



Explore Weather Trends

UDACITY MISK DATA ANALYSIS NANODEGREE

HISHAM ALEIDAN

1. How Did I Do It

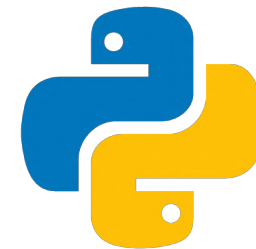
❖ To do this project I had to use these programs to help me



SQL: I used SQL to get the data from the Data base



Excel: to compare the data that I get and to calculate the average



Python: to use the pandas and matplotlib libraries to create the graphs

SQL



To get the data I had to execute the following code

```
SELECT *
```

```
FROM city_list
```

to see the cities that are in the data base

When I saw the cities and choose them

I executed this code

```
SELECT *
```

```
FROM city_data
```

```
WHERE city='Riyadh'
```

```
AND year > 1847
```

```
AND year < 2014
```


Excel



- I used average function excel to calculate the moving average

AVERAGE =AVERAGE(D2:D11)					
	A	B	C	D	E
1	year	city	country	avg_temp	MA
2	1848	Riyadh	Saudi Arabia	24.56	
3	1849	Riyadh	Saudi Arabia	24.8	
4	1850	Riyadh	Saudi Arabia	24.34	
5	1851	Riyadh	Saudi Arabia	25.03	
6	1852	Riyadh	Saudi Arabia	24.85	
7	1853	Riyadh	Saudi Arabia	24.93	
8	1854	Riyadh	Saudi Arabia	24.72	
9	1855	Riyadh	Saudi Arabia	24.92	
10	1856	Riyadh	Saudi Arabia	24.57	
11	1857	Riyadh	Saudi Arabia	24.26	=AVERAGE(D2:D11)

The best average that worked for me is over a ten years period

Python



- ▶ I used python to get pandas and matplotlib libraries to create the graphs

I could have done it with excel but this will help me in the future

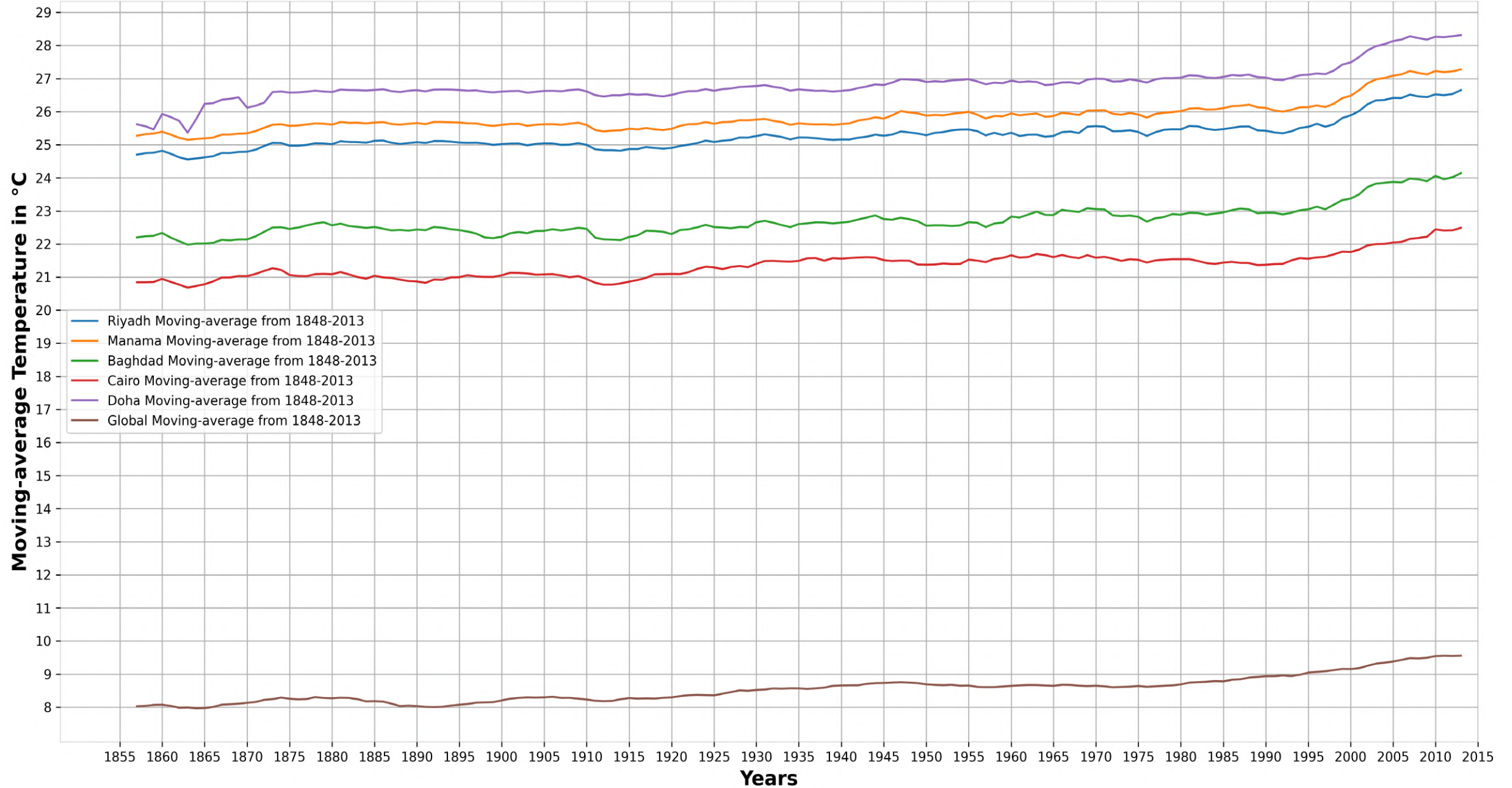
There was no prior knowledge in pandas and matplotlib

But after trial and error I figured it out

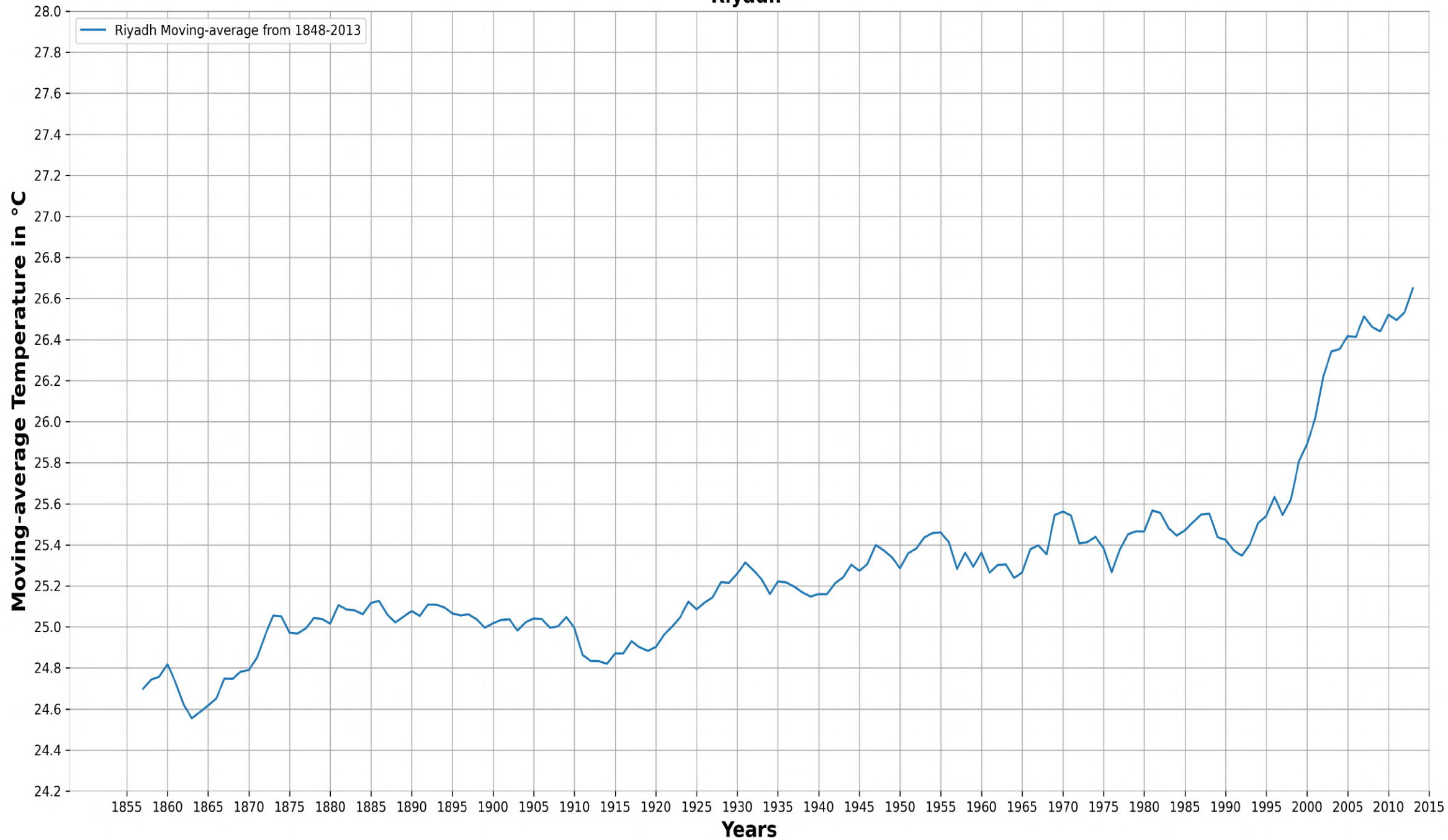
i used panda to import the cvs file and matplotlib to create the graph

* Included in the file the jupyter notebook that i used to make this project

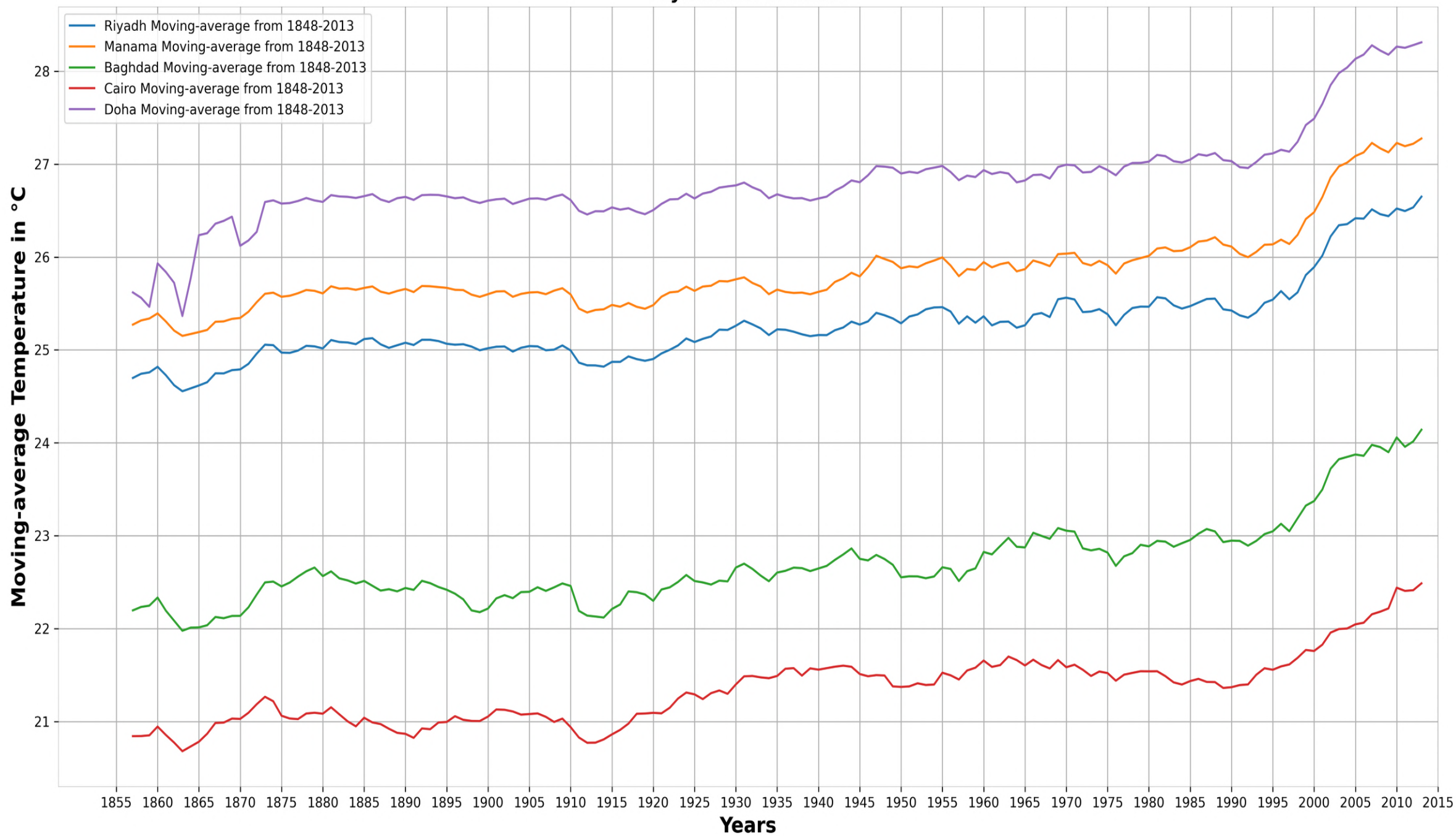
Riyadh&Global Data



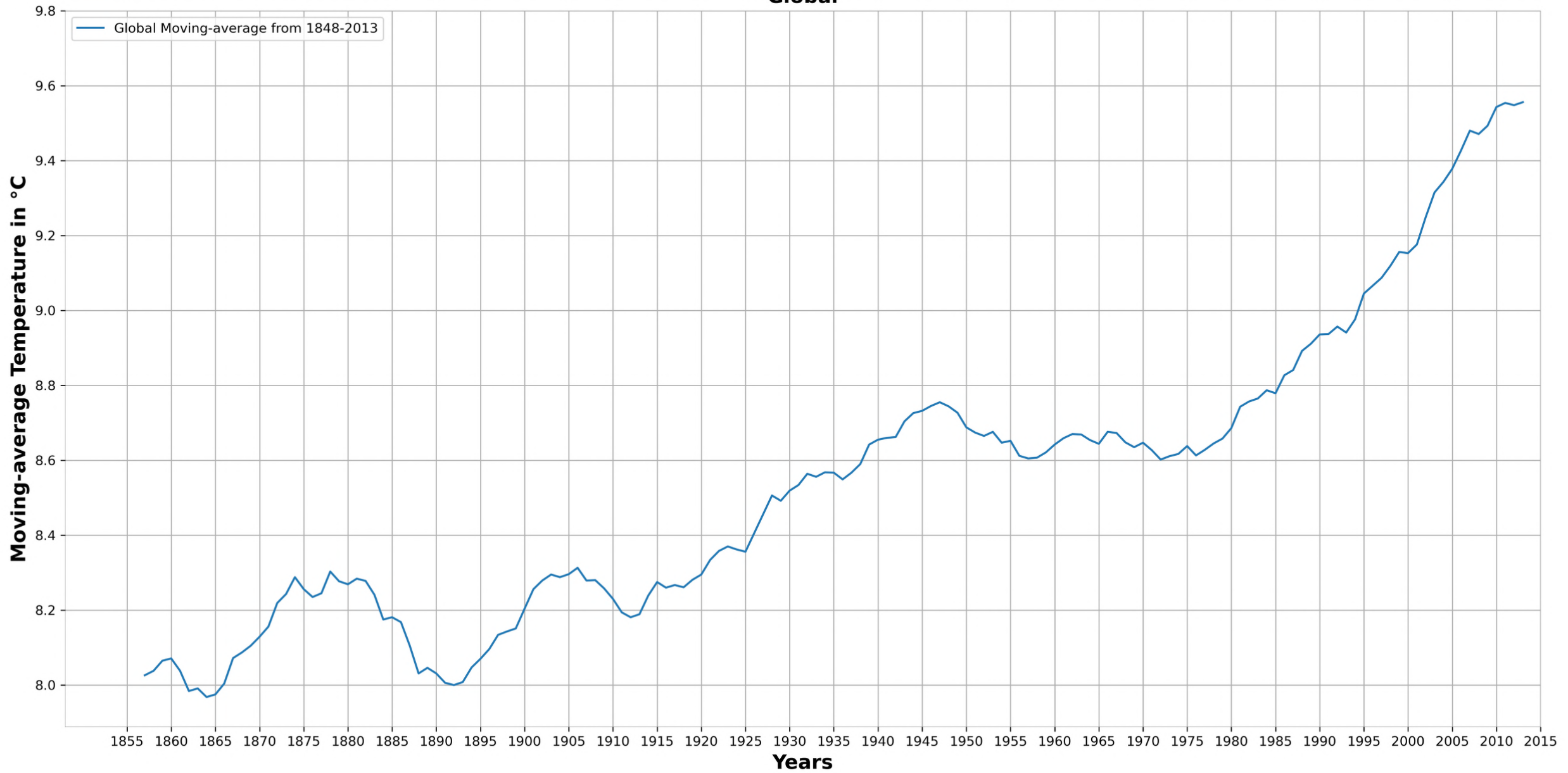
Riyadh



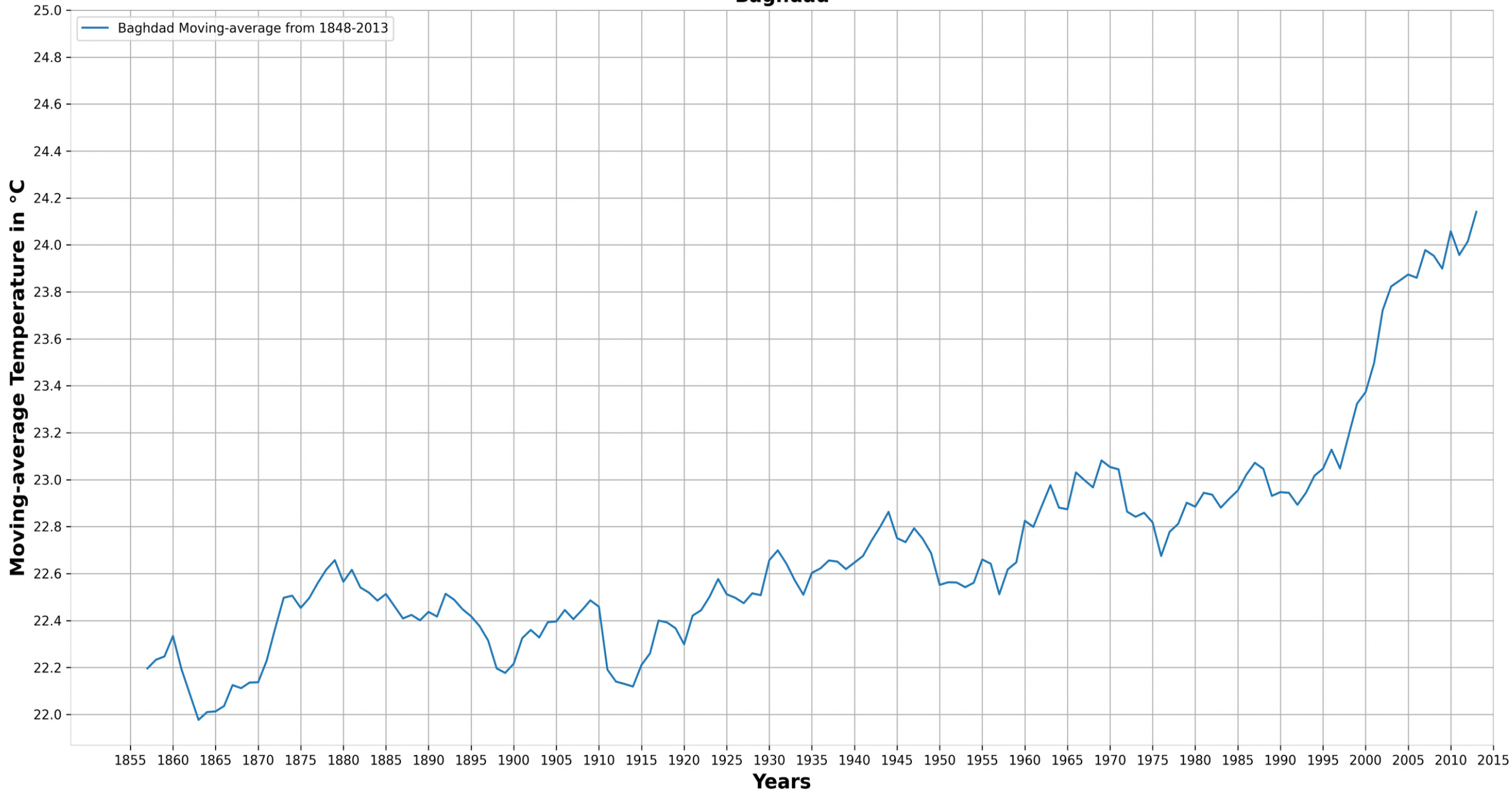
Riyadh&near cities



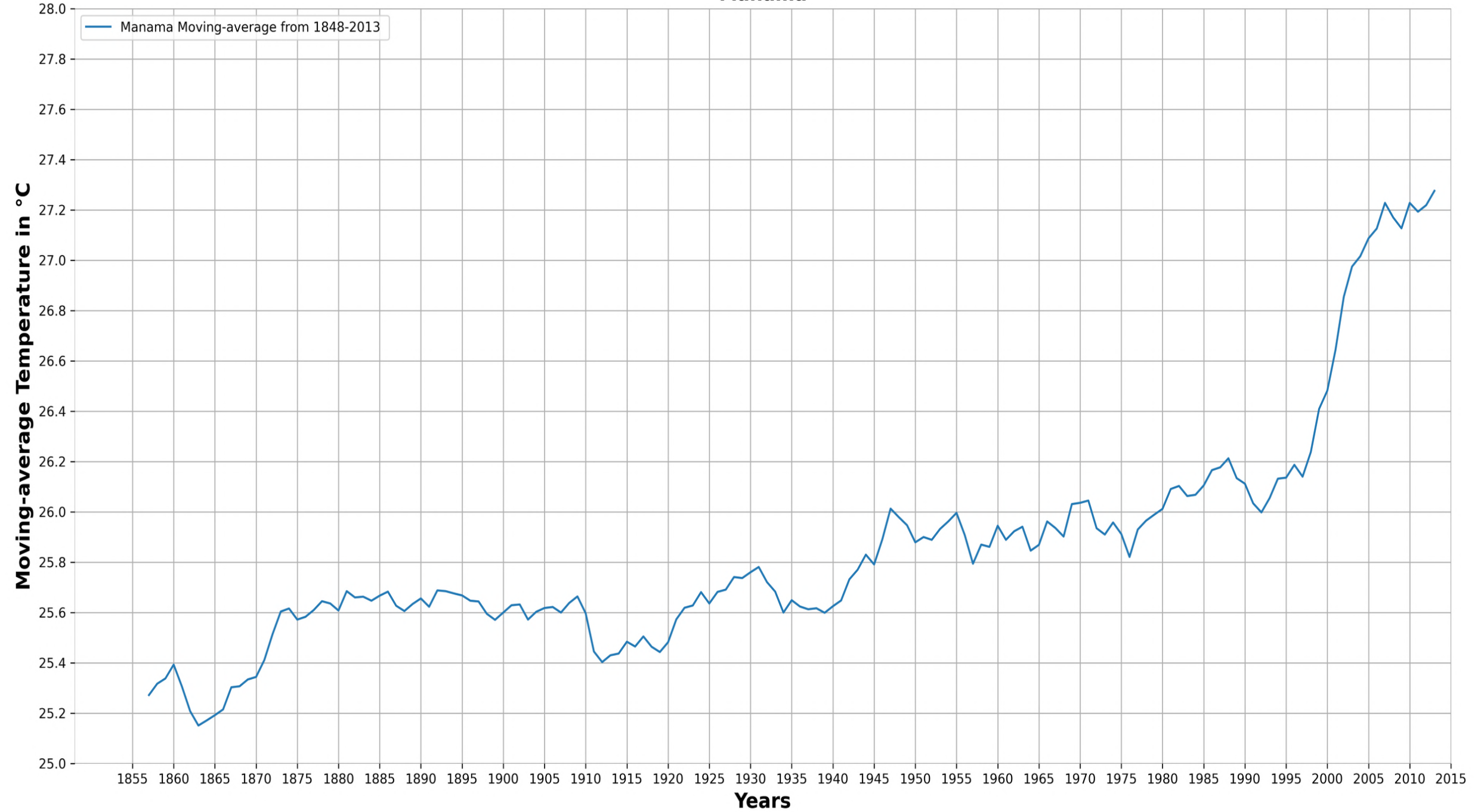
Global



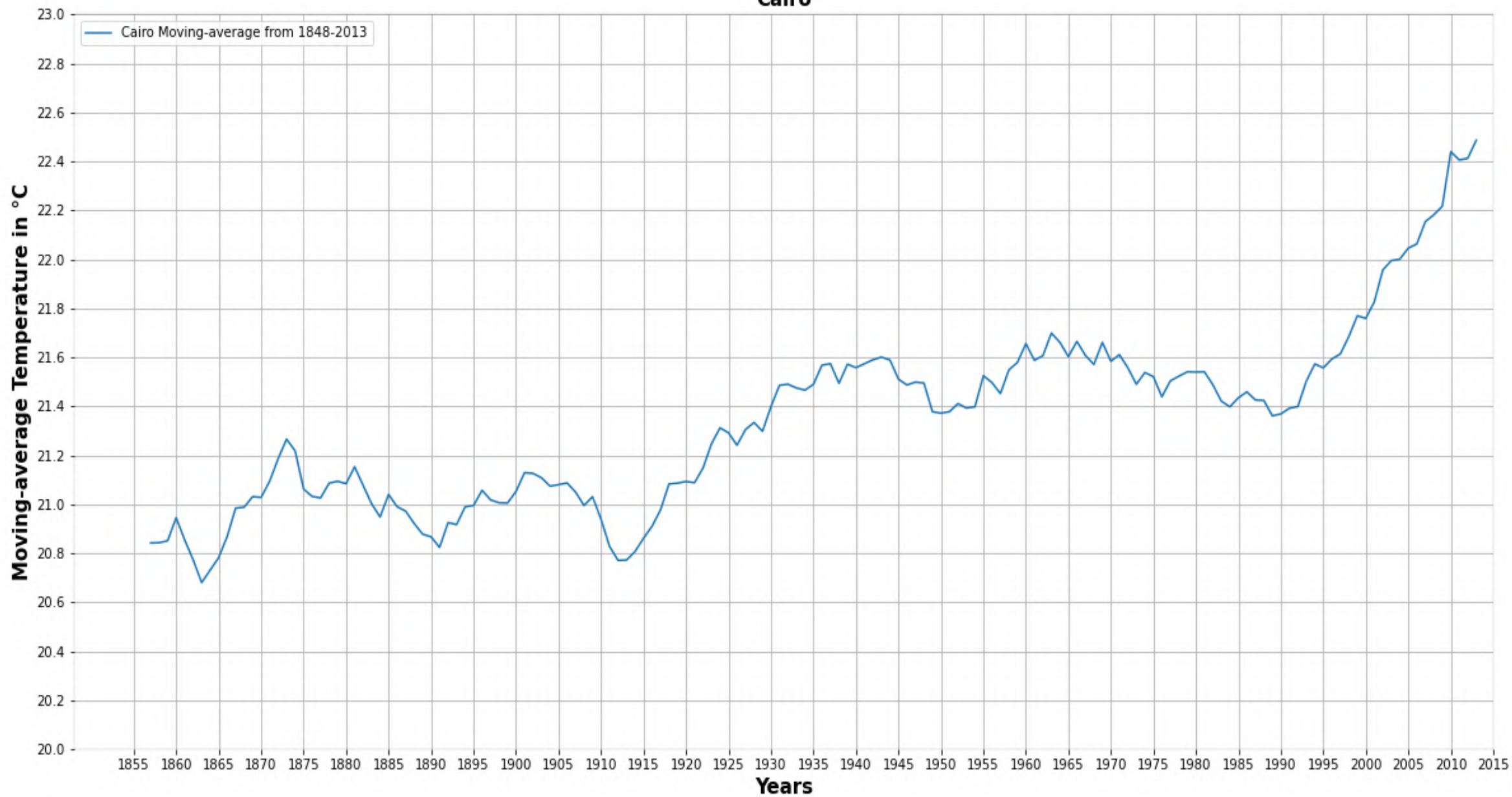
Baghdad



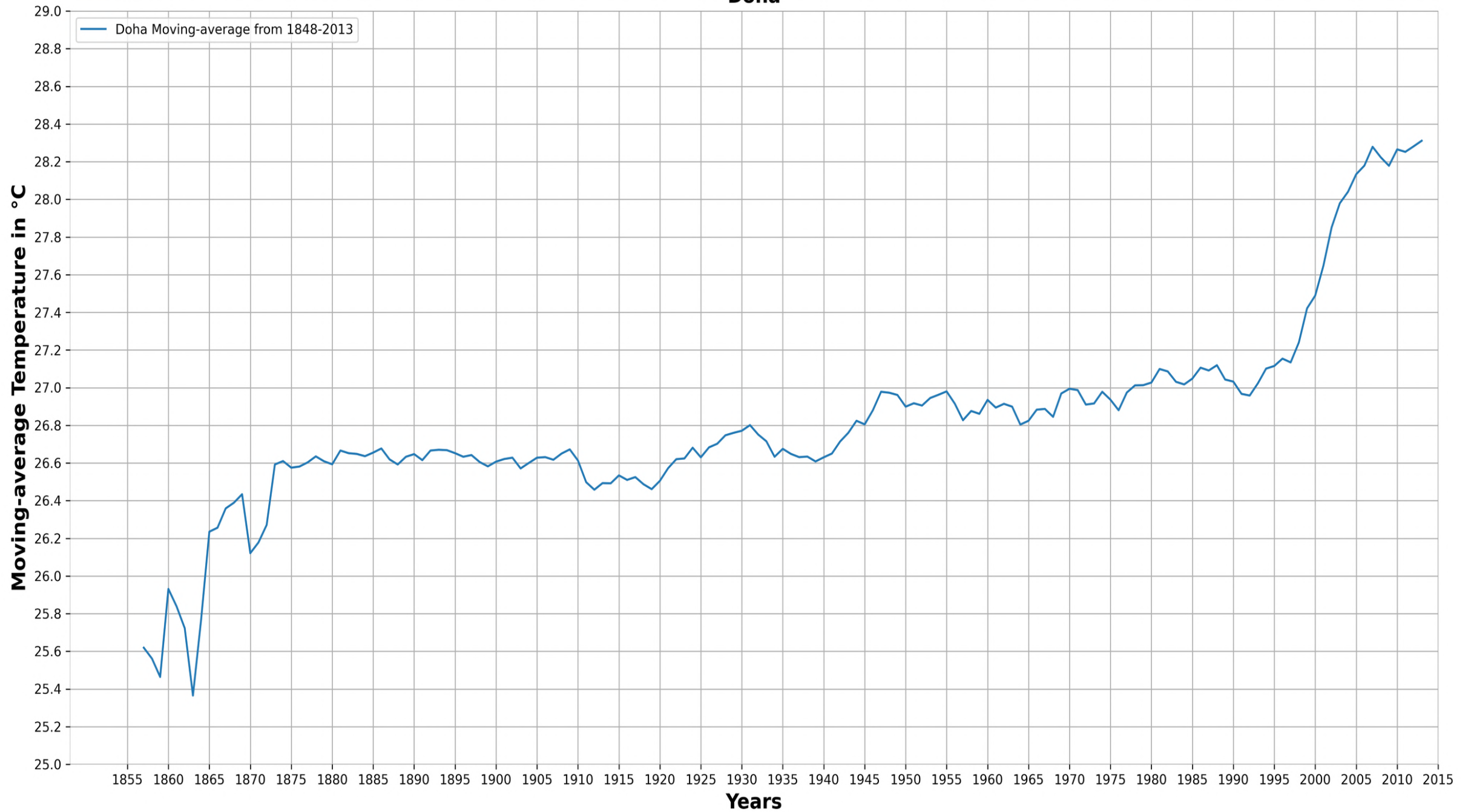
Manama



Cairo



Doha



observations

From 1848 to 2013

- ▶ Global Temperature has risen between 1.0°C and 1.5°C
- ▶ Riyadh , Manama, Cairo and Baghdad Temperatures has risen between 1.0°C and 1.5°C
- ▶ Doha Temperatures has risen between 2.0°C and 2.5°C
- ▶ we could see that the average temperature is gradually increasing over the years
- ▶ Also in 1995 and upward we could see there are high inclining changes in the temperature Comparing to the past years

Where I got help

Here are some sites that I got help from

- ▶ <https://www.youtube.com/watch?v=AYorFcI1MTU>
- ▶ <https://www.youtube.com/watch?v=a9UrKTVEeZA>
- ▶ https://matplotlib.org/tutorials/intermediate/legend_guide.html
- ▶ <https://matplotlib.org/tutorials/introductory/pyplot.html#sphx-glr-tutorials-introductory-pyplot-py>
- ▶ <https://thepythonguru.com>