

Exploring Weather Trends

1. Extracting the data from the database:

- SQL query to extract the city level data:

The screenshot shows a SQL query interface with the following components:

- Input Section:**
 - SCHEMA:** A list of tables including `city_data`, `year`, `city`, `country`, and `avg_temp`.
 - Query:**

```
1 select year, city, country, avg_temp
2 from city_data
3 where city='Riyadh';
```
 - Status:** A green bar indicating "Success!".
 - Action:** A blue button labeled "EVALUATE".
- Output Section:**
 - Results:** 171 results.
 - Download:** A link to "Download CSV".
 - Table:** A table with 4 columns: `year`, `city`, `country`, and `avg_temp`. The first few rows are:

year	city	country	avg_temp
1843	Riyadh	Saudi Arabia	24.74
1844	Riyadh	Saudi Arabia	15.45
1845	Riyadh	Saudi Arabia	20.82
1846	Riyadh	Saudi Arabia	

- SQL query to extract the global data:

The screenshot shows a SQL query interface with the following components:

- Input Section:**
 - SCHEMA:** A list of tables including `city_data`, `city_list`, `global_data`, `year`, and `avg_temp`.
 - Query:**

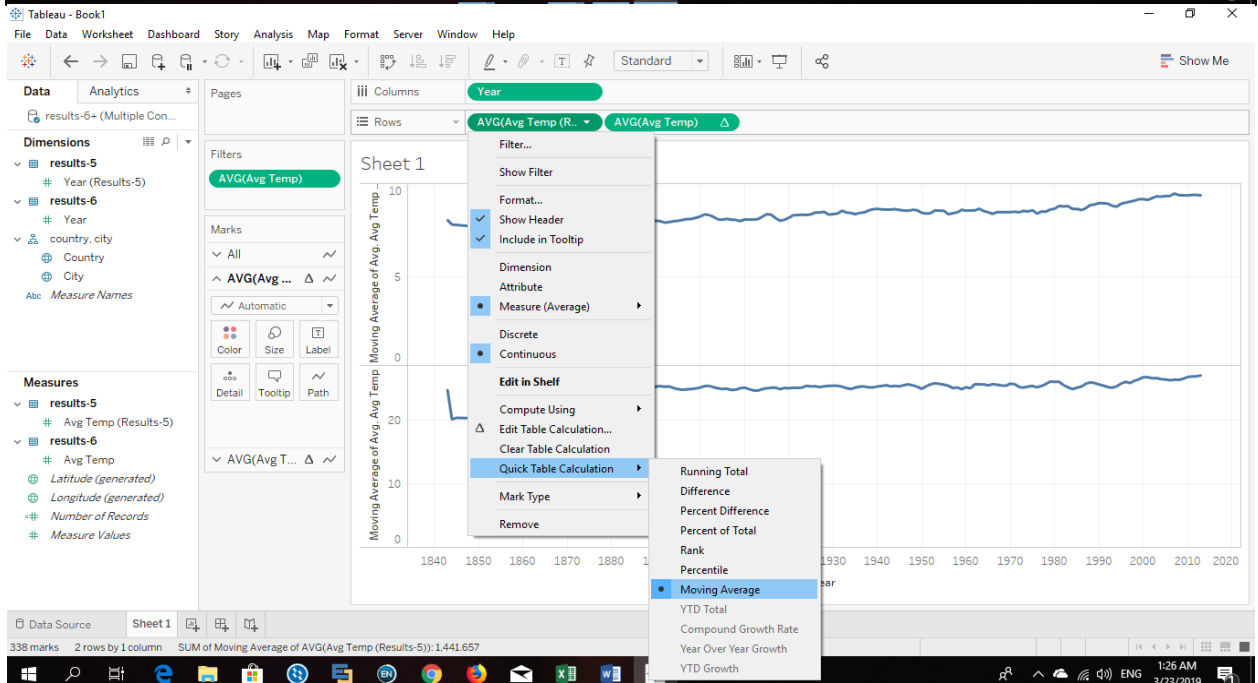
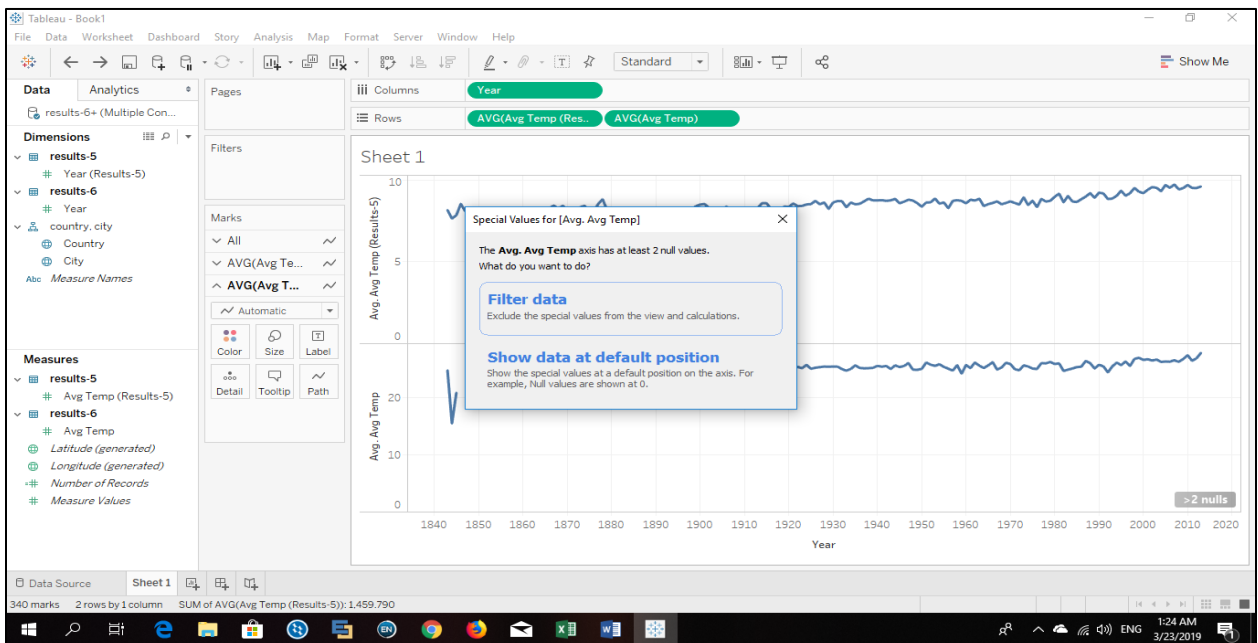
```
1 select year, avg_temp
2 from global_data;
```
 - Status:** A green bar indicating "Success!".
 - Action:** A blue button labeled "EVALUATE".
- Output Section:**
 - Results:** 266 results.
 - Download:** A link to "Download CSV".
 - Table:** A table with 2 columns: `year` and `avg_temp`. The first few rows are:

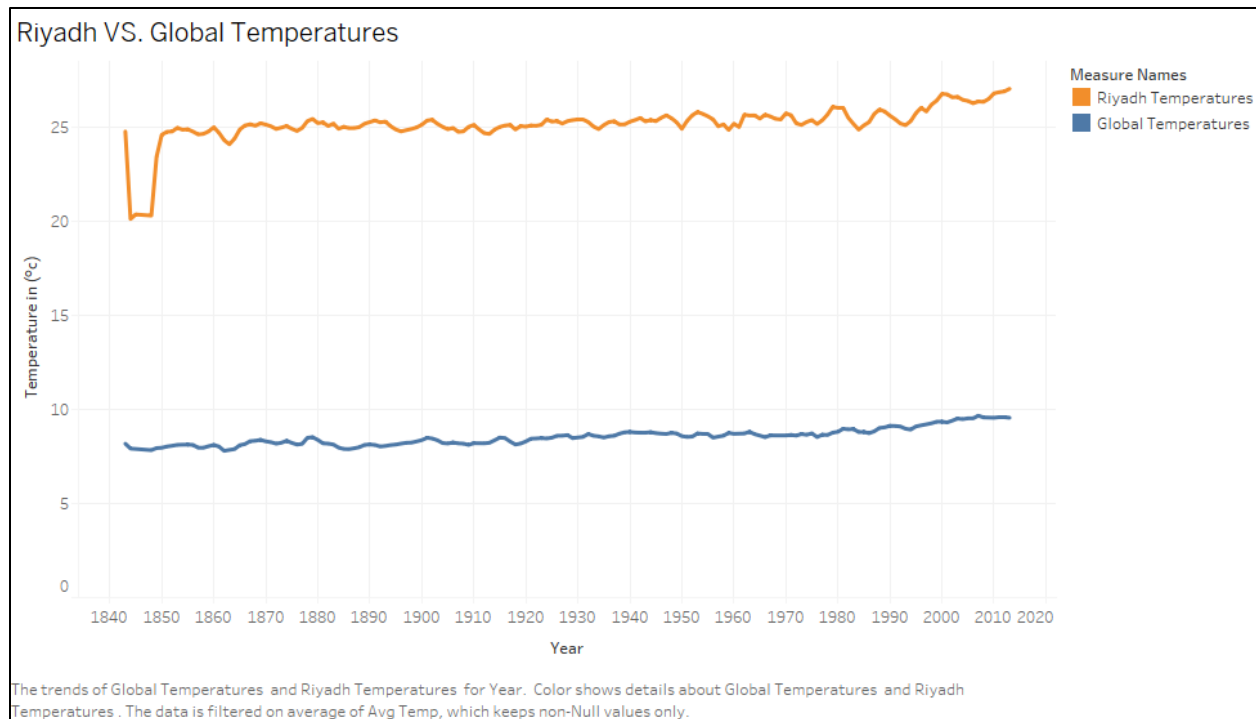
year	avg_temp
1750	8.72
1751	7.98
1752	5.78
1753	8.39
1754	8.47

2. Create a line chart:

Steps taken to prepare the data to be visualized in the chart:

1. I used Tableau to open the data set after saving the files as Excel files.
2. I joined the two data sets using the year as a primary key.
3. I removed the null values.
4. Then I automatically calculated the moving average.
5. I joined the values in one graph.
6. Making sure that the chart and its axes have titles, and there's a clear legend.





3. Make observations:

- Riyadh is way hotter than the global average.
- The global temperatures were more consistent than Riyadh's.
- The world unfortunately is getting hotter and the trend has been consistent over the last few hundred years globally.
- Between 1840 and 1860, Riyadh's temperatures were decreasing and increasing while the global temperatures were consistent.
- The changes of Riyadh temperatures compared to the global were obvious between 1840 and 1860.
- In 1863 the global and Riyadh temperatures were decreasing.
- In 2000 Riyadh had encountered a sudden rise in temperatures compared to the rest of the world.
- Riyadh's temperatures are increasing way faster than the rest of the world over the last years.