Explore Weather Trends

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DAND - C.4

About
Explore Weather Trends

In this project, I will analyze local and global temperature data and compare the temperature trends In Syria to overall global temperature trends.
I will use SQL to download the data in CSV format and python to exploring, analyzing, and visualizing the data.

Extract Data (SQL)

I was used SQL in both queries
1- Extract the city level data.

```sql
-- I am From Jordan and Syria(Damascus) is the nearest country to my location
SELECT * FROM city_data WHERE country='Syria' ;

```

2- Extract the global data.

```sql
SELECT * FROM global_data
WHERE year BETWEEN 1808 and 2013

```

I used the keyword (between) to standardization the data with data in Damascus.

Moving Average

in this step, I have used a 5-Year moving average on avg-temp in the two CSV files using python (***rolling(5).mean()***).

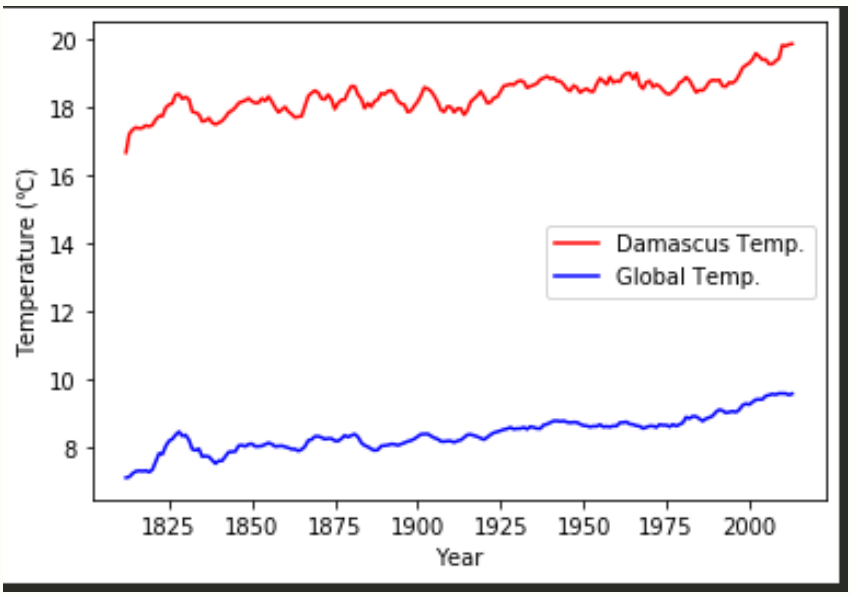
```
cTempMAVG = cityData["avg_temp"].rolling(5).mean()
gTempMAVG = globalData["avg_temp"].rolling(5).mean()
```

Ploting

using matplot lib library

import matplotlib.pyplot as plt

```
plt.plot(cityData["year"],cTempMAVG,c="r",label="Damascus Temp.")
plt.plot(cityData["year"],gTempMAVG,c="b",label="Global Temp.")
plt.xlabel("Year")
plt.ylabel("Temperature (℃)")
plt.legend()
plt.show()
```



Observations

1. The world goes to be hotter over time due to global warming .
2. The world become hotter with about 3-4 °C.
3. the was wiggle in Damascus in temperature more than than the wiggle on global.
4. the trend in the last 100 years is the world becomes hotter over time and this trend is continuous .

View Full Code

```
import pandas as pd
import matplotlib.pyplot as plt

cityData = pd.read_csv("cityLevelData.csv")
globalData = pd.read_csv("globalData.csv")

#To Explore Data
print( cityData.head() )
print( globalData.head() )

cTempMAVG = cityData["avg_temp"].rolling(5).mean()
gTempMAVG = globalData["avg_temp"].rolling(5).mean()

plt.plot(cityData["year"],cTempMAVG,c="r",label="Damascus Temp.")
plt.plot(cityData["year"],gTempMAVG,c="b",label="Global Temp.")
plt.xlabel("Year")
plt.ylabel("Temperature (°C)")
plt.legend()
plt.show()
```