MULTIMEDIA UNIVERSITY
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TDS3401 - Data Visualization

Lecture/Tutorial:
TC1V/TT3V

Title:
Assignment – Make a Data Story with Tableau

Dataset Category:
Environment

Group Name:
Team LAC

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1.0 Description about the dataset

We're using a GitHub dataset titled CO2 emissions by sector from 1990 to 2016, released by nation and sector from the Center for Advanced Information and Technology (CAIT) Climate Data Explorer. The dataset represents the distribution of CO2 emissions from several sectors such as building, energy, transportation, and others.
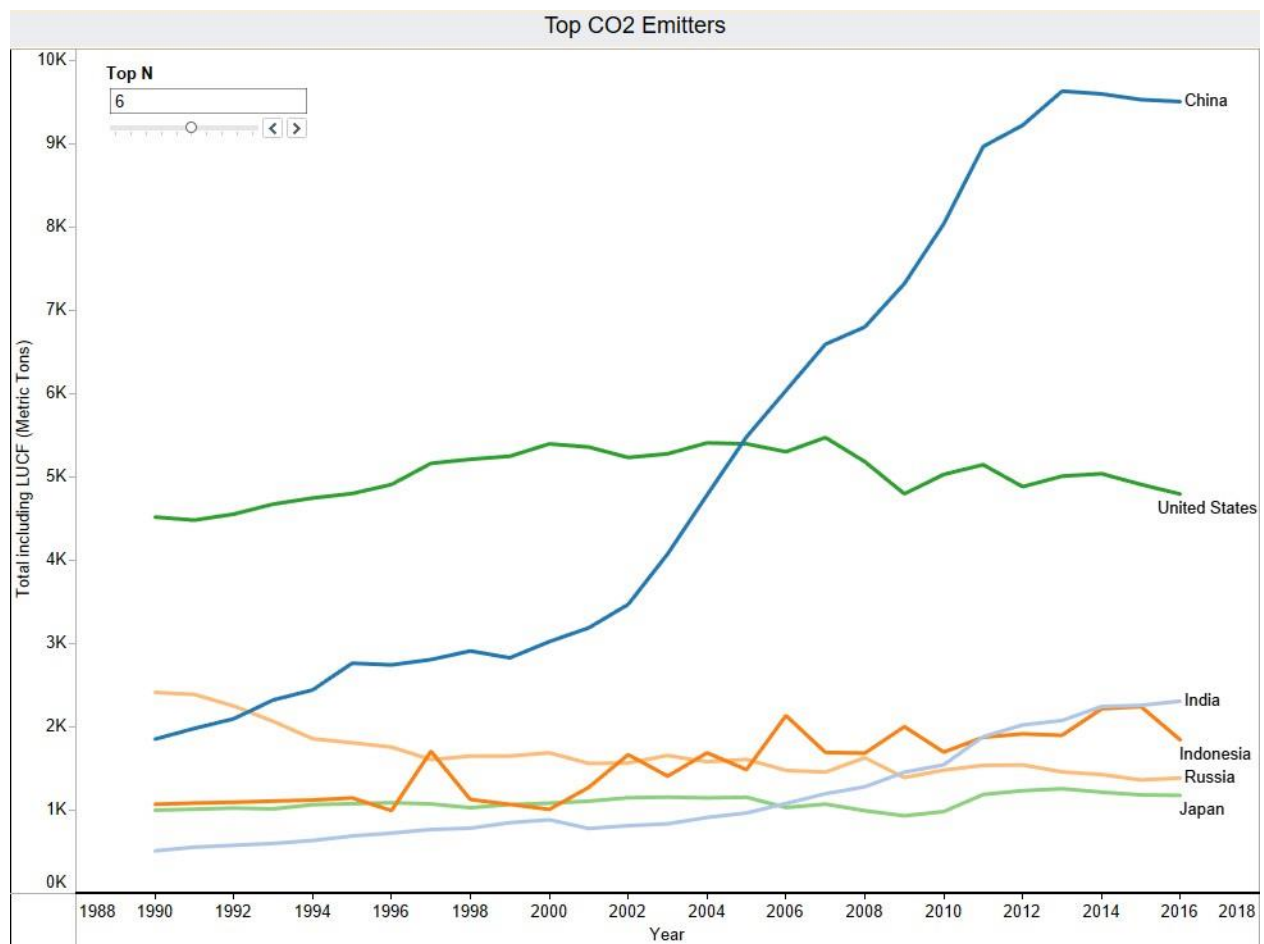
2.0 Summary of Visualization

Figure 2.1: Top CO2 Emitters

We used a line graph to show the top six countries of total CO2 emissions from 1990 until 2016. Surprisingly, we discovered that China's CO2 emissions have significantly climbed since 2002. It surpassed the United States (US) record by double the quantity of CO2 emissions and became the world's highest CO2 emitting country since 2006.

3.0 Trend, pattern, or relationship in your data

Based on Wikipedia (2022) countries such as China, US, India, Indonesia, Russia and Japan are the leading top 20 most populated countries in the world. This shows that countries with high numbers of populations do emit more CO2 compared to other countries. From Figure 2.1, the CO2 emissions of China started rocketing in 2002 was due to the participation of the World Trade Organization (WTO) which the manufacturing sector in China started to expand and caused the emission to spike. Concurrent with the global economic recession during 2007-2009, the decrease of CO2 emissions in the US was due to decreased consumption and changes in the production structure of the US economy.

4.0 Story

Since the Industrial Revolution, human sources of carbon dioxide (CO2) emissions have risen. Human activity, such as the combustion of oil, coal, and gas, as well as deforestation, is causing the growth of carbon dioxide concentrations in the atmosphere. In this work, we will focus on the CO2 generating countries, the percentage difference in year-over-year emissions, and the sectors that contribute the most emissions for the top-emitting country. After the visualization we can see that Figure 2.1 shows the top 6 countries with the most emissions in the world. Since 1990, US has had the world's highest record of CO2 emissions, emitting 4.5k to 5k tonnes of CO2 per year. In 2002 China joined the WTO and expanded its manufacturing sector. This has caused the CO2 emissions in China to grow and surpassed the US record in 2006. Not even that, China keeps expanding their record until it reaches 9.6k tons CO2 emissions in a year. We also find out that CO2 emissions in India are also rising steadily and continue to hit the third most CO2 emissions country in the world leaving Indonesia, Russia and Japan behind. Meanwhile, US produced less CO2 due to the decreased consumption and changes in the production structure concurrent with the economic recession during 2007-2009 with decreasing of 12.7% tons of CO2.

5.0 Reference

[1] Wikipedia contributors. (2022, February 19). List of countries and dependencies by

population. Wikipedia.

https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_population