

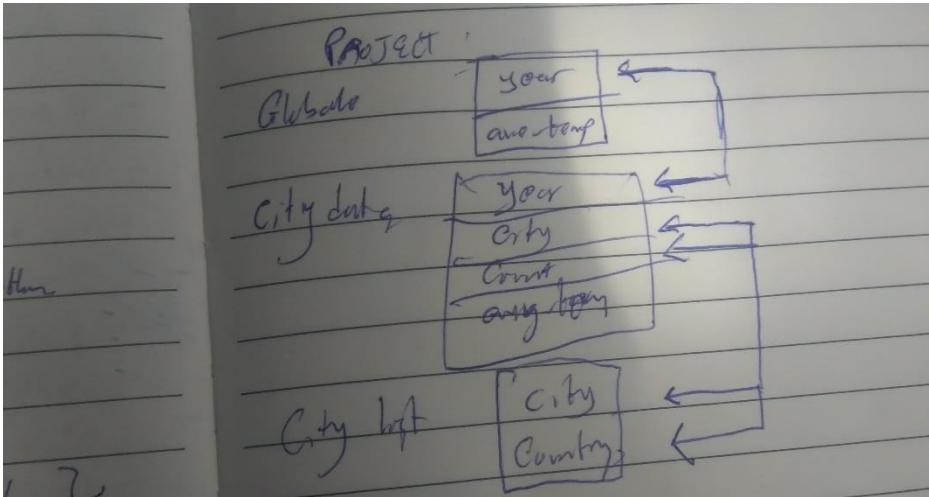
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PROJECT: Exploring Weather Trends

### STEPS

The project was carried out following the below steps:

1. Previewed each table on the data base using SQL, made a rough table of the columns and observes the tables relationship



2. Extracted Global avg. temp data from data base

The screenshot shows a SQL query interface with the following components:

- Input**: A schema dropdown set to 'city\_data'. The SQL query is:

```
1 SELECT *
2 FROM global_data
```
- Output**: A table with 266 results. The columns are 'year' and 'avg\_temp'.

year	avg_temp
1750	8.72
1751	7.98
1752	5.78
1753	8.39
1754	8.47
1755	8.36
1756	8.85
1757	9.02

3. Opened the city\_list table and filtered the data to know the list of cities in my country (Nigeria) which are available on the data base and choose Lagos because it was the one closest to me.

Input		HISTORY ▾		MENU ▾	
SCHEMA	⚙	1	SELECT *		
city_data	▾	2	FROM city_list		
city_list	▾	3	WHERE country = 'Nigeria'		
global_data	▾				
				EVALUATE	
Output		7 results			
		<a href="#">Download CSV</a>			
city		country			
Abuja		Nigeria			
Ibadan		Nigeria			
Kaduna		Nigeria			
Kano		Nigeria			
Lagos		Nigeria			
Maiduguri		Nigeria			
Port Harcourt		Nigeria			
⌵ Menu		⌵ Expand			

4. Combined city\_data and city\_list (Optional), filtered by country being Nigeria and city being Lagos and extracted data with only year and avg\_tempt (as city\_avg\_tempt).

Input

SCHEMA

city\_data

city\_list

global\_data

1

2

3

4

5

6

SELECT d.year, d.avg\_temp

FROM city\_data d

JOIN city\_list l

ON d.city = l.city

WHERE l.country = 'Nigeria' AND l.city = 'Lagos'

ORDER BY d.year

Success!

EVALUATE

Output

165 results

[Download CSV](#)

year

avg\_temp

1849

25.98

1850

25.87

1851

26.10

1852

1853

1854

1855

1856

7/6/95

Menu

Expand

5. Combined the global\_data table with the table in step 4 and extracted it.

Input

SCHEMA

city\_data

city\_list

global\_data

g.avg\_temp As global\_avg\_temp

FROM city\_data d

JOIN city\_list l

ON d.city = l.city

JOIN global\_data g

ON g.year = d.year

WHERE l.country = 'Nigeria' AND l.city = 'Lagos'

ORDER BY d.year

Success!

EVALUATE

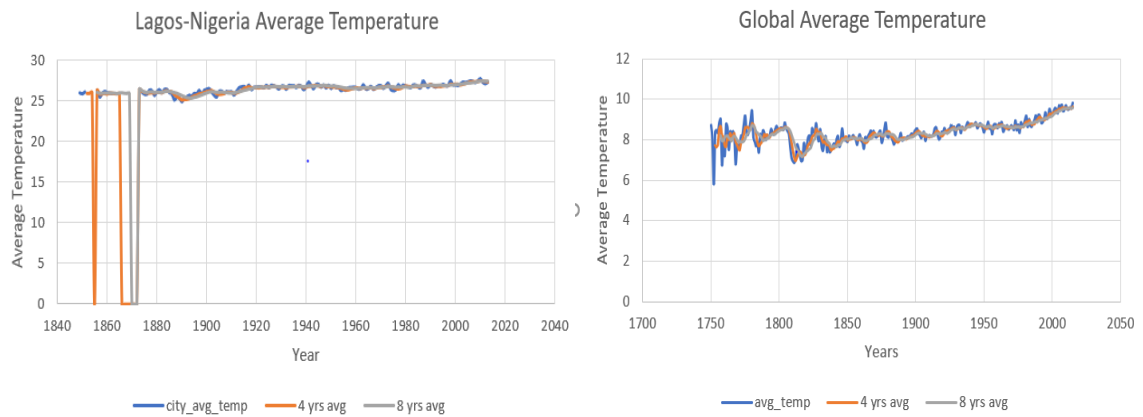
Output

165 results

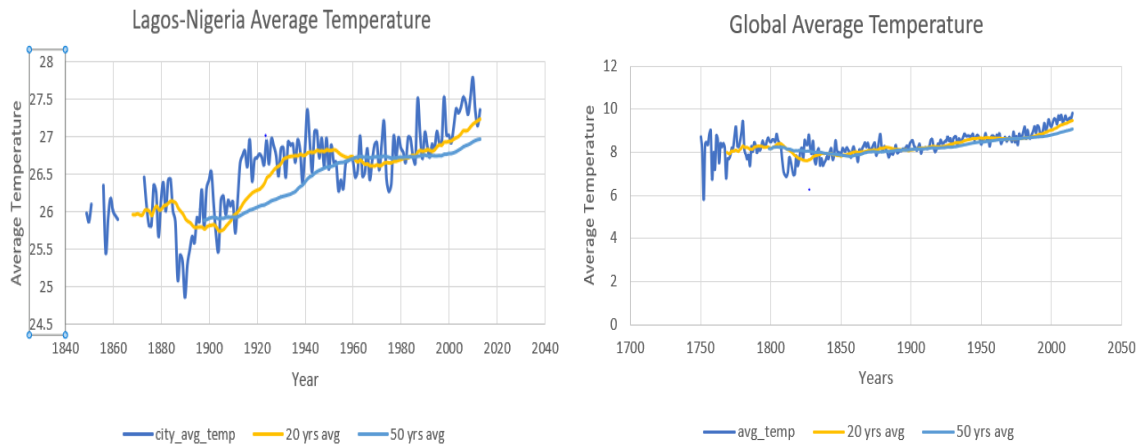
Download CSV

year	city_avg_temp	global_avg_temp
1849	25.98	7.98
1850	25.87	7.90
1851	26.10	8.18
1852		8.10
1853		8.04
1854		8.21

6. Using excel, a line chart was created to visualize the different extracted data. Due to the fluctuation of this data, different moving average were created and the 20 years moving average was server to be best to conduct the analysis. v



Yearly average, 4- and 8-years moving average



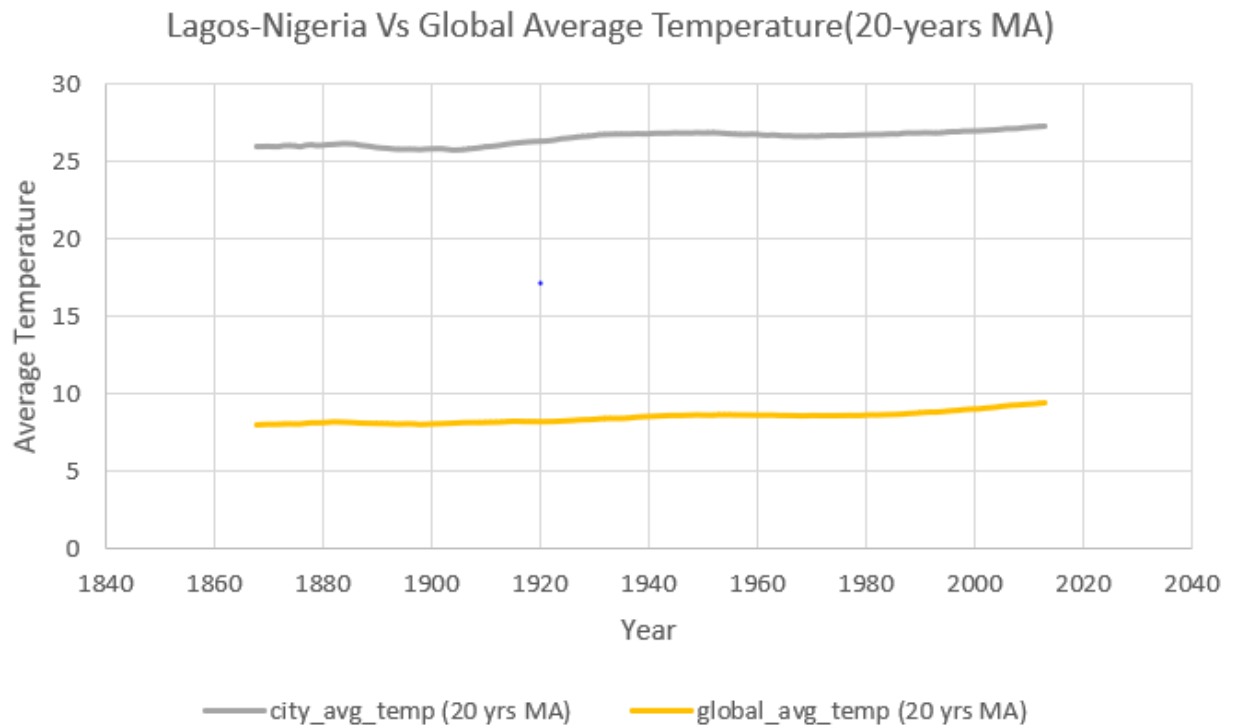
Yearly average, 20- and 50-years moving average

It was observed that 20-years moving average had a smoother trend with less unaccounted years.

	A	B	C	D	E	F
1	year	city_avg_t	4 yrs avg	8 yrs avg	20 yrs avg	50 yrs avg
2	1849	25.98				
3	1850	25.87				
4	1851	26.1				
5	1852		25.98333			
6	1853		25.985			
7	1854		26.1			
8	1855		#DIV/0!			
9	1856	26.35	26.35	26.075		
10	1857	25.45	25.9	25.9425		
11	1858	25.92	25.90667	25.955		
12	1859	26.18	25.975	25.975		
13	1860	26.01	25.9	25.982		
14	1861	25.95	26.015	25.97667		
15	1862	25.9	26.01	25.96571		
16	1863		25.95333	25.96571		
17	1864		25.925	25.90167		
18	1865		25.9	25.992		
19	1866		#DIV/0!	26.01		
20	1867		#DIV/0!	25.95333		
21	1868		#DIV/0!	25.925	25.971	
22	1869		#DIV/0!	25.9	25.97	
23	1870		#DIV/0!	#DIV/0!	25.9825	
24	1871		#DIV/0!	#DIV/0!	25.96571	

Table sample

7. A line chart was then created using the table extracted in step 5 and 20-years moving average was used.



#### OBSERVATIONS

1. My city (Lagos- Nigeria) is hotter on average compared to the global average
2. The difference in both average temperatures has been approximately consistent (18)
3. The change in temperature over time in my city (Lagos-Nigeria) is similar to the global average change
4. The overall trend is an upward moving curve, which implies that the world is getting hotter and this trend has been consistent over the last 100-years
5. My city (Lagos- Nigeria) average temperature is approximately equal to 3 times the global average