

Explore Weather Trends Project: Insights Report

Data Analyst Nanodegree Program

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1. Overview

In this project, I will analyze local and global temperature data and compare the temperature trends where I live to overall global temperature trends.

2. Dataset

The dataset was extracted from the udacity database with SQL commands.

```
SELECT *  
FROM global_data;  
  
SELECT year, avg_temp  
FROM city_data  
WHERE city = 'Manaus';
```

The generated files were saved in the directory **data/**. Contains two files with two features each:

- **global_temp_avg.csv**: Trend of global average temperature in each year
 - year
 - avg_temp

- **manaus_temp_avg**: Trend of average temperature of my city (Manaus - Brazil) in each year
 - year
 - Avg_temp

3. Wrangling Process

The wrangling process consisted of the three stages:

- Gather Stage: Downloaded the datasets with SQL commands from the Udacity Database.
- Assess Stage: Assessment the datasets to visually and programatically in order to identify some inconsistencies in the datasets, if it has, documentation them.
- Clean Stage: Clean all the dataset and combine them in the final to generate one master dataset to work with.

Inconsistencies

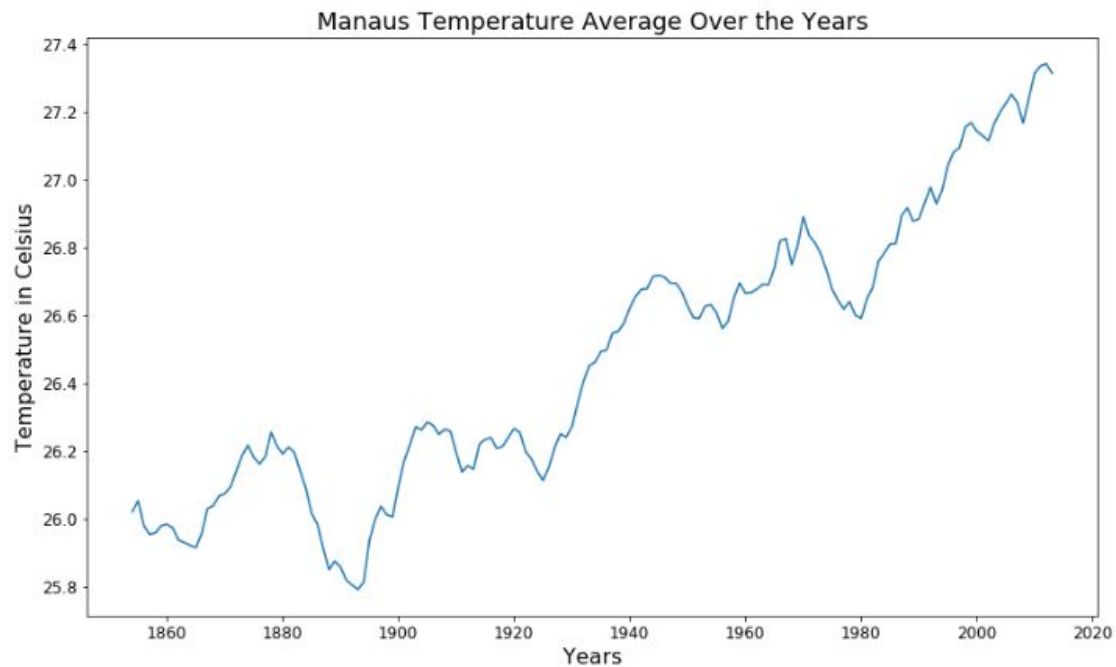
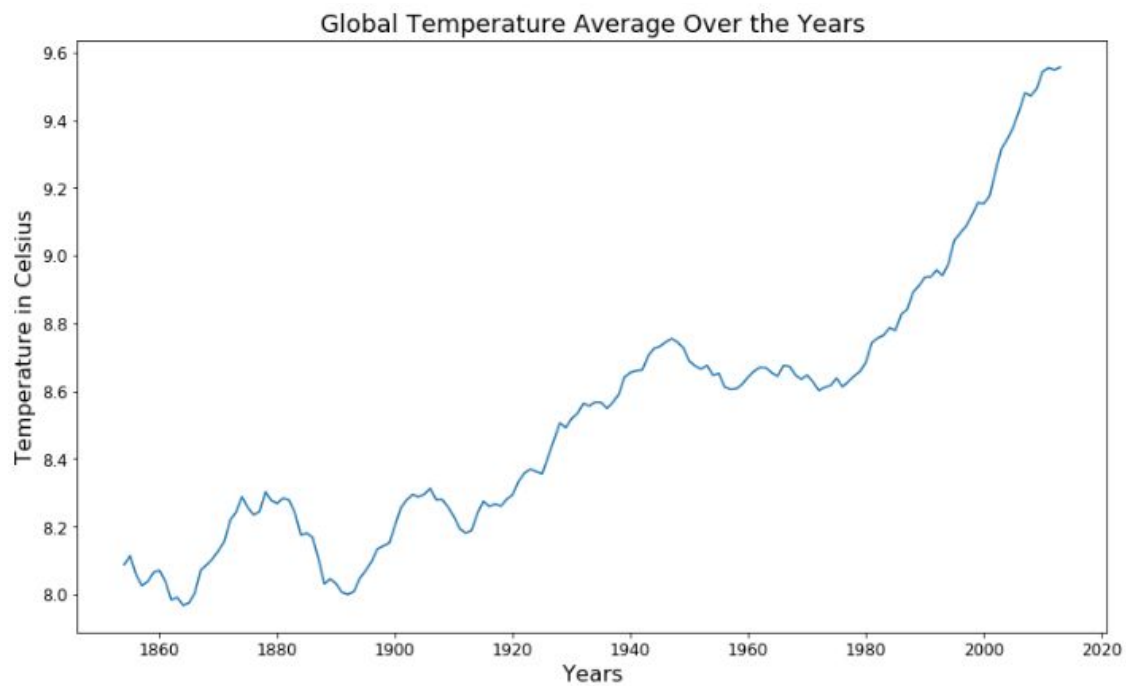
Quality

- NaN values in avg_temp column in manaus_df
- Rename columns names in both dataset

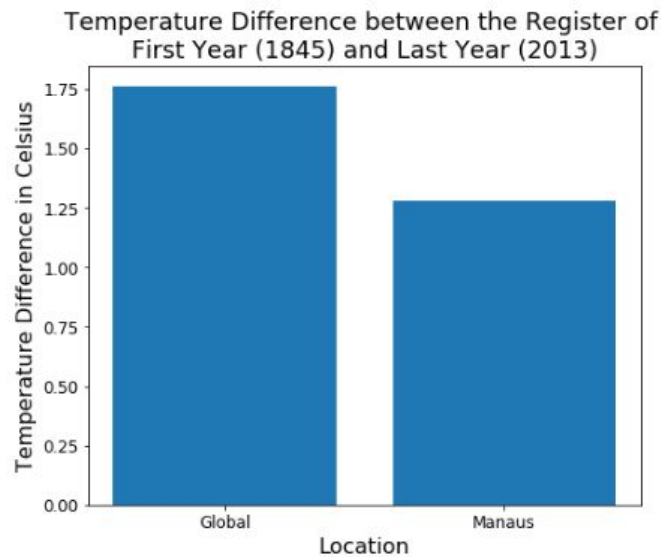
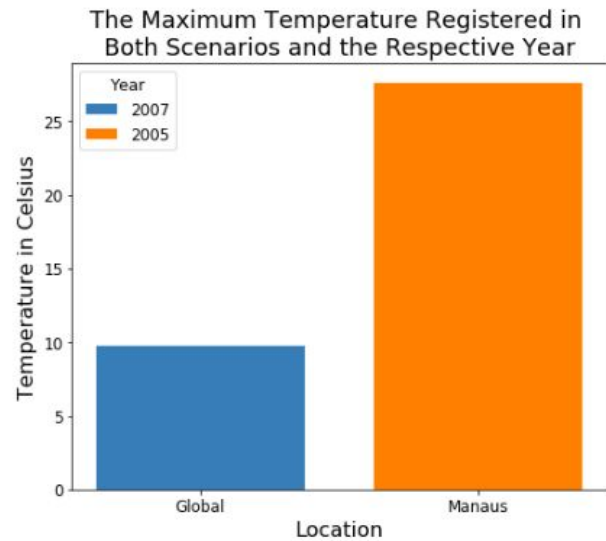
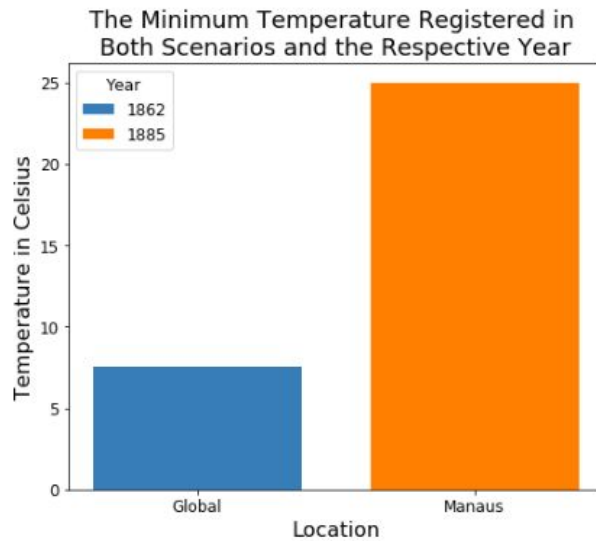
4. Moving Averages

```
global_mv_avg = master_df['global_avg_temp'].rolling(10).mean()  
manaus_mv_avg = master_df['manaus_avg_temp'].rolling(10).mean()
```

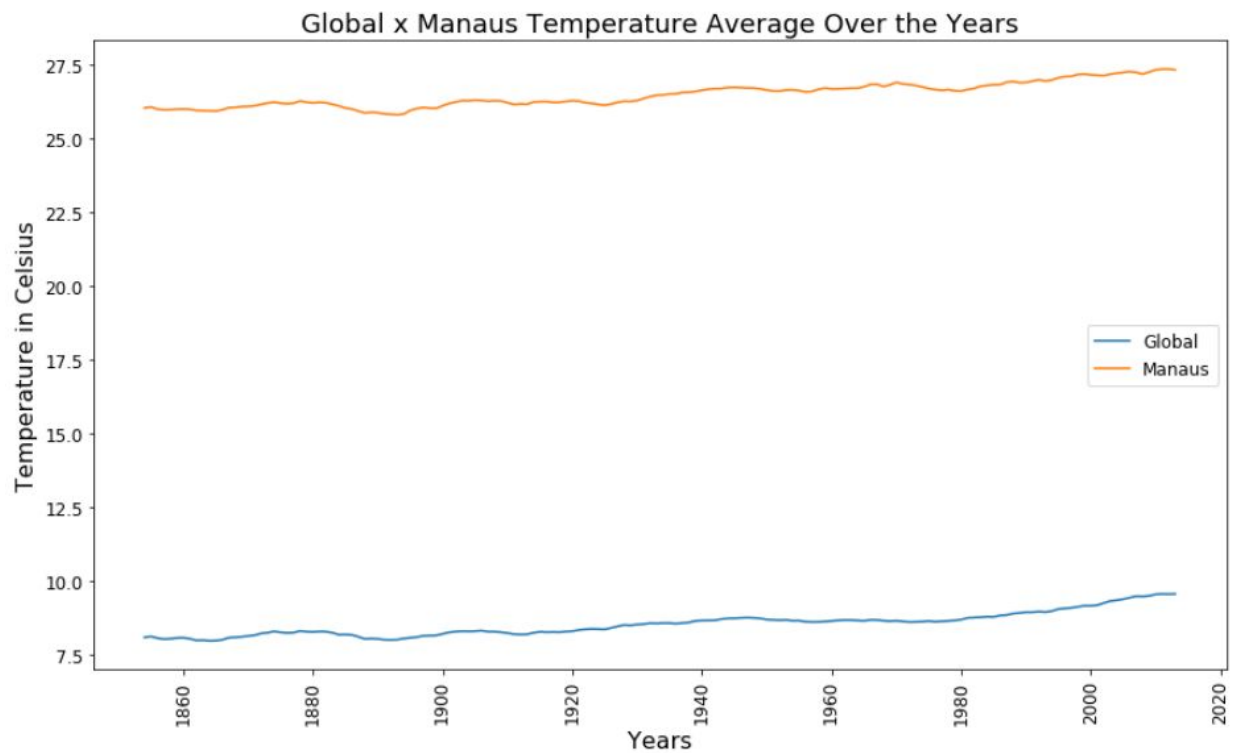
5. Analysis



- We can observe that in both scenarios we have a trend: temperature is increased over the years



- The Year of the minimum and maximum Global temperature registered is different from the Year of minimum and maximum Manaus temperature registered. This is curious and this happened maybe because Manaus is a very hot city and the concentrated industry here maybe cause this difference.
- The difference between the first year and last year registered on our dataset show us that global increase more than Manaus city.



- The difference between the Global location with the local (Manaus) location is pretty higher. About 16 °C.
- Even with this difference, it is possible to notice the trend. The Global temperatura it is getting hotter, consequently, Manaus city too. This is very insane because Manaus city is already a really hot city.

6. Conclusion

There is evidence that suggests that the global temperature is getting hotter over the years and it is possible to check this trend in local cities.