**Project Design Phase-II**

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

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| Date | 27 June 2025 |
| Team ID | LTVIP2025TMID36584 |
| Project Name | cleantech: 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 | Waste Image Upload | Allow users to upload waste images. |
| FR-4 | Waste Image Classification | Classify uploaded images into Biodegradable, Recyclable, or Trash. |
| FR-5 | Display Classification Result | Show the classification label and the uploaded image to the user |
| FR-6 | Log Predictions | Record prediction results in terminal logs. |

**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 should be user-friendly and intuitive for waste classification. |
| NFR-2 | **Security** | Implement secure image handling and data storage. |
| NFR-3 | **Reliability** | The classification model should consistently provide accurate results. |
| NFR-4 | **Performance** | The system should classify images quickly (e.g., -0.2 seconds/image on CPU). |
| NFR-5 | **Availability** | The web application should be consistently available for users to upload images and receive predictions. |
| NFR-6 | **Scalability** | The system should be scalable to handle an increasing number of users and image classification requests. |