Project 01: Explore Weather Trends

Step 01: Data Extration

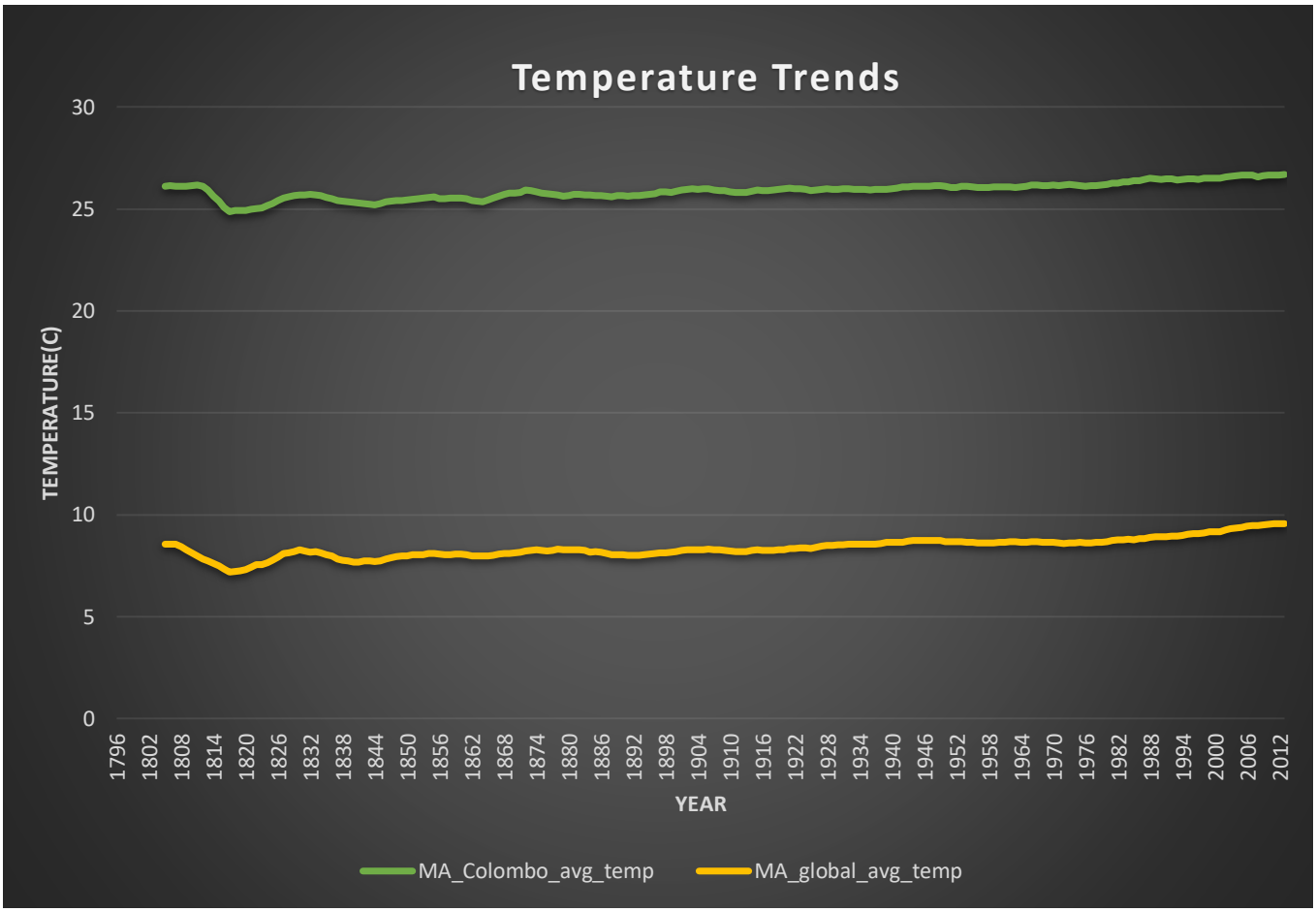
Below SQL query is used to retrieve the data from the database. And it was exported as CSV.

```
SELECT cd.year, cd.city, cd.country, cd.avg_temp colombo_avg_temp,
gd.avg_temp global_avg_temp
FROM city_data cd
JOIN global_data gd
ON cd.year = gd.year
WHERE cd.country = 'Sri Lanka'
AND cd.city = 'Colombo';
```

Please note that, I'm living in Sri Lanka, So, I selected Colombo as my city. It was observed that there are years in which temperature of the Colombo was not gathered.

Step 02: Create line charts

Excel is used to generate the line charts. In order to smoothen the lines, instead of row values, moving average (per decade/10 years) values of those columns (Colombo_avg_temp, Global_avg_temp) are used to generate the lines.



Step 03: Observations

1. It is obvious that, Colombo average temperature is hotter than average global temperature.
2. Global warming can be clearly identified here as both global and Colombo temperature are increasing with the time.
3. Sudden drop of global and Colombo temperature can be seen around 1810-1820 time period.
4. It can be seen that, rate of temperature increment has been picked up after around 1980s, which means global warming rate has been rapidly increased recently.
5. Correlation between global temperature and Colombo temperature can be seen.