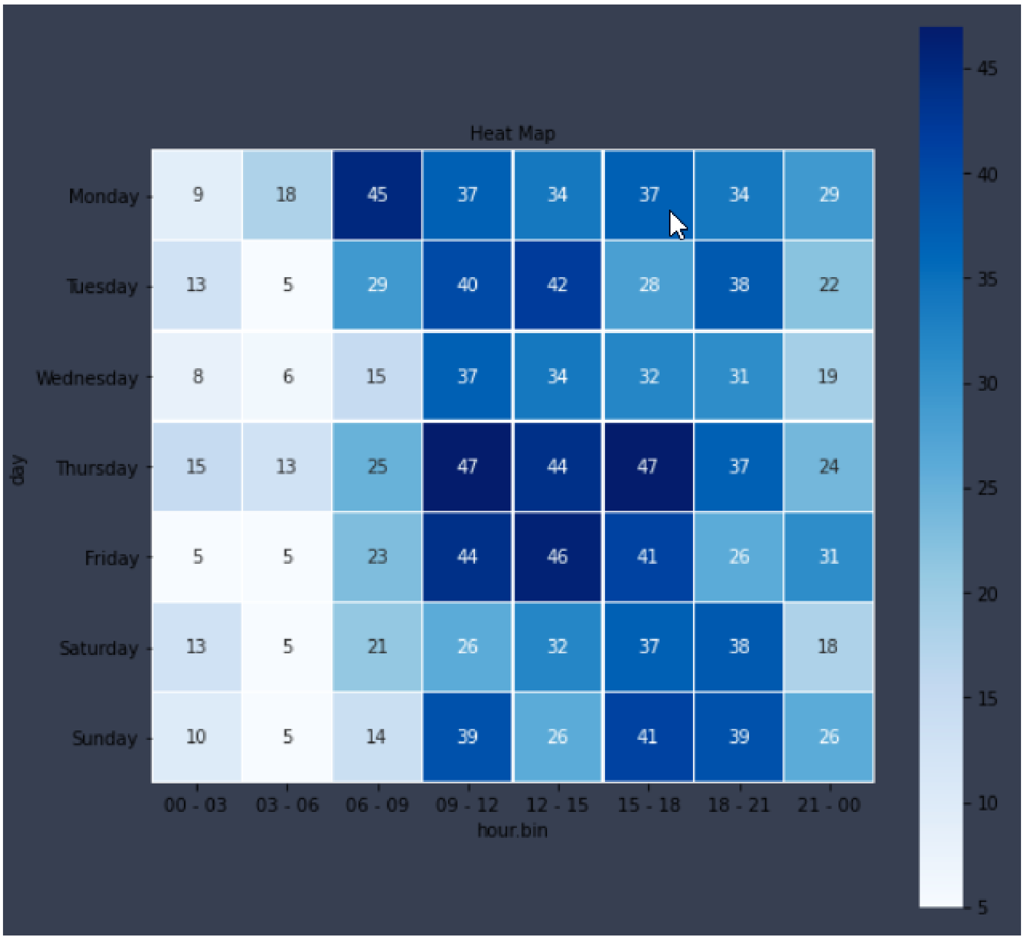
```
# Top Commit Streak
```

In [9]:

```python
# Top commiting streak
allcommits.sort_values(by=['match3'],ascending=False).head(1)
```

	commit.author.date	commit.author.email	commit.author.name	match	match3	day	date.hour	hour.bin
671	2020-03-23 04:58:08	kaxilnaik@gmail.com	Kaxil Naik	True	14.0	Monday	4	03 - 06

Heatmap



day	00 - 03	03 - 06	06 - 09	09 - 12	12 - 15	15 - 18	18 - 21	21 - 00
Monday	9	18	45	37	34	37	34	29
Tuesday	13	5	29	40	42	28	38	22
Wednesday	8	6	15	37	34	32	31	19
Thursday	15	13	25	47	44	47	37	24
Friday	5	5	23	44	46	41	26	31
Saturday	13	5	21	26	32	37	38	18
Sunday	10	5	14	39	26	41	39	26