

Udacity  
Data Analysis Nano Degree  
Project 1

**(Explore weather Trends)**

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**First Part – SQL queries**

<u>SQL sentence used</u>	<u>Output</u>
SELECT * FROM city_list WHERE country = 'Egypt'	view cities in my country available in the database
SELECT * FROM city_data WHERE city = 'Cairo'	get all temperature data related to cairo
SELECT gd.* FROM global_data gd INNER JOIN city_data cd ON gd.year = cd.year AND cd.city = 'Cairo'	get temperature data related to global world in the years which are available to the data in cairo only

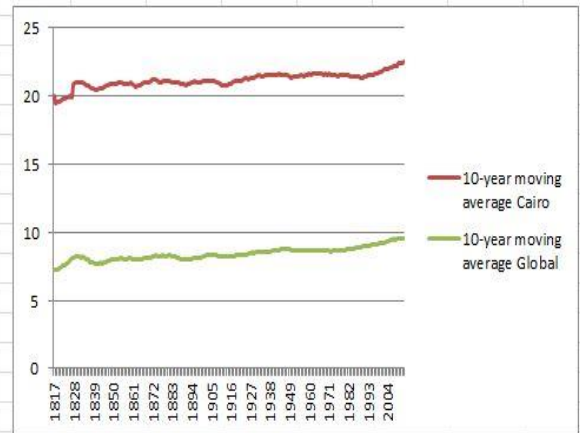
**Second Part – getting data and calculating moving average**

I choose to calculate a 10 – year moving average using the Average function in Excel

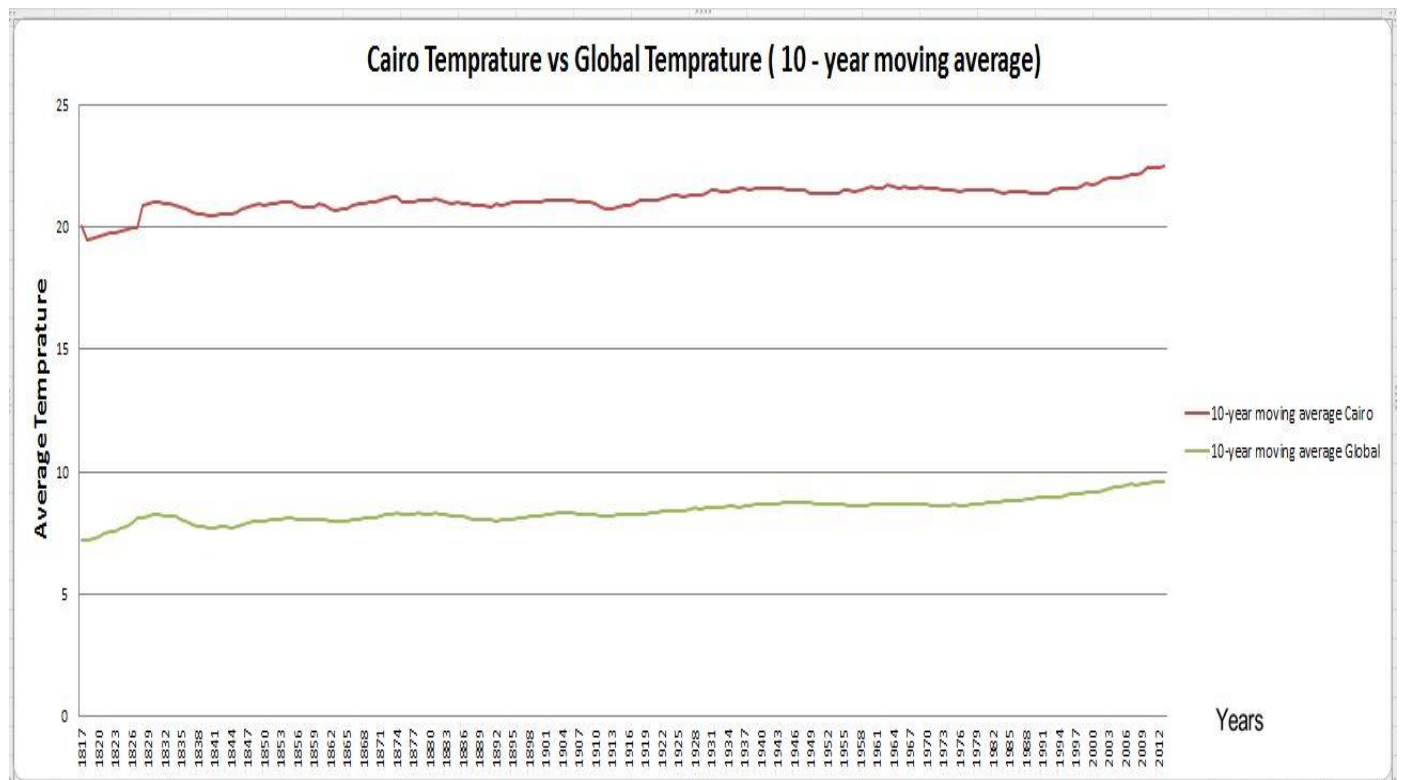
year	city	country	avg_temp	10-year moving average
1808	Cairo	Egypt	17.11	
1809	Cairo	Egypt	19.87	
1810	Cairo	Egypt	19.93	
1811	Cairo	Egypt	20	
1812	Cairo	Egypt	19.93	
1813	Cairo	Egypt	20.51	
1814	Cairo	Egypt	20.43	
1815	Cairo	Egypt	20.3	
1816	Cairo	Egypt	20.51	
1817	Cairo	Egypt	21.88	=AVERAGE(D2:D11)
1818	Cairo	Egypt	11.6	19.496
1819	Cairo	Egypt	20.31	19.54
1820	Cairo	Egypt	20.58	19.605

### Third Part – Finalizing calculations

year	10-year moving average Cairo	10-year moving average Global
1817	20.047	7.203
1818	19.496	7.223
1819	19.54	7.252
1820	19.605	7.322
1821	19.668	7.445
1822	19.747	7.559
1823	19.767	7.557
1824	19.868	7.653
1825	19.938	7.768
1826	19.981	7.91
1827	19.956	8.093
1828	20.895	8.127
1829	20.955	8.184
1830	21.022	8.274
1831	21.011	8.229
1832	20.959	8.155
1833	20.969	8.184
1834	20.894	8.144
1835	20.811	8.044
1836	20.776	7.978
1837	20.64	7.835
1838	20.562	7.760



### Fourth Part – The Graph



## **Fifth Part – Observations**

1. The average local temperature is higher than the average global temperature by nearly 12.5 to 13 degrees.
2. The difference between the local temperature and the global temperature is nearly consistent and it varies only in 0.5 degrees.
3. From 1817 to 1826 the average global temperature was below 20 but after that it rises to above 20 until now which indicates that the world is becoming hotter.
4. The Local weather trend in Cairo seems to be aligning with the global weather trend in cases of positive slopes and negative slopes.
5. From 2000 until now, the rise in global temperature as well as the local temperature is happening with a higher rate.