UDACITY Data Analysis Nanodegree Project 1

Exploring Weather Trends

Outline of steps taken to prepare the data to be visualized in the chart:

Step 1:

SQL is used to access the data. Following query is being used:

```
SELECT
a.year,
a.city,
a.country,
a.Local,
b.Local as "Global"
FROM city_data a
INNER JOIN global_data b
on a.year = b.year
WHERE a.city = 'Your city'
AND a.Local IS NOT NULL
```

With the help of this SQL query we will get the csv file having columns as year, city , country , Local and Global from given city_data and global_data .

Step 2:

Excel is used for analysing the data and finding moving average.

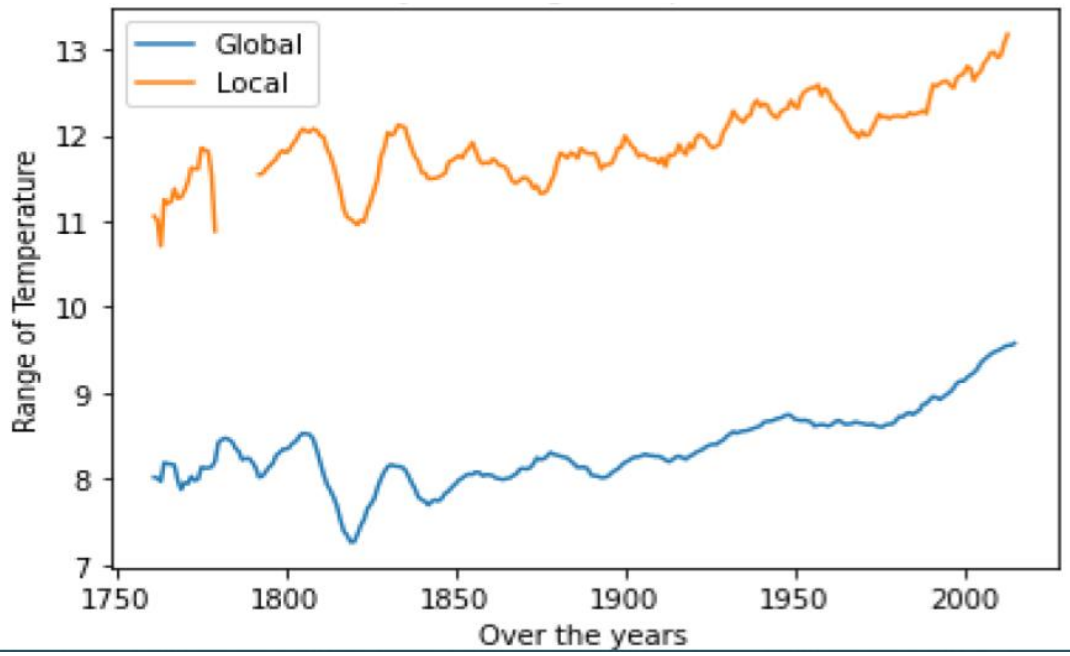
Step 3:

Python is used for visualising the data by making the line plot using matplotlib library.

```
import pandas as pd
import os os.chdir(r"C:\Users\Aakash\Downloads")
data = pd.read_csv("data.csv")
import matplotlib.pyplot as plt
import seaborn as sns
```

```
from matplotlib import rcParams
%matplotlib inline
rcParams['figure.figsize'] = 20,5
sns.set_style('whitegrid')
df = data[['Global','Local']]
df.plot()
```

Output:



Ans 2. We will calculate moving average by using the following :

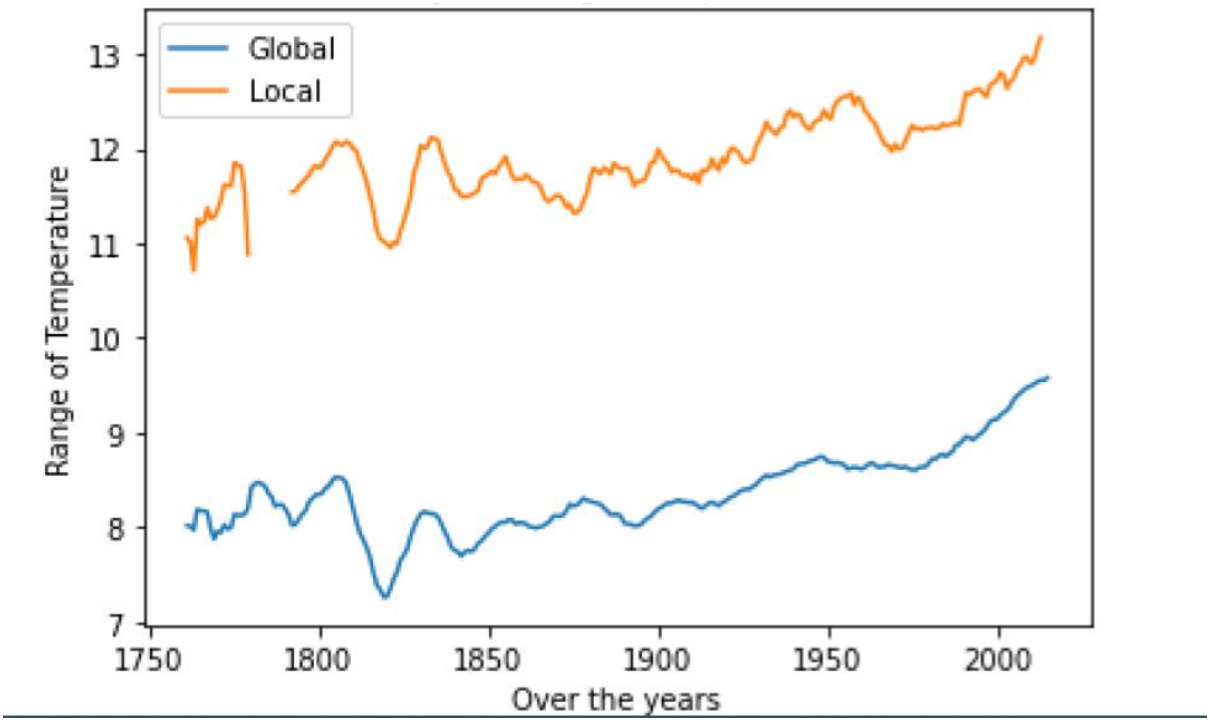
=AVERAGE(start_point:end_point)

Ans 3 . Key considerations I had when deciding how to visualize the trends were:

1. To make sure that year from city_data is equal to year from global_data .

2. To make sure there is no null or irrerelevant value in the data set.

Line chart with local and global temperature trends :



Four observations about the similarities and/or differences in the trends:

1. There was a steep decrease in Abu Dhabi after few years whereas there was no steep decrease on global average temperature.

2. The average temperature of Abu Dhabi was in range of 22 degree Celsius to 28 degree Celsius respectively.

3. The average temperature globally was in range of 6 degree Celsius to 9 degree Celsius respectively.

4. We can a see variation in the temperature in Abu Dhabi whereas it was almost constant globally.