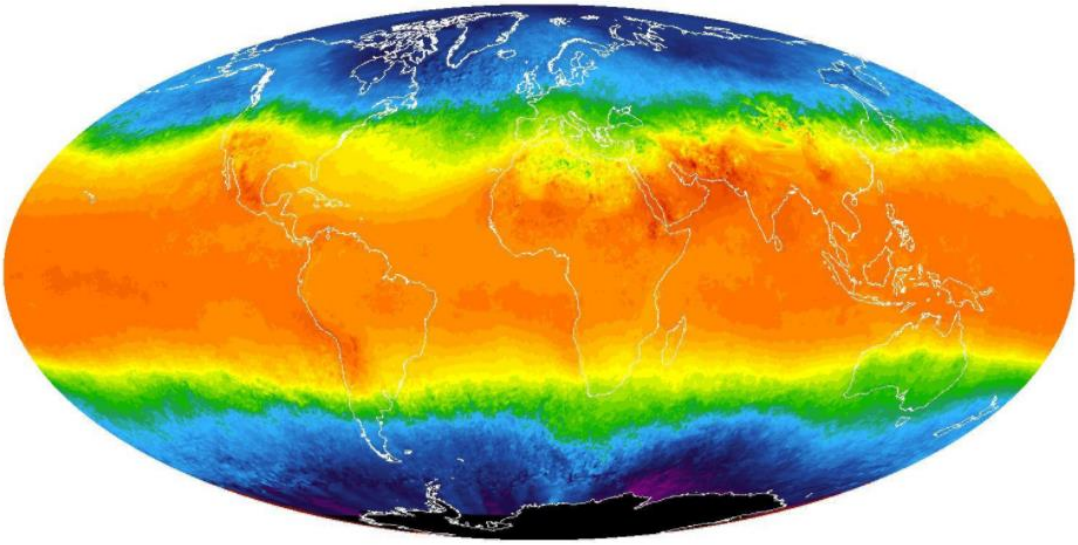

Explore weather trends

PROJECT #01

SEPTEMBER 25, 2018

Data Analyst Nanodegree

UDACITY

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Overview:

In this project, I will will analyze local and global temperature data and compare the temperature trends in “Algiers, Algeria” to overall global temperature trends.

I will create a visualization and prepare a write up describing the similarities and differences between global temperature trends and temperature trends in “Algiers, Algeria”.

WORK PLAN :

- **Extracting Data:** I will be using the data provided by Udacity to pull the appropriate information (using SQL) that will make me do the right analysis.

- **Exporting data to a spreadsheet:** I will be exporting data to a google spreadsheet in order to calculate the moving average and make a line chart of it.

- **Making observations:** I will be using the visualization that I made in the spreadsheet to make some observations and conclusions about the similarities about the world’s average temperature and “Algiers’” average temperature.

ANALYSIS :

1. Data Extraction :

- First , I enquired the « city_list » table , to pull all the cities from my country that are available on that table :

```
SELECT *

FROM city_list

WHERE country = 'Algeria'
```

The result to this query was only one city which is "Algiers".

- Then , I used the result of the last query to pull data from the « city_data » table :

```
SELECT year , avg_temp

FROM city_data

WHERE city = 'Algiers' AND country = 'Algeria'
```

I added "where country = 'Algeria'" just to eliminate any other city in the world called Algiers

- Finally, I pulled the data that concerns the global temperature from the « global_data » table :

```
SELECT *

FROM global_data
```

2. Exporting data :

- I used the last two SQL queries to export the data to a google sheet in order to calculate the moving average of both global temperature and Algiers' temperature .

  The command that was used to calculate the moving average of the global temperature for the first 10 years is:

  ```
  =average(B2:B11)
  ```

  And then, I just pull down plus sign to fill the rest of the cells automatically

  And the same with calculating the moving average of Algiers' temperature :

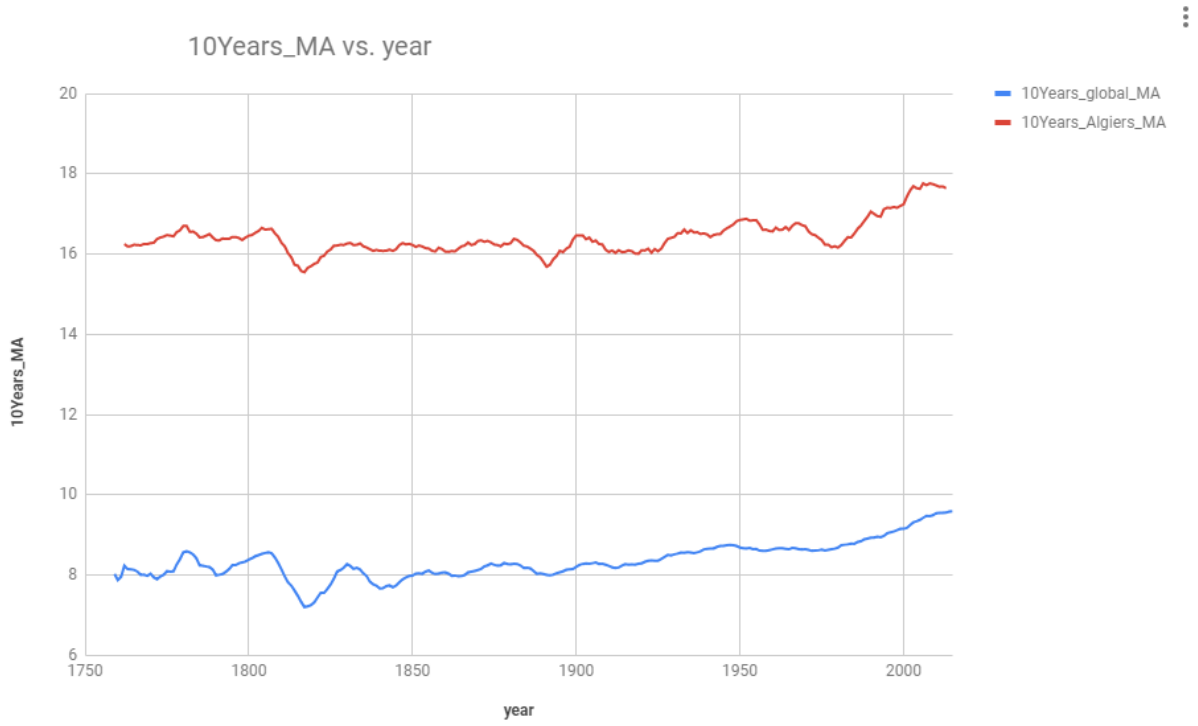
  ```
  =average(F5:F14)
  ```

fx

	A	B	C	D	E	F	G	H
1	year	global_avg_temp	10Years_global_MA			Algiers_avg_temp	10Years_Algiers_MA	
2	1750	8,72						
3	1751	7,98						
4	1752	5,78						
5	1753	8,39				16,44		
6	1754	8,47				16,48		
7	1755	8,36				16,19		
8	1756	8,85				16,58		
9	1757	9,02				16,37		
10	1758	6,74				15,18		
11	1759	7,99	8,03			16,31		
12	1760	7,19	7,877			15,87		
13	1761	8,77	7,956			16,55		
14	1762	8,61	8,239			16,51	16,248	
15	1763	7,5	8,15			15,85	16,189	
16	1764	8,4	8,143			16,56	16,197	
17	1765	8,25	8,132			16,54	16,232	
18	1766	8,41	8,088			16,49	16,223	
19	1767	8,22	8,008			16,31	16,217	
20	1768	6,78	8,012			15,53	16,252	
21	1769	7,69	7,982			16,25	16,246	
22	1770	7,69	8,032			16,13	16,272	
23	1771	7,85	7,94			16,65	16,282	
24	1772	8,19	7,898			17,45	16,376	
25	1773	8,22	7,97			16,21	16,412	
26	1774	8,77	8,007			16,78	16,434	
27	1775	9,18	8,1			16,92	16,472	

+ ≡ results

- After calculating the 10 years moving average , I made a line chart for the moving average of both average temperatures of the world and Algiers :



3. Observations :

- There is a clear difference between the average temperature of the world and Algiers, the average temperature of the world varies almost between 7°C and 9.5°C, however the average temperature of Algiers varies almost between 15.5°C and 18°C. Which makes Algiers hotter than the world average temperature.

- Looking at the line chart, we can see that the difference between the average temperature of the world and Algiers is very consistent.

- The changes of the average temperature of Algiers is also consistent to the changes of the global average temperature , as we can see on the line chart ; almost every time the global temperature decreases so does the average temperature of Algiers , and the other way around too .

- Looking at the line chart we can clearly see that the overall average temperature is consistently increasing, it went up by almost 5°C in the last 200 years.

CONCLUSION:

The average overall temperature is increasing (getting hotter) consistently during the last 200 years.

TOOLS USED IN THIS PROJECT:

- **SQL**: I used Structured Query Language (SQL) to extract data from the database.
- **Google sheets**: I used google spreadsheets to calculate the moving average of the average temperature and to make a line chart visualization.
- **Word 2013**: I used word 2013 to write this project.