**Ideation Phase**

**Brainstorm & Idea Prioritization Template**

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| Date | 25 june 2025 |
| Team ID | LTVIP2025TMID45798 |
| Project Name | Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables |
| Maximum Marks | 4 Marks |

**Brainstorm & Idea Prioritization Template:**

Brainstorming was conducted to generate and filter innovative ideas for using **deep learning and computer vision** to detect spoilage in fruits and vegetables accurately, quickly, and in a user-friendly manner.

**Step 1: Team Gathering, Collaboration, and Selecting the Problem Statement**

* A meeting was held with the project team to discuss **issues in food spoilage detection**.
* Final **problem statement selected**:

“Manual detection of spoiled fruits and vegetables is inefficient and often inaccurate, leading to health issues and economic losses.”

* Goal:
  + Develop an **AI-powered system that can detect healthy vs. rotten produce** using images.
  + Create a **web interface for user-friendly access**.

**Step 2: Brainstorm, Idea Listing, and Grouping**

**Ideas Generated:**

✅ Using **VGG16 pretrained models** for feature extraction.  
✅ Building a **Flask web application** for easy deployment.  
✅ Adding a **mobile-compatible interface** for instant camera capture.  
✅ Incorporating **multilingual UI** for wider usability.  
✅ Integrating **alert notifications** on predictions.  
✅ Maintaining **prediction logs** for user reference.  
✅ Providing **preventive tips** for detected spoilage.  
✅ Developing **dataset augmentation** for better model accuracy.  
✅ Option to upload **multiple images for batch predictions**.

**Grouped Into:**

* **Technology**: Model training, dataset preparation, Flask, TensorFlow, image preprocessing.
* **Features**: UI simplicity, multilingual support, notifications, logs.
* **Impact**: Food waste reduction, health benefits, vendor profitability.

**Step 3: Idea Prioritization**

Using an **Impact vs. Effort matrix**, the following ideas were prioritized:

✅ **High Impact, Low Effort**:

* VGG16 with transfer learning
* Flask web app
* Basic upload and prediction interface

✅ **High Impact, Medium Effort**:

* Mobile compatibility
* Alert notifications
* Prediction logs

✅ **Medium Impact, Low Effort**:

* Preventive tips

✅ **Future Enhancements (High Impact, High Effort)**:

* Real-time camera detection
* Multilingual and speech-based input
* Dashboard for vendors