# WEATHER TRENDS ANALYSIS

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For this sample set, I have taken information for my home city (Pune, India) and compared it to the global temperature average. In addition to my home city of Pune, I have also taken other popular cities such as London, Miami, Paris, and Singapore.

I have used a moving average of 10 years as per my analysis; this has ironed out any dissimilarity in the data which may have existed, I have also tried with a moving average of 5 years at first but feel that former produces a more consistent result set.

Line Graph #1: Pune v/s World Average (Both 10 Years Moving Average)
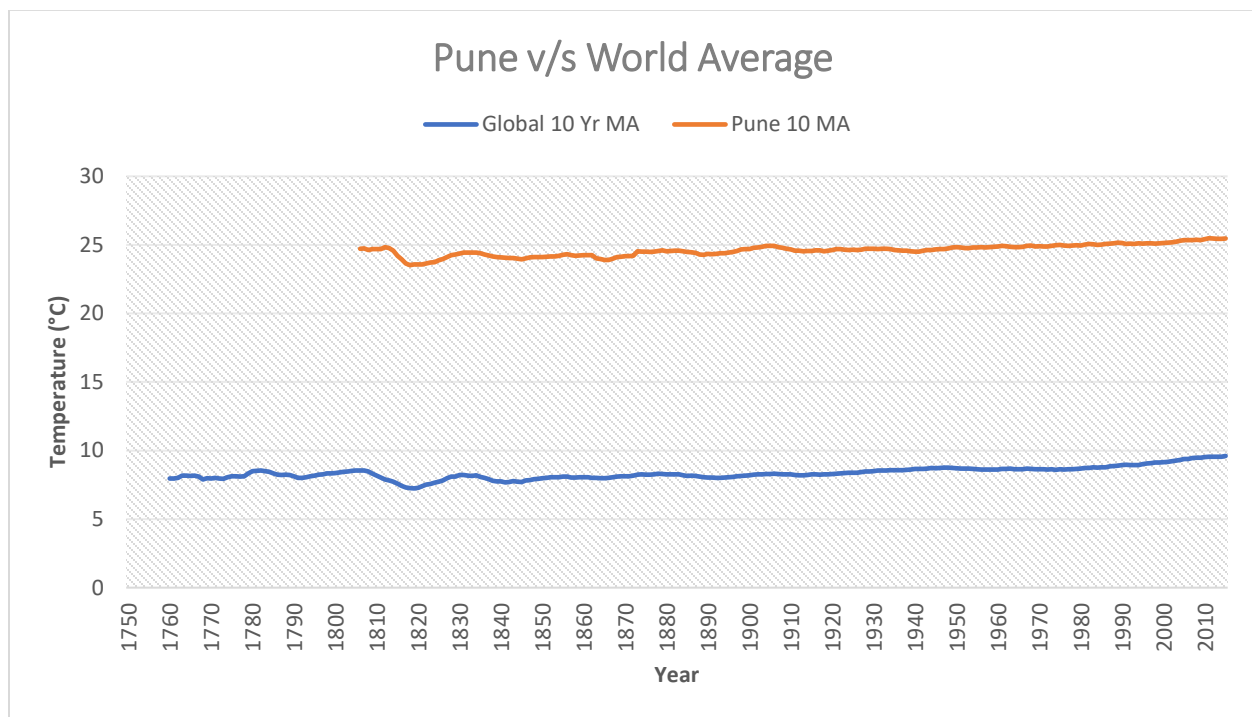
The Following observations can be made from the data set

1. The global trends and Pune city trends show that temperature has been steadily on the rise. This is most noticeable during the years after 1980.
2. The city Pune is on average much hotter than the global average, approximately 15 °C, indicating this data set was taken using mostly non-tropical cities.
3. Pune city follows the global trend of temperature which is most noticeable when the temperature was colder globally between the years 1810-1820.
4. Global temperatures have been although mostly been stable without many erratic changes over the years except the steady rise as mentioned in point 1.

Line Graph #2: Comparing Temperatures of popular cities around the world.
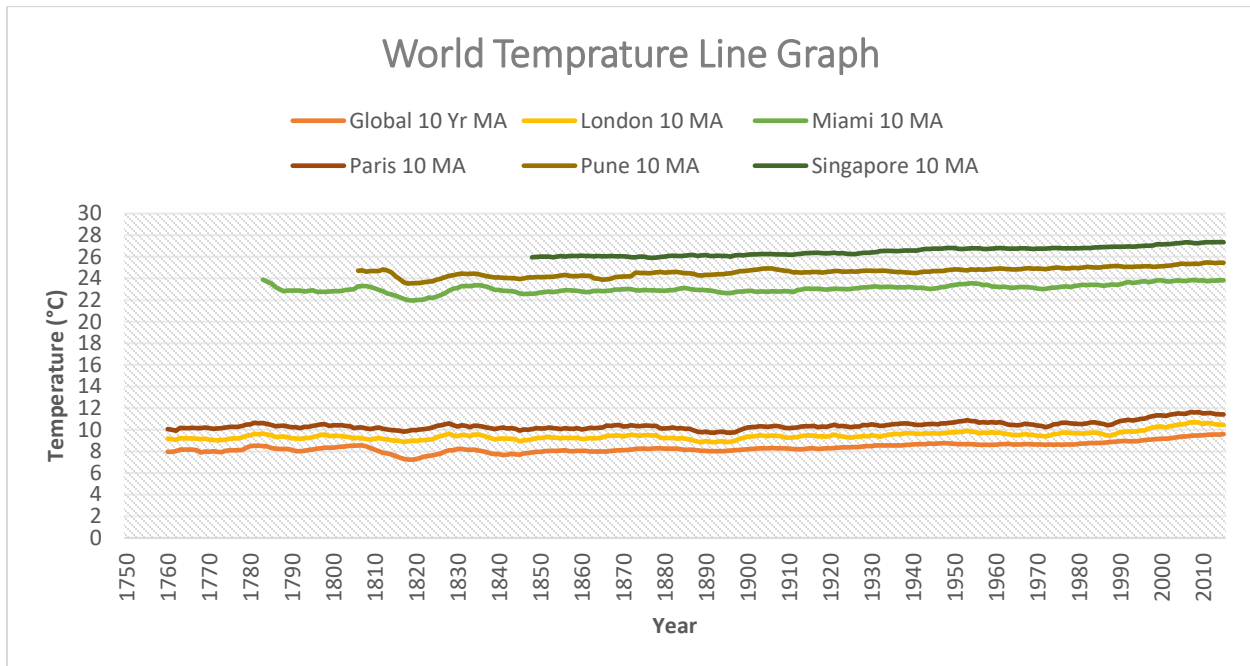
I have also taken the liberty to compare data from a few other cities so the above analysis does not place in a vacuum. Looking at the above line chart the following observations can be made.

1. The global average temperature is much lower than all cities in this graph, indicating that the most of the cities in the world are cooler than the popular cities mentioned above. A correlation can be made between the temperature changes along the proceeding years, wherein, the popularity of a city and the number of inhabitants that occupy these cities could make a difference.
2. Miami, Singapore, Pune are all tropical cities and hence the temperature is much higher than other cities in the list. Also, Miami and Singapore have beaches which help them stay warm consistently.
3. From the data, it can be seen that London and Paris are indeed old cities as their data scales back the longest from the 1750's onwards and Singapore has, in recent times, become a popular city with its data starting from 1850.
4. A global rise of temperature can be observed within the range of the dataset, showing that the world and most of the cities are indeed getting hotter.

Queries Used for Extracting Data from the database –
After entering said queries, the data was downloaded via CSV and compiled together in an Excel sheet and the above graphs were generated.

Query to get London Data:

```
SELECT * from city_data
WHERE city ='London'
AND
country='United Kingdom';
```

Query to get Pune Data:

```
SELECT * from city_data
WHERE city ='Pune'
AND
country='India';
```

Query to get Singapore Data:

```
SELECT *
FROM city_data
WHERE city = 'Singapore';
```

Query to get Miami Data:

```
SELECT *
from city_list
WHERE city = 'Miami';
```

Query to get Paris Data:

```
SELECT *
FROM city_data
WHERE city = 'Paris';
```

Query to get Global Data:

```
SELECT *
FROM global_data;
```