# Weather Trends

# Exploring Weather Trends

**Overview**

In this project, we will analyze local and global temperature data and compare the temperature trends where I live to overall global temperature trends. Goal will be to create a visualization and mention the similarities and differences between global temperature trends and temperature trends in the closest big city to where I live.

An outline of steps taken to prepare the data to be visualized are as follows:

**Step 1 - Data Extraction (Tools Used)**
I used SQL to extract data from the Database. Queries used for extraction are:
- Select *
  From global_data

- Select city
  From city_list
  Where city 'New York'

- Select year, avg_temp
  From city_data
  Where city ='New York' and country =' United States'

Downloaded the file as CSV and later used Excel to calculate the Moving Average and plot the Line Chart.

**Step 2 - Data Validation (Key Consideration when deciding to visualize the trends)**

New York average temperature was available from the year 1743 and Global data was available from the year 1750. Since, I couldn't compare New York temperature prior to the year 1750, hence I removed years 1743 to 1749 from my analysis.
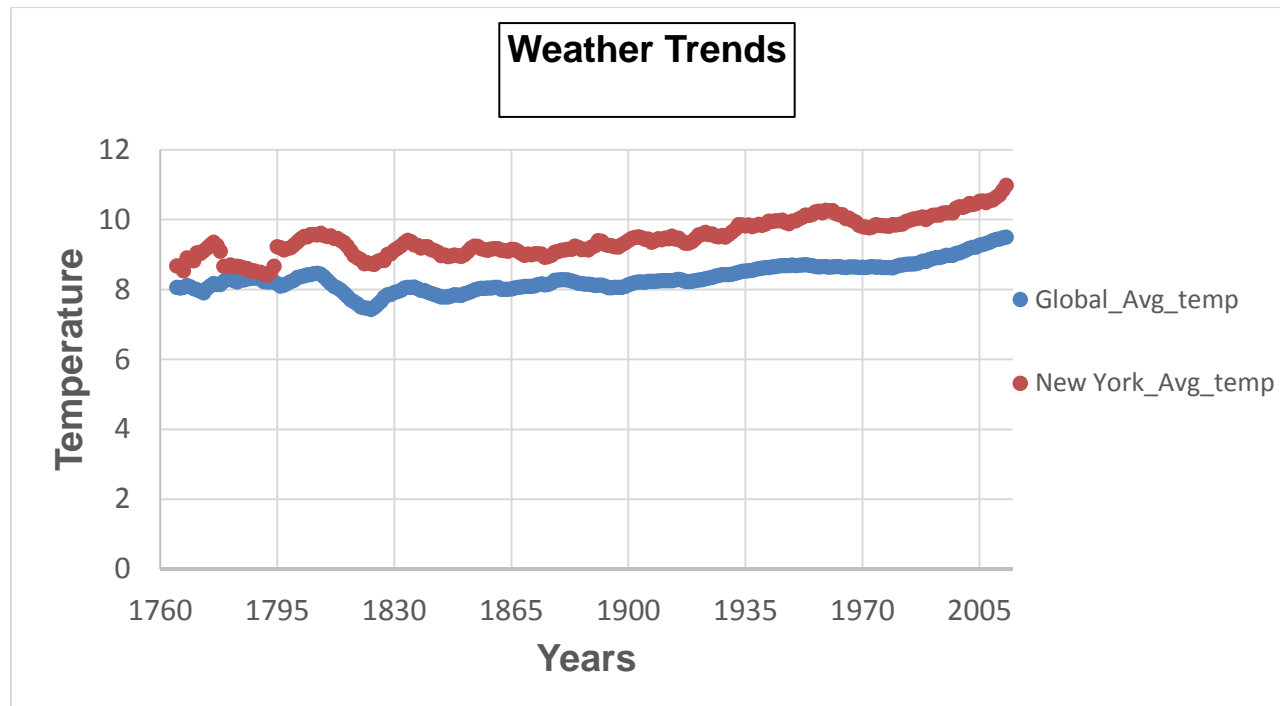Moreover, for the year 1980 average temperature for New York was missing. To fill the gap, I calculated the mean of the local temperature. column and represented it as an average temperature for year 1980.

**Step 3 - Data Analysis (Calculated the moving average)**

I calculated the moving average of 15years by using the formula: Average (Cell2: Cell16).
I tried different permutation for selecting the years to get a smooth line.

## Step 4 - Data Visualization (Line Chart)



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## Result – Observations

Some of the similarities and differences between the Global and New York average temperatures are:

- New York temperatures is higher than the Global on an average by 1 degree.
- Both New York and Global temperatures are increasing over the years i.e. temperature will be hotter in the coming years.
- Drop in both the temperatures between 1810-1830 has been significant and before the year 1810 we see different variation in temperatures not providing us a clear trend.
- For New York the temperature has dropped for the years 1770-1795, however Global temperatures have increased.

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