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

Date	15 October 2022
Team ID	PNT2022TMID32785
Project Name	Project – SMART WASTE MANAGEMENT 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	➢ User needs to login by using the gmail to resolve the queries ➢ Registration needs to be done by giving their name, mobile number and locality
FR-2	User Confirmation	➢ Confirmation about the received queries through message.
FR-3	Smart bin location	➢ Bin can be viewed through Google maps. ➢ Bins can be tracked using GPS
FR-4	Monitoring details	➢ This process gives a brief description about the bins. ➢ Using Capacitance sensor the level of the bin can be measured ➢ Ultrasonic sensor is used for opening and closing of the lid for the bin ➢ Using Moisture sensor it determines whether the waste is moist or dry
FR-5	Truck driver	➢ Truck driver should login to the web portal by giving their name and the id, vehicle number ➢ After the completion of work they should report to the admin about the waste has been collected. ➢ Verification is done by admin via Message through the truck driver portal
FR-6	Admin	➢ Admin should monitor the work which has been done by the truck driver ➢ In emergency situation , admin can allot the truck driver to collect the waste

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	IoT device verifies that usability is a special and important perspective to analyze user requirements, which can further improve the design quality.
NFR-2	**Security**	We propose a Secure Incentive based Waste monitoring system to encourage garbage segregation at the initial level.
NFR-3	**Reliability**	Smart waste management is also about creating better working conditions for waste collectors and drivers. Instead of driving the same collection routes and servicing empty bins, waste collectors will spend their time more efficiently, taking care of bins that need servicing.
NFR-4	**Performance**	The Smart Sensors use ultrasound technology to measure the fill levels. focuses on solving the previously mentioned solid waste management problems using sensors, intelligent monitoring systems, and mobile applications.
NFR-5	**Availability**	By developing & deploying resilient hardware and beautiful software we empower cities, businesses, and countries to manage waste smarter
NFR-6	**Scalability**	Using smart waste bins reduce the number of bins inside town , cities as we are monitoring the whole 24 hours of 7days Smart waste bins are more cost efficient and scalability