Project Design Phase
Proposed Solution Template

Date	4 March 2025
Team ID	PNT2025TMID00864
Project Name	GrainPalette A Deep Learning Odyssey In Rice Type Classification Through Transfer Learning
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)	Farmers and agriculture stakeholders lack affordable and accessible tools for accurate rice type identification, leading to suboptimal farming practices and reduced yields.
2.	Idea / Solution description	GrainPalette is an AI-powered mobile/web application that uses image recognition to rapidly and accurately identify rice types from a grain image uploaded by the user.
3.	Novelty / Uniqueness	Utilizes Transfer Learning (MobileNetv4) for efficient and accurate image classification, providing an AI-powered solution that is more accessible and affordable than expert consultation.
4.	Social Impact / Customer Satisfaction	Empowers farmers with knowledge, leading to improved yields, optimized resource use (water, manure), and reduced reliance on costly experts, ultimately enhancing livelihoods.
5.	Business Model (Revenue Model)	Freemium model: Basic service is free (limited uses/features), with potential premium subscription for advanced features, higher usage limits, and/or enterprise solutions.
6.	Scalability of the Solution	Cloud-based AI model and application allow for global scalability, reaching a wide range of users with minimal marginal cost per user, and adaptable to new rice types with data.