**Project Design Phase-II**
**Solution Requirements (Functional & Non-functional)**

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| Date | 19 FEB 2026 |
| Team ID | LTVIP2026TMIDS65633 |
| Project Name | Smart sorting: transfer Learning For Identifying Rotten Fruits and Vegetables |
| 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<br>Registration through Gmail<br>Registration through LinkedIN |
| FR-2 | User Confirmation | Confirmation via Email<br>Confirmation via OTP |
| FR-3 | Image Upload | - Upload fruit/vegetable images via camera or file picker<br>- Support for batch upload |
| FR-4 | Image Classification | - Use Transfer Learning model to classify input as *Fresh* or *Rotten*<br>- Display classification results with confidence score |
| FR-5 | Dataset Management | - Admin panel for managing training images (add/edit/delete)<br>- Option to retrain the model with updated dataset |
| FR-6 | Results Dashboard | - View recent predictions<br>- Filter results by date, category, and freshness status |
| FR-7 | Feedback System | - Users can provide feedback on classification accuracy |
| FR-8 | Report Generation | - Generate downloadable reports (CSV or PDF) of analysis results |

**Non-functional Requirements:**

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

| FR No. | Non-Functional Requirement | Description |
|---|---|---|
| NFR-1 | **Usability** | The interface should be user-friendly and intuitive for both tech-savvy and non-technical users such as farmers or shopkeepers. |
| NFR-2 | **Security** | User data and uploaded images should be securely stored. Access to dataset management must be role-based. |
| NFR-3 | **Reliability** | The system should perform consistently, ensuring accurate predictions under normal usage. |
| NFR-4 | **Performance** | The model should return classification results within 2 seconds for a single image. |
| NFR-5 | **Availability** | The system should be available 24/7 with minimum downtime, especially during peak usage hours. |

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| NFR-6 | **Scalability** | The system should support scaling for increased user load or larger datasets in the future. |