Project Design Phase-I

Proposed Solution

Date	6 May 2023
Team ID	NM2023TMID01588
Project Name	IoT based Smart City Waste Management system with connected Trash Can
Maximum Marks	4 Marks

Proposed solutions:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	❖ A big challenge in the urban cities is solid waste management. ❖ The garbage collecting authority in traditional waste management system doesn't know about the level of garbage in dustbin. ❖ If the dust bin gets full by garbage, then it gets overflowed as well as spelled out from the dustbin leading to unhygienic condition in cities. ❖ Sometimes due to unclean garbage bins toxic gases are produced which leads to air pollution and to some harmful diseases which are easily spreadable. ❖ It is very bad look of the city. ❖ Use of traditional system result in inefficient and time and money spending system.
2.	Idea / Solution description	❖ IoT devices turn this model by using smart trash bins to detect location and fill level in real time. ❖ This data is then used to plan optimal collection routes, resulting in an efficient pickup process that saves fuel as well as manpower.
3.	Novelty / Uniqueness	❖ Smart cities use IoT devices such as connected sensors, lights, and meters to collect and analyze data. ❖ The cities then use this data to improve infrastructure, public utilities and services, and more. ❖
4.	Social Impact / Customer Satisfaction	❖ The "smart bin" communicates information on fill levels and ensures collection only when the bin is full. ❖ Fewer collection visits reduce congestion and traffic interruption, resulting also in cleaner and safer streets. ❖ Traffic reduction due to fewer collection visits helps reduce carbon dioxide and other emissions.
5.	Business Model (Revenue Model)	❖ Subscription-based service model. ❖ Revenue generated through partnerships with local businesses for rewards. ❖ Monthly fee charged to city government.
6.	Scalability of the Solution	❖ Each sensor has its own independent area of responsibility. ❖ The way the system was designed, each sensor is responsible for a specific area of the waste-bin and there is no overlap between areas of various sensors. ❖ The type of sensor that was chosen is very versatile because a wide range of models exist with different characteristics.