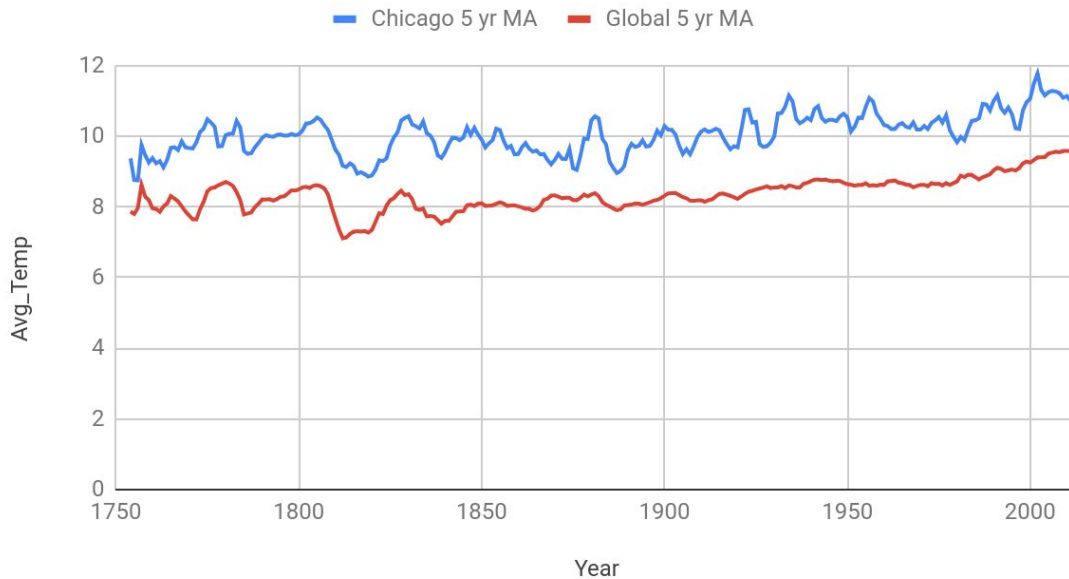# Exploring Weather Trends
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Outline

In order to complete this project, I first had to run a SQL query to produce the dataset I desired. The query I wrote is shown below.

SELECT cd.city, cd.year, cd.avg_temp AS chicago_avg_temp, gd.avg_temp AS global_avg_temp
FROM city_data cd
JOIN city_list cl
ON cd.city = cl.city
JOIN global_data gd
ON gd.year = cd.year
WHERE cd.city = 'Chicago'
ORDER BY 2

After writing the query, I calculated the five year moving average temperature of both Chicago and the globe by inserting an average formula of the previous five years, and copying that formula down the column until all years were accounted for. When deciding how to visualize the trends, I had to consider which type of graph would best document change over the same period of time for more than one group - in this case, a line graph was best suited to visualize the data.

Chicago vs. The World

Observations

In this project, we looked to compare Chicago's average temperature to the global average. From this project, we can make the following conclusions.

1. Both Chicago and the world at large have seen an overall increase in temperature from 1750 to the present day.
2. Towards the beginning years, both Chicago and the world saw increases and decreases to average temperature at almost the exact same time - for example, we saw a significant dip in global temperature shortly after 1800 (estimating around 1820), followed by a rapid rise through the mid 19th century.
3. Recently, increases and decreases in temperature have not been mirrored between Chicago and the world at large. While the world at large has seen a steady, more gradual increase between 1950 and present day, Chicago has seen larger spikes in its average temperature in the same time frame.
4. According to this graph, Chicago has always had a higher average temperature than the rest of the world. I would estimate that Chicago's average temperature over this time frame hovers around 11 degrees Celsius, while the global average temperature is closer to 8.5 degrees Celsius.