PROJECT

EXPLORE WEATHER TRENDS

At here we are going to look through the data of temperature of local and global
Global temeperature has been a hot topic in recent years and we are goin to look
at the temeprature data and find out what is happening to our earth!
This projects includes use of SQL & Google spreadsheets

TOOLS
- SQL : To collect data from database and convert to csv format
- Google Sheat : Load csv data and analysis the data and visualize the data trend by line chart

1. Extract the data using SQL from database

Database is allowed to access by udacity and we can use it by SQL
We have to write the SQL query to collect the data we need and we are going to collect the temperature data from the city where we live and the global temperature data

Global temperature data SQL query

```
SELECT *
FROM global_data;
```

Seoul temperature data SQL query

```
SELECT *
FROM city_list
WHERE city = 'Seoul';
```

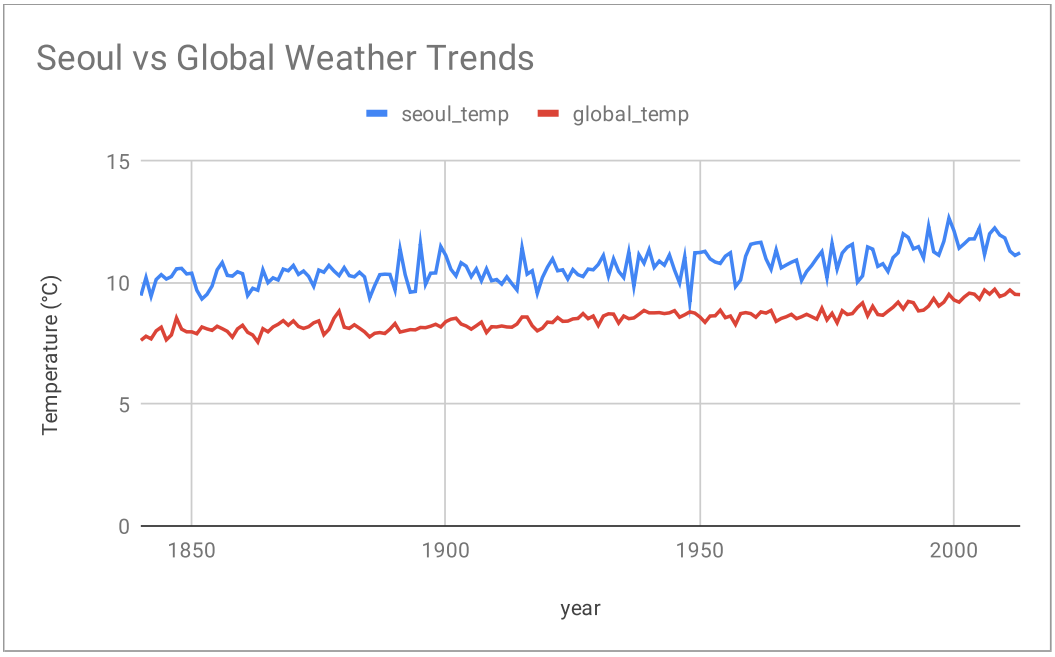
Seoul & global temperature inner joined data SQL query

```
SELECT local.year AS year,
       local.city AS city,
       local.country AS country
       local.avg_temp AS local_temp,
       global.avg_temp AS global_temp
FROM city_data local
JOIN global_data global
ON local.year = global.year
WHERE local.city = 'Seoul';
```

I used the last query to use the year data that both the Seoul and global has

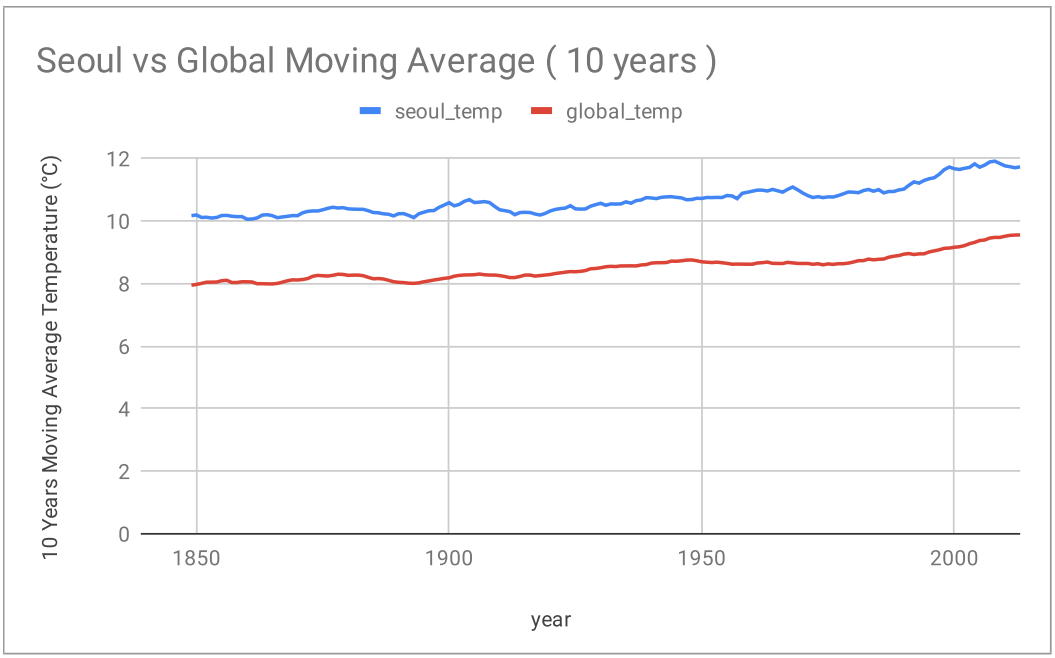
2. Import CSV data to Google Sheet and draw a line chart

Google spreadsheet is used to import CSV data
I draw the raw data itself as a line chart and it show like this



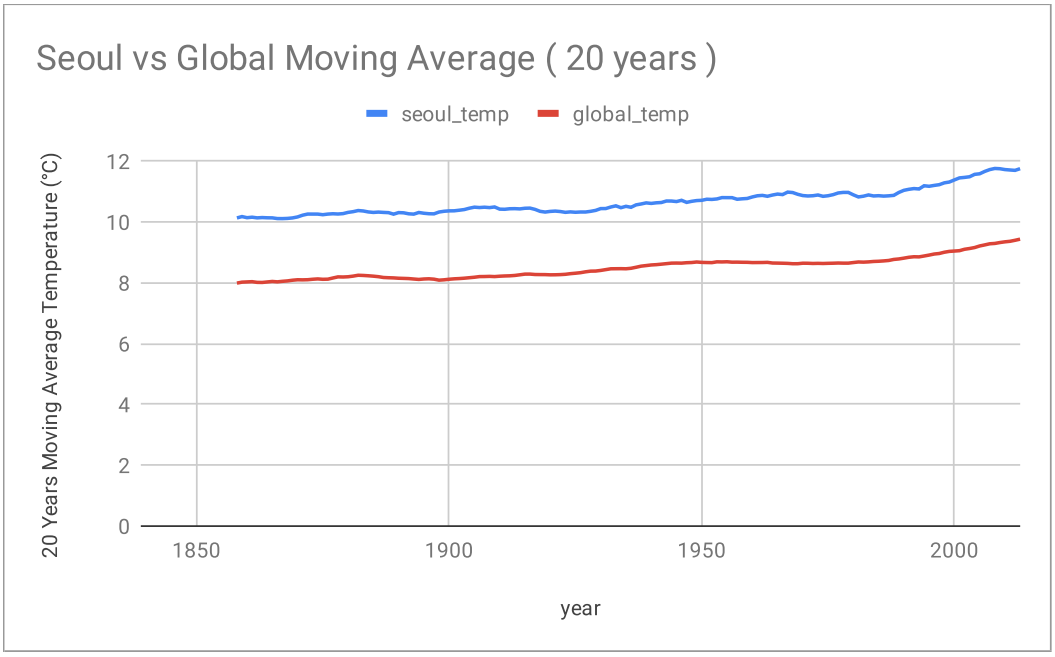
The line is not smooth so I used 10 years moving average to make it smooth

What is moving average and how to calculate it?
https://www.investopedia.com/terms/m/movingaverage.asp



You can see the data starts from near 1850 different from upper line chart.
Because 10 years moving average is using 10 years data average so it can be calculated when

there 9 years more of past data from current calculating year



When we apply 20 years of moving average you can see the line goes more smoothly

3. Observations

1. The temperature is steadily increasing both in Seoul and global similary
Approximately, Seoul increased 2 celsius, Global increased 1.5 celsius

2. Seoul was originally 2 degress higher than global temperature

3. When we see the line chart before smoothing above, we can see that the fluctuation is very large at Seoul compared to Global

4. Increasing trend of Seoul and global looks almost the same.