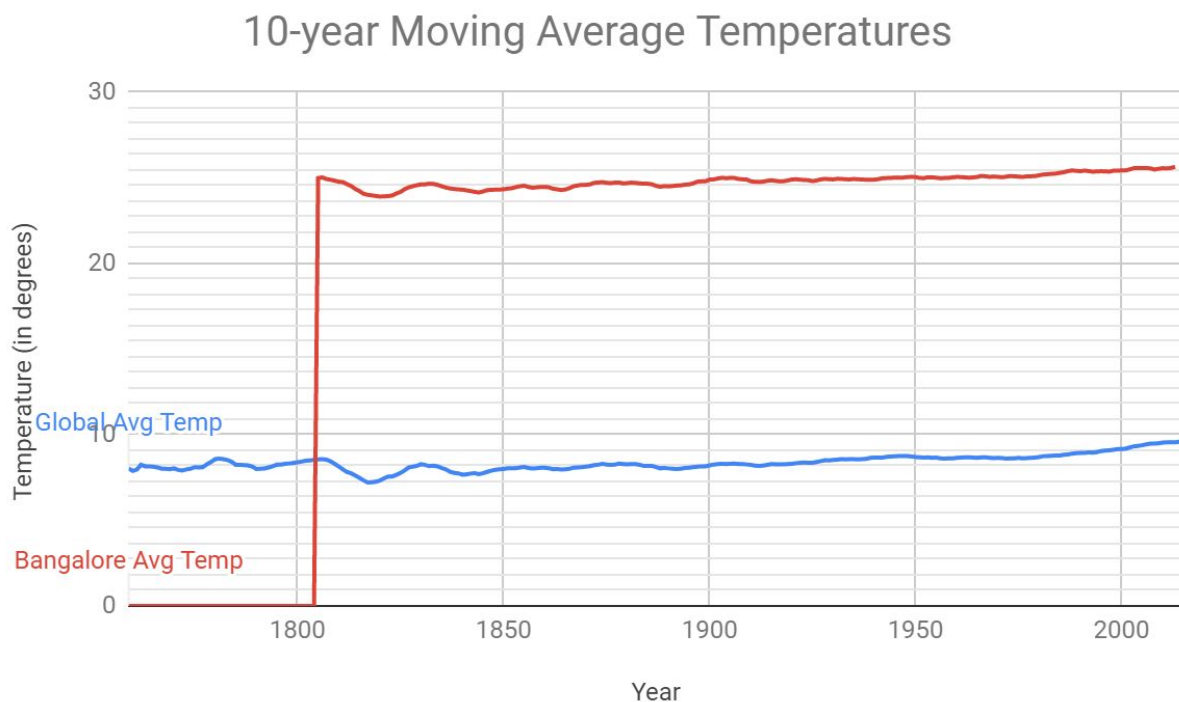


Exploring Weather Trends

Observations

Bangalore is on an average much hotter than the global average, averaging 24.85 degrees overall vs 8.37 degrees for the global average temperatures.

When looking at the change in temperature over the recorded history, the difference in the global average temperatures is 4.05 degrees, while the total change for Bangalore is 3.31 degrees. As a percentage of change against the mean, global temperatures have increased by 48 degrees while Bangalore has seen an increase of 13 degrees.



From the visualization, the trend shows that there has been a gradual increase in the average temperatures both globally and for Bangalore over the last ~250 years. There isn't a stark difference between the trends for Global vs Bangalore except that at the very end it looks like the Global trend is on a slightly larger upward rise than Bangalore, however this difference is very small.

We can also observe a slight dip in the average temperatures in the 1810s and this is seen both for Bangalore as well as globally.

Steps Performed

1. [Data Extraction using SQL](#)
2. [Data Exploration and Cleanup using Google Sheets](#)
3. [Data Analysis using Google Sheets](#)

Data Extraction

1. Checked for the list of Indian cities in the *city_list* table.

```
SELECT * FROM city_list  
WHERE country = 'India'
```

Since 'Bangalore' is there in the list, we'll extract its data from *city_data* table

2. Extracting weather data for Bangalore

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

Downloaded the csv of 218 records that resulted from the above query

3. Get all the data from the *global_data* table

```
SELECT * FROM global_data
```

Downloaded the csv of 266 records resulting from the above query

Data Exploration & Cleanup

The 2 CSV files were imported into Google Sheet into 2 separate worksheets properly named. The columns were renamed so that the data on both sheets are consistent and not technical.

It is seen that in the City data, there are some years where there is no data point. In order to keep the moving averages consistent, the gaps in the data were filled in by the average of the last entry before the gap and the first entry after the gap.

Eg: from 1808 to 1812 the average of year 1807 (24.25 degrees) and year 1813 (24.23 degrees) which is 24.24 degrees, was filled in.

For both global and Bangalore temperature, the Moving Average over the previous 10 years was taken in order to plot a smooth graph of the temperature trends. This was done by calculating the average of the first 10 years (in row 11) and copying that formula down to all the available rows.