Exploring Weather Trends

Summary

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

My local city is Cairo in Egypt

An outline of steps

- **Tools**
  - SQL

    A. Write a SQL query to extract the city level data. Export to CSV

    ```
    SELECT year, avg_temp AS Local_Avg
    FROM city_data c
    JOIN city_list l
    ON c.city = l.city
    WHERE l.country = 'Egypt' AND l.city = 'Cairo'
    ```

    B. Write a SQL query to extract the global data. Export to CSV.

    ```
    SELECT year, avg_temp AS Global_Avg
    FROM global_data
    ```

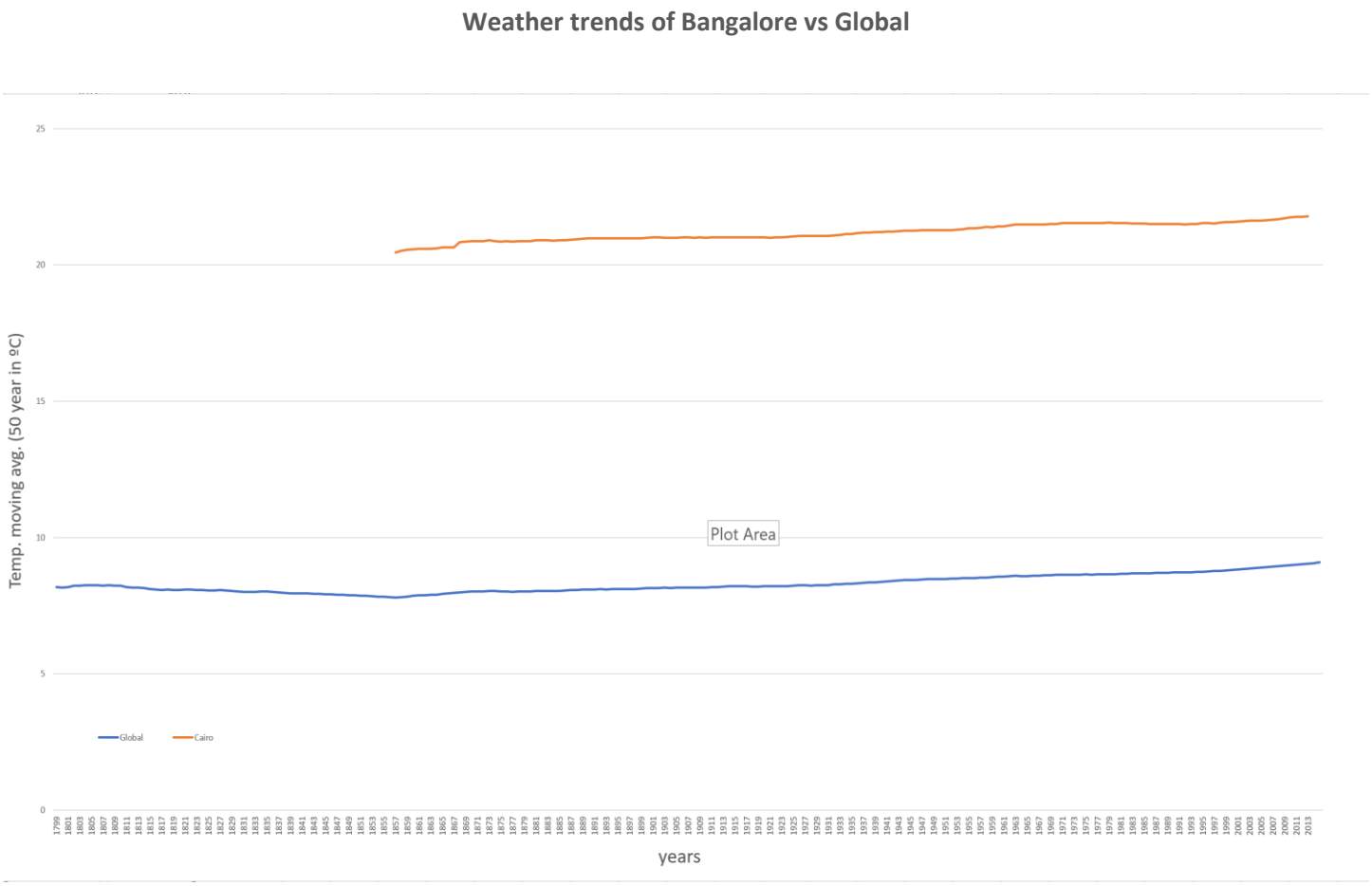
  - Excel

- **Calculating the moving average**
  - I have created columns with **Global_Moving_avg** and **Local_Moving_avg** for storing the moving average data I have calculated moving average for **50** years separately for global and local data .

year	Global_avg_temp	Global_Moving_avg	Locall_avg_temp	Local_Moving_avg
1849	7.98	7.89	20.9	
1850	7.9	7.88	20.39	
1851	8.18	7.87	21.11	
1852	8.1	7.86	21.04	
1853	8.04	7.85	21.53	
1854	8.21	7.84	20.74	
1855	8.11	7.83	21.04	
1856	8	7.82	20.49	
1857	7.76	7.81	20.29	20.46
1858	8.1	7.82	20.9	20.53
1859	8.25	7.84	20.98	20.56
1860	7.96	7.86	21.33	20.58
1861	7.85	7.88	20.21	20.59
1862	7.56	7.89	20.22	20.59

  - By using **excel** with formula **AVERAGE()** for every **50 years** and round to 2 decimals.
  - The full formula **=ROUND(AVERAGE(B2:B51),2)**
- **<u>key considerations</u>**
  - Draw the 2 trends in the same chart with different color to show the differences between them
  - Write the legends

<u>Line Chart</u>



Observations

1. Egypt is **hotter** on average compared to global average
2. The difference looks **consistent** over time
3. The world is getting **hotter**
4. There is a **significant increasing** in temperature can be observed in global and local data.
5. The Global average temperature is significant **increasing** over last few 100 years