Explore Weather Trends – Project 1

Queries used to extract Data:

```
#To get data of my city, Bangalore

SELECT *

FROM city_data

WHERE country = 'India'

AND city = 'Bangalore';

#To get global data

SELECT *

FROM global_data;
```

Steps used to prepare the data:

- Used the VM on Udacity to extract the data using the above queries and download as CSV
- Used MS Excel to import the CSV data into a workbook
- Used the Data Toolbar to import data from text and then into columns
- Put in my city data and global avg. data by year in a separate worksheet. Used VLOOKUP to populate avg. temp for my city and global avg. against each year. It appears that the SQL data extract has 0 temp. values for some years (1808, 1809, 1810, 1811,1812). Queried the same in the VM to double check and it was indeed 0. Used the below query

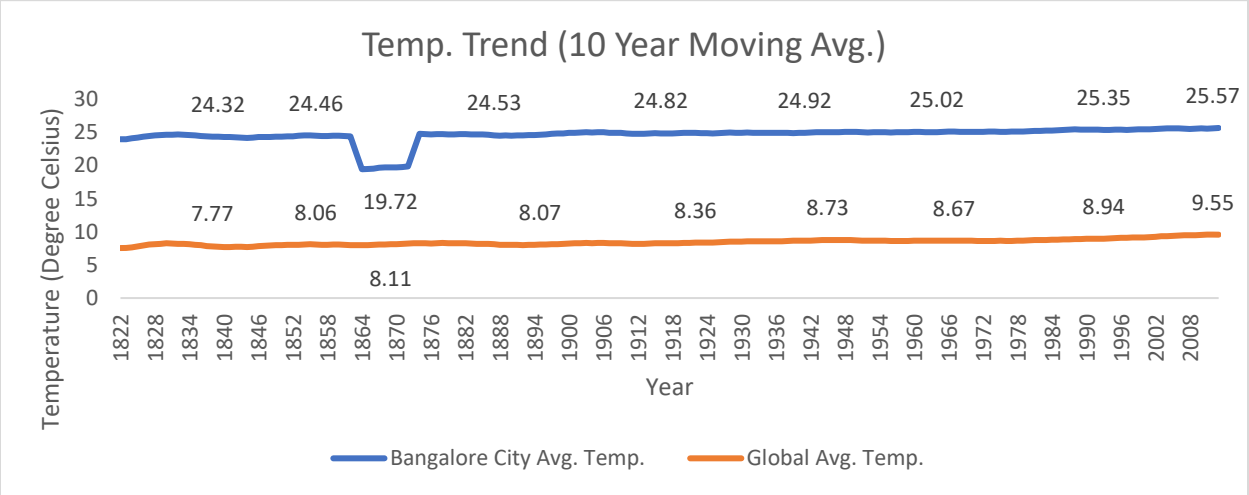
```
SELECT year, avg_temp

FROM city_data

WHERE city = 'Bangalore'

AND year IN ('1808','1809','1810','1811','1812');
```

Year	Avg. Temp in My City	Global Avg. Temp.
1796	24.49	8.27
1797	25.18	8.51
1798	24.65	8.67
1799	24.81	8.51
1800	24.85	8.48
1801	24.49	8.59
1802	25.44	8.58
1803	25.22	8.5
1804	25.67	8.84
1805	25.01	8.56
1806	24.87	8.43
1807	24.25	8.28
1808	0	7.63
1809	0	7.08
1810	0	6.92
1811	0	6.86
1812	0	7.05
1813	24.23	7.74
1814	23.91	7.59
1815	23.79	7.24
1816	23.3	6.94
1817	23.6	6.98
1818	23.94	7.83
1819	23.86	7.37
1820	23.91	7.62
1821	24.4	8.09
1822	24.33	8.19

- As this might skew the results, I have started my subsequent calculations and analysis to begin from the year 1813.
- Added a moving avg. column to calculate the moving avg of all city level avg temperature. Used an interval of 10 years to calculate the moving avg.

Year	Avg. Temp in My City	Global Avg. Temp.	My City MA 10 years	Global MA 10 years
1813	24.23	7.74		
1814	23.91	7.59		
1815	23.79	7.24		
1816	23.3	6.94		
1817	23.6	6.98		
1818	23.94	7.83		
1819	23.86	7.37		
1820	23.91	7.62		
1821	24.4	8.09		
1822	24.33	8.19	23.927	=AVERAGE(C2:C11)
1823	24.62	7.72	23.966	
1824	25.1	8.55	24.085	
1825	24.69	8.39	24.175	
1826	24.88	8.36	24.333	
1827	24.67	8.81	24.44	
1828	24.61	8.17	24.507	
1829	24.46	7.94	24.567	
1830	24.39	8.52	24.615	
1831	24.43	7.64	24.618	
1832	24.66	7.45	24.651	
1833	24.46	8.01	24.635	
1834	24.59	8.15	24.584	
1835	23.89	7.39	24.504	
1836	24.12	7.7	24.428	
1837	24.13	7.38	24.374	
1838	24.29	7.51	24.342	
1839	24.24	7.63	24.32	
1840	24.24	7.8	24.305	

Line Chart Comparing City (Bangalore) vs. Global 10 year Moving Avg. Temperature



Observations:

- Global temperatures are much lower to that of Bangalore.
- Temperatures across both the categories have increased marginally over the years reflecting warmer weather over time
- There appears to be a skew in the 1860's as there are no associated temperature values for Bangalore (SQL queries blank) and therefore the moving average shows 19.7 degrees, which may not be a true reflection.

- There is at most times a delta of +15 between my city and the global avg. As my city is between the Equator and the Tropic of Cancer, it has tropical climate and this means it is mostly warm/ hot throughout the year and this is incremental over the years.
- The trend appears to support that the world is getting warmer over the years.