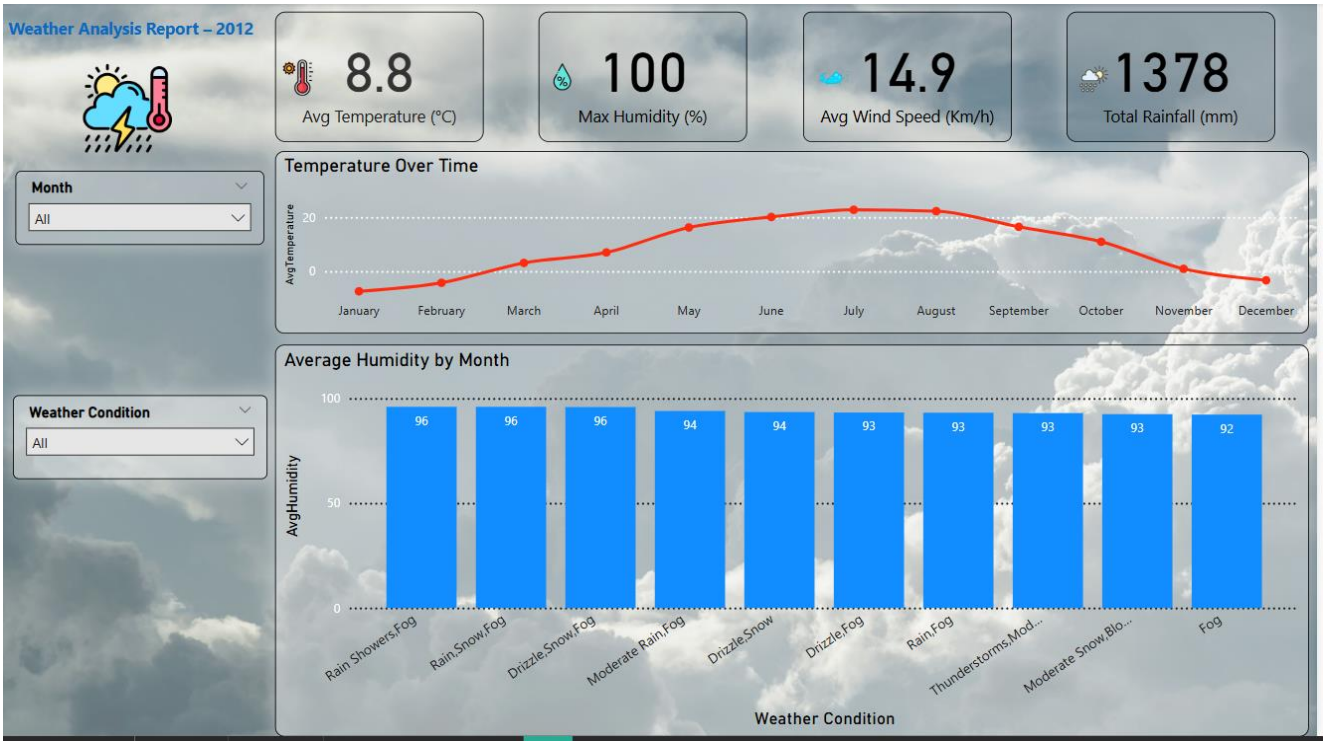
Weather Analysis Report-2012

Executive Summary

Objective:

The main aim is to find out the weather conditions on monthly basis. To compare major weather parameters throughout the year 2012 using Power BI to better understand monthly trends and weather patterns in terms with different metrics and visuals for clearer insights.



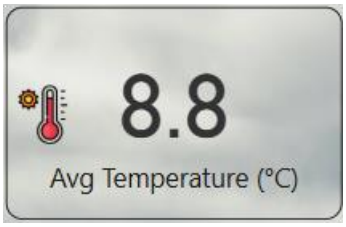
Dataset Overview:

- **Timeframe**: January 2012 – December 2012
- **Features Used**: Average Temperature, Maximum Humidity, Average Wind Speed, Total Rainfall, and Weather Conditions

Key Visualizations (Page 1 Overview):

The dashboard begins with a set of four KPI (Key Performance Indicator) cards. These indicators summarize the overall environmental conditions in a clear and visually appealing manner.

- **KPI Cards**:
    - **Average Temperature:** Displays the overall mean temperature across the year 2012.

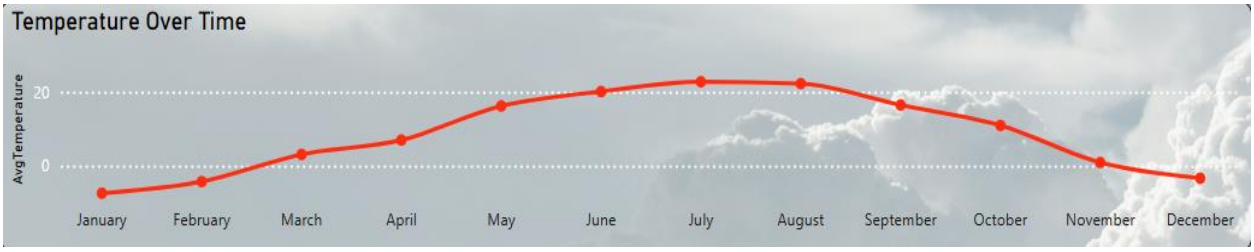


    - **Maximum Humidity:** Highlights the highest humidity level recorded throughout the year.

    - **Average Wind Speed:** Shows the average wind velocity, helping detect shifts across seasons.

    - **Total Rainfall (mm):** Reflects the total precipitation accumulated during the year, in millimeters.

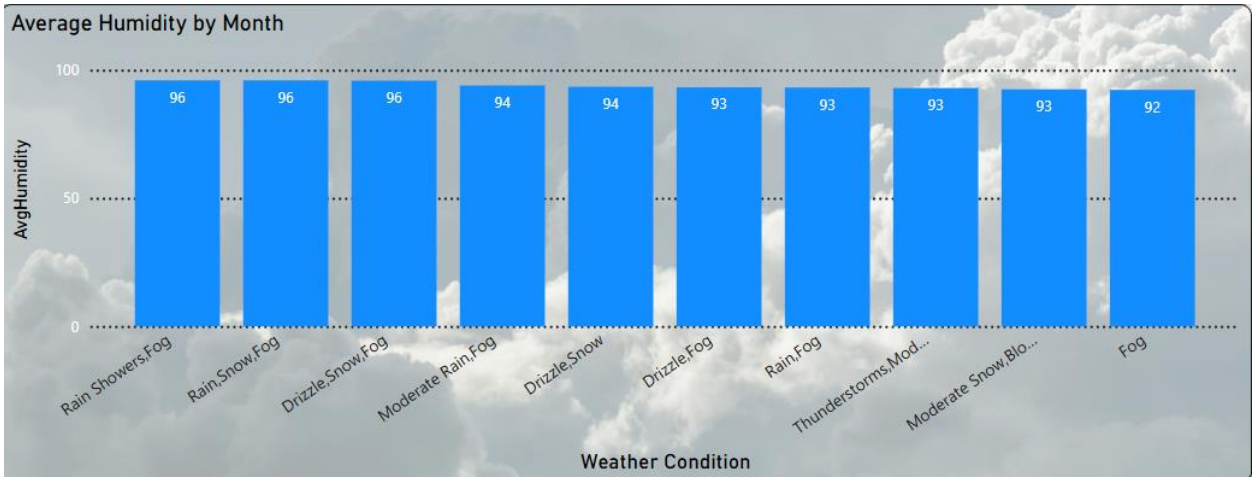
- **Line Chart**:



This line chart captures the **monthly trend in average temperature** throughout the year 2012. The visualization reveals a **gradual increase in temperature from January**, peaking around **July and August**, before steadily **declining towards December**.

  - Visualizes monthly average temperature trend
  - Highlights seasonal variation and temperature shifts

- **Bar Chart**:



This bar graph comparing the mean humidity of the top 10 weather conditions in 2012. The graph indicates which conditions hold the most atmospheric moisture.

- **Fog and Rain** consistently exhibit **the highest average humidity**, indicating dense moisture presence during these conditions.
- Displays average humidity across top 10 weather conditions
- Focuses on most dominant and humid conditions in the dataset

- **Slicers**:
  - Month (Dropdown Style)
  - Weather Condition (Dropdown Style)

Insights:

- **Temperature**: A clear warming trend is observed from January to July, peaking mid-year before cooling towards December.
- **Humidity**: Conditions like fog and rainfall display the highest average humidity.
- **Wind Speed**: Relatively stable, with slight increases observed during seasonal shifts.

7. Future Enhancements

- **Page 2** (to be developed):
  - Deeper analysis of rainfall patterns
  - Correlation between conditions and temperature/humidity
  - Top conditions by rainfall volume

Conclusion:

This weather dashboard clearly communicates key insights into 2012 weather patterns using simple, clean, and interactive visualization provides the groundwork with fundamental weather information. The approach is beginner-friendly, yet insightful enough to inform decisions or deepen understanding of environmental data.

This report features an easy-to-understand, beginner-oriented dashboard that tells a brief story of 2012 weather trends. There will be more pages dedicated to the analysis of this data in the future.