

IOT Based on Garbage Monitoring System

M. Kabilasree, N. Nandhini, R. Parvathalakshmi, V. Anand Kumar

Department of ECE, Sri Eshwar College of Engineering, Coimbatore, Tamil Nadu, India

ABSTRACT

Many times, in our city we see that the garbage bins or dustbins placed at public places are overloaded. It creates unhygienic conditions for people as well as ugliness to that place leaving bad smell. To avoid all such situations we are going to implement a project is IoT Based Garbage Monitoring System. These dustbins are interfaced with arduino based system having load cell which is used to sense the garbage level which are contained in the dustbin and showing current status of garbage on Php web page by Wi-Fi. Major part of our project depends upon the working of the Wi-Fi module, essential for its implementation. The main aim of this project is to reduce human resources and efforts along with the enhancement of a smart city vision.

Keywords : Arduino, Wi-Fi (ESP 8266), Load cell, Database System

I. INTRODUCTION

Garbage Monitoring System

Garbage may consist of the unwanted material left over from the city, public area, society, college, home etc. This project is related to the “Garbage Monitoring” and based on “Internet of Things”. So for smart lifestyle, cleanliness is needed and cleanliness begins with Garbage bin. This project will help to minimize the garbage disposal problems.

The project IOT garbage Monitoring System is very innovative system which will help to keep the clean city. This system monitoring the garbage bins and informs about the level of garbage collected in the garbage bins via a web page. For this the system uses load cell placed over the bins to detect the garbage level and compare it with the garbage bins depth. The system makes use Arduino, LCD screen, Wi-Fi modem for sending data. The LCD screen is used to display the status of the level of garbage collected in the bins. Where the web page is built to show the status of the user monitoring it. The web page gives a graphical view of the garbage bins to show the level of garbage collected. The LCD screen shows the status of the garbage level. Thus this system helps to keep the city

clean by informing about the garbage levels of the bins by providing graphical image of the bins via IOT Php web development platform.

II. METHODS AND MATERIAL

Arduino

Arduino is a computer hardware and software user community that designs and manufactures microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world. Arduino board designs use a variety of microprocessors and microcontrollers. The board are equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards and other circuits. The boards feature serial communication interfaces, including Universal Serial Bus (USB) on some models, which are also used for loading programs from personal computer. The microcontrollers are typically programmed using a dialect of feature from the programming languages C and C++. In addition to using traditional compiler toolchains, the Arduino project provides an integrated development environment (IDE) based on processing language project.

Loadcell

A load cell is a sensor or a transducer that converts a load or a force acting on it into an electrical signal. This electronic signal can be a voltage change, current change or frequency change depending on the type of load cell and circuitry used. Bending beam load cells are the best fit for many measuring tasks. Here the signal on principle depends on the bending moment. When the load application point in the bending beam's longitudinal direction changes with identical loads, different signals are generated.

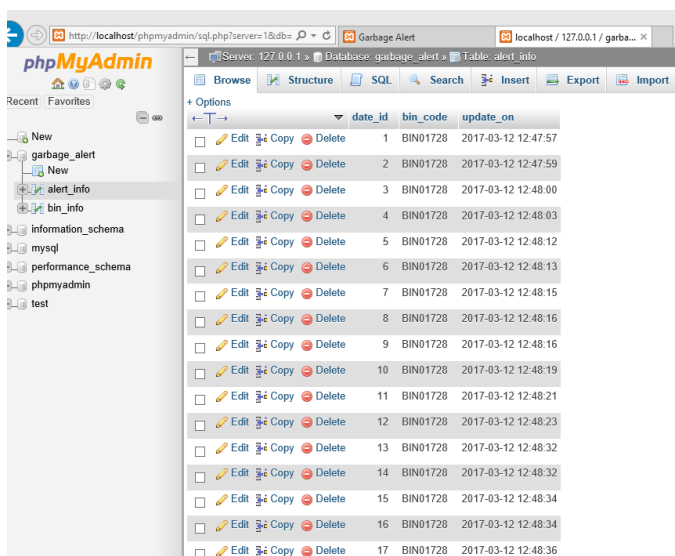
Wi-Fi (ESP8266)

ESP 8266 IS A Wi-Fi module which will give our projects access to wi-fi or internet, It is very cheap device but will make our projects very powerful. It can communicate with arduino and makes the project wireless.

Database system

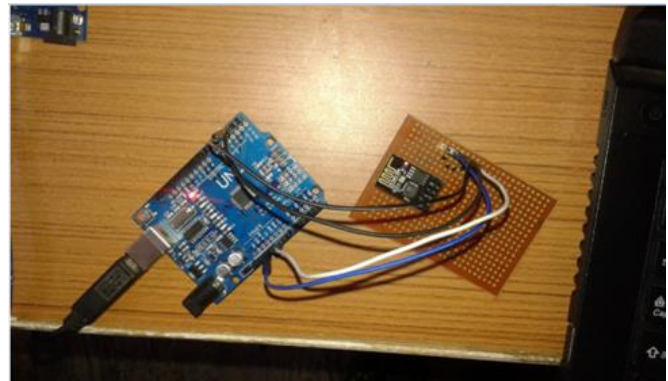
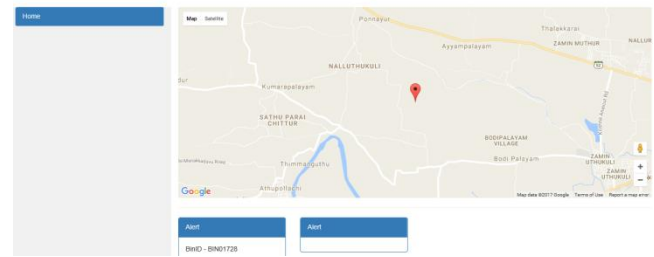
A database management system is a computer software application that interacts with user. IT is the collection of schemes, tables, queries, reports, views and other objects.

Related work: Creating a new database for a garbage bin Configure the Arduino pin with Wi-Fi module.



date_id	bin_code	update_on
1	BIN01728	2017-03-12 12:47:57
2	BIN01728	2017-03-12 12:47:59
3	BIN01728	2017-03-12 12:48:00
4	BIN01728	2017-03-12 12:48:03
5	BIN01728	2017-03-12 12:48:12
6	BIN01728	2017-03-12 12:48:13
7	BIN01728	2017-03-12 12:48:15
8	BIN01728	2017-03-12 12:48:16
9	BIN01728	2017-03-12 12:48:16
10	BIN01728	2017-03-12 12:48:19
11	BIN01728	2017-03-12 12:48:21
12	BIN01728	2017-03-12 12:48:23
13	BIN01728	2017-03-12 12:48:32
14	BIN01728	2017-03-12 12:48:32
15	BIN01728	2017-03-12 12:48:34
16	BIN01728	2017-03-12 12:48:34
17	BIN01728	2017-03-12 12:48:36

Garbage Monitoring



III. CONCLUSION

In this project, an integrated system of Wi-Fi modem, IoT, Sensor is introduced for efficient and economic garbage collection. The developed system provides improved database for garbage collection time and waste amount at each location. We analysed the solutions currently available for the implementation of IoT. By implementing this project we will avoid overflowing of garbage from the container in residential area which is previously either loaded manually or with the help of loaders in traditional trucks. 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 garbage collection process monitoring and management for green environment.

IV. REFERENCES

- [1]. Prof. R.M.Sahu, Akshay Godase, Pramod Shinde, Reshma Shinde, "Garbage and Street Light Monitoring System Using Internet of Things" INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ELECTRICAL, ELECTRONICS, INSTRUMENTATION AND CONTROL ENGINEERING, Vol. 4.
- [2]. Kanchan Mahajan, Proff.J.S.Chitode, "Waste Bin Monitoring System Using Integrated

Technologies", International Journal of Innovative Research in Science, Engineering and Technology , Vol. 3.

- [3]. Md. Shafiqul Islam, M. A. Hannan, Maher Arebey , Hasan Basri , "An Overview For Solid Waste Bin Monitoring System", Journal of Applied Sciences Research, vol.5.
- [4]. Twinkle sinha, k.mugesh Kumar, p.saisharan, "SMART DUSTBIN", International Journal of Industrial Electronics and Electrical Engineering, Volume-3.