DATA ANALYTICS: ANALYSIS OF CARBON EMISSION

ASSIGNMENT 1: ANALYSIS OF DATASET

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\*HERE , COLUMNS ARE WRITTEN BELOW IN RED LETTERS AND THE DESCRIPTIONS ARE WRITTEN WITH IT IN BLACK LETTERS

1. Country: Country - Geographic location.
2. Year: Year - Year of observation.
3. iso\_code: ISO code - ISO 3166-1 alpha-3 three-letter country codes.
4. Population: Population - Population by country, available from 10,000 BCE to 2100, based on data and estimates from different sources. Ideal population density is 50-100 people per square kilometer
5. Gdp: Gross domestic product (GDP) - This data is adjusted for inflation and differences in the cost of living between countries. (international-$ in 2011 prices). A higher GDP generally indicates a stronger and healthier economy for a country.
6. cement\_co2: Annual CO₂ emissions from cement - Annual emissions of carbon dioxide (CO₂) from cement, measured in million tonnes.
7. cement\_co2\_per\_capita: Annual CO₂ emissions from cement (per capita) - Annual emissions of carbon dioxide (CO₂) from cement, measured in tonnes per person.
8. co2: Annual CO₂ emissions - Annual total emissions of carbon dioxide (CO₂), excluding land-use change, measured in million tonnes.
9. co2\_growth\_abs: Annual CO₂ emissions growth (abs) - Annual growth in total emissions of carbon dioxide (CO₂), excluding land-use change, measured in million tonnes.
10. co2\_growth\_prct: Annual CO₂ emissions growth (%) - Annual percentage growth in total emissions of carbon dioxide (CO₂), excluding land-use change.
11. co2\_including\_luc: Annual CO₂ emissions including **land-use change**\*- Annual total emissions of carbon dioxide (CO₂), including land-use change, measured in million tonnes.

(here , **land-use change: the alteration of how humans utilize and structure the Earth's terrestrial surface. This includes changes in land cover, such as converting forests to agricultural land or expanding urban areas**)

1. co2\_including\_luc\_growth\_abs: Growth rate of emissions including land-use change - Annual growth in total emissions of carbon dioxide (CO₂), including land-use change, measured in million tonnes.
2. co2\_including\_luc\_growth\_prct: Growth rate of emissions including land-use change (%) - Annual percentage growth in total emissions of carbon dioxide (CO₂), including land-use change.
3. co2\_including\_luc\_per\_capita: Annual CO₂ emissions including land-use change per capita - Annual emissions of carbon dioxide (CO₂), including land-use change, measured in tonnes per person.
4. co2\_including\_luc\_per\_gdp: Annual CO₂ emissions including land-use change per GDP - Annual total emissions of carbon dioxide (CO₂), including land-use change, measured in kilograms per dollar of GDP (2011 international-$).
5. co2\_including\_luc\_per\_unit\_energy: Annual CO₂ emissions including land-use change per unit energy - Annual total emissions of carbon dioxide (CO₂), including land-use change, measured in kilograms per kilowatt-hour of primary energy consumption.
6. co2\_per\_capita: Annual CO₂ emissions (per capita) - Annual total emissions of carbon dioxide (CO₂), excluding land-use change, measured in tonnes per person.
7. co2\_per\_gdp: Annual CO₂ emissions per GDP (kg per international-$) - Annual total emissions of carbon dioxide (CO₂), excluding land-use change, measured in kilograms per dollar of GDP (2011 international-$).
8. co2\_per\_unit\_energy: Annual CO₂ emissions per unit energy (kg per kilowatt-hour) - Annual total emissions of carbon dioxide (CO₂), excluding land-use change, measured in kilograms per kilowatt-hour of primary energy consumption.
9. coal\_co2: Annual CO₂ emissions from coal - Annual emissions of carbon dioxide (CO₂) from coal, measured in million tonnes.
10. coal\_co2\_per\_capita: Annual CO₂ emissions from coal (per capita) - Annual emissions of carbon dioxide (CO₂) from coal, measured in tonnes per person.
11. consumption\_co2: Annual consumption-based CO₂ emissions - Annual consumption-based emissions of carbon dioxide (CO₂), measured in million tonnes.
12. consumption\_co2\_per\_capita: Per capita consumption-based CO₂ emissions - Annual consumption-based emissions of carbon dioxide (CO₂), measured in tonnes per person.
13. consumption\_co2\_per\_gdp: Annual consumption-based CO₂ emissions per GDP (kg per international-$) - Annual consumption-based emissions of carbon dioxide (CO₂), measured in kilograms per dollar of GDP (2011 international-$).
14. cumulative\_cement\_co2: Cumulative CO₂ emissions from cement - Cumulative emissions of carbon dioxide (CO₂) from cement since the first year of available data, measured in million tonnes.
15. cumulative\_co2: Cumulative CO₂ emissions - Total cumulative emissions of carbon dioxide (CO₂), excluding land-use change, since the first year of available data, measured in million tonnes.
16. cumulative\_co2\_including\_luc: Cumulative CO₂ emissions including land-use change - Total cumulative emissions of carbon dioxide (CO₂), including land-use change, since the first year of available data, measured in million tonnes.
17. cumulative\_coal\_co2: Cumulative CO₂ emissions from coal - Cumulative emissions of carbon dioxide (CO₂) from coal since the first year of available data, measured in million tonnes.
18. cumulative\_flaring\_co2: Cumulative CO₂ emissions from flaring - Cumulative emissions of carbon dioxide (CO₂) from flaring since the first year of available data, measured in million tonnes.
19. cumulative\_gas\_co2: Cumulative CO₂ emissions from gas - Cumulative emissions of carbon dioxide (CO₂) from gas since the first year of available data, measured in million tonnes.
20. cumulative\_luc\_co2: Cumulative CO₂ emissions from land-use change - Cumulative emissions of carbon dioxide (CO₂) from land-use change since the first year of available data, measured in million tonnes.
21. cumulative\_oil\_co2: Cumulative CO₂ emissions from oil - Cumulative emissions of carbon dioxide (CO₂) from oil since the first year of available data, measured in million tonnes.
22. cumulative\_other\_co2: Cumulative CO₂ emissions from other industry - Cumulative emissions of carbon dioxide (CO₂) from other industry sources since the first year of available data, measured in million tonnes.
23. energy\_per\_capita: Primary energy consumption per capita - Measured in kilowatt-hours per person.
24. energy\_per\_gdp: Primary energy consumption per GDP - Measured in kilowatt-hours per international-$.
25. flaring\_co2: Annual CO₂ emissions from flaring - Annual emissions of carbon dioxide (CO₂) from flaring, measured in million tonnes.
26. flaring\_co2\_per\_capita: Annual CO₂ emissions from flaring (per capita) - Annual emissions of carbon dioxide (CO₂) from flaring, measured in tonnes per person.
27. gas\_co2: Annual CO₂ emissions from gas - Annual emissions of carbon dioxide (CO₂) from gas, measured in million tonnes.
28. gas\_co2\_per\_capita: Annual CO₂ emissions from gas (per capita) - Annual emissions of carbon dioxide (CO₂) from gas, measured in tonnes per person.
29. ghg\_excluding\_lucf\_per\_capita: Per capita greenhouse gas emissions from fossil fuels and industry - Greenhouse gas emissions over a 100-year timescale.
30. ghg\_per\_capita: Per capita greenhouse gas emissions including land use - Greenhouse gas emissions over a 100-year timescale.
31. land\_use\_change\_co2: Annual CO₂ emissions from land-use change - Annual emissions of carbon dioxide (CO₂) from land-use change, measured in million tonnes.
32. land\_use\_change\_co2\_per\_capita: Annual CO₂ emissions from land-use change per capita - Annual emissions of carbon dioxide (CO₂) from land-use change, measured in tonnes per person.
33. Methane: Annual methane emissions including land use - Measured in tonnes of carbon dioxide-equivalents over a 100-year timescale.
34. methane\_per\_capita: Per capita methane emissions including land use - Measured in tonnes per person of carbon dioxide-equivalents over a 100-year timescale.
35. nitrous\_oxide: Annual nitrous oxide emissions including land use - Measured in tonnes of carbon dioxide-equivalents over a 100-year timescale.
36. nitrous\_oxide\_per\_capita: Per capita nitrous oxide emissions including land use - Measured in tonnes per person of carbon dioxide-equivalents over a 100-year timescale.
37. oil\_co2: Annual CO₂ emissions from oil - Annual emissions of carbon dioxide (CO₂) from oil, measured in million tonnes.
38. oil\_co2\_per\_capita: Annual CO₂ emissions from oil (per capita) - Annual emissions of carbon dioxide (CO₂) from oil, measured in tonnes per person.
39. other\_co2\_per\_capita: Annual CO₂ emissions from other industry (per capita) - Annual emissions of carbon dioxide (CO₂) from other industry sources, measured in tonnes per person.
40. other\_industry\_co2: Annual CO₂ emissions from other industry - Annual emissions of carbon dioxide (CO₂) from other industry sources, measured in million tonnes.
41. primary\_energy\_consumption: Primary energy consumption - Measured in terawatt-hours.
42. share\_global\_cement\_co2: Share of global annual CO₂ emissions from cement - Annual emissions of carbon dioxide (CO₂) from cement, measured as a percentage of global emissions of CO₂ from cement in the same year.
43. share\_global\_co2: Share of global annual CO₂ emissions - Annual total emissions of carbon dioxide (CO₂), excluding land-use change, measured as a percentage of global emissions of CO₂ in the same year.
44. share\_global\_co2\_including\_luc: Share of global annual CO₂ emissions including land-use change - Annual total emissions of carbon dioxide (CO₂), including land-use change, measured as a percentage of global total emissions of CO₂ in the same year.
45. share\_global\_coal\_co2: Share of global annual CO₂ emissions from coal - Annual emissions of carbon dioxide (CO₂) from coal, measured as a percentage of global emissions of CO₂ from coal in the same year.
46. share\_global\_cumulative\_cement\_co2: Share of global cumulative CO₂ emissions from cement - Cumulative emissions of carbon dioxide (CO₂) from cement since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from cement.
47. share\_global\_cumulative\_co2: Share of global cumulative CO₂ emissions - Total cumulative emissions of carbon dioxide (CO₂), excluding land-use change, since the first year of available data, measured as a percentage of global total cumulative emissions of CO₂.
48. share\_global\_cumulative\_co2\_including\_luc: Share of global cumulative CO₂ emissions including land-use change - Total cumulative emissions of carbon dioxide (CO₂), including land-use change, since the first year of available data, measured as a percentage of global total cumulative emissions of CO₂ (including land-use change).
49. share\_global\_cumulative\_coal\_co2: Share of global cumulative CO₂ emissions from coal - Cumulative emissions of carbon dioxide (CO₂) from coal since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from coal.
50. share\_global\_cumulative\_flaring\_co2: Share of global cumulative CO₂ emissions from flaring - Cumulative emissions of carbon dioxide (CO₂) from flaring since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from flaring.
51. share\_global\_cumulative\_gas\_co2: Share of global cumulative CO₂ emissions from gas - Cumulative emissions of carbon dioxide (CO₂) from gas since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from gas.
52. share\_global\_cumulative\_luc\_co2: Share of global cumulative CO₂ emissions from land-use change - Cumulative emissions of carbon dioxide (CO₂) from land-use change since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from land-use change.
53. share\_global\_cumulative\_oil\_co2: Share of global cumulative CO₂ emissions from oil - Cumulative emissions of carbon dioxide (CO₂) from oil since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from oil.
54. share\_global\_cumulative\_other\_co2: Share of global cumulative CO₂ emissions from other industry - Cumulative emissions of carbon dioxide (CO₂) from other industry sources since the first year of available data, measured as a percentage of global cumulative emissions of CO₂ from other industry sources.
55. share\_global\_flaring\_co2: Share of global annual CO₂ emissions from flaring - Annual emissions of carbon dioxide (CO₂) from flaring, measured as a percentage of global emissions of CO₂ from flaring in the same year.
56. share\_global\_gas\_co2: Share of global annual CO₂ emissions from gas - Annual emissions of carbon dioxide (CO₂) from gas, measured as a percentage of global emissions of CO₂ from gas in the same year.
57. share\_global\_luc\_co2: Share of global annual CO₂ emissions from land-use change - Annual emissions of carbon dioxide (CO₂) from land-use change, measured as a percentage of global emissions of CO₂ from land-use change in the same year.
58. share\_global\_oil\_co2: Share of global annual CO₂ emissions from oil - Annual emissions of carbon dioxide (CO₂) from oil, measured as a percentage of global emissions of CO₂ from oil in the same year.
59. share\_global\_other\_co2: Share of global annual CO₂ emissions from other industry - Annual emissions of carbon dioxide (CO₂) from other industry sources, measured as a percentage of global emissions of CO₂ from other industry sources in the same year.
60. share\_of\_temperature\_change\_from\_ghg: Share of contribution to global warming - Measured as a percentage of the world's temperature change.
61. temperature\_change\_from\_ch4: Change in global mean surface temperature caused by methane emissions - Measured in °C.
62. temperature\_change\_from\_co2: Change in global mean surface temperature caused by CO₂ emissions - Measured in °C.
63. temperature\_change\_from\_ghg: Change in global mean surface temperature caused by greenhouse gas emissions - Measured in °C.
64. temperature\_change\_from\_n2o: Change in global mean surface temperature caused by nitrous oxide emissions - Measured in °C.
65. total\_ghg: Annual greenhouse gas emissions including land use - Greenhouse gas emissions over a 100-year timescale measured in million tonnes.
66. total\_ghg\_excluding\_lucf: Annual greenhouse gas emissions from fossil fuels and industry - Greenhouse gas emissions over a 100-year timescale measured in million tonnes.
67. trade\_co2: Annual CO₂ emissions embedded in trade - Annual net carbon dioxide (CO₂) emissions embedded in trade, measured in million tonnes. A positive value denotes a country or region is a net importer of CO₂ emissions; a negative value indicates a country is a net exporter.
68. trade\_co2\_share: Share of annual CO₂ emissions embedded in trade - Annual net carbon dioxide (CO₂) emissions embedded in trade, measured as a percentage of emissions of CO₂