Bangkok Vs. Global Temperature

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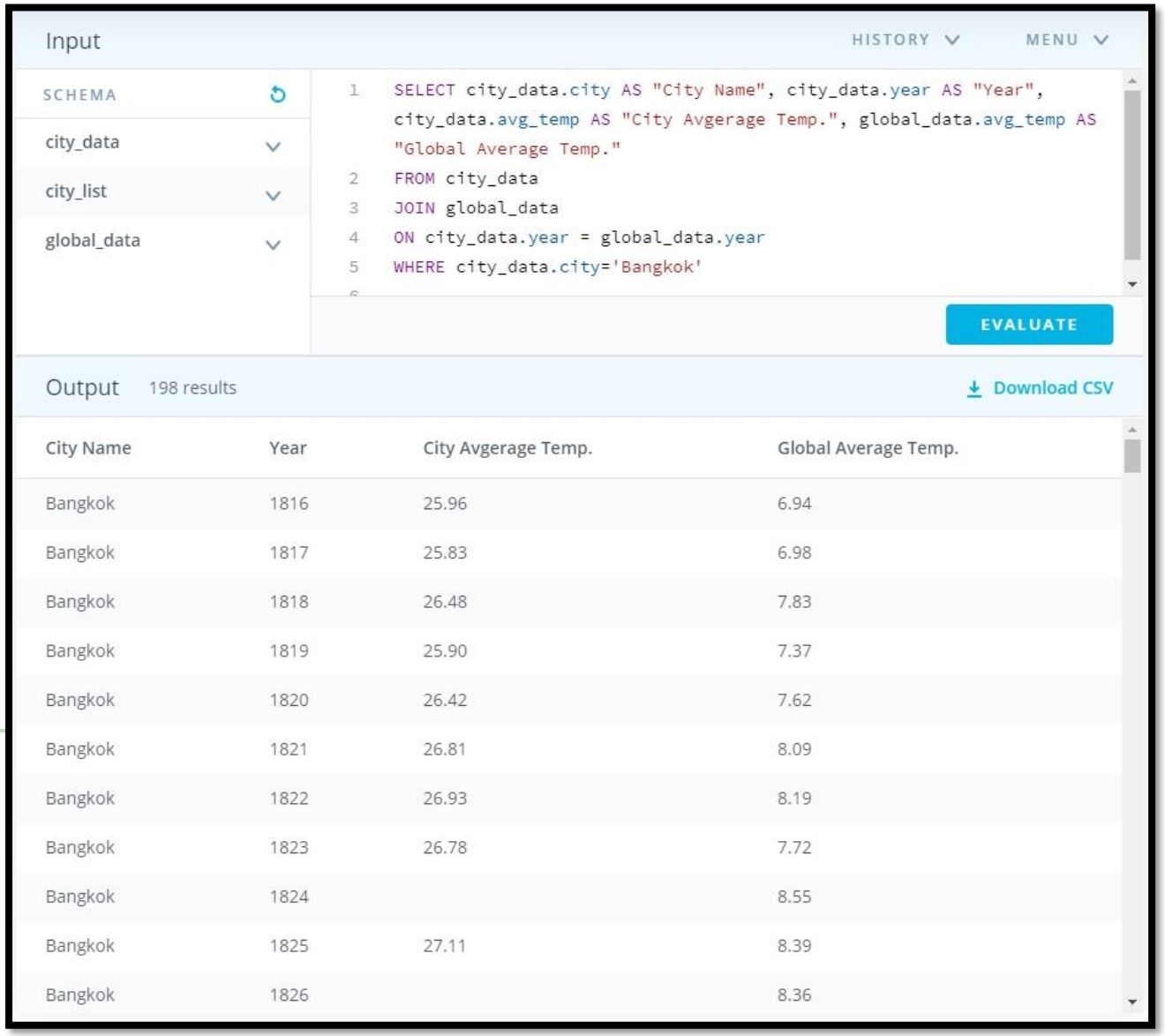
SQL query

For this project I have chosen to query a data from two data set which are city_data and global_data where I selected column as from the picture and perform an inner join so that the year on both data set are a match.



Data manipulating

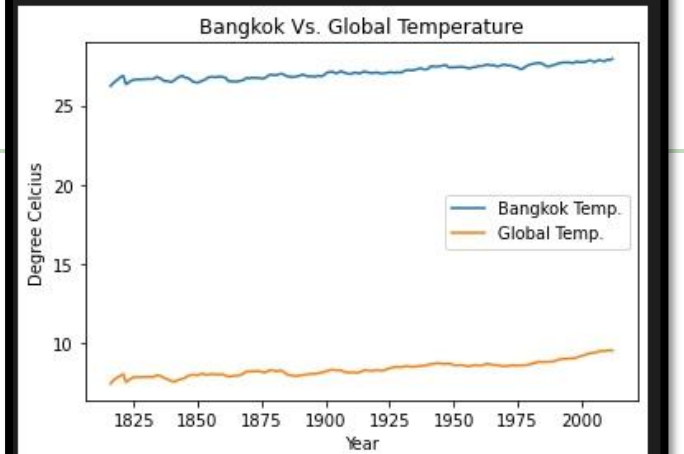
In this process I have calculated 7 years moving averages for both Bangkok and Global Temperature on Excel. To calculate for MA, I basically use the build-in Average function on excel and selected seven years average temperature and keep doing this till the end of the row. I'm applying the same method for the 7 years MA global temperature.

	A	B	C	D	E	F
1	City Name	Year	City Avgerage Temp.	Global Average Temp.	7 year City MA	7 year Global MA
2	Bangkok	1816	25.96	6.94	26.23	7.47
3	Bangkok	1817	25.83	6.98	26.40	7.68
4	Bangkok	1818	26.48	7.83	26.55	7.80
5	Bangkok	1819	25.9	7.37	26.66	7.90
6	Bangkok	1820	26.42	7.62	26.81	8.00
7	Bangkok	1821	26.81	8.09	26.88	8.09
8	Bangkok	1822	26.93	8.19	26.33	7.57
9	Bangkok	1823	26.78	7.72	26.45	7.69
10	Bangkok	1825	27.11	8.39	26.63	7.89
11	Bangkok	1833	26.83	8.01	26.68	7.91
12	Bangkok	1834	26.82	8.15	26.81	8.02
13	Bangkok	1835	25.89	7.39	26.74	7.99
14	Bangkok	1836	26.36	7.7	26.67	7.94
15	Bangkok	1837	25.84	7.38	26.52	7.82
16	Bangkok	1838	27.08	7.51	26.56	7.79
17	Bangkok	1839	26.59	7.63	26.49	7.68
18	Bangkok	1840	26.83	7.8	26.49	7.65
19	Bangkok	1841	27.58	7.69	26.60	7.59
20	Bangkok	1842	26.88	8.02	26.74	7.68
21	Bangkok	1843	26.89	8.17	26.81	7.74
22	Bangkok	1844	26.39	7.65	26.89	7.78
23	Bangkok	1845	26.13	7.85	26.76	7.83
24	Bangkok	1846	26.55	8.55	26.75	7.96
25	Bangkok	1847	26.18	8.09	26.66	8.00
26	Bangkok	1848	26.52	7.98	26.51	8.04
27	Bangkok	1849	26.62	7.98	26.47	8.04
28	Bangkok	1850	26.72	7.9	26.44	8.00
29	Bangkok	1851	26.85	8.18	26.51	8.08
30	Bangkok	1852	26.67	8.1	26.59	8.11
31	Bangkok	1853	26.94	8.04	26.64	8.04
32	Bangkok	1854	26.94	8.21	26.75	8.06
33	Bangkok	1855	26.84	8.11	26.80	8.07
34	Bangkok	1856	26.56	8	26.79	8.08
35	Bangkok	1857	26.72	7.76	26.79	8.06
36	Bangkok	1858	26.95	8.1	26.80	8.05

	A	B	C	D	E	F
1	City Name	Year	City Avge	Global Av	7 year City	7 year Glo
2	Bangkok	1816	25.96	6.94		
3	Bangkok	1817	25.83	6.98		
4	Bangkok	1818	26.48	7.83		
5	Bangkok	1819	25.9	7.37		
6	Bangkok	1820	26.42	7.62		
7	Bangkok	1821	26.81	8.09		
8	Bangkok	1822	26.93	8.19	=Average(C2:C8)	

Data Visualization

```
#line 1 plot
x1 = BvGTemp.Year
y1 = BvGTemp[('7 year City MA')]
plt.plot(x1, y1, label = "Bangkok Temp.")
#line 2 plot
x2 = BvGTemp.Year
y2 = BvGTemp[('7 year Global MA')]
plt.plot(x2, y2, label = "Global Temp.")
# Set the x axis label
plt.xlabel('Year')
# Set the y axis label
plt.ylabel('Degree Celcius')
# Set a title of the current axes.
plt.title('Bangkok Vs. Global Temperature')
# show a legend on the plot
plt.legend()
# Display the figure.
plt.show()
```



In this step I have use Python: Matplotlib as my data visualize tool. I have chosen a line chart where the axes and the legend are clearly on the chart.

Interpreting the data

- Bangkok temperature has been consistently increasing every year, the highest recorded was in 2010 and the temperature was 28.54 °C. The lowest recorded was in 1862 at 25.37 °C.
- Global temperature has also been consistently increasing every year. The highest ever been recorded was in 2007 at 9.73 °C and the lowest was in 1816 at 6.94 °C.
- The similarity between Bangkok's average temperature and Global's average temperature is that it is consistently increasing over the year.
- The big difference between both temperature is that Bangkok lies in the tropical latitudes whereas when researcher calculate for the global average temperature on a grid weighted by area on the grid point: latitudes further away from the equator have smaller areas therefore global temperature is recorded generally low over year.