INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.165

Smart Garbage Disposal System

Vaibhav Anil Kamble, Shivaraj Manik Gaikwad, Ganesh Sanjay Misal, Mr. R. P. Bembade

Student, Department of Information Technology, JSPM's Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India

Student, Department of Information Technology, JSPM's Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India

Student, Department of Information Technology, JSPM's Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India

Professor, Department of Information Technology, JSPM's Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India

Abstract:- Every person during this world throws waste within the type of plastics, wet waste, dry waste and etc. Also, one and all looks for an area or a plastic container to dispose that waste, that plastic container is that the Dustbin which they appear for. Dustbin could be a plastic container where everyone can dispose their waste. Dustbin is employed as a storage place to dispose waste, but we cannot estimate the precise amount of waste disposed by a society, and therefore the dustbin cannot take more waste because the space should be available in it to require more. we want to grasp the extent of waste within the dustbin and supported that we will intimate people to use the dustbin or not. during this Smart Dustbin project, we've designed a prototype where the lid of the dustbin is opened, on detection of human hand and waste, and therefore the level of waste available inside the dustbin is distributed as notification within the type of LED. the most components we utilized in making this prototype are Arduino, NODEMCU, Servo Motor and Ultrasonic Sensors. The software component is that the application named asBlynk which is employed to induce notification. This dustbin may be a start to Smart Waste Management System where the officials can clean or empty the dustbin which depends on the notification received by them and not awaiting a call from an individual of a society who informs the rubbish trucks to return and take the waste from them.

 KEYWORDS: Arduino UNO R3, , Ultrasonic Sensor, 16x2 LCD Screen, IoT,

I. INTRODUCTION

The nation is growing widely but there's lack of public awareness towards the waste management. publicly places, there is a awfully common situation where the rubbish is. overloaded which garbage is spilled out. This ultimately finishes up in pollution. This also increases number of diseases as sizable amount of insects additionally as mosquitoes breed thereon. there is a unsystematic and inefficient way method to disposal of garbage and through which we are able to see that there is an overflowing of the rubbish from the bins.

Research says that growth is directly proportional to waste generation. the gathering of the solid Waste expenditure 80-95% of the Survey. So to make a Digital India we must always always ensure a clean and a healthy global to protect the Environment. So to beat above problem the paper is written.

Although the IOT concepts are older, but the implementation are still on the verge of the new born concepts. the good help which may be taken is from IoT (Internet of Things). the number of garbage is monitored constantly and hence it provides the efficient due to manage garbage. When the bin is should be full, the authority is alerted or notified. It's promoting dynamic scheduling and routing of the rubbish collection is that the approach to the world that it goes catchy. By comparing to the standard static scheduling and routing, this dynamic scheduling and routing are said to allow operational cost reduction, by reducing the ingredients. This paper presents an alternate in managing domestic waste especially in flat areas via a wise garbage monitoring system, which is developed supported Arduino Uno.this technique will monitor the rubbish level within the bin and may alert the authority within the case where the bins are almost full

II. RELAED WORK

We propose a smart waste collection system on the basis of level of wastes present in the waste bins. The data obtained through sensors is transmitted over the Internet to a server for storage and processing mechanisms. It is used for monitoring the daily selection of waste bins, based on which the routes to pick several of the waste bins from different locations are decided. Every day, the workers receive the updated optimized routes in their navigational devices. The significant feature of this system is that it is designed to update from the previous experience and decide not only on the daily waste level status but also the predict future state with respect to factors like traffic congestion in an area where the waste bins are placed, cost-efficiency balance, and other factors that is difficult for humans to observe and analyses.

Based on this historical data the rate at which waste bins gets filled is easily analyzed. As a result, it can be predicted before the overflow of wastes occurs in the waste bins that are placed in a specific location. Depending on economic requirements specified at early stages, the optimized selection of waste bins to be collected is expected to improve collection efficiency Shows the system overview, whose components are briefed as follows

- Arduino Uno is an open-source microcontroller board based on the processor ATmega328P. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller. Just plug it into a computer with a USB cable or power it with an adapter to get started. You can experiment with your Arduino without worrying too much about it. In the event of a worst case scenario, you could buy a new one as the Uno is very economical

- Ultrasonic Sensor is an instrument which measures the distance to the waste using ultrasonic sound waves. It has a transducer that helps to send and receive ultrasonic pulses based on the object's proximity. It detects the objects and the waste materials.

III. PROPOSED SYSTEM

Waste collection and management is usually discerning as a low-tech undertaking. However, IoT- and ML- based solutions have the ability to rework individual waste containers into an online of smart, connected objects. This system automatically detects the amount of the rubbish and notify us when it's getting ready to full.So when it's close to full it notifies us employing a buzzer.
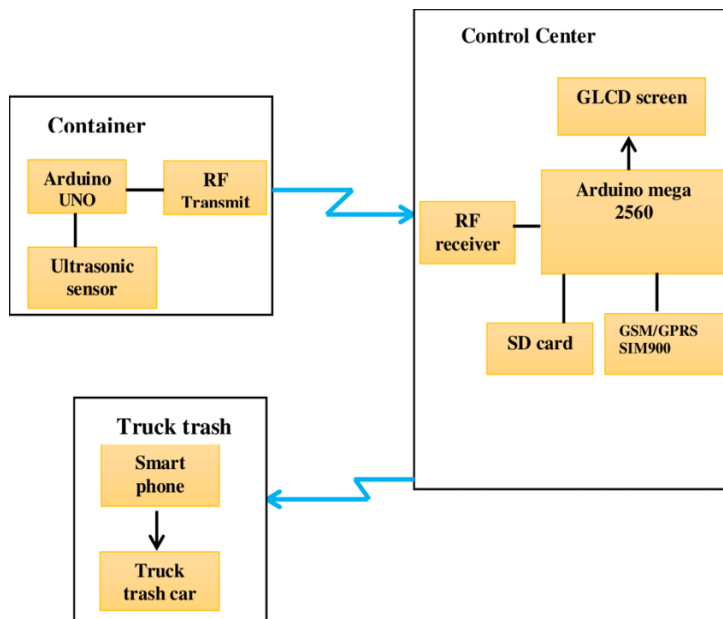
IV. SYSTEM ARCHITETURE

Fig :- smart garbage disposal system architecture
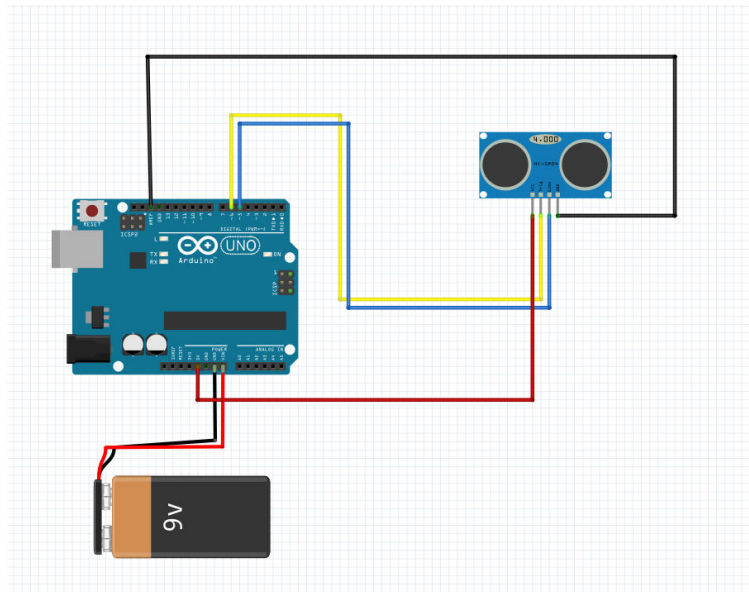
SYSTEM CIRCUIT :-

Fig.:- Circuit Diagram

V. RESULT AND DISCUSSION

The project works as when the dustbin gets filled 80% then the buzzers rings n notifies us that we should make dustbin empty so that it will prevent from getting it full

VI. CONCLUSION

In this particular system the sensors which are mentioned will detect the extent of the rubbish. Once the extent of the rubbish reaches to a specific limit the system will provides a notification to the actual authority via certain means. In case where the bins are already full or almost full, it will generate a warning message which can be sent to the municipality via notifications, by using the WI-FI module. This will help them to really know that where and when to go to collect the rubbish. This manages the trouble to test the area by visiting there. This project is sort of helpful for both the BMC and also the citizens in this area. Also when the lower authority ignores the notification, the subsequent notification goes to the higher authority. this offers us the management of garbage efficiently. Also supporting android application is formed to help the collectors give an update to the authority when the garbage is being collected. This establishes end to finish communication.

REFERENCES

1. Arkady Zaslavsky, kostas Kolomvatsos, Alexey Medvedev, Pouria Amirian, Jeremy Morley, Stathes Hadjieftymiades" Challenges and opportunities of Waste Management in IOT-enabled Smart cities: A survey" an IEEE Transaction 2017.

2. Krishna Nirde, Prashant S.Mulay, Uttam M.Chaskar" IOT based solid waste management system for smart cities" an ICICCS in 2017.

3. Dr.N.Sathish Kumar, B.Vijayalakshmi, R.Jenifer Prathana, A.Shankar", IOT based smart garbage alert system using Arduino Uno" an IEEE in 2016.

4. Andrei Borozdukhin, Olga Dolinina and VitalyPechnkin, "Approach to the garbage collection in the Smart clean city Project", in Yuri Gagarin State Technical University of Saratov,Russia in 2016.

5. Kanchan Mahajan, Prof.J.S.Chitode," Waste bin monitoring system using integrated technologies" an IRJET in july 2014. 6. Prof.R.M.Sahu, Akshay Godase, Pramode shinde, Reshma Shinde," Garbage and street light monitoring system using IOT" an IRJET in April 2016. 7.BelaalChowdhury, Morshed Chowdhury,"RFID based Real-time Smart waste management system", an Australasian telecommunication networks and application conference in 2017.

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

9940 572 462   6381 907 438   ijircce@gmail.com

Scan to save the contact details