

Udacity

Data Analyst Nanodegree

Project 1: Exploring Weather Trends

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Query used to check whether San Francisco is in the list of cities :

```
SELECT *  
FROM city_list  
WHERE city LIKE 'San%'
```

Query used to extract city level data :

```
SELECT year, avg_temp  
FROM city_data  
WHERE city = 'San Francisco'
```

Query used to extract global data :

```
SELECT year, avg_temp  
FROM global_data  
WHERE year >= 1849 AND year <= 2013
```

-> I made use of google spreadsheets and copied the downloaded csv which I got as a result of running sql queries onto the google spreadsheet

-> For calculating 20 year moving averages:

New columns were created:

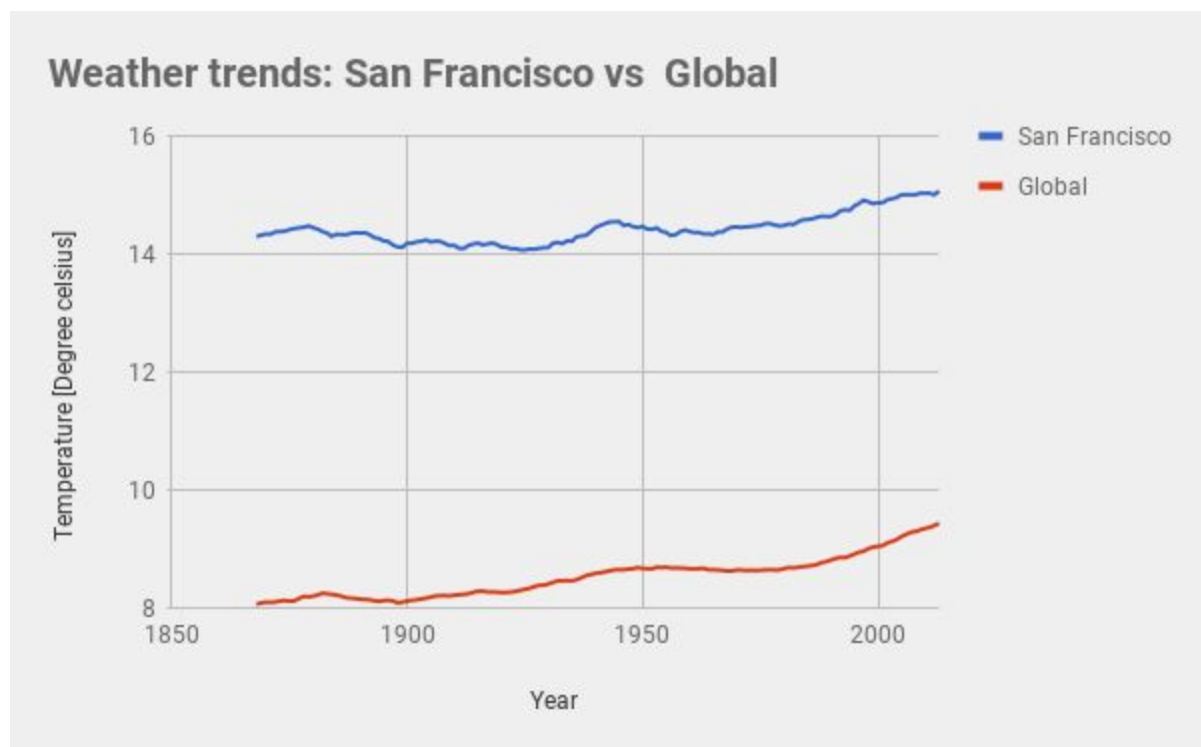
20_year_MA_city [renamed as San Francisco in Line chart] and 20_year_MA_global [renamed as Global in Line chart]

The formula used was: = AVERAGE (B2:B21) and AVERAGE (E2:E21)

And then, I just copied the formula for rest of the data.

Few things that I considered were: I picked a 20 year moving average since the data was spread across centuries so I felt having a 20 year moving average will help me visualize the differences better. Also, I only picked global data starting year 1849 until 2013 since I only had data for those years for the city level data.

Line Chart:



Observations:

1. The average temperature in San Francisco has been between 14-16 degree celsius whereas for global temperature has been in the range 8-10 degree celsius. So, my closest city, San Francisco is hotter as compared to global temperature.
2. As we can observe in the chart, the average temperature in San Francisco never dropped below 14 degree celsius and for average global temperature, it never went above 10 degree celsius. So, the difference has been more or less consistent.
[approx 4-6 degree celsius difference]
3. Until 1900, the temperature changes were almost same for San Francisco as well as global. However, between 1900 and 1950, average temperature in San Francisco fluctuated, came down somewhere in 1930's and then kept rising whereas for global temperature, it kept rising between 1900-1950. Also, post 2000, global temperature was rising at a much faster rate than what was observed in San Francisco.
4. Overall, I think it is safe to say that the world is getting hotter. Between 1850 - 1900, the global average temperature did not rise at a fast rate and also eventually came a bit lower between 1870 - 1900. However, average global temperature has been on the rise since 1900 and rising at even faster rate post 2000.