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

Date	12 May 2023
Team ID	NM2023TMID11143
Project Name	Intelligent Garbage Classification System Using Deep Learning

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	Garbage Classification	The user should be able to input the type of garbage into the system for classification, such as plastic waste, organic information.
FR-4	Image capture	Image capture: The system should allow users to capture an image of the garbage item they want to dispose of.
FR-5	Image recognition	Image recognition: The system should use deep learning to accurately classify the garbage items based on the images captured by the users.
FR-6	Feedback:	Feedback: The system should provide real-time feedback to users on the correct category for the garbage item they captured.
FR-7	Location-based information:	Location-based information: The system should provide location-based information, for example, nearest recycling facilities and disposal sites, to users.
FR-8	Multilingual support:	Multilingual support: The system should support multiple languages to cater to the needs of diverse users.
FR-9	User management:	User management: The system should allow users to manage their account information, view their garbage disposal history, and provide feedback or submit complaints.
FR-10	Integration with other systems	Integration with other systems: The system should be compatible with other waste management systems and provide seamless integration.

FR-11	Reporting and analytic	Reporting and analytic: The system should generate reports and provide data analytic on garbage disposal patterns and trends to help improve waste management practices.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	1. The system should be user-friendly and provide clear instructions for proper disposal of various types of waste. 2. The interface should be intuitive and easy to navigate, even for individuals with limited technological knowledge or physical disabilities.
NFR-2	**Security**	3. The system should have robust security measures in place to protect user data and prevent unauthorized access. 4. This includes secure login credentials, encrypted communication protocols, and regular security
NFR-3	**Reliability**	5. The system should be able to handle large volumes of data and users without compromising its performance. 6. It should be designed to accommodate future growth and expansion.
NFR-4	**Performance**	7. The system to ensure the system is protected against cyber threats and attacks. 8. The system should be designed to follow industry best practices in terms of security and comply with relevant regulations.
NFR-5	**Availability**	9. The system should be highly available, with minimum downtime for maintenance or upgrades. 10. It should be able to handle high traffic volumes and provide continuous service without disruption. 11. It should also have a solid disaster recovery plan in case of unexpected events such as natural disasters or cyber-attacks.
NFR-6	**Scalability**	12. The system should be able to handle a large volume of users and data as it increases in size over time. 13. It should be designed to be easily scalable , allowing for additional features to be added as needed.