

## **Team1: Orcas from the D3ep!**

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**GitHub Link:** <https://github.com/aawad93/Viz-Project.git>

**Research Hypothesis:** Does the amount of CO2 emissions in each country equate to its' own population growth?

As CO2 emissions rise globally, does the rise in population of each country respectively determine the increase of these emissions? Globally, CO2 emissions have risen without restraint and one can easily attribute the rise in population to that of CO2 emissions by typical association to one's own carbon footprint, ergo the more humans, the more CO2 emissions.

However, our research and data proved that although there is a link between the increase in human population and that of CO2 emissions, it is not a direct correlation for each individual country. For example, there are 4 countries in the world, out of 200 (+/-), that are home to over 64 percent of the world's population and emit 54 percent of its CO2 emissions. Meaning the remaining 196 countries make up the remaining 46 percent of global CO2 emissions. This inequality in global emissions lies at the heart of why international agreement on climate change has (and continues to be) so contentious. As the wealthiest countries; due in part to industrialization, in the world produce the most CO2 emissions, the poorer countries do not generate as much CO2 emissions.

Furthermore, the United States of America is one of the top 4 gross polluters, yet, it has steadily decreased its CO2 emissions since 2014, due in part to the enforcement of environmental laws and increase in renewable energies. France, for example, relies on 74 percent thermonuclear energy and is the No. 20 CO2 emitting country in the world. Also, the country of Japan, as small as it may seem, happens to be the No. 1 country in the world in consuming fossil fuels due in part to being highly industrialized and urbanized with limited to no natural resources. As of 2011, a rise in CO2 emissions is attributed to the Fukushima reactor accident caused by the tsunami disaster that was a major source of Japan's thermonuclear energy.

**Conclusion:** Globally, CO2 emissions continue to rise with population growth. However, CO2 emissions are a man-made and can be controlled or reduced.

**Dataset No. 01 (DS1):** CO2 Emissions by Country from 1960 to 2017

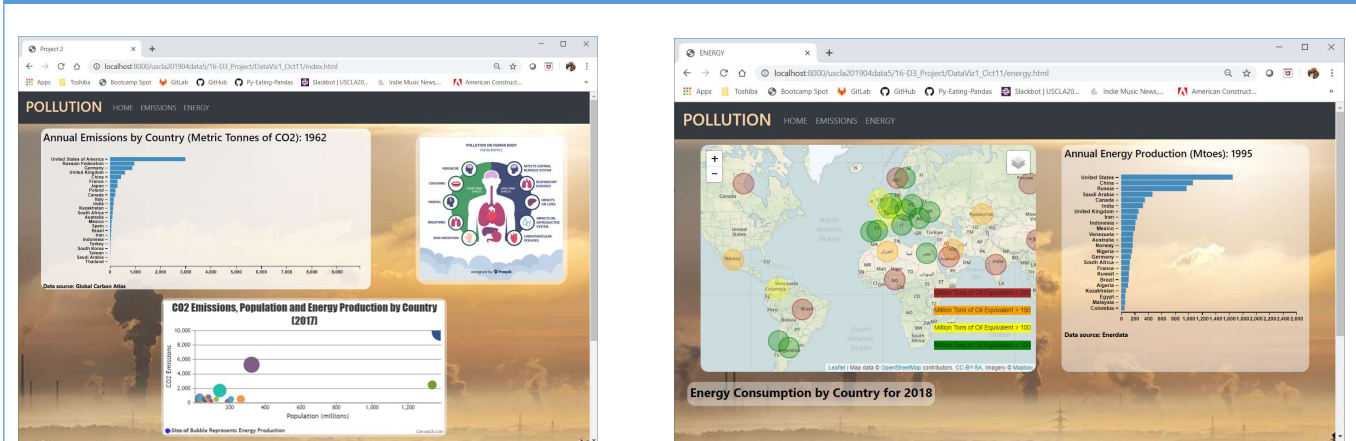
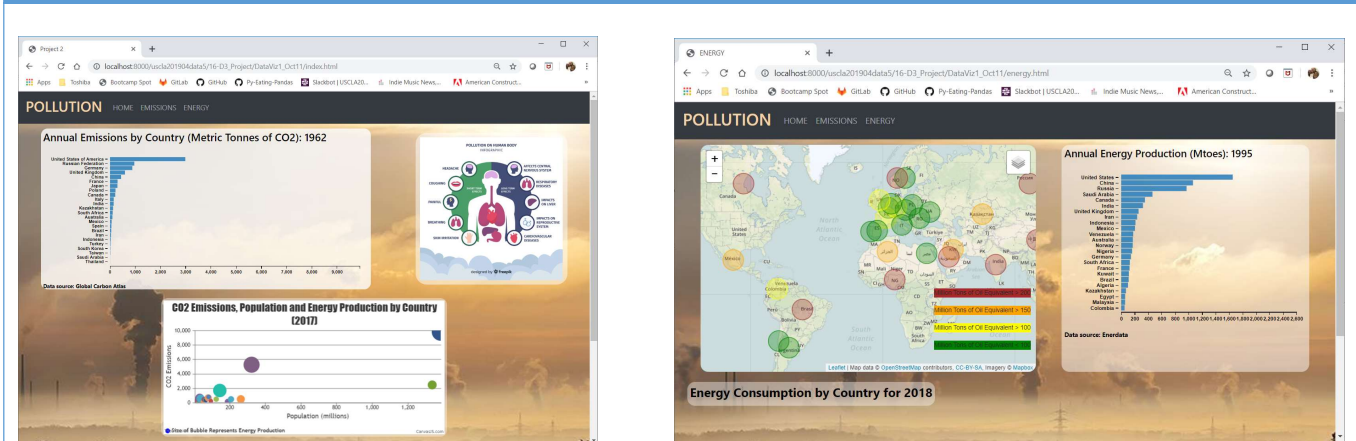
- Dataset from GlobalCarbonAtlas.org
- <http://www.globalcarbonatlas.org/en/CO2-emissions>
- Measured in metric tons
- 59 columns for years and 218 rows for each country
- No country ID, merge with DS2 and add ID to match
- Clean country names to match DS2

**Dataset No. 02 (DS2):** World Population by Country

- Dataset from World Development Indicators (Last Update 09/27/2019)
- <https://datacatalog.worldbank.org/dataset/world-development-indicators>
- 3 string Country ID is key to merge with DS1
- Raw data spreadsheet containing 56 columns and 268 rows of country population data from 1960 to 2018, and 3 tabs of analysis

- ❖ Clean data with Tableau & Excel to transpose and organize
- ❖ Use Tableau quickly develop charts and visualizations prior to creating in JavaScript
- ❖ Load datasets on to MongoDB

Orcas from the D3ep Visualizations:



## Rendition from Tableau



## “Inspiring” Visualizations:

