Project 1 – Explore Weather Trends
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- What tools did you use for each step? (Python, SQL, Excel, etc)
  SQL query used to extract data

  To get global data:
  SELECT * FROM global_data;

  To see Cities in United States is in the city_list:
  select * from city_list
  where country = 'United States';

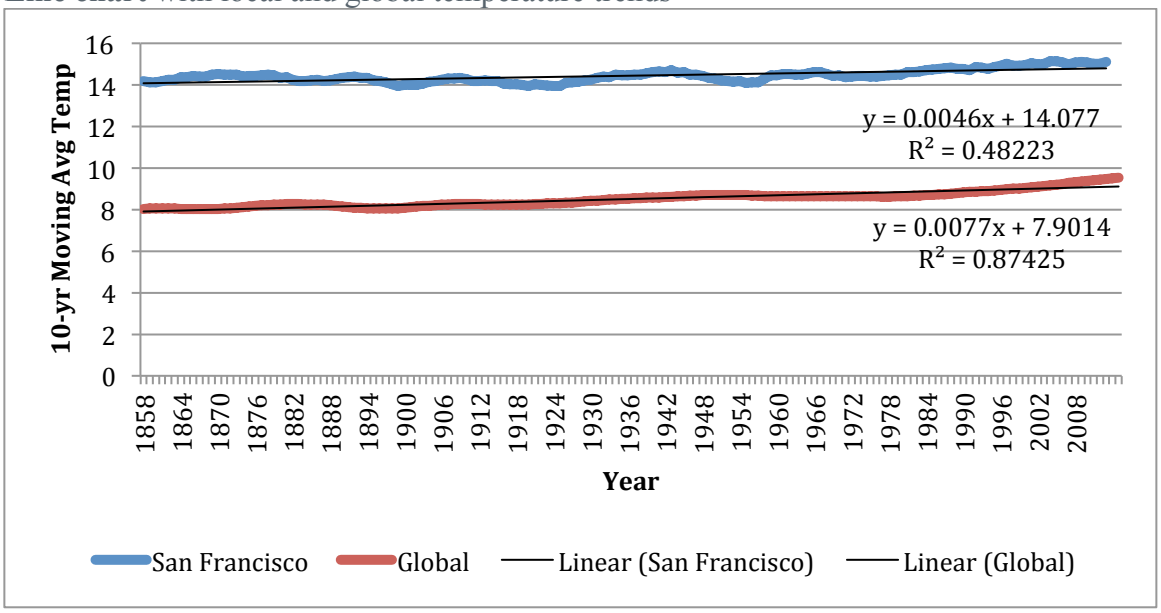
  To get data of San Francisco:
  select * from city_data
  where city = 'San Francisco' and county = 'United States';

  I used excel to graph the Stacked Line Chart and calculate moving averages.

- How did you calculate the moving average?
  I calculated the moving average using the AVERAGE() function in excel for the first 10 years and iterated for the following years.

- What were your key considerations when deciding how to visualize the trends?
  I decided on a line chart because I wanted to show changes over time and show a relationship between two variables. It was the cleanest representation of change in temperature at two different locations.

- **Line chart** with local and global temperature trends



- At least **four observations** about the similarities and/or differences in the trends
    1. San Francisco's temperature has more variation in its data. The R-value of SF is 0.48 and the R-value of global temp is 0.87. R-value represents how strongly the trendline is correlated to the actual data set. SF had a lower R-value meaning there is more variation in the data (i.e less linear). Global temp had a high R-value of 0.87 meaning the data is close to linear.
    2. Both of these data trends are positive, meaning the temperature of San Francisco and the global temperature has increased from 1858 to 2013. This is proof of global warming.
    3. The average change in global temperature over the years is larger than San Francisco temperature. You can tell by the slope of the trendline equation that the change is greater in the global temperature data than it is in the San Francisco temp data. This indicates that the rate of global warming is more severe on a global level than at a locational level.
    4. The variation of both global and San Francisco's avg temp is most likely due to the natural climate cycle, such as El Nino and El nina years. However, the Earth is getting hotter overall.