Source: Internet

Project 1: Exploring Weather Trends

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1. Overview

a. Goal

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

b. Methods:

-To extract data, I use SQL code to download data.
-Then I try to evaluate the data in order to use it effectively.
-To visualize and analyze data, I use Tableau.
-After all, I will give some conclusions about the weather trend, here is the temperature, between Berlin and the world.

2. Framework

a. Extract data

To have data global, I use SQL code:

```
SELECT * FROM global_data
```

To have information about the city which I should choose to do project, I use code:

```
SELECT * FROM city_list

WHERE country = 'Germany'
```

The result gives me 3 cities: Berlin, Hamburg, Munich. And Berlin is the nearest city to me. So I chose it.

To have data in Berlin, I use SQL code:

```
SELECT * FROM city_data

WHERE city = 'Berlin'
```

b. Assessing Data

In this project we want to define and then forecast the trend of weather. What we have is the data from 1743 until 2015, which comes from 3 data files downloaded from the website.

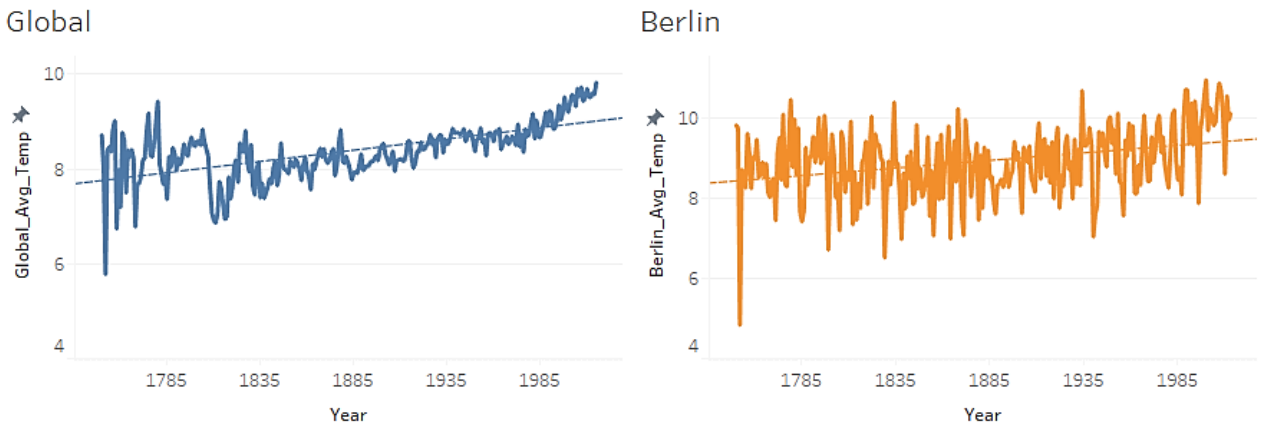
The data has some problems such as (1) the year in global_data starting at 1950 and ending at 2013 and that one in city_list at 1943 and 2015 respectively. In addition, data in some year in one of two data is missing.

To solve the (1) problem, the simplest way is that I will use the year in gloabal_data starting at 1750 and the ending year of 2013 to solve. Another way to solve it is such as calculating the average temperature for each year. And use it as global average temperature. However, to extract the data required a little bit time so I choose the simpler way to do as I mentioned before.

In order to define the weather trend, I aim to visualize the overall data with line charts.

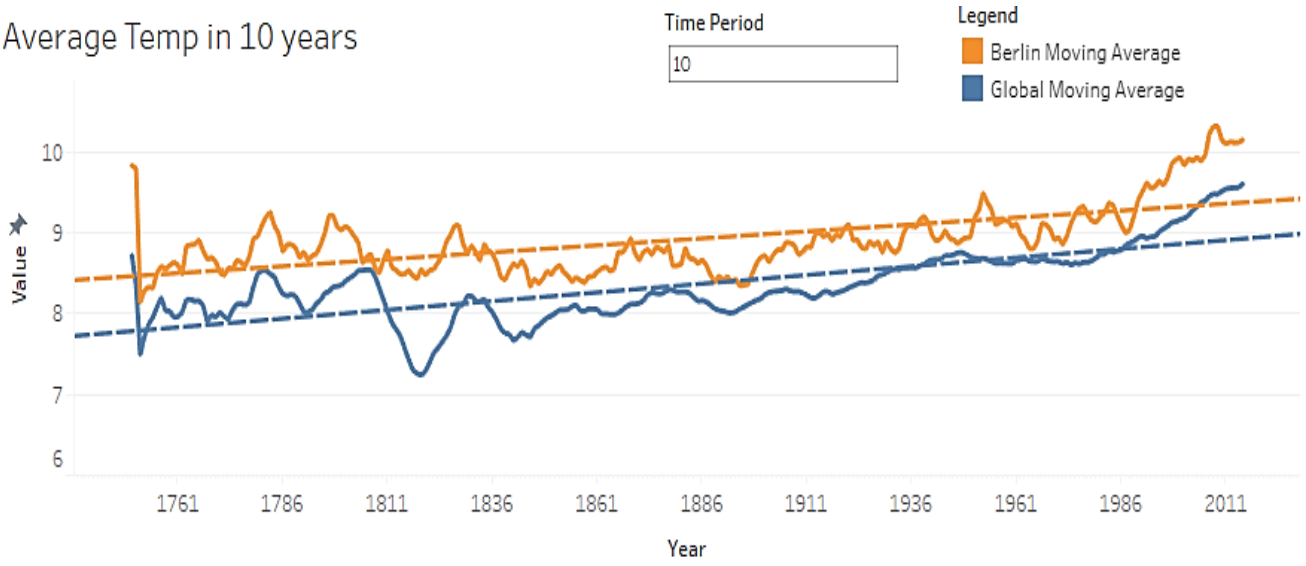
c. Visualizing and analyzing Data

The followings are 2 charts. One is the average temperature of global weather in general. Other is the Berlin temperature.



2 charts show us clearly an increasing trend of temperature all over the world as well as in Berlin. In addition, when the chart of average global temperature seems to have a higher slope than that one of the avage global, especially in the last 30 years. However, the line chart shows that the average temperature in Berlin have a wider fluctation, and the average temperature in Berlin seems to be higher than the average global temperature.

With the average temperature in 10 years in the chart below, we can see that the average temperature in Berlin is obviously higher than the average global temperature.



Also, the chart shows in Berlin and over the world it is the increasing in temperature, especially in the last 30 years, the average temperature not only in Berlin but all over the world increases more sharply than ever and reaches the highest level over the time. One important thing is that the slope of the average of global temperature is higher than that one of Berlin. That means the average global temperature increases quicklier than it in Berlin.

3. Conclusion

- The average temperature in Berlin is higher than the average temperature of global.
- The average global temperature increases more quickly than that one of Berlin.
- Trend of both is increasing, and its speed is quicklier in the last recent decades.