

Project: Exploring Weather Trends

In this project, we will analyze local and global temperature data and compare the temperature trends where you live to overall global temperature trends.

An outline of steps taken to prepare the data to be visualized:

- Tools used in the project are **Excel** and **SQL**.

The data is extracted from the database with the help of SQL (Structured Query Language).

- **Ques. SQL query to extract the Global data to visualize global temperature trends.**

Ans. `SELECT * FROM global_data;`

- **Ques. SQL query to see all cities that are present in India so as to choose the closest city.**

Ans. `SELECT * FROM city_list WHERE country='India';`

- **Ques. SQL query to extract the Local data to visualize local temperature trends.**

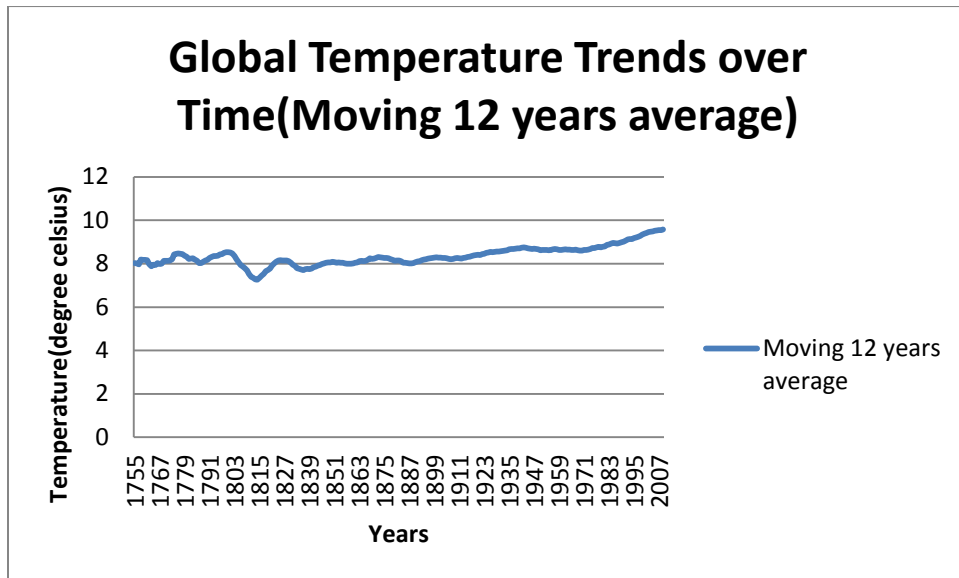
Ans. `SELECT year,avg_temp FROM city_data WHERE country = 'India' AND city = 'Delhi';`

- **Calculation of moving average:**

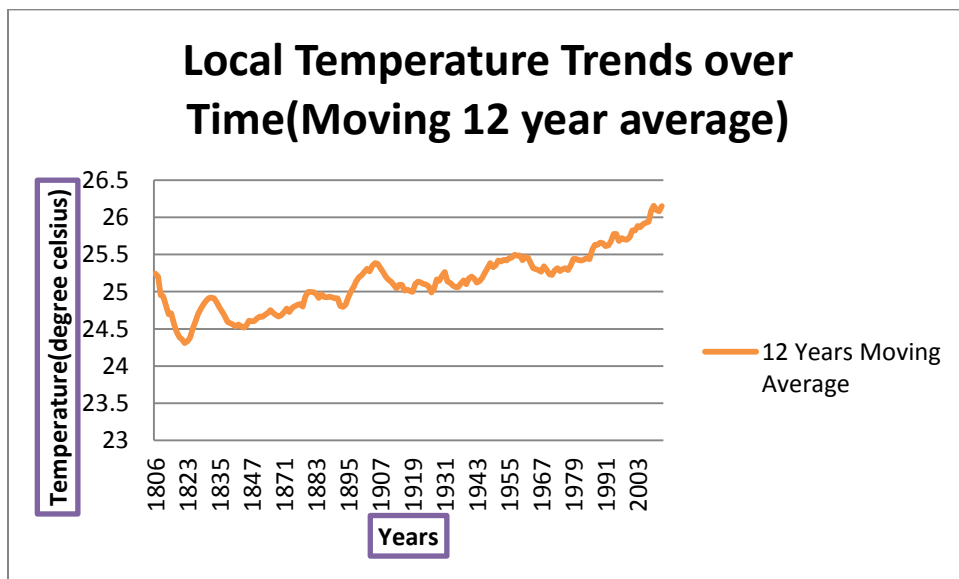
Here, calculation of moving average is done for each 12 years. This is done by simply taking the average of first 12 entries (For example: `=AVERAGE(B2:B13)`) and then dragging the column down till end in which average of first 12 entries was found.

- Key considerations when deciding how to visualize the trends was to plot the moving average calculation for each 12 years and to see how temperature trends differ with respect to time.

- Line chart with Global Temperature Trends



- Line chart with Local Temperature Trends



- Observations:

Similarities:

- With the help of global and local data, we can say that overall the world is getting hotter and temperature is rising.
- Trends are not consistent in last few hundred years. Overall, the temperature is rising in last few hundred years. But, in both local and global data, fluctuations in temperature are found, though the temperature is rising but not consistently.

Differences:

- According to the visualized data, the city is getting hotter on an average as compared to the global average. There is a very slight difference in the differences between local and global average over time.
- There are more fluctuations in local temperature trends as compared to global temperature trends. Global temperature is much cooler as compared to local temperatures over time.