IOT-Based Smart Dustbin

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ABSTRACT

Indian Govt. has launched few smart city projects and for these cities it is necessary that the system which collects the garbage has to be Smarter. It is necessary that people need easy accessibility to the garbage disposing points and the garbage collection process. It has been efficient in terms of time and fuel cost. In most of the urban cities and town in India are not well designed to facilitate the proper garbage disposing as well as collection mechanism. There are cities which are expanding rapidly and are putting the pressure on the current infrastructure which is not developing at the same pace as that of the current urbanization. our propose system are going to check garbage fill status of the dustbin by using Ultrasonic Sensor,Buzzer, Arduino Board, Flip flop system, lock system,Wifi Model it will check the status and send the message to cloud that Dustbin is full, then message is sent to Concerned authority.

INTRODUCTION

From the total number of cities in India most of the towns and cities are not well designed and does not facilitate the proper garbage disposing and collection mechanism.Also there are cities which are expanding fastly and are putting the pressure on the current infrastructure which is not developing at the same pace as that of the current urbanization. As the govt. of India has been launch smart city project to utilize the IT enabled solution so there is an implicit need to make the city cleaner. Our proposed system solves two related problems:

•We are providing greater access to the garbage disposing points (public dustbin).
• System are efficient in terms of fuel and time cost.

LITERATURE SURVEY

Dhaval Patel, Aditya Kulkarni, Hrushikesh Udar, Sachin Sharma:

They are going to check garbage fill status of the dustbin by using Ultrasonic Sensor, Buzzer, Arduino Board, Moisture Sensor, Wifi Model this will check the status and send the message to cloud that Dustbin is full, then message is sent to collection van through Wifi Module then garbage collection is done, if the Dustbin is not cleaned in paticular time we will send message to higher authority and they will take approprite action on it.Our proposed system is going to segregate Dry and Wet garbage. Therefore, the Automatic Garbage Fill Alerting system makes the garbage collection more efficient, which will ultimately make our dustbins and also cities smart at the same time[1].

N.Sathish Kumar,Sri Ramakrishna Engineering College, Coimbatore, TamilNadu, India:

This process is aided by the ultrasonic sensor which is interfaced with Arduino UNO to check the level of garbage filled in the dustbin and sends the alert to the municipal web server once if garbage is filled. After cleaning the dustbin, the driver confirms the task of emptying the garbage with the aid of RFID Tag. RFID is a computing

technology that is used for verification process and in addition, it also enhances the smart garbage alert system by providing automatic identification of garbage filled in the dustbin and sends the status of clean-up to the server affirming that the work is done. The whole process is upheld by an embedded module integrated with RF ID and IOT Facilitation. The real time status of how waste collection is being done could be monitored and followed up by the municipality authority with the aid of this system. In addition to this the necessary remedial / alternate measures could be adapted. An Android application is developed and linked to a web server to intimate the alerts from the microcontroller to the urban office and to perform the remote monitoring of the cleaning[2].

P.Siva Nagendra Reddy,Department of ECE, Kuppam Engineering College, Kuppam, A.P:

This project is designed for the effective garbage collection using Embedded System. The main aim of the proposed method is collecting waste into the dumping vehicles. In this method when ever dustbin filled to certain levels the module placed on the dustbin will send an alert message to server node. From the server node it again sends a message to the concerned authorities. This system also sends information about harmful gases emanation[3].

B.Rajapandian, K.Madhanamohan, T.Tamilselvi, R.Prithiga:

Our project aims to find a solution by using a Smart Dustbin which is GSM and GPS enabled .It employs an 'Ultrasonic Sensor' to prevent overflow of garbage from the dustbin and a 'Gas sensor' to sense the presence of bad odour and ensures timely disposal of the unhygienic contents of the Dustbin.Thus our project aims at prevention of overflowing garbage from the dustbin and also ceasing unhygienic condition from prevailing near it.Thus our project aims to have an effective and efficient garbage disposal system[4].

PREVIOUS WORK

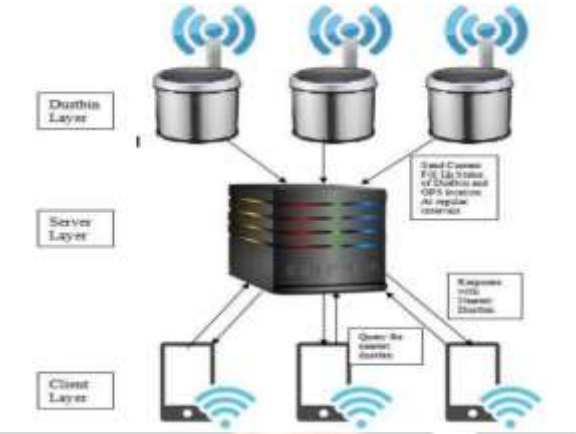
Longhi s et al.It made a quantitative analysis between previous as well as existing dustbins. It studied as well as analysed the relating to space distribution of dustbins in the local areas of dhaka city using the average nearest neighboring function.The spatial circulation of the current dustbins has been appeared to be dominant in the clustered pattern. An optimal number of additional dustbins were calculated. It has been shown that the number of existing dustbins was insufficient in the studied area[1].

D Alidori et al. studied the increase in pollution caused by the existing system. In this system it has been found that all the dustbins were burnt along with waste and causing pollution to the environment. The results will be obtained, helped to understand the situation of the waste management of dhaka city and than the dustbins were placed optimally.[2] Thakker s and Narayanamoorthi are used ultrasonic sensors in dustbins, which is used to determine its fill status. It has been divided into three levels of garbage. The sensors, detects dustbins filled status. This data was sent using GSM module. They are used three ultrasonic sensors at three different levels in the dual so the sensors could be damaged by harsh use by the users. In an Smart Garbage System, battery-based smart garbage bins (sgbs) they exchange information with each other using router and server collects this information and this information is analyzed for service provisioning. It includes different iot skills for user convenience as well as it increases the battery life with the help of two different types of energy-efficient operations of the sgbs,standalone operation and cooperation-based operation.The proposed sgs has been experimented as a pilot project in the Gangnam district, Seoul, Republic of Korea, for a one-year period. This test demonstrated that the waste food could be decreased by 33%[4].

PROPOSED SYSTEM

- Sensor based garbage collection bins is used to identify status of waste bins whether it is empty or filled.

- Real time waste management system by using smart dustbin to check the fill level of dustbin whether the dustbin is full or not. When the dustbin get full it will Locked.
- It will inform the status of dustbin to the concerned authority. And authority send the garbage collection vehical only when the dustbin full.



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