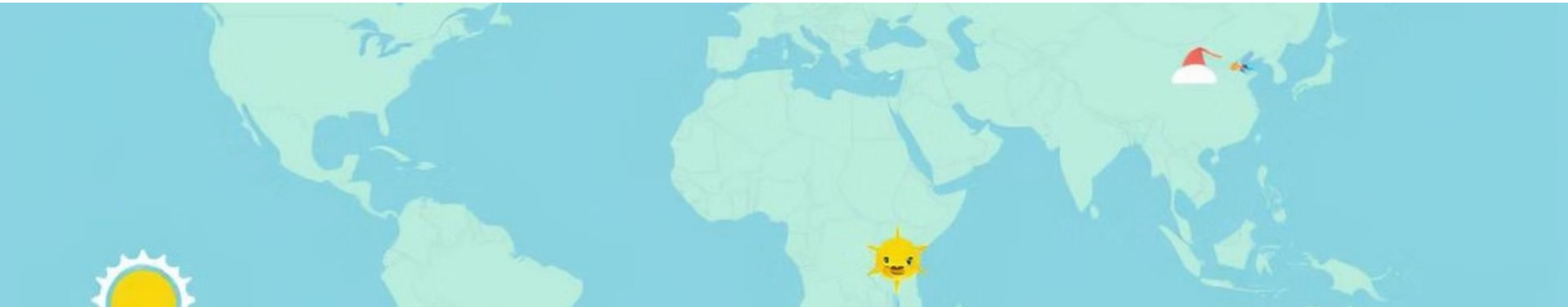
Unlocking Business Insights with Weather Data

GROUP -9

PROBLEM STATEMENT

Identifying the key environment factors that most significantly influence weather classification into types like Rainy, Cloudy and Sunny.



Understanding Data Analysis Types

Univariate Analysis

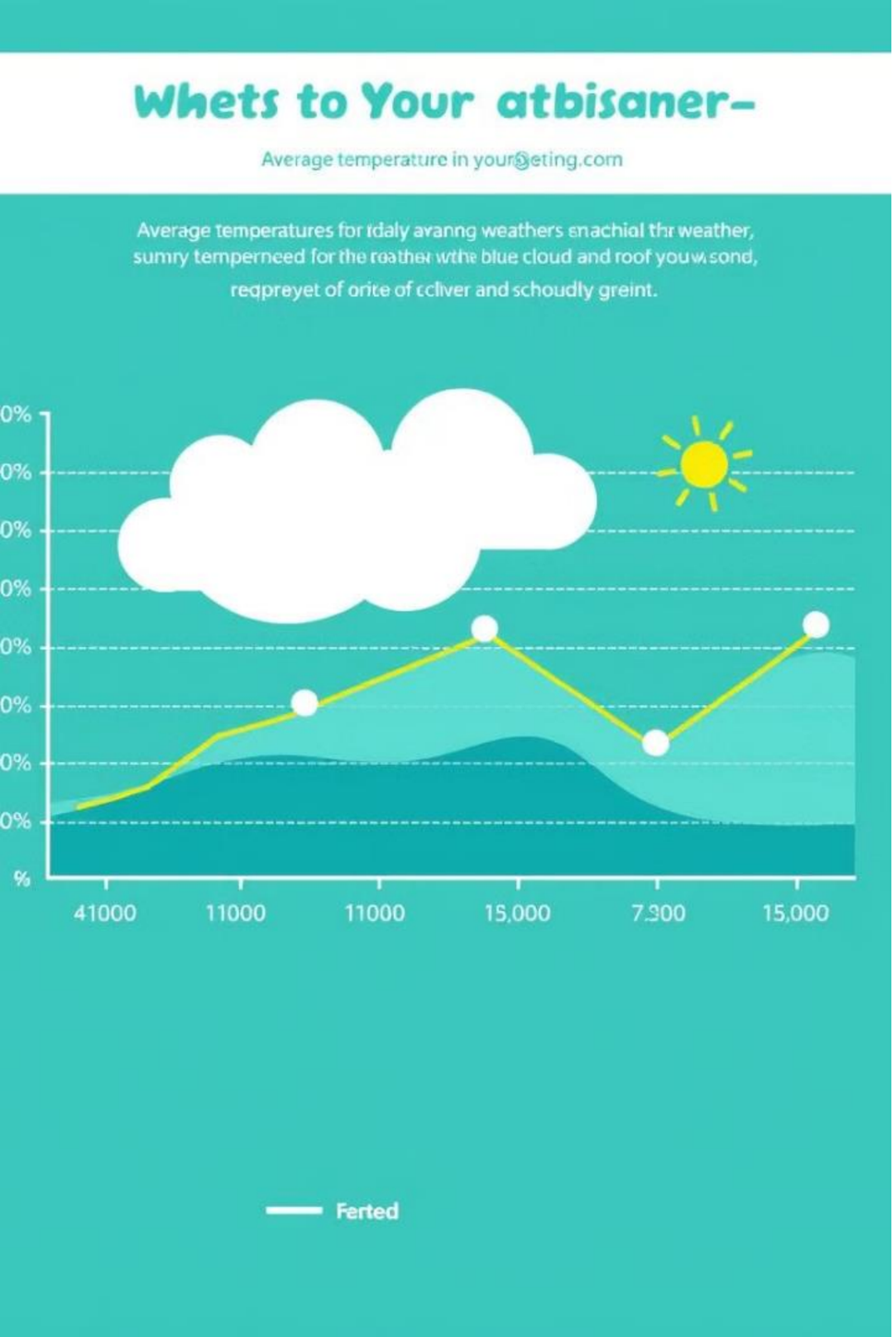
Examines a single variable at a time. This can reveal trends, patterns, and distributions.

Bivariate Analysis

Explores the relationship between two variables. This can reveal correlations and dependencies.

Multivariate Analysis

Analyzes the relationship between multiple variables. This can reveal complex interactions and insights.



Univariate Analysis Examples

1 Average Temperature

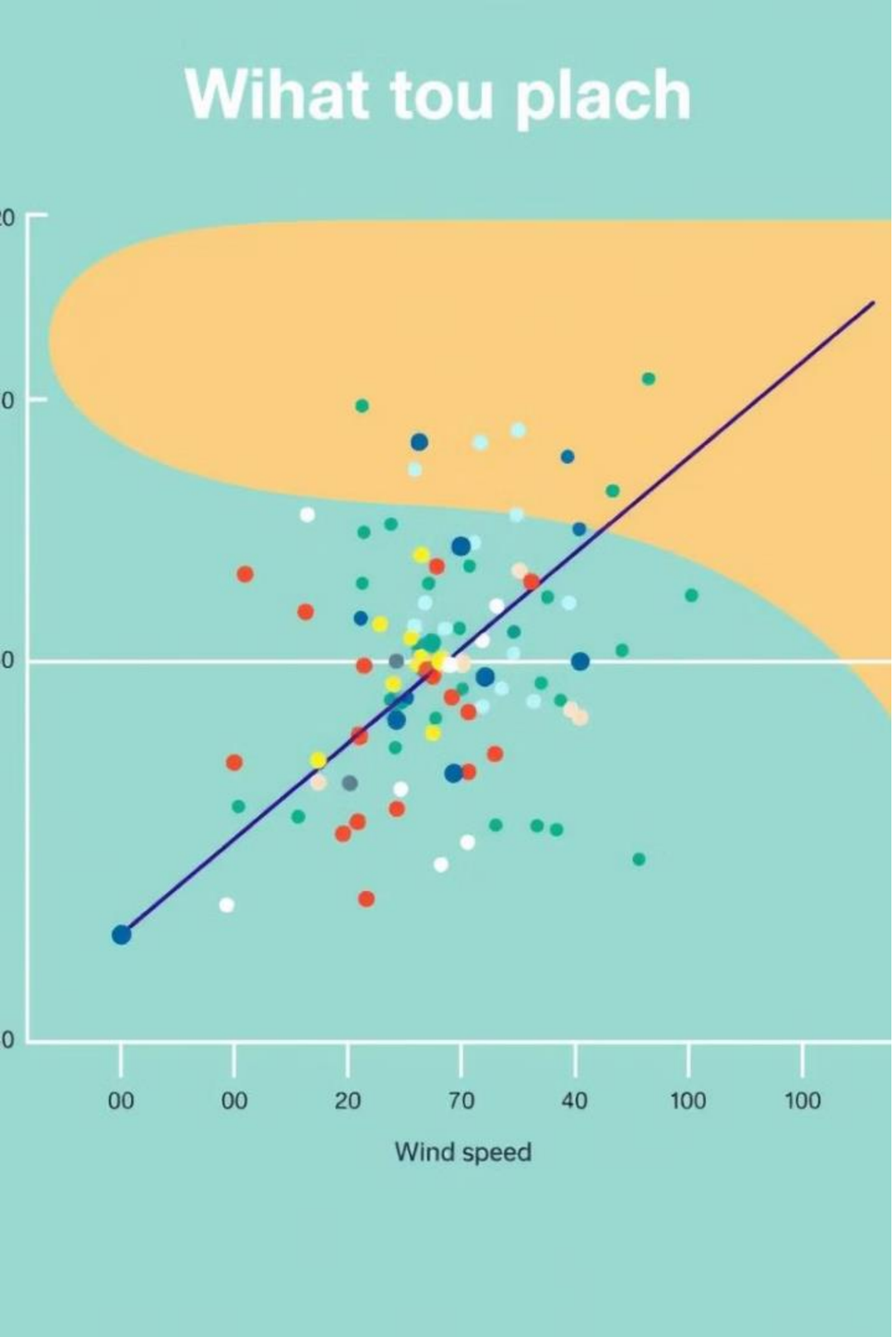
Sunny days are typically the warmest, followed by rainy, cloudy, and snowy days.

2 Atmospheric Pressure

Atmospheric pressure varies across weather types and months, with snowy days having lower pressure.

3 Humidity Levels

Snowy days tend to have the highest humidity, followed by cloudy, rainy, and sunny days.

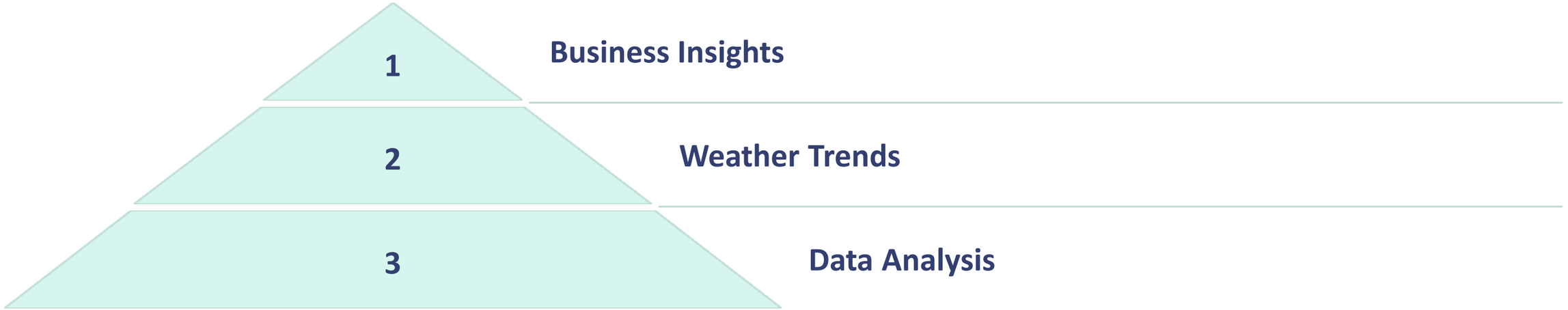


Bivariate Analysis Example

Wind Speed

Rainy days have the highest wind speed, followed by cloudy, sunny, and snowy days.

The Power of Multivariate Analysis



Impact on Businesses

Tourism

Plan promotions during sunny periods or offer deals during rainy seasons.

Agriculture

Predict weather patterns and plan crop cycles, accordingly, preparing for potential droughts or floods.

Construction

Plan outdoor activities based on weather forecasts, avoiding scheduling during rain or wind.

Real-World Benefits

1

Risk Management

Identify potential risks associated with extreme weather events and take steps to mitigate them.

2

Operational Efficiency

Optimize operations by adjusting schedules and resource allocation based on weather conditions.

3

Marketing & Sales

Tailor strategies to specific weather conditions, promoting outdoor activities during sunny periods or offering discounts on winter clothing during cold periods.

Key Takeaways & Next Steps

1

Utilize Data

Harness the power of weather data to make informed decisions.

2

Strategic Planning

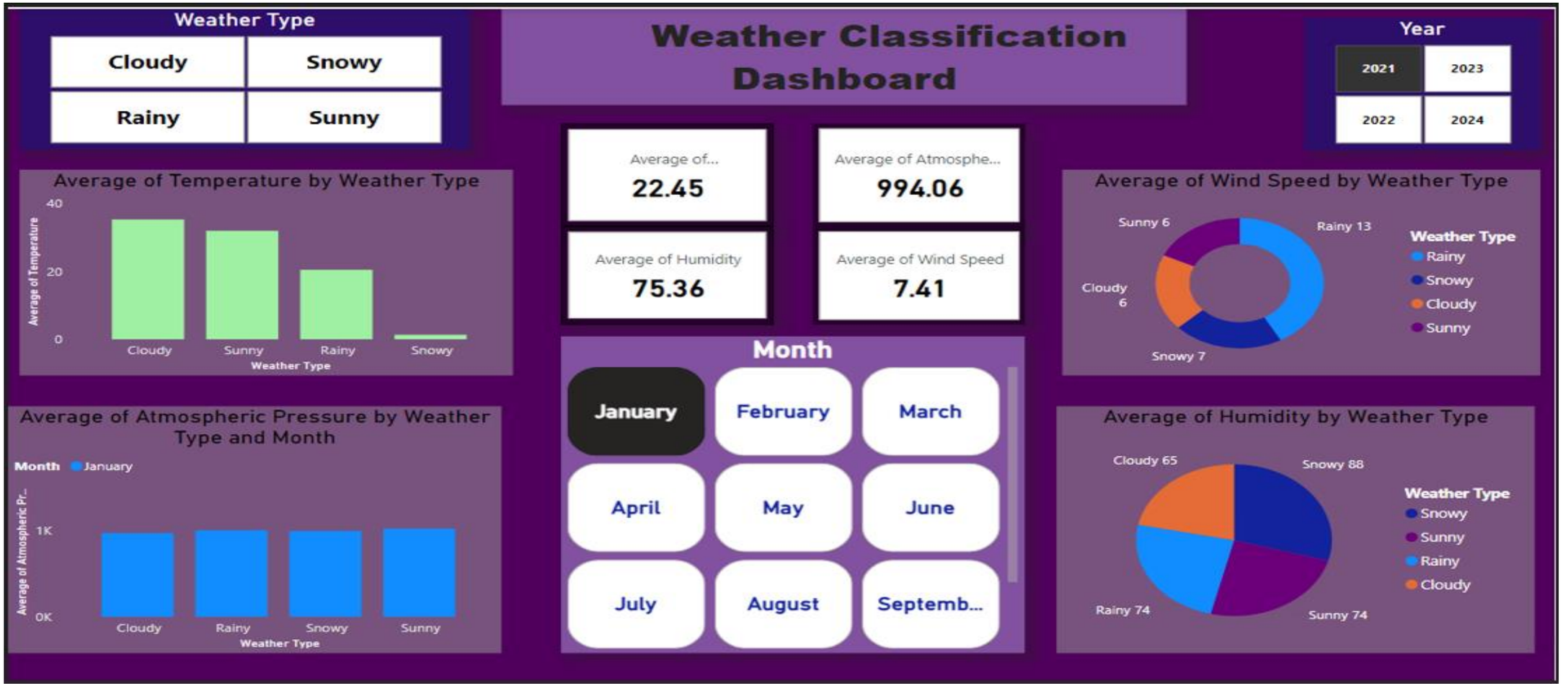
Plan and adjust operations based on weather forecasts.

3

Embrace Innovation

Continuously explore new ways to leverage weather insights.

Dashboard


Weather Type
Cloudy
Snowy
Rainy
Sunny
Weather Classification Dashboard
Year
2021
2023
2022
2024
Average of...
22.45
Average of Atmosphe...
994.06
Average of Humidity
75.36
Average of Wind Speed
7.41
Average of Temperature by Weather Type
Average of Temperature
40
20
0
Cloudy
Sunny
Rainy
Snowy
Weather Type
Average of Wind Speed by Weather Type
Sunny 6
Rainy 13
Cloudy 6
Snowy 7
Weather Type
Rainy
Snowy
Cloudy
Sunny
Month
January
February
March
April
May
June
July
August
Septemb...
Average of Atmospheric Pressure by Weather Type and Month
Month
January
Average of Atmospheric Pr...
1K
0K
Cloudy
Rainy
Snowy
Sunny
Weather Type
Average of Humidity by Weather Type
Cloudy 65
Snowy 88
Rainy 74
Sunny 74
Weather Type
Snowy
Sunny
Rainy
Cloudy

Thank
you