



CASE STUDY 2

Analysis of Global Weather

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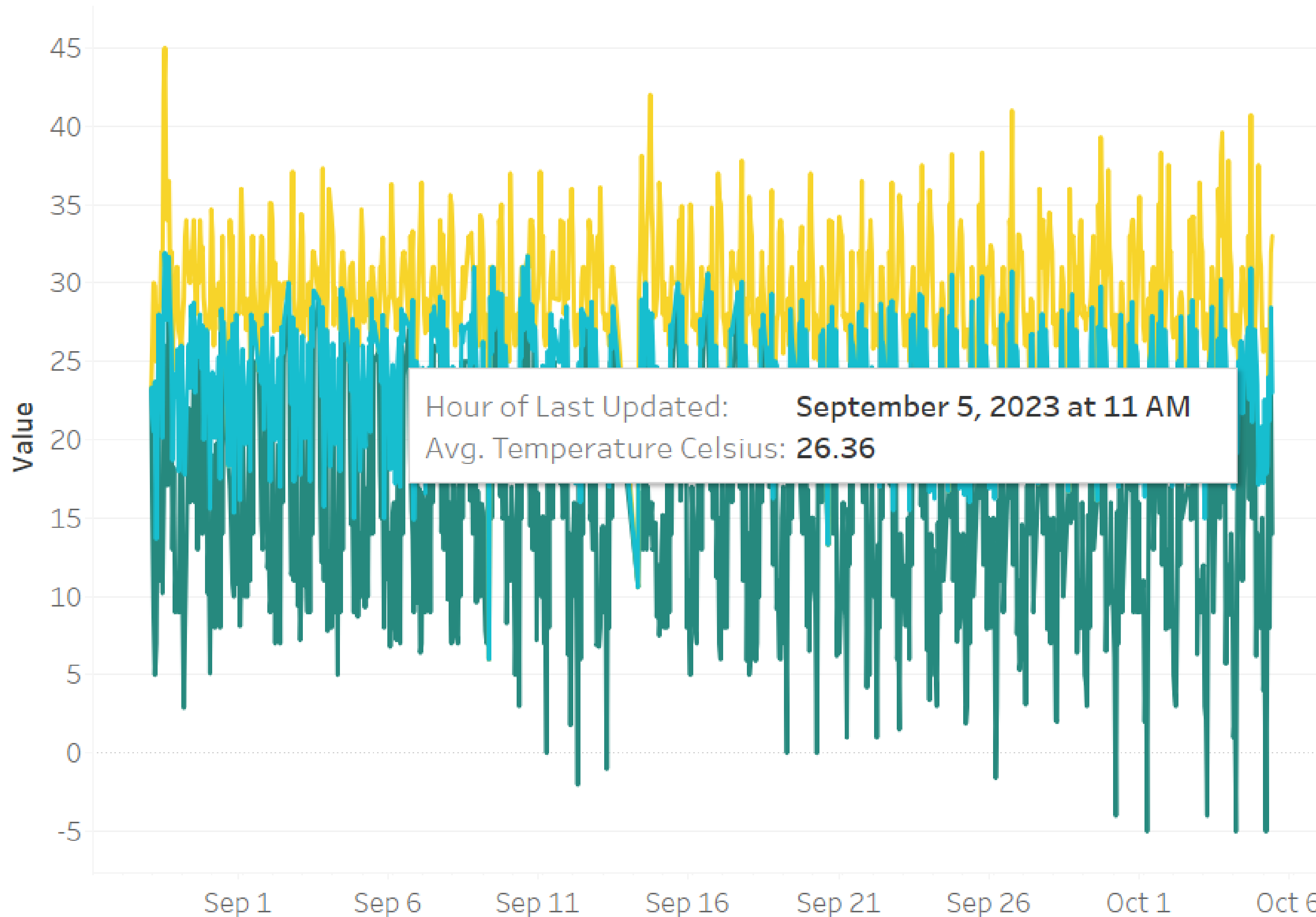
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Content

- Global Weather Analysis
 - Perception
 - Temperature
 - AQI
 - Uv Index
- Dashboards
 - Analysis of uv index and cloud
 - Analysis of PM 10 and percipitation
 - Analysis of air pollution

Temperature (°C) by Hour



Measure Names

- Avg. Temperature Celsius
- Max. Temperature Celsius
- Min. Temperature Celsius

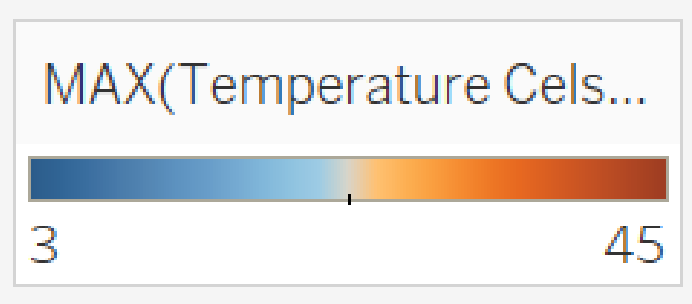
country

- ☐ (All)
- ☐ Afghanistan
- ☒ Albania
- ☐ Algeria

- The line chart shows the average, maximum, minimum temperature Celsius of the global world by hour from August 28 to October 5
- The trend can be showed by each country using the filter

Maximum Temperature

| Country | Location Name | Last Updated | | |
|------------------------|------------------|--------------|-----------|---------|
| | | Q3 | Q4 | |
| | | August | September | October |
| Afghanistan | Kabul | 28.8 | 22.7 | 12.5 |
| Albania | Tirana | 27 | 29 | 19 |
| Algeria | Algiers | 28 | 37 | 23 |
| Andorra | Andorra La Vella | 10.2 | 15.9 | 13.8 |
| Angola | Luanda | 25 | 26 | 24 |
| Antigua and Barbuda | Saint John's | 29 | 32 | 30 |
| Argentina | Buenos Aires | 16 | 23 | 18 |
| Armenia | Yerevan | 31 | 26 | 17 |
| Australia | Canberra | 16 | 18 | 22 |
| Austria | Vienna | 17 | 23 | 20 |
| Azerbaijan | Baku | 31 | 26 | 22 |
| Bahamas | Nassau | 31 | 32 | 30 |
| Bahrain | Manama | 38 | 38 | 32 |
| Bangladesh | Dhaka | 24 | 20.7 | 26.5 |
| Barbados | Bridgetown | | | 31 |
| Belarus | Minsk | | | 16 |
| Belgium | 'S-Gravenwezel | | | 19 |
| | Brussels | | | 19 |
| Belize | Belmopan | | | 32 |
| Benin | Porto-Novo | | | 28 |
| Bhutan | Thimphu | | | 11.9 |
| Bolivia | National | 32.7 | 37.3 | 40.7 |
| | Sucre | 19.5 | 25.9 | 28.4 |
| Bosnia and Herzegovina | Sarajevo | 22 | 24 | 15 |



- The chart focus on the maximum Celsius for each country by quarters
- The orange-blue setting can show the trend of temperature quickly

The word cloud displays various countries, with sizes indicating their average UV index. Larger words represent higher UV indices.

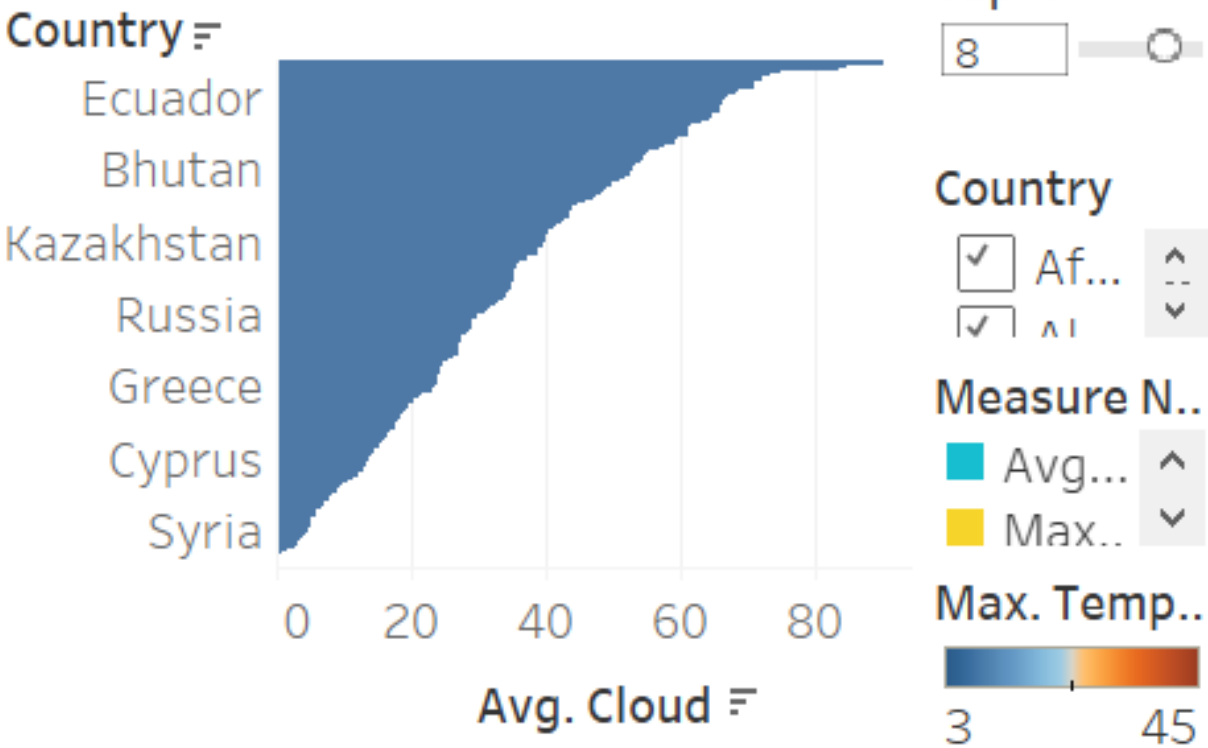
| Country | Avg. Uv Index |
|-----------|---------------|
| Nicaragua | 6.865 |
| Hungary | 1.237 |

Analysis of uv index and cloud

Ux Index by Country



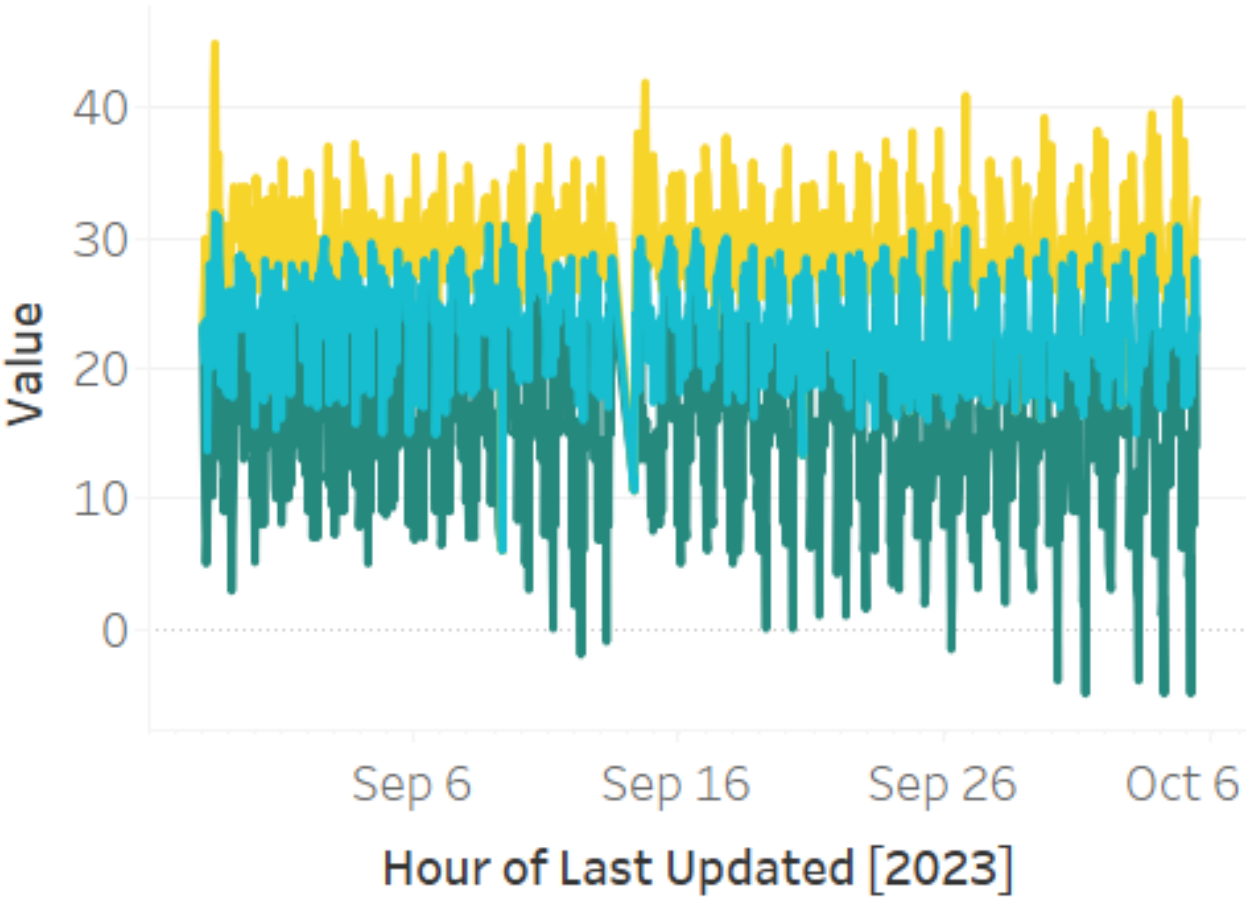
Cloud by Country



Maximum Temperature

| Country | Location N.. | Last Updated | | | |
|-----------------|------------------|--------------|--------|--------------|---|
| | | Q3 Augu.. | Sept.. | Q4 Octo.. | |
| Afghanistan | Kabul | 28.8 | 22.7 | 12.5 | ^ |
| Albania | Tirana | 27 | 29 | 19 | |
| Algeria | Algiers | 28 | 37 | 23 | |
| Andorra | Andorra La Vel.. | 10.2 | 15.9 | 13.8 | |
| Angola | Luanda | 25 | 26 | 24 | |
| Antigua and B.. | Saint John's | 29 | 32 | 30 | |
| Argentina | Buenos Aires | 16 | 23 | 18 | |
| Armenia | Yerevan | 31 | 26 | 17 | |
| Australia | Canberra | 16 | 18 | 22 | |
| Austria | Vienna | 17 | 23 | 20 | |
| Azerbaijan | Baku | 31 | 26 | 22 | ^ |

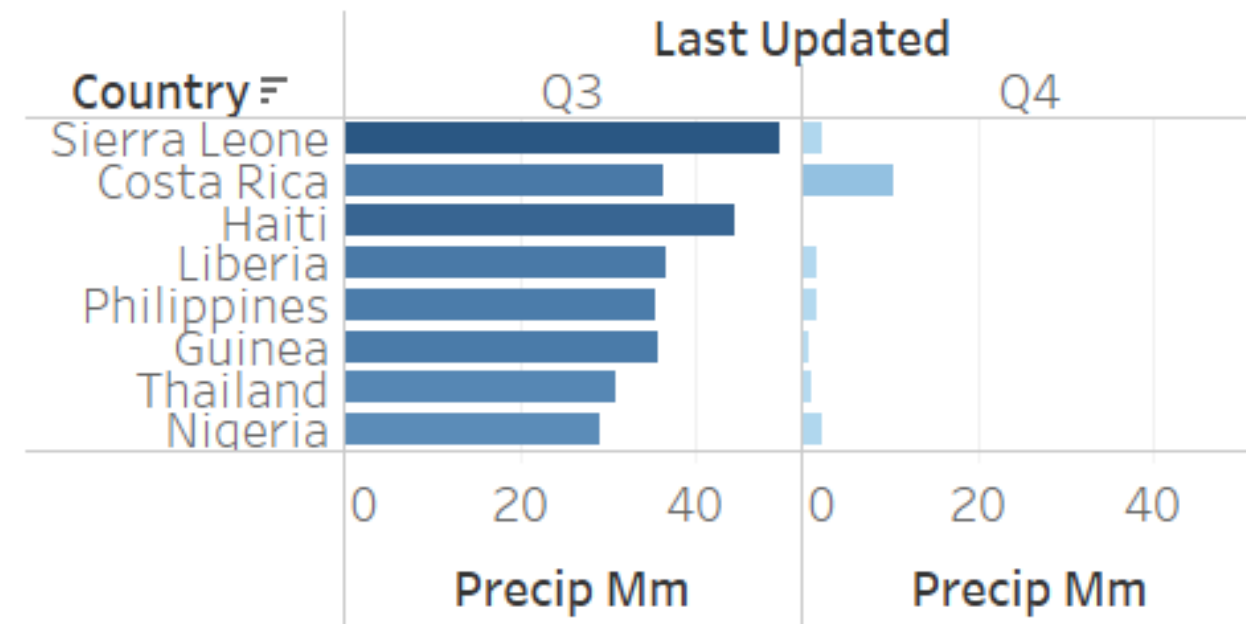
Temperature (°C) by Hour



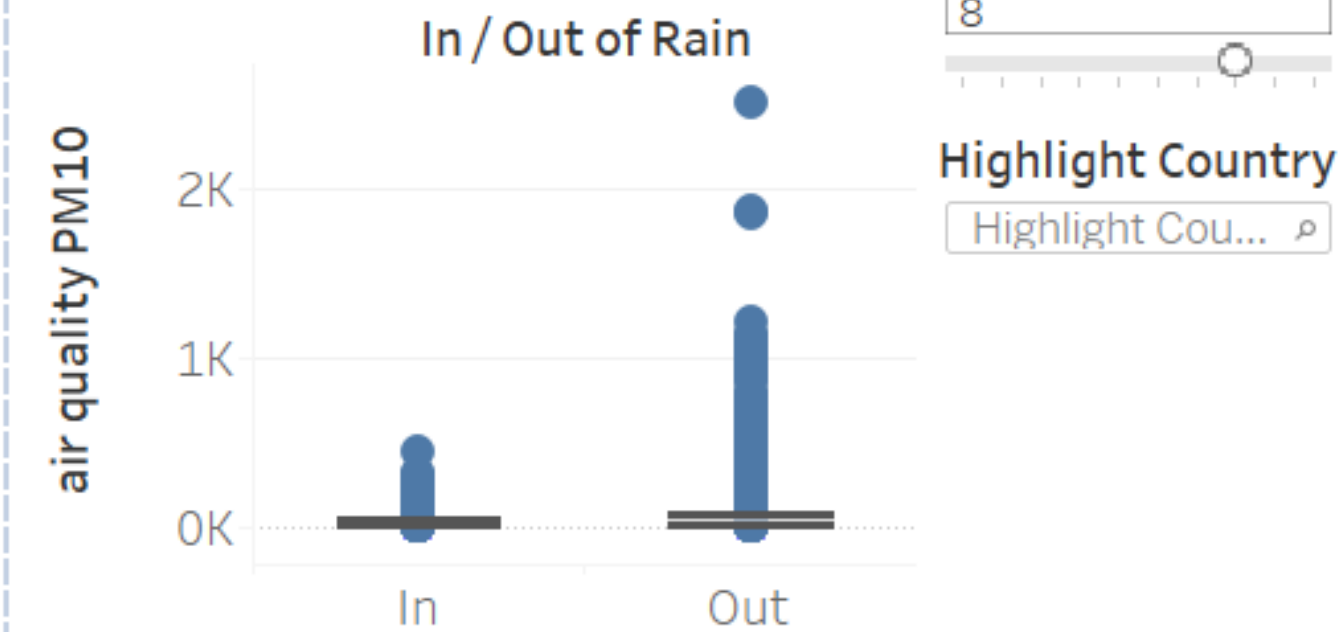
- The thicker the clouds, the smaller the UV Index
- The thicker the clouds, the lower the maximum temperature, the lower the average temperature

Analysis of PM 10 and percipitation

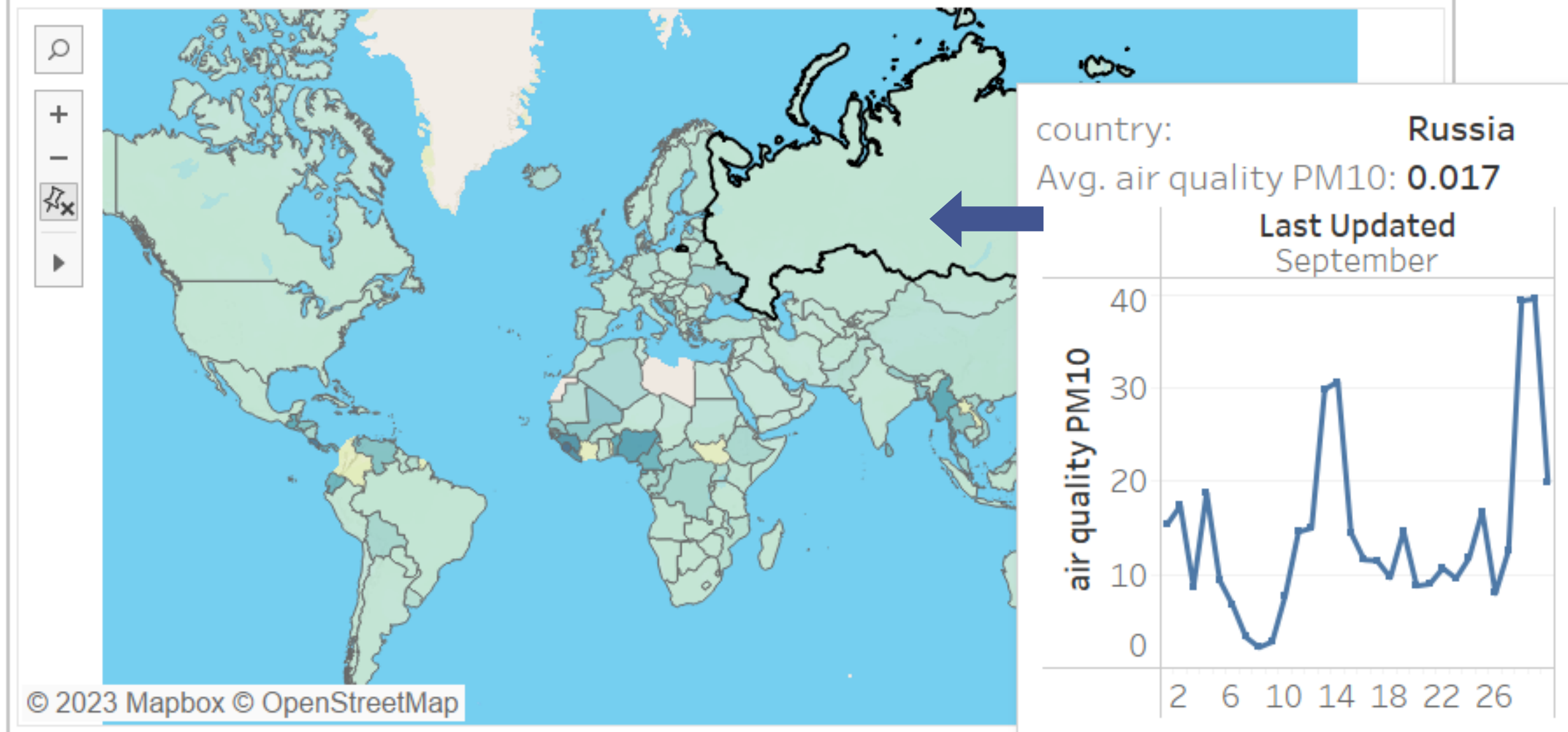
Precipitation Ranking



PM 10 concentrations and rain

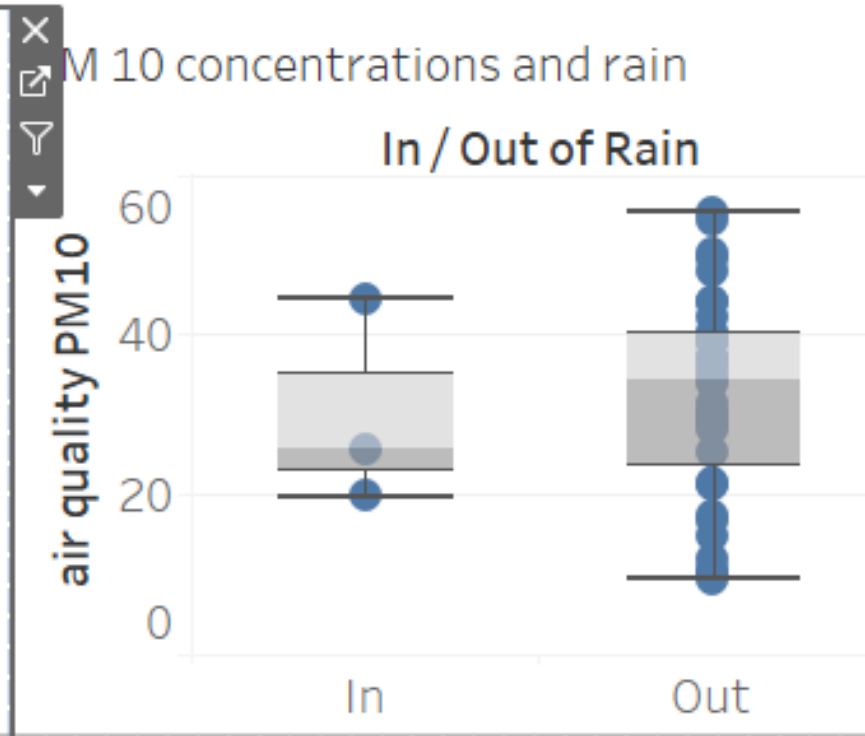
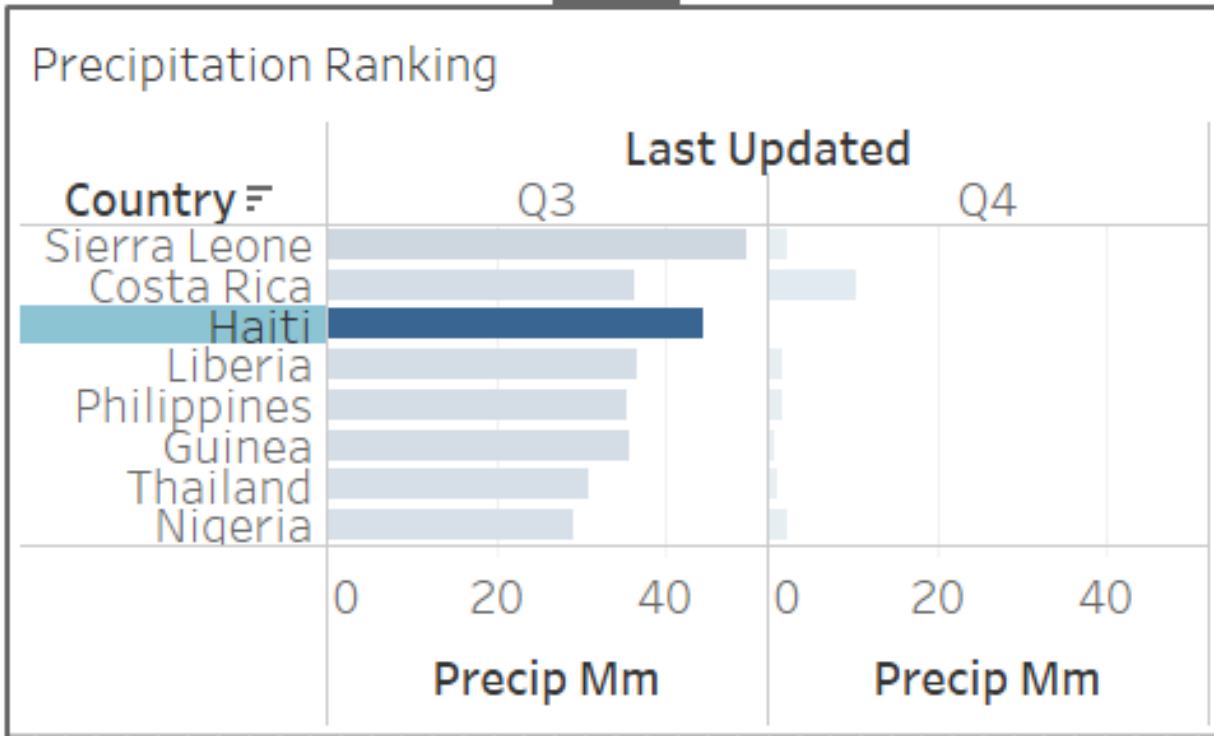


Average Percipitation by Country



- The dashboard shows the precipitation ranking (Top N), the effect of rain on PM10, the trend of PM10 for relevant country by day, the degree of precipitation by country.
- The more rainfall there is, the lower the PM10 values are.

Analysis of PM 10 and percipitation



Top N

8

Highlight Country

Haiti x

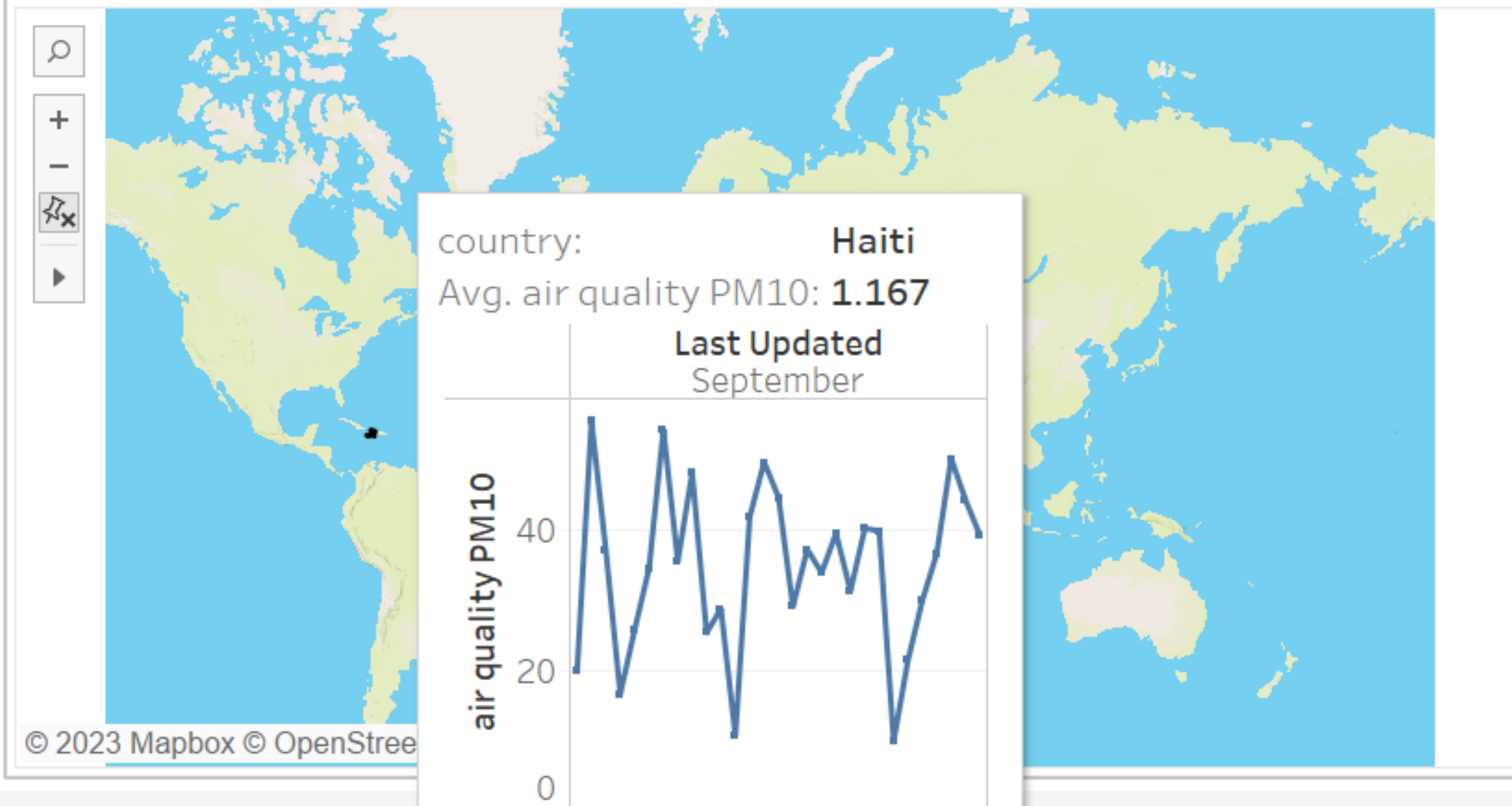
In:

Upper Whisker: 44.60
Upper Hinge: 35.20
Median: 25.80
Lower Hinge: 22.85
Lower Whisker: 19.90

Out:

Upper Whisker: 55.40
Upper Hinge: 40.00
Median: 34.50
Lower Hinge: 23.45
Lower Whisker: 9.50

Average Percipitation by Country



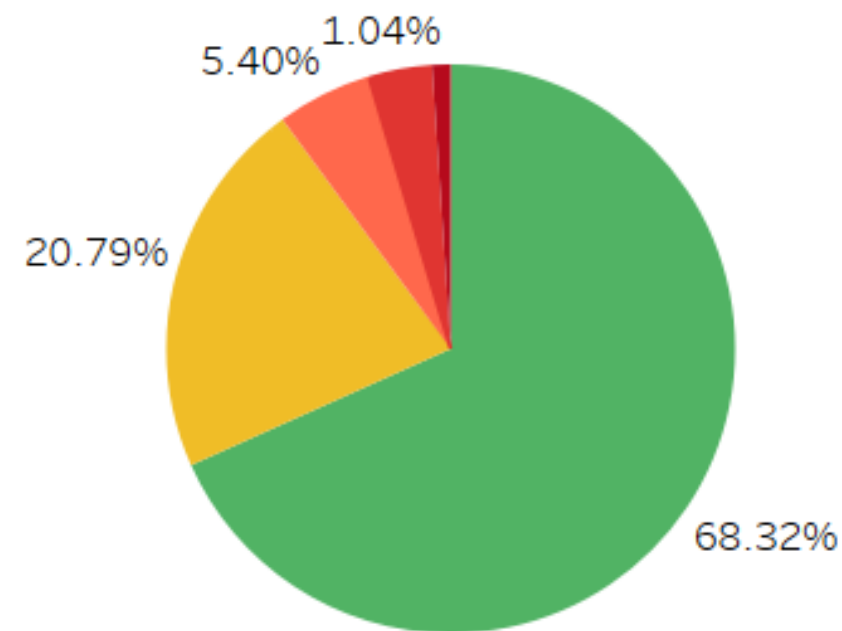
- Highlight the country of the third of precipitation ranking - Haiti
- The value of PM10 is lower when it rains.
- The country in the top precipitation ranking are geographically located near the equator.

Analysis of air pollution

Pollution Rate----Hazardous

| Country | Last Updated | | |
|-------------------|--------------|-------|---|
| | Q3 | Q4 | |
| Afghanistan | 33.3% | 40.0% | ^ |
| Albania | 39.4% | 20.0% | |
| Algeria | 8.8% | 25.0% | |
| Andorra | 0.0% | 0.0% | |
| Angola | 2.9% | 0.0% | |
| Antigua and Bar.. | 0.0% | 0.0% | |
| Argentina | 8.8% | 0.0% | |
| Armenia | 3.0% | 0.0% | |
| Australia | 0.0% | 0.0% | |
| Austria | 30.3% | 40.0% | v |

Air Quality Us-Epa-Index



degree of conta..

Hazardous

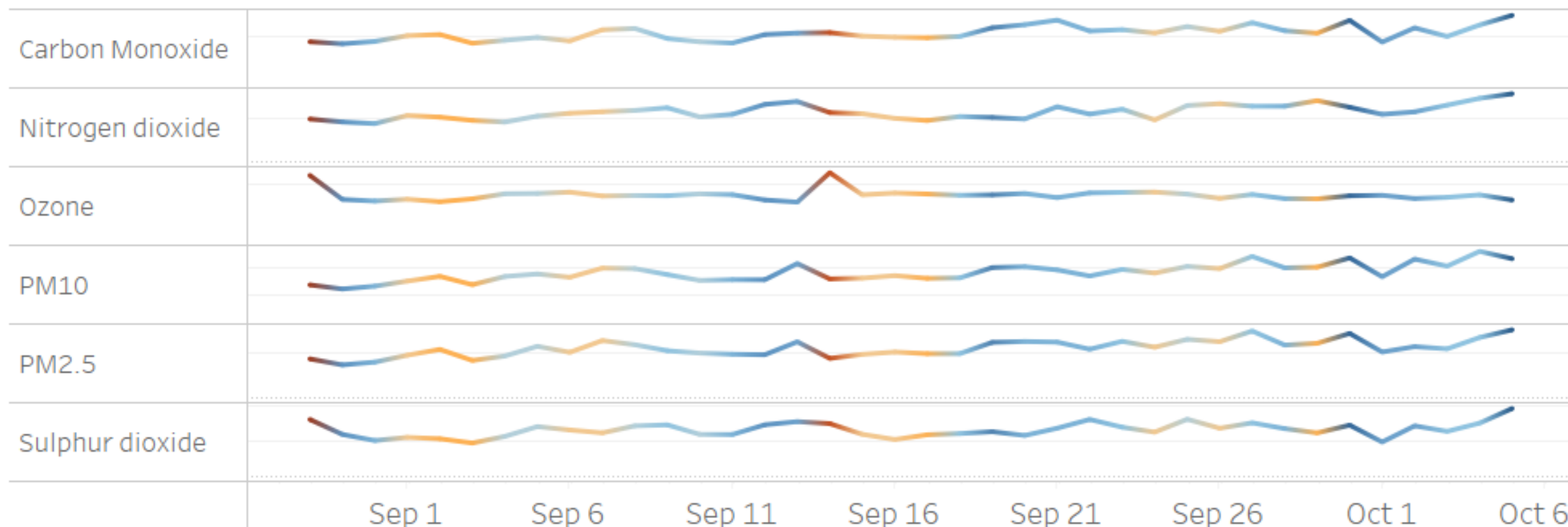
AQI

- ☒ Good
- ☒ Moderate
- ☒ Severe
- ☒ Unhealthy
- ☒ Verv Unh..

Country

- ☒ (All)
- ☒ Afghani...
- ☒ Albania
- ☒ Algeria

Pollutant concentrations and temperature



- The dashboard shows the pollution rate according to the degree of contamination
- (Moderate/Severe/Unhealthy/Very Unhealthy/Hazardous)
- The dashboard transfers the AQI to six levels and shows the number of Good level country is 68% of total country .
- Different temperature bring the different effect to the pollutant concentration. The higher the temperature, the higher the ozone level

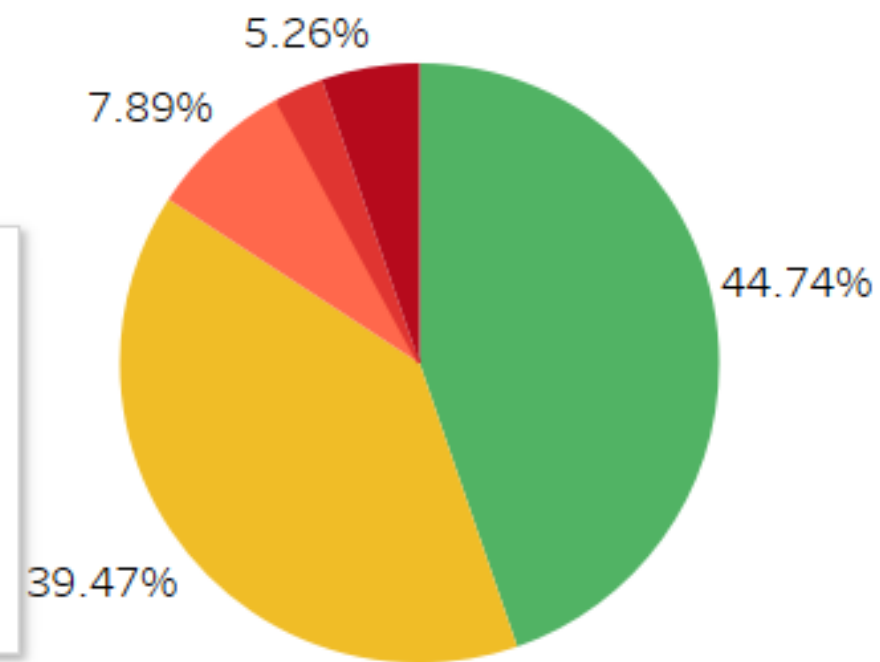
Analysis of air pollution

Pollution Rate----
Hazardous

| Country | Last Updated | |
|---------|--------------|-------|
| | Q3 | Q4 |
| Chad | 52.9% | 75.0% |

Country: **Chad**
Quarter of Last Updated: **Q3**
Year of Last Updated: **2023**
Number of polluted days: **18**
Pollution Rate: **52.9%**

Air Quality Us-Epa-Index



degree of conta..

Hazardous

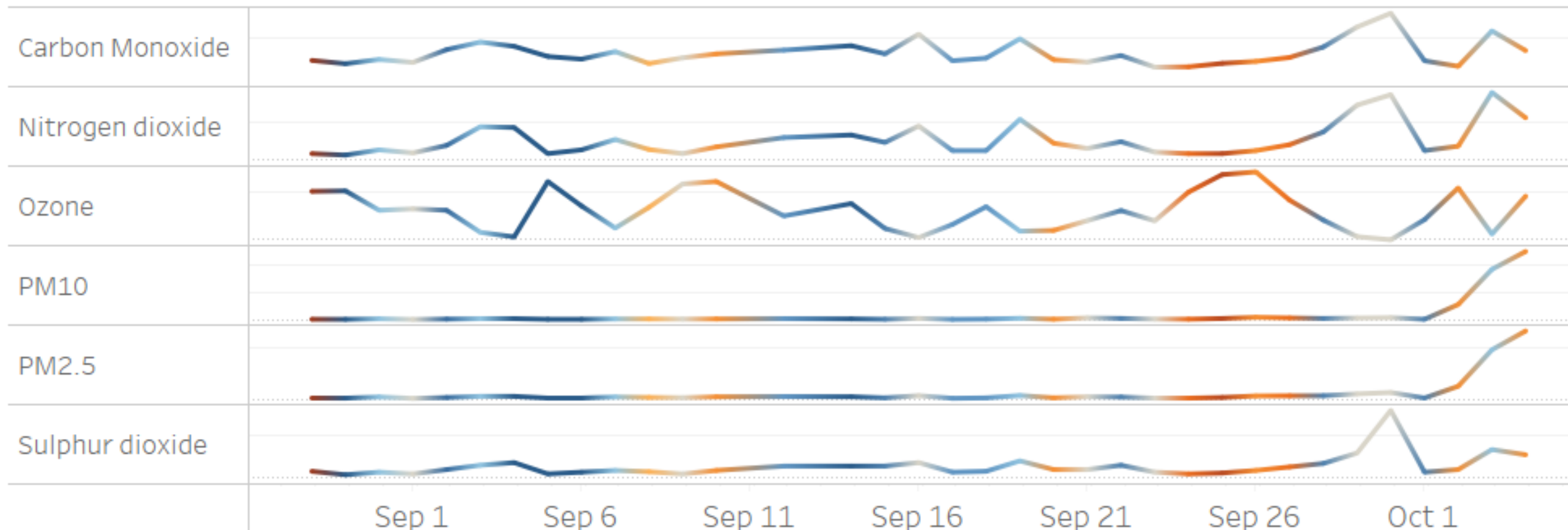
AQI

Good
Moderate
Unhealthy
Very Unh..
Hazardous

Country

☐ Central ...
☒ Chad
☐ Chile
☐ China

Pollutant concentrations and temperature



- All of relevant data will be changed by filtering the selected country, which helps analyze air pollution of the specific country.

Pollution Rate-- Hazardous

| Country | Last Updated | |
|--------------------------|--------------|--------|
| | Q3 | Q4 |
| Bahrain | 100.0% | 100.0% |
| Bangladesh | 63.6% | 20.0% |
| Barbados | 0.0% | 0.0% |
| Belarus | 3.0% | 0.0% |
| Belgium | 34.8% | 0.0% |
| Belize | 0.0% | 0.0% |
| Benin | 8.8% | 25.0% |
| Bhutan | 0.0% | 0.0% |
| Bolivia | 13.2% | 0.0% |
| Bosnia and Herzegovina | 24.2% | 20.0% |
| Botswana | 39.4% | 40.0% |
| Brazil | 5.9% | 25.0% |
| Brunei Darussalam | 0.0% | 0.0% |
| Bulgaria | 13.1% | 33.3% |
| Burkina Faso | 91.2% | 100.0% |
| Burundi | 90.9% | 100.0% |
| Cambodia | 45.5% | 80.0% |
| Cameroon | 44.1% | 100.0% |
| Canada | 5.9% | 50.0% |
| Cape Verde | 14.7% | 100.0% |
| Central African Republic | 8.8% | 0.0% |
| Chad | 52.9% | 75.0% |
| Chile | 100.0% | 75.0% |
| China | 97.0% | 100.0% |

• Create a new parameter

Abc degree of contamination

• Create a new set

Compliance with specified pollution levels

• Create a new calculated field

=# Number of polluted days

• Create a new calculated field

=# Pollution Rate

degree of contamination

Hazardous

Hazardous

Moderate

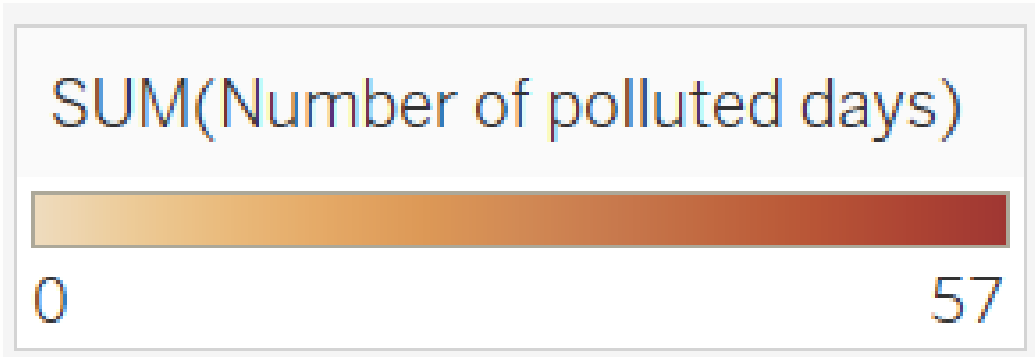
Severe

Unhealthy

Very Unhealthy

Pollution Rate

sum([Number of polluted days])/COUNT([AQI])



Thank you

[Back to Coneten Page](#)