LITERATURE SURVEY ON SMART WASTE MANAGEMENT FOR METROPOLITAN CITIES

TEAM MEMBERS:
IRFAN ALI BAIG.G
DEEPAK.M
RAMANAN.V
THAMIZHVENDAN.G

INTRODUCTION		SURVEY/BODY OF REVIEW			CRITICAL ANALYSIS ON PAPER	
Title	**Author**	**Problem**	**Methodology**	**Input paramet ers**	**Result**	**Future scope**
GARBAGE MONITORI NG SYSTEM FOR SMART CITIES	Lilyan Anthony , Pradnya Chavan , Astrid Ferreira , Prerana Gadhave, Archana Shirke	In this paper, a model has been proposed in which the collection of garbage is made real time. A network is established using wireless sensors with each dustbin attached to a sensor circuitry. The sensor is placed in the garbage bin, set at a particular level. If that level is crossed by the garbage in the bin, the sensor will send a signal to the nearest vehicle driver along with the authorities in charge.	**Tools used:** Ultrasonic sensors IoT Bluetoo th Arduino Python **Implementation :** 1.Sensors All types of sensors used for implementation of a system based on IOT are included here. 2.Communicatio n Module Provides interface between the communication between Hardware (Sensor) and the Application (Web- page). 3. Processing Module Deals with data processing of the signals received from the sensors. In this system, the bins are connected to the internet to get the real time information of the garbage levels.	Garba ge level, Densit y of garba ge	**Advantages:** 1.It is an automatic dustbin monitoring system in order to detect the full condition of the garbage bins. 2.This provides the authorized users timely updates of the status of the garbage bins and thus eliminates the need for periodic manual checks and overflowing garbage bins. **Disadvantag es:** 1.Disposed large-sized waste objects may obstruct the signals resulting in error messages. 2.Bluetoot h has very short range of communicati on.	The WiMAX technology can be used instead of Bluetooth to cover large areas, but for cost effectivene ss, we are implementi ng this system using Bluetooth.
IoT Enabled	Manju Mohan, RM.	In this paper, design of a	**Tools used:** Matlab	Garbag e,	**Advantage:** 1. A sensing	1. This system

Smart Waste Bin with Real Time Monitoring for efficient waste	Kuppan Chetty, Vijayram Sriram, Mohd. Azeem , P. Vishal and G. Pranav	Waste Bin with real time monitoring is presented and a smart waste	Ultrasonic sensor Microcontroller Servomotor Arduino Capacitance sensor	Weather, Rain water	mechanism based on simple parallel plate capacitance is	could find an application in smart buildings where the waste

					also developed and presented. 2. The statuses of the bins are communicated to the cloud effectively. **Disadvantage:** 1. The process is not always cost-effective 2. The resultant product has a short life	management could be practiced autonomously in a smarter way. 2. Our future work is to investigate the performance of the proposed traditional and robotic waste management system in outdoor and indoor environment
management in Metropolitan Cities		management system is proposed using the recent technical advancements of automation and Internet of Things (IoT). The capacitance sensor in the bin continuously monitors the level of the bin in real time and communicates to the central cloud where the bins are connected.	**Implementation:** The capacitance sensor in the bin continuously monitors the level of the bin in real time and communicates to the central cloud where the bins are connected. Ultrasonic sensor is used to open and close the lid of the bin whenever the persons are nearby the bin. Such smart bins are connected to the cloud, where the bin status are communicated, recorded and monitored by the local bodies through and android app or a centralized server.			
SMART GARBAGE MONITORING SYSTEM USING IOT	Dr. Ihtiram Raza Khan, Mehtab Alam, Anuj Razdan	Garbage Monitoring System using an ultrasonic sensor as a distance measurement sensor, GPS will assist in sending a garbage bins location and GSM will assist in sending a message to municipal authorities.	**Tools used:** GPS GSM Arduino Ultrasonic sensor **Implementation:** • Sends a "DUSTBIN FULL" warning message to municipal officials. • The purpose of the project is to help manage waste management in urban and rural areas	Garbage, Weather conditions, Garbage level	**Advantages:** 1. Reduces expenses on disposal. 2. GPS receiver tracks and send signal at faster rate. **Disadvantages:** GSM has fixed maximum call sites range up to 35 km that is very limited.	All bins are equipped with GPRS enabled embedded system. Central servers receive information from bins. It can store all necessary information Thus based on prediction of collected data on bin level, it enables optimization of number of vehicles used. An

			• The project will send an SMS to municipal officials containing information about dustbin.			application for smartphone will be developed, through which

			• SMS will be sent via GPS location • Buzzer indicating a state of overflow.			citizens can report to municipal office.
Machine Learning and IoT-Based Waste Management Model	Rijwan Khan , Santosh Kumar , Akhilesh Kumar Srivastava,Niharika Dhingra,Mahima Gupta, Neha Bhati,and Pallavi Kumari	1.Lack of Awareness about Waste Management. 2.Participation of Organized Sector for Carrying Out Efficient Management of Waste. 3.Lack of Technical Solution and Public-Private Partnership. 4.Transport of Waste.	**Tools used:** Arduino UNO, Microcontroller, Sensors, GPS, ML & IoT **Implementation:** Ultrasonic sensor will depict the assorted distance from waste in the dustbins. It is used for the space measurement purpose and the moisture sensor determines whether the waste is moist or dry. Using image processing, we will measure the waste index of a specific dumping ground .A dumper truck database has been generated in the given system so that data and details of dumper truck ID, meeting date, meeting time of garbage collection, and so on are collected. Mobile application developed will monitor important time movement and track vehicular	Moisture content in the garbage. Garbage level, Bin location.	**Advantages:** 1.It provide real-time information about the waste and provide an optimized path for the waste collection trucks, reducing the cost and time for the overall process. 2.Waste management technique is sustainable and reduces the time and cost of the setup. **Disadvantages:** 1. High error-susceptibility. 2. Maintaining and recovering cost is very high.	This method ensures that waste is collected as soon as it reaches the maximum level. As a result, the system will provide accurate reports, therefore boosting its efficiency.

			movement. It will send an optimized track to destination waste to the teamster.			