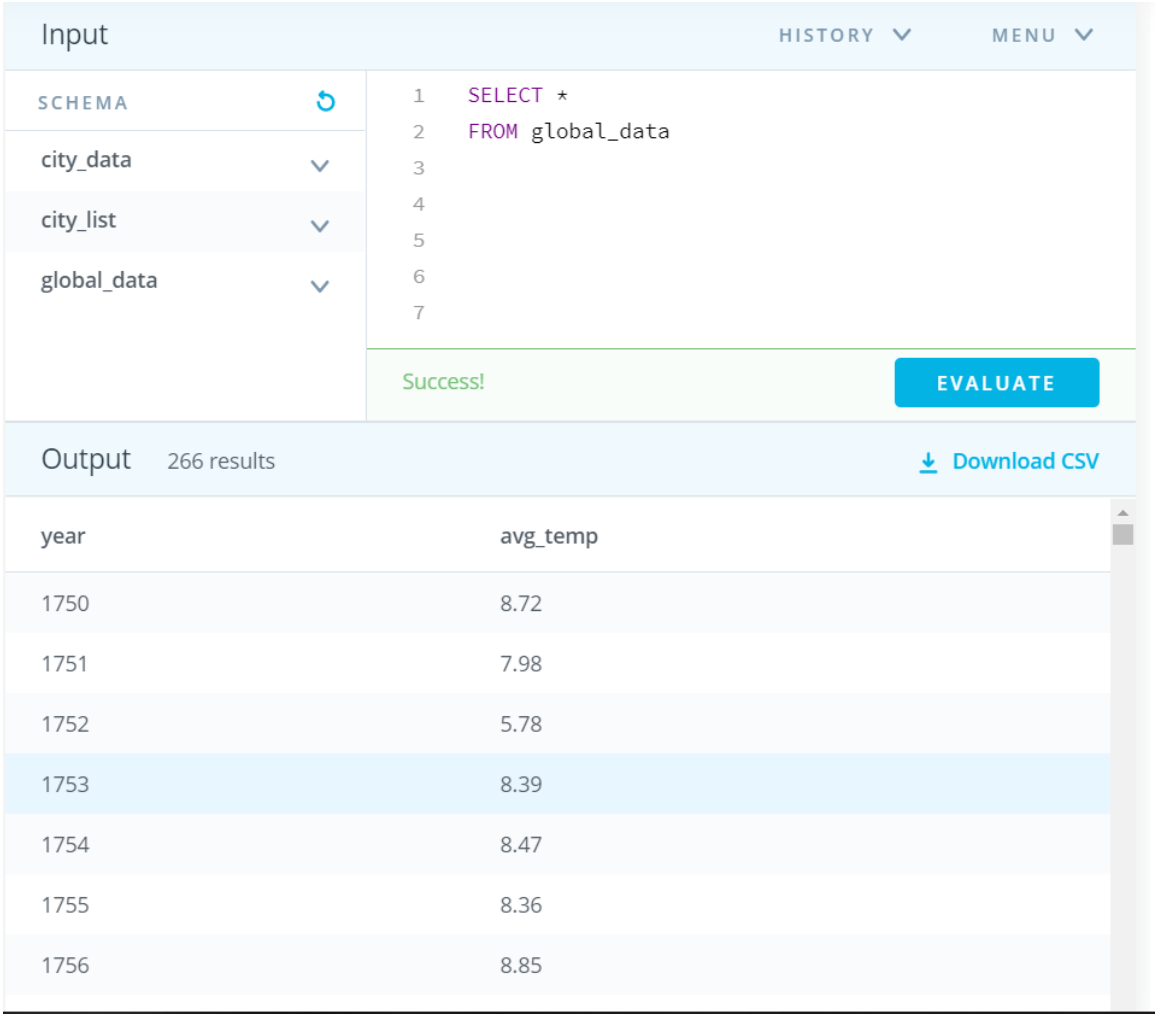
Project 1: Exploring Weather Trends

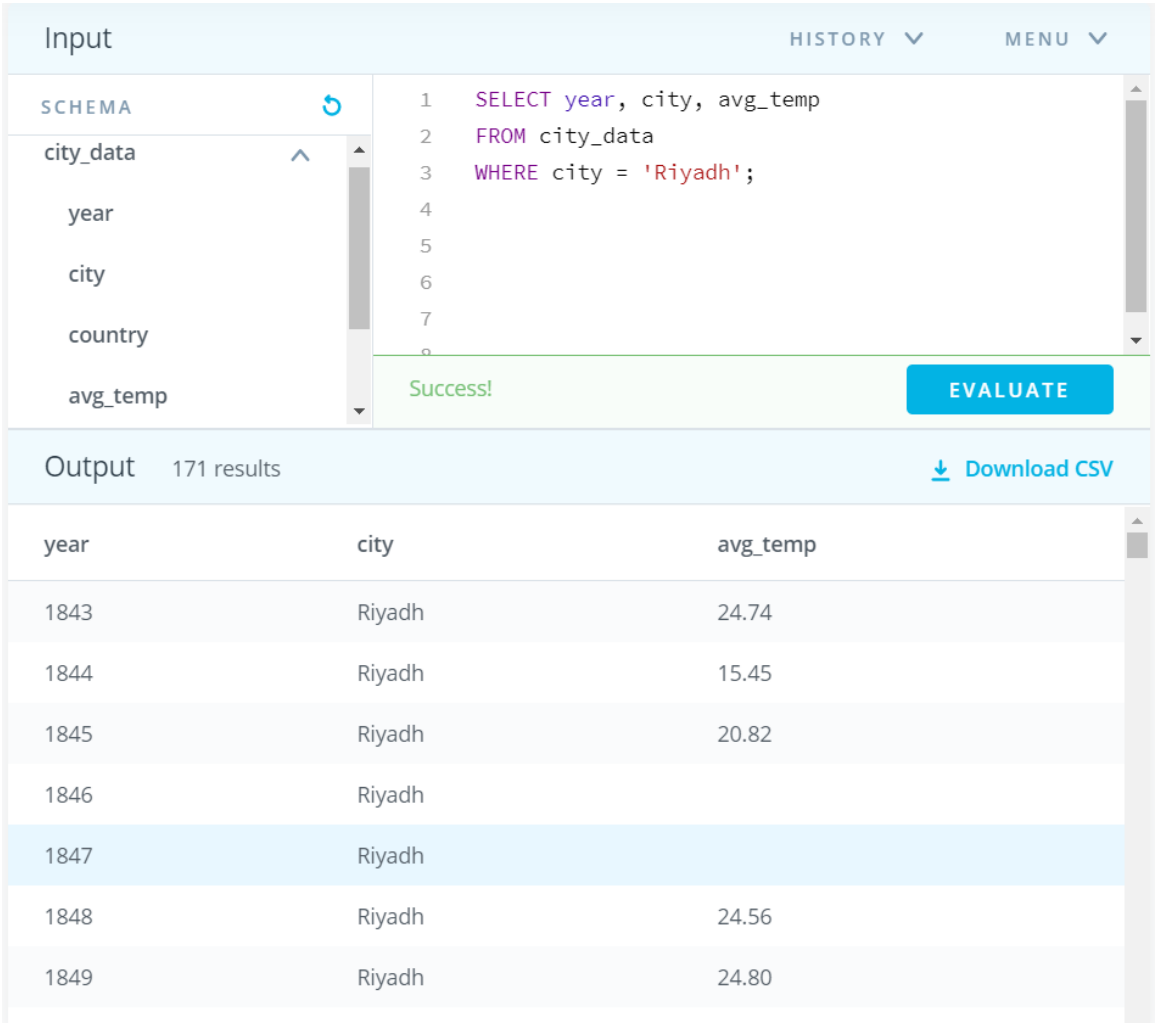
Steps taken to prepare the data

I used SQL command to extract the data form the database then I export it to Excel file.

- I used SQL command to extract the data from **global_data**

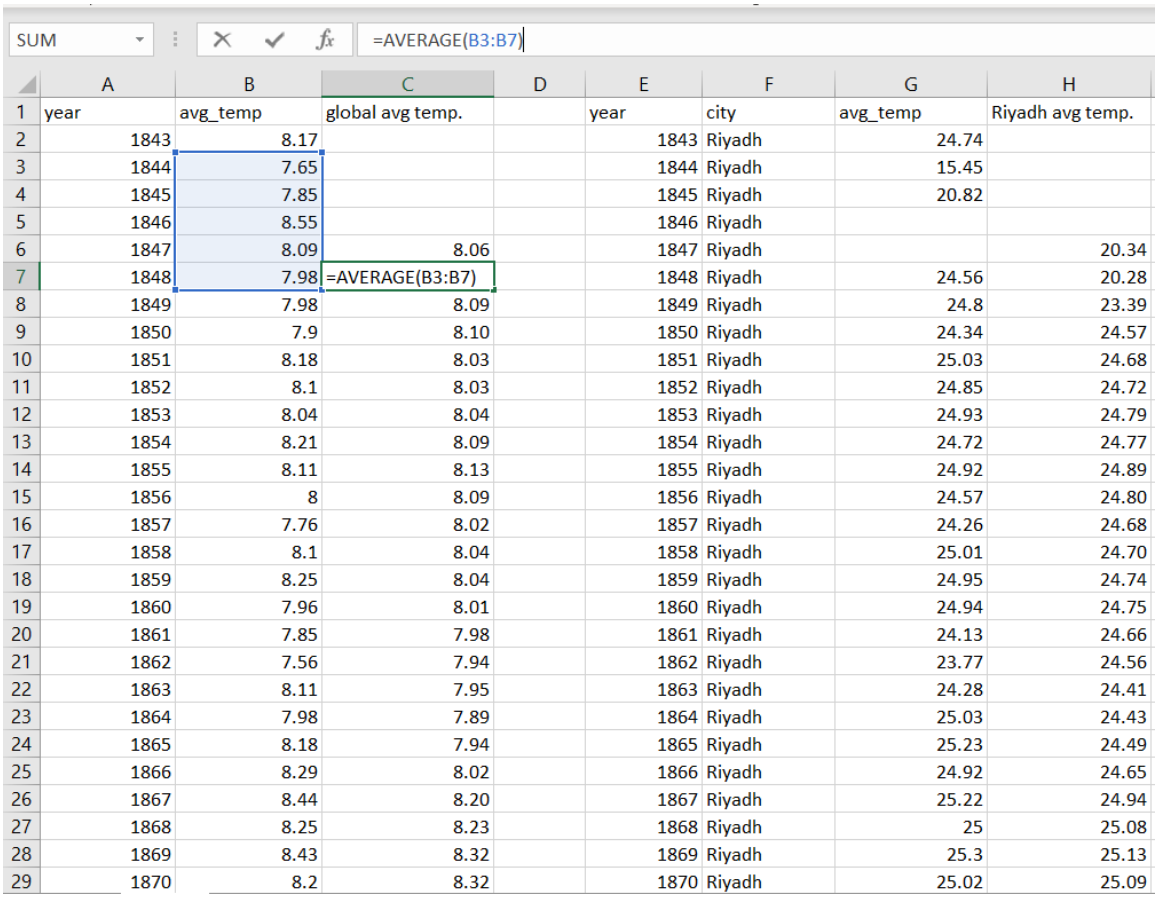


- I use SQL command to extract the data from **city_data**



How I have calculated the moving average

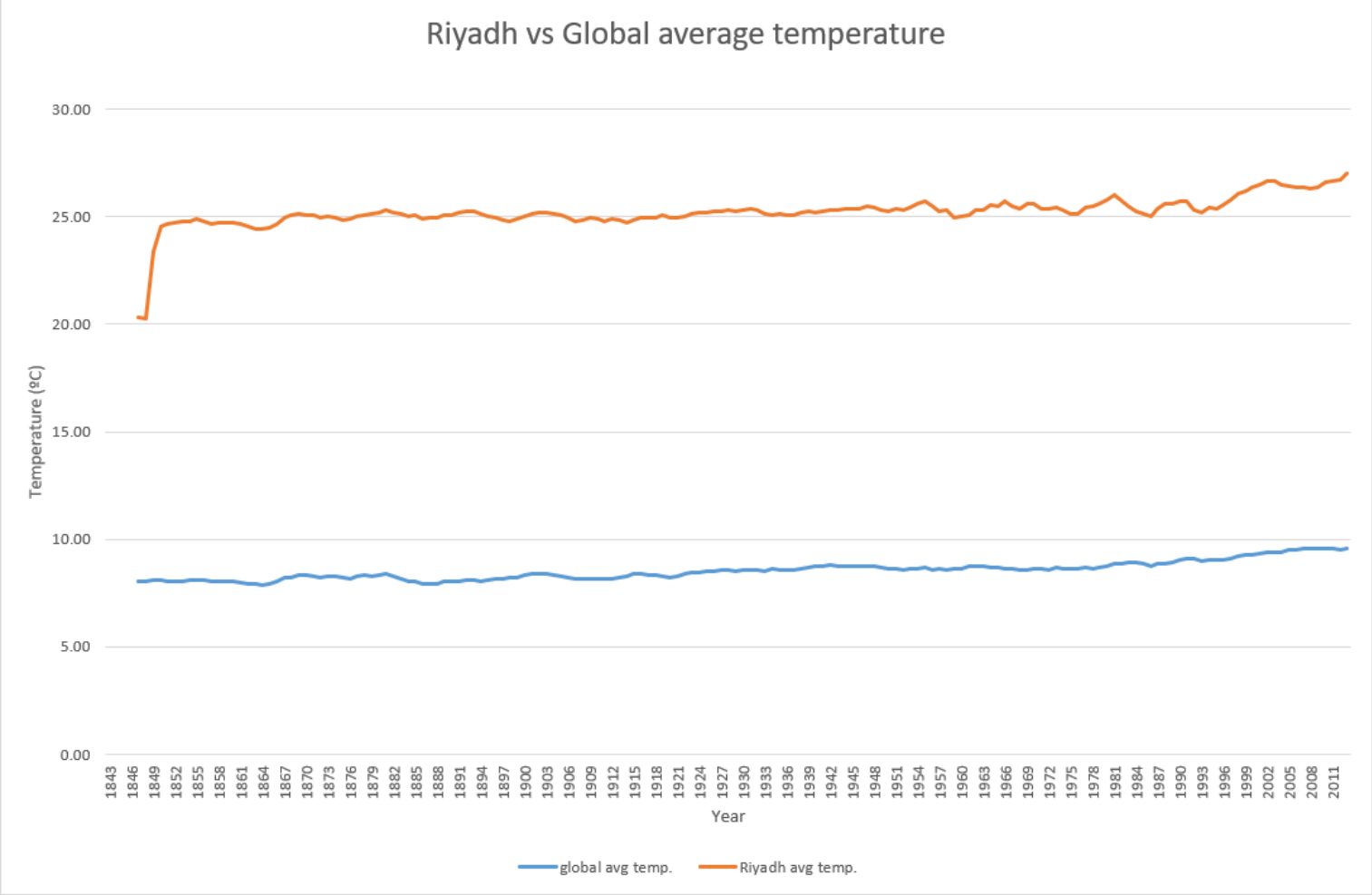
I used Excel to calculate the moving average and to make line chart (visualization).



	A	B	C	D	E	F	G	H
1	year	avg_temp	global avg temp.		year	city	avg_temp	Riyadh avg temp.
2	1843	8.17			1843	Riyadh	24.74	
3	1844	7.65			1844	Riyadh	15.45	
4	1845	7.85			1845	Riyadh	20.82	
5	1846	8.55			1846	Riyadh		
6	1847	8.09	8.06		1847	Riyadh		20.34
7	1848	7.98	=AVERAGE(B3:B7)		1848	Riyadh	24.56	20.28
8	1849	7.98	8.09		1849	Riyadh	24.8	23.39
9	1850	7.9	8.10		1850	Riyadh	24.34	24.57
10	1851	8.18	8.03		1851	Riyadh	25.03	24.68
11	1852	8.1	8.03		1852	Riyadh	24.85	24.72
12	1853	8.04	8.04		1853	Riyadh	24.93	24.79
13	1854	8.21	8.09		1854	Riyadh	24.72	24.77
14	1855	8.11	8.13		1855	Riyadh	24.92	24.89
15	1856	8	8.09		1856	Riyadh	24.57	24.80
16	1857	7.76	8.02		1857	Riyadh	24.26	24.68
17	1858	8.1	8.04		1858	Riyadh	25.01	24.70
18	1859	8.25	8.04		1859	Riyadh	24.95	24.74
19	1860	7.96	8.01		1860	Riyadh	24.94	24.75
20	1861	7.85	7.98		1861	Riyadh	24.13	24.66
21	1862	7.56	7.94		1862	Riyadh	23.77	24.56
22	1863	8.11	7.95		1863	Riyadh	24.28	24.41
23	1864	7.98	7.89		1864	Riyadh	25.03	24.43
24	1865	8.18	7.94		1865	Riyadh	25.23	24.49
25	1866	8.29	8.02		1866	Riyadh	24.92	24.65
26	1867	8.44	8.20		1867	Riyadh	25.22	24.94
27	1868	8.25	8.23		1868	Riyadh	25	25.08
28	1869	8.43	8.32		1869	Riyadh	25.3	25.13
29	1870	8.2	8.32		1870	Riyadh	25.02	25.09

I calculate the moving average by taking the average for the first 5 years (1843-1847) then taking the moving average to the first 5 years after the first year (1844-1848)

Line Chart



My observations:

- Riyadh consider a hotter city comparing to the global average and the difference is been consistent over time it is about 15 degree.
- The average changing in Riyadh in the first 5 years is high its about 5 degree then become fixed.
- The temperatures are changing slowly over the years.
- As we can notice in the last 20 years the temperature become to increased, and I expect to increase in the upcoming years (in both Riyadh and globally).