Explore Weather Trends

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I. INTRODUCTION

The Explore Weather Trends project is part of Udacity's Data Analyst Nanodegree Program. Structured Query Language (SQL) was used to extract global and local (San Antonio, TX) data from the temperatures database and then downloaded to comma separated value (CSV) files. The data was then used to make observations about the similarities and differences between the world averages and San Antonio's averages, as well as overall trends.

II. METHODS

SQL, Microsoft Excel and Word, were used to complete this project. Below is the SQL code used to extract the data and Excel function used to calculate moving averages.

A. SQL - Extract Data from Database

SQL querying the city_list table:

```
SELECT *
FROM city_list
WHERE city = 'San Antonio';
```

SQL query to extract the San Antonio data.

```
SELECT *
FROM city_data
WHERE city = 'San Antonio';
```

SQL query to extract the global data.

```
SELECT *
FROM global_data;
```

B. Microsoft Excel – Create line charts

The two CSV files were combined into one excel spreadsheet. A new column was add for both San Antonio and Global titled "7-Year Moving Average".

The 7-Year moving average was calculated for both San Antonio and Global using the AVERAGE() function to calculate the average temperature for the first five years.

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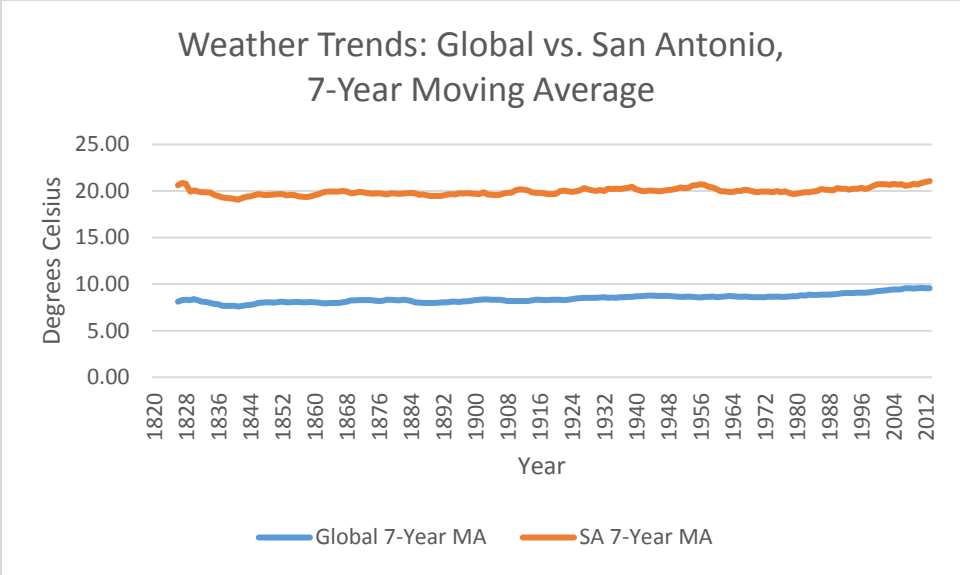

Fig. 1. Seven year moving average of temperature, Global vs. San Antonio, TX

III. CONCLUSION

After analyzing the data line chart, the following similarities, differences, and overall trends were observed:

- San Antonio's average annual temperature is consistently greater (hotter) than the for Global
- Global temperatures maintained a sideway trend, with a slightly noticeable upwards trend by 2012
- San Antonio temperatures maintained a sideway trend, with a slightly noticeable upwards trend by 2012
- Weather trends for global and San Antonio weather trend appears to be consistent over the last few hundred years