## Project Development Phase
## Model Performance Test

| Date | 12 March 2025 |
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| Team ID | PNT2025TMID07064 |
| Project Name | **Prediction plant growth stages with environment and management data using power BI** |
| Maximum Marks | 4 |

**Model Performance Testing:**

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

| S.No. | Parameter | Screenshot / Values |
|---|---|---|
| 1. | Data Rendered | No. Of Rows – 11912 No. Of Columns - 25 |
| 2. | Data Preprocessing | Fixed column name gaps, Converted numerical columns to Whole Number, Adjusted outliers |
| 3. | Utilization of Data Filters | Year Slicer, Country Slicer |

| 4. | DAX Queries Used | // Measure: Plant Growth Stage Rank (based on a hypothetical 'Growth Stage Index')<br><br>Plant Growth Stage Rank =<br>RANKX(<br>  ALL('PlantData'[PlantID]),<br>  [Growth Stage Index], // Replace with your actual growth stage index measure/column<br>  DESC,<br>  DENSE<br>)<br><br>// Measure: Growth Stage Index Share % (relative to total index)<br>Growth Stage Index Share % =<br>DIVIDE(<br>  [Growth Stage Index], // Replace with your actual growth stage index measure/column<br>  CALCULATE([Growth Stage Index], ALL('PlantData'[PlantID])), // Replace with your actual growth stage index measure/column<br>  0<br>) * 100<br><br>// Measure: Dominant Environmental Factor (based on impact on growth)<br>Dominant Environmental Factor =<br>VAR FactorList = {<br>  "Temperature",<br>  "Humidity",<br>  "Soil Moisture",<br>  "Light Intensity" // Add or change factors based on your data<br>}<br>VAR MaxImpact =<br>  MAXX(<br>    FactorList,<br>    CALCULATE(<br>      [Environmental Factor Impact], // Replace with a measure that represents the impact of each factor on growth<br>        'PlantData'[Environmental Factor] = EARLIER(FactorList)<br>    )<br>  )<br>RETURN |

```
    CALCULATE(
        MAX('PlantData'[Environmental Factor]),
        'PlantData'[Environmental Factor] IN FactorList,
        CALCULATE(
            [Environmental Factor Impact],// Replace with a
measure that represents the impact of each factor on growth
            'PlantData'[Environmental Factor] IN FactorList
) = MaxImpact
    )


// Measure: Dominant Management Practice (based on impact
on growth)
Dominant Management Practice =
VAR PracticeList = {
    "Fertilization",
    "Irrigation",
    "Pesticide Application",
    "Pruning" // Add or change practices based on your data
}
VAR MaxPracticeImpact =
    MAXX(
        PracticeList,
        CALCULATE(
            [Management Practice Impact], // Replace with a measure
representing the impact of each practice on growth
            'PlantData'[Management Practice] =
EARLIER(PracticeList)
        )
    )
RETURN
    CALCULATE(
        MAX('PlantData'[Management Practice]),
        'PlantData'[Management Practice] IN PracticeList,
        CALCULATE(
            [Management Practice Impact], // Replace with a measure
representing the impact of each practice on growth
            'PlantData'[Management Practice] IN PracticeList
        ) = MaxPracticeImpact
    )
```

```
    ADDCOLUMNS(
        SUMMARIZE('world_food_production_cleaned',
'world_food_production_cleaned'[Entity]),
        "Production",
        VAR CropValues = {
            SUM('world_food_production_cleaned'[Apples Production
(tonnes)]),
            SUM('world_food_production_cleaned'[Bananas Production
(tonnes)]),
            SUM('world_food_production_cleaned'[Rice Production
(tonnes)]),
            SUM('world_food_production_cleaned'[Wheat     Production
(tonnes)])
        }
        RETURN MAXX(CropValues, [Value])
    ),
    [Production]
)

RETURN MaxCrop Total

Production =
SUM('world_food_production_cleaned'[Apples Production (tonnes)])
+
SUM('world_food_production_cleaned'[Avocados          Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Bananas Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Cocoa     beans    Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Coffee,    green    Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Grapes Production (tonnes)])
+
SUM('world_food_production_cleaned'[Maize        Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Meat,    chicken    Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Oranges Production
(tonnes)]) +
SUM('world_food_production_cleaned'[Palm oil Production (tonnes)])
+
SUM('world_food_production_cleaned'[Peas,        dry     Production
(tonnes)]) +
```

| | | SUM('world_food_production_cleaned'[Potatoes Production (tonnes)]) + SUM('world_food_production_cleaned'[Rice Production (tonnes)]) + |
|---|---|---|

| | | SUM('world_food_production_cleaned'[Rye Production (tonnes)]) + SUM('world_food_production_cleaned'[Soybeans Production (tonnes)]) + SUM('world_food_production_cleaned'[Sugar cane Production (tonnes)]) + SUM('world_food_production_cleaned'[Sunflower seed Production (tonnes)]) + SUM('world_food_production_cleaned'[Sweet potatoes Production (tonnes)]) + SUM('world_food_production_cleaned'[Tea Production (tonnes)]) + SUM('world_food_production_cleaned'[Tomatoes Production (tonnes)]) + SUM('world_food_production_cleaned'[Wheat Production (tonnes)]) + SUM('world_food_production_cleaned'[Yams Production (tonnes)] ) |
|---|---|---|
| 5. | Dashboard design | No of Visualizations -8 <br>(1) Slicer <br>(2) Card <br>(3) Guage Chart <br>(4) Bar Chart <br>(5) Area Chart <br>(6) Ribbon Chart <br>(7) Donut Chart <br>(8) Text box |
| 6 | Report Design | No of Visualizations – 7 <br>(1) Slicer <br>(2) Card <br>(3) Pie Chart <br>(4) Donut Chart <br>(5) Table <br>(6) Line Chart <br>(7) Text box |