This project objectives are to :

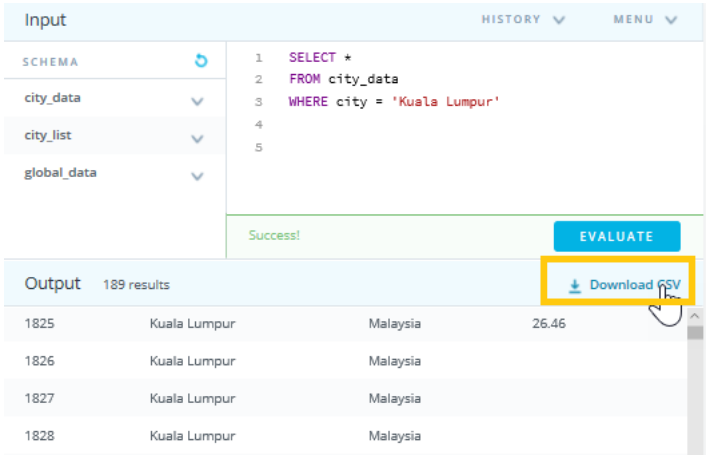
1. analyse global and city of Kuala Lumpur temperature data.
2. compare the temperature trends of Kuala Lumpur to overall temperature trends.

Steps to prepare the data to be visualized in chart.

1. Data from database is extracted by running sql query below :
   - Average temperature of Global data.
     - *SELECT year, avg_temp*
       FROM global_data

   - Average temperature data of the city nearest to me.
     - *SELECT year, avg_temp*
       FROM city_data
       WHERE city = 'Kuala Lumpur'

2. Outputs are downloaded into csv files.
   a. Global data
   b. Kuala Lumpur city data



3. The csv files are opened in Excel , some missing value in column avg_temp for data of Kuala Lumpur city are spotted.

   - There is no extreme outliers. Therefore I decided to replace the missing data with Mean.

   - Query below is ran in database to find MEAN

     SELECT AVG(avg_temp)
     FROM city_data
     WHERE city = 'Kuala Lumpur'
     AND avg_temp IS NOT NULL

   - The Mean is 26.57.

   - 17 empty cells in avg_temp column are replaced with value 26.57 in Excel.

4. The avg_temp column in Global_data is copied and pasted into Kuala Lumpur data next to KL_avg_temp column. An the column is then renamed to global_avg_temp

	A	B	C
1	year	global_avg_temp	KL_avg_temp
2	1825	8.39	26.46
3	1826	8.36	26.57
4	1827	8.81	26.57
5	1828	8.17	26.57
6	1829	7.94	26.57
7	1830	8.52	26.57
8	1831	7.64	26.57

5. To smooth out the lines and making the trends more observable in graph later, 2 new columns are computed in order to find 7-year moving average. First compute global column using formula below starting on year 1831 :
=AVERAGE(B2:B8)

6. The formula is dragged down to next cell =AVERAGE(B3:B9) until year 2013.

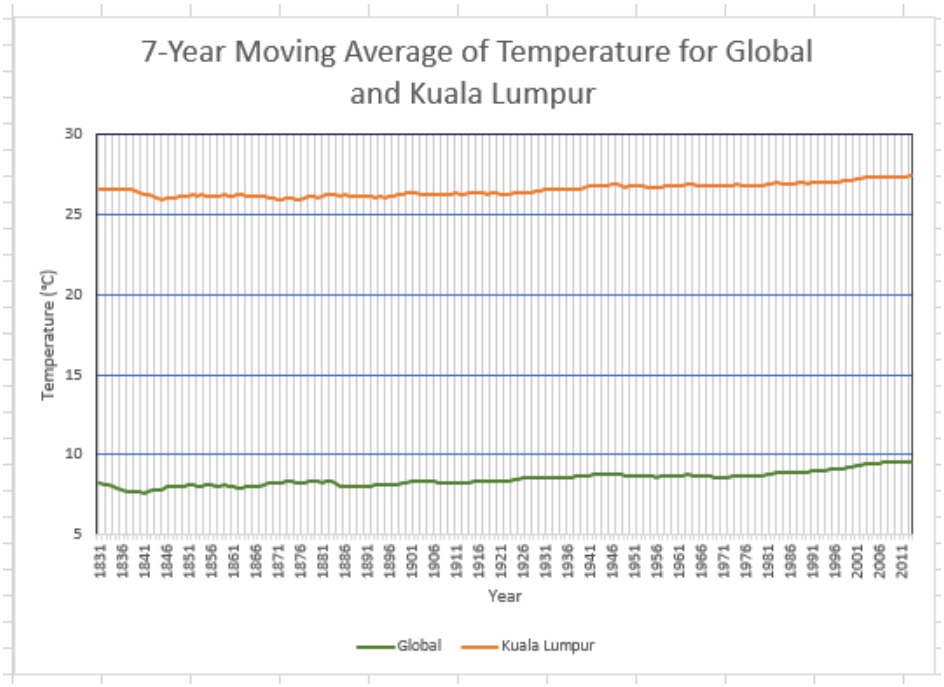
7. And step 5 and 6 are repeated to compute 7-year moving average for Kuala Lumpur column.

E8 =AVERAGE(B2:B8)

	B	C	D	E	F
1	global_avg_temp	KL_avg_temp	year	Global	Kuala Lumpur
2	8.39	26.46	1825		
3	8.36	26.57	1826		
4	8.81	26.57	1827		
5	8.17	26.57	1828		
6	7.94	26.57	1829		
7	8.52	26.57	1830		
8	7.64	26.57	31	8.261428571	26.55428571
9	7.45	26.57	32	8.127142857	26.57
10	8.01	26.57	1833	8.077142857	26.57
11	8.15	26.57	1834	7.982857143	26.57
12	7.39	26.57	1835	7.871428571	26.57
13	7.7	26.57	1836	7.837142857	26.57
14	7.38	26.57	1837	7.674285714	26.57
15	7.51	26.57	1838	7.655714286	26.57
16	7.63	25.74	1839	7.681428571	26.45142857
17	7.8	25.96	1840	7.651428571	26.36428571
18	7.69	26.1	1841	7.585714286	26.29714286
19	8.02	26.18	1842	7.675714286	26.24142857
20	8.17	26.25	1843	7.742857143	26.19571429
21	7.65	25.77	1844	7.781428571	26.08142857
22	7.85	25.64	1845	7.83	25.94857143
23	8.55	26.44	1846	7.961428571	26.04857143
24	8.09	25.89	1847	8.002857143	26.03857143
25	7.98	26.57	1848	8.044285714	26.10571429
26	7.98	26.57	1849	8.038571429	26.16142857
27	7.9	26.06	1850	8	26.13428571
28	8.18	26.13	1851	8.075714286	26.18571429
29	8.1	26.02	1852	8.111428571	26.24
30	8.04	26.26	1853	8.038571429	26.21428571
31	8.21	25.98	1854	8.055714286	26.22714286
32	8.11	26.12	1855	8.074285714	26.16285714

8. Columns for year, Global and Kuala Lumpur for 7-year moving average temperature data are highlighted, then go to Insert tab and select recommended chart to plot the data into chart.

Line chart for both global and Kuala Lumpur 7-year moving average temperature.



Observation from the graphs of 7-year moving average temperature for global and Kuala Lumpur.

a) Global 7-year moving average temperature is varies from 7.5°C to 9.7°C while Kuala Lumpur 7-year moving average temperature is varies between 25.9°C to 27.5°C.

b) Kuala Lumpur average temperature is higher than global yearly average temperature from year 1831 until 2011.

c) Both global and Kuala Lumpur hit their minimum temperature before year 1841.

d) Both global and Kuala Lumpur showed a consistent increase of average temperature from year 1966 to 2011.

e) Overall global and Kuala Lumpur moving average temperature is showing a trend of increase of temperature since 1846