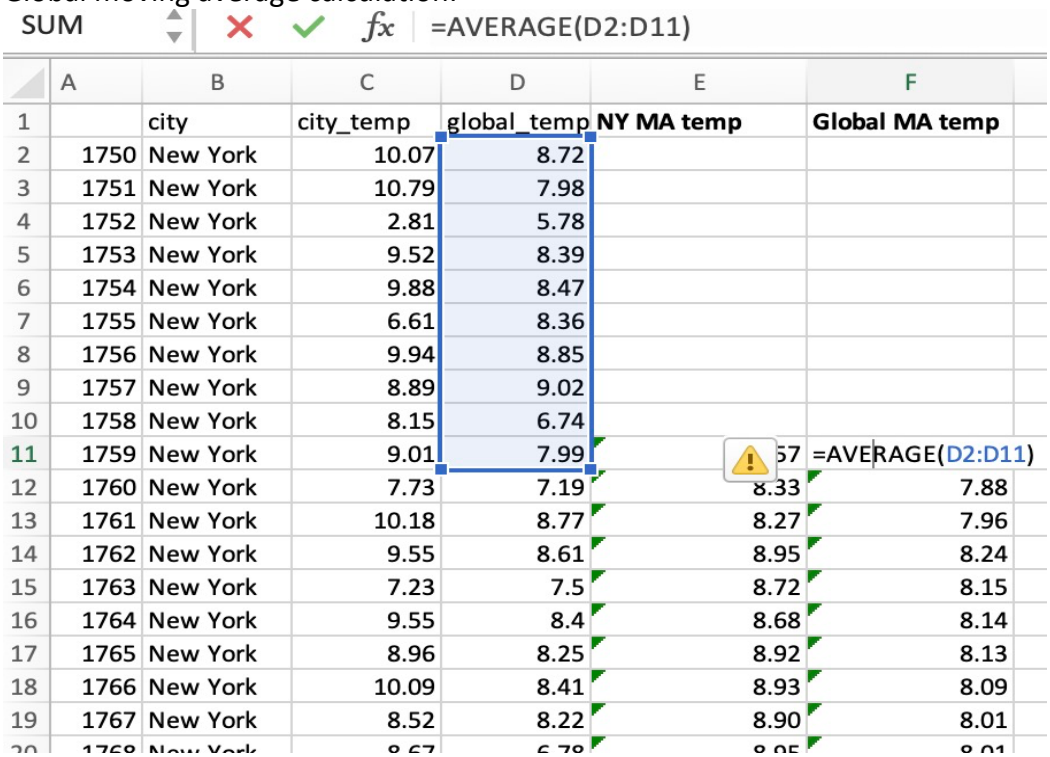
SQL query:

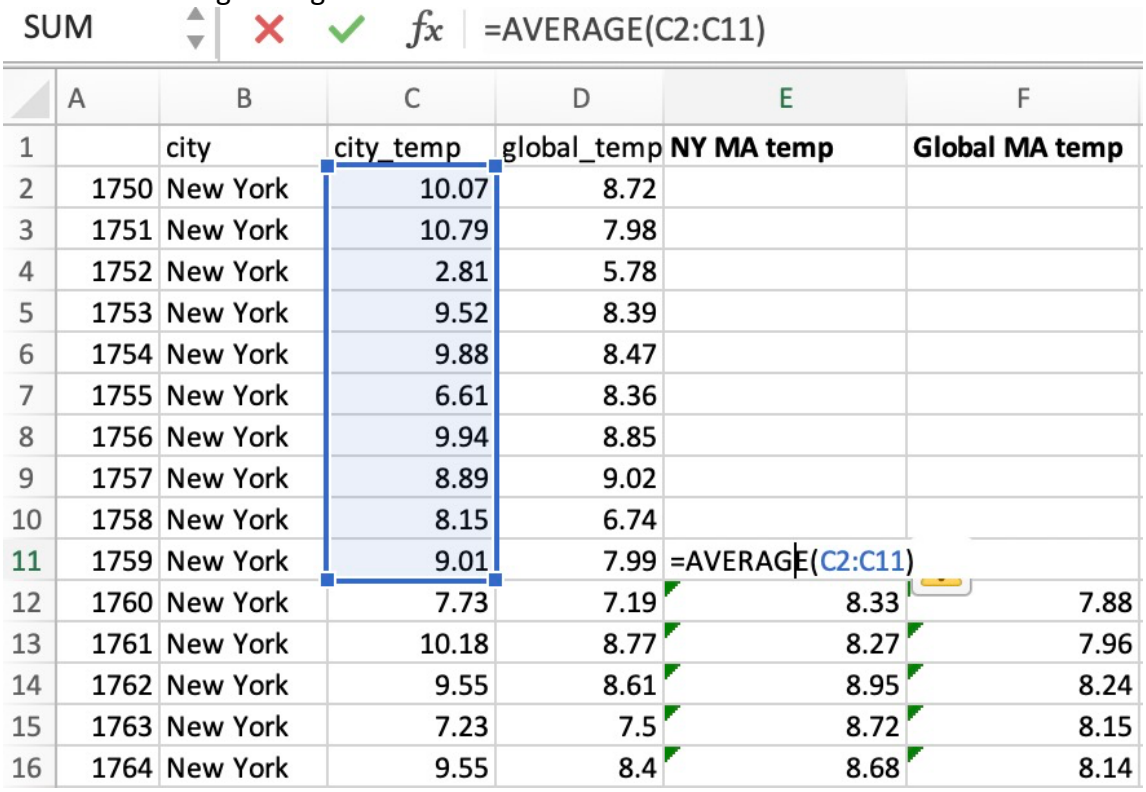
```
SELECT  c.year,   c.city,  c.avg_temp AS city_temp,  g.avg_temp AS global_temp
FROM  city_data c   JOIN global_data   ON c.year =g.year
WHERE   c.city = 'New York'
```

Global moving average calculation:

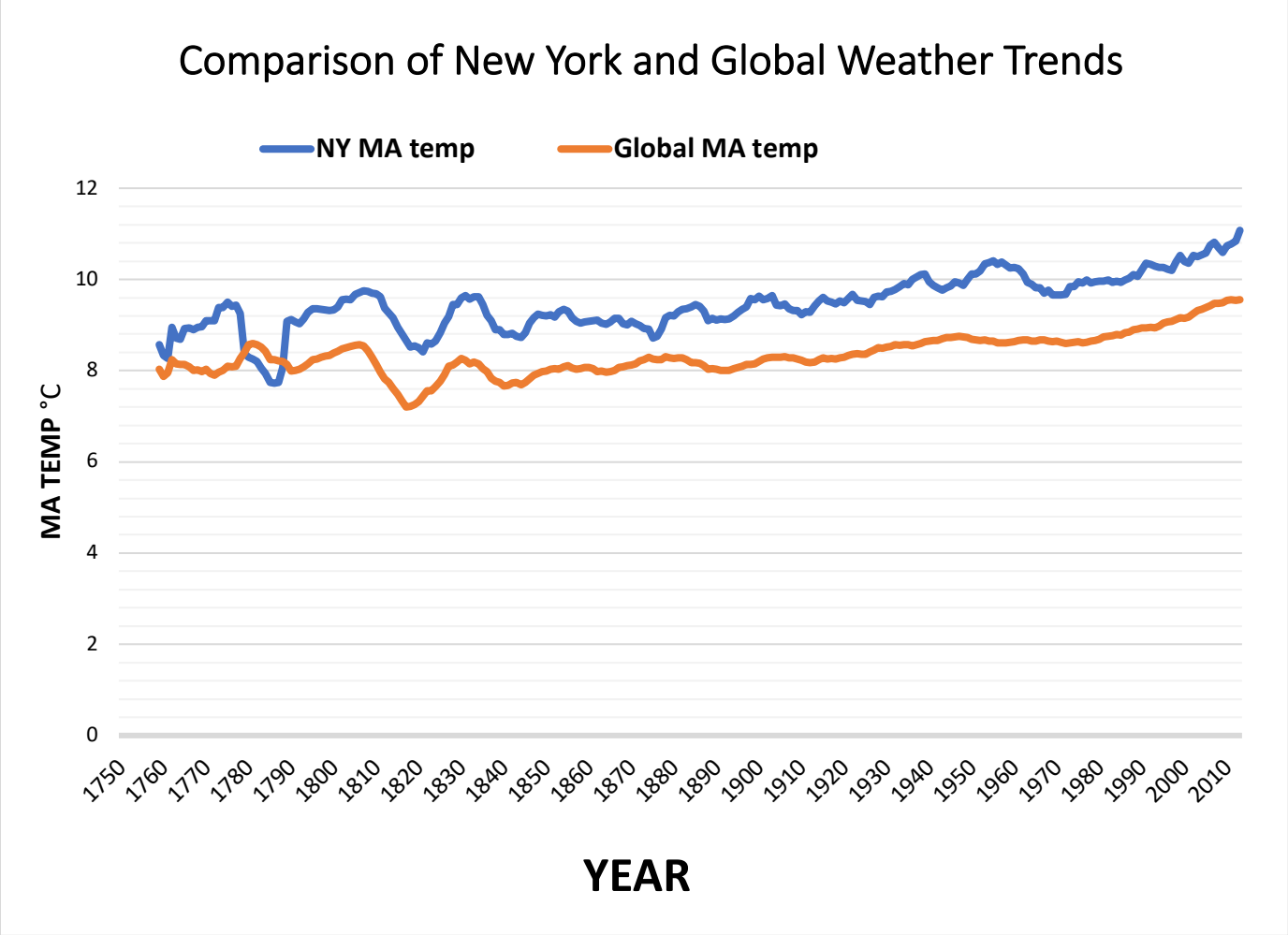


	A	B	C	D	E	F
1		city	city_temp	global_temp	NY MA temp	Global MA temp
2	1750	New York	10.07	8.72		
3	1751	New York	10.79	7.98		
4	1752	New York	2.81	5.78		
5	1753	New York	9.52	8.39		
6	1754	New York	9.88	8.47		
7	1755	New York	6.61	8.36		
8	1756	New York	9.94	8.85		
9	1757	New York	8.89	9.02		
10	1758	New York	8.15	6.74		
11	1759	New York	9.01	7.99	57	=AVERAGE(D2:D11)
12	1760	New York	7.73	7.19	8.33	7.88
13	1761	New York	10.18	8.77	8.27	7.96
14	1762	New York	9.55	8.61	8.95	8.24
15	1763	New York	7.23	7.5	8.72	8.15
16	1764	New York	9.55	8.4	8.68	8.14
17	1765	New York	8.96	8.25	8.92	8.13
18	1766	New York	10.09	8.41	8.93	8.09
19	1767	New York	8.52	8.22	8.90	8.01

New York moving average calculation:



	A	B	C	D	E	F
1		city	city_temp	global_temp	NY MA temp	Global MA temp
2	1750	New York	10.07	8.72		
3	1751	New York	10.79	7.98		
4	1752	New York	2.81	5.78		
5	1753	New York	9.52	8.39		
6	1754	New York	9.88	8.47		
7	1755	New York	6.61	8.36		
8	1756	New York	9.94	8.85		
9	1757	New York	8.89	9.02		
10	1758	New York	8.15	6.74		
11	1759	New York	9.01	7.99	=AVERAGE(C2:C11)	
12	1760	New York	7.73	7.19	8.33	7.88
13	1761	New York	10.18	8.77	8.27	7.96
14	1762	New York	9.55	8.61	8.95	8.24
15	1763	New York	7.23	7.5	8.72	8.15
16	1764	New York	9.55	8.4	8.68	8.14



MA= moving average

Outline:
- Accessing Data with SQL, the data of New York will be analyze using Excel.
- Read the questions and understand what variables we are trying to plot. The X-axis refers to timeline, and Y-axis refers to temperature in Celsius.
- In order to smooth out the dates shown in graph, moving average will be plot instead of yearly averages. The moving average will be calculate based on 10 years interval.
- The data are plotting in line plot; different dataset will display in different colors.

- Using color, size, scale, labels to visualize the trends.

Observations:

1. The average temperature of New York is greater than the average temperature of Global at most of the time, New York is hotter on average compared to global average.
2. Between 1780 and 1790, the average temperature of New York is in a U-Shaped, and is lower than Global average temperature during this period.
3. Since the year of 1840, both New York and Global average temperature have been in a rising trend.
4. The ups and downs trends between New York and Global are consistent after 1790, as global temperature changes, the New York temperature also changes in the same direction.