Explore Weather Trends

Data Analyst Nanodegree Project 1

05.30.2020

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Overview

In this project, I have analysed three cities I had lived in (Dublin IE, Vilnius LT) and living at this moment (San Jose, CA) with the global temperature data to compare the overall temperature trends.

I have used tools:

- **SQL** to extract the data from the database,
- **Excel** to open up the CSV files and to create a line chart.

1 Step.

I have extracted data from the 3 cities there I lived or still living:

- Vilnius data extracted as below:

- Dublin data extracted as below:

- San Jose data extracted as below:

Also, have extracted data Global data.

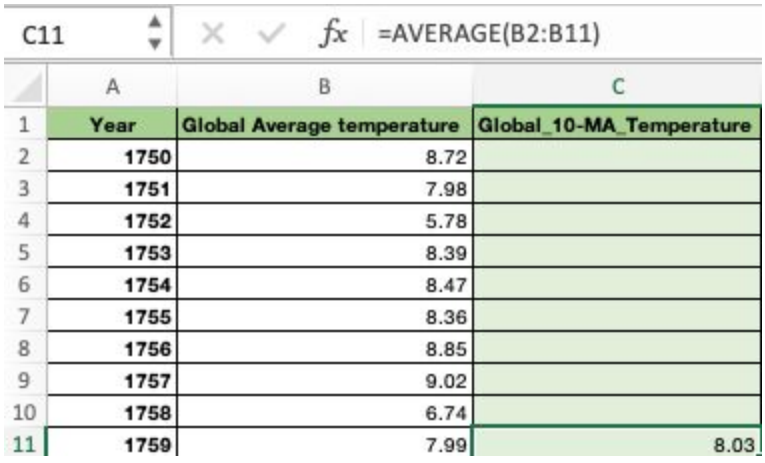
- Global data extracted as below:

2 Step.

I have opened all extracted CSV files in Excel and created a summary table with all average temperature figures by years. Used vlookup function to bring average temperatures. See below:

Year	Global	Vilnius	Dublin	San Jose
1750	8.72	6.42	9.32	
1751	7.98	6.17	9.12	
1752	5.78	0.66	6.28	
1753	8.39	5.31	8.63	
1754	8.47	5.3	8.59	
1755	8.36	5.19	8.29	
1756	8.85	5.87	8.75	

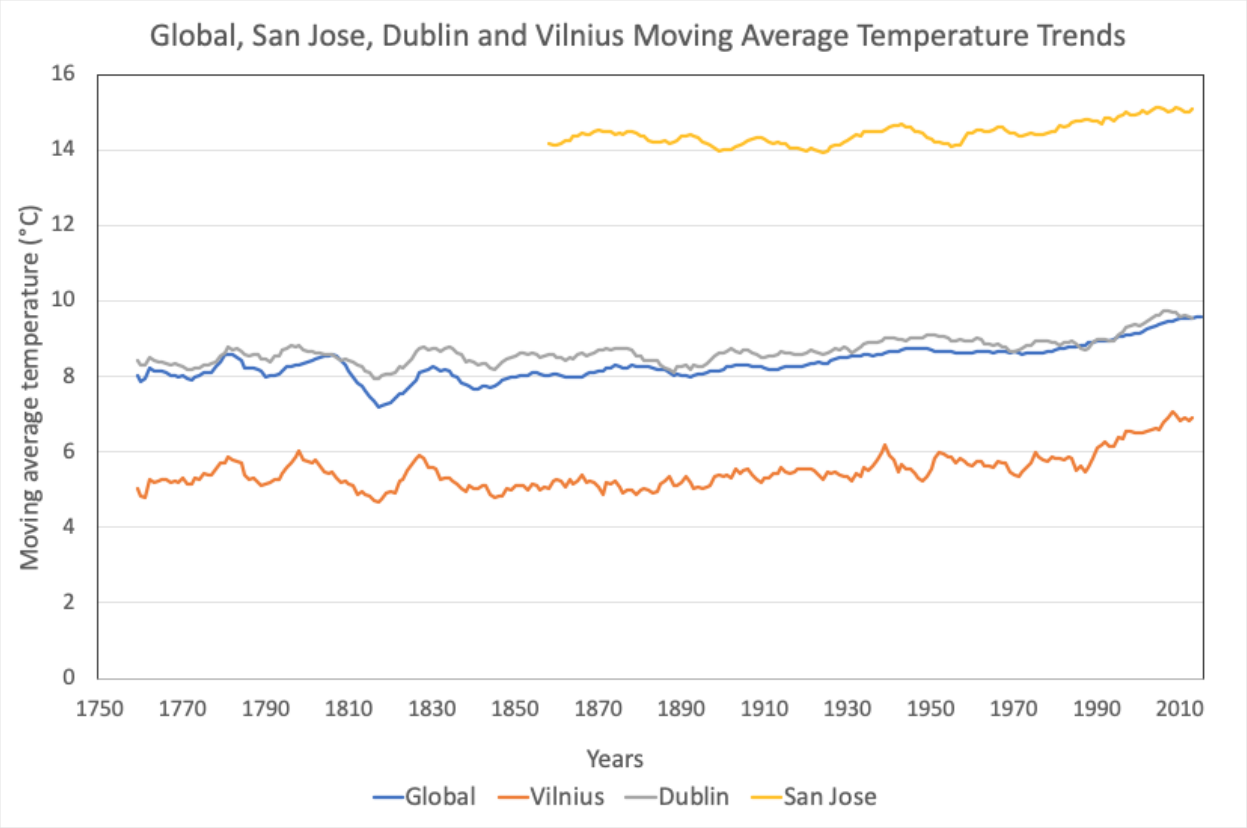
The moving average has been calculated by taking the average of the first ten years of the weather data and applying it to the rest of the years of cities and global data. See below:



	A	B	C
1	Year	Global Average temperature	Global_10-MA_Temperature
2	1750	8.72	
3	1751	7.98	
4	1752	5.78	
5	1753	8.39	
6	1754	8.47	
7	1755	8.36	
8	1756	8.85	
9	1757	9.02	
10	1758	6.74	
11	1759	7.99	8.03

3 Step.

I have created a line chart which compares three cities' temperatures with the global temperatures. See below:



4 Step.

Observations base on the prepared line chart:

- We can see from the line chart that all datasets have different positions on the graph. On the top is San Jose city with the highest average temperature, in the middle Dublin and Global, on the bottom Vilnius with the lowest average temperature.
- We can't compare San Jose average temperature before 1849 as it was not collected, but based on collected information we could assume that average temperature was around 14 degrees Celsius.
- The most significant changes were between 1790 and 1830. The 10-years moving average temperature went down and up sharply on all data sets.
- Every city and global data set showed an increase in temperature over the years and it is a sign of global warming which affected all.