

EXPLORE WEATHER TRENDS

Data Analyst Project by Janely Padillo

OUTLINE:

1. Using the in-house SQL workspace in Lesson 3, I wrote the following SQL queries and downloaded the CSV for the resulting queries:

- a. To access temperatures for Los Angeles, California:

```
1  SELECT * FROM city_list
2  WHERE city='Los Angeles'
3  AND country='United States';
```

- b. To access temperatures globally:

```
1  SELECT * FROM global_data;
```

2. I downloaded the CSV files and uploaded them into my Jupyter Notebooks.
3. I created a new project file called Weather Dataset and imported PANDAS, Numpy and Matplotlib.

```
import numpy as np
import pandas as pd
from pandas import DataFrame, read_csv

import matplotlib.pyplot as plt
%matplotlib inline
```

4. I passed the Los Angeles CSV file into a PANDAS DataFrame and created a new column containing my moving averages.

```
#Passing Los Angeles temperature csv file into a DataFrame
file=r'LA.csv'
LA = pd.read_csv(file)

#Adding the moving averages for Los Angeles Temperatures
LA['moving_temp'] = LA.avg_temp.rolling(window=10).mean()

LA
```

5. I created a line chart for the moving averages of LA temperatures.

```
#Creating a line chart for LA Temperatures in moving avg
plt.plot(LA.year,LA.moving_temp)
plt.title('Los Angeles Temperatures Moving Averages')
plt.ylabel('Temperatures')
plt.xlabel('Year')
plt.show()
```

****Attribution:** [How to Plot Charts in Python with Matplotlib by Shaumik Daityari](#)**

6. I created a line chart for the moving averages of global temperatures.

```
#Creating a line chart of the global temperatures dataframe
plt.plot(globaltemp.year,globaltemp.moving_temp)
plt.title('Global Temperatures Moving Averages')
plt.ylabel('Temperatures')
plt.xlabel('Year')
plt.show()
```

****Attribution:** [Python and R Tips To Learn Data Science](#)**

7. I created a line chart combining the data points of both LA & global temperatures' moving averages into a single chart.

```
#Creating a line chart using LA & global dataFrames in the same plot

fig, ax = plt.subplots()
ax2 = ax.twinx()

LA.plot(x='year', y='moving_temp', ax=ax, color='red')
globaltemp.plot(x='year', y='moving_temp', ax=ax2, ls='--')
ax2.legend().set_visible(False)
ax.legend().set_visible(False)
ax2.set_ylabel('Global Temperatures',color='blue',fontsize=14)
ax.set_ylabel('LA Temperatures',color='red', fontsize=14)
```

****Attribution:** [Python and R Tips To Learn Data Science](#)**

LINE CHARTS:

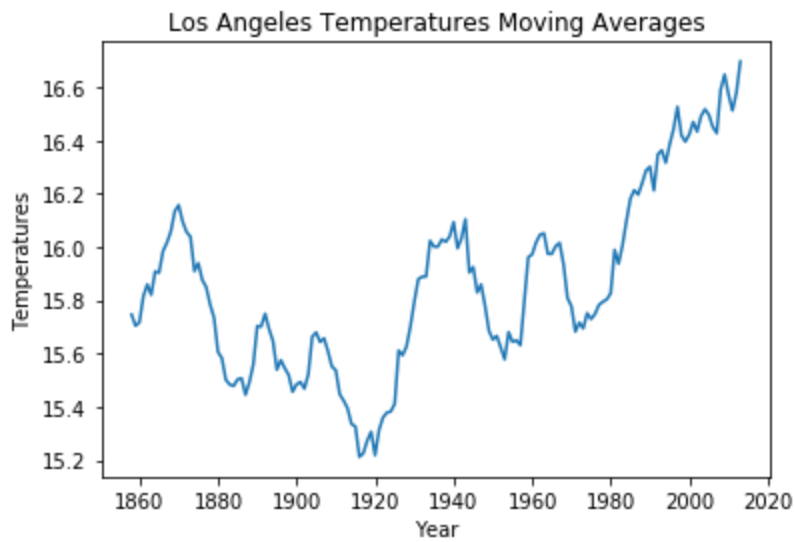


Figure 1.1 - LA Temperatures Moving Averages

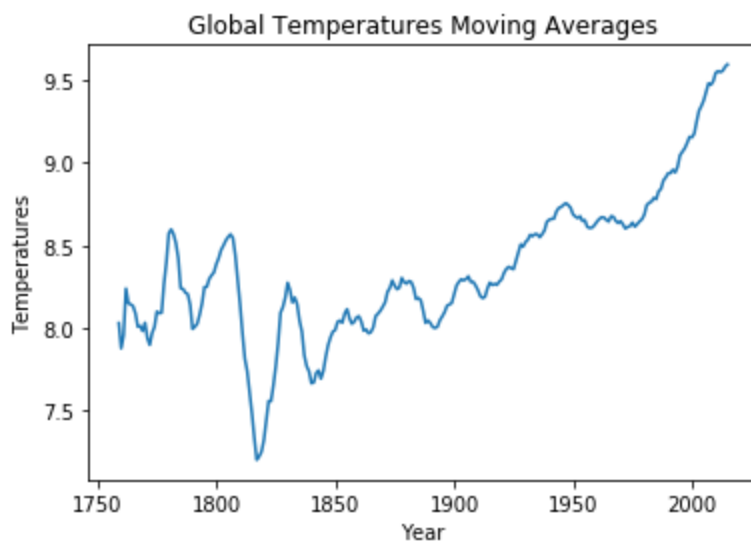


Figure 1.2 - Global Temperatures Moving Averages

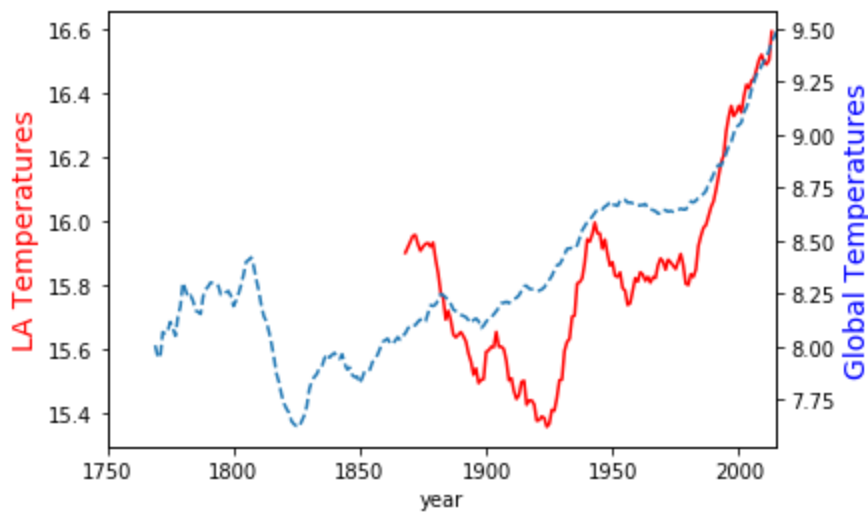


Figure 1.3 - LA & Global Temperatures Moving Averages

OBSERVATIONS:

- 1.) Whereas global temperatures were tracked and recorded in as early as 1750, records of Los Angeles temperatures did not begin until 1849.
- 2.) Both global and Los Angeles temperatures increased over time.
- 3.) Whereas there was a significant drop of temperatures in Los Angeles between the period of 1900-1950, the temperatures globally remained more or less the same, albeit still trending upwards.
- 4.) Whereas the temperatures in Los Angeles dropped sharply in the 1870s, there was a subtle uptick in temperatures globally.