Exploring Weather Trends

Tools used:

- SQL to extract queries into CSV files.
- Google Sheets to format data and create visualization
- Microsoft Excel for the line chart to add the ticks and year axis

The focus city is San Jose. I also included two other cities (Los angeles and San Diego) to show the weather trends in the area.

Queries used:

/ start by checking city names to find the closest, filtering by country name and ordering by city name.*/*

```
SELECT *
FROM city_list
WHERE country = 'United States'
ORDER BY city
```

/ pulling the info for San Jose, Los Angeles, San Diego. Filtering by city and country (there is a San Jose in another country) going for both SJ and SF*/*

```
SELECT *
FROM city_data
WHERE city IN ('San Jose', 'Los Angeles', 'San Diego')
AND Country = 'United States'
```

*/*pulled all global data for years between 1849 and 2013*/*

```
SELECT *
FROM global_data
WHERE year BETWEEN '1849' AND '2013'
```

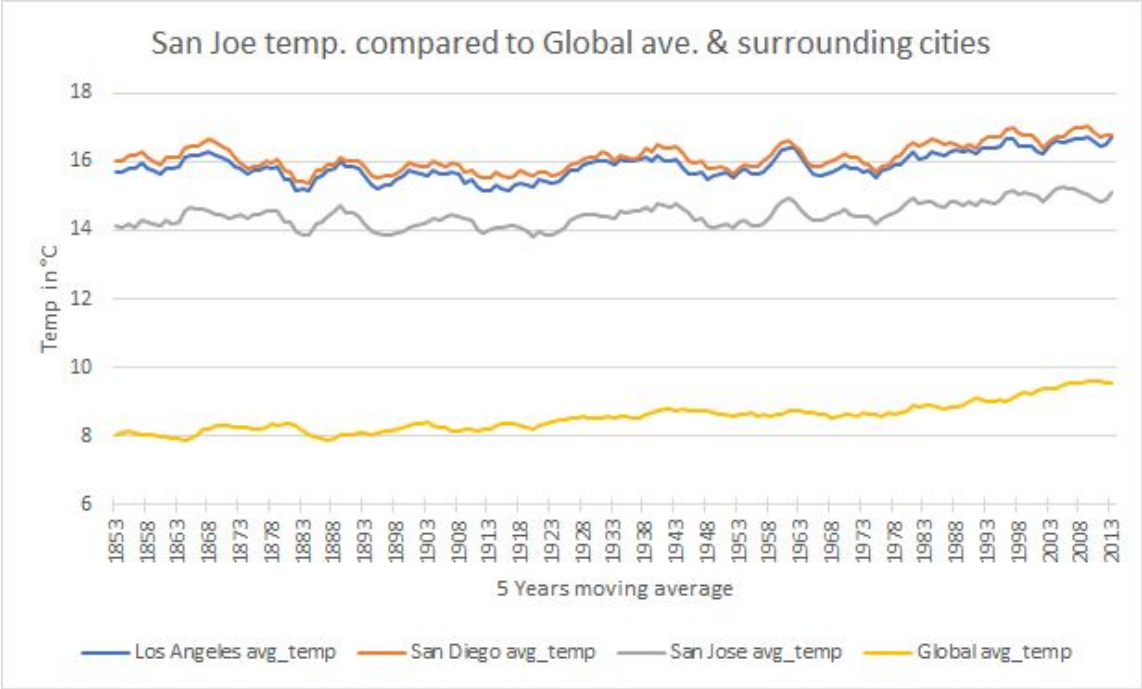
I will be comparing 5 years moving average. To find out:

- How is local temperature is compared to global average
- How is local temperature is compared to the near cities
- How drastic was change in temperature over the last hundred or so years
- How strong is the relation between local and global temperature
- What is the general trendline and prediction of temperature change

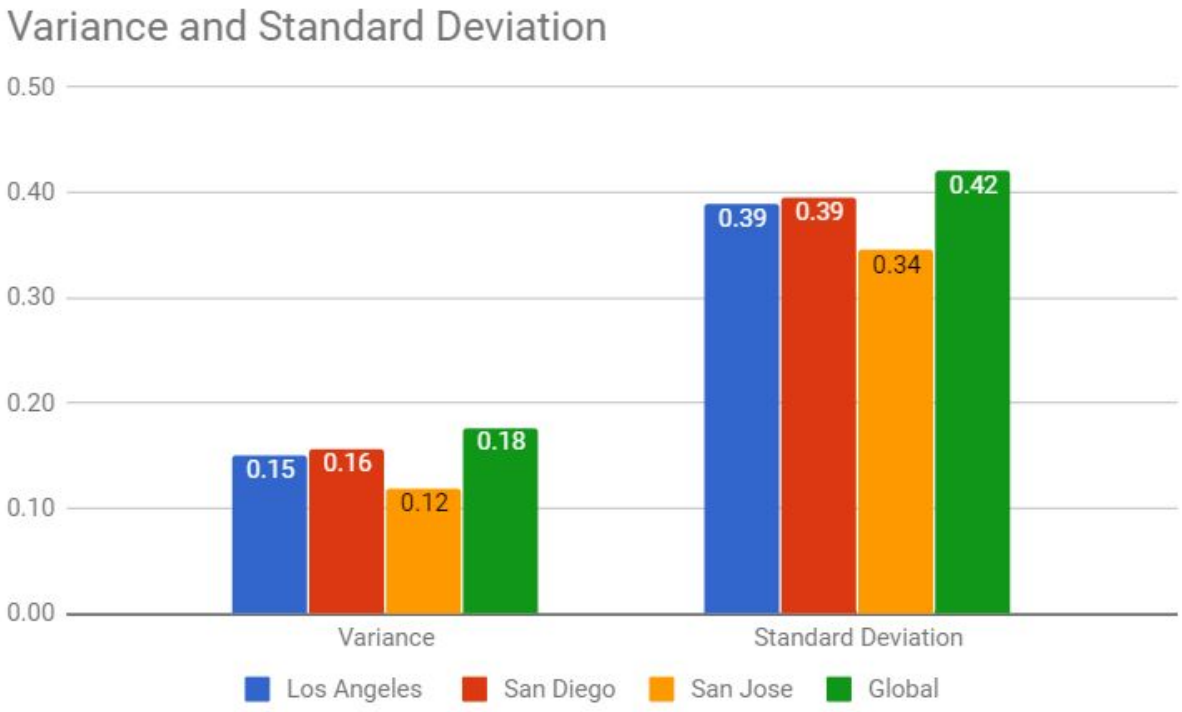
Report:

- Notice in the below chart that the temperature in Bar area and south california cities is around 180% above the average global temperature.

- San Jose shows a cooler average temperature than cities in southern California, but it's still 170% above the average global temperature.



- As expected, the Global average temperature shows more spread and higher variance in data. (Los Angeles is included, it's just doesn't show due to the closeness in data to san Diego)
- While San Jose is the least variant compared to Southern California cities.



Sula Al Hatem 11/21/2017

- With 0.54 correlation coefficient, there is a strong positive relationship between the global and local average temperature.

- The trendline is showing a consistent increase in Global and local temperature in the last hundred and fifty years. So far, it looks like the world is getting hotter every year and it will still do.