**Project Design Phase-II**

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

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID42728 |
| Project Name | Clean Teach: Transforming Waste Management with Transfer Learning |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| --- | --- | --- |
| **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 |  |  |
| FR-4 |  |  |
|  |  |  |
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**Non-functional Requirements:**

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

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The system provides a clean and responsive web interface, allowing users to easily upload waste images and receive instant results. |
| NFR-2 | **Security** | Image files are handled securely using Flask’s file handling; system does not store any user data or images. |
| NFR-3 | **Reliability** | The model consistently predicts accurate classifications for a wide variety of waste images under normal conditions. |
| NFR-4 | |  |  |  | | --- | --- | --- | |  | **Availability** | The application runs locally 24/7 and can be deployed online with minimal downtime using platforms like Render or Heroku. | |  | **Scalability** | The model and architecture can be scaled to integrate into mobile apps, smart bins, or cloud APIs with minimal changes. | | The prediction and preview are delivered in under 2 seconds on average, even for high-resolution images. |
| NFR-5 | **Availability** | The application runs locally 24/7 and can be deployed online with minimal downtime using platforms like Render or Heroku. |
| NFR-6 | **Scalability** | The model and architecture can be scaled to integrate into mobile apps, smart bins, or cloud APIs with minimal changes. |