Project: Exploring Weather Trends

Data Analyst Nanodegree Program

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Steps:

1. I ran a query on SQL (from the Udacity project data provided) to load the city list for city temperatures around the world to find the one closest to me.

   SELECT city
   FROM city_list

2. I found that Denver was the closest city to me and ran a second query using the city data and loaded the average temperatures for Denver and then downloaded a .csv file.

   SELECT *
   FROM city_data
   WHERE city = 'Denver'

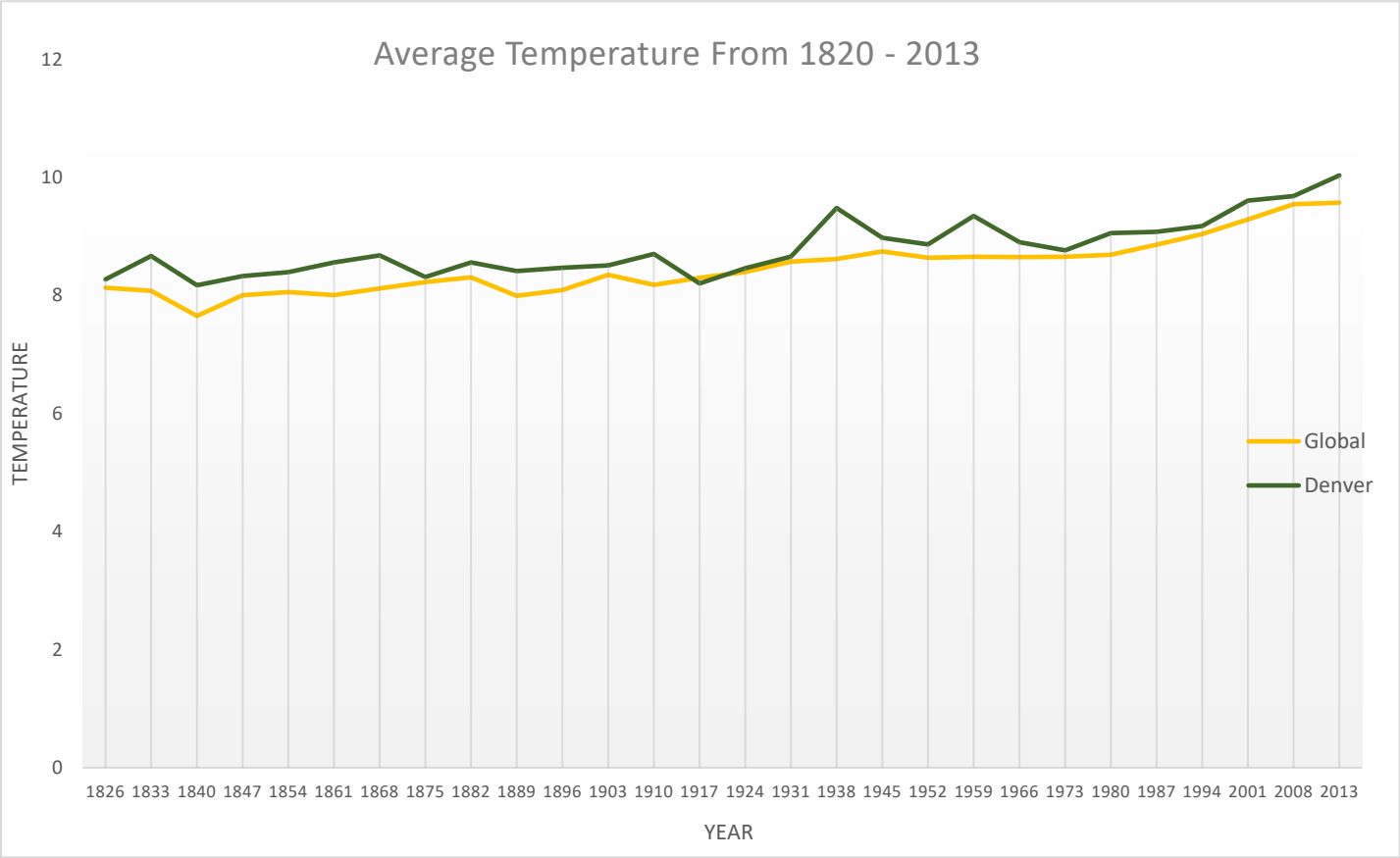
3. I ran a query for the global temperatures to compare against the Denver temperatures and downloaded that .csv file as well.

   SELECT year, avg_temp
   FROM global_data

4. I loaded each .csv file into Microsoft Excel.
5. Then I calculated the moving average by taking seven years (beginning in 1820) and finding the average (using the AVERAGE formula) and continuing that pattern for the rest of the data until the year 2013. The global average temperature list had data beginning in the year 1750 but Denver was missing data until 1820, which is why I could only compare the temperatures from that year and moving forward.
6. The key considerations that I had when deciding how to visualize the trends included being able to see the difference between the moving averages rather than the temperatures from each individual year. I had to copy the moving averages as values for both the Denver temperatures and the global temperatures and then compare the two. I

also removed all the years in between so that they wouldn't be listed on the line chart. A line chart is best for this type of visualization because I am trying to compare the two temperatures against a long period of time.

Line Chart:



Observations:

1. Denver seems to have a slightly higher average temperature for most of the years that the data set covers. The only period where it had a lower average temperature was from about 1915 to 1923.
2. While both temperatures have increased throughout time, the global average temperature line is a lot smoother than Denver's.
3. From this chart, you can see that the overall trend is increasing, and the average temperature of the world is getting hotter.

4. Both lines increase over time, but they really start to take off in 1980 and the difference between moving averages are significantly higher than recent time periods.