Explore Weather Trends

project (1)

Abd El Rhman Mohamed

DAND

UDACITY

SQL Query

```
WITH cairo_temp AS (SELECT year, avg_temp
                    FROM city_data
                    WHERE country = 'Egypt' AND city = 'Cairo')
SELECT g.year,
       g.avg_temp global_temp,
       ct.avg_temp cairo_temp
FROM global_data g
JOIN cairo_temp ct
  ON ct.year = g.year
ORDER BY 1;
```

AbdElRhman Mohamed

The steps taken to prepare the data to be visualized in the chart:

1- I have used Microsoft excel

- Make the column of 5 years move average for both global and Cairo weather.
- Then create the charts.

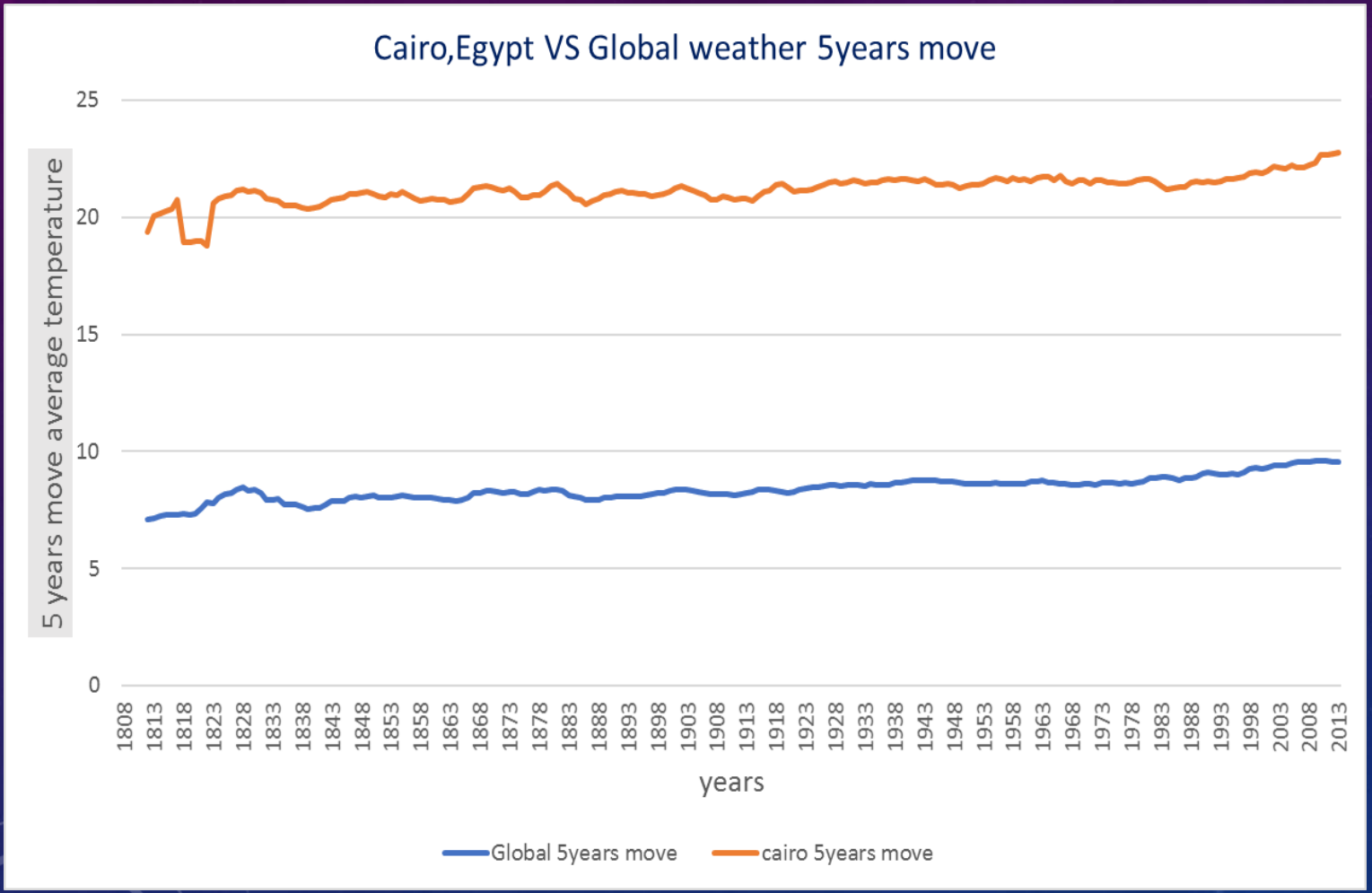
2- I have used the average and Median function (measuring of center).

3- I have used the range as a measure of spread.

4- I have used only the years that has data for both (global and Cairo weather).

AbdElRhman Mohamed

Is Cairo hotter or cooler on average compared to the global average? has the difference been consistent over time?



Cairo is hotter compare to the global average, Since the mean of the average of 5 years move of Cairo temperature is 21.18 however the global average have mean 8.396.

The global median is 8.35 and the Cairo average temperature median is 21.22.

the range of the average temperature of Cairo (3.98) is greater than the global one(2.47).

So Cairo weather is more **spread** than the global.

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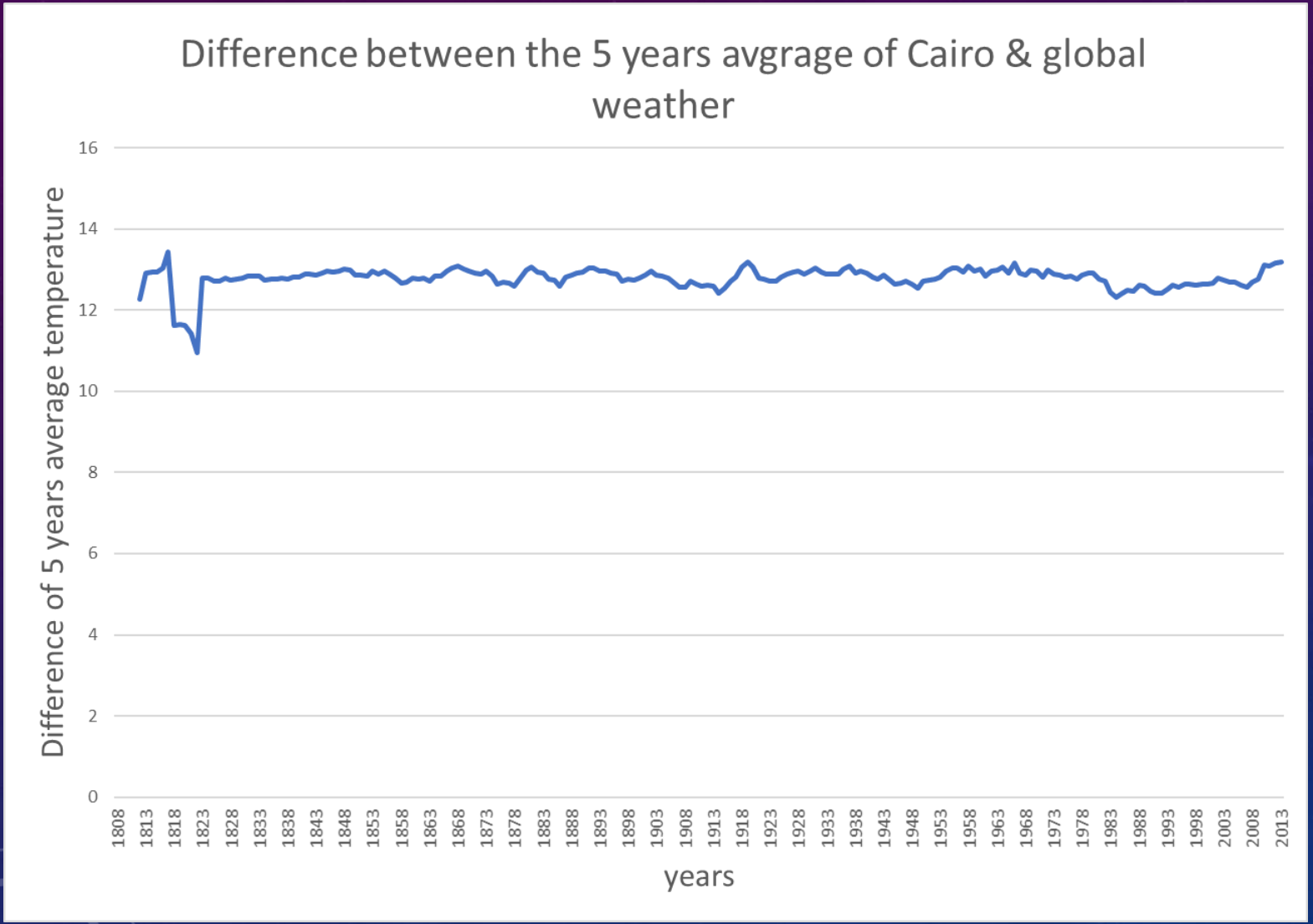
Has the difference between Cairo & the global average been consistent over time?

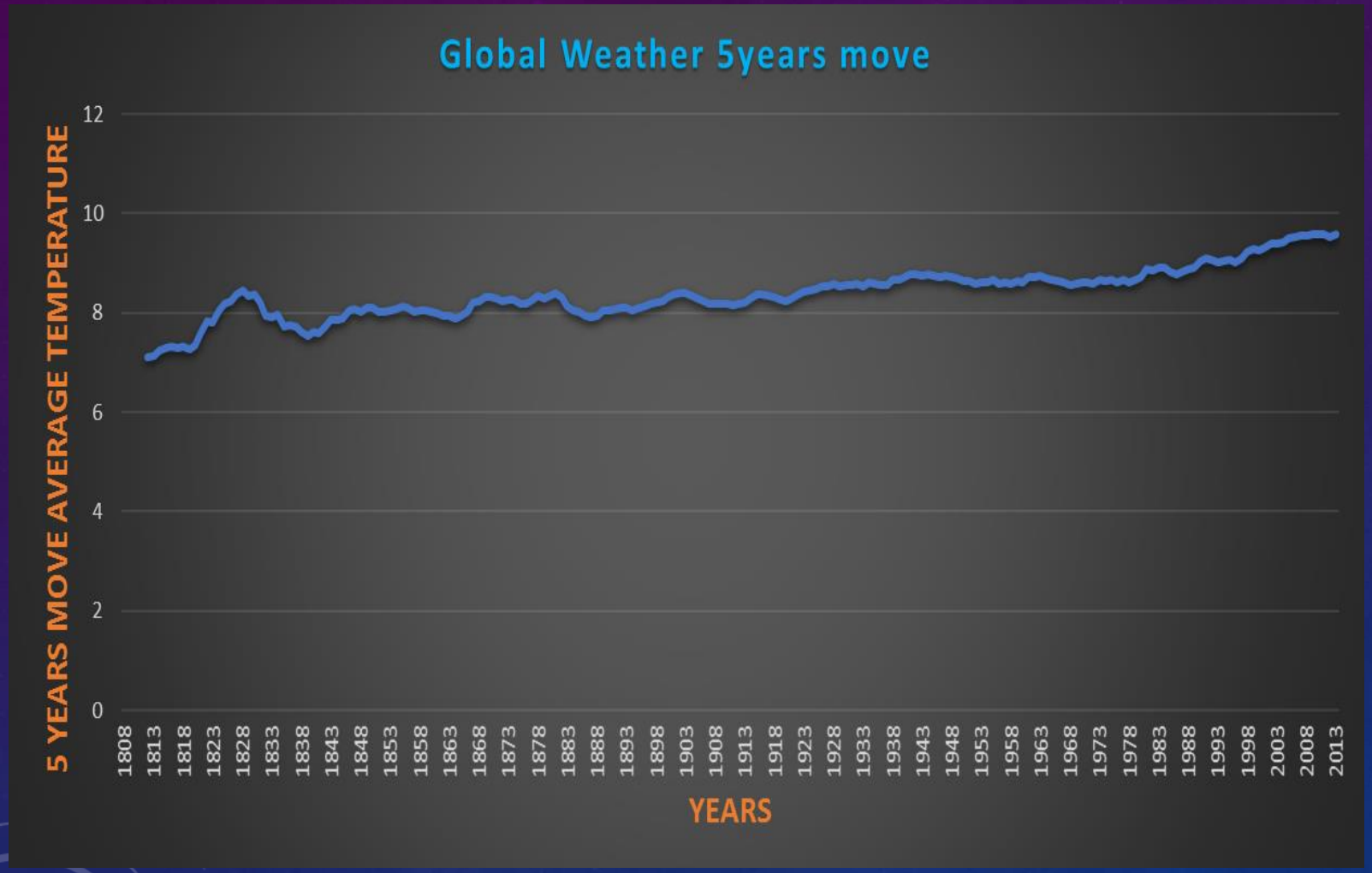


No, the difference between them hasn't been consistent over time. But it

Since the difference between them is in range of 10.9 **°C** to 13.5 **°C**. with range 2.48 **°C**

Abd El Rhman Mohamed

WHAT DOES THE OVERALL TREND LOOK LIKE? IS THE WORLD GETTING HOTTER OR COOLER?



It looks like the “move average temperature” of the Global is increasing from 1808 (7.1 °**C**) to 2013 (9.57 °**C**)

So, The world is getting hotter.

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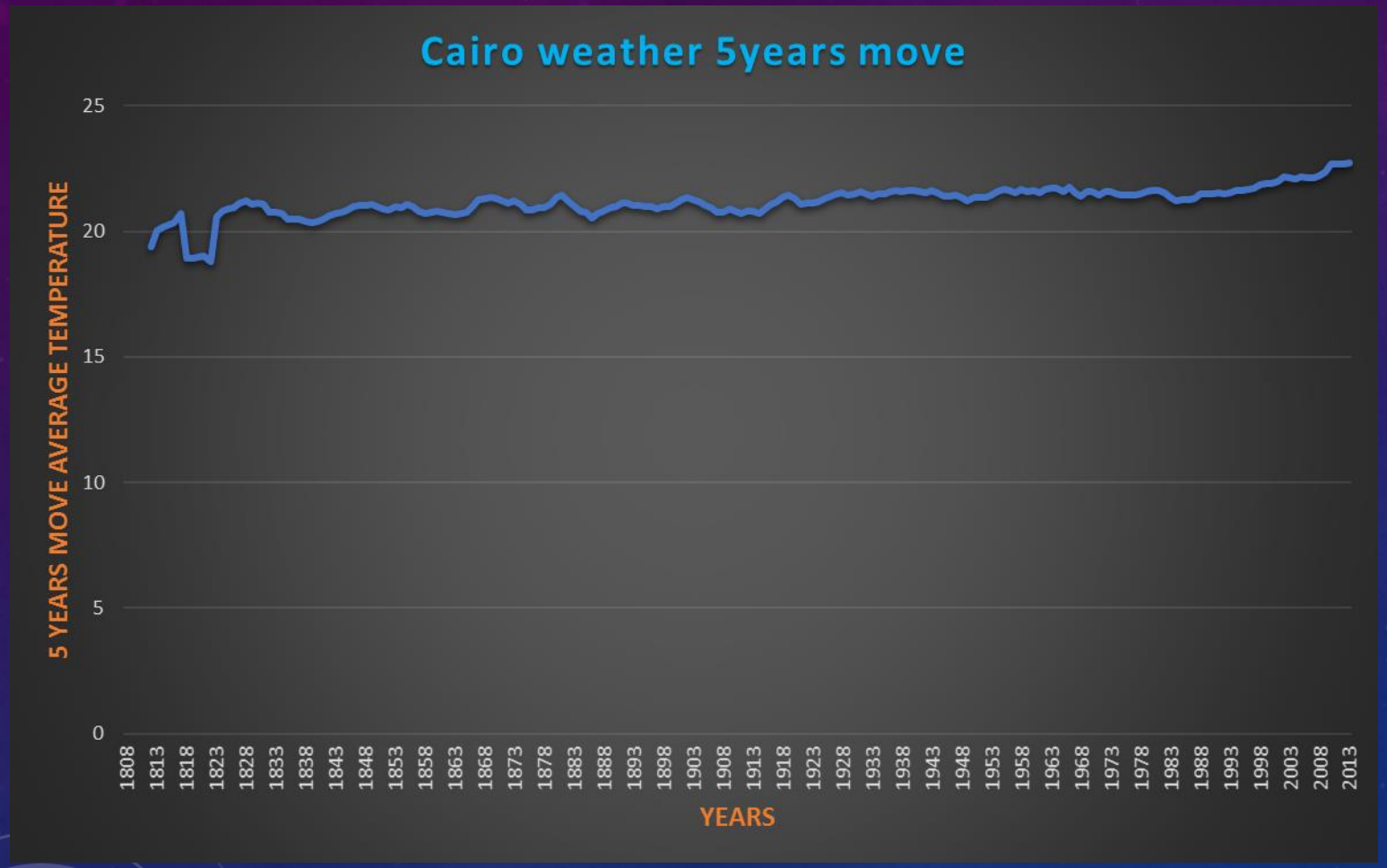
What does the overall trend look like? is Cairo getting hotter or cooler?



It looks like the “move average temperature” of Cairo is increasing from 1808 (19.36 °**C**) to 2013 (22.74 °**C**)

So, The weather at Cairo is getting hotter.

AbdElRhman Mohamed

SQL Query

```
WITH cairo_temp AS (SELECT year, avg_temp
                    FROM city_data
                    WHERE country = 'Egypt' AND city = 'Cairo'),
     san_francisco AS(SELECT year, avg_temp
                    FROM city_data
                    WHERE country = 'United States' AND city = 'San
Francisco'),
     london_temp AS(SELECT year, avg_temp
                    FROM city_data
                    WHERE country = 'United Kingdom' AND city =
'London'),
     prais_temp AS(SELECT year, avg_temp
                    FROM city_data
                    WHERE country = 'France' AND city = 'Paris')
```

```
SELECT g.year,g.avg_temp global_weather, ct.avg_temp
cairo_weather, sf.avg_temp san_francisco_weather, l.avg_temp
london_weather, pt.avg_temp Paris_weather
FROM global_data g
JOIN cairo_temp ct
  ON ct.year = g.year
JOIN san_francisco sf
  ON sf.year = g.year
JOIN london_temp l
  ON l.year = g.year
JOIN prais_temp pt
  ON pt.year = g.year
ORDER BY 1;
```

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The steps taken to prepare the data to be visualized in the chart:

1- I have used Microsoft Excel
   - Make the column of 5 years move average for the cities
   - Then create the charts.

2- I have used the average and Median function (measuring of center).

3- I have used the range as a measure of spread.

4- I have used only the years that has data for All.

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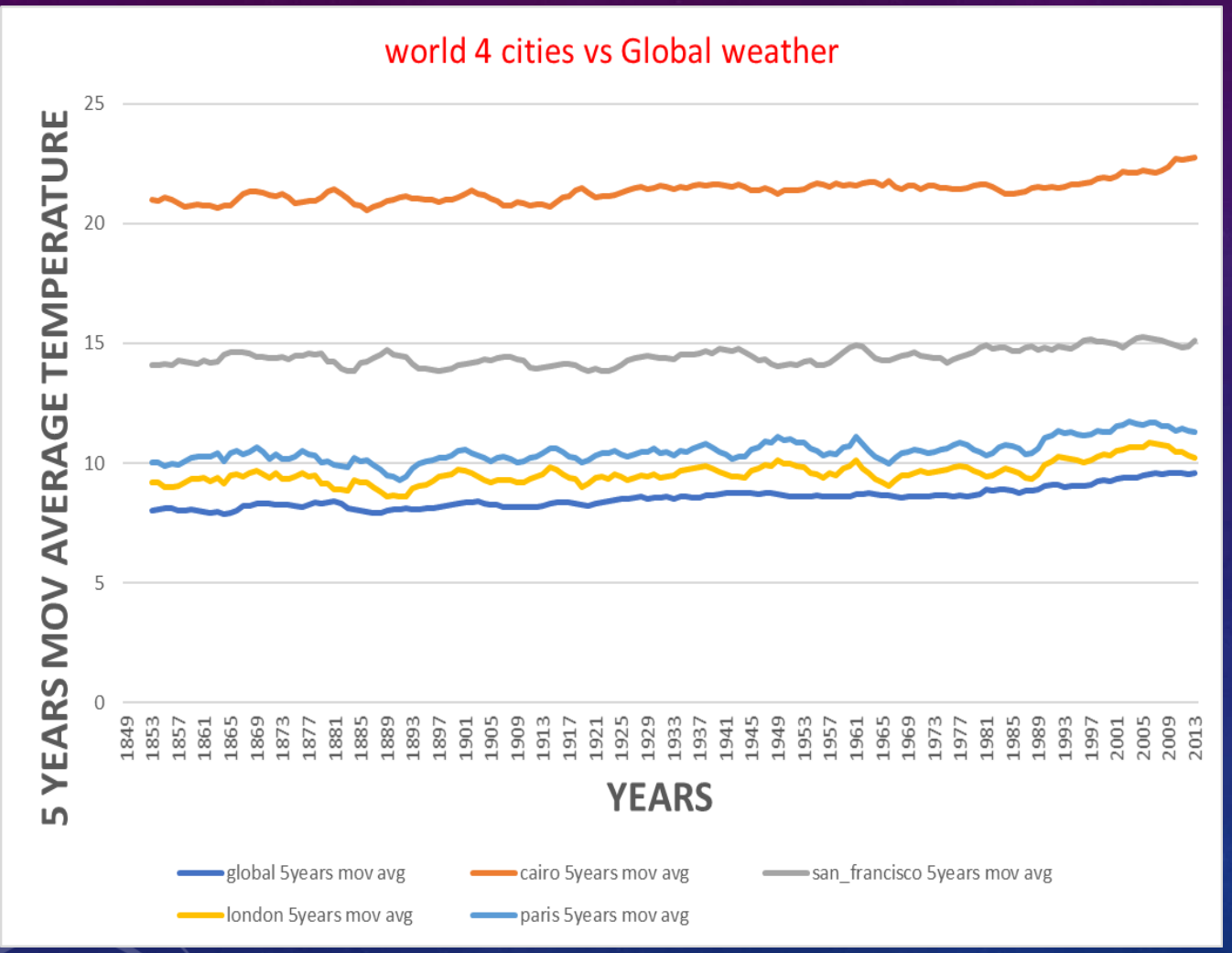
Are Cairo, London, Paris and San Francisco hotter or cooler on average compared to the global average? Which one is the most spread?



It looks like the "5 years move average of temperature" of Cairo is increasing from 1808 (20.9 °C) to 2013 (22.74 °C) with range 2.202 °C

The "5 years move average of temperature" of San Francisco is increasing from 1808 (14.1 °C) to 2013 (15.1 °C). with range 1.418 °C.

The "5 years move average of temperature" of Paris is increasing from 1808 (10.038 °C) to 2013 (11.286 °C). with range 2.44 °C.

The "5 years move average of temperature" of London is increasing from 1808 (9.21°C) to 2013 (10.2 °C). with range 2.228 °C.

It looks like the "move average temperature" of the Global is increasing from 1808 (7.1 °C) to 2013 (9.57 °C), with range 1.688 °C.

So, The world is getting hotter by time even in the cold countries .

Cairo is the hottest city, then San Francisco, Paris, London.

London is the coldest city.

Paris average temperature is the most spread (according to the range) then London, Cairo, San Francisco.

London temperature is so close to the global temperature.

The more the city near to the north or south pole it becomes more cold.

The near the city to equator the hotter it'll be.

AbdElRhman Mohamed

Thank You
For reviewing my project.
Hope u enjoy it.

I would be happy to keep in touch with you.

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