Smart Trash Analyser

Dhanashree Mhatre[1], Snehal Raut[2], Akshita Dhene[3], Shanti Patil[4]

B.E Computer Enginering, B.E Computer Enginnering, B.E Computer Enginnering, B.E Computer Enginering

Department of Computer Engineering,

[1]Pillai HOC College of Engineering & Technology, Rasayani, India

Abstract:In today's busy world time is a crucial issue that can not be addressed with our tight schedule by noticing each and every phenomenon. So now Automatic systems are preferred to manual systems for a day to make life easier and simpler in all aspects. The latest internet technology developed to make it a great success of Things Internet. The number of internet users has grown so fast that it has become a necessary part of our daily lives.Our concern in this project is to develop the garbage monitoring system based on the Internet of Things. As the world's population grows every day, the environment should be clean and hygienic to lead our better lives.

An innovative step towards making this process smoother and more efficient is the IOT Garbage Monitoring with Weight Sensing project.Thus, this system helps to keep the city clean by learning about the bins ' garbage stage by providing the bins ' graphical image through the web development platform of IOT Gecko.

***IndexTerms* - Arduino, Buzzer, Capacitors, Gas Sensor, Ultrasonic Sensor**.

I. INTRODUCTION

In today's metropolitan cities scenario,garbage management and monitoring system is a challenging issue. According to one of our survey for the Navi Mumbai Municipal Corporation we have witnessed an unprecedented growth in last 24 years which is reflected as per census-2011 population around 11.20 Lac per day garbage generation within the area of Municipal Corporation is about 700 metric tons.100% garbage is collected from the door steps of 6,443 housing societies,800 commercial and educational institution and industrial permises on daily basis. Solid Waste Management is a measure challenge in Urban cities. Smart dustbin is therefore a system that can eradicate or atlest reduced this problem to the minimum level. Our current Indian Prime Minister, Shree Narendra Modiji, introduced the concept of 100 smart cities being implemented in India. In order to ensure a clean environment, "Swachh Barat Abhiyan" was initiated. The need to solve the problem of a Waste Management and Monitoring is therefore felt. Thus we are designing smart bin in this project with the help of IoT, based on which bin management and monitoring in the smart city can take place. Two factors largely determine the amount of waste: first, the population in any given area, and second, it patterns of consumption. According to the UN, the world population will increase by 20 percent to reach 8 billion inhabitants (from 6.5 today) between now and 2025. This population increase also increase the responsibility for waste management. Our waste management frameworks and our economic situation are not equipped to take care of the development of waste measures universally, even taking care of business. A tidal wave of uncontrolled dumpsites will be the main waste management method, especially in Asia, unless a new paradigm of global corporation and governance is adopted. San Francisco is leading the way on America's waste coast with a landfill disposal diversion rate of 72 percent and the city has set itself a zero – waste target for landfill by 2020.

II. LITERATURE SURVEY.

Following literatures we studied such as garbage overflowing and detection of dry and wet garbage etc. had some common drawb ack. This is why we implement our system called Smart Trash Analyser.

A) SOLID WASTE COLLECTION SYSTEM IN IPOH CITY (YEAR2011)

The main goal is to collect information about the collection and transport of solid waste in Ipoh and to suggest a proper route opti mization that emphasizes the recycling of solid waste generated.Solid waste can be of many types depending on whether plastic, metal, electronic and glass devices contain some basic solid waste.

Using the Geographical Information System (GIS), a new optimized route that provides specified time, crew and vehicles for recy clable collection is suggested. This route will only be a well - defined path for smooth and timely execution of the system.

B) SMART AND GREEN URBAN SOLID WASTE COLLECTION SYSTEM (YEAR 2015)

RFID tags are attached to bins and containers, vehicles are equipped with RFID readers and GPS, and weighing scales are distribu ted at transfer stations.

With the help of centralized and/or decentralized servers, all elements can communicate with each other through sensor networks to collect information in real time. The optimized routing and scheduling strategies can be sent to vehicles in instructions via the s martphone and other terminals.Vehicle performance and other equipment linked to these communication networks can be monitor ed and analyzed at all times, and improvement strategies can be continuously generated and reported back to crew members and mission control staff.

Through these smart and green waste collection systems, decision makers, public agencies, collection rms, crew members, and ot her stakeholders can interactively participate in such sustainable solid waste management plans.

III. EXISTING SYSTEM.

Another cause of concern for residents in developing countries was overflowing garbage bins. With population growth, the scenario of cleanliness regarding garbage management is tremendously degrading.
Municipalities traditionally pick up trash and recyclables on designated days on weekly routes, regardless of whether the containers are full or not.

DISADVANTAGE

- Time consuming and less effective: trucks go and empty containers whether they are full or not.

- High costs.

- Unhygienic Environment .

- Bad smell spreads and may cause illness to human beings.

IV. PROPOSED SYSTEM
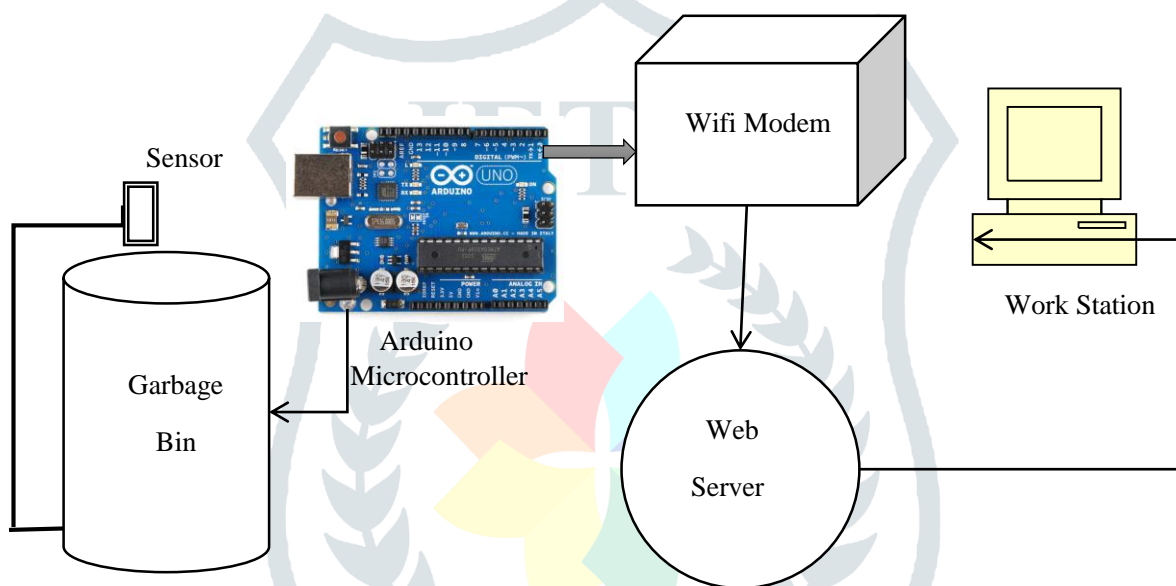
There are multiple dustbins throughout the city and campus in this proposed system, this dustbin are provided with low-cost embedded devices that help track the level of the garbage bins and a unique ID is provided for each dustbin in the city to make it easy to identify. The device will transmit the level together with the unique ID provide when the level reaces the threshold limit. With the help of internet, the concerned authorities can access this details from there place and an immediate action can be taken to clean the dustbins. The block digram shows the various components used in the Garbage Monitoring System, where the sensor is used to detect the dustbin level wheather the dustbin is full or empty.

The sensor senses the dustbin content and sends the Arduino Atmega328 signals or data.Power Supply +5V Battery power supply is given to the Arduino Atmega328 to drive the system and the Arduino Atmega328 reads the data from the sensor and process the data received from sensor, and the same data wirelessly transmitted to the Cloud using WiFi module. At receiver side user can access on the cloud with the help of internet.In the project, we choose IOT as a domain and to perform sensing, actuating we have taken different types of sensors (Ultrasonic Sensor (current proposed), (Future Scope Gas Sensor, Humidity sensor etc)).

V. RESULT.

In the project, till now we have analyzed the existing system and its working. We have searched on waste generation per day from different resources. From the google, we got these results.
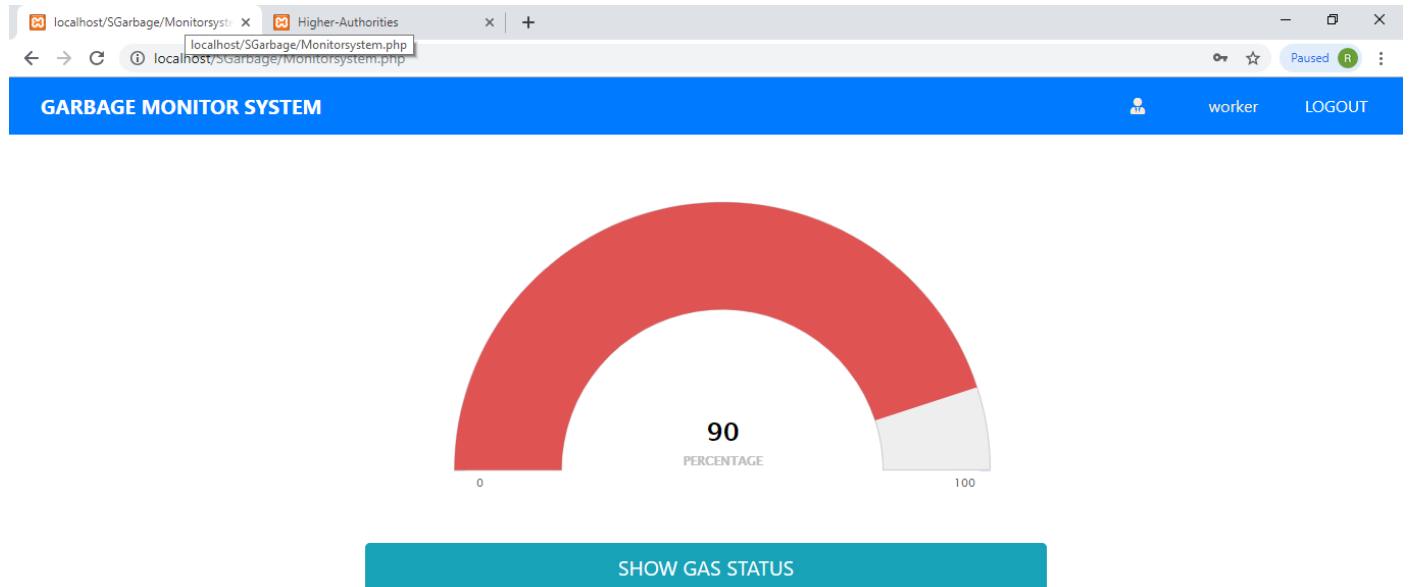
VI. CONCLUSION AND FUTURE SCOPE

When designing this smart dustbins various features such as durability, affordability, damage prevention and maintenance issues are addressed. In building a smart city, the smart dustbin can contribute a lot to a clean and hygienic environment. However, since in India the technology is new, proper awareness among the public should be created before it is implemented on a large scale. Otherwise, sensitive devices such as sensor could be damage by rough user action. In future we will build the system based on the proposed analysis that will protect the environment and human lives and all our other goals. IOT Based Garbage Monitoring System will be design to cover all of the existing System's disadvantages. Implementation only take place for a single bin. The integration of many bins with a unique ID can be accomplished by implementing the IOT principles and creating a database for each bin that can be maintained using SQl technology and creating login webpage to ensure authorized entries.

Besides this, it is possible to distinguish between dry waste bin and wet waste bin collecting dry plastic waste and biodegradable waste. It is possible to use methane and smell sensors to implement this.

This helps to distinguish the source waste and thus reduce the need for manpower. To further enhance it, it is possible to develop an automated system capable of collecting waste in and around the bin, separating it and placing it in the respective bins.

.

REFERENCES

[1] Amirhossein Malakahmad and Noor Diana Khalil. Solid waste collection system in ipoh city. In Business, Engineering and Industrial Applications (ICBEIA), 2011 International Conference on, pages 174–179. IEEE, 2011.

[2] Andrea Zanella, Nicola Bui, Angelo Castellani, Lorenzo Vangelista, and Michele Zorzi. Internet of things for smart cities. IEEE Internet of Things Journal, 1(1):22–32, 2014.

[3] Jia-Wei Lu, Ni-Bin Chang, Li Liao, and Meng-Ying Liao. Smart and green urban solid waste collection systems: Advances challenges.

[4] https://www.ijser.org/researchpaper/IOT-BASED-GARBAGE-MONITORING-SYSTEM International Journal of Scientific & Engineering Research, Volume 8, Issue 4, April-2017

[5] Shri Prakesh javadekar, "IoT Based Smart Garbage System for Efficient Food waste management", The Scientific World Journal Volume 2014(2014), Article ID646953.

[6] Citizen Government Partnership(2004): Bhagiradhi: The Citizen Government Partership, Department of Administrative Reforms, Delhi.