

# Data Analyst Nanodegree Program

## Project 1: Explore Weather Trends

### 1. Preparation:

- Data Gathering: The following SQL scripts are used to gather the weather data from SQL workspace for this project.

A) `SELECT * FROM city_data WHERE city = 'Tokyo';` (city: Tokyo)

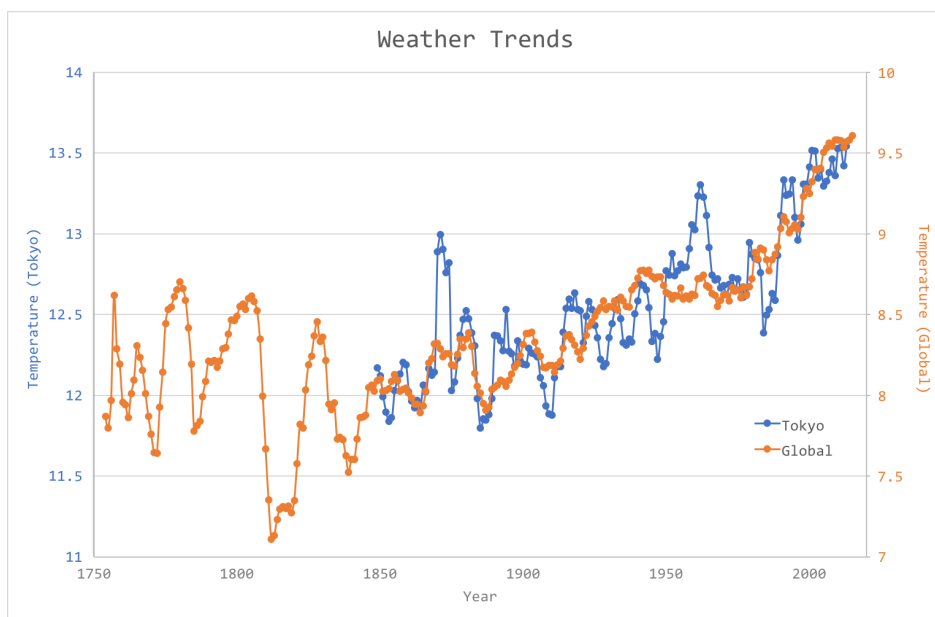
B) `SELECT * FROM global_data;` (global)

- Analysis: The weather data are imported to Microsoft Excel. Moving averages are calculated based on the data of the past 5 years. The

value (*avg*) for a specific year (*y*) will be: 
$$avg = \frac{\sum_{y-4}^y temp(y)}{5}$$

- Plotting: The moving averages of local and global temperature are plotted in the same chart for ease of comparison, and two y-axes are used(left for “Tokyo”, right for “Global”).

### 2. Line Chart:



### 3. Observations:

- On average, the local temperature (Tokyo) is about 4°C higher than global temperature.
- The local temperature trends align with global trends. Temperature continues to rise between 1845 and 2013.
- Local temperature has larger variation than global temperature.
- The rising trend is only observed and apparent in the past hundred years.