**Project Design Phase**

**Proposed Solution Template**

|  |  |
| --- | --- |
| Date | 18 june 2025 |
| Team ID | LTVIP2025TMID38185 |
| Project Name | Grainpalette - A Deep Learning Odyssey  In Rice Type Classification Through |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Farmers, traders, and quality inspectors often struggle to accurately identify different rice varieties, which leads to classification errors, market inefficiencies, and reduced trust in product quality. |
|  | Idea / Solution description | Our project uses a deep learning-based image classification model to accurately classify different types of rice grains. The model is trained on a curated dataset and can be integrated into mobile or web apps for real-time usage. |
|  | Novelty / Uniqueness | Unlike traditional methods that rely on manual observation or expensive lab testing, our solution offers a cost-effective, fast, and scalable AI-driven approach with high accuracy. |
|  | Social Impact / Customer Satisfaction | This project empowers farmers and traders by providing an easy-to-use tool for rice identification, leading to fair pricing, improved quality assurance, and increased customer trust. |
|  | Business Model (Revenue Model) | The solution can be monetized via a subscription-based model for agricultural businesses, a freemium app version for farmers, and B2B licensing for large-scale grain processing units. |
|  | Scalability of the Solution | The model can be expanded to classify other grains and food products. It can be integrated with IoT devices or supply chain systems to automate and optimize quality control. |