

Outline:

1. I used SQL to extract city_list, city_data, and global_data from database and export them as CSV files. In order to do this, I used the SQL Workspace and type `Select *` from City_data and then I clicked "Evaluate" to extract the data. Then, I clicked "Download CSV" to export data as CSV file. I did the same thing for global_data and city_list.

The screenshot shows a SQL workspace interface. On the left, under the 'Input' tab, there is a 'SCHEMA' section with a refresh icon and a list of databases: 'city_data', 'city_list', and 'global_data', each with a dropdown arrow. The main area displays a SQL query: `1 select *` and `2 from city_data`. Below the query, a green 'Success!' message is shown next to a blue 'EVALUATE' button. On the right, there are tabs for 'HISTORY' and 'MENU'. Below the query area, the 'Output' section shows '71311 results' and a 'Download CSV' button. A table of results is displayed with columns: 'year', 'city', 'country', and 'avg_temp'. The first row shows data for 1849 in Abidjan, Côte D'Ivoire, with an average temperature of 25.58.

year	city	country	avg_temp
1849	Abidjan	Côte D'Ivoire	25.58

2. I used Excel to open up CSV files. I filtered out city_data and selected San Diego as my city.

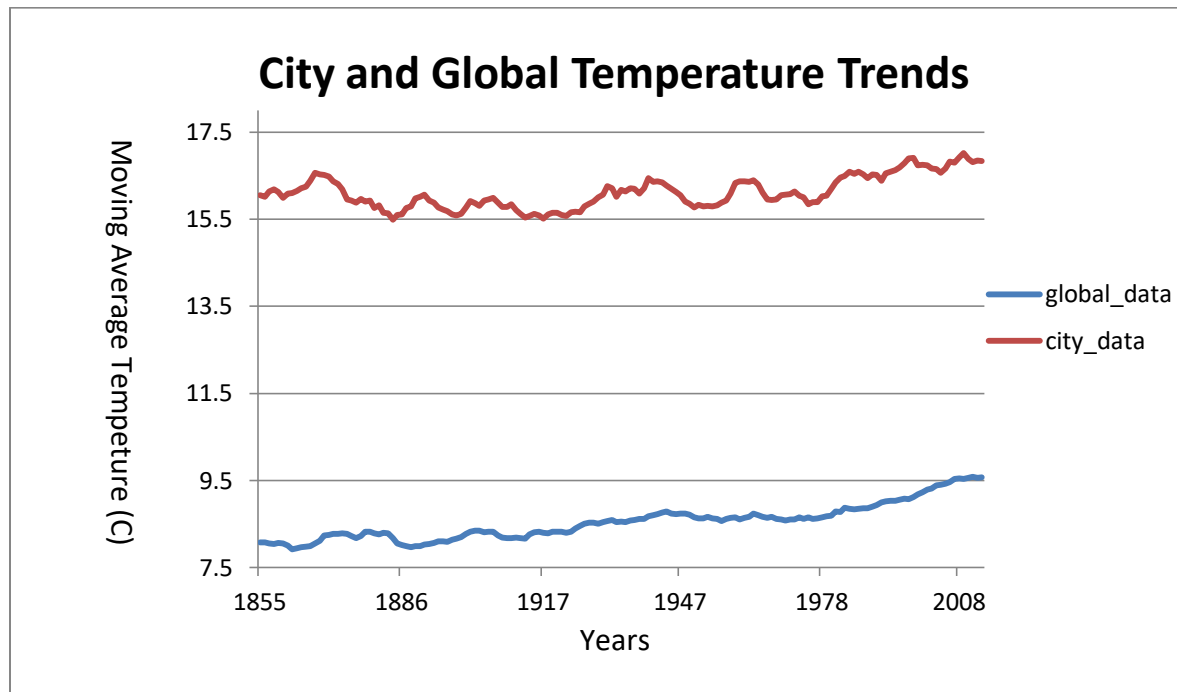
3. I created new column called 7-day Ma and went down to the seventh year (1855) in city_data. Then, I used the AVERAGE() function to calculate the average temperature for first seven year and drag the formula down to the last cell. I did the same thing in global_data file.

F56832		fx		=AVERAGE(D56826:D56832)			
	A	B	C	D	E	F	G
1	year	city	country	avg_tem		7-Year MA	
56826	1849	San Diego	United States	16.03			
56827	1850	San Diego	United States	15.55			
56828	1851	San Diego	United States	15.66			
56829	1852	San Diego	United States	16.06			
56830	1853	San Diego	United States	16.69			
56831	1854	San Diego	United States	16.11			
56832	1855	San Diego	United States	16.31		16.05857	
56833	1856	San Diego	United States	15.75		16.01857	
56834	1857	San Diego	United States	16.41		16.14143	

3. For global_data, I only chose data from year 1849 to 2013 since city_data doesn't have data prior 1849. Then, I inserted a line chart and selected city average temperature , global average temperature and year as my data.

4.To make the line chart more observable, I adjusted the vertical axis, which changed the minimum to 7.5, maximum to 17.5, and major unit to 2.0. I also considered to change the horizontal axis to every 31 year. We can see that the temperature in san Diego went up and down almost every 30 year.

Line Chart:



Observations:

1. My city is hotter on average compared to the global average. The city average temperatures are two times higher than global average temperatures. The difference has been consistent from overtime.
2. My city's average temperatures went up and down over time. However, the global average is gradually increasing and increases smoothly.
3. City average temperature has increased around 10% from lowest average to highest average. global average temperature has increased around 20% from lowest average to highest average.

4. The global and city average temperature are both consistently increasing over the last few hundred years. The world is getting hotter and hotter.