Explore Weather Trends Project

Step One: Data Extraction

I was able to extract the data which was needed for the project from the linked database using the following SQL queries:

- To find my city, I used:

  SELECT *
  FROM city_list
  WHERE city LIKE 'Wash%' AND country LIKE 'United%';

- Alternatively, I used the following syntax assuming my city was in the list as it is one of the biggest cities:

  SELECT *
  FROM city_list
  WHERE city = 'Washington' AND country = 'United States';

- In order to get the weather data for my city, I used the following syntax:

  SELECT *
  FROM city_data
  WHERE city = 'Washington' AND country = 'United States';

- For extracting the global weather data, I used the following syntax:

  SELECT *
  FROM global_data;

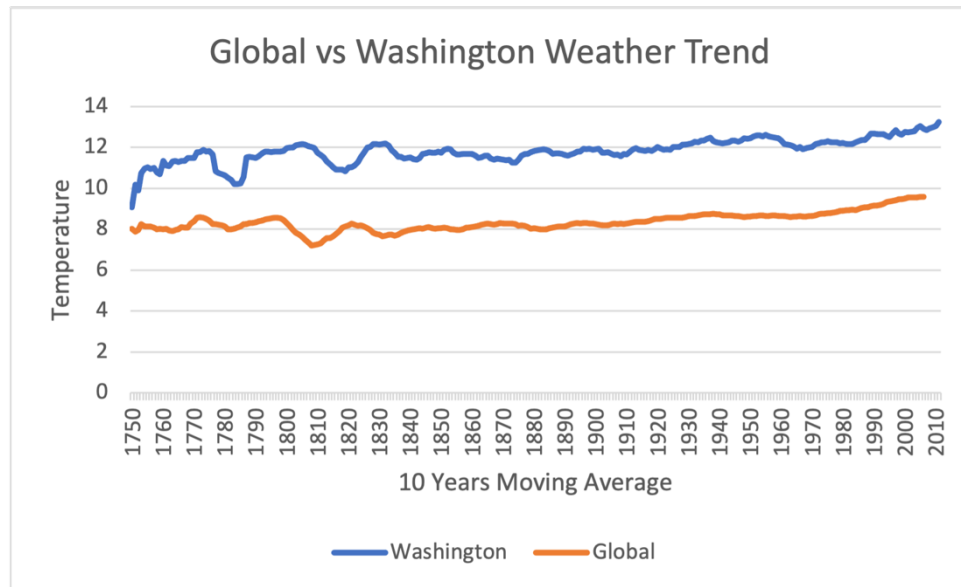## Step Two: Calculating Moving Averages

I used Microsoft Excel for the purpose of this project and opened both extracted CSV files in there. Since there was no specific instruction provided as to how many years we should take for the moving average, I took the averages for 10 years which I thought would make it simpler.

The specific code I used for calculating moving averages was: "=AVERAGE(*corresponding cells)*".
Then I dragged the applied formula all the way to the last row available to calculate the average for all available years.

Step Three: Visualization

Once I had all the moving average data for both the global weather trend and for my specific city, which was Washington, I created a line chart using Microsoft Excel and included all the necessary information in the chart to make it easily readable and easy to understand:
My chart looks like this:

Step Four: Observations

After closing reviewing the available data for the global temperature and my city's temperature, I can make the following observations:

- Based on the above chart, it looks like my city is hotter compared to the global average and It has been consistently hotter over the course of past couple hundred years.
- The changes in my city's temperature overtime have been parallel to the changes in global temperature. So, it has been moving up with the increasing global temperature, but it still have been hotter.
- The overall temperature trend is increasing, and the world is getting hotter.
- According to my observation from the available data, the increase in overall temperature trend has been pretty consistent over the past few hundred years and has always been increasing.