

PROJECT SPECIFICATION

Explore Weather Trends

Student is able to extract data from a database using SQL.

- The SQL query used to extract the data is included.
- The query runs without error and pulls the intended data.

Student is able to manipulate data in a spreadsheet or similar tool.

- Moving averages are calculated to be used in the line chart.

Student is able to manipulate data in a spreadsheet or similar tool.

- A line chart is included in the submission.
- The chart and its axes have titles, and there's a clear legend (if applicable).

Student is able to interpret a data visualization.

- The student includes four observations about their provided data visualization.
- The four observations are accurate.

1- Extracting the Data

I used two queries to extracting data.

First one to extract the Riyadh data.

```
select year, avg_temp
from city_data
where city='Riyadh'
```

Second one to extract the global data.

```
select year, avg_temp
from global_data
```

Extra: Extract Milan data

```
select year, avg_temp
from city_data
where city='Milan'
```

After extract each one, I merge the two datasets to one dataset.

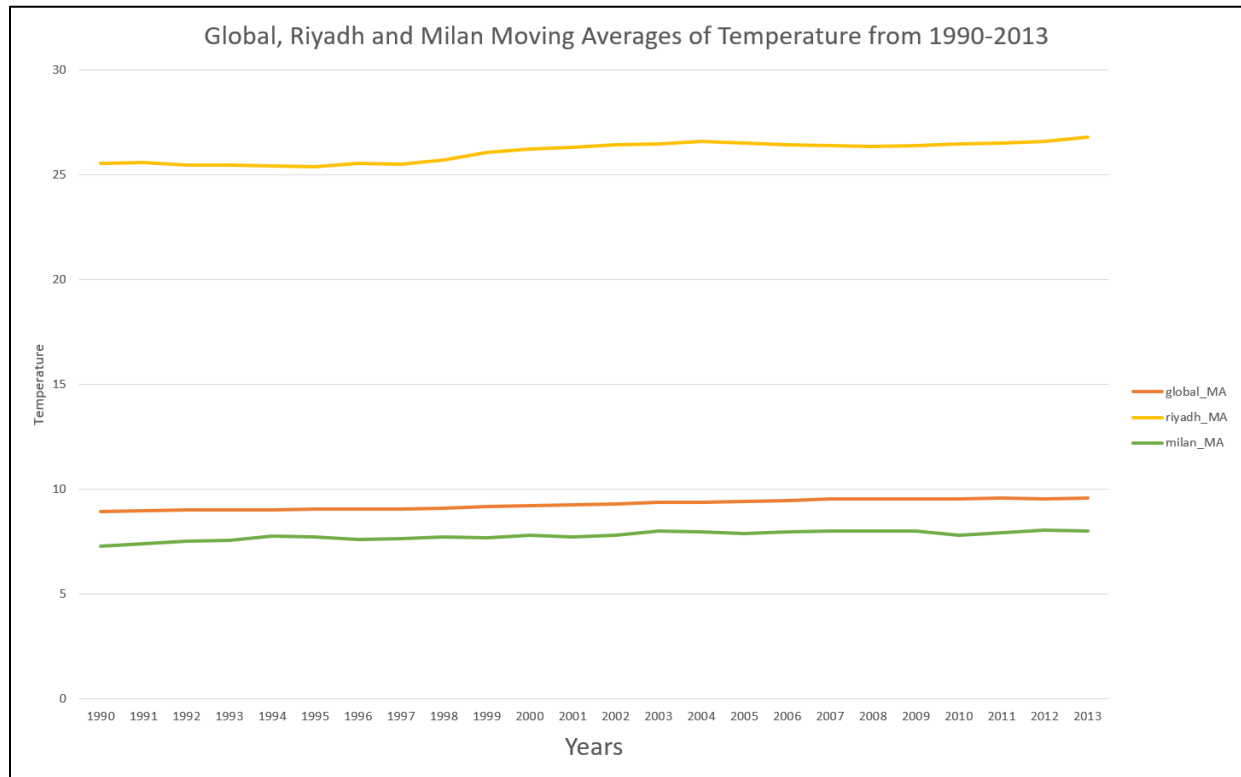
	A	B	C
1	year	global_avg_temp	riyadh_avg_temp
2	1843	8.17	24.74
3	1844	7.65	15.45
4	1845	7.85	20.82
5	1846	8.55	
6	1847	8.09	
7	1848	7.98	24.56
8	1849	7.98	24.8

2- Calculate Moving Average

There is too long years in dataset. I calculated 7-Year moving from 1990 – 2013.

	A	B	C	D	E	F	G
1	year	global_avg_temp	global_MA	riyadh_avg_temp	riyadh_MA	milan_avg_temp	milan_MA
2	1984	8.69		25.05		6.49	
3	1985	8.66		25.3		6.87	
4	1986	8.83		25.36		7.12	
5	1987	8.99		26.37		7.19	
6	1988	9.2		25.99		7.65	
7	1989	8.92		25.05		7.86	
8	1990	9.23	8.9314286	25.7	25.545714	7.97	7.307143
9	1991	9.18	9.0014286	25.43	25.6	7.28	7.42
10	1992	8.84	9.0271429	24.37	25.467143	7.76	7.547143
11	1993	8.87	9.0328571	25.42	25.475714	7.43	7.591429
12	1994	9.04	9.04	26.08	25.434286	8.39	7.762857
13	1995	9.35	9.0614286	25.64	25.384286	7.43	7.731429
14	1996	9.04	9.0785714	26.28	25.56	7.06	7.617143
15	1997	9.2	9.0742857	25.49	25.53	8.18	7.647143
16	1998	9.52	9.1228571	26.73	25.715714	7.77	7.717143
17	1999	9.29	9.1871429	26.92	26.08	7.64	7.7
18	2000	9.2	9.2342857	26.55	26.241429	8.13	7.8
19	2001	9.41	9.2871429	26.67	26.325714	7.83	7.72
20	2002	9.57	9.3185714	26.44	26.44	8.15	7.822857
21	2003	9.53	9.3885714	26.62	26.488571	8.55	8.035714
22	2004	9.32	9.4057143	26.2	26.59	7.74	7.972857
23	2005	9.7	9.4314286	26.27	26.524286	7.33	7.91
24	2006	9.53	9.4657143	26.24	26.427143	8.15	7.982857
25	2007	9.73	9.5414286	26.49	26.418571	8.4	8.021429
26	2008	9.43	9.5442857	26.21	26.352857	7.91	8.032857
27	2009	9.51	9.5357143	26.71	26.391429	8.11	8.027143
28	2010	9.7	9.56	27.37	26.498571	7.05	7.812857
29	2011	9.52	9.5885714	26.4	26.527143	8.68	7.947143
30	2012	9.51	9.5614286	26.83	26.607143	8.05	8.05
31	2013	9.61	9.5728571	27.78	26.827143	8.04	8.034286

3- Create a Line Chart



4- Make Observations

- Q: Is your city hotter or cooler on average compared to the global average?
Has the difference been consistent over time?
A: Riyadh always higher than global average (hotter), and the difference is inconsistent.
- Q: How do the changes in your city's temperatures over time compare to the changes in the global average?
A: Each of them has increased in temperature over time.
- Q: What does the overall trend look like? Is the world getting hotter or cooler? Has the trend been consistent over the last few hundred years?
A: The world getting hotter. The trend been increase over time (inconsistent)
- Q: What is the highest temperature in average for each one?
A: about 27 in Riyadh, about 8 in Milan and about 9 in Global.