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Course: GRAPH Courses AI Bootcamp Q2

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Assignment Topic

Examining The Relationship Between Life Expectancy and Carbon Dioxide Emissions per capita using Julius.AI

Assignment Instruction

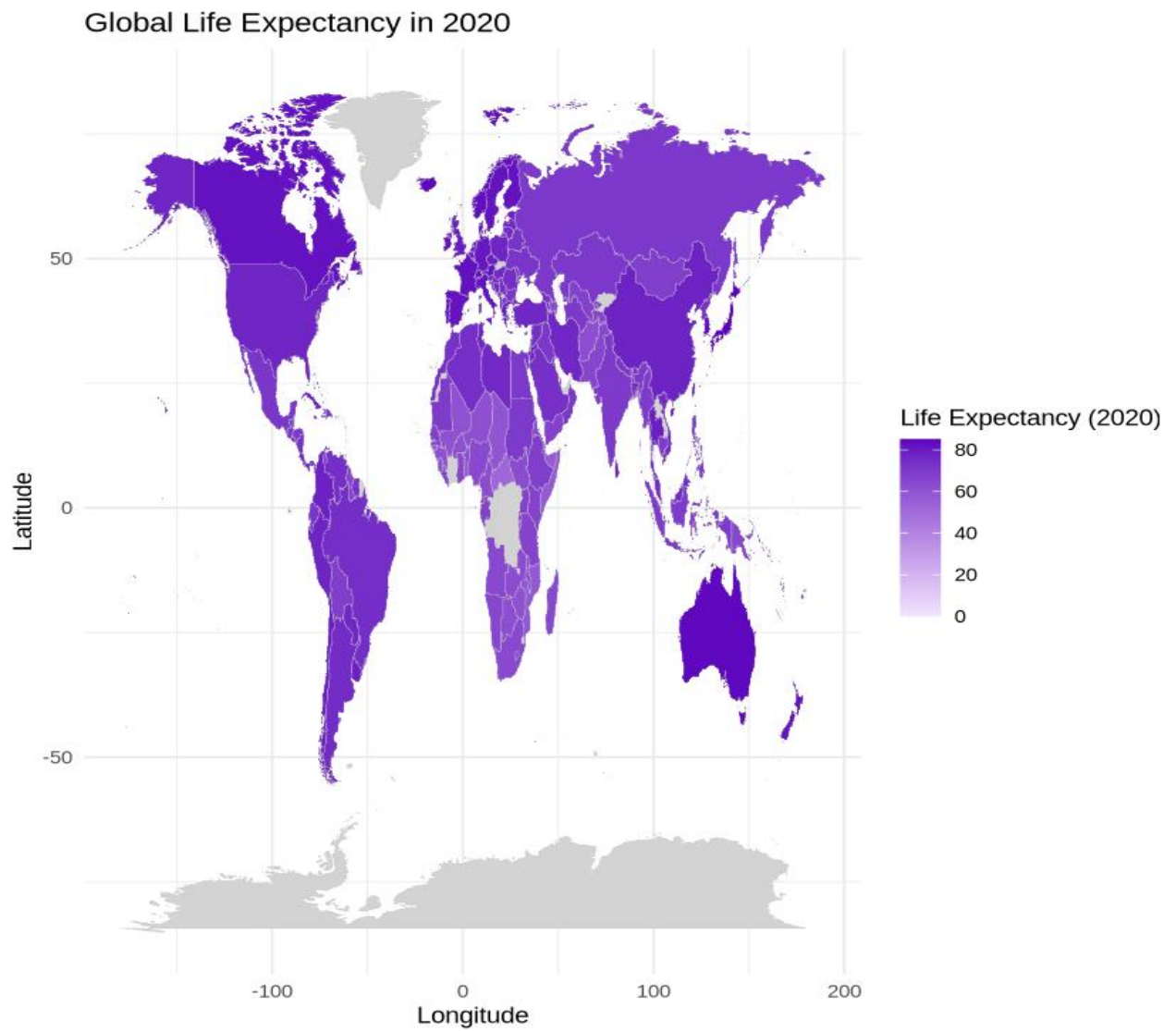
I am a junior data analyst and I am writing a report on the relationship between the two indicators life expectancy and CO2 emission per capita. Both datasets have been added.

Please help me do the following: 1. Load both datasets. 2. For each indicator, subset the data to year 2020 3. Create a world map visualization for life expectancy. Use a purple colour theme to depict life expectancy. 4. Create a world map visualization for CO2 emission per capita. Use a red colour theme to depict CO2 emission per capita. 5. Now merge the data for these indicators. 6. Create a scatterplot showing the relationship between these two indicators. 7. Provide a brief interpretation of the relationship shown in the scatterplot (you can calculate Pearson's correlation coefficient if it's helpful). Make sure the plots have good titles and labels.

Julius.AI Output

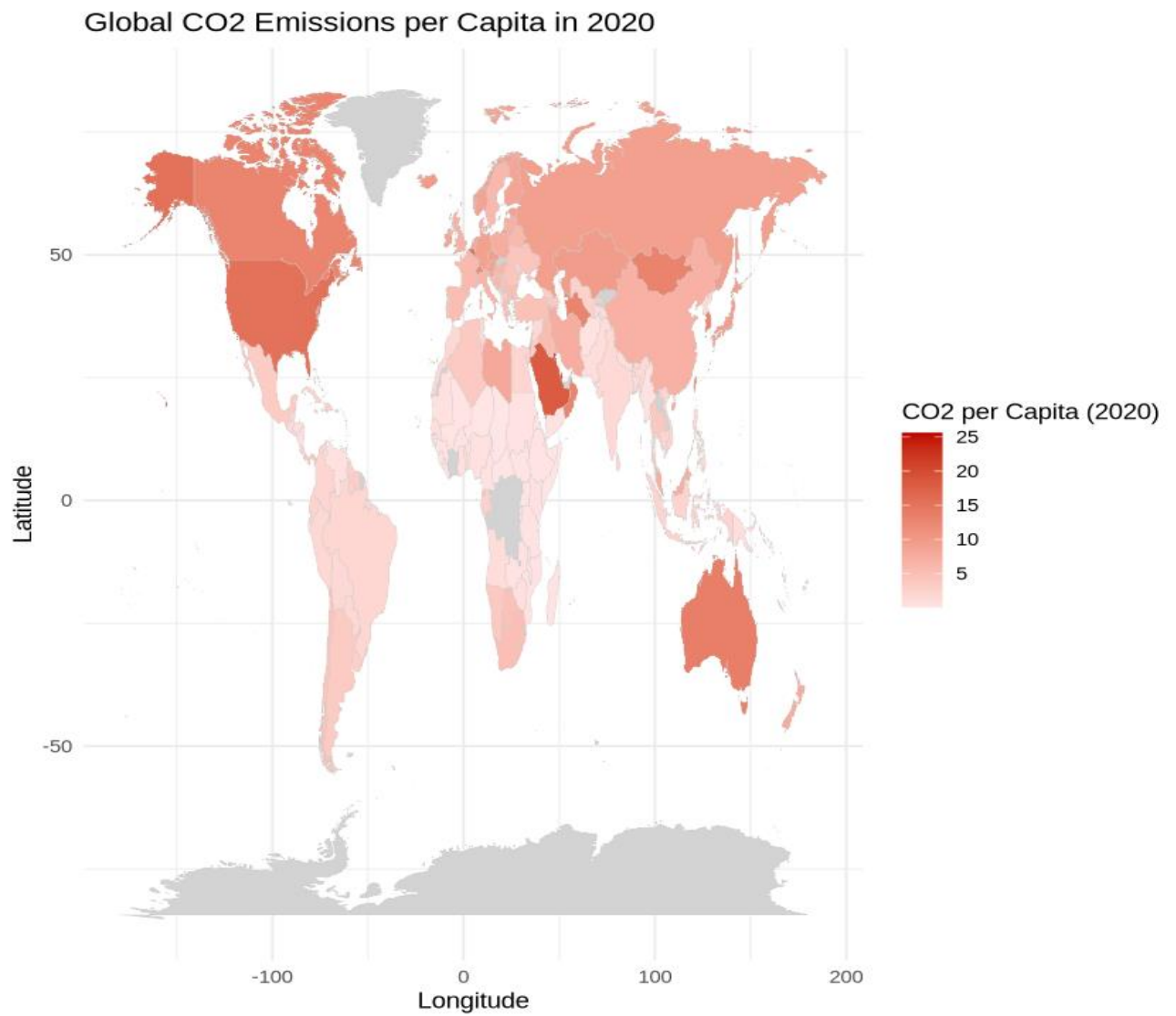
1. Global Life Expectancy in 2020

A purple-shaded world map where darker purples correspond to higher life expectancy (data for countries without values appear in light gray).



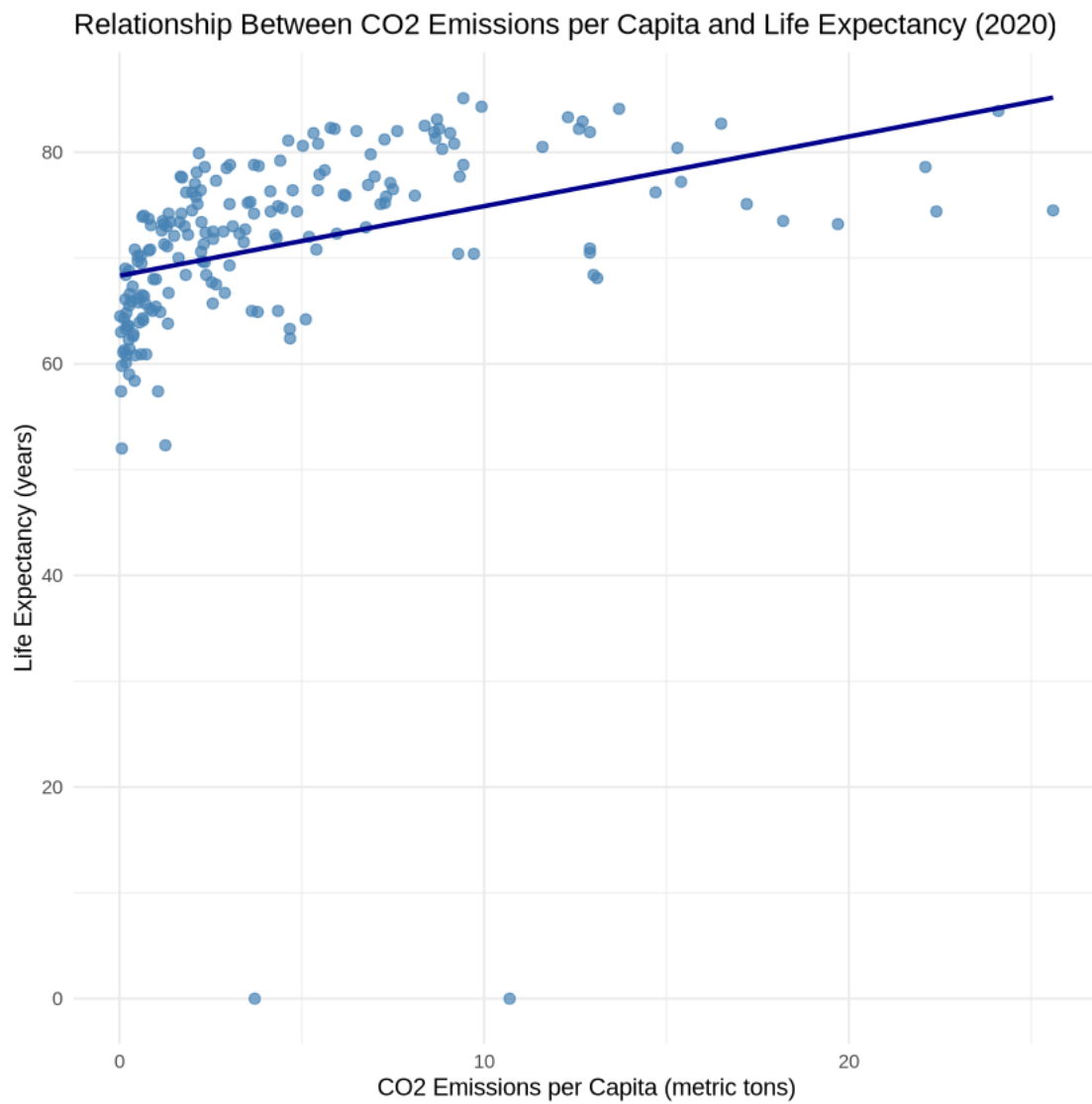
2. Global CO₂ Emissions per Capita in 2020

A red-shaded world map where deeper reds correspond to higher per-person CO₂ emissions (countries with missing data show as light gray).



3. Relationship Between CO₂ Emissions per Capita and Life Expectancy (2020)

A scatterplot of each country's CO₂ per-person emissions versus life expectancy, with a fitted linear trend line.



Sample of Merged 2020 Data

(country, life expectancy, CO₂ per capita)

	country	life_expectancy	co2_pcap
1	Afghanistan	62.3	0.261
2	Angola	64.9	1.12
3	Albania	76.2	2
4	Andorra	78.3	5.63
5	UAE	73.2	19.7
6	Argentina	75.2	3.52

Pearson Correlation

0.332

Brief Interpretation

There is a modest positive correlation ($r \approx 0.33$) between per-capita CO₂ emissions and life expectancy. In practical terms, higher-emitting countries tend to exhibit higher average lifespans, reflecting the influence of industrialization and economic development on both energy use and public health infrastructure.

My Reflections

The use of the Julius.AI for data analysis proved to be a fast and efficient tool for the uninitiated data analyst. However, as I used the tool I found that at times the AI tool got stuck and I have to rerun the code generated.

Though the use of the tool appears efficient, one cannot discountenance a possible mistake in the output. A person who is not familiar with data analysis or the use of R or any software tool linked to the AI tool for data analysis may not be able to spot any mistake in the output from the AI. It would therefore be important for one to be trained in data analysis and use of R or any other tool for data analysis and then use the AI tool to automate the process, while doing the verification of the primary tool.

Having produced the analysis output and the report using the Julius AI tool, I kept wondering to myself, have I become more intelligent or productive through using the tool? At the back of my mind, the answer keeps echoing that I might have been more efficient but I have at the same time put my brain to sleep and the use of the AI tool does not excite the use of my thinking faculty and cognitive development. I would prefer the process of coding and putting up the report myself to foster my intellectual development. Nevertheless, the AI tool would be handy in some situations.