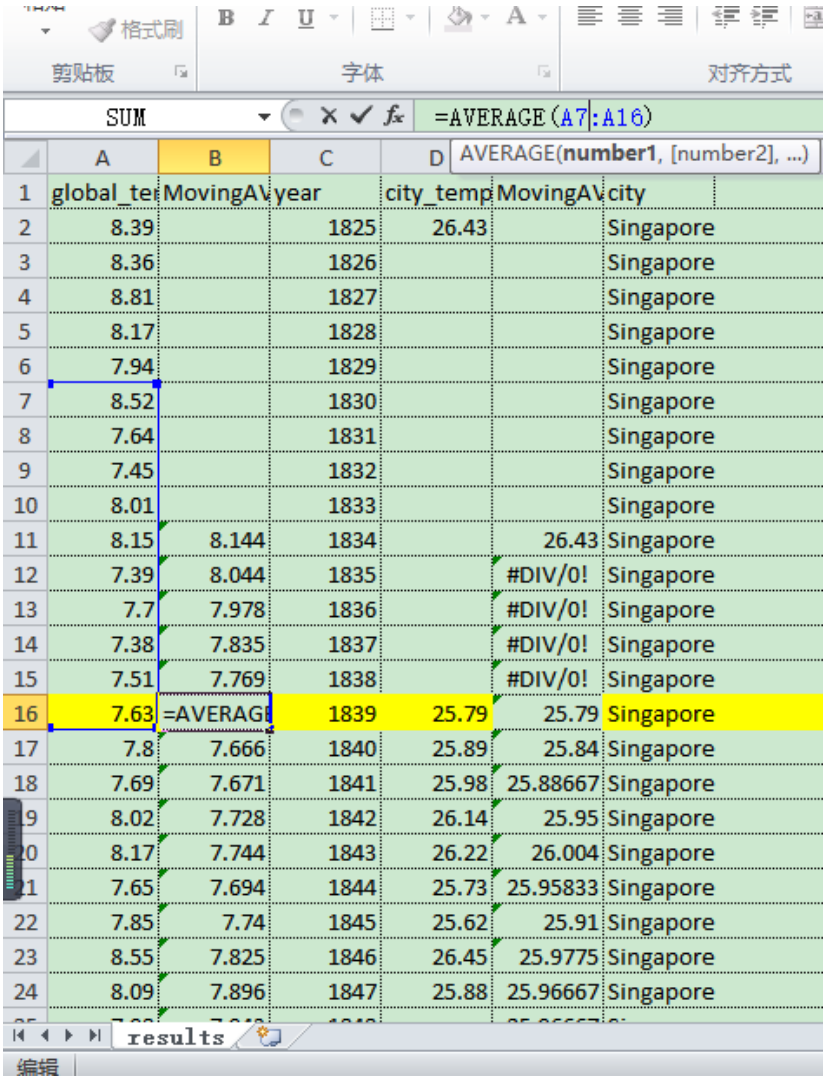
Project: Explore Weather Trends

1. Outline

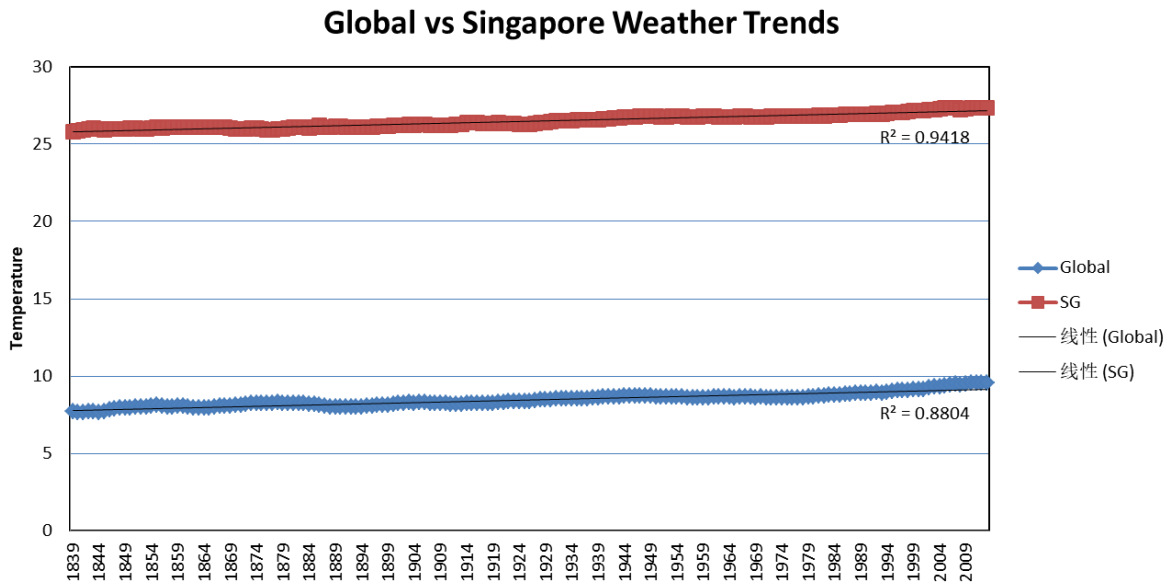
- In this project, I used SQL and excel;
- The SQL query I used to extract data from database is：
  ALTER TABLE global_data RENAME COLUMN avg_temp tO global_temp;
  ALTER TABLE city_data RENAME COLUMN avg_temp tO city_temp;
  SELECT global_data.global_temp,
  global_data.year,city_data.city_temp,city_data.city FROM global_data LEFT JOIN city_data ON global_data.year=city_data.year WHERE city LIKE 'Singapore';
- I used every 10 years' average as moving average starting from 1839 to 2013, the time range where both global and city datasheet got valid data to use



	A	B	C	D	E	F
1	global_ter	MovingAv	year	city_temp	MovingAv	city
2	8.39		1825	26.43		Singapore
3	8.36		1826			Singapore
4	8.81		1827			Singapore
5	8.17		1828			Singapore
6	7.94		1829			Singapore
7	8.52		1830			Singapore
8	7.64		1831			Singapore
9	7.45		1832			Singapore
10	8.01		1833			Singapore
11	8.15	8.144	1834		26.43	Singapore
12	7.39	8.044	1835		#DIV/0!	Singapore
13	7.7	7.978	1836		#DIV/0!	Singapore
14	7.38	7.835	1837		#DIV/0!	Singapore
15	7.51	7.769	1838		#DIV/0!	Singapore
16	7.63	=AVERAG	1839	25.79	25.79	Singapore
17	7.8	7.666	1840	25.89	25.84	Singapore
18	7.69	7.671	1841	25.98	25.88667	Singapore
19	8.02	7.728	1842	26.14	25.95	Singapore
20	8.17	7.744	1843	26.22	26.004	Singapore
21	7.65	7.694	1844	25.73	25.95833	Singapore
22	7.85	7.74	1845	25.62	25.91	Singapore
23	8.55	7.825	1846	26.45	25.9775	Singapore
24	8.09	7.896	1847	25.88	25.96667	Singapore

- My key considerations to visualize the trends are whether the data is sufficient and all valid over a long time period, will the data sets chosen truly reflect trends(if linear, what's the r value), the values of the two sets should align on x axis (same year comparisons).

2. Line chart



3. Four Observation

Similarities:

- Both trends are linearly increasing with r value almost 1;
- Both trends value varied within 3 degree;

Differences:

- Singapore is always in a higher temperature range around 25 degree while global average always lower at around 8 degree; (Singapore is at equator)
- Singapore trend is more perfectly uphill than global with a slightly bigger r value.