Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	IBM-EPBL/IBM-Project-10972-1659249039
Project Name	Smart waste management in meteropolitian cities
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	1. Smart Bins- The bins will be connected with some sensors, so that it can give the status of the bins to the garbage collector, and the admin side the data of the bins will be collected in the cloud database, and from the cloud database it can be used. 2. GPRS Vehicle Tracking- Garbage collecting vehicles can be tracked using the GPS module and the RFID tags, once the vehicle reaches the particular region where the bins are located, the RFID tags on the vehicle and dustbins read and transmit the signal of the status to the cloud. And from the cloud, the data will be shared to the user's app and the admin dashboard. 3. Android Application- The Android app will act as a bridge between the users and the municipal cooperation people. The user can be provided with some features like tracking of the garbage vehicle, day to day activity of the society cleanliness and users can have an interaction with the municipal peoples also, and they can also raise their voice against the issues which they are facing in their region. People even can give some suggestions to the government regarding some better solution against the fight for Waste management. Along with that one more feature is added for the user, where he/she can book the garbage vehicle to take waste from his location on the user chargeable basis.
2.	Idea / Solution description	Waste management and dumping of solid waste in India have been researched and the findings show that municipal solid wastes are mostly composed of biodegradables and non-biodegradable materials. And also, the agency responsible for the evacuation of this waste does not do that on a regular basis. It was also observed that the present waste disposal

		situation is expected to worsen due to rapid municipal in the state, increase in unplanned settlements and housing, and lack of sustainable waste management technologies in India metropolis. The major proportion of the wastes emanates from the residential sectors and recycling is not currently practiced formally in the metropolis. The consequences of poor waste management are manifested in environmental degradation, road encroachment, air pollution, residential land encroachment, and loss of aesthetic view of the metropolis. The findings and solutions presented in this paper will serve as useful guides for improved waste management services within the metropolis and regions with similar waste challenges in India and other developing countries.
3.	Novelty / Uniqueness	Using data mining and machine learning approaches, this project proposed a scalable framework for used smart waste management. An efficient machine learning model is built by training, testing, and evaluating five machine learning regressors. The results of our tests were quantified in terms of the R2 score of our predictions. R2 score is a statistical measure of how close the data are to the fitted regression line.
4.	Social Impact / Customer Satisfaction	People can predict the management of their waste at a better accuracy. They can provide their preferred features into consideration with the help of user-friendly interface.
5.	Business Model (Revenue Model)	It is cost free as it is a Software as a Service Platform. People need not spend money to detect the management of their waste.
6.	Scalability of the Solution	Better execution in accuracy, sensitivity, and specificity as well as in system design flexibility.