Advance and Smart Garbage Monitoring System

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Abstract-*Now a days, there are a number of techniques which are purposefully used and are being build up for well management of garbage or solid waste. ZIGBEE and Global System for Mobile Communication (GSM) are the latest trends and are one of the best combination to be used in the project. Hence,a combination of both of these technologies is used in the project . To give a brief description of the project , the sensors are placed in the common garbage bins placed at the public places. When the garbage reaches the level of the sensor, then that indication will be given to Controller. The controller will give indication to the authentication centeras to which garbage bin is completely filled and needs urgent attention. ZIGBEE will give indication by sending SMS using GSM technology.In our project we are going to use robotic arm at the center of garbage bin for the compression of garbage.*

Keywords-Robotic arm, Level Sensor, Weight Sensor, Zigbee Technology

I. INTRODUCTION

Garbage Monitoring System: Garbage may consists of the unwanted material left over from City, Public area, Society,College, home etc.This project is related to the "Smart City" and based on "Internet of Things" (IOT). So for smart lifestyle, cleanliness is needed, and cleanliness is begins with Garbage Bin. This project will helps to eradicate or minimize the garbage disposal problem. The Internet of Things (IoT) is a recent communication paradigm that envisions near future, in which the objects of everyday life will be equipped with microcontrollers, transceivers for digital communication, and suitable protocol stacks that will make them able to communicate with one another and with the users, becoming an integral part of the Internet [1]. This project IOT Garbage Monitoring system is a very innovative system which will help to keep the cities clean.

II. LITERATURE SURVEY

Jan 2017 Smart Garbage Monitoring System using IOT by "Prof. Dr. Sandeep M. Chaware, ShriramDighe, Akshay Joshi, NamrataBajare, RohiniKorke", this paper conclude that IOT garbage monitoring system is a very innovative system which will help to keep the cities clean.

April 2017 Smart Dustbin for Smart Cities using IOT by "Prof. MD. WasiqRaza, Abhijeet A. Misal, Sachin R. Ghose, Vishwanath T. Thakre, Sidhharth A. Humane", this paper conclude that lumping of garbage in the roadside dustbin which ends up giving foul smell and illness to people.

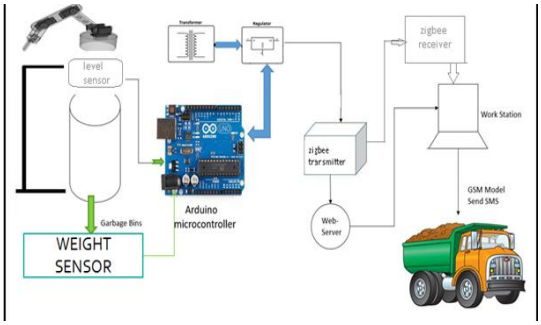
March 2016 GSM based Automatic Segregation of Waste and Monitoring by "Dr. M. Yuvraju, DivyaPriya", this paper conclude that handling, division, transport and discarding of the waste is to be properly managed to avoid any hazard to the environment as well as the living being around this ecosystem.

"KanchanMahajan, Prof. J. S. Chitode", this paper conclude that technologies which are used in the proposed system are good enough to ensure the practical and perfect for solid waste collection process monitoring and management for green environment.

Feb 2014 Smart Garbage Monitoring And Segregation Process using Arduino by "Vishnupriya M., MohanaPriyanka K. and Malar R.", this paper conclude that Waste are segregated into biodegradable and non-biodegradable. Along with that the overflow of the Garbage bins are detected to avoid the Land Pollution.

Dec 2012 An Overview For Solid Waste Bin Monitoring System by "Md. Shafiqul Islam, M. A. Hannan, Maher Arebey and HasanBasri", this paper conclude that the real time image processing, histogram analysis, waste estimation and other bin information have been displayed in the GUI of the Monitoring System.

III. WORKING



Scope:-

The system monitors the lends of the waste inside the bin so the human effort is get reduce because as automatically the level is displayed so it is not necessary to check it manually.

Robotic arm:

A robotic arm is a type of mechanical arm, usually programmable, with similar functions to a human arm. It is fixed in the central part of the garbage bin. Coding controls the robotic arm by rotating individual servo motors connected to each joints.

Weight sensor:

A load cell is a sensor or a transducer that convert a load or force acting on it into an electronicsignal.this electronic signal can be voltage change,current change depending on the type of load cell.

Zigbee Technology:

Zigbee uses the 2.4 GHz radio frequency to deliver a variety of reliable and easy-to-use standards anywhere in the world. In mesh Network ,Zig Bee devices are generally used to transmit data or information over a long distance .This data or information is passed through intermediate instruments to reach the destination .

Components requirements:

- AVR family microcontroller
- Zigbee module
- LCD display
- LED's
- 12V power supply
- Ultrasonic sensor
- Weight sensor
- Robotic Arm
- Arduino controller

SOFTWARE:

- AVR studio
- Proteus

IV. CONCLUSION

It can automatically monitor the garbage level & send the information to collection truck. The technologies which are used in the proposed system are good enough to ensure the practical and perfect for effective solid garbage collection, monitoring and management for green environment.

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[6] March 2016 GSM based Automatic Segregation of Waste and Monitoring by "Dr. M. Yuvraju, DivyaPriya"