

Exploring Weather Trends: Baltimore Maryland and The Globe

By: Jessica Elaine Spencer, SQL Google Sheets Data Analyst

Analysis:

Task	SQL Commands for Extracting Data
SQL Query to find the Average Temperature for the city of Baltimore and Global Average Temperature.	<pre>SELECT city_data.year, city_data.avg_temp as city_temp, global_data.avg_temp as global_temp FROM city_data JOIN global_data ON city_data.year = global_data.year JOIN city_list ON city_list.city = city_data.city WHERE city_data.year = global_data.year AND NOT city_data.avg_temp is NULL AND city_data.city = 'Baltimore';</pre>

Approach to Gathering Data:

- Extracted the data from SQL to CSV:
- Used SQL to specify data to be used in visualization
- I used Google Sheets for my analysis

Methodology:

- My analysis utilizes the Simple Moving Average in order to quickly identify established trends in the data. Using a 5-year simple moving average, there was too much static and the lines were not as smooth as when using the 9-yr moving average. Moreover, a 12-yr moving average visually gave the same display as with the 9-yr average. The 9-yr simple moving average was used because it allowed for smoother lines for graphical representation.

Formulas for 9-yr Simple Moving Average:

Moving Average	Google Sheet Commands
9-Year Moving Average for Global Avg Temp.	AVERAGE(E2:E10)
9-Year Moving Average for City Avg Temp.	AVERAGE(C2:C10)

Screen of formula for MA

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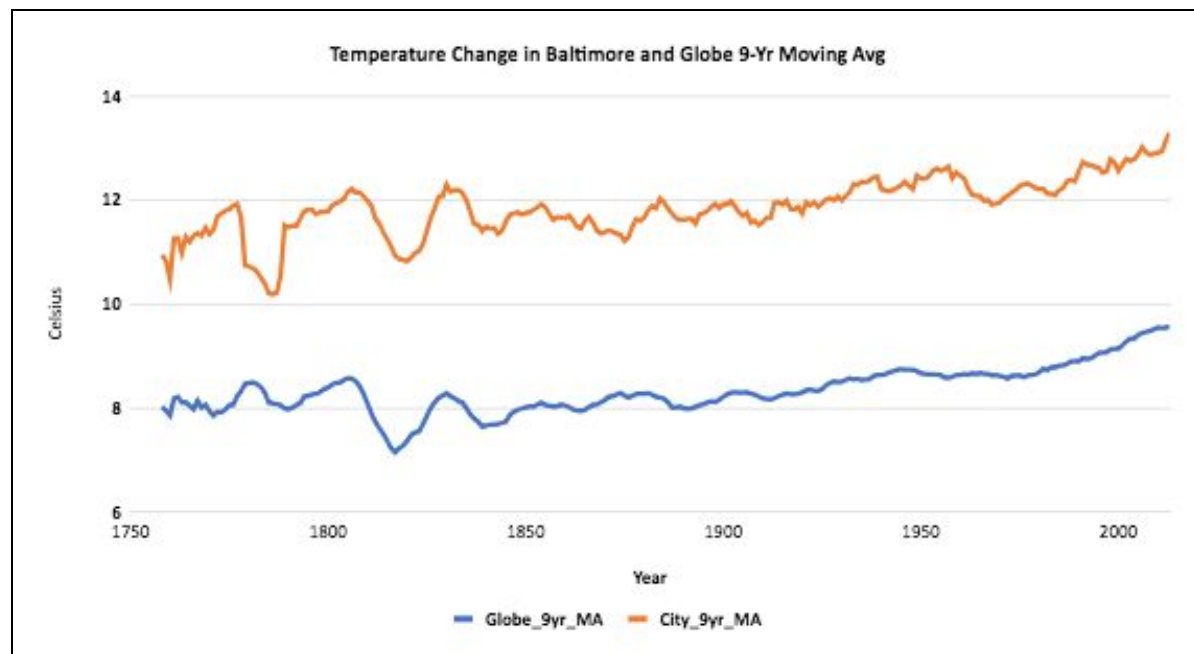
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fx =AVERAGE(C2:C10)

	A	D	E
1	year	Globe_9yr_MA	City_9yr_MA
2	1750		
3	1751		
4	1752		
5	1753		
6	1754		
7	1755		
8	1756		
9	1757		
10	1758	8.03	10.96
11	1759	7.95	10.84

Line Chart For Baltimore And Global Temperature:



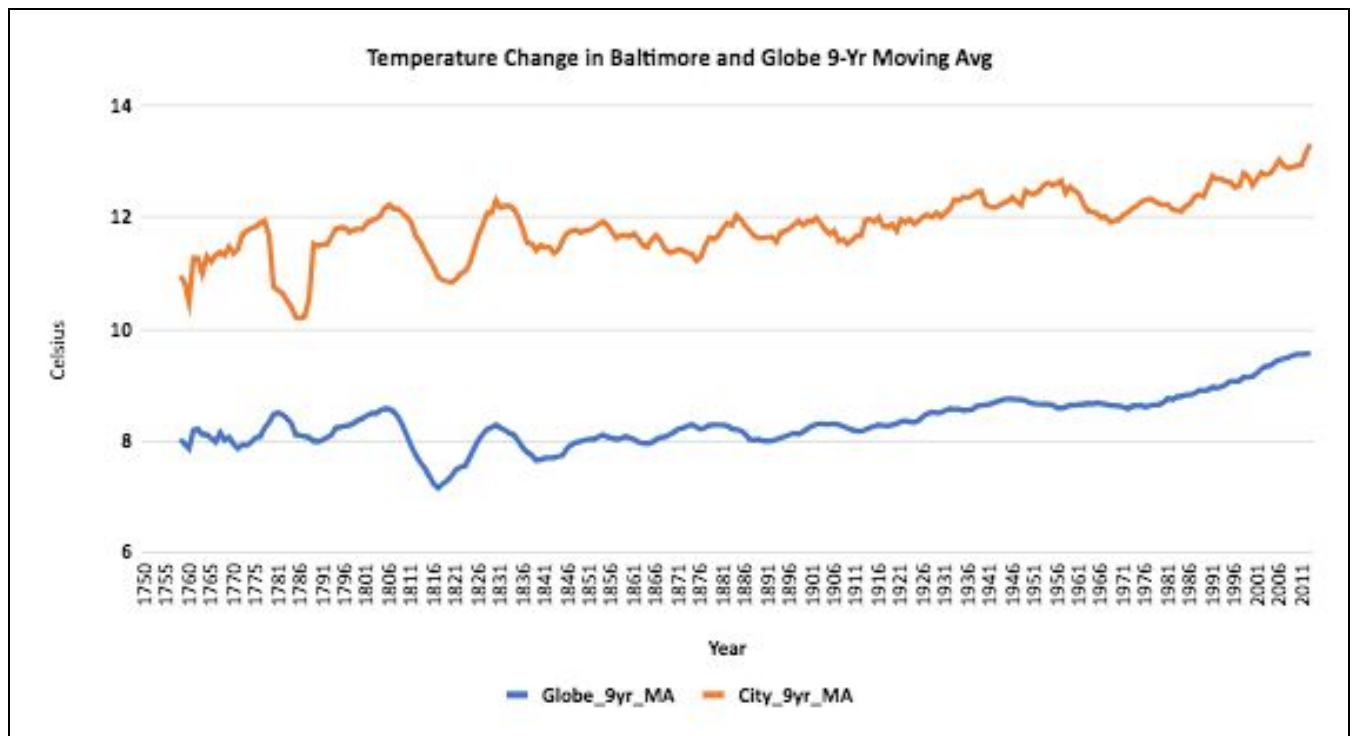
Observations:

- Global Average temperature varies from 5.78 degrees Celsius to 9.73 while the variation for Baltimore's Average Temperature varies from 3.15 to 14.19 degrees Celsius.
- The City of Baltimore stays a cooler than the average temperature of the globe.
- The most dramatic spike in weather happened in between 1750 - 1800 both Globally and Baltimore.
- Overall, Earth's Global Trend is that it is getting increasingly warmer.

Change in Temperature Over Time:

Global Avg Temp			
Years	MIN	MAX	Change
1750-1800	5.78	9.43	3.65
1800- 1850	6.86	8.84	1.98
1850-1900	7.56	8.83	1.27
1900-1950	7.95	8.86	0.91
1950-2013	8.28	9.73	1.45
Baltimore Avg_Temp			
Years	MIN	MAX	Change
1750-1800	3.15	12.73	9.58
1800- 1850	10.24	13.4	3.16
1850-1900	10.33	12.71	2.38
1900-1950	10.55	13.37	2.82
1950-2013	11.34	14.19	2.85

Final Chart:



From the final chart, you can see that the average temperature both in Baltimore as well as around the Globe is increasing upwards, which means that the earth is getting hotter.

Final Conclusion:

The world is getting increasingly warmer.