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

Date	06 May 2023
Team ID	NM2023TMID15707
Project Name	Smart City waste Management System with connected trashcans

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Real-time monitoring	The system should provide real-time monitoring of trash can fill levels using sensors to enable efficient waste collection.
FR-2	Waste segregation guidance	The solution should include intelligent trash cans with indicators or instructions to guide users in proper waste segregation.
FR-3	Optimized waste collection routes	The system should optimize waste collection routes based on real-time data, minimizing travel time and fuel consumption.
FR-4	Web application	A user-friendly mobile application should be developed to provide waste disposal guidelines, recycling center locations, collection schedules, and reporting functionalities.
FR-5	Data analytics	The solution should employ data analytics to analyze waste generation patterns, monitor performance, and make data-driven decisions for waste management strategies.
FR-6	Reporting and issue resolution	The web application should allow residents to report issues such as overflowing trash cans or damaged containers, enabling quick resolution by waste management authorities.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The user interfaces, including the mobile application and web portal, should be user-friendly and easy to navigate, requiring minimal training for users. The system should be accessible to users with disabilities, complying with accessibility standards and guidelines.
NFR-2	**Security**	Robust security measures should be implemented to protect user data, ensuring privacy and preventing unauthorized access.

NFR-3	**Reliability**	The solution should be reliable, ensuring uninterrupted monitoring, accurate data collection, and timely waste collection.
NFR-4	**Performance**	The system should provide real-time or near-real-time responses to user actions, ensuring a smooth and responsive user experience. The system should be designed and optimized for fast and efficient data processing, ensuring timely delivery of information and reducing latency.
NFR-5	**Availability**	Implement redundant systems and failover mechanisms to ensure high availability and minimize service disruptions. Provide round-the-clock technical support to address any issues or incidents promptly and ensure continuous system availability.
NFR-6	**Scalability**	The system should be scalable to accommodate varying city sizes and future growth, supporting an increasing number of trash cans and users.