

Explore Weather Trends Report

1. Extracting Weather Data

I used SQL (server query language) to extract average yearly temperatures across the world and extract average annual temperatures for the closest city to me, Lagos.

The picture below is a screenshot of the SQL query.

The screenshot shows a web interface titled "Accessing Data With SQL". It features an "Input" section on the left with a schema list: "city_data", "city_list", and "global_data". The main area displays a SQL query with six lines: 1. SELECT cd.year, cd.city, cd.avg_temp AS lagos_avg_temp, gd.avg_temp AS global_avg_temp; 2. FROM global_data AS gd; 3. INNER JOIN city_data AS cd; 4. ON cd.year = gd.year; 5. WHERE cd.city = 'Lagos'; 6. ORDER BY year DESC. Below the query is a green "Success!" message and a blue "EVALUATE" button. The "Output" section shows "165 results" and a "Download CSV" link. A table displays the results with columns: year, city, lagos_avg_temp, and global_avg_temp. The table lists data for the years 2013 down to 2005, all for the city of Lagos.

year	city	lagos_avg_temp	global_avg_temp
2013	Lagos	27.36	9.61
2012	Lagos	27.15	9.51
2011	Lagos	27.35	9.52
2010	Lagos	27.79	9.70
2009	Lagos	27.53	9.51
2008	Lagos	27.30	9.43
2007	Lagos	27.46	9.73
2006	Lagos	27.53	9.53
2005	Lagos	27.39	9.70

2. Creating moving averages

Microsoft Excel was used to Analyse and visualize the above information, a decade moving average was calculated for both the avg_lagos_temp and avg_global_temp columns. The calculation stopped in the year 1873 because of null values for avg_lagos_temp.

The moving average was calculated using "AVERAGE" function in excel to find the average of 10 cells which makes up a decade (10 years), e.g., "=AVERAGE(C2:C11)".

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Clipboard Font Alignment

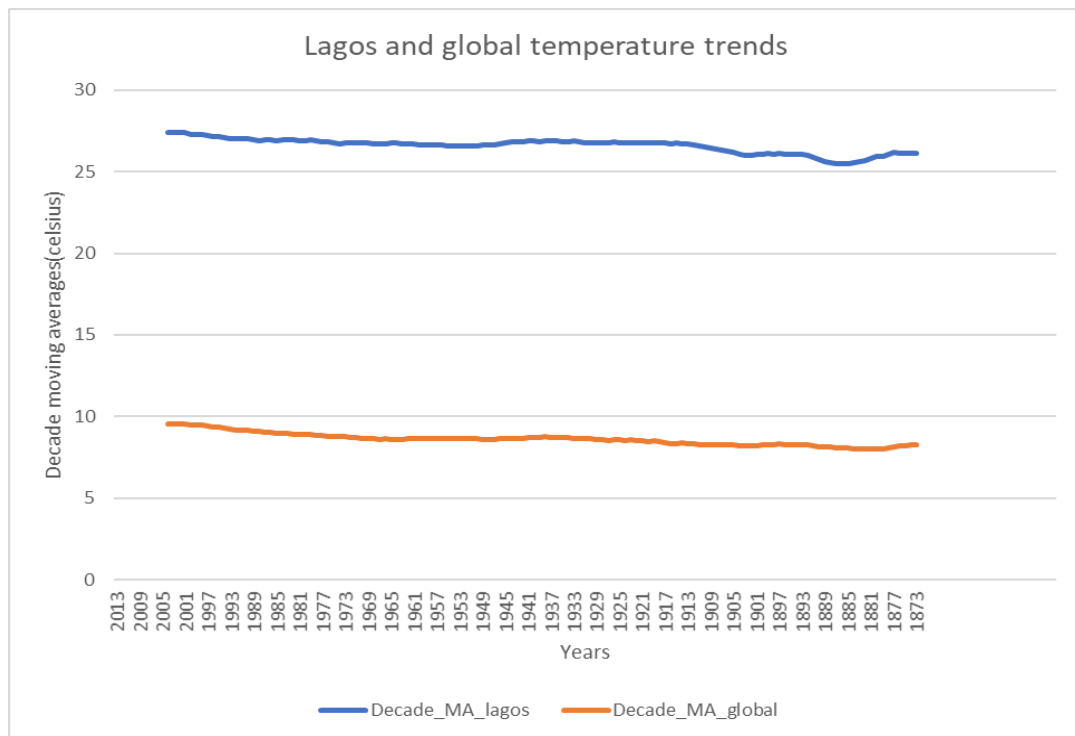
UPDATES AVAILABLE Updates for Office are ready to be installed, but first we need to close some apps. Update now

	A	B	C	D	E	F	G
1	year	city	lagos_avg_temp	Decade_MA_lagos	global_avg_temp	Decade_MA_global	
2	2013	Lagos	27.36		9.61		
3	2012	Lagos	27.15		9.51		
4	2011	Lagos	27.35		9.52		
5	2010	Lagos	27.79		9.7		
6	2009	Lagos	27.53		9.51		
7	2008	Lagos	27.3		9.43		
8	2007	Lagos	27.46		9.73		
9	2006	Lagos	27.53		9.53		
10	2005	Lagos	27.39		9.7		
11	2004	Lagos	27.32	27.418	9.32	9.556	
12	2003	Lagos	27.37	27.419	9.53	9.548	
13	2002	Lagos	27.13	27.417	9.57	9.554	
14	2001	Lagos	26.92	27.374	9.41	9.543	
15	2000	Lagos	27.02	27.297	9.2	9.493	
16	1999	Lagos	27.03	27.247	9.29	9.471	
17	1998	Lagos	27.53	27.27	9.52	9.48	
18	1997	Lagos	26.91	27.215	9.2	9.427	
19	1996	Lagos	26.92	27.154	9.04	9.378	
20	1995	Lagos	27.07	27.122	9.35	9.343	
21	1994	Lagos	26.84	27.074	9.04	9.315	
22	1993	Lagos	26.9	27.027	8.87	9.249	
23	1992	Lagos	26.73	26.987	8.84	9.176	
24	1991	Lagos	26.88	26.983	9.18	9.153	
25	1990	Lagos	27.06	26.987	9.23	9.156	
26	1989	Lagos	26.71	26.955	8.92	9.119	
27	1988	Lagos	27.04	26.906	9.2	9.087	
28	1987	Lagos	27.51	26.966	8.99	9.066	
29	1986	Lagos	26.65	26.939	8.83	9.045	
30	1985	Lagos	26.74	26.906	8.66	8.976	
31	1984	Lagos	26.98	26.92	8.69	8.941	
32	1983	Lagos	26.99	26.929	9.03	8.957	
33	1982	Lagos	26.66	26.922	8.64	8.937	
34	1981	Lagos	26.79	26.913	9.17	8.936	
35	1980	Lagos	26.85	26.892	8.98	8.911	
36	1979	Lagos	26.99	26.92	8.73	8.892	
37	1978	Lagos	26.73	26.889	8.69	8.841	

Analysis 2

3. Visualizing the data

The data was visualized using a line chart with the moving averages of both temperatures plotted on the y-axis and the year on the x-axis.



4. Observations

I made the following observations from the above data visualization

- The average temperature in lagos is greater than the average global temperature, and the difference was maintained through the years
- There is a gradual increase in the average global temperature
- There is also a gradual increase in the average temperature in lagos every year.
- The increase in temperature both locally and globally are similar.