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

Date	October 2022
Team ID	PNT2022TMID38320
Project Name	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 Employee ID
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Design smart bins	Bins should be fitted with sensors to measure the weight, level, and placement of waste. cloud storage for data.
FR-4	Cloud computing	Obtain data from the sensors. act as a storage container. Calculate when the bin level and weight cross the threshold.
FR-5	Dashboard view	Display bin information in the Dashboard with an aesthetically pleasing UI. Give the proper pop-up warnings when the trash cans are full. Real-time bin surveillance.
FR-6	Alert system	Users of web applications should receive notifications. truck drivers with precise bin locations for waste collection through GSM module.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	easy-to-use UI that is straightforward. Utilize single-page applications to improve user experience and reduce page load interruptions.
NFR-2	**Security**	Use password and OTP two-factor authentication for access from authorised users, and add captchas for extra protection.
NFR-3	**Reliability**	Use captcha for added security and password and OTP two-factor authentication for access from authorised users.

NFR-4	**Performance**	The web application should load quite quickly, and since the sensor data is gathered and processed remotely in the cloud, good performance is guaranteed.
NFR-5	**Availability**	This intelligent waste management system continuously monitors intelligent bins around the clock. Any upcoming module deployments for the web application can also happen without interfering with the functionality of other pages. When a new module is deployed and the system is unavailable, a countdown is displayed to show when the system will be operational once more.
NFR-6	**Scalability**	In addition, the sensor technology in smart bins can be updated for greater accuracy, ensuring both vertical and horizontal scalability, if the municipality wishes to increase the number of trash cans in any location.