**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

|  |  |
| --- | --- |
| Date | 18 June 2025 2025 |
| Team ID | LTVIP2025TMID46414 |
| Project Name | GrainPalette - A Deep Learning Odyssey In Rice Type Classification Through Transfer Learning |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Form  Registration through Gmail  Registration through LinkedIN |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | Image upload | Model classifies the uploaded rice image  Display predicted rice type and confidence score |
| FR-4 | Rice type classification | Upload rice grain image from local device  Upload image from mobile camera |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The application should have a simple, intuitive, and user-friendly interface so that farmers, traders, and non-technical users can easily upload images and view results |
| NFR-2 | **Security** | The system should ensure data privacy and secure storage of user-uploaded images. User authentication should be implemented for account-based access |
| NFR-3 | **Reliability** | The model should provide consistent and repeatable classification results with a minimum accuracy of 80% across multiple runs and inputs. |
| NFR-4 | **Performance** | The system should process and classify each image within 5 seconds to ensure fast response time for users. |
| NFR-5 | **Availability** | The service should be available 24/7 with a downtime of less than 2% per month. |
| NFR-6 | **Scalability** | The solution should be scalable to handle large datasets and more rice types in the future without affecting performance. It should also support deployment on cloud platforms |