

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

Date	15 October 2022
Team ID	PNT2022TMID27888
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 Gmail -Registration through Facebook -Registration through Phone number
FR-2	User Confirmation	-Confirmation via Email -Confirmation via OTP
FR-3	User login	-The user able to login in to their account. -If the user submits incorrect information, the system must display an error message. -A user able to save their username and password on the login page.
FR-4	Display map views	-User able to see the map views, the system require user to enable GPS. -User able to see the smart bins location. -User able to see the smart bin status. -The system allows user gets the route direction from user's current location to dustbin location.
FR-5	System functionality	Taking sensor readings from the sensor circuit. Pushing the data to a database. Retrieving information from a database to calculate the garbage bin that meets the criteria for garbage collection; for example, collecting garbage from bins with a level of 80% or higher. The system should be also able to update the dustbin status to real-time database.
FR-6	User logout	User able to logout from the system.

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	A user friendly mobile/web application has been proposed to make the waste management more simple and accurate, and improve the user experience, usability, and satisfaction.
NFR-2	Security	The system can be only accessed by the registered email and password.
NFR-3	Reliability	Based on the trash collector: "Smart routing" is made possible by the information on bin fill levels. Waste collectors can utilise the astute waste management software to optimise their collection routes with a digital overview of the fill levels of bins. Instead of spending several hours driving pre-planned collection routes and picking up every single bin, regardless of fill level, they just pick up bins that need service this way.
NFR-4	Performance	<ul style="list-style-type: none">-The system can be accessed within 24 hours per day and 365 days per year.-The system can be accessed via internet.-The system can be used in any android devices.
NFR-5	Availability	The smart bins are used to recompense the waste generated by the traditional method that our world still uses today, by providing free access to the citizens to use the smart bins which are placed in various locations based on precise scrutiny on waste generation.
NFR-6	Scalability	As smart Dustbins are maintained in real time, it will stop dustbins along roadsides and in neighbourhoods from overflowing. The waste can be promptly managed to its efficient level once these smart bins are introduced on a big scale by replacing the regular bins since it prevents needless lumping of wastes on the roadside.