

Exploring Weather Trends in Atlanta, Georgia, United States of America

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Process Steps

1. First, I generated a query to see what countries matched the first word in my country's name: United States.

```
3  SELECT *
4      FROM city_list
5      WHERE country LIKE 'United%';
6
```

I saw that my country was listed as United States--rather than USA or United States of America.

2. I modified my query to find my city.

```
9  SELECT *
10     FROM city_list
11     WHERE country LIKE 'United States';
12
```

I then saw that the closest city to where I live in Athens, Georgia, was listed: Atlanta.*/

3. I expanded the city_data column facet to see that the column I wanted to filter on was city and crafted my query to download all of the Atlanta, United States, data.

```
15  SELECT *
16     FROM city_data
17     WHERE city = 'Atlanta' AND country = 'United States';
18
```

This query yielded my city level data.

4. I saved this output as city_data_atlanta_us.csv.

5. I then modified my search to download all of the global data.

```
23 SELECT *  
24 FROM global_data;
```

6. I saved this output as global_data.csv.

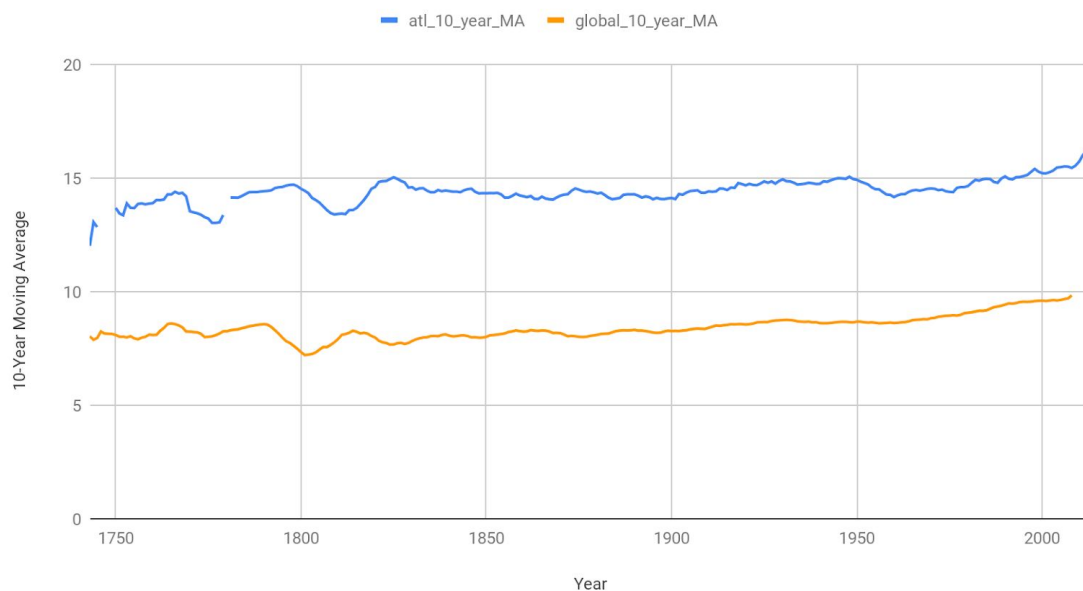
7. I then imported both spreadsheets into a GoogleSheet.

8. In each GoogleSheet, I created a column called 10_year_MA to store my formula for the 10-year moving average of the average temperatures or avg_temp column: atl_10_year_MA and global_10_year_MA.

9. I then generated my formula for calculating the 10-year moving average for each cell. The formula below is for Row 2: = AVERAGE(D2:D11).

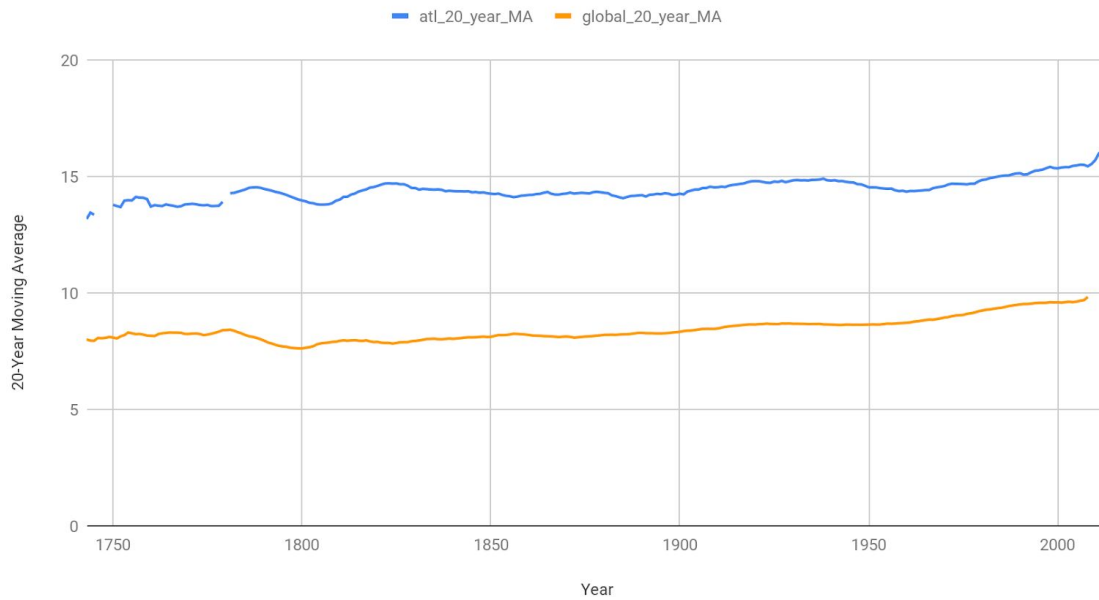
10. I noticed a huge amount of volatility in the Atlanta moving average versus that of the global one. The corresponding GoogleSheet is linked to the images provided.

10-Year Moving Average for Atlanta, United States, and globally

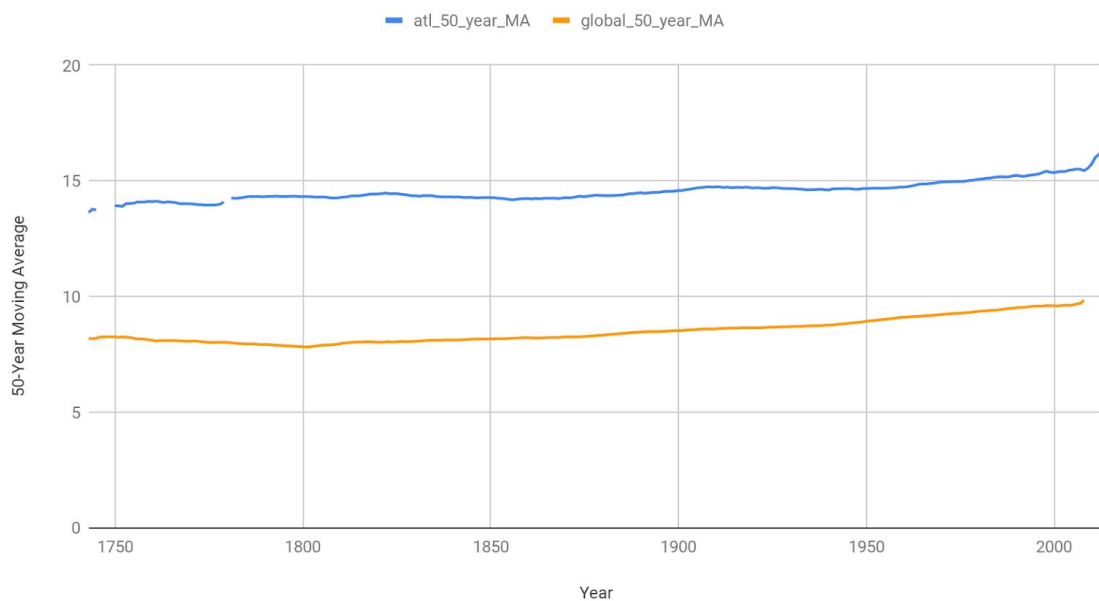


I then decided to calculate the moving average at different intervals to see how those lines manifested differently in their line graphs: 20 years, 50 years, and 100 years.

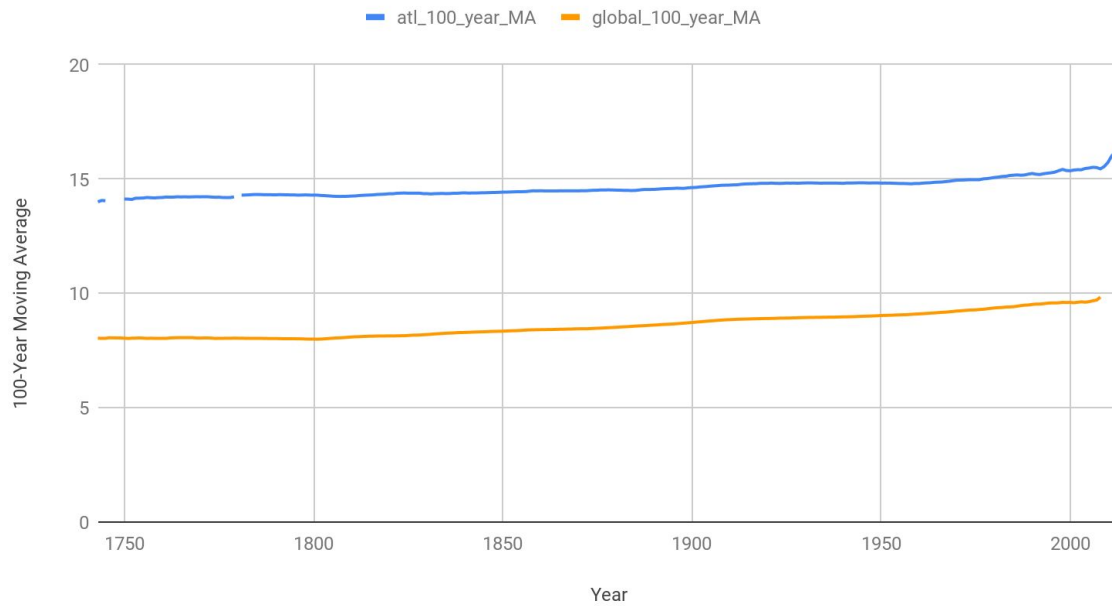
20-Year Moving Average for Atlanta, United States, and the globe



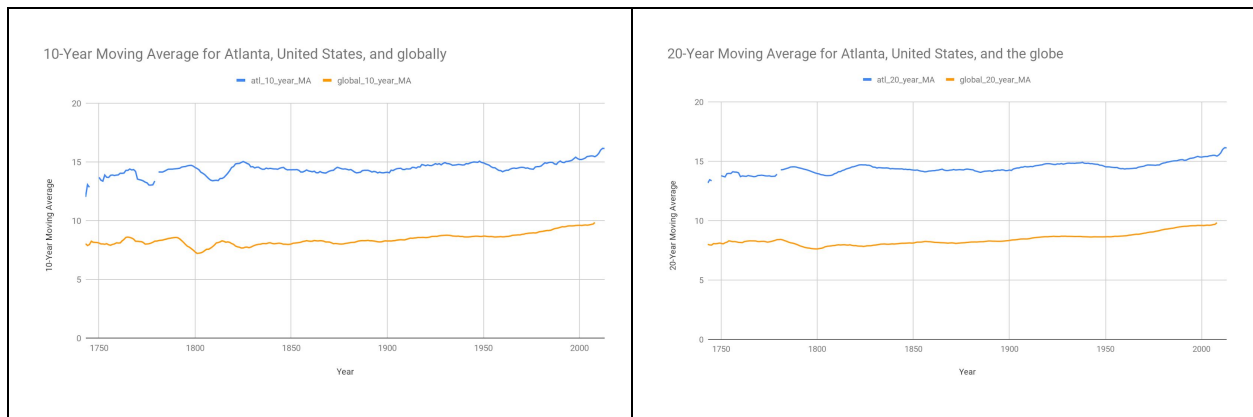
50-Year Moving Average for Atlanta, United States, and the globe



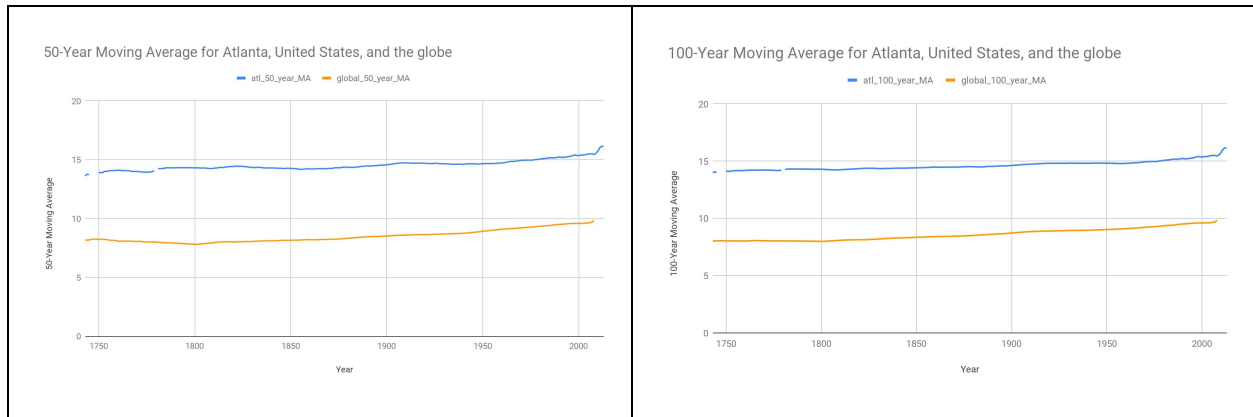
100-Year Moving Average for Atlanta, United States, and the globe



11. I noticed that the 10-year and 20-year averages still displayed marked differences in the comparative trends of Atlanta versus the globe.



When I changed the averages to 50-years and 100-years, the lines looked remarkably similar, except for Atlanta having a higher line on the y-axis.



Observations

1. Atlanta's temperatures were consistently higher than that of the globe.
2. That being said, Atlanta's temperatures trend similarly to that of the globe: increasing and decreasing proportionately.
3. However, there are marked dissimilar trends for certain periods of time:
 - a. Global temperatures started decreasing in the late 18th Century (1791-1802) before Atlanta who saw a decrease from 1798-1809. Similarly, there was a global increase in temperature from 1803-1814, and then Atlanta saw its increase from 1810-1826. There was another global trend happening before Atlanta in a decrease between 1815-1825--Atlanta seeing a decrease 1825-1831, before both begin levelling off and trending similarly until the mid 1950s.
 - b. In 1948, Atlanta started seeing a drastic decrease in its temperatures until 1960 when it started on a drastic increase again.
4. Over the last 100 years, we see a steady increase in global temperatures: with the 10-year moving average of 1908 being 8.362 and 2008 at 9.83.
5. Over the last 100 years, we see a steady increase in Atlanta: with the 10-year moving average of 1918 being 14.776 and 2018 being 16.14. Thus, it looks like Atlanta's temperatures are increasing at a slower rate (an increase of 1.364) than the global moving average (increase of 1.468).