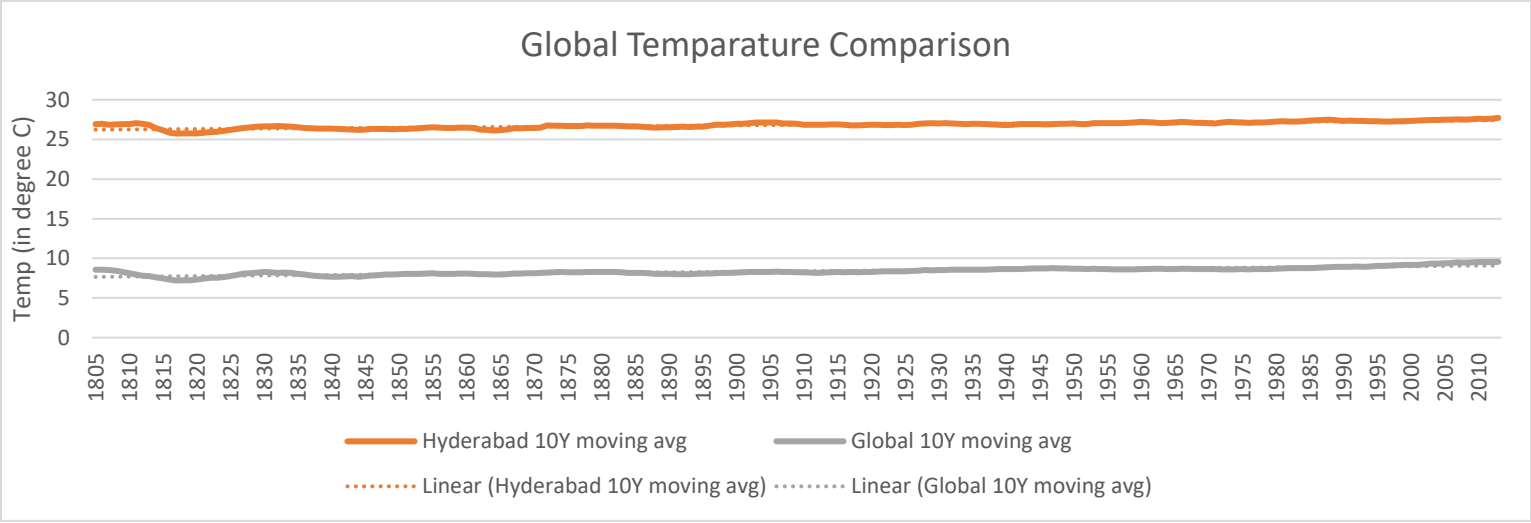
Explore Weather Trends

Process

Data Preparation

1. Data was downloaded from **SQL server** using queries
    a. select * from city_data
    b. select * from city_list
    c. select * from global_data
2. And then the databases were joined to create a single data-mart (using simple function like *VLOOKUPs*) on **MS Excel**
3. In the next step, a single city was selected for instance here *Hyderabad* was considered to be compared with global temperature indexes
4. In order to smoothen the temperature spikes *10-year moving average* was applied to generate a line plot between temperature of Hyderabad and global temperatures. Formula used was a simple average considering last 10 years temperature (Average function in Excel)



Observations

1. 2013 was observed as the hottest year, both for Hyderabad (@27.72°C) and the globe (@9.56°C); while the coldest year being 1817 for both of them
2. 10-year moving average shows the global temperature has risen from 26.93°C (in 1805) to 27.72°C (in 2013) for Hyderabad; while for globe it has got from 8.55°C (in 1805) to 9.56°C (in 2013)
3. Slope for global temperature is calculated at 0.00687 while for Hyderabad it is calculated at 0.00576; making rise of temperature for the Globe slightly steeper
4. Correlation coefficient between both of them was calculated to be 0.92 making them highly correlated
5. Khartoum in Sudan observed the highest temperature spike of 30.73°C in the year 2010
6. In the year 2013, Ulaanbaatar was the coldest city observing -0.22°C while Khartoum was the hottest city @ 30.65°C