Exploring Weather Trends - Project Instructions

Statement:
Analyze the local and global temperature data and compare the temperature trends where you live to overall global temperature trends.

Solution:

- Local city – Seattle

- Data extraction query

```
select cd.year, cd.avg_temp as local_avg,
gd.avg_temp as global_avg from city_data cd
left join global_data gd on cd.year=gd.year
where cd.city='Seattle'
```

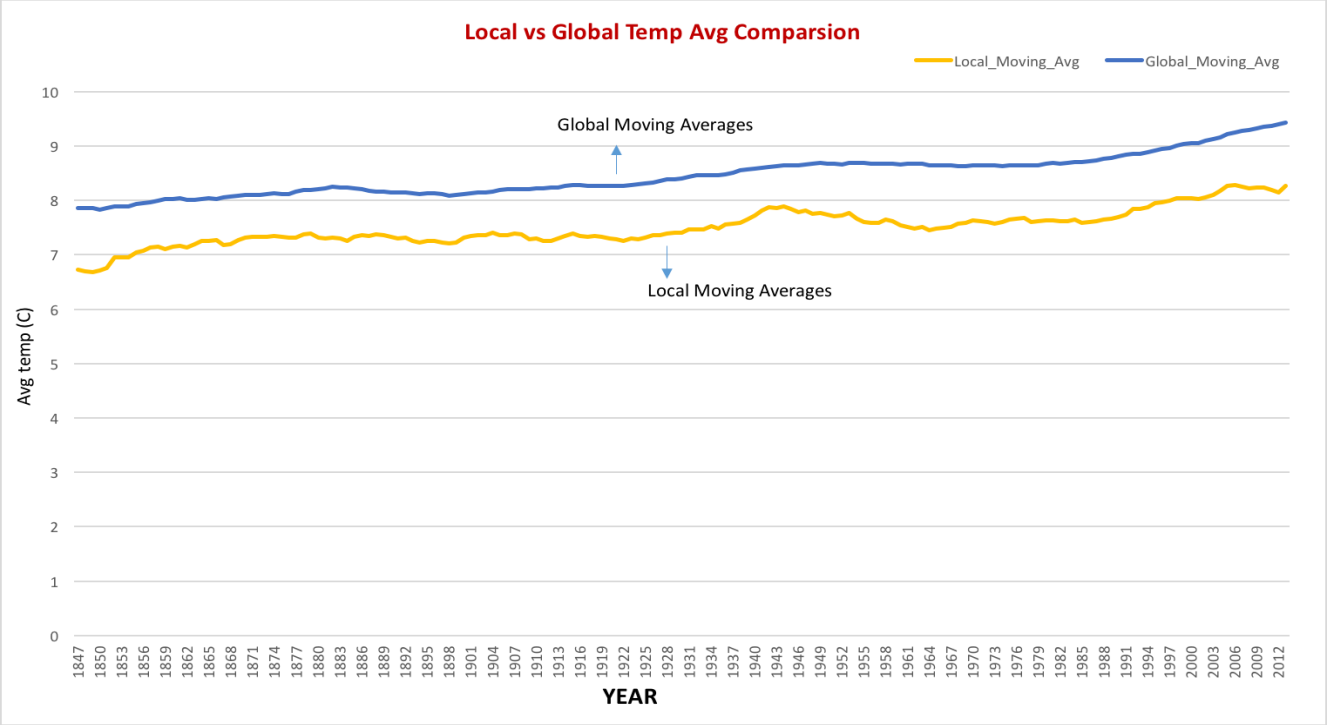
- Data file that is extracted and is worked is located in this github repo - https://github.com/krishi008/Udacity-DAND/blob/master/project-1-Weather_trends/local_global_temps.xls
- Sample snapshot of the data extracted:

year	local_avg	global_avg
1828	7.13	8.17
1829	6.8	7.94
1830		8.52
1831		7.64
1832	3.52	7.45
1833	7.48	8.01
1834	7.1	8.15
1835	5.58	7.39
1836	6.74	7.7
1837	6.81	7.38
1838	6.59	7.51
1839	7.3	7.63
1840	6.69	7.8

- A moving average for 20 years is calculated for both global and local averages.
    - =average(B2:B21)
    - sample snapshot of the excel sheet with moving averages calculated

year	local_avg	global_avg	local_moving_avg	global_moving_avg
1847	8.99	8.09	6.721176471	7.8655
1848	6.6	7.98	6.69	7.856
1849	6.68	7.98	6.682941176	7.858
1850	7.06	7.9	6.703888889	7.827
1851	7.79	8.18	6.761052632	7.854
1852	7.08	8.1	6.948421053	7.8865
1853	7.61	8.04	6.955263158	7.888
1854	6.99	8.21	6.949473684	7.891
1855	7.31	8.11	7.040526316	7.927
1856	7.44	8	7.077368421	7.942
1857	7.91	7.76	7.135263158	7.961
1858	6.91	8.1	7.152105263	7.9905

- **PLOT**



- **Findings:**
    - Average temperatures of Seattle are lower than the global temperatures over the period of 1847-2013
    - Average temperatures for both Seattle and around the Globe are trending to increase year by year.
    - The rate of increase in the average temperatures seems to have picked up in early 90's.
    - There seems to be sudden increase in temperatures between 1939 and 1944, this could be due to global industrialization which could have caused rise in global warming.