Explore Weather Trends

❖ Introduction

➢ This project is about exploring global weather trends and comparing them with the closest big city where I live then visualizing the results with a line chart.

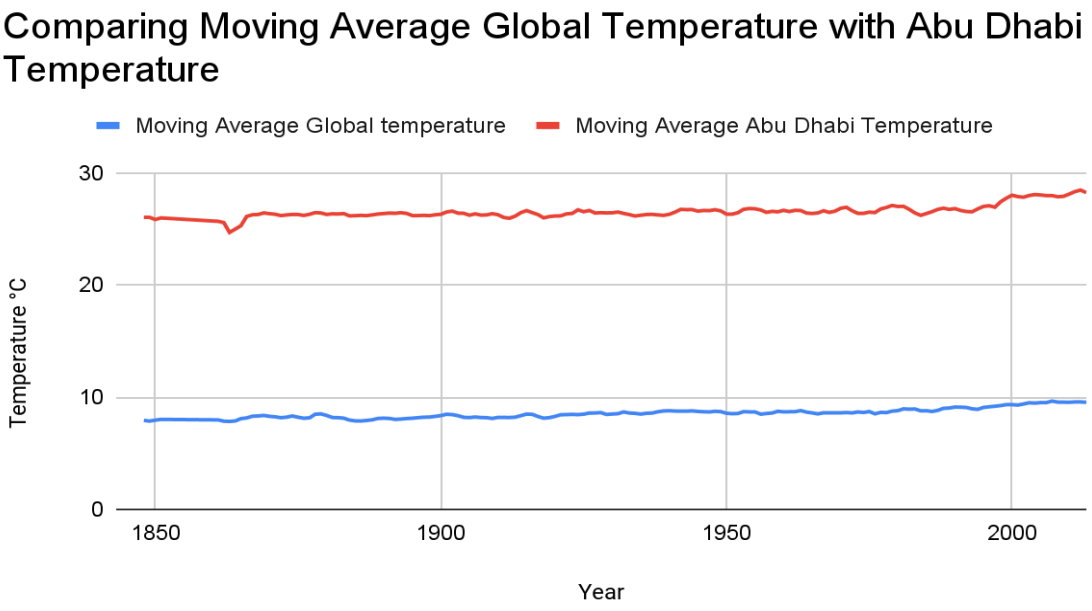
❖ Process

➢ First I have exported data required using SQL with the provided database which is the year and average temperature of the closest big city which is Abu Dhabi in United Arab Emirates and globally using the following queries:

```sql
-- Query 1 (Return global temperature with year)
SELECT * FROM global_data
-- Query 2 (Return Abu Dhabi temperature with year)
SELECT c.year, c.avg_temp, 0 AS abu_dhabi_avg_temp
FROM city_data AS c
WHERE c.city = 'Abu Dhabi'
```

➢ Then I have imported both csv files to google sheets then combined the data and got the moving average of every year by getting the average of the 2 previous years with the current one then I have visualized the results in a line chart.

❖ Result



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❖ Moving Average Calculation

G4 | =AVERAGE(B2:B4)

	A	B	C	D	E	F	G	H	I
1	Year	Average Global	Average Abu Dhabi Temperature			Year	Moving Average	Moving Average Abu Dhabi Temperature	
2	1843	8.17	26.04			1843			
3	1844	7.65	26.26			1844			
4	1848	7.98	25.83			1848	7.933333333	26.04333333	
5	1849	7.98	26.01			1849	7.87	26.03333333	
6	1850	7.9	25.69			1850	7.953333333	25.84333333	
7	1851	8.18	26.25			1851	8.02	25.98333333	
8	1861	7.85	25.1			1861	7.976666667	25.68	
9	1862	7.56	25.34			1862	7.863333333	25.56333333	
10	1863	8.11	23.62			1863	7.84	24.68666667	
11	1864	7.98	26			1864	7.883333333	24.98666667	
12	1865	8.18	26.26			1865	8.09	25.29333333	
13	1866	8.29	26.09			1866	8.15	26.11666667	
14	1867	8.44	26.44			1867	8.303333333	26.26333333	
15	1868	8.25	26.33			1868	8.326666667	26.28666667	
16	1869	8.43	26.51			1869	8.373333333	26.42666667	
17	1870	8.2	26.24			1870	8.293333333	26.36	
18	1871	8.12	26.17			1871	8.25	26.30666667	
19	1872	8.19	26.16			1872	8.17	26.19	
20	1873	8.35	26.42			1873	8.22	26.25	
21	1874	8.43	26.3			1874	8.323333333	26.29333333	
22	1875	7.86	26.13			1875	8.213333333	26.28333333	
23	1876	8.08	26.19			1876	8.123333333	26.20666667	
24	1877	8.54	26.59			1877	8.16	26.30333333	
25	1878	8.83	26.59			1878	8.483333333	26.45666667	
26	1879	8.17	26.09			1879	8.513333333	26.42333333	
27	1880	8.12	26.2			1880	8.373333333	26.29333333	
28	1881	8.27	26.75			1881	8.186666667	26.34666667	
29	1882	8.13	26.05			1882	8.173333333	26.33333333	
30	1883	7.98	26.3			1883	8.126666667	26.36666667	
31	1884	7.77	26.15			1884	7.96	26.16666667	
32	1885	7.92	26.1			1885	7.89	26.18333333	
33	1886	7.95	26.38			1886	7.88	26.21	
34	1887	7.91	26.08			1887	7.926666667	26.18666667	
35	1888	8.09	26.3			1888	7.983333333	26.25333333	
36	1889	8.32	26.61			1889	8.106666667	26.33	

❖ Observations

- ➢ Some of Abu Dhabi's temperature drops and raises are similar to global temperature drops and raises.
- ➢ The temperature in Abu Dhabi is hotter than global temperature.
- ➢ The chart shows that the world is getting hotter over the last few years.
- ➢ Between 1848 to 1863 the temperature was dropping in Abu Dhabi but it wasn't noticeable globally.

❖ Why A Line Chart Was Used

- ➢ Line chart is commonly used to visualize trends with categories to compare data over time which makes it easier to understand the specific changes that occur in time.