

Exploring Weather Trends

1. Data Extraction

SQL used to extract the data from database schema

```
/* Query 1 for Guangzhou */
```

```
SELECT * FROM city_data WHERE country = 'China' and city = 'Guangzhou'
```

```
/* Query 2 for Anshan */
```

```
SELECT * FROM city_data WHERE country = 'China' and city = 'Anshan'
```

```
/* Query 3 for Global */
```

```
SELECT * FROM global_data
```

The results was exported in csv format

2. Data Cleaning

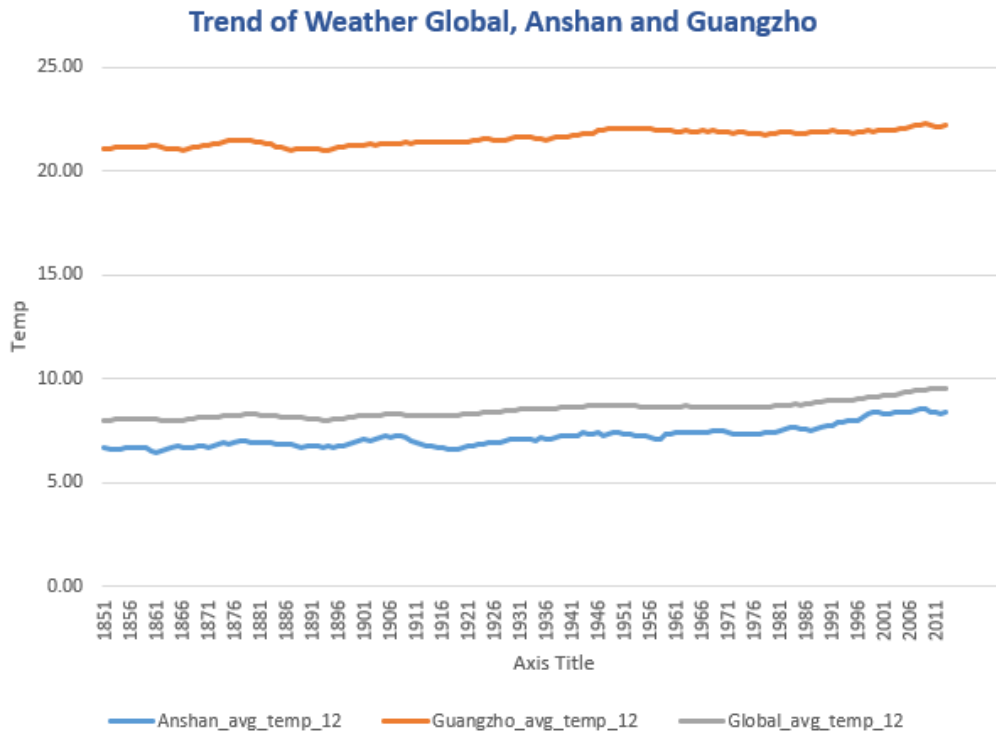
Using EXCEL, I realized that there are some missing values of some years for Anshan, Guangzho in comparison to Global, so I removed and only keep the data from 1840 to 2013.

Then I can calculate the temperature moving averages for 12 years.

	A	B	C	D	E	F	G	H
1	year	country	Anshan_avg _temp	Guangzho _avg_tem	Global_a vg_temp	Anshan_avg _temp_12	Guangzho_av g_temp_12	Global_avg _temp_12
2	1840	China	6.79	20.98	7.8			
3	1841	China	5.77	21.02	7.69			
4	1842	China	6.66	21.16	8.02			
5	1843	China	6.94	21.25	8.17			
6	1844	China	6.81	20.86	7.65			
7	1845	China	6.8	20.84	7.85			
8	1846	China	7.26	21.46	8.55			
9	1847	China	7.11	21.07	8.09			
10	1848	China	7.03	20.75	7.98			
11	1849	China	7.03	21.03	7.98			
12	1850	China	5.99	21.21	7.9			
13	1851	China	5.62	21.33	8.18	6.65	21.08	7.99
14	1852	China	5.85	21.28	8.1	6.57	21.11	8.01
15	1853	China	6.14	21.78	8.04	6.60	21.17	8.04
16	1854	China	7.06	21.64	8.21	6.64	21.21	8.06
17	1855	China	7.45	21.09	8.11	6.68	21.20	8.05
18	1856	China	6.84	20.6	8	6.68	21.17	8.08
19	1857	China	6.67	21.12	7.76	6.67	21.20	8.08
20	1858	China	7.11	21.05	8.1	6.66	21.16	8.04
21	1859	China	6.93	21.28	8.25	6.64	21.18	8.05

3. Data Visualization

I then plotted a line chart with the temperature moving average value on y-axis and the years on x-axis for Global, Anshan, Guangzhou.



4. Data Exploration

- There are a slight increase in average temperature in Global, Anshan and Guangzhou from 1851 to 2013
- Global average temperature is slightly higher than Anshan but very low compared to Guangzhou
- Global temperature rise higher than Anshan and Guangzhou since 1991.
- Global temperature remains stable until 1951 and then starts to rise faster thus far.
- The temperature at 3 categories has inscrease marginally over the last 170 years