Outline

STEP 1: Data Extraction

Following sql queries have been used in the workspace provided by udacity which is connected to the database.

First average temperature of the city I live close to is extracted by the following sql query.

```
SELECT *
FROM city_data
WHERE city = 'Dhaka';
```

For extraction global temperature the following sql query has been executed

```
SELECT *
FROM global_data
WHERE year BETWEEN 1796 AND 2013;
```

The extracted data from these two sql queries have been merged into a single .csv file.

STEP 2: 10 Years Moving Average Calculation

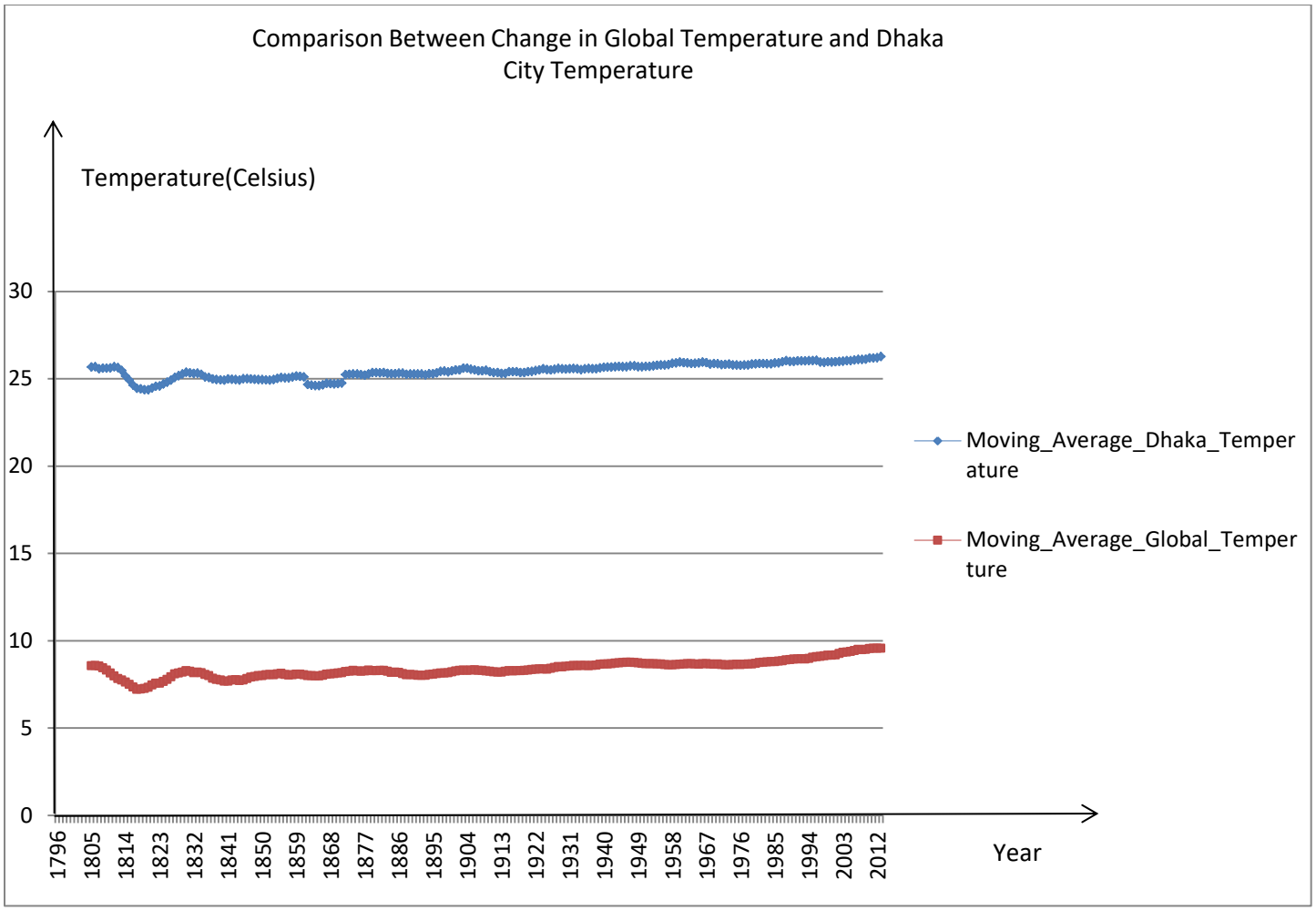
Average() function is used to calculate the moving average temperature of first 10 years from 1976-1805 in Microsoft Excel. From then on every cell of global moving average temperature column and Dhaka city moving average temperature column have been derived by calculating the average of their previous 10 years temperature. to have smoothed data curve for easy observation of temperature change.

Screenshot of a portion of the .csv file is as follows. It is to be noted that the last two columns from the right side of the screenshot represents the temperature curve of the line chart.

year	city	country	avg_dhaka	avg_globa	dhk_moving_avg	glbl_moving_avg
1796	Dhaka	Banglades	25.35	8.27		
1797	Dhaka	Banglades	26.36	8.51		
1798	Dhaka	Banglades	25.22	8.67		
1799	Dhaka	Banglades	25.61	8.51		
1800	Dhaka	Banglades	25.54	8.48		
1801	Dhaka	Banglades	25.14	8.59		
1802	Dhaka	Banglades	25.98	8.58		
1803	Dhaka	Banglades	25.73	8.5		
1804	Dhaka	Banglades	26.05	8.84		
1805	Dhaka	Banglades	25.64	8.56	25.662	8.551
1806	Dhaka	Banglades	25.56	8.43	25.683	8.567
1807	Dhaka	Banglades	25.15	8.28	25.562	8.544
1808	Dhaka	Bangladesh		7.63	25.6	8.44
1809	Dhaka	Bangladesh		7.08	25.59875	8.297
1810	Dhaka	Bangladesh		6.92	25.60714286	8.141
1811	Dhaka	Bangladesh		6.86	25.685	7.968
1812	Dhaka	Bangladesh		7.05	25.626	7.815
1813	Dhaka	Banglades	24.9	7.74	25.46	7.739
1814	Dhaka	Banglades	24.51	7.59	25.152	7.614
1815	Dhaka	Banglades	24.43	7.24	24.91	7.482
1816	Dhaka	Banglades	24.19	6.94	24.636	7.333
1817	Dhaka	Banglades	24.21	6.98	24.448	7.203
1818	Dhaka	Banglades	24.26	7.83	24.41666667	7.223

Line Chart

Axes have been labeled and title has been added to the chart. Acronyms have also been replaced with full words/names.



Observations

1. Comparing the moving average temperature curve of both my city and gloabal one, it is evident that the temperature of my city is hotter than global temperature by 17°C-18°C
2. This significant temperature difference has been consistent over the last few hundred years.
3. The change in the average temperature of both Dhaka and global has been gradual.
4. In both cases the temperature fluctuation isn't that high although there is noticeable fluctuation of temperature of both global and Dhaka between the year 1805-1837. Based of the curve it is visible that the overall global temperature has been on the rise consistently. Even though the temperature curve is moving upward but between the year 1860-1868 the temperature of Dhaka was lower than its previous years.