**Project Design Phase-II**

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

|  |  |
| --- | --- |
| Date | 26 June 2025 |
| Team ID | LTVIP2025TMID34781 |
| Project Name | Smart Sorting |
| 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 | Image Upload | Upload via web form or drag & drop |
| FR-2 | Image Preprocessing | Resize, normalize, apply augmentation (rotation, flip, etc.) |
| FR-3 | Classification | Predict whether the item is **Fresh** or **Rotten** using a CNN-based model |
| FR-4 | Visualization | Display uploaded image, predicted label, and confidence score |
| FR-5 | Sorting Mechanism | Tag/redirect classified images into appropriate folders (Fresh/Rotten) |
| FR-6 | Result Export | Download prediction summary as **PDF** or **CSV** report |

**Non-functional Requirements:**

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

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The system should have a user-friendly and intuitive web interface |
| NFR-2 | **Security** | Uploaded images and prediction data should be securely stored and processed |
| NFR-3 | **Reliability** | The model should provide consistent predictions under various conditions |
| NFR-4 | **Performance** | The system should process and return results within **2–5 seconds per image** |
| NFR-5 | **Availability** | The system should have **99% uptime** during operational hours |
| NFR-6 | **Accuracy** | The model should maintain at least **90% classification accuracy** on testing |