

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

Date	10 October 2022
Team ID	PNT2022TMID04344
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	Detailed bin inventory.	Bins that can be visited at any time via street view and are shown on maps with GPS location. Maps show bins as different coloured circles. The garbage can's capacity, recyclable or nonrecyclable waste, waste measurement, GPS location, and pick recognition are all visible in the dashboard.
FR-2	Bin Monitoring	Waste that is placed in bins is observed by sensors. The tool forecasts when the bin will fill based on the prior data. Every action is recognised by intelligent sensors. As a result, it will examine the most recent data gathered. We can stop bins from overflowing by using real-time data and predictions.
FR-3	Expensive bins	It aids in the identification of bins that raise collection expenses. The tool rates each bin according to how much it will cost to gather the contents.

FR-4	Eliminates unefficient picks	1.The sensor recognize picks.
		2.By the data filled on the bin, pick recognition, we can show how full the bins you collect are. 3.Eliminates the collection of empty bins.
FR-5	Adjust bin distribution	1. We must first make sure that the bins are distributed in the best possible way. 2. Shows where the distribution of bins is dense or sparse. 3. We can modify the position or capacity of the bins based on historical data.
FR-6	Waste collection routes.	We are prepared to respond and schedule based on the level of bin filling that is now being experienced and the anticipated capacity. To find any discrepancies, we must compare the routes that were planned and those that were taken.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	We are prepared to respond and schedule based on the level of bin filling that is now being experienced and the anticipated capacity. To find any discrepancies, we must compare the routes that were planned and those that were taken.

NFR-2	Security	<p>1.Use reusable and recyclable bottles</p> <p>2.Avoid non-recyclable plastic container.</p> <p>3.Use reusable bags</p>
NFR-3	Reliability	<p>This project (Smart waste management system) is all about creating better work</p> <p>experience for waste collectors and drivers.</p> <p>Waste collector will spend their time more efficiently instead of driving the same collection routes and servicing empty bins.</p>
NFR-4	Performance	<p>For data-driven daily operations and available garbage, the sensors transfer the data to smart waste management software system, a cloud platform, using a variety of IoT networks.</p> <p>Users are given access to data-driven decision making, and garbage collection route optimization is reduced by at least 35%.</p>
NFR-5	Availability	<p>We enable cities and nations to manage garbage more intelligently by creating robust hardware and software.</p>
NFR-6	Scalability	<p>By using smart bins, we can monitor the garbage whenever we want at a lower cost and with greater scalability. This helps cities and urban regions utilise less bins.</p>