Activities for Week 6:

Data Science Foundations

Please attempt the following upon completion of week 6 content. Attempt the following questions in a single jupyter notebook & upload the .ipynb file in the dropbox.

In week 5, you have learned to design a storyboard using ready-to-use datasets. Now, your task is to create and prepare your own dataset. Here is the open data UK Carbon Intensity API base url [https://api.carbonintensity.org.uk](https://api.carbonintensity.org.uk/) and the endpoint /intensity/{from}/{to}.

Question 1.

Make request to UK Carbon Intensity API to collect carbon intensity data for January 2022. Demonstrate it using GET requests. For the URL parameter, you could use formatted string with these {from} and {to} parameter:

* from\_date = "2022-01-01T00:01Z"
* to\_date = "2022-02-01T00:00Z"

Question 2.

In Pandas library, there is a built-in function called ‘[json\_normalize](https://pandas.pydata.org/pandas-docs/stable/reference/api/pandas.json_normalize.html)’ which normalize semi-structured JSON data into a flat table. Use that function to store the requested data into a DataFrame called ‘carbon\_df’. After that, show the first and last 5 rows.

Question 3.

Do a simple clean and wrangle to your dataset by:

* Rename the column names into:
  + ‘From\_Date’
  + ‘To\_Date’
  + ‘Carbon\_Forecast’
  + ‘Actual\_Carbon\_Intensity’
  + ‘Carbon\_Index’
* Convert ‘From\_Date’ and ‘To\_Date’ columns into ‘datetime64’ data type.
* Check for missing values.