Smart Waste Management System for Metropolitan Cities

PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP (U18CSE0013)

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S.No	Paper link	Title	Author Name	Solution Proposed
1.	https://www.hindawi.com/journals/wcmc/2020/6138637/	Waste Management System Using IoT-Based Machine Learning in University	Tran Anh Khoa, Cao Hoang Phuc, Pham Duc Lam	The system is based on IoT sensing prototype. It is responsible for measuring the waste level in the waste bins and later send this data (through Internet) to a server for storage and processing. This data helps to compute the optimized collection routes for the workers Technology used: SQL-used for storage of all data collected by the sensors and the trucks AI-The forecast of waste levels for the future and learning how to select the daily waste bins is based on historical data through artificial intelligence algorithm. Sensors-Collection and forwarding of data can be done once or twice in a day. Optimization algorithm-Once the identification of waste bins has been done, shortest path for collection of same is done. In this work, algorithm 2 is followed for optimization.
2.	https://iopscience.iop.org/article/10.1088/1757-899X/263/4/042027/pdf	IoT based solid waste management system for smart city	Krishna Nirde, Prashant Mulay, Uttam M. Chaskar	This paper improves the practicality of IoT-based solid waste collection and management systems for the smart city. The integrated sensing system is designed using an ultrasonic sensor and load cell to offer a proficient and automatic dustbin status monitoring system. components used: PIC controller Sensors GSM module Two ultrasonic sensors are settled at the the highest point of the dustbin to avoid inaccurate level measurement and is interfaced with a PIC microcontroller. The weight sensor is placed at the base of the dustbin and is additionally, interfaced with the controller to recognize over weight of the junk-filled in the dustbin.

3.		Garbage monitoring system using IoT	Anitha A	In this paper, Dustbins are interfaced with microcontroller-based system having ultrasonic sensor systems along with central system showing current status of garbage, on mobile web browser with html page by Wi-Fi. Hence the status will be updated on to the html page. Major part of this project depends upon the working of the Wi-Fi module; essential for its implementation. The main aim of this project is to reduce human resources and efforts along with the enhancement of a smart city vision.
4.		IoT based solid waste management system for smart city	Krishna Nirde, Prashant S. Mulay, Uttam M.Chaskar	This paper improves practicality of IoT based solid waste collection and management system for smart city. The integrated sensing system is designed using ultrasonic sensor and load cell to offer a proficient and automatic dustbin status monitoring system. Still there is good scope for improvement in algorithm which synthesize bin operative situation, its status, time threshold and loaded status perception. Optimizing power required for the system would also be a challenge. Numbers of test runs were performed for assessment of proposed system

Objective of the Project:

The main objective of the project is to collect the waste from the from the municipal bins when filled, then to interconnect all the bins through internet of things. By using the concept of supply chain management, data management and statistical predictions algorithm the route for the waste collection is designed for a specified time. This waste management ideation enhances the time consumption and thus prevents the overflowing of bin and effective use of man power and resources.