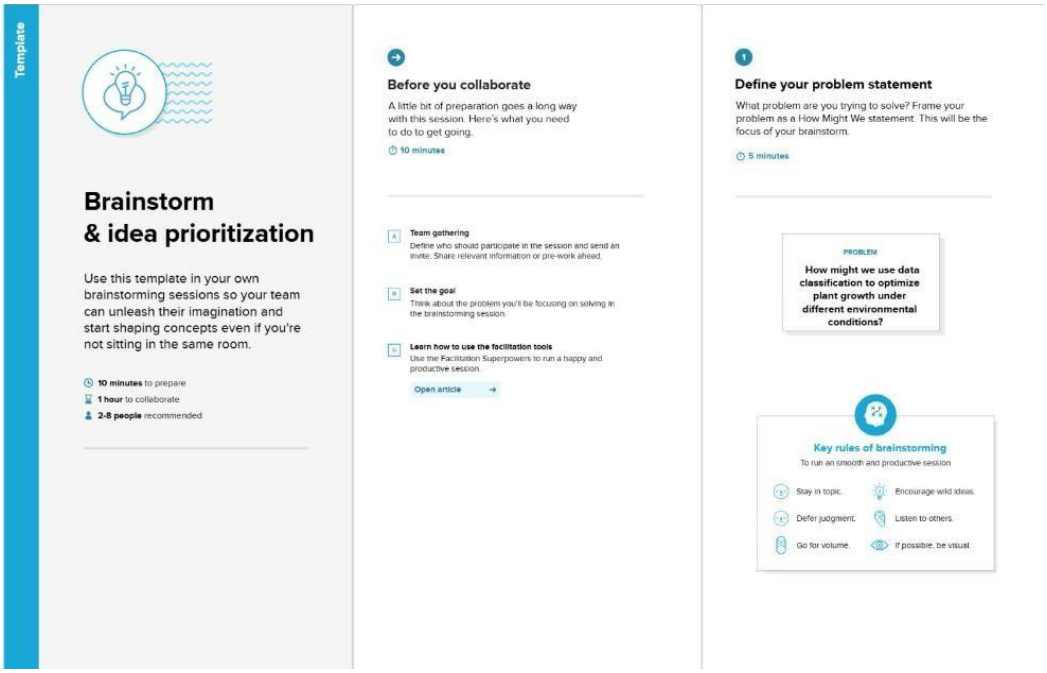
Ideation Phase
Brainstorm & Idea Prioritization Template

Date	13 March 2025
Team ID	PNT2025TMID06970
Project Name	**Predicting Plant Growth Stages with Environmental and Management Data**
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:



Step-1: Team Gathering, Collaboration and Select the Problem Statement

Problem Statement:

Farmers and agritech companies struggle to **predict plant growth stages** accurately due to varying environmental conditions like **soil type, sunlight exposure, water frequency, temperature, and humidity**.

Project Goal:
Using **Power BI**, we aim to analyze plant growth patterns and provide **data-driven insights** to optimize farming strategies and improve **crop yield and sustainability**.

Step-2: Brainstorm, Idea Listing and Grouping

Brainstormed Ideas for the Project

1. **Data Collection & Preparation:**

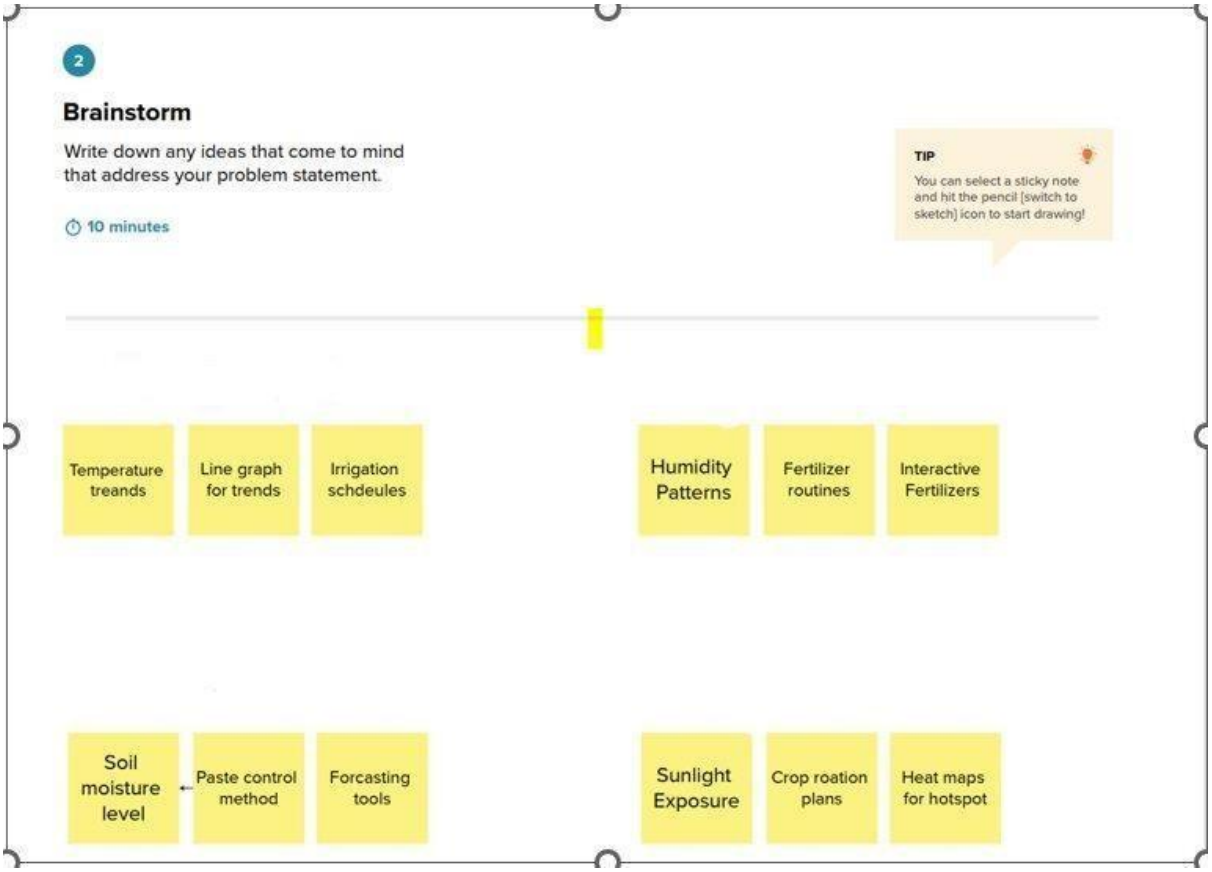
- Collect environmental and management data (soil type, water frequency, etc.).

- Ensure data quality by handling missing values and inconsistencies.
- Import and transform data in **Power BI**.

2. **Data Analysis & Key Metrics:**
   - Identify **growth trends based on different environmental conditions**.
   - Use **DAX measures** to calculate insights like average growth, highest/lowest temperature impact, etc.
   - Apply **data filters and slicers** to explore different growth conditions.

3. **Visualization & Dashboard Creation:**
   - **Stacked Bar Chart:** Soil Type vs. Growth Milestone (stacked by Fertilizer Type).
   - **Scatter Plot:** Sunlight Hours vs. Growth Milestone (colored by Soil Type).
   - **Line Chart:** Temperature vs. Growth Milestone (to track environmental impact).
   - **Pie Chart:** Distribution of Water Frequency or Fertilizer Type.
   - **Card Visuals:** Total Plants, Average Growth Milestone, Most Common Soil Type.

4. **Predictive Insights & Business Impact:**
   - Use a **Decomposition Tree** to break down **factors influencing growth milestones**.
   - Provide insights on **optimal soil type, watering schedule, and environmental conditions**.
   - Support **precision agriculture and smart farm management** using data analytics.



Step-3: Idea Prioritization

Idea	**Priority Level (High/Medium/Low)**	**Reason for Priority**
Data Cleaning & Transformation	High	Essential for accurate insights
Stacked Bar Chart (Soil Type vs Growth)	High	Shows key environmental impact
Scatter Plot (Sunlight vs Growth)	High	Helps find correlation
Decomposition Tree (Growth Analysis)	High	Breaks down key influencing factors
Card Visuals (Key Metrics)	High	Provides quick insights
Predictive Insights	Medium	Future enhancement

Advanced AI-based Predictions	Low	Needs further data exploration