

**Project Design Phase-I**  
**Proposed Solution**

Date	19 September 2022
Team ID	PNT2022TMID43325
Project Name	Smart Waste Management System for Metropolitan Cities
Maximum Marks	2 Marks

**Proposed Solution:**

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Solid waste disposal is a significant problem in metropolitan areas of the majority of developing nations, and it seriously jeopardizes the residents' ability to live a healthy lifestyle. Both the local authorities and the public will benefit from having access to trustworthy information on the state of solid trash at various sites throughout the city for managing the threat.
2.	Idea / Solution description	A 24/7 monitoring system is designed for the bins consisting of a microcontroller and embedded Wi-Fi module and has sensors for detecting the weight, level of the waste and a GPS module. When the bin is full, relevant information is sent to the cloud which is notified to the users via the web application. Once the message is sent, route optimization for nearby bins that have to be emptied can be done using the application.
3.	Novelty / Uniqueness	Garbage collection is made simple and efficient with the help of this web application, which can be used to monitor the bins throughout the city. Additionally, it optimises the garbage collectors' routes so that they can collect trash along the way faster with far less pollution.
4.	Social Impact / Customer Satisfaction	Large overflowing bins are a potential threat because they not only pollute the air nearby but also serve as a breeding ground for contagious diseases. Also, the waste collection process is more effective for the garbage collectors as a result. Normally, they might see a bin that is overflowing and is difficult for them to collect or one that is only partially filled, but with the help of this application, these problems are resolved.

5.	Business Model (Revenue Model)	Without any financial advantages, the primary goal of this solution is to assist locals and government employees. Recycling dry waste and composting wet waste, which could then be sold, are two ways to generate income if it is necessary.
6.	Scalability of the Solution	The waste collection for an entire major metropolitan area should be supported by the platform. The implementation of this will take into account various implementation-related factors, including the storage and security of data in the cloud.