

Exploring Weather Trends

prepared by

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Summary

In this project, I will analyze local (Berlin city) and global temperature data and compare the temperature trends to overall global temperature trends.

Goal

Create a visualization and describe the similarities and differences between global temperature trends and temperature trends in Berlin city.

Questions

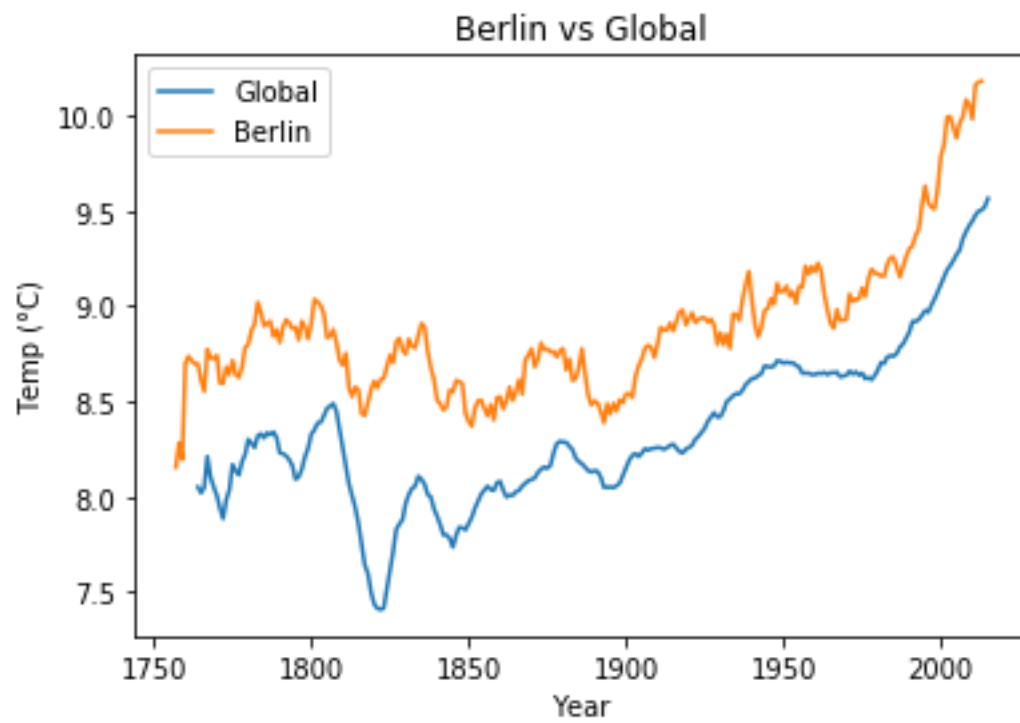
- Is Berlin city hotter or cooler on average compared to the global average? Has the difference been consistent over time?
- “How do the changes in Berlin city temperatures over time compare to the changes in the global average?”
- What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?

Methodology

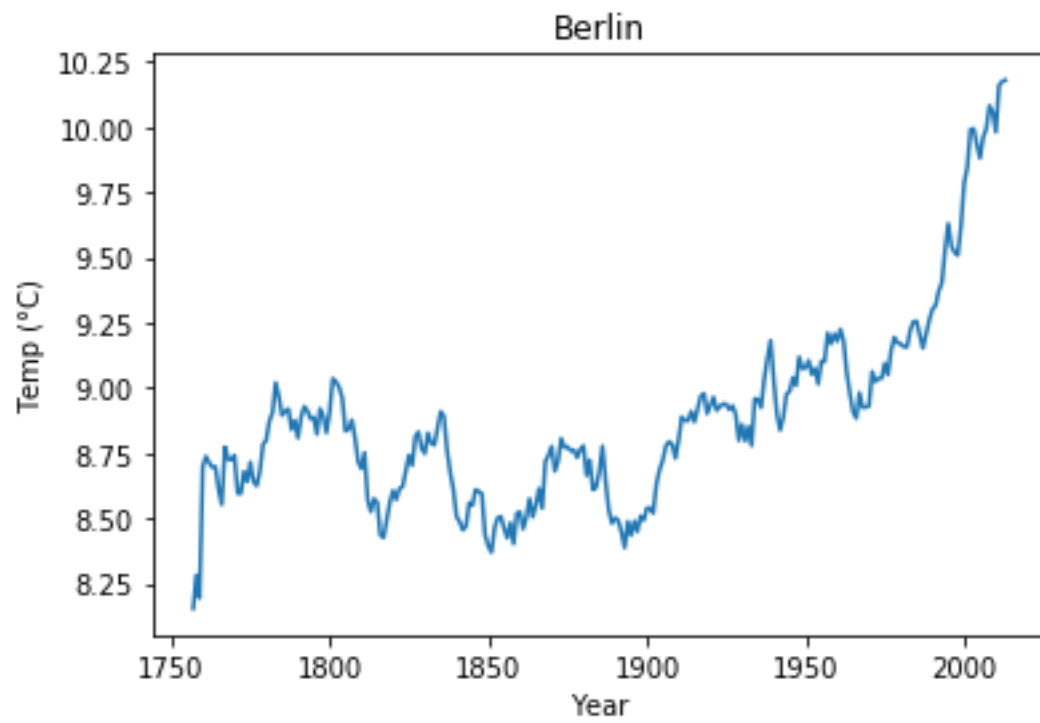
1. SQL Query was used to extract the data and download (CSV) files contain yearly average temperature of Global and Berlin city average temperature data.
2. Data Analysis is carried using python programming on Jupyter Notebook.
3. A line chart visualization using moving average of the Berlin Vs Global data.

Visualization

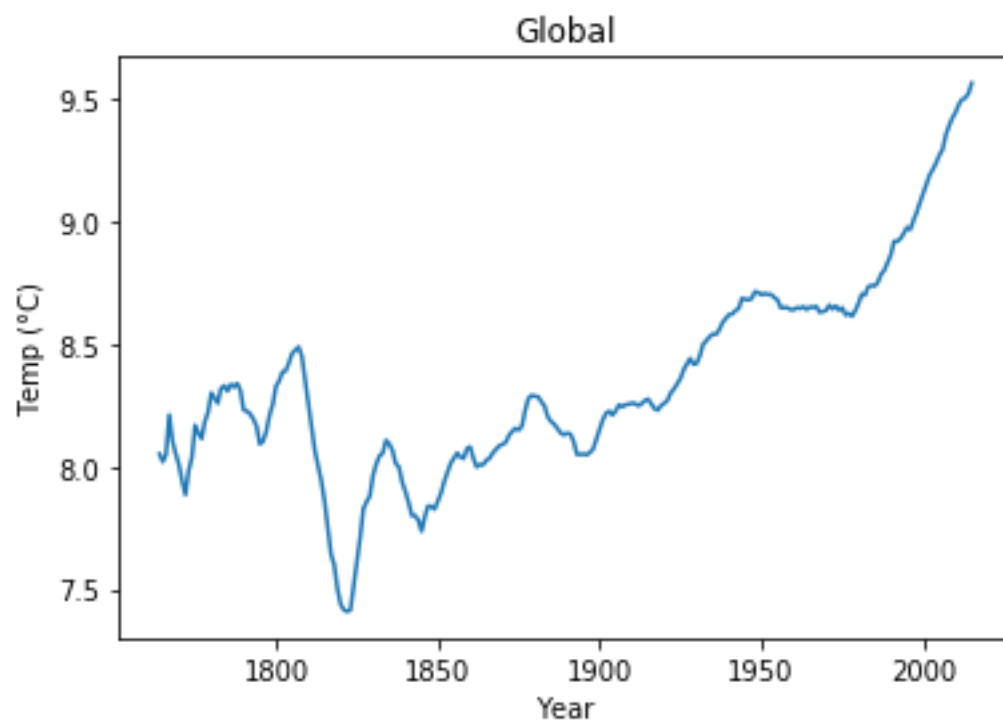
Data visualization of Berlin vs Global average temperature data using matplotlib.



Berlin average temp line chart



Global average temp line chart



Conclusion

Berlin is slightly warmer than global average, i.e., only by 0.5159 degrees Celsius higher than global.

Berlin and Global avg temperatures are pretty much alike as they are both cold.

Berlin is the capital of Germany and it is the part of Europe, where temperature is usually low. Berlin temperature fluctuates a lot as seen from Berlin line chart, but from 1970, there is an increase of avg temp by almost 2 degrees.

In the past hundred years, a definite rise in temperature can be observed in both Global and Berlin data. From late 90's the temperature is rising without any significant drops.

Hence, we can conclude that the world is definitely getting hotter.

Appendix

Data Extraction using SQL.

```
SELECT *  
    FROM city_data  
    WHERE country LIKE 'Germany'
```

```
SELECT *  
    FROM city_data  
    WHERE city='Berlin' AND  
    country='Germany'
```

```
SELECT * FROM global_data
```