Explore Weather Trends

First, I extracted the data from the database writing a SQL query and exported them to CSV files:

- city_list:

```
SELECT *

FROM  city_list;
```

- city_data:

```
SELECT year, avg_temp
FROM city_data
WHERE city = 'London' AND country = 'United Kingdom'
ORDER BY year;
```

- global_data:

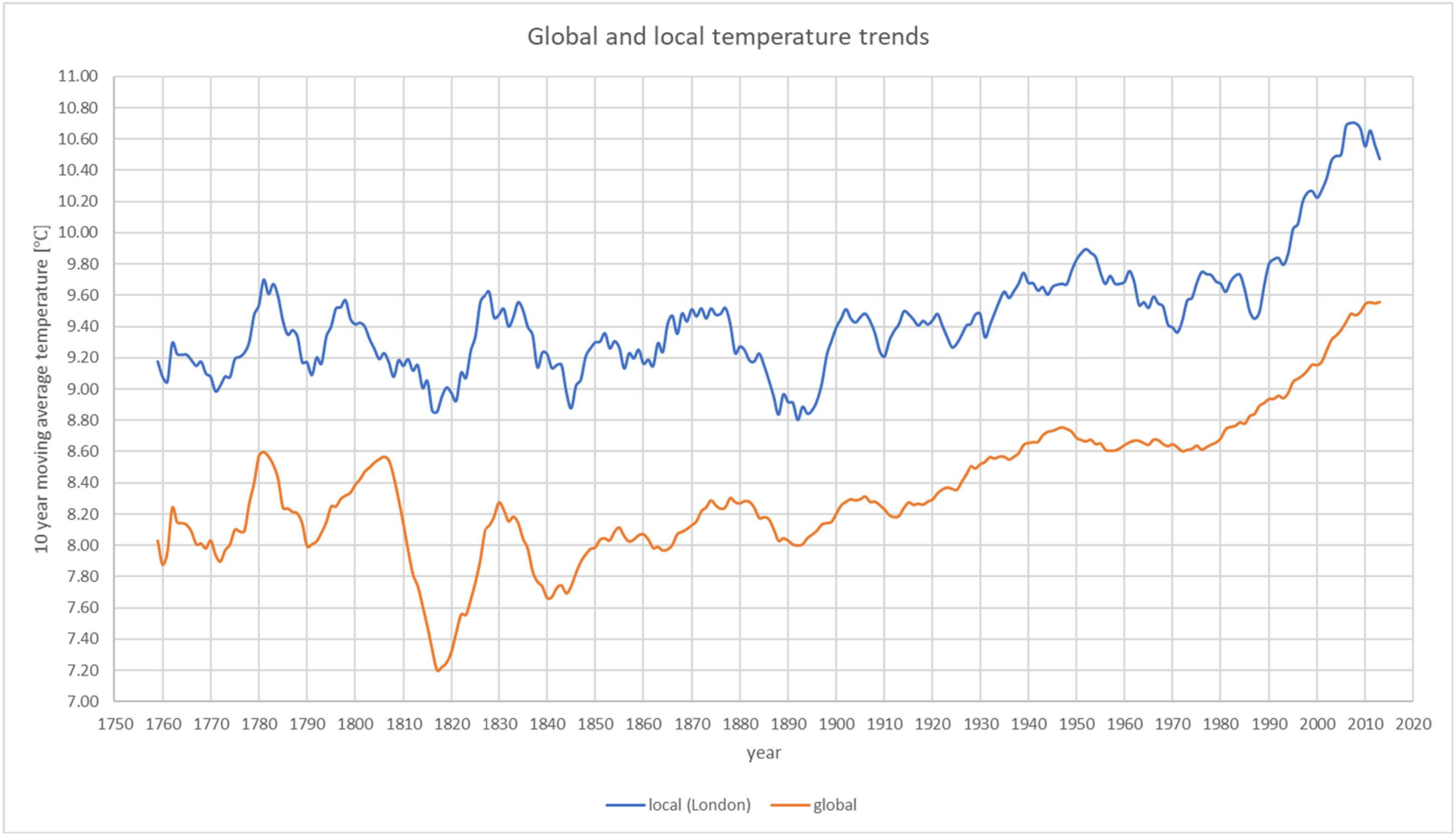
```
SELECT *

FROM global_data;
```

Then I opened CSV files using Excel. For global and local (London – United Kingdom) data I calculated the 10 year moving average temperature: I went down to the tenth year and used the AVERAGE() function to calculate the average temperature for the first 10 years, than I dragged the formula down to the next cell.

Next, in Excel, I created the line charts with two series (global and local) of 10 year moving average temperature in years 1759 – 2013. This chart is shown in next page.

The line chart shows that local moving average temperature is higher from global (by an average of 1.11 Celsius degrees). Both, local and global, average temperature show growing trends. This trend has been consistent over 110 years. It means the world is getting hotter. The local trends are similar to the global trends. The correlation coefficient between this two, local and global, data sets is equal 0.88. It means the relationship is strong positive.


Global and local temperature trends
11.00
10.80
10.60
10.40
10.20
10.00
9.80
9.60
9.40
9.20
9.00
8.80
8.60
8.40
8.20
8.00
7.80
7.60
7.40
7.20
7.00
10 year moving average temperature [°C]
1750 1760 1770 1780 1790 1800 1810 1820 1830 1840 1850 1860 1870 1880 1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020
year
local (London)
global