

Project 1: Explore Weather Trends

1. SQL Queries

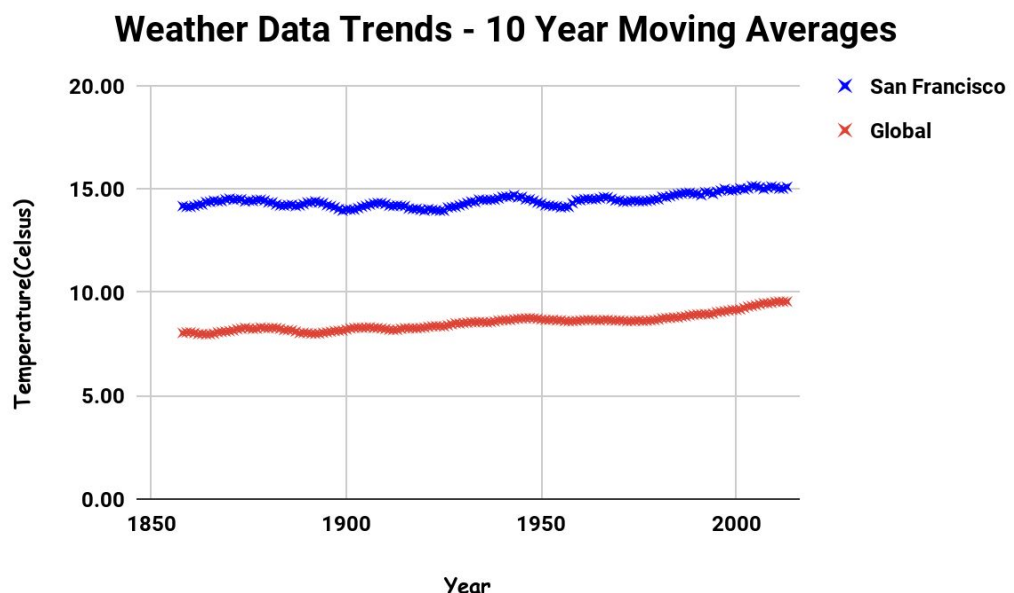
- a. This project requires that we perform SQL Queries, in order to, extract the data that we will be conducting the analysis on.
 - i. Extract city level data and export to CSV:
 1. `SELECT * FROM city_list WHERE city = 'San Francisco';`
 2. `SELECT * FROM city_data WHERE city = 'San Francisco';`
 3. Export to CSV
 - ii. Extract the global data and export to CSV
 1. `Select * FROM global_data;`
 2. Export to CSV

2. Exported Data in Excel

- a. We saved the data as an Excel document and opened them in Google Drive.
- b. Google Drive was chosen because Google Sheets is an excellent way to manipulate data.

3. Line Chart

- a. We will be comparing San Francisco's temperatures with the global temperatures from the years 1849 to 2013. A 10 year moving average was used as the comparison between groups, in order to, make trends more observable.



4. Data Cleaning

- a. There were more temperature recordings for the global temperatures, but we believe that it should only be compared to the years that San Francisco temperatures were also recorded. We argue that it is a sufficient amount of years to use. Since we are only using one city to compare against the world's average temperature, over time, we believe it is safe to only use the years that were given for the project and not use outside data sources.

5. Making Observations

- a. San Francisco is hotter on average than the global average. This observation is also true over time. The maximum temperature that was recorded for San Francisco was 16.23 degrees celsius, and the minimum was 13.22 degrees celsius. The maximum recorded temperature for globally was 9.73 degrees celsius, and the minimum was 7.56 degrees celsius.
- b. From just eyeballing the line graph above, there appears to not be a large visual difference in fluctuation for both cohorts. There has been a slight increase over time for both San Francisco and the world, but only by 1 to 3 degrees.
- c. We believe that the world is getting hotter. Looking solely at the line for global temperatures there is no denying that the line appears to be increasing. There is a bit more fluctuations happening for San Francisco but, in 2013 (the latest year recorded) it reached its all time high of 16.23 degrees celsius.
- d. Since San Francisco does not experience significant seasonal changes in temperatures, we believe it is an excellent city to compare global temperatures to. More moderate temperature cities will show fluctuations due to more extreme temperature changes. Again, it is undeniable that temperatures, as a global whole, are heating up.