

Udacity Nanodegree - Project 1

Exploring Weather Trends

Key Objectives

Your goal will be to create a visualization and prepare a write up describing the similarities and differences between global temperature trends and temperature trends in the closest big city to where you live.

Submission

Your submission should be a PDF that includes:

An outline of steps taken to prepare the data to be visualized in the chart, such as:

- What tools did you use for each step? (Python, SQL, Excel, etc)
- How did you calculate the moving average?
- What were your key considerations when deciding how to visualize the trends?
- Line chart with local and global temperature trends
- At least four observations about the similarities and/or differences in the trends. Eg. questions:
 - Is your city hotter or cooler on average compared to the global average? Has the difference been consistent over time?
 - “How do the changes in your city’s temperatures over time compare to the changes in the global average?”
 - What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?

Assignment

Question	Answer / Comments
What Tools Did I Use?	1. Mainly accessed the database provided by Udacity using SQL 2. Excel for visualizing the trend and making observations
How did you calculate the moving average?	1. Used formula =AVERAGE(C5:C12) without locking the cells with \$ for a 7 day moving average
What were your key considerations for visualisation?	1. Completeness of data. If there were missing temps for the year as it might affect moving average calculation. 2. Layering of line graphs to compare moving average on same visualisation 3. Consistency in vertical & horizontal axis to make comparison “fairer”
Query Used	<u>Singapore</u> SELECT * FROM city_data WHERE country = 'Singapore' AND year > 1900

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	<pre>ORDER BY year ASC LIMIT 1000 Global SELECT * FROM global_data WHERE year > 1500 ORDER BY year ASC LIMIT 2000 *WHERE clause from >1500 just to see where data starts</pre>
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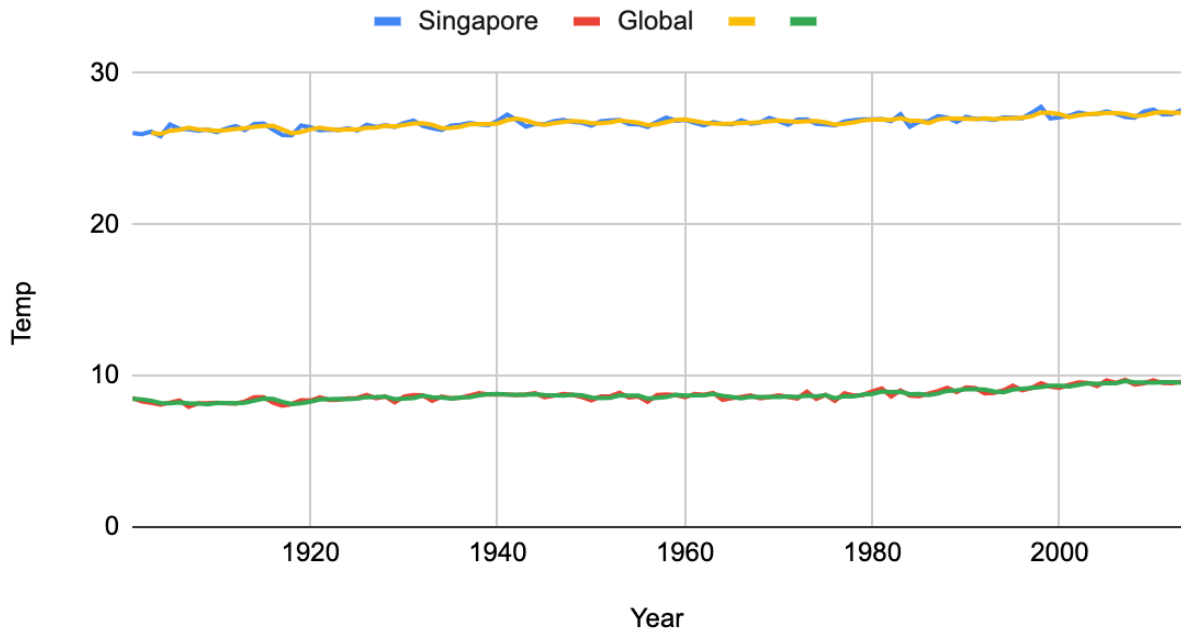
Questions & Answer:

- Q: Is your city hotter or cooler on average compared to the global average? Has the difference been consistent over time?
 - A: Singapore is hotter on average as compared to the global average. This has been consistent over the years since 1901.
- “How do the changes in your city’s temperatures over time compare to the changes in the global average?”
 - A: As compared to global, temperature changes in my Country/City is not as volatile as global. Global year on year % change in ave. temperature fluctuates from -6% to +6% as compared to Singapore where the YoY change is usually within -2% to +2%.
- What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?
 - A: Overall trend is upwards with the word getting hotter and has been consistent. Singapore is upward trending too.
 - A: Global 3 year moving average remains relatively stable between years 1940 - 1980 as compared to Singapore with a steeper upward slope.

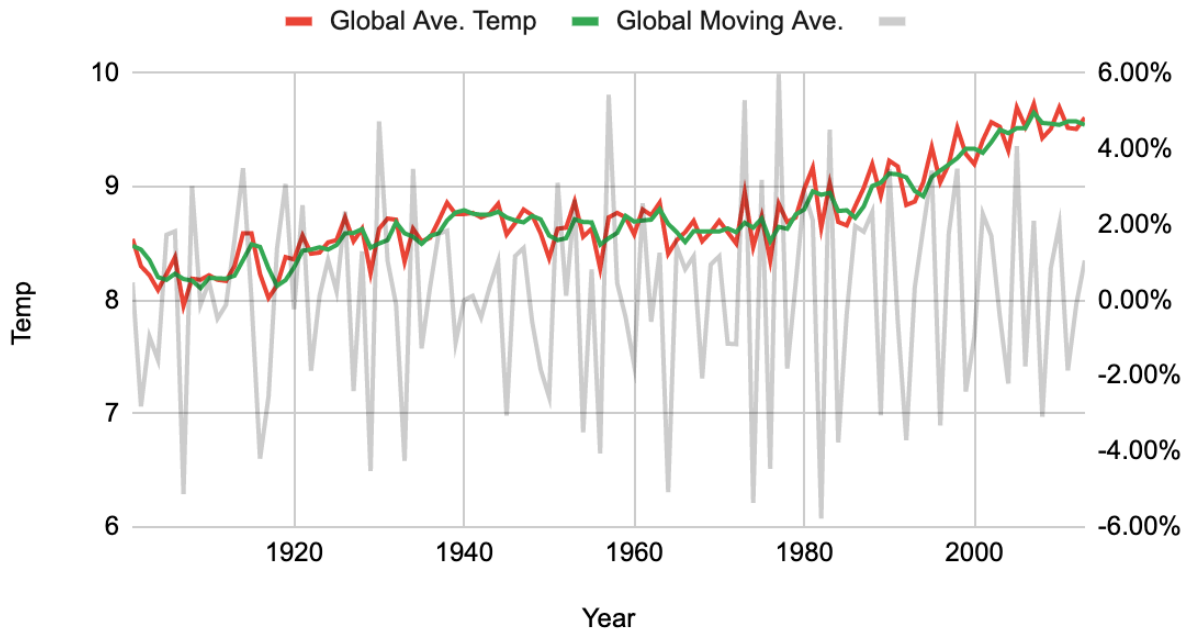
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Singapore Ave. Temp vs Global



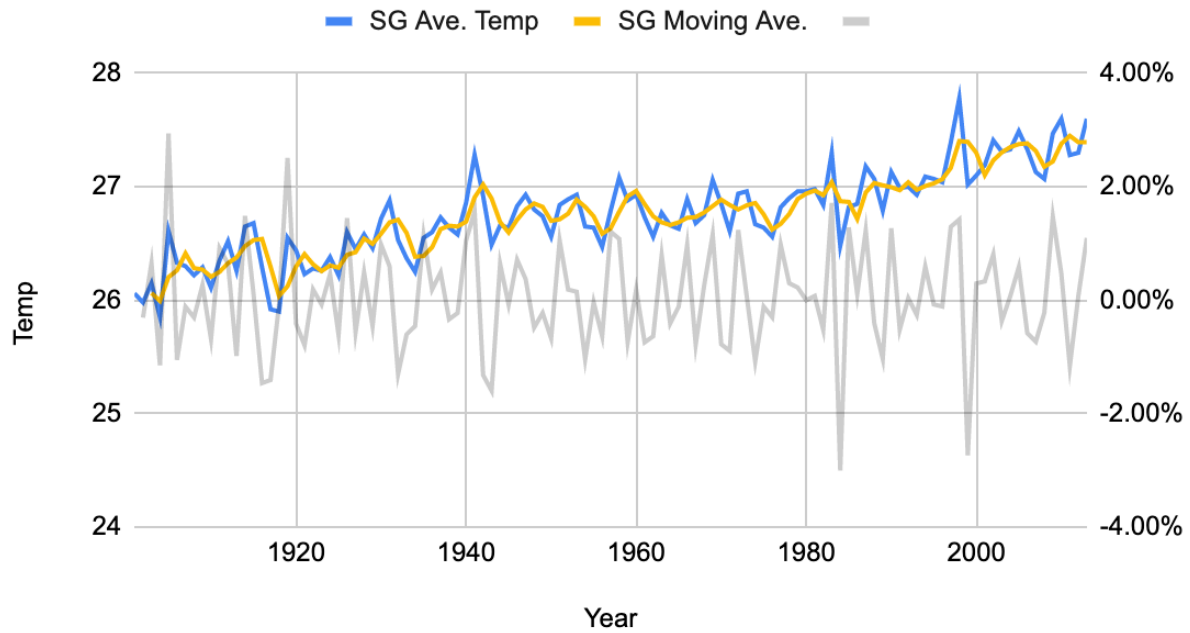
Global Ave. Temp & Moving Ave.



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Singapore Ave. Temp & Moving Ave.



Links to graphs: [Udacity Nanodegree - Project 1 | Explore Weather Trends](#)