Project Development Phase
Model Performance Test

Date	10 February 2025
Team ID	PNT2025TMID01160
Project Name	Predicting Plant Growth Stages with Environmental and Management Data Using Power BI
Maximum Marks	

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Plant growth data including soil type,fertilizer type ,water frequency,temperature ,humidity and growth milestone
2.	Data Preprocessing	Cleaned missing values ,standardized data formats and remove duplicates
3.	Utilization of Data Filters	Filters applied for temperature range,fertilizer type ,soil type and water frequency
4.	DAX Queries Used	1.Average_Humidity = AVERAGE(plant_growth_data[Humidity]) 2.Average_Sunlight_Hours = AVERAGE(plant_growth_data[Sunlight_Hours]) 3.AVERAGE(plant_growth_data[Sunlight_Hours]) 4,Average_Temperatue = AVERAGE(plant_growth_data[Temperature]) 5.Growth_Milestone_Count = COUNTROWS(FILTER(plant_growth_data, plant_growth_data[Growth Milestone]=1)) 6.Growth_Milestone_Percentage = DIVIDE([Growth_Milestone_Count], COUNTROWS(plant_growth_data), 0) 7.Water Frequency Numeric = SWITCH([Water_Frequency], "daily",1, "bi-weekly",2, "weekly",3, BLANK()) 8.Temprature Range = SWITCH(

		TRUE(), [Temperature]<15,"Low", [Temperature]>=15 && [Temperature]<25,"Moderate", [Temperature]>=25,"High") 9.Humidity range = SWITCH(TRUE(), [Humidity]<40,"Low", [Humidity]>=40 && [Humidity]<60,"Moderate", [Humidity]>=60 , "High") 10.Humidity Level Description = SWITCH(TRUE(), [Humidity]<30,"Very Dry", [Humidity]>=30 && [Humidity]<50,"Dry", [Humidity]>=50 && [Humidity]<70,"Moderate", [Humidity]>=70 && [Humidity]<90,"Humid", [Humidity]>=90,"Very Humid") 11.Temperature Range Description = SWITCH(TRUE(), [Temperature]<10,"Very Cold", [Temperature]>=10 && [Temperature]<20,"Cold", [Temperature]>=20 && [Temperature]<30,"Moderate", [Temperature]>=30 && [Temperature]<40,"Warm", [Temperature]>=40,"Hot") 12.Growth Milestone Description = SWITCH([Growth Milestone], 0,"Early Stage", 1,"Mature Stage", "Unknown Stage") 13.Plant Growth Category = SWITCH([Growth Milestone], 0,"Initial Growth", 1,"Advanced Growth", "Uncategorized")
5.	Dashboard design	**No. of Visualizations / Graphs –** • **KPI Card** – Average Humidity • **KPI Card** – Average Temperature • **Clustered Bar Chart** – Growth by Soil Type and Fertilizer Type • **Line Chart** – Growth by Humidity Range and Water Frequency • **Clustered Bar Chart** – Growth by

		Temperature Range • **Donut Chart** – Growth by Water Frequency • **Scatter Plot** – Sunlight Hours vs Growth Milestone • **Clustered Column Chart** – Average Temperature by Temperature Range • **Slicer** – Temperature Range • **Slicer** – Fertilizer Type • **Slicer** – Soil Type • **Slicer** – Water Frequency 
6	Report Design	**No. of Visualizations / Graphs –** • **Card** – Average Humidity (58.10) • **Card** – Average Sunlight Hours (6.83) • **Card** – Average Temperature (25.08) • **Line Chart** – Growth by Humidity Level and Water Frequency • **Stacked Bar Chart** – Growth Milestone by Fertilizer Type and Soil Type • **Pie Chart** – Humidity by Water Frequency • **Gauge Chart** – Growth Milestone Count (96 out of 192) • **Text Box** – Plant Growth Report summarizing insights from the data

		 58.10 Average_Humidity 6.83 Average_Sunlight_Hours 25.08 Average_Temperatue Growth by Humidity Level and Water Frequency Growth Milestone Count Dry Humid Moderate Water_Frequency Plant Growth Report This dashboard analyzes the impact of humidity, temperature, sunlight, water frequency, soil type, and fertilizer on plant growth. · Environmental Conditions: · Avg. Temperature: 25.08°C | Avg. Humidity: 58.10% | Avg. Sunlight Hours: 6.83 · Insight: Moderate temperature and humidity promote better growth. · Watering & Humidity Effect: · Daily watering in moderate humidity yields the highest growth. · Insight: Frequent watering alone is ineffective in dry conditions. · Soil & Fertilizer Influence: · Organic fertilizer and loam soil contribute most to plant growth. · Insight: Soil type impacts fertilizer effectiveness. · Overall Growth Performance: · Growth Milestone Count: 96 (out of 192 max). Growth Milestone by Fertilizer Type and Soil Type clay loam sandy Sum of Growth Milestone organic chemical none Fertilizer_Type Humidity by Water Frequency bi-weekly 3.4K (30.31%) daily 4.3K (38.31%) weekly 3.52K (31.38%) Growth Milestone Count 96 0 192