### Importing the libraries

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

### Reading the data sets

```
global_temperature = pd.read_csv('global_data.csv')
city_temperature = pd.read_csv('local.csv')
```

### Viewing the top 5 rows of each data set

```
global_temperature.head()
```

| | year | avg_temp |
|---|---|---|
| **0** | 1750 | 8.72 |
| **1** | 1751 | 7.98 |
| **2** | 1752 | 5.78 |
| **3** | 1753 | 8.39 |
| **4** | 1754 | 8.47 |

```
city_temperature.head()
```

| | year | city | country | avg_temp |
|---|---|---|---|---|
| **0** | 1743 | Washington | United States | 5.34 |
| **1** | 1744 | Washington | United States | 13.88 |
| **2** | 1745 | Washington | United States | 4.00 |
| **3** | 1746 | Washington | United States | NaN |
| **4** | 1747 | Washington | United States | NaN |

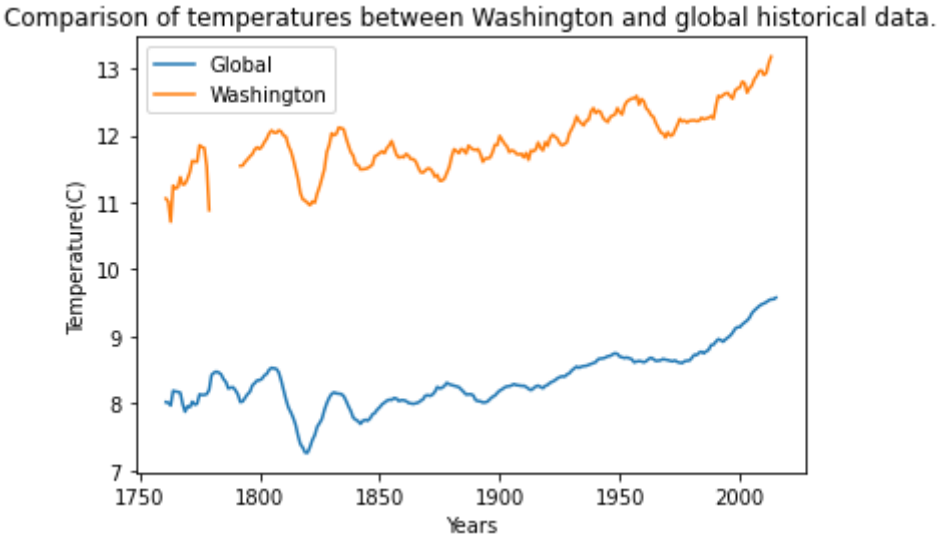
### Finding out the moving averages for Global Data and Local Data

1. rolling() takes window size or subset 12 means 12 years of individual avg. temperature
2. mean() calculates mean of temperature over those 12 years.
3. This process goes on until the end.

```
global_moving_average = global_temperature['avg_temp'].rolling(12).mean()
local_moving_average = city_temperature['avg_temp'].rolling(12).mean()
```

### Plotting Graphs

```
plt.plot(global_temperature['year'],global_moving_average,label='Global')
plt.plot(city_temperature['year'],local_moving_average,label='Washington')
plt.legend()
plt.xlabel("Years")
plt.ylabel("Temperature(C)")
plt.title("Comparison of temperatures between Washington and global historical data.")
plt.show()
```




Inference:

1. Over here we have plotted the graph of moving average and tried to draw a comparision between the global and local data values and tried to understand the difference.
2. The local temperatures are represented by the orange line
3. The global temperature is represented by blue line
4. The local teperature increases continuously as time increases only decreasing for very few years in between
5. The global temperature increases continously with time
6. Global teperature decreased only significantly in the period 1800-1850
7. The local temperature is very high as compared to the global temperature.
8. Currently, local temperature is much higher than the current global temperature

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