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

Date	15 October 2022
Team ID	PNT2022TMID33070
Project Name	Smart Waste Management for Metropolitian 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	Expensive bins	✓ As we are making up bins with sensors and other costly devices , this is somewhat expensive architecture to built. ✓ And so this requires more security settings as it requires more cost if we need to rebuilt it.
FR-2	Implementing proper monitoring system	✓ All bins can be seen on the map, and you can visit them at any time via the Street View feature from Google. Bins are visible on the map as green, orange or red circles. ✓ You can see bin details in the Dashboard capacity, waste type, last measurement, GPS location and collection schedule or pick recognition.
FR-3	Separation of different kind of wastes	✓ Separation of different kind of wastes involves people responsibility too and so, proper education need to be provided. ✓ And bins should be implemented accordingly in each locations. ✓ And especially medical wastes should be disposed in a proper manner.
FR-4	Routing the pickup of trash	✓ Route planning for rubbish pickup is semi-automated using the tool. ✓ You are prepared to act and arrange for garbage collection based on the levels of bin fill that are now present and forecasts of approaching capacity. ✓ To find any discrepancies, compare the planned and actual routes.
FR-5	Get rid of ineffective picks	✓ Get rid of the collection of half-empty trash cans. ✓ Picks are recognised by sensors. ✓ We are able to show you how filled the bins you collect are by utilizing real-time data on fill-levels and pick recognition. ✓ The report details the bin's initial level of brimmingness. ✓ Any picks below 80% full that are inefficient are seen right away.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	✓ The study of customers' product usability can help designers better understand users' possible demands in waste management, behavior, and experience during the design process, which places a focus on the user experience.
NFR-2	**Security**	✓ Security ensures the level of assurance in data collection, processing and conveying. ✓ As this is totally depend upon cloud service we need to make security more particular without channel crash.
NFR-3	**Reliability**	✓ Creating better working conditions for waste collectors and drivers is another aspect of smart waste management. Waste collectors will use their time more effectively by attending to empty bins that need service rather than driving the same collection routes.
NFR-4	**Performance**	✓ The system consist of sensors to measure the weight of waste and the level of waste inside the bin. ✓ Customers are provided with required datadriven and decision making prototypes which would help uses to monitor its performance and encounter their quires.
NFR-5	**Availability**	✓ By creating and implementing durable hardware and gorgeous software, we enable cities, companies, and nations to manage garbage more intelligently.
NFR-6	**Scalability**	✓ We have to customize the number of bins in the town/city which we are going to monitor 24/7 a week and collect data. ✓ Smart waste management aims to optimize resource allocation, reduce running costs, and increase the sustainability of waste service. ✓ Analytics data to manage collection routes and the placement of bins more effectively.