Project Design Phase
Proposed Solution Template

Date	31 January 2026
Team ID	LTVIP2026TMIDS56025
Project Name	Exploratory analysis of rain fall data in india for agriculture
Maximum Marks	2 Marks

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Urban areas face inefficient waste collection due to fixed collection schedules, overflowing bins, poor segregation, and lack of real-time monitoring. This leads to environmental pollution, increased operational costs, and public health issues
2.	Idea / Solution description	Develop an AI-based Smart Waste Management System using IoT-enabled smart bins with sensors that monitor fill levels in real time. The system uses data analytics and route optimization algorithms to notify collection teams only when bins are full. A mobile/web dashboard provides authorities with monitoring, reporting, and predictive insights.
3.	Novelty / Uniqueness	Unlike traditional systems, this solution integrates IoT sensors, AI-based predictive analytics, and route optimization in one platform. It also includes citizen reporting via a mobile app and automated waste segregation detection using image processing.
4.	Social Impact / Customer Satisfaction	Reduces overflowing bins and environmental pollution. Improves city cleanliness and public health. Enhances transparency and efficiency in municipal services. Citizens experience cleaner surroundings and better service reliability.
5.	Business Model (Revenue Model)	Revenue through subscription-based SaaS model for municipalities and private waste management companies. Additional revenue from hardware sales (smart bins), maintenance contracts, and data analytics services.
6.	Scalability of the Solution	The solution is cloud-based and modular, allowing deployment from small towns to smart cities. Easily scalable by adding more IoT devices and users. Can be expanded to include recycling management, carbon tracking, and sustainability analytics.