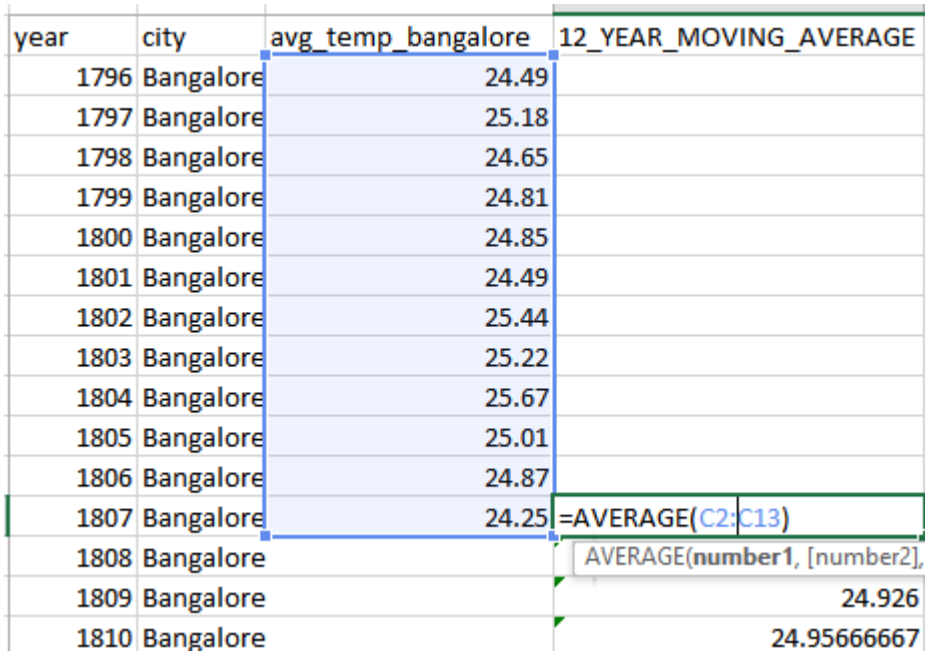
A) An outline of steps taken to prepare the data

SQL is used to pull the data

select * from city_data where city in (select city from city_list where city in('Bangalore'))
and country in (select country from city_list where country = 'India')

select * from global_data

Sample Initial Raw Data (with 12 year Moving Average Calculations)



year	city	avg_temp_bangalore	12_YEAR_MOVING_AVERAGE
1796	Bangalore	24.49	
1797	Bangalore	25.18	
1798	Bangalore	24.65	
1799	Bangalore	24.81	
1800	Bangalore	24.85	
1801	Bangalore	24.49	
1802	Bangalore	25.44	
1803	Bangalore	25.22	
1804	Bangalore	25.67	
1805	Bangalore	25.01	
1806	Bangalore	24.87	
1807	Bangalore	24.25	=AVERAGE(C2:C13)
1808	Bangalore		
1809	Bangalore		24.926
1810	Bangalore		24.95666667

Sample Final Raw Data (with 12 year Moving Average Calculations separate for 2 categories

The data is preprocessed in excel to combine all the data for Bangalore.

(Assuming the temperature given is in Degree Celsius)

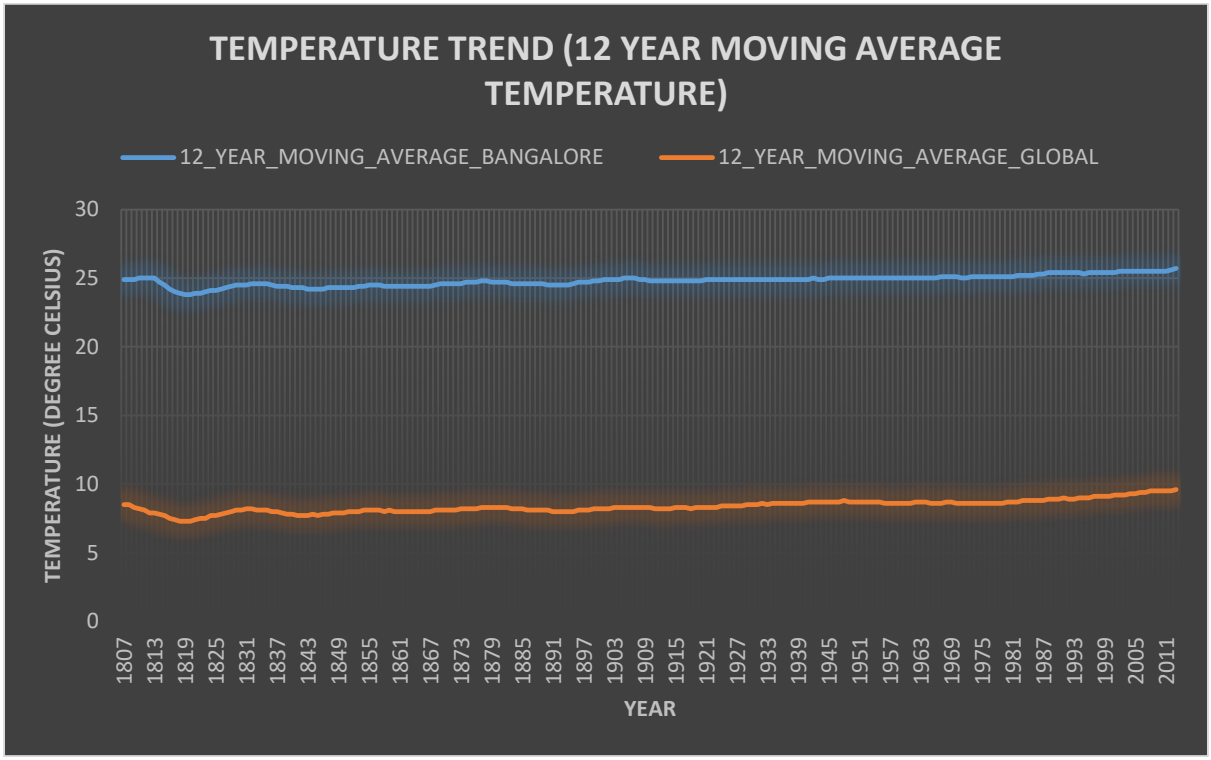
year	12_YEAR_MOVING_AVERAGE_BANGALORE	12_YEAR_MOVING_AVERAGE_GLOBAL
1807	24.9	8
1808	24.9	8
1809	24.9	8
1810	25	8
1811	25	8
1812	25	7
1813	25	7
1814	24.7	7
1815	24.5	7

B) How did you calculate the moving average?

Moving average is calculated for 12 years

C) Key considerations when deciding how to visualize the trends

Wanted to time align the data for all the 2 categories i.e (Global , Bangalore)
As 12 year moving average is taken for both, hence a line / trend chart is populated w.r.t Year and Avg temperature



a) Global temperatures are very less compared to Bangalore.

b) The temperatures for the 2 categories have increased marginally in the last 200 years of data

c) The lowest temperatures found for Global (7.3 deg C) around 1819, whereas for Bangalore (23.8 deg C) around 1820.

d) Exactly 50 years from the year 1807, we observe that Global and Bangalore have their temperatures dipped.

e)The global temperature remained consistent until the year 1957, but after 1957 increased. there seems to be a lot of change in temperatures.

f) At every 50 years interval, the temperatures are shown in chart ,
Hence we can observe that temperatures have changed by +/ -0.3

g) The correlation coefficient for (Global vs bangalore -> 0.943)