Weather Trends Project Submission:

Data preparation Steps:

1. Extract data from the database using SQL:
    - Explore the city_list table to choose the closest city by the following query

      SELECT *
      FROM city_list
    - Extract both city level data and global level data by the following query

      SELECT cd.year, cd.city, cd.country, cd.avg_temp AS atlanta_avg_temp , gd.avg_temp AS global_avg_temp

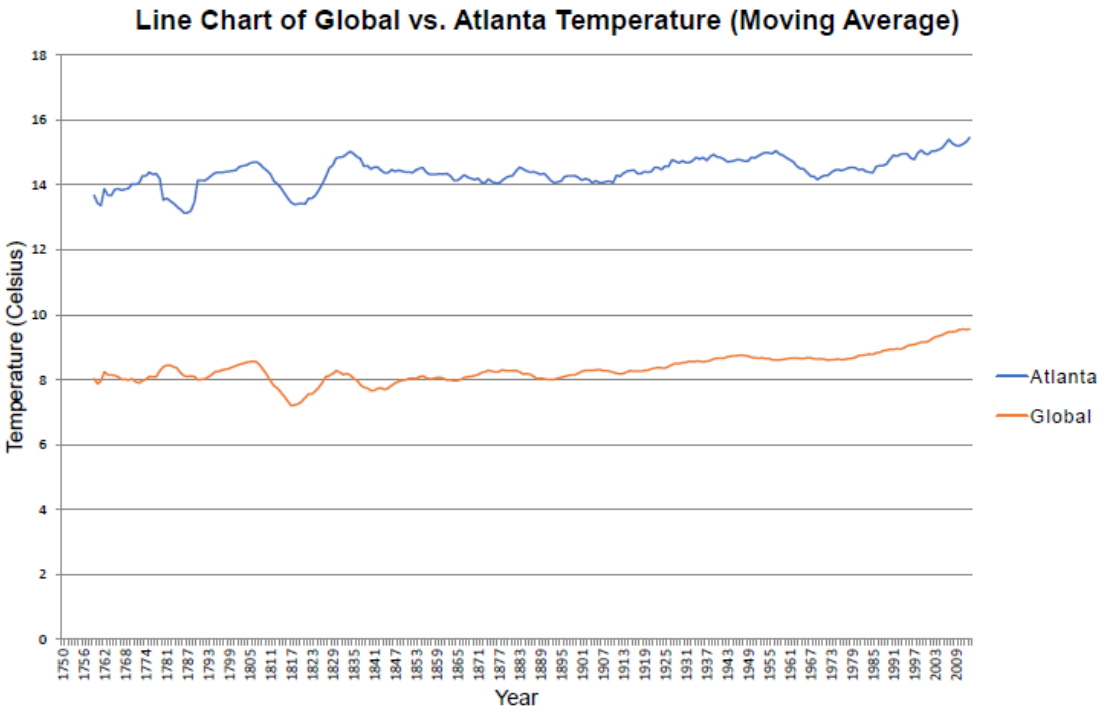
      FROM city_data cd

      JOIN global_data gd

      ON cd.year = gd.year

      WHERE cd.city = 'Atlanta' AND cd.avg_temp IS NOT NULL
2. Export and download the extracted data into a csv file by the download button in the classroom SQL workspace
3. Calculate a 10_year moving average for both city and global data in Excel using the AVERAGE() function
4. Create the below line chart to represent the 10_year temperature moving average for Atlanta and global temperature trends.

Data visualization (Line Chart):



Observations:

Using the chart above and different Excel functions to manipulate the data the following was noticed:

- As regarding to Atlanta and as shown in the graph the average temperature has decreased rapidly followed by increase twice between 1776 and 1790 & between 1805 and 1832
- As regarding to the overall global temperature average there was one noticeable rapid decrease followed by rapid increase between 1805 and 1829
- The Atlanta as well as the overall temperature trends have been continuously increasing over the last 50 years
- Atlanta is hotter on average compared to the global average
- The minimum average in Atlanta was recorded 1779 while the minimum global average was recorded in 1752(calculated by the MIN() function in Excel)
- The maximum average in Atlanta was recorded in 1828 while the maximum global average was recorded in 2007(calculated by the MAX() function in Excel)
- The correlation coefficient of the Atlanta average temperature over the years is weak positive(0.38) while the correlation coefficient of the global average temperature over the years is moderate positive (0.62) (calculated by the CORREL() function in Excel)