Objective:

Then we went into the sub-question 2, in this part we make Comparison for Growth Areas and Declining Emissions.

Data introduction:

The following things are the variable we use for analysis.

We mainly focus on the following content in relation to time.

For economic and the Indirect factors that generate pollutant, there is GDP, population, Vehicle Miles travels and Energy Consumption

For air pollutant, there is CO2 emissions and Aggregate Emission.

**These two types of data are used “circle” and triangle to represent correspondingly**

Analysis:

To have a better understanding the **trend** of every indicator and **compare them**, **we firstly try to use interactive multi-line chart for getting a better view on it since each y has the same meaning which is the change comparing to the 1970.**

It is easy to notice that the GDP as well as the Vehicle Miles travels have significant increasement during these years, while the Aggregate Emission is decreasing steadily. Other indicators just have a slightly enhancement. **These three trends can be easily grouped, and we apply “blue”, “yellow” and “red” to represented different types of trends. We can select the interested items for observing.**

Then, we want to make analysis for the correlation between each variable. For better represent the correlation coefficient value. **We using heatmap to visualize the relationship presented with a cooler shade of blue as a negative correlation and a warmer shade of red as a positive correlation, which is very intuitive.**

We can see that the GDP and the Aggregate Emission have very strong negative correlation with its deep blue with other variables. And thus, we use the bubble chart to focus **on the relationship** variables. The position is the GDP and the size and color reflect the amount of emission, and if we want to find the exact value, **we can choose the corresponding point for detail.**

Conclusion:

According to the graph we draw above, we can firstly realize that the GDP have greatest influence on the Aggregate Emission, which means that the economic development can help declining the Emissions.