

## Weather Trend Data Analysis Report

**Purpose:** To create a visualization plotting the global temperature trends and the temperature trends in the closest city that I stay in and make inferences.

**Procedure:** Following steps were taken to prepare the data and plot the line chart:

1. I extracted the data from the database using the following SQL queries:

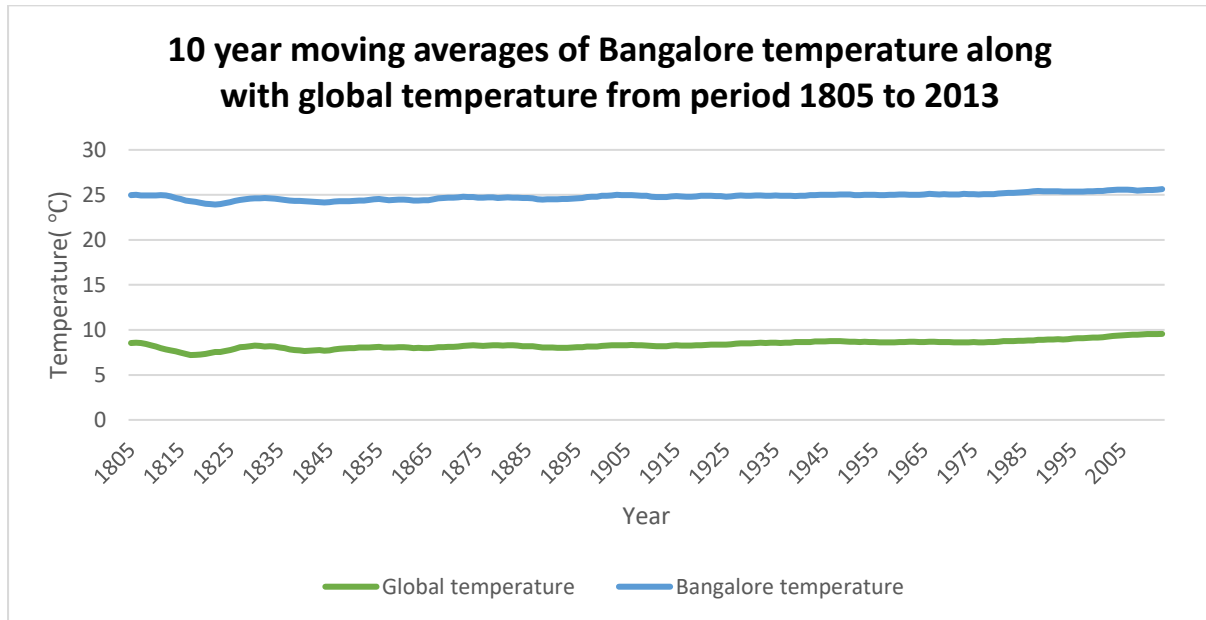
```
select distinct * from city_list where country='India'  
  
select * from city_data where city='Bangalore'  
  
select * from global_data
```

2. Used MS-Excel to open the city level data. In the city level dataset, certain years had missing data, therefore used the mean of the city temperature data to fill the missing data. The mean of the city temperature data was: 24.85.
3. Filled the empty cells of the excel with a mean value of 24.85 and in a new column in the same sheet, calculated the 10 years moving average.
4. For calculating the 10 years moving average, I started for the 10<sup>th</sup> year in the data and calculated 10 years MA using =AVERAGE (D2:D11)

year	City	Country	avg_temp	10 years moving average
1796	Bangalore	India	24.49	
1797	Bangalore	India	25.18	
1798	Bangalore	India	24.65	
1799	Bangalore	India	24.81	
1800	Bangalore	India	24.85	
1801	Bangalore	India	24.49	
1802	Bangalore	India	25.44	
1803	Bangalore	India	25.22	
1804	Bangalore	India	25.67	
1805	Bangalore	India	25.01	24.981

5. And to populate the rest of the years 10 years MA, dragged down the formula down the cells.
6. Copied the column of the city temperature 10 years MA and pasted in the sheet containing the global temperature dataset in a new column starting from the row having year 1805.

7. For the global temperature dataset, repeated the steps 4 & 5 to fill the column with global temperature 10 years MA.
8. In the same excel sheet, selected both the columns containing the global level and the city level 10 years moving average and plotted the line chart. Attached is the visualization of the weather trends.



**Observations:** As a result of the line chart, following observations were made:

1. The overall temperature over the years for Bangalore city has been more than the global temperature.
2. The temperature for Bangalore city over the years has been consistent whereas globally, the temperature has increased.
3. The lowest global temperature is observed in the period 1815-1825.
4. Temperature for Bangalore city dropped to lowest in the period 1820-1825.