**TECHNOLOGY (IT SYSTEM)**

**PLEASE READ INSTRUCTIONS CAREFULLY**

**Part 3A**

Review the impacts of pollution across the US states by conducting a detailed analysis. You will utilize visualization tools and techniques to create strong arguments and powerful presentations supported by empirical data. You will utilize the theories we discussed in class to develop sustainable policies and create entrepreneurial opportunities.

**Using these entrepreneurial ideas you should forecast into the future what the projected pollution will be. Projections should include both with and without your idea.**Projection methods may be regression analysis or other techniques you have learned throughout the MBA or in this class. Note that Tableau does have some limited projection capabilities.

* Visually (e.g. Tableau maps, data grids, heat maps, etc.) compare and contrast four states using Air Pollutant Emissions Trends Data (Links to an external site.)Links to an external site. [Use the data through 2018 or later (Links to an external site.)Links to an external site.](https://www.epa.gov/sites/production/files/2018-07/state_tier1_caps.xlsx) You may introduce other data sets if it supports your analysis and argument better. Hint: you may want to delete the first row of nonrelevant data. Look at the government website to understand the data set.
* It is **very important** to consider air quality data from the US EPA within your analysis. You will need to link the two datasets for the best results.
  + [https://www.epa.gov/outdoor-air-quality-data (Links to an external site.)](https://www.epa.gov/outdoor-air-quality-data)
* Conduct an aggregate analysis of the US.
  + I suggest dividing the analysis by logical regional breakdowns. You can do this in the data set or select states individually in the visualizations
    - e.g., rust belt, sunshine, technology, heavy population.
    - e.g., NE, SE, West
    - Or, another logical grouping
* Conduct a deep dive into each of the states that you selected to understand what drives the pollution. What political policies currently harm or can be enacted to improve the problem? The deep drive should be at an aggregate level and at a detailed level by pollution type.
* Are there disruptive innovations that can change the game? How can embedded sustainability theory help with this problem?

**Deliverables:**

* A Tableau vis that is insightful and interesting. At least 12-16 worksheets including a comprehensive GEO analysis. Create**dashboards** and three**storyboards** (one high-level and another at a detailed-level)**.**
  + The dashboards need to have linked values. Meaning that clicking a value in one chart changes the values in the connected charts.
* Visualizations showing your projections; project by using the ideas your team generates to improve conditions.
* Compare the US or parts of the US to other countries. The comparison must make sense. For example, former classes have compared Hawaii to the Caribbean island. Other classes have compared to Europe and Asia. [A picture containing drawing, table, window, shirt

  Description automatically generated](https://youtu.be/waV_eGDVrII)

Requirements:

* Pick a position and support your argument using the Toulmin method throughout the exercise.
* You must email me the **Tableau package (including data)** two days before the presentation for final approval and feedback. Hint: save as a package.
* Your vis must include **logical** data views presented in the following ways:
  + box and whisker plot
  + heat map
  + symbol maps
  + linked charts
  + text tables
  + bar chart(s)
  + treemaps
  + circle views
  + Packed bubbles
* Use of filters is important
* Data analytics with trends and a **forecast** is important

**Part 3B**

In this part of the assignment you are asked to do the following:

1. Extend your pollution analysis against the **COVID19**, **FLU**, and **mortality data sets**. Only focus on the data extension. You will need to use statistical forecasts since COVID is a 2020 epidemic and your pollution data may not align. What are the correlations between the data elements?