**Project Development Phase**

**Model Performance Test**

|  |  |
| --- | --- |
| Date | 12 March 2025 |
| Team ID | PNT2025TMID06726 |
| Project Name | Predicting Plant Growth Stages with Environmental and Management Data Using PowerBI |
| 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')  Plant Growth Stage Rank =  RANKX(  ALL('PlantData'[PlantID]),  [Growth Stage Index], // Replace with your actual growth stage index measure/column  DESC,  DENSE  )    // Measure: Growth Stage Index Share % (relative to total index)  Growth Stage Index Share % =  DIVIDE(  [Growth Stage Index], // Replace with your actual growth stage index measure/column  CALCULATE([Growth Stage Index],  ALL('PlantData'[PlantID])), // Replace with your actual growth stage index measure/column  0  ) \* 100    // Measure: Dominant Environmental Factor (based on impact on growth)  Dominant Environmental Factor =  VAR FactorList = {  "Temperature",  "Humidity",  "Soil Moisture",  "Light Intensity" // Add or change factors based on your data  }  VAR MaxImpact =  MAXX(  FactorList,  CALCULATE(  [Environmental Factor Impact], // Replace with a measure that represents the impact of each factor on growth  'PlantData'[Environmental Factor] = EARLIER(FactorList)  )  )  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   1. Slicer 2. Card 3. Guage Chart 4. Bar Chart 5. Area Chart 6. Ribbon Chart 7. Donut Chart 8. Text box |
| 6 | Report Design | No of Visualizations – 7   1. Slicer 2. Card 3. Pie Chart 4. Donut Chart 5. Table 6. Line Chart 7. Text box |