Title: EXPLORE WEATHER TREND - Bangalore

Objective: To compare the temperature trends where I live to overall global temperature trends

Outline/Steps involved:

The project is a comparison between temperature trends of the place where I live and overall global temperature trends to draw some overall conclusions.

The project involved data from the Udacity data sources. The data consisted of average global and local city temperatures over the period from 1750-2015.

The tools used for the project work were SQL, Google Sheets.

- SQL was used to extract the data from the database
- Google sheets was used to view the extracted data in csv and to visualise the data.

SQL Queries:

For global average data:

```
SELECT *
FROM global_data;
```

For City average data:

```
SELECT  year, city, avg_temp
FROM city_data
WHERE city='Bangalore';
```

Google Sheets:

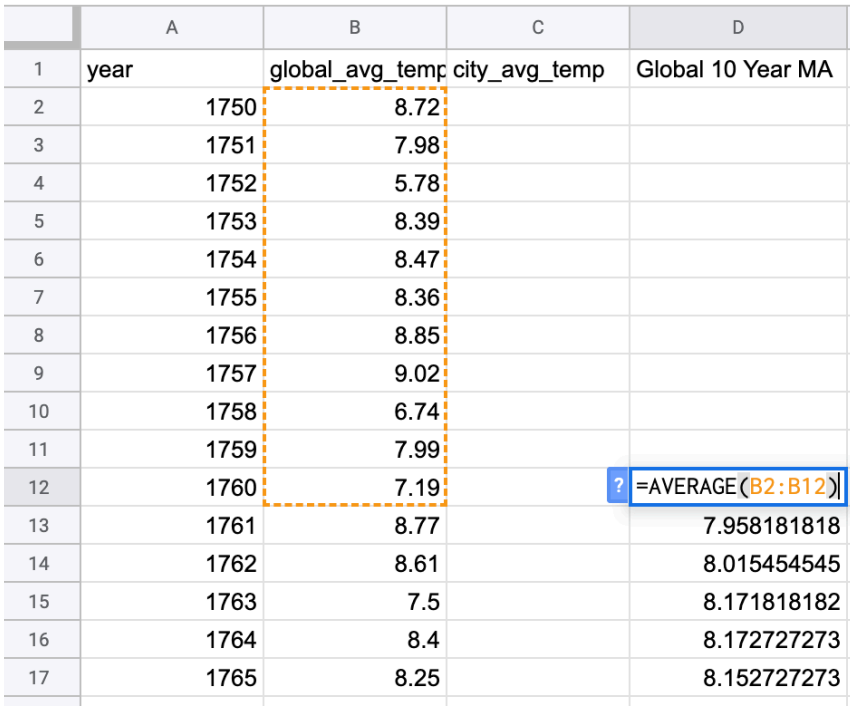
1. Copy the data from the downloaded global average data and the city average data onto a single sheet.

2. Calculation of Moving average.
   Moving average is calculated on a particular range of data. The range selected by me is 10 years. Hence is the wording 10 year MA (moving average).

The MA is calculated for the average temperature values of global and city data.

Moving Average is calculated as shown below:

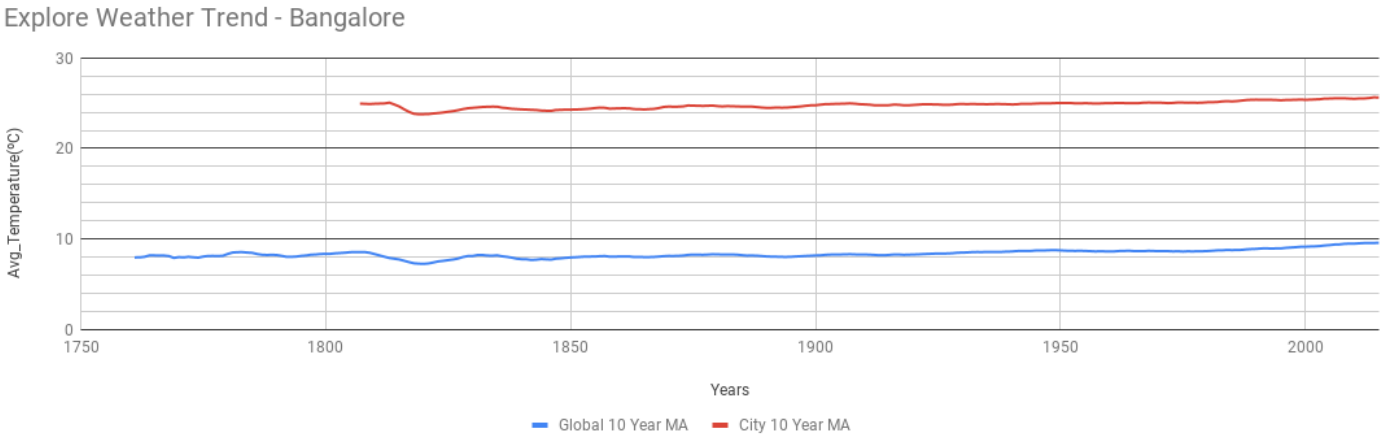
1. Click on a cell where the MA is to be calculated.
2. Type the formula "=AVERAGE(START CELL : END CELL)"
   - START CELL : END CELL - Range for which the MA should be calculated
3. Drag the cell with formula upto the cell MA should be calculated.
4. The formula will change dynamically as you drag the pointer. The cells will be auto populated with the MA for the corresponding cells.



	A	B	C	D
1	year	global_avg_temp	city_avg_temp	Global 10 Year MA
2	1750	8.72		
3	1751	7.98		
4	1752	5.78		
5	1753	8.39		
6	1754	8.47		
7	1755	8.36		
8	1756	8.85		
9	1757	9.02		
10	1758	6.74		
11	1759	7.99		
12	1760	7.19		=AVERAGE(B2:B12)
13	1761	8.77		7.958181818
14	1762	8.61		8.015454545
15	1763	7.5		8.171818182
16	1764	8.4		8.172727273
17	1765	8.25		8.152727273

Once the MA is calculated for the entire range, the data is ready to be plotted. The plot was generated with the MA values for global and city values with different colour codes.

Below is the visualisation of the data:



Conclusion:

Below are the observations that can be drawn from the visual depiction.

5. The overall trend shows that the global average has been on the rise for the past 50 years.
6. The city temperature has been on the rise for the past 30 years.
7. My city is way hotter when compared to the global average temperature. The difference has been consistent over time.
8. The change in the city temperate is more noticeable when compared to the global temperature. Even though global temperature was pretty stable till 1950, the city temperature has continued to rise after 1850.
9. This shows that the global average temperature has small impact on the city temperature. City temperature has been growing irrespective of the global