

Overview:

In this project they required to analyze the Local and Global temperature, so what I did I chose Mecca city in Saudi Arabia as it's a nearest city to me and compared with global temperature.

Tools Used:

- Udacity database to extract the data
- Microsoft excel Application to work with the extracted data and chart visualization
- Microsoft word to make a PDF

STEP 1:

Extract data from the Udacity database by using SQL Query:

- 1) `SELECT * FROM city_list`

Input		HISTORY ▾	MENU ▾
SCHEMA	↻	1 <code>SELECT * from city_list</code>	
city_data	▾		
city_list	▾		
global_data	▾		
		Success!	EVALUATE
Output		345 results	Download CSV
city	country		
Abidjan	Côte D'Ivoire		
Abu Dhabi	United Arab Emirates		
Abuja	Nigeria		
Accra	Ghana		
Adana	Turkey		
Adelaide	Australia		
Agra	India		
Ahmadabad	India		

2) SELECT * FROM city_data

Input		HISTORY ▾	MENU ▾
SCHEMA	↻	1 SELECT * from city_data	
city_data	▾		
city_list	▾		
global_data	▾		
		Success!	EVALUATE
Output	71311 results	Download CSV	
year	city	country	avg_temp
1849	Abidjan	Côte D'Ivoire	25.58
1850	Abidjan	Côte D'Ivoire	25.52
1851	Abidjan	Côte D'Ivoire	25.67
1852	Abidjan	Côte D'Ivoire	
1853	Abidjan	Côte D'Ivoire	
1854	Abidjan	Côte D'Ivoire	

3) SELECT * FROM global data

Input		HISTORY ▾	MENU ▾
SCHEMA	↻	1 SELECT * from global_data	
city_data	▾		
city_list	▾		
global_data	▾		
		Success!	EVALUATE
Output	266 results	Download CSV	
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		

STEP2:

Calculate Moving Average for Local temperature by using AVERAGE function and select the range for 20 years in Microsoft excel

1) I calculate the moving average for Local 20 Years

4	1859	Mecca	Saudi Arabia		
5	1860	Mecca	Saudi Arabia		
6	1861	Mecca	Saudi Arabia	23.98	
7	1862	Mecca	Saudi Arabia	24.13	22.96
8	1863	Mecca	Saudi Arabia	22.87	22.50
9	1864	Mecca	Saudi Arabia	25.43	23.77
0	1865	Mecca	Saudi Arabia	25.6	24.40
1	1866	Mecca	Saudi Arabia	25.42	24.57
2	1867	Mecca	Saudi Arabia	25.62	24.72
3	1868	Mecca	Saudi Arabia	25.3	24.79
4	1869	Mecca	Saudi Arabia	25.65	24.89
5	1870	Mecca	Saudi Arabia	25.35	24.94
6	1871	Mecca	Saudi Arabia	24.97	24.94
7	1872	Mecca	Saudi Arabia	25.2	24.96
8	1873	Mecca	Saudi Arabia	25.57	25.01
9	1874	Mecca	Saudi Arabia	25.32	25.03
0	1875	Mecca	Saudi Arabia	24.53	25.00
1	1876	Mecca	Saudi Arabia	25.13	25.00
2	1877	Mecca	Saudi Arabia	25.81	25.05
3	1878	Mecca	Saudi Arabia	25.94	25.10
4	1879	Mecca	Saudi Arabia	25.57	25.13
5	1880	Mecca	Saudi Arabia	25.42	25.14
6	1881	Mecca	Saudi Arabia	26.06	=AVERAGE(D40087:D40106)

Calculate the Moving Average Global temperature by using AVERAGE function in excel

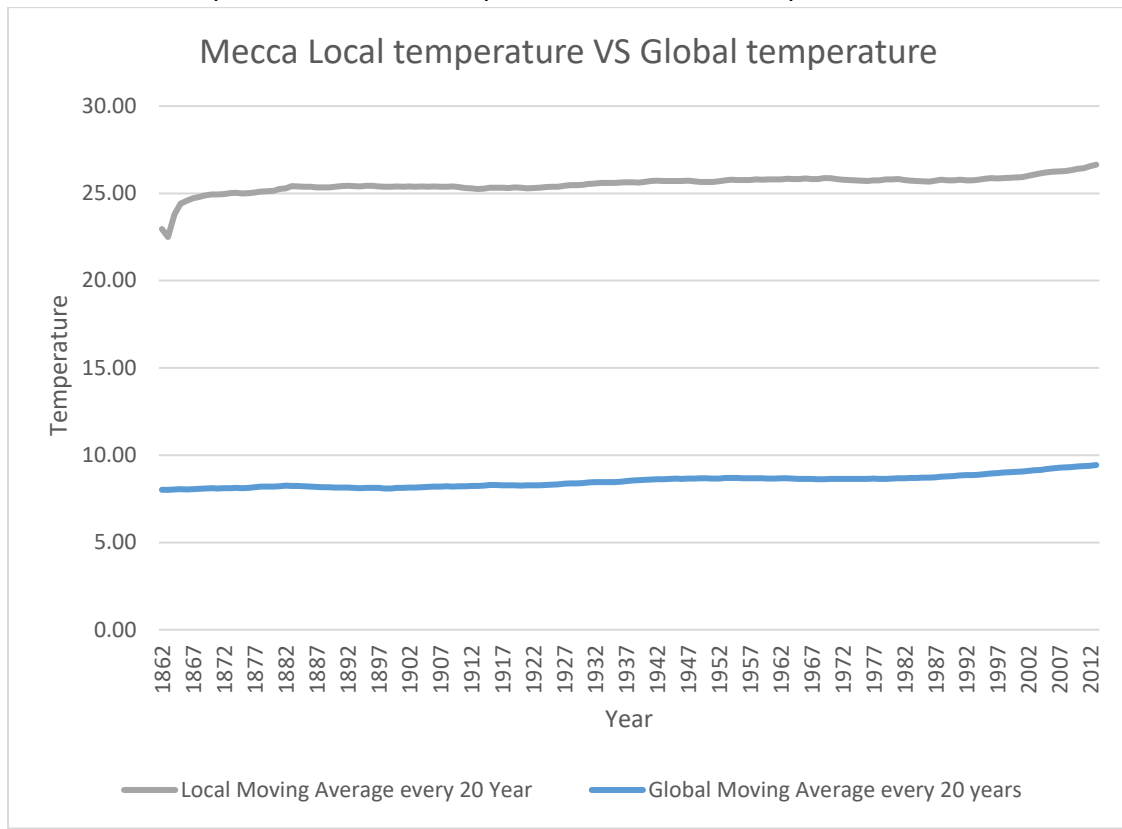
2) I calculate the moving average for global 20 Years

year	avg. te	Global Moving Average every 20 y
1750	8.72	
1751	7.98	
1752	5.78	
1753	8.39	
1754	8.47	
1755	8.36	
1756	8.85	
1757	9.02	
1758	6.74	
1759	7.99	
1760	7.19	
1761	8.77	
1762	8.61	
1763	7.5	
1764	8.4	
1765	8.25	
1766	8.41	
1767	8.22	
1768	6.78	
1769	7.69	=AVERAGE(B2:B21)
1770	7.69	7.9545
1771	7.85	7.948
1772	8.19	8.0685
1773	8.22	8.06
1774	8.77	8.075
1775	9.18	8.116
1776	8.3	8.0885
1777	8.26	8.0505

- 3) Then I combined the Moving Average in 20 Years for the Local and global temperatures in one sheet and filtering on the matching Year to visualize the line chart that compare the difference between local and global temperature

year	avg_te	Global Moving Average every 20 y	Local Moving Average every 20 Yea
1862	7.56	8.01	22.96
1863	8.11	8.01	22.50
1864	7.98	8.03	23.77
1865	8.18	8.04	24.40
1866	8.29	8.03	24.57
1867	8.44	8.05	24.72
1868	8.25	8.06	24.79
1869	8.43	8.09	24.89
1870	8.2	8.10	24.94
1871	8.12	8.10	24.94
1872	8.19	8.10	24.96
1873	8.35	8.12	25.01
1874	8.43	8.13	25.03
1875	7.86	8.12	25.00
1876	8.08	8.12	25.00
1877	8.54	8.16	25.05
1878	8.83	8.20	25.10
1879	8.17	8.19	25.13
1880	8.12	8.20	25.14
1881	8.27	8.22	25.24
1882	8.13	8.25	25.29
1883	7.98	8.24	25.42
1884	7.77	8.23	25.40
1885	7.92	8.22	25.38
1886	7.95	8.20	25.37
1887	7.91	8.18	25.34
1888	8.09	8.17	25.34
1889	8.32	8.16	25.35
1890	7.97	8.15	25.37
1891	8.02	8.15	25.42
1892	8.07	8.14	25.43
1893	8.06	8.12	25.42
1894	8.16	8.11	25.40
1895	8.15	8.13	25.42
1896	8.21	8.13	25.43
1897	8.29	8.12	25.40
1898	8.18	8.09	25.39

4) I create this output Mecca Local temperature VS Global temperature



Observation:

- 1) There is a huge difference between the Mecca Local temperature and global temperature
- 2) Mecca have a hotter temperature than global temperature and it's increase between 0.1 and 0.10
- 3) As shown in the figure the global temperature it is seems constant in the temperature for all years
- 4) The temperature in Mecca was increased from year 1867 and it's constant until year 2012

Key Consideration:

- 1) Temperature on Y axis
- 2) Year in x axis
- 3) The color difference for Local and Global temperature
- 4) Filtering on matching year to get smoothly data
- 5) Use Microsoft excel application to applied the requirements