



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 5, May 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com



Smart Dustbin by Using IOT

Mr.Garad. A.A¹, Sayali Lendave², Aishwarya Patane², Janhavi Devdikar²

Department of Electronics and Telecommunication, SVERI's College of Engineering, Pandharpur, India¹

U.G. students, Department of Electronics and Telecommunication, SVERI's College of Engineering,
Pandharpur, India²

ABSTRACT: The capacity for continuous existence is sustainability. It often refers to the ability of the ecosystem and human civilization to coexist in the twenty-first century. The production of solid trash has increased recently. A major problem with regard to the global sustainability crisis is solid waste management. Efforts are being made by governments all over the world to transform cities into smart cities. For this shift to occur, a suitable system for collecting and managing solid waste is required.

Without proper management, waste's economic value cannot be achieved. Such services in smart cities can be handled effectively by Internet of Things (IoT) technologies. The key to sustainability is the effective application of technology to address major environmental issues, of which solid waste management is one. In this study, we propose a smart trashcan monitoring system based on the Internet of Things.

KEYWORDS: Solid waste management, Dry and wet segregation system

I.INTRODUCTION

A smart city is an urban area with integrated monitoring and management systems for many different sectors, including water supply networks, power plants, and traffic and transportation systems. Law enforcement, information technology, waste management, and other community services like hospitals, schools, and libraries. The necessary data is gathered from the sensors and other devices installed in different smart city blocks using information and communication technology (ICT), and it is then used to manage resources in a sustainable and effective way. City officials may engage directly with the public and the local infrastructure thanks to technology that has been placed in smart cities. They can also keep an eye on what is occurring in the city and how it is changing. The largest problem is how to manage the waste that is produced in the city. The mechanism is required for maintaining a clean and green environment. Waste collection and recycling are done through various technologies. The Internet of Things (IoT) is an emerging technology that has vast applications in a wide area. In the Internet of Things, all the connected device scan communicates with each other to share information among them and initiate a task. The following sections detail the usage of IoT Technology in solid waste management in smart cities.

II.RELATED WORK

In this proposed system, the two bins were used to store dry and wet waste, these bins are replaceable for cleaning purposes. The waste is placed on the dry-wet sensor. The dry-wet sensor is set with a threshold value of moisture. This senses the moisture content; the relay helps in the rotation of the servo motor in both clockwise and anticlockwise directions hence it moves waste into its respective bins. The IR sensors are used to know the level of the garbage in the bin and intimate the message to the municipality.

In our proposed system, it contains two bins for the storage of waste. Initially, the waste has to be placed on the dry-wet moisture sensor. It senses the moisture content of waste using the dielectric permittivity of the medium which is a function of water content. Then it displays in the LCD to the user whether this detected waste is dry or wet based on a previously set threshold value.

With the help of a relay and a Servo motor, the wastes are moved into their respective bins. The IR sensors in both bins are used to detect the amount of garbage inside them. If the bins are filled then messages are sent to the municipality to evacuate the bin at the earliest and in LCD the message will be displayed to the user that the bin is filled.

III.METHODOLOGY

In the traditional system, waste is collected first by garbage collecting vehicles and then it is separated into two parts dry waste and wet waste. But it is somehow a difficult process and it requires more labor.

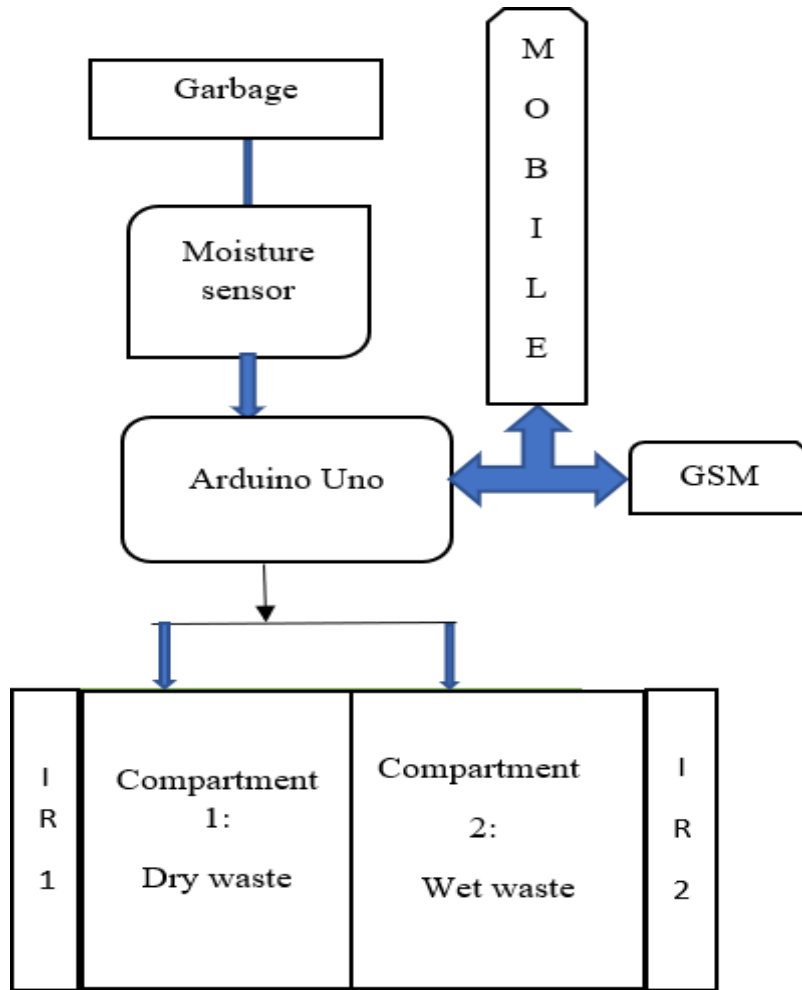


Fig 1. Block diagram of Smart dustbin

IOT-based Dustbins help people to manage their waste easily and help them reduce the work of calling or waiting for a specific person to make the area clean and make a healthier environment to live in. In this project, we are first done with hardware implementation.

IV.RESULTS

This project will send an SMS to the city authorities with details of whether the dustbin is either full or not. The trash can lid opens when someone approaches. Separate dry and wet waste. It will provide an improved and efficient solution to waste management issues over the previous system. It reduces health-related issues and put the best example of a real-time garbage management system. With the help of an IR sensor, Moisture sensor, and GSM module, a smart garbage management system is being implemented in this project. When the rubbish level reaches its peak, this method ensures that dustbins will be cleaned as quickly as possible. As a result, the efficient garbage management system increases the effectiveness of garbage collection. Such systems are susceptible to several types of component theft, which requires attention.



Fig 2: Results of Smart Dustbin

V.CONCLUSION

This project work is the implementation of an Automatic garbage monitoring system. This reduces the total number of trips of garbage collection vehicles and hence reduces the overall expenditure associated with garbage collection. It ultimately helps to keep cleanliness in society. Therefore, the Automatic Garbage Fill Alerting system makes garbage collection more efficient and cost-effective. Waste management is all those activities, actions, and works required to manage waste from its production to its final disposal. This project is designed in such a way that a system collects from different positions and segregates the wastes. It also segregates the waste whether it is dry or wet automatically. It generates the message and sends it to the control system or garbage collection vehicle.

REFERENCES

1. "Smart Garbage Management System", by Vikrant Bhor, Pankaj Morajkar, Maheshwar Gurav, and Dishant Pandya, March 2015
2. "IoT Based Garbage and Waste Collection Bin", S.S. Navghane, M.S. Killedar, and Dr. V.M. Rohokale, May 2016.[3].
3. "A GIS based transportation model for solid waste disposal": A case study on the Asansol municipality, Ghose, M.K., Dikshit, A.K., Sharma, S.K. Waste Management Journal.
4. "Solid waste management difficulties for cities in developing nations", Guerrero, LA; Maas, G.; Hogland, W. Waste Management Journal.
5. "Waste management as an IoT-enabled service in smart cities" is a topic that Alexey Medvedev, Petr Fedchenkov, Arkady Zaslavsky, Theodoros Anagnostopoulos, and Sergey Khoruznikov have discussed.



Impact Factor: 8.423



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details