SMART WASTE MANAGEMENT SYSTEM

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Literature Survey:

References:

SI NO	TITTLE	Authors	Abstract
1.	**SMART GARBAGE DUSTBIN**	Shephali Rakhunde, Shreya Ghavghave, Shraddha Jagtap.	We have to develop an automatic dustbin which will detect the garbage is dry or wet then separate the garbage and informs about the level of garbage collected in the garbage bin to a person in the garbage collecting vehicle and by using vending machine coins comes out the smart dustbin. This system helps to city clean and green. There is a new garbage collecting way to dispose the waste by using the help of these sensors' authorities can get information about the bin is over flowing by the

			information given by sensor then they can easily find out the bin in which located and squash it as early possible. When garbage throw in dustbin. motor rotate according sensor and then wet and dry garbage is separated. A conveyer belt rotates and comes out coins.
2	Cloud-based Smart Waste Management for Smart Cities	Mohammad Aazam, Marc St-Hilaire, Chung-Horng Lung, Ioannis Lambadaris	With the increasing population, urbanization, migration issues, and change in lifestyle, municipal solid waste generation levels are increasing significantly. Hence, waste management becomes a challenge faced not only by the developing nations, but also the developed and advanced countries. The overall waste management involves three main types of entities: 1) users who generate waste, 2) waste collectors/city admin., 3) stakeholders. Waste management directly effects the lifestyle, healthcare, environment, recycling and disposal, and several other industries. Current waste management trends are not sophisticated enough to achieve a robust and efficient waste management mechanism. It is very important to have a smart way of managing waste, so that not only the waste status is notified in-time when to be collected, but also, all the stakeholders are made aware in timely fashion that what type of waste in what quantity is coming up at what particular time. This will not only help in attracting and identifying stakeholders, but also aids in creating more effective ways of recycling and minimizing waste also making the overall waste management more efficient and environment friendly. Keeping all this in mind, we propose a cloud-based smart waste management mechanism in which the waste bins are equipped with sensors, capable of notifying their waste level status and upload the status to the cloud. The stakeholders are able to access the desired data from the cloud. Moreover, for city administration and waste management, it will be possible to do route optimization and select path for waste collection according to the statuses of waste bins in a metropolis, helping in fuel and time efficiency.
3	Design a Smart Waste Bin for Smart Waste Management	Aksan Surya Wijaya Zahir Zainuddin Muhammad Niswar	In this paper, we presented the smart waste-bin that can managed the waste in a smart city project. The system consist of sensors to measure the weight of waste and the level of waste inside the bin. The system also adapt with network environment, to manage all information from waste management. As the result we proposed a prototype of smart waste-bin that suitable for many kind of conventional waste-bin.

4	Smart City Application: Internet of Things (IoT) Technologies Based Smart Waste Collection Using Data Mining Approach and Ant Colony Optimization	Zeki Oralhan1 , Burcu Oralhan2 , and Yavuz Yiğit3	Globally today, Living in urban areas is more preferred than in living rural areas. This situation creates many problem for urban living. One of the big problem is waste management in urban areas. Optimizing waste collection has become very important phenomenon for being smart city. In this study, we aimed to optimize waste collection for reduce both cost of collection and pollution effect of environment. We designed a garbage container integrated sensors for measuring fill level of container, temperature, and ratio of carbon dioxide inside the container. We transmitted all information to our waste management software based Internet of Things (IoT) technologies. According to the ant colony algorithm, most efficient waste collection route delivered to garbage truck drivers' cellular enabled smart tablet. We used data mining approach to forecast when garbage container can reach highest level, and the planning of garbage container placement. We applied this smart waste collection management system in a town where is in Kayseri, Turkey. In first step, we applied for 200 Items (garbage containers) in the town that has 548.028 population and urban living ratio is 100%. Before smart waste management system 200 garbage containers was collecting by garbage trucks in a static route. After we had applied smart waste management system, containers were collected by garbage truck in dynamic route. Smart waste management system significantly decreased the trucks' oil cost, carbon emissions, traffic, truck wear, noise pollution, environmental pollution, and work hours. The system presented approximately 30% with in direct cost savings in waste collection.
5	An IoT enabled Smart Waste Management System in concern with Indian Smart Cities 2018	Pooja Devi, Wajge Shubham Ravindra, Sai Prakash S.K.L.V 978-1-5386-3570-4/18/$31.00 ©2018 IEEE	The system is implemented by interfacing ultrasonic sensor, DHT22 sensor and air quality sensor to Wi-Fi enabled board ESP8266. The ultrasonic sensor measures the distance between dust and top that is the level of a dustbin. The level measured is given to ESP8266 which as Wi-Fi enabled to put the data on the adafruit cloud. From the cloud, the user/municipality can get the information. The air quality in the surrounding area, temperature and humidity values also can be seen and accessed remotely. In this way, the level of waste in the bin can be identified and the problem of overflow can be avoided. Continuous air quality measurement is also guaranteed.

6	IOT Based Smart Waste Management System 2021 978-1-6654-0521-8/21/$31.00 ©2021 IEEE	Gayathri, Divagaran, Akhilesh, Aswiin, Charan	Each user has to scan their RFID to open the bin to pour the food waste inside the bin, RFID is used to monitor the food wastage of every individual as every RFID has its unique number. Load cell measures the amount of food wastage of each and every individual in the office premise and is displayed immediately on the screen fixed outside the bin for every time and then the amount of wastage is fed into the database. In the database all the records of every individual are gathered, and an analysis report is generated and the final report is shared to the display of the management website. Then finally management can take necessary measures based on the reports generated by the system.
7	Real -time smart garbage bin mechanism for solid waste management in smart cities 2021	Dominic Abuga, N S Raghava	This paper focuses on a real -time smart garbage bin mechanism for solid waste management in smart cities. The mechanism proposed accesses real - time information of any smart garbage bin deployed across the city and helps to resolve the problem of waste overflow from garbage bins and keep the smart cities clean. Fuzzy logic is applied in the strategic deployment of smart garbage bins across the smart cities. The system is implemented on Net -logo which is widely used in multi -agent modelling environments. The significant advantage of the system is its novelty in real - time decision - making and real -time monitoring using the fuzzy logic process.
8	Smart Waste Management under Smart City Mission 2019	Priyanka Mokale	Smart waste management helps to reduce the waste, create waste to energy source also it helps to keep the environment clean and neat. Its main way to show the difference between small - town waste management and Metropolitan cities challenges and how to manage it and then gave the recommendation for solid waste management improvement.