1. bubble chart

Chart, scatter chart

Description automatically generated

Chart, scatter chart

Description automatically generated

On this part I was using the data of median-age-vs-children-per-woman.csv. First, I was checking the data and found out the there are lots of missing value in column of indicator of how many children women given birth, median age and continent, since there are row of future years, so I remove the rows which contains missing values, and using Excel build in Vlookup() function to match the countries with their continent based on the International country code located on the second column. Now we can use the continents as color to indicate their geographic location in the chart. Because there are multiple records of different countries and different years we can use “years” in the “page box” to show the variation overtime. Based on the anime, we could quickly notice that the number of children given birth per women is dropping globally and the median age is rising. The number of children given birth per women is dropping tremendously among the country in Arab area and African indicates some of these countries ‘s population structure change from young to a little bit older, which is a typical sign of developing in less developed country, showing that these countries stop preferring human power is the source of development and making their way to the time of industry if they have the ability.

2.stacked area chart

Chart, histogram

Description automatically generated

In this chart we are using the CO2 emission chart to visualize the trends of CO2 emissions of different countries over time and the difference between them. As we can see the CO2 of Europe are dropping since 2000 since people are more caring about climate change in the developed countries. Secondly, the national Opening up Policy which made by the Chairman Xiaoping Deng led to the rise of modern industry which led to the rapidly growth of the emissions of CO2, and because of the agreement of reducing CO2 emission to protect the environment around the world, China is reducing it by cutting down the oversize steel and petroleum industry and shut down the company doesn’t meet the regulation of environmental act.

3. line chart

Chart, histogram

Description automatically generated

We are working on the life expectancy data of the world and color were given by different countries. As we can see, the life expectancy has a tendency of growing over time. And during 1910s and 1940s the European area’s life expectancy are dropping probably because of the WWI and WWII. If we look at the orange line, which is China, there is a small drop down in the 1960s because of the huge drop down of the yield of food. After that, during the 60s-80s, the life expectancy quickly passes the line of world which the reason mentioned above.

4. bump chart

Chart, line chart

Description automatically generated

We are still using the life expectancy data, now making y axis’s “life expectancy” computing using “country” and do the calculation over rank and we got the bump chart showing the rank change of life expectancy over time which also match the image showing above.