Project Development Phase

Model Performance Test

Date	**15 February 2025**
Team ID	**PNT2025TMID01163**
Project Name	**Predicting Plant Growth Stages with Environmental and Management Data Using Power BI**

Model Performance Testing:

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

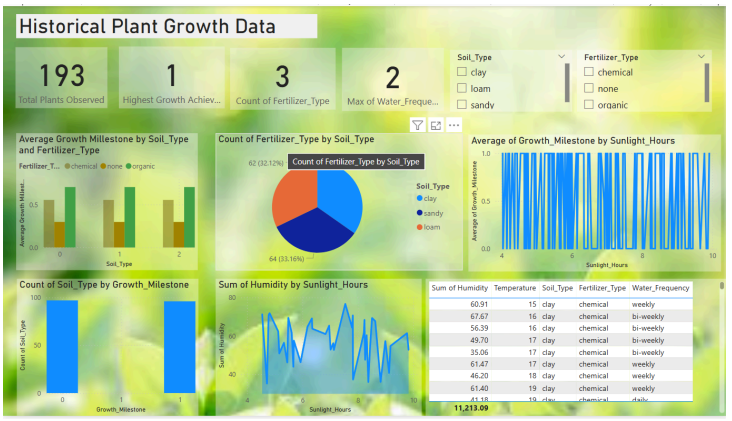
S.No.	Parameter	Screenshot/values
1.	Data Rendered	Plant growth data including soil type,fertilizer type ,water frequency,temperature ,humidity and growth milestone
2.	Data Preprocessing	Cleaned missing values ,standardized data formats and remove duplicates
3.	Utilization of Data filters	Filters applied for temperature range,fertilizer type ,soil type and water frequency
4.	DAX Queries Used	**Historic Data DAX Queries** 1. Total Plants Observed Total Plants = COUNTROWS('Historic_Data') 2. Average Growth Milestone Average Growth Milestone = AVERAGE('Historic_Data'[Growth_Milestone])

		3. Maximum Temperature Recorded Max Temperature = MAX('Historic_Data'[Temperature]) 4. Minimum Temperature Recorded Min Temperature = MIN('Historic_Data'[Temperature]) 5. Average Humidity Average Humidity = AVERAGE('Historic_Data'[Humidity]) 6. Plants with High Sunlight Hours (e.g., >8 hours) High Sunlight Plants = CALCULATE(COUNTROWS('Historic_Data'), 'Historic_Data'[Sunlight_Hours] > 8) 7. Plants with Low Growth (Growth Milestone < 50) Low Growth Plants = CALCULATE(COUNTROWS('Historic_Data'), 'Historic_Data'[Growth_Milestone] < 50) 8. Growth Milestone by Fertilizer Type Growth by Fertilizer = AVERAGEX(VALUES('Historic_Data'[Fertilizer_Type]), CALCULATE(AVERAGE('Historic_Data'[Growth_Milestone]))) 9. Growth Milestone by Soil Type Growth by Soil = AVERAGEX(VALUES('Historic_Data'[Soil_Type]), CALCULATE(AVERAGE('Historic_Data'[Growth_Milestone])))

		10. Humidity Level Category (Custom Column) Humidity Category = SWITCH(TRUE(), 'Historic_Data'[Humidity] < 30, "Low", 'Historic_Data'[Humidity] >= 30 && 'Historic_Data'[Humidity] <= 70, "Medium", 'Historic_Data'[Humidity] > 70, "High") **Predicted Data DAX Queries** 1. Total Predictions Made Total Predictions = COUNTROWS('Predicted_Data') 2. Average Predicted Growth Milestone Average Predicted Growth = AVERAGE('Predicted_Data'[Predicted_Growth_Milestone]) 3. Prediction Model Accuracy Display Model Accuracy = 0.64 4. Difference Between Actual and Predicted Growth Growth Difference = 'Predicted_Data'[Actual_Growth_Milestone] - 'Predicted_Data'[Predicted_Growth_Milestone] 5. Percentage Error Between Actual and Predicted

		Percentage Error = DIVIDE(ABS('Predicted_Data'[Actual_Growth_Milestone] - 'Predicted_Data'[Predicted_Growth_Milestone]) , 'Predicted_Data'[Actual_Growth_Milestone], 0) * 100 6. Predictions Above Accuracy Threshold (Example > 70%) High Accuracy Predictions = CALCULATE(COUNTROWS('Predicted_Data'), 'Predicted_Data'[Predicted_Growth_Milestone] >= 70) 7. Predictions with Large Deviations (Example > 20) Large Deviations = CALCULATE(COUNTROWS('Predicted_Data'), ABS('Predicted_Data'[Actual_Growth_Milestone] - 'Predicted_Data'[Predicted_Growth_Milestone]) > 20) 8. Predicted Growth by Soil Type Predicted Growth by Soil = AVERAGEX(VALUES('Predicted_Data'[Soil_Type]), CALCULATE(AVERAGE('Predicted_Data'[Predicted_Growth_Milestone]))) 9. Predicted Growth by Fertilizer Type Predicted Growth by Fertilizer =

		AVERAGEX(VALUES('Predicted_Data'[Fertilizer_Type]), CALCULATE(AVERAGE('Predicted_Data'[Predicted_Growth_Milestone]))) 10. Prediction Accuracy Category Prediction Category = SWITCH(TRUE(), [Percentage Error] < 10, "High Accuracy", [Percentage Error] >= 10 && [Percentage Error] <= 30, "Moderate Accuracy", [Percentage Error] > 30, "Low Accuracy")
5.	Dashboard Design	**No. of Visualizations/Graphs** **1. KPI Card - Average Humidity** **2. KPI Card - Average Temperature** **3. Cluster Bar Chart - Growth By Soil Type and Fertilizer Type** **4. Line Chart - Growth by Humidity Range and Water Frequency** **5. Clustered Bar Chart - Growth by Temperature range** **6. Donut Chart - Growth By Water Frequency** **7. Clustered Column Chart - Average Temperature by Temperature Range** **8. Slicer - Temperature Range** **9. Slicer - Fertilizer Type** **10. Slicer - Soil Type**

		
6.	Report Design	**No. of Visualizations/Graphs** 1. **Card - Average growth milestone(0.50)** 2. **Line Chart** 3. **Stacked bar Chart** 4. **Pie Chart - Soil points** 5. **Gauge Chart** 6. **Text Box - Plant growth report summarization insights from the data**