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

Date	6 November 2022
Team ID	PNT2022TMID05191
Project Name	Project – Smart waste management system for metropolitan cities
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	**User Registration**	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	**User Confirmation**	Confirmation via Email Confirmation via OTP
FR-3	**GPS access**	GPS access to know the location
FR-4	**Bin level analysing**	Acquire the levels of Waste bins in a regular interval of time.
FR-5	**Transport router**	To make a efficient route for the collection of garbage's around a area.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	•A smart solution has been proposed to make the waste sorting more simple and accurate , and improve the user experience, usability, and satisfaction. •It aims to optimize ease of use while offering maximum functionality.
NFR-2	**Security**	•The information of the users will be highly secured, the accounts are verified with Gmail. •If the products are misplaced then the GPS driven sensor gives an alert.
NFR-3	**Reliability**	•Operates in a defined environment without failure resulting in less manpower, emissions, fuel use and traffic congestion.
NFR-4	**Performance**	•The system will provide accurate reports, thus increasing the efficiency of the system.

		•The real-time monitoring of the garbage level with the help of sensors and wireless communication will reduce the total number of trips required of Garbage collecting truck. •This will reduce the total expenditure associated with the garbage collection. •Customers are hence provided data-driven decision making, and optimization of waste collection routes, frequencies, and vehicle loads resulting in route reduction by at least 30%.
NFR-5	**Availability**	•The smart waste bins are available in Convention centres, buildings, stadiums, and transportation facilities and captures high-quality waste data and informs staff when it gets full.
NFR-6	**Scalability**	•A versatile scalable smart waste-bin system based on limited waste management could potentially lead to great improvements. •Once these smart bins are implemented on a large scale by replacing the traditional bins, the waste can be quickly managed to its efficient level as it avoids unnecessary lumping of wastes on roadside.