

Project 1: Explore Weather Trends

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Juliane Bilda

- As the first step I wanted to extract the data for the city Berlin from the database. I checked if Berlin is included in the city_list table by using SQL:

```
SELECT *  
FROM city_list  
WHERE city = 'Berlin'
```

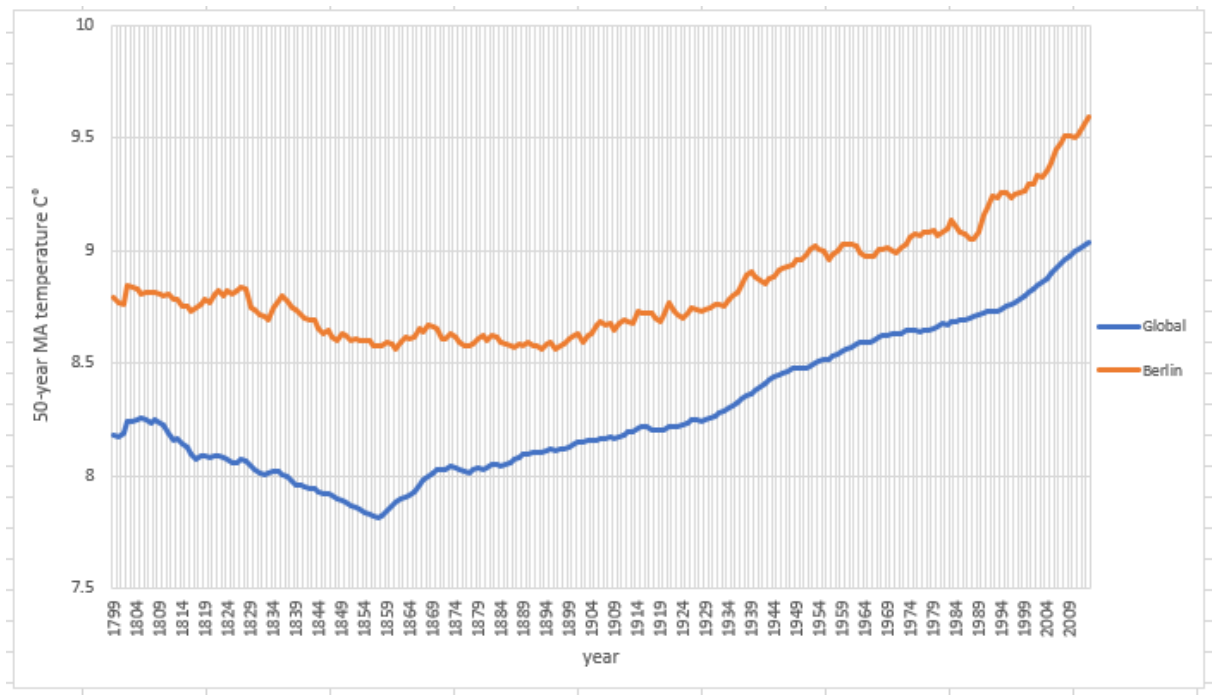
- Then I extracted the data for Berlin from the database and exported to csv:

```
SELECT *  
FROM city_data  
WHERE city = 'Berlin'
```

- I also extracted the global data and exported to csv:

```
SELECT *  
FROM global_data
```

- I opened both files in Excel, but wanted to create one overall document including the Berlin and global data. Therefore, I created a new sheet in excel and copied all the Berlin data into the global data file. Thus, I had one excel file with two sheets: one with Berlin data and the other with global data.
- Calculating the moving average for Berlin: I created a new column called ,50-year MA' to store the moving average. I went down to the 50th year (1792) and used the AVERAGE() function to calculate the average temperature for the first fifty years. I clicked and dragged the formula to last cell of the column.
- Calculating the moving average for global: I created a new column called ,50-year MA' to store the moving average. I went down to the 50th year (1799) and used the AVERAGE() function to calculate the average temperature for the first fifty years. I clicked and dragged the formula to last cell of the column.
- I created a new sheet in excel with a table including the three columns: ,year', ,50-year MA global', and ,50-year MA Berlin' with values. The table contains the years 1799 - 2013.
- For visualizing the data I considered as important to compare the global and Berlin data in one diagram. The diagram should demonstrate differences and similarities clearly.



Observations:

1. As we can see in the visualization Berlin is hotter on average compared to the global average. This trend has been consistent over the last few hundred years.
2. The lowest global temperature on average was below 8 degree in 1859, while the highest global temperature on average was in 2013 with over 9.5 degree.
3. While the world was getting cooler until 1859, the overall trend changed then and showed continuously rising temperatures.
4. Berlin was coolest between 1849 and 1904, but then showed continuously rising temperatures. Especially during the last 20 years the average temperature has increased strongly.