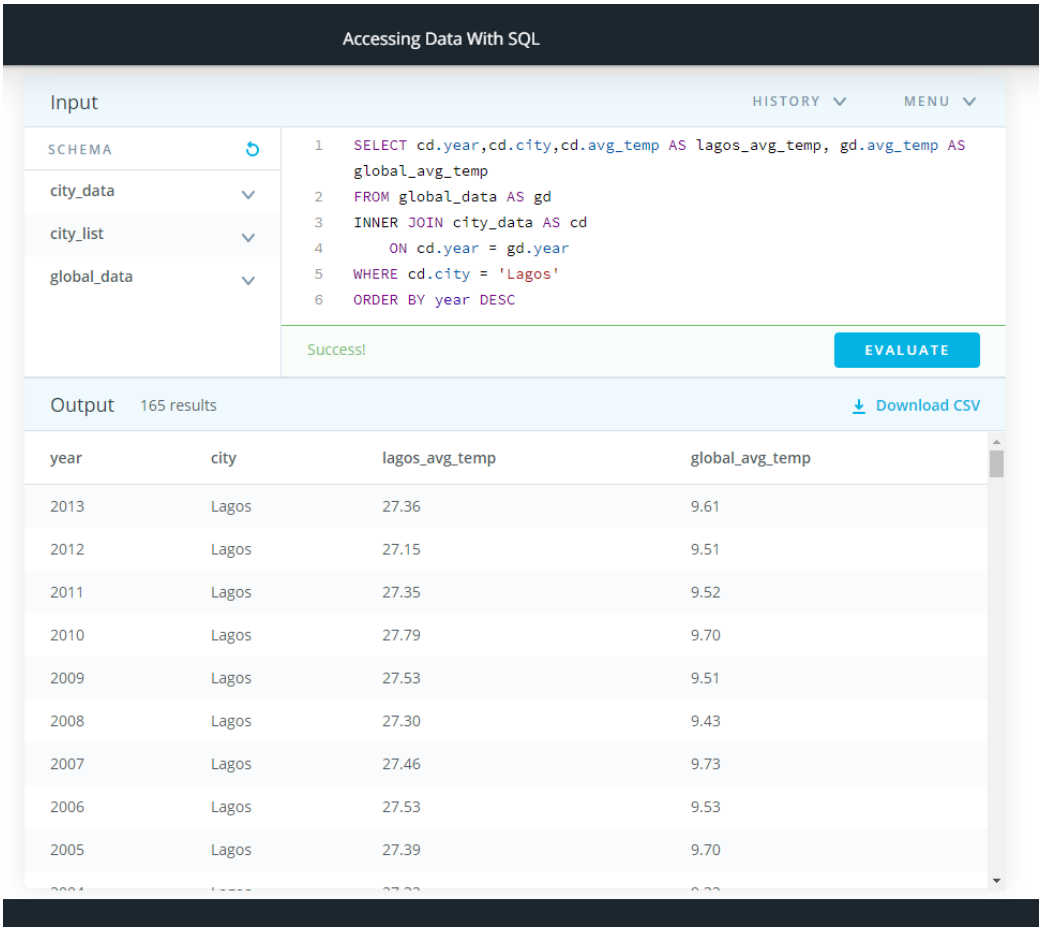
Explore Weather Trends Report

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.

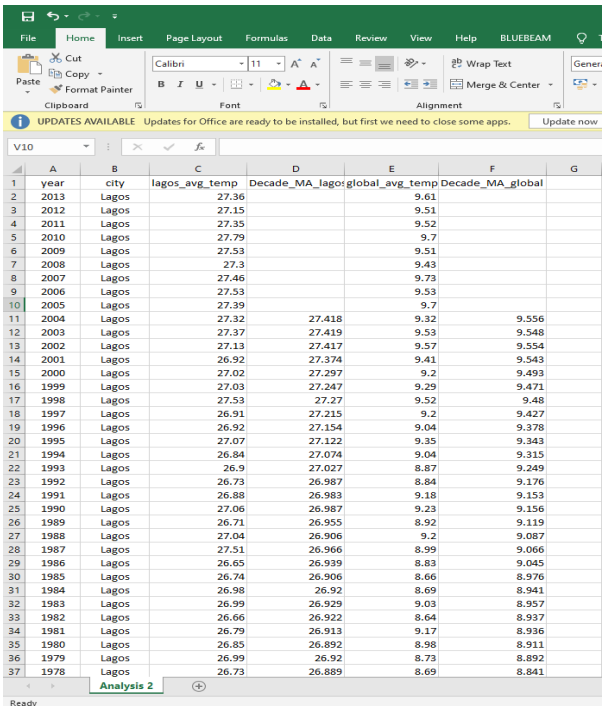
The picture below is a screenshot of the SQL query.



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.

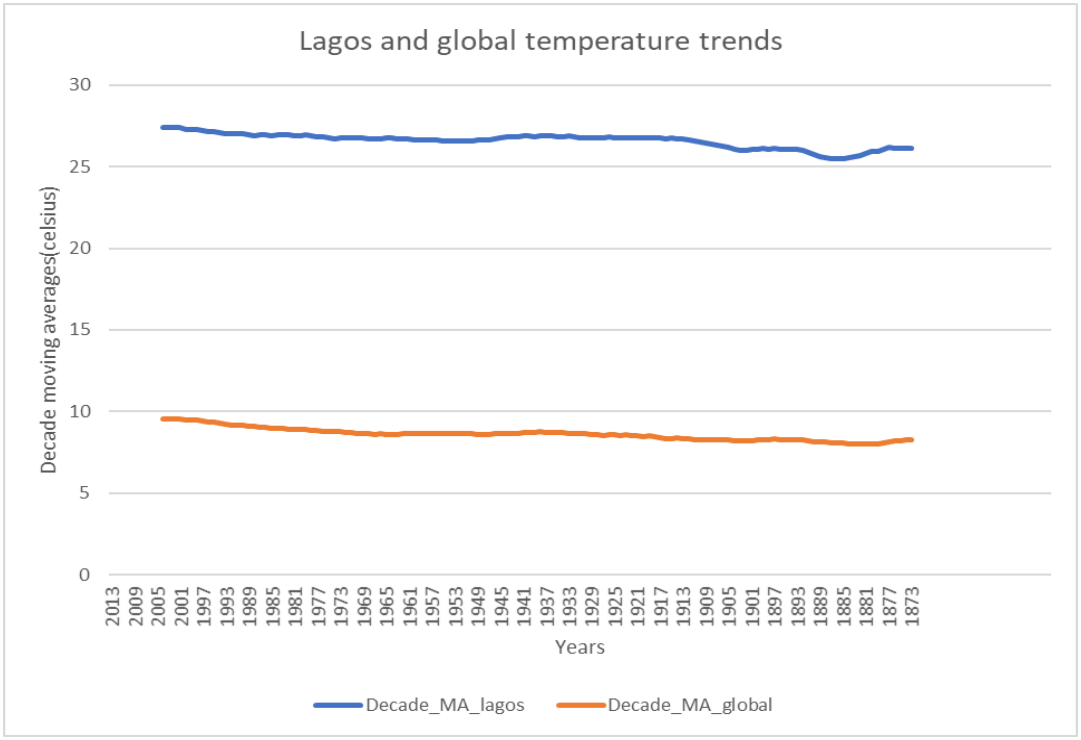
The moving average was calculated using “AVERAGE” function in excel to find the average of 10 cells which makes up a decade (10 years), e.g., “=AVERAGE(C2:C11)”.



year	city	lagos_avg_temp	Decade_MA_lagos	global_avg_temp	Decade_MA_global
2013	Lagos	27.36		9.61	
2012	Lagos	27.15		9.51	
2011	Lagos	27.35		9.52	
2010	Lagos	27.79		9.7	
2009	Lagos	27.53		9.51	
2008	Lagos	27.3		9.43	
2007	Lagos	27.46		9.73	
2006	Lagos	27.53		9.53	
2005	Lagos	27.39		9.7	
2004	Lagos	27.32	27.418	9.32	9.556
2003	Lagos	27.37	27.419	9.53	9.548
2002	Lagos	27.13	27.417	9.57	9.554
2001	Lagos	26.92	27.374	9.41	9.543
2000	Lagos	27.02	27.297	9.2	9.493
1999	Lagos	27.03	27.247	9.29	9.471
1998	Lagos	27.53	27.27	9.52	9.48
1997	Lagos	26.91	27.215	9.2	9.427
1996	Lagos	26.92	27.154	9.04	9.378
1995	Lagos	27.07	27.122	9.35	9.343
1994	Lagos	26.84	27.074	9.04	9.315
1993	Lagos	26.9	27.027	8.87	9.249
1992	Lagos	26.73	26.987	8.84	9.176
1991	Lagos	26.88	26.983	9.18	9.153
1990	Lagos	27.06	26.987	9.23	9.156
1989	Lagos	26.71	26.955	8.92	9.119
1988	Lagos	27.04	26.906	9.2	9.087
1987	Lagos	27.51	26.966	8.99	9.066
1986	Lagos	26.65	26.939	8.83	9.045
1985	Lagos	26.74	26.906	8.66	8.976
1984	Lagos	26.98	26.92	8.69	8.941
1983	Lagos	26.99	26.929	9.03	8.957
1982	Lagos	26.66	26.922	8.64	8.937
1981	Lagos	26.79	26.913	9.17	8.936
1980	Lagos	26.85	26.892	8.98	8.911
1979	Lagos	26.99	26.92	8.73	8.892
1978	Lagos	26.73	26.889	8.69	8.841

3. <u>Visualizing the data</u>

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.