Explore Weather Trends Project 1: Los Angeles
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With the use of python and pandas module, I was able to plot the average temperature and rolling averages of both Los Angeles USA and the global data from 1849 - 2013. Below are snapshots of the code I wrote to plot the data. The reason I chose 1849 is because LA was founded in 1849 and the global data began in 1750. Thus, having a graph where the plot lines began on the same date yielded a graph that focused on LA temperature relative to global temperature.

Steps taken to generate the graph:
1. First I had to write code with the appropriate method to read the CSV files in python.
2. Then I reformatted the graph by making the year the X-axis and temperature as the y-axis.
3. After I did that I had to make a plotted graph between the years 1849 and 2013.
4. I combined all three CSV files and assigned that to a variable.
5. Lastly, I made two graphs with different arguments in the .rolling() method where one can make observations.

Observations:

1. The graph shows that both LA and global temperatures were mostly stable in mid 1800's.
2. Around 1880 and 1960, LA experienced jumps in its average temperature.
3. Around the same period in 1880, global average temperatures dropped briefly.
4. Looking at the beginning of the 20th century vs 21st century, there is a noticeable increase in average temperature in both LA and globally.

Resources Used:
Consulted a friend with years of experience as a data engineer with adding labels to X and Y axis.

```
In [1]: import pandas as pd

In [94]: df1 = pd.read_csv("results city_data.csv", index_col = 'year')
         df2 = pd.read_csv("results city_list.csv")
         df3 = pd.read_csv("results global_data.csv", index_col = 'year')

In [109]: df3_rename = df3.rename(columns = {'avg_temp':'avg_global_temp'})
          df1_rename = df1.rename(columns = {'avg_temp':'avg_LA_temp'})

In [116]: df_1849_global = df3_rename.loc['1849':'2013']

In [117]: df_x = pd.concat([df1_rename,df2,df_1849_global])
          df_x.plot()

In [141]: figure_1 = df_x.rolling(10).mean().plot(figsize = (10,5), xlabel='Year', ylabel='Temp C')
          figure_1
Out[141]: <AxesSubplot:xlabel='Year', ylabel='Temp C'>
```
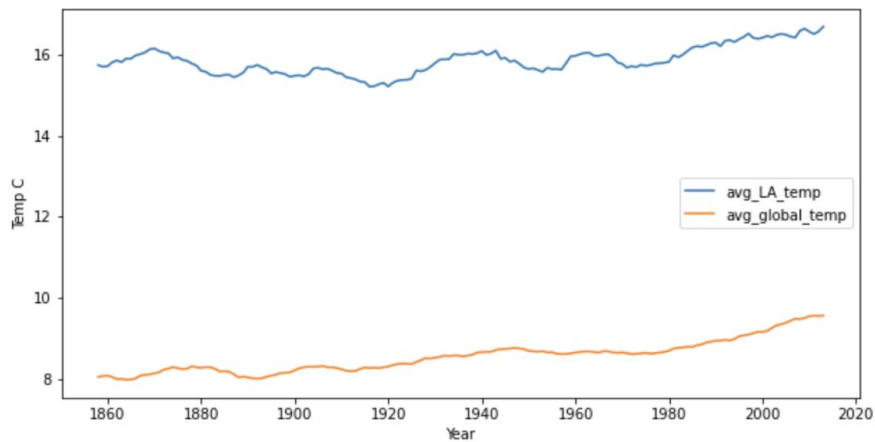


```
: figure_2 = df_x.rolling(5).mean().plot.line(figsize=(10,5), xlabel='Year', ylabel='Temp C', color=['purple','blue'])
  figure_2
: <AxesSubplot:xlabel='Year', ylabel='Temp C'>
```