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

Date	14 October 2022
Team ID	PNT2022TMID23556
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	Bin inventory	Real time data on fill levels of bins noted by different sensors are displayed. Details like capacity,waste type,Gps,pickup spot of each bin will be displayed
FR-2	Bin monitoring	By analysing the past data the frequency of filling of each bins will be predicted a feature not there in existing systems.With real time data and predictions we can prevent overflowing of bins and collecting of partially filled bins
FR-3	Facilitate bin distribution	Categorise areas based on dense or sparse bin distribution Bin location can be changed or bin capacity can be changed based on analysing the previous data
FR-4	Provide optimum waste collection route	The tool automates waste collection route plnning.Based on bin levels and past datas,waste collection is scheduled.A proper full fledged schedule is figured out.
FR-5	Expensive bins	Identify the bins that drive up your collection cost .Rating for each bin is done in terms of collection cost
FR-6	Eliminate unefficient picks	Sensors recognize picks.By using real time data levels and pick recognition bin level of each bin is monitored

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This management is usable to a great extent .In the design process with user experience as the core,the analysis of users product usability can indeed help designers better understand users potential needs.
NFR-2	**Security**	This is a very secure system as we use cloud for storing and analysing the datatbase
NFR-3	**Reliability**	This system is not prone to much failures if in case any failure happen like not sending alarm after bin is filled or not providing proper route,it will be rectified easily
NFR-4	**Performance**	This is the most efficient waste management system.In the exisiting systems only alarm is sent when the bin is full but with our proposed system the frequency of filling of bin is monitored and optimum path to the nearest filled bin is also provided
NFR-5	**Availability**	By developing a state of the art hardware and a secure software with firewalls we can save cities,villages from pollution caused by lying of waste
NFR-6	**Scalability**	This system is very much scalable.We can add any number of bins in this system and we can implement this to areas ranging from a small village to a metropolitan cities.