Data preparation:

1. SQL: ran the following queries; downloaded the csv. files; and, opened / saved them all in Excel –

```
SELECT *
FROM global_data

SELECT *
FROM city_list
WHERE city LIKE 'Tok%' AND country LIKE 'Japan%'

SELECT *
FROM city_data
WHERE city = 'Tokyo' AND country = 'Japan'

SELECT avg_temp as
tokyo_avg_temp
FROM city_data
WHERE UPPER (city) LIKE '%TOKYO%'
;

SELECT g.year,  g.avg_temp AS global_avg_temp, c.avg_temp AS tokyo_avg_temp
FROM global_data g
JOIN city_data c
ON g.year = c.year
WHERE UPPER (C.city) LIKE '%TOKYO%'
ORDER BY c.year
;

SELECT g.year, g.avg_temp AS global_avg_temp, c.avg_temp AS chicago_avg_temp
FROM global_data g
JOIN city_data c
ON g.year = c.year
WHERE UPPER (C.city) LIKE '%CHICAGO%'
ORDER BY c.year
;
```

2. Using the “Moving Averages” as a guide, calculated 10-year moving averages for global (average) temperature; and, a comparison between Tokyo and Chicago.
3. A key visualization consideration was creating a simple and easily readable chart beginning with (the year) 1845 and ending with (the year) 2013.

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Observations:

a. Used Chicago against the global average temperatures because the initial year (1845) marked a roughly 2-degree average temperature separation between each measurement – Global 8 | Chicago | 10 | Tokyo 12 degrees (Celsius).
b. From about 1862 until 1880 both Tokyo and Chicago's temperatures diverged when the most significant differences began around 1870. Therein, Tokyo was about 3 degrees warmer than Chicago. Around 1860, Chicago's temperatures trended downward only returning to where they once were (in 1860) around 1879 or 1880. Conversely, Tokyo's temperature remained fairly constant from 1860 until about 1870 before increasing from about 1870 until 1880.
c. In comparison to observation b, with the exceptions of slight decreases around 1862 and in about 1890 from about 1862 until around 1880, the global average temperature trended upward.
d. Overall, all three temperature averages (Chicago / Global / Tokyo) trended upward from 1845 until 2013 with the global average temperature increasing most of these three categories (at just under 2 degrees).

Temperature Chart: