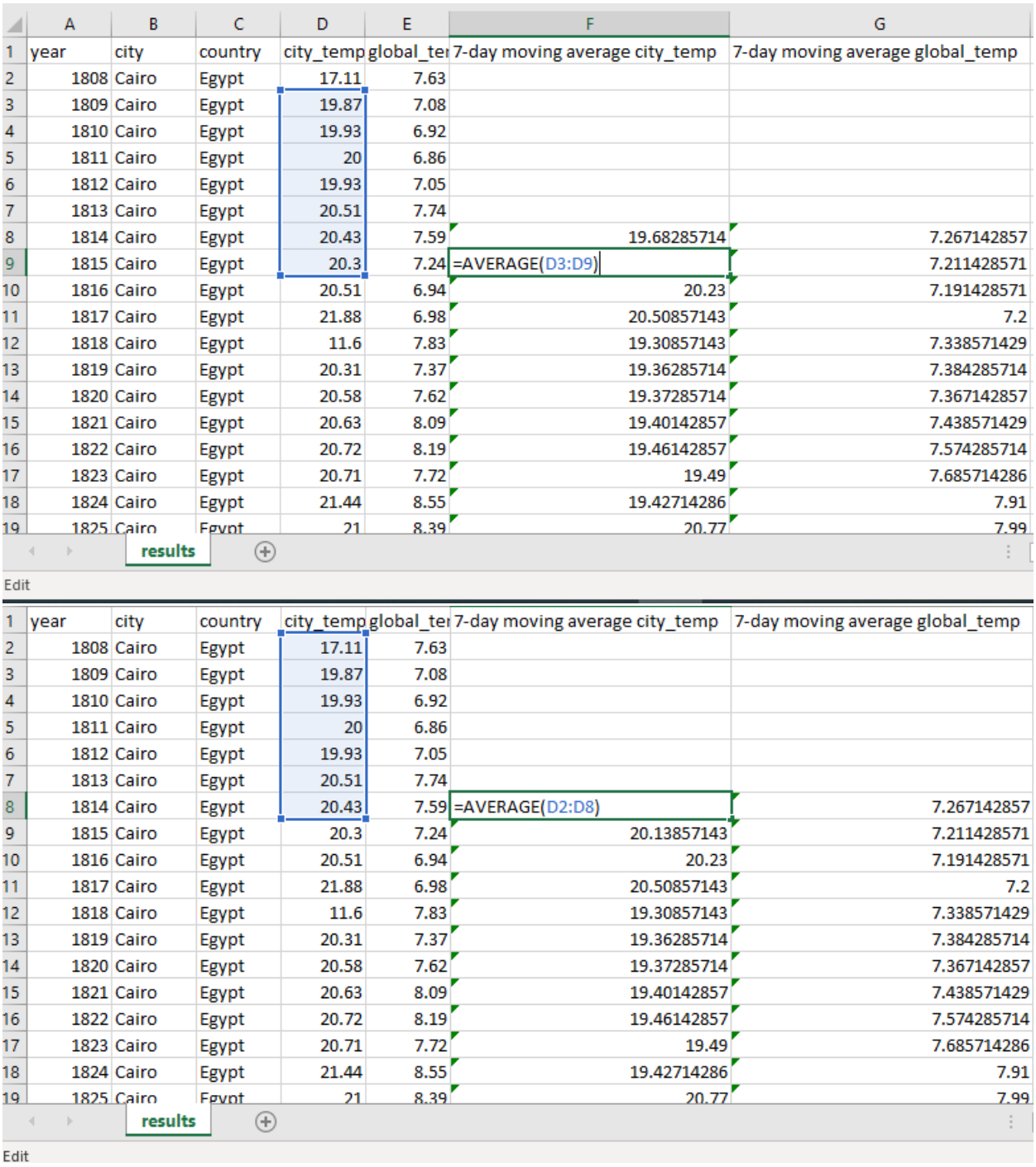
Preparation of data to be visualized in the chart

Steps:

- Gathering data: I used SQL to extract the columns: year, city, country, avg global temp and avg city temp for the nearest city Cairo in my country Egypt, and the SQL code:

```sql
SELECT c.year, c.city, c.country, c.avg_temp
city_temp, g.avg_temp global_temp
FROM city_data c
JOIN global_data g
ON c.year = g.year
WHERE c.city = 'Cairo' AND c.country = 'Egypt';
```

- I calculated the moving average using AVERAGE function in excel by taking the average of each 7 rows of avg city temp column and so on with avg global temp.



	A	B	C	D	E	F	G
1	year	city	country	city_temp	global_ter	7-day moving average city_temp	7-day moving average global_temp
2	1808	Cairo	Egypt	17.11	7.63		
3	1809	Cairo	Egypt	19.87	7.08		
4	1810	Cairo	Egypt	19.93	6.92		
5	1811	Cairo	Egypt	20	6.86		
6	1812	Cairo	Egypt	19.93	7.05		
7	1813	Cairo	Egypt	20.51	7.74		
8	1814	Cairo	Egypt	20.43	7.59	19.68285714	7.267142857
9	1815	Cairo	Egypt	20.3	7.24	=AVERAGE(D3:D9)	7.211428571
10	1816	Cairo	Egypt	20.51	6.94	20.23	7.191428571
11	1817	Cairo	Egypt	21.88	6.98	20.50857143	7.2
12	1818	Cairo	Egypt	11.6	7.83	19.30857143	7.338571429
13	1819	Cairo	Egypt	20.31	7.37	19.36285714	7.384285714
14	1820	Cairo	Egypt	20.58	7.62	19.37285714	7.367142857
15	1821	Cairo	Egypt	20.63	8.09	19.40142857	7.438571429
16	1822	Cairo	Egypt	20.72	8.19	19.46142857	7.574285714
17	1823	Cairo	Egypt	20.71	7.72	19.49	7.685714286
18	1824	Cairo	Egypt	21.44	8.55	19.42714286	7.91
19	1825	Cairo	Egypt	21	8.39	20.77	7.99

results

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	year	city	country	city_temp	global_ter	7-day moving average city_temp	7-day moving average global_temp
2	1808	Cairo	Egypt	17.11	7.63		
3	1809	Cairo	Egypt	19.87	7.08		
4	1810	Cairo	Egypt	19.93	6.92		
5	1811	Cairo	Egypt	20	6.86		
6	1812	Cairo	Egypt	19.93	7.05		
7	1813	Cairo	Egypt	20.51	7.74		
8	1814	Cairo	Egypt	20.43	7.59	=AVERAGE(D2:D8)	7.267142857
9	1815	Cairo	Egypt	20.3	7.24	20.13857143	7.211428571
10	1816	Cairo	Egypt	20.51	6.94	20.23	7.191428571
11	1817	Cairo	Egypt	21.88	6.98	20.50857143	7.2
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results

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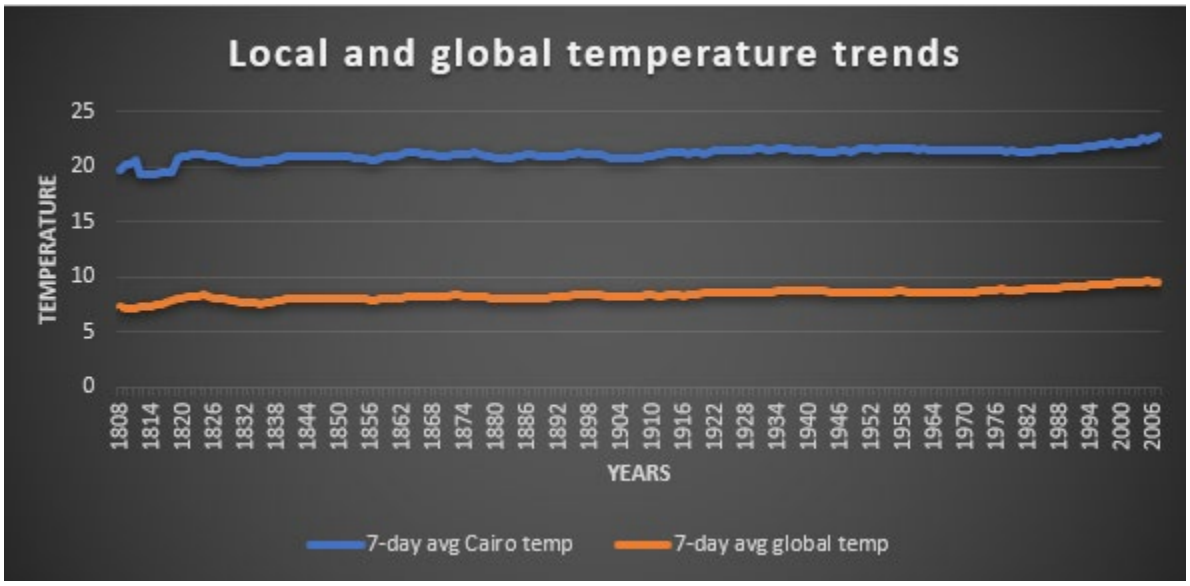
- My key considerations when deciding how to visualize the trends:
  I wanted to compare between the two trends, so I decided to make two lines one for the selected city and the global.

Line Chart



Observations about similarities and differences between trends

1. The nearest city which is Cairo is hotter on average compared to the global average and the difference has been consistent over time.
2. The changes in my city's temperatures over time are similar of the changes in the global average.
3. The overall trend looks like that the global temperature increases over time, so the world is getting hotter, and the trend has not been consistent over the last few years because between 1830 and 1841 the world was getting cooler.
4. I observe that my city's temperature was decreasing between 1817 and 1824.

The correlation coefficient between average Cairo temperature and average global temperature: 0.912938881 which means that there is positive strong relationship between them.