- Project Title

Exploring Weather Trends

- Description

In this project, i analyzed local and global temperature data and compare the temperature trends to overall global temperature trends. I created a visualization and prepared a write up describing the similarities and differences between global temperature trends and temperature trends in Memphis.

- About

1. Queries: SELECT * FROM city_data WHERE city = 'Memphis';
2. How to calculate moving average: I picked seven years as window, used =AVERAGE(:) function in excel to calculated average for every seven years.
3. Key consideration: I notice in global file, the data didn't start until 1750, while in Memphis file the data started 1743, however, there are four year's missing value between 1746 and 1749 in Memphis file. Science I picked seven years as window, this missing part will become an outliner, so it make sense to drop it off and start both data analysis from 1750.

- Software used

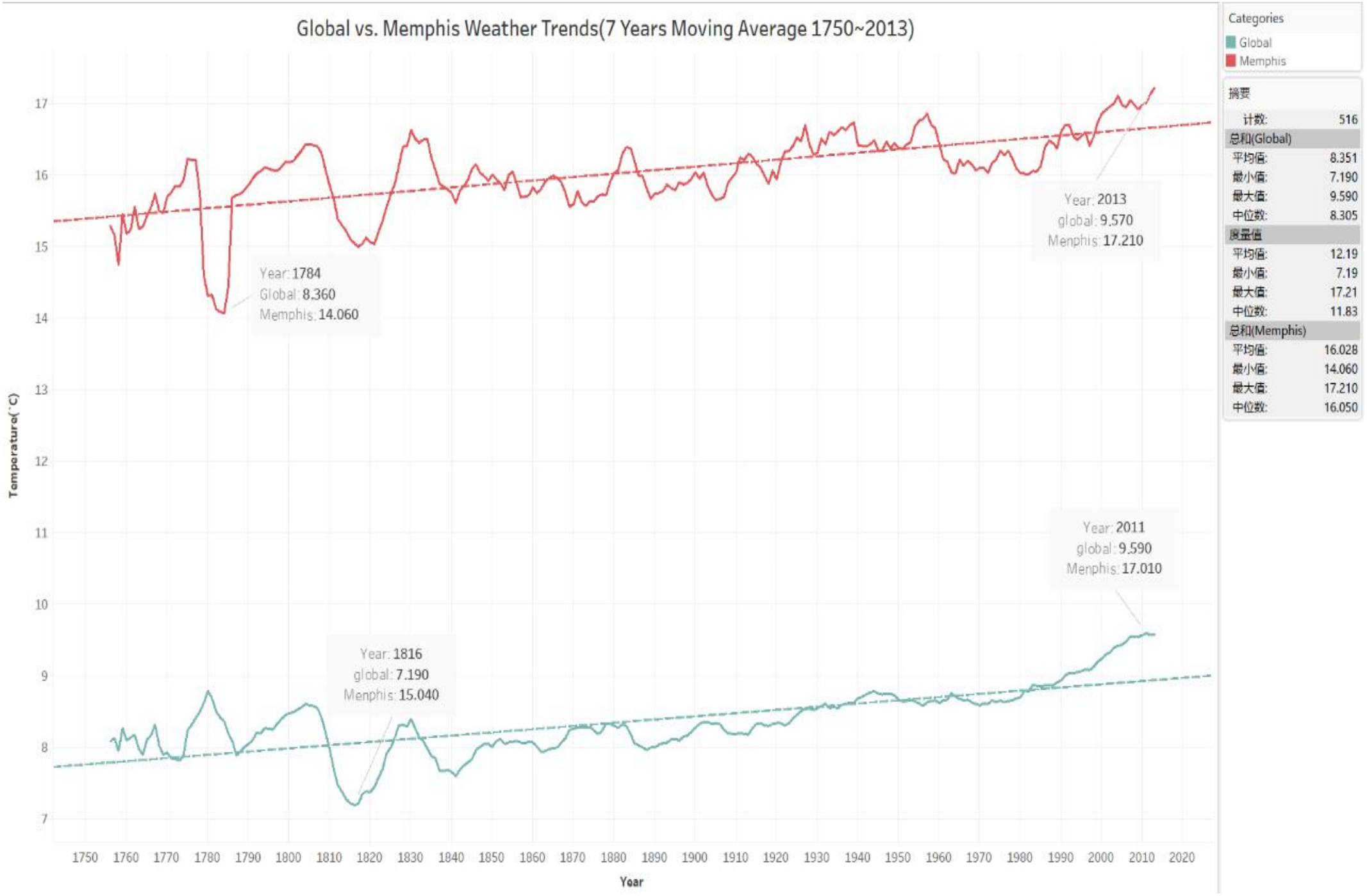
1. Postgre SQL -- used for gathering initial understanding of raw data, querying then pulling data as needed and export then as csv file.
2. WPS Office (Excel/ Word) --used for calculating moving average and editing file to export as pdf file.
3. Tableau -- used for data visualization.

- Files used

1. city_data.csv
2. city_list.csv
3. global_data.csv

- Observation

1. Memphis's lowest moving average temperature occurred in 1784 at 14.06˚C while highest occurred in 2013 at 17.21˚C.
2. Global lowest moving average temperature occurred in 1816 at 15.04˚C while highest occurred in 2011 at 17.01˚C
3. From the plot we can tell Memphis has higher temperature than global our data also confirm this information: the average MAT is 16.028 in Memphis over two and half centuries while average MAT of global is 8.351
4. Both trend lines indicate temperature is gradually increasing over two and half centuries.
5. The median of Memphis data is 16.05˚C; The median of global is 8.305˚C.


Global vs. Memphis Weather Trends(7 Years Moving Average 1750~2013)
Categories
Global
Memphis
摘要
计数: 516
总和(Global)
平均值: 8.351
最小值: 7.190
最大值: 9.590
中位数: 8.305
度量值
平均值: 12.19
最小值: 7.19
最大值: 17.21
中位数: 11.83
总和(Memphis)
平均值: 16.028
最小值: 14.060
最大值: 17.210
中位数: 16.050
Year: 2013
global: 9.570
Menphis: 17.210
Year: 1784
Global: 8.360
Memphis: 14.060
Year: 2011
global: 9.590
Menphis: 17.010
Year: 1816
global: 7.190
Menphis: 15.040
Temperature(°C)
17
16
15
14
13
12
11
10
9
8
7
1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020
Year