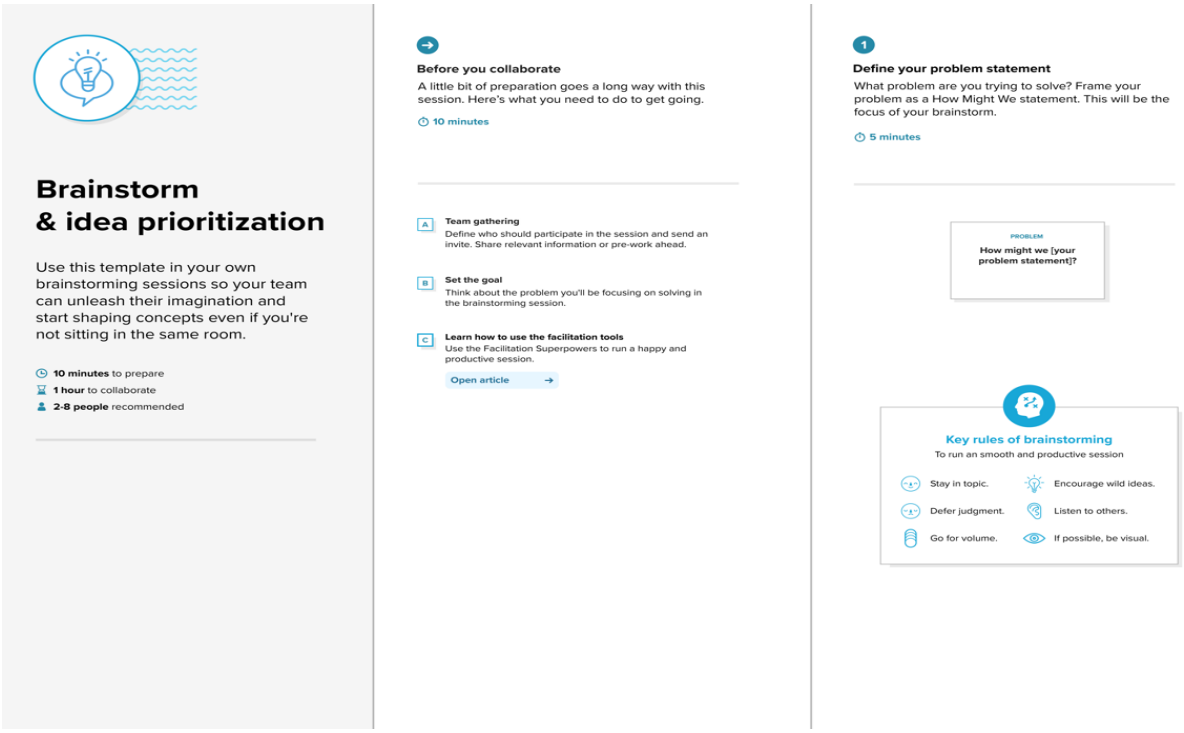
Ideation Phase
Brainstorm & Idea Prioritization Template

Date	26 June 2025
Team ID	LTVIP2025TMID20416
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

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



Our team began by identifying issues related to **food waste and safety**, especially in retail and storage of fruits and vegetables. After several brainstorming sessions and feasibility checks, we finalized the problem:

"How can we use machine learning to automatically detect rotten fruits and vegetables from images?"

This issue was selected based on:

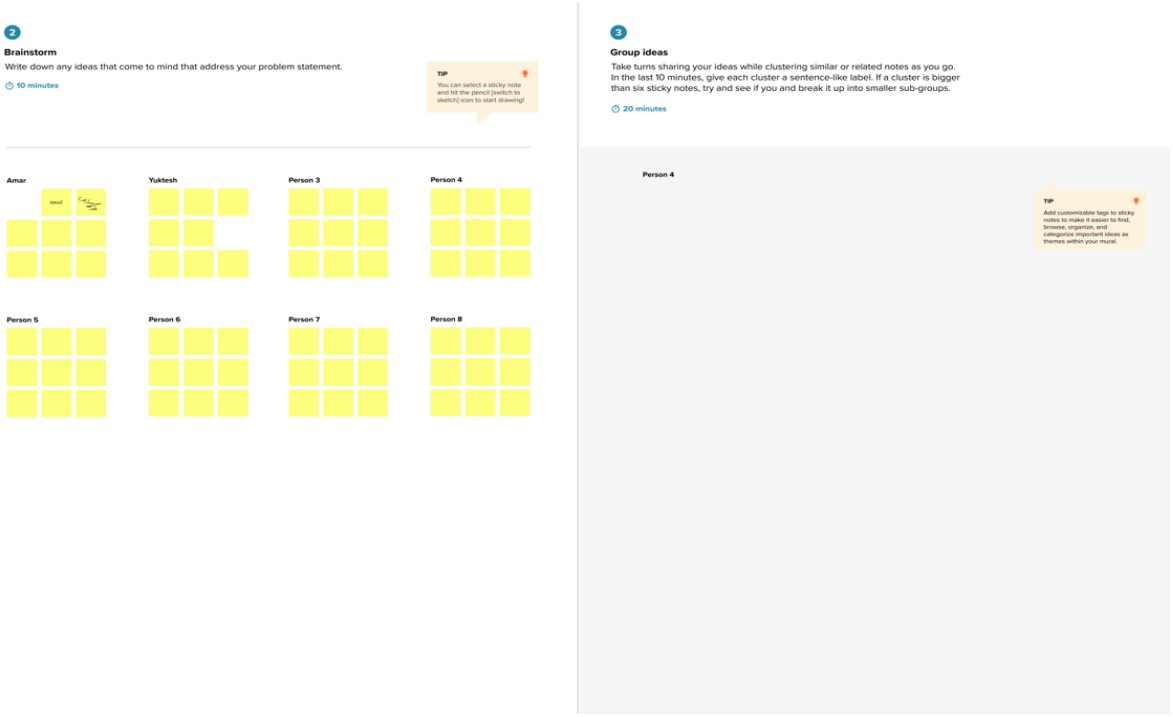
- Its relevance to consumers, vendors, and farmers
- The potential for automation using accessible tools

- The possibility of building a **real-time, user-friendly web-based solution**

We decided to name our solution:

Nutrigaze – GreenGuard Insights

Step-2: Brainstorm, Idea Listing and Grouping



We generated a range of ideas during our brainstorming sessions to approach the problem from different angles.

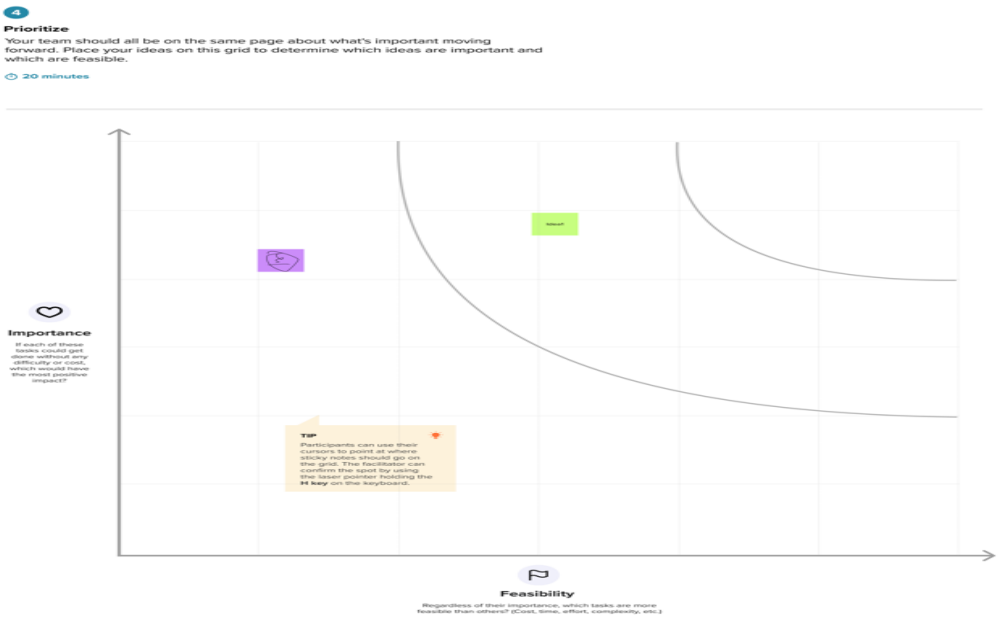
Ideas Generated:

- Train a machine learning model to classify images of fruits/vegetables as "fresh" or "rotten"
- Use color and texture features for spoilage detection
- Build a web application to upload and classify images
- Use transfer learning for better accuracy with limited data
- Include a freshness confidence score (optional)
- Add database storage for scanned results (future scope)

Grouped Ideas:

Category	Ideas
ML Model	Train with image dataset, use CNN or transfer learning
User Interface	Build a web app for image upload and classification
Features	Binary classification, freshness confidence, real-time response
Future Scope	Multi-class spoilage levels, hardware integration

Step-3: Idea Prioritization



We prioritized ideas based on:

- **Feasibility** (doable with current tools and time)
- **Impact** (how well it solves the problem)
- **Usability** (is it user-friendly and practical?)

Final Chosen Idea:

Build a **machine learning model** to classify images of fruits and vegetables as **fresh or rotten**, and integrate it into a **web-based application** where users can upload images and receive instant results.

Chosen Stack & Workflow:

- **Dataset**: Labelled images of fresh vs. rotten produce (custom or open-source)
- **Model**: CNN (Convolutional Neural Network) using TensorFlow/Keras
- **Training**: Model trained on the dataset, evaluated on accuracy and loss
- **Web App**: Built using HTML, CSS, JavaScript, and Python Flask/Streamlit backend
- **Deployment**: Local or cloud-based platform for real-time image detection