**Power BI Dashboard Documentation: Plant Growth Analysis**

**Overview**

This Power BI dashboard provides insights into plant growth by analyzing various environmental and agricultural factors such as soil type, temperature, humidity, sunlight hours, and fertilizer type. The dataset used for visualization is plant\_growth\_data.csv.

**Dataset Description**

The dataset consists of the following columns:

* **Soil\_Type**: Type of soil (e.g., sandy, loam)
* **Temperature**: Recorded temperature levels
* **Temperature Range Description**: Categorization of temperature (e.g., Warm, Cold, Moderate)
* **Humidity**: Recorded humidity levels
* **Humidity Level Description**: Categorization of humidity (e.g., Humid, Dry, Moderate)
* **Avg\_Sunlight\_Hours**: Average daily sunlight exposure
* **Fertilizer\_Type**: Type of fertilizer used (e.g., organic, chemical, none)
* **Growth\_Milestone**: Growth progress of the plant
* **Daily, Bi-weekly, Weekly**: Time-based plant growth records

**Visualizations and Insights**

**1. Sum of Temperature by Soil Type**

* A bar chart showing temperature variations across different soil types.
* Helps in identifying which soil types retain heat better.

**2. Sum of Temperature by Temperature Range Description**

* A grouped bar chart categorizing temperature into warm, cold, and moderate ranges.
* Useful for understanding plant growth trends under different temperature conditions.

**3. Sum of Growth Milestone by Fertilizer Type**

* A donut chart displaying growth milestones achieved with different fertilizers.
* Highlights the effectiveness of organic vs. chemical fertilizers.

**4. Sum of Humidity by Humidity Level Description**

* A line chart visualizing humidity distribution across different humidity levels.
* Helps in determining optimal humidity conditions for plant growth.

**5. Sum of Growth Milestone by Soil Type**

* A horizontal bar chart comparing plant growth milestones across various soil types.
* Useful for selecting the best soil type for maximum plant growth.

**6. Sum of Avg. Sunlight Hours by Soil Type**

* A pie chart showing average sunlight hours for different soil types.
* Assists in understanding how soil type affects sunlight absorption.

**7. Sum of Growth Milestone Percentage by Bi-weekly, Daily, and Weekly Growth**

* A stacked bar chart analyzing plant growth across different time intervals.
* Useful for tracking plant development over time.

**8. Growth Milestone Gauge Chart**

* A gauge visualization representing overall plant growth performance.
* Helps in monitoring plant health and expected progress.

**9. Key Influencers Analysis for Temperature Impact**

* Identifies key factors influencing temperature variations.
* Helps in making data-driven agricultural decisions.

**Filters Implemented**

* **Search Filter**: Allows searching for specific attributes.
* **Filters on Page**: Enables customization of displayed data by selecting relevant filters.
* **Filters on All Pages**: Provides a global filter option across all reports.

**Conclusion**

This Power BI dashboard provides a comprehensive view of plant growth conditions by leveraging various visualizations. It helps in making informed decisions regarding soil selection, fertilizer usage, and environmental conditions to optimize plant growth.