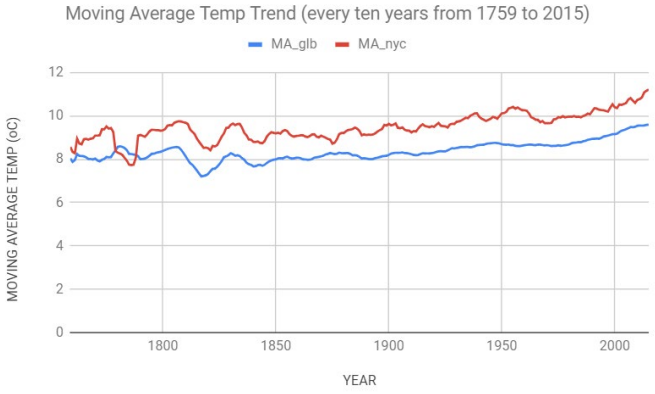
Project 1
Exploring Weather Trends

Summary
In this project, I analyzed New York City (NYC) and global temperature data and compare the temperature trends of NYC to overall global temperature trends.

Method
- **Extract the data** from the database using SQL. (Link to SQL file, see below for preview)

```
/*explore global_data and extract the global_data to csv*/
SELECT *
FROM global_data
/*explore city_list and see if New York is in the list*/
SELECT *
FROM city_list
WHERE country='United States'
ORDER BY country desc
/*explore city_data and extract all column about 'New York' to csv*/
SELECT year, city, avg_temp
FROM city_data
WHERE city='New York'
```

- **Calculate moving average** based on the yearly temperature data (Temp) of New York City and global. Below are two key decisions made when visualizing the data and why. (Link to google sheet)
  1. Yearly data before 1750 was excluded since the data deficiency between 1746-1749 in NYC data and the data deficiency in global data before 1750;
  2. Moving averages were calculated on a ten-year interval to have a smooth trend line and keep critical peaks and valleys on the trend for observation.
- **Create a line chart** that compares NYC city's temperatures with the global temperatures. (Link to published chart, see below for preview)



Observations
1. Overall, the world and New York City are both getting hotter and hotter in the past 150 years.
2. Overall, more than 90% of the time that NYC is hotter than the world in the past 257 years from 1759 to 2015.
3. The temp trend for both the world (macro) and NYC (micro) has fluctuation. Both the world Temp and NYC Temp have bigger fluctuation before 1850 than after 1850.
4. The fluctuation in a micro climate in NYC is more dramatic than the macro climate of the world since 1850.
5. The NYC Temp has opposite trend than the world trend between 1759 and 1787.