**Project Design Phase**

**Proposed Solution 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 | 2 Marks |

**Proposed Solution Template:**

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Identifying rotten fruits and vegetables manually is time-consuming, subjective, and error-prone, leading to food waste and health hazards. There is a need for an AI-powered, accessible solution for instant freshness detection. |
|  | Idea / Solution description | NutriGaze uses a deep learning model (VGG16) trained on fruit and vegetable images to classify them as **Healthy** or **Rotten**. A Flask-based web app allows users to upload images and instantly receive results, aiding consumers, vendors, and farmers in quality checks. |
|  | Novelty / Uniqueness | - Uses transfer learning for accurate detection.  - Simple, intuitive UI requiring no technical expertise.  - Works on mobile/desktop browsers.  - Provides a scalable, automated freshness inspection system. |
|  | Social Impact / Customer Satisfaction | - Reduces health risks from consuming spoiled produce.  - Decreases food wastage by early detection.  - Provides peace of mind to consumers, vendors, and farmers. |
|  | Business Model (Revenue Model) | Freemium web app model: free basic predictions, with potential premium features for vendors (batch analysis, analytics dashboard). Future scope includes B2B API licensing for supermarkets and farm tech integrations. |
|  | Scalability of the Solution | - Can expand to include more fruit/vegetable categories.  - Extend to fungal/pest detection.  - Integration with mobile apps and IoT-enabled cameras for real-time analysis.  - Potential to scale for supermarkets and export quality checks. |