Project Design Phase
Proposed Solution Template

Date	26 June 2025
Team ID	LTVIP2025TMID38828
Project Name	Smart Sorting: Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	**Problem Statement** (Problem to be solved)	Difficulty in identifying rotten or spoiled fruits and vegetables, leading to health risks, wastage, and customer dissatisfaction due to lack of quick, accurate, and non-expert-friendly tools.
2.	**Idea / Solution Description**	An AI-powered web application that uses transfer learning (VGG16) to classify uploaded fruit/vegetable images as *Healthy* or *Rotten*. The system displays a confidence score and provides a clear recommendation such as "Good to Eat" or "Don't Eat." It is built using Flask and TensorFlow.
3.	**Novelty / Uniqueness**	Leverages pre-trained deep learning models (transfer learning) to deliver fast, lightweight predictions with 28-class support. It requires no technical expertise, offers real-time image-based analysis, and includes a feedback system to improve over time.
4.	**Social Impact / Customer Satisfaction**	Ensures safer food consumption, reduces food wastage, builds consumer trust, and empowers local vendors with affordable technology. Enhances public health and supports digital transformation in traditional markets.
5.	**Business Model (Revenue Model)**	Freemium model: Free basic version for vendors and consumers; premium version for supermarkets and delivery companies with batch analysis, API access, and admin dashboard. Potential ad revenue or partnership with agri-tech firms.
6.	**Scalability of the Solution**	Highly scalable – can be deployed across regions, integrated with mobile apps, expanded to other food categories, and enhanced through feedback-based model retraining. Can also support multiple languages and platforms in future.