Project Development Phase
Model Performance Test

Date	12 March 2025
Team ID	PNT2025TMID07071
Project Name	Global Food Production Trends and Analysis AComprehensive Study from 1961 to2023 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')
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