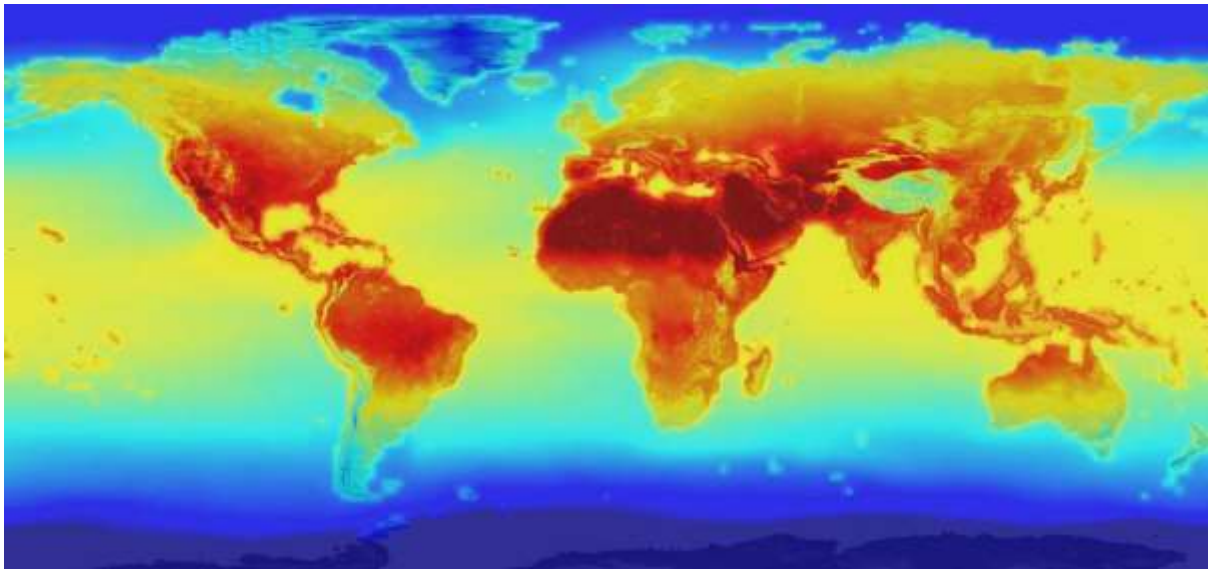
Exploring Weather Trends



Submitted by :-

MONIKA DUBEY

Steps Taken->

- ***Extract data*** – I wrote SQL queries to extract data from data source.

  In following query, I extracted city data for Bangalore city.

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

  In following query, I extracted global data

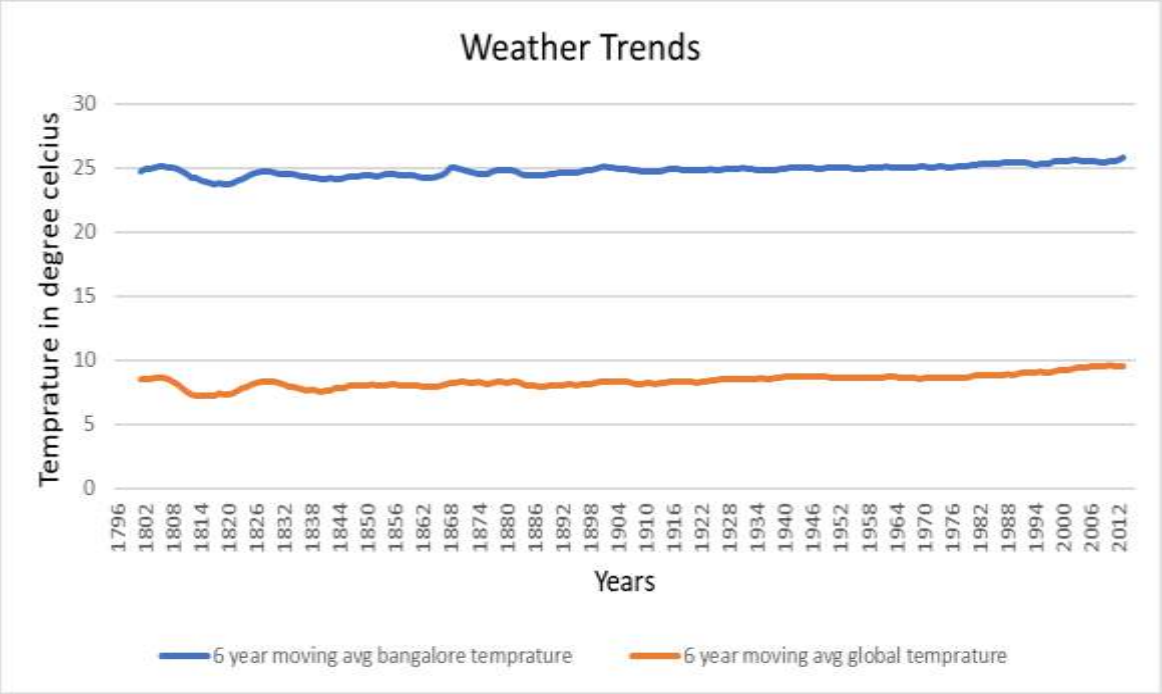
  ```
  SELECT *
  FROM global_data;
  ```

- ***Open csv file*** – After extracting data I opened csv files in Ms-excel for further analysis.

- ***Create a line chart*** – I created line chart that compares the global moving average temperature to Bangalore city moving average temperature.

  I used 6 years moving average to smooth out the line chart. For finding moving average I used ***AVERAGE*** function (for e.g. =AVERAGE (C2:C7)).

- ***Observations***-



1st insight – Overall 6 year moving average temperature of global is in range from 7.21 to 9.6 whereas the overall moving average temperature of Bangalore varies from 23.73 to 25.8.

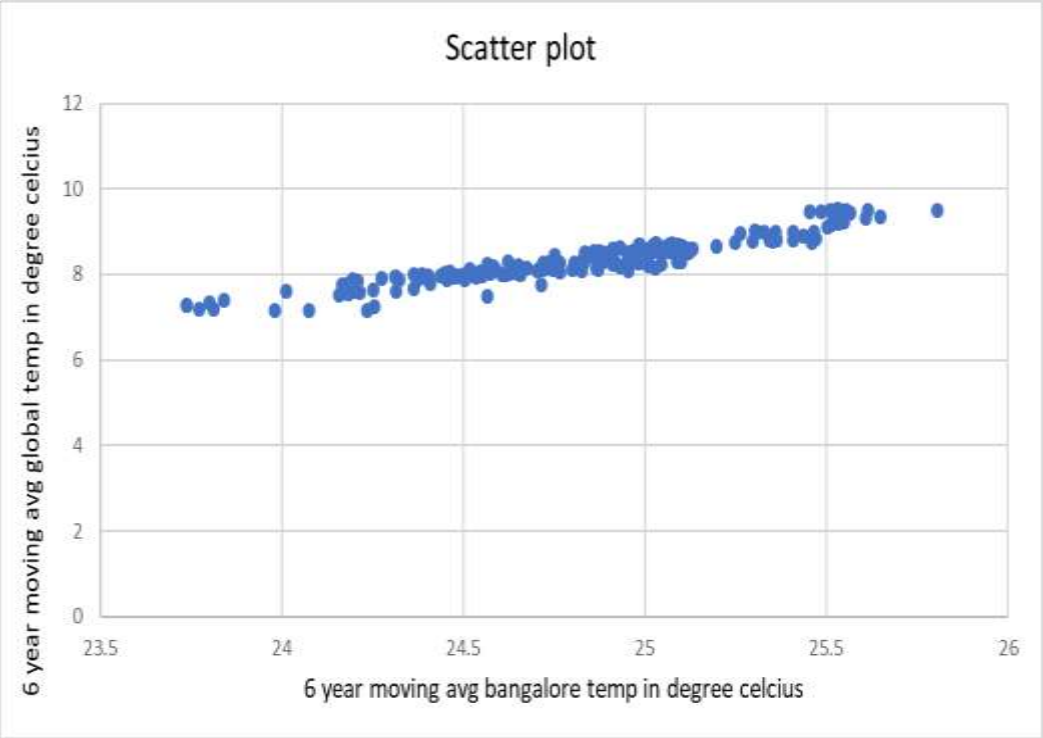
2nd insight – If we compare global average temperature with Bangalore then we found the Bangalore city is hotter then global. And the difference is consistent over time.

3rd insight- Overall trend look like increasing, world is getting hotter. We can see the global average temperature is fluctuating between 1796 to 1880 and after that overall trend is increasing approx.

4th insight - Similarity in between trends.

YEAR	6 YEARS MOVING AVG GLOBAL	6 YEARS MOVING AVG BANGALORE	INCREASING/DECREASING TRENDS
1808 - 1814	8.37 – 7.20	25.00 – 24.07	Decreasing
1819 - 1828	7.32- 8.33	23.73 – 24.76	Increasing
1997 - 2003	9.05 – 9.42	25.35 – 25.64	Increasing

- I have done further analysis to find the correlation between Bangalore moving avg. temperature and global moving avg. temperature.



Here we can see there is a strong positive correlation between Bangalore avg. temperature and global avg. temperature. Using **CORREL** function in Excel I have calculated correlation coefficient i.e. **0.943275 .**