Assignment 1

Task: Understanding the Impact of CO_2 Emissions

Due Date: 13th May, 2022

Details

A dataset with the CO2 emissions has been provided.

Your task is to clean the data, pre-process it and come up with your Exploratory Data Analysis. You can use any open sources for reference. Do use python for the task as it will be the primary programming language for your Summer Internship. You can use Google Colab or Jupyter for creating notebooks.

You can find out answers to these questions through your EDA:

CO2 emissions:

- How much does a country emit each year?
- What are the average emissions per person?
- How much has it emitted over time?
- How do emissions compare when we correct for trade?

Coal, Oil, Gas, Cement:

- How much CO2 comes from coal, oil, gas, and flaring or cement production?

Other greenhouse gases:

- How much total greenhouse gases does each country emit?
- How much methane and nitrous oxide is emitted?

Emissions by sector:

- Which sectors contribute most to emissions?
- Does transport contribute more or less than electricity?
- How large are agriculture and land use emissions?

Carbon and energy efficiency:

- How much energy do we use per unit of GDP?
- How much carbon do we emit per unit of energy?

Tips:

- Before cleaning and pre-processing, narrow down to an AOI and focus on it particularly.
- Since the data is large, you can divide it in a time period.
- Find correlations in the attributes. (Example, CO2 Emissions with GDP)
- Assign lat-lon values to the country for creating maps.
- Use Tableau, Plotly or Seaborn for plots and maps!

Reference Material:

https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions

https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

https://www.epa.gov/ghgemissions/overview-greenhouse-gases

https://plotly.com/python/maps/

https://towardsdatascience.com/how-to-perform-exploratory-data-analysis-with-seaborn-97e3413e841d

https://help.tableau.com/current/pro/desktop/en-us/maps_build.htm

Data Analysis cannot be complete without Data Storytelling!
Good luck!