Business Question and Visualization Report

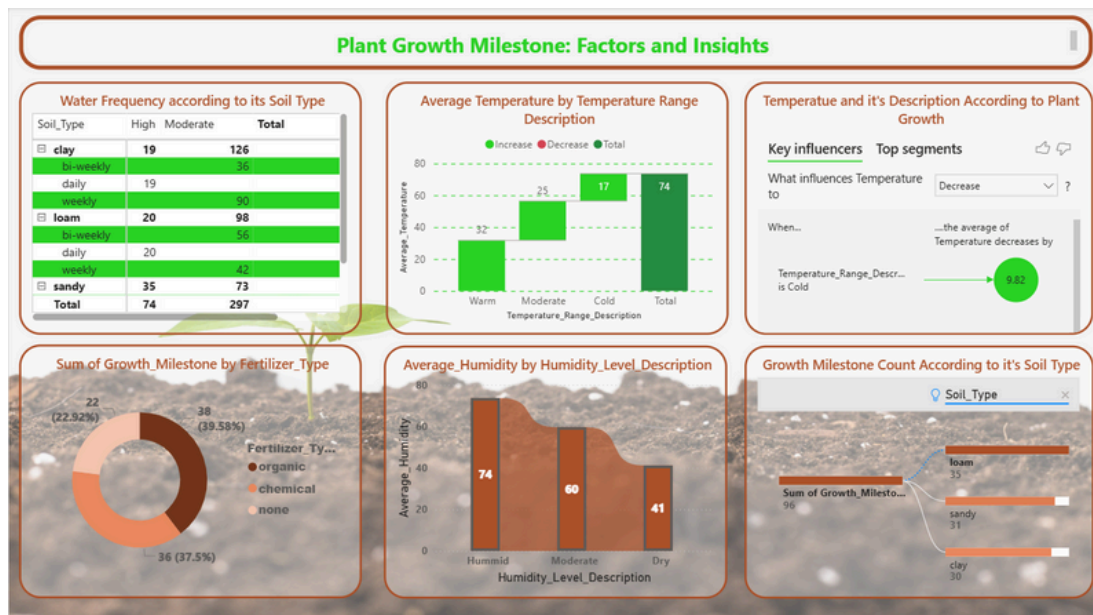| Date	26 july 2025
Team ID	Satya Prakash Sharma
Project Name	Predicting plant growth stages
Maximum Marks	5 Marks

Visualization development refers to the process of creating graphical representations of data to facilitate understanding, analysis, and decision-making. The goal is to transform complex datasets into visual formats that are easy to interpret, enabling users to gain insights and make informed decisions. Visualization development involves selecting appropriate visual elements, designing layouts, and using interactive features to enhance the user experience. This process is commonly associated with data visualization tools and platforms, and it plays a crucial role in business intelligence, analytics, and reporting

Business Questions and Visualisation

The process involves defining specific business questions to guide the creation of meaningful and actionable visualizations in Power BI. Well-framed questions help in identifying key metrics, selecting relevant data, and building visualisation that provide insights.

Dashboard visualisation

Questions

8 business questions derived from the Power BI visualisation:

1. What is the average humidity in the plant growth environment?

> **Visualization: KPI Card showing the average humidity value.**
>
> **Screenshot Reference: Top-left KPI card – "Average of Humidity: 58.10"**

2. How many soil types and fertilizer types are used?

> **Visualization: KPI Cards showing counts.**
>
> **Screenshot Reference: Middle-top cards – "Count of Soil Type: 3", "Count of Fertilizer Type: 3"**

3. What is the average growth milestone across all conditions?

> **Visualization: KPI Card showing the average growth milestone.**
>
> **Screenshot Reference: Top row – "Average of Growth Milestone: 0.50"**

4. How do growth milestones vary across different soil types?

Visualization: Bar chart comparing growth milestones by soil type.

Screenshot Reference: Bottom-left bar chart – "Growth Milestone by Soil Type"

5. What is the distribution of growth milestones across fertilizer types?

Visualization: Donut chart showing proportion by fertilizer type.

Screenshot Reference: Middle-center donut chart – "Growth Milestone by Fertilizer Type"

6. How does humidity level affect plant growth milestones?

Visualization: Line chart displaying growth milestone versus humidity.

Screenshot Reference: Middle-left line graph – "Growth Milestone by Humidity"

7. How does water frequency combined with fertilizer type impact growth milestones?

Visualization: Grouped bar chart comparing different combinations.

Screenshot Reference: Top-right grouped bar chart – "Growth Milestone by Water_Frequency and Fertilizer_Type"

8. How do different soil types perform under various water frequencies?

Visualization: Stacked bar chart comparing growth milestones across soil types and water frequency.

Screenshot Reference: Bottom-right stacked bar – "Growth Milestone by Water_Frequency and Soil_Type"

6.82
Average_Sunlight_Hours

58.10
Average_Humidity

25.07
Average_Temperature

Average_Sunlight_Hours by Soil_Type

6.4193... (31.4...)   7.268... (35.5...)

6.734375 (32.98%)

Soil_Type
- clay
- sandy
- loam

Growth_Milestone_Percentage by Water_Frequency

daily	bi-weekly
0.51	
weekly	0.48
0.49	

Reports

Sunlight Hours:-
- **Average Sunlight Hours** across all soil types is **6.82 hours**.
- **Clay soil** received the highest sunlight (**7.26 hrs**), followed by **loam (6.73 hrs)** and **sandy (6.41 hrs)**.

Humidity:-
- **Average Humidity** is **58.10%**.
- **Moderate humidity** level led to the highest **Growth Milestone Count (52)**, compared to **Dry (27)** and **Humid (17)**.

Temperature:
- **Average Temperature** is **25.07°C**, moderately favorable for plant growth.

Growth Milestone:
- Total **Growth Milestone Count** is **96**.
- Growth was highest under **moderate humidity**, indicating a strong correlation between moderate humidity and healthy plant development.

Water Frequency:
- **Daily watering** had the highest Growth Milestone percentage (**0.51**), followed closely by **weekly (0.49)** and **bi-weekly (0.48)**, suggesting frequent watering

Growth_Milestone_Count by Humidity_Level_Description

Growth_Milestone_Count

50 — 52
27
0 — 17

Moderate   Dry   Hummid

Humidity_Level_Description

Growth_Milestone_Count

96

0   192