

USER INTERFACE FOR FINDING LOCATION OF GPS EQUIPPED SMART DUSTBIN

Yogesh Kumar¹, Dhajvir Singh Rai², Tanu Dhyani³

¹PG Scholar, Dept. of CSE, DBIT (Dehradun)

²HOD, Dept. of CSE, DBIT (Dehradun)

³PG Scholar, Dept. of CSE, DBIT (Dehradun)

Abstract

Now a day's garbage problem is a sedate problem not in India but in complete world. . The solid waste problem is assuming terrible proportions today, according to a report published in the natural journal. People not having any interface by which they can search smart dustbin in the city. Keeping these things in mind this paper give you an idea for implementing user interface (mobile application) using GPS technology by which they can locate the near location of smart dustbin. It will save the time and it also prevents the environment from pollution.

Keywords: GPS, Trilateration, Arduino, MCU Microcontroler, Google Map.

1. Introduction

Indians currently produce approximately 60 million tons of solid waste annually. According a report, urban India generates 1 Million tons of waste per day. We can also see that people throw the waste near to the Market Places, railway lines, roads etc. It is often seen that waste material including plastic, paper, animal bones, glass pieces etc. are throw n in open. A reason of throwing waste anywhere can be if they are not finding any dustbin then solution for such type of situation is interface for searching location of smart dustbin. This interface (application) will give the location of smart dustbin which having GPS electronic device that will responsible for giving location to user. Now Indian public cannot give excuse that they have not found dustbin that's why they have thrown waste on the roads, ground, colony etc. This technology can be responsible for making world smart. After implementing this interface will contribute in waste management by which we can make our city clean.

2. Literature Survey

Previous researches on smart dustbins [1]. S.Vinoth Kumar, A. Krishna Kumar, T. Senthil Kumaran, These dustbins proposed an intelligent waste clean management system based on IOT that uses sensor systems to control the level over the dustbins. Once level is increased then this system immediately alerts the authorized person by GSM/GPRS. Microcontroller is used as an interface between the sensor system and the GSM/GPRS system for this model. In order to maintain all these things, an android application is developed for the desired information relating to the different waste levels at different dustbin locations.

[2]. Ahmed Imteaj, Chowdhury Mahfuzulhoq, Md. Arafin Mahamud, This system is an android based application in which users can help clean up their city by notifying volunteers or informing to municipality corporation.

[3]. Saurabh, Rohit, Debanjan Das, M Bharat This system has two dustbins(Dustbin 1 and Dustbin 2) which will be kept at crowded places mostly. Dustbin 1 can used for throwing waste but dustbin 2 cannot be used till dustbin 1 is full with waste. Dustbin 2 can used when 1 is full and then dustbin 1 will not open till the waste from dustbin 1 is cleared. Whenever one of the dustbin is filled up, a message is delivered to concerned person..

[4]. Jayshree Ghorpade-Aher, Anagha Wadkar, Janhavi Kamble This research based on the dustbin automated works as a robot, when dustbin is full it takes instruction from authorized person and it goes to pre-learned route and empties itself. An authorized person gives instruction from webpage where dustbin current status is updated on a regular bases.

3. Proposed System

This model is a mobile application for searching dustbin by entering the location. This model will work on GPS technology. This technology is used to locate the location of smart dustbins with the help of satellite. The complete technology will work on a simple principle called Trilateration (2-D and 3-D Trilateration). For making the calculation easy the GPS receiver must aware two things. First it must cognize the location of the spot is to be traced by three satellites above the spot. Second, it must cognize the distance between the spot and each of those Smart Beans.

4. System overview

This interface only for smart bins those having GPS system which is programmed using Arduino and node MCU microcontroller. This application will installed in mobile phone, when we need dustbin at new place for throwing waste we can easily get the location of dustbin using GPS system. In this system we will take the help of Google Map When we type the location, Google Map will show the location of all dustbins under the complete area.

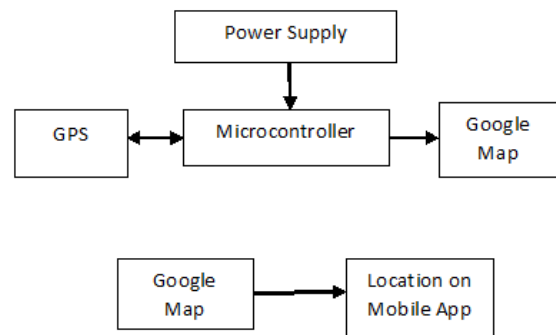
Arduino

It is a microcontroller device based on the ATmega328 microcontroller. It has input/output analog pins that helps to make different circuit. We can say it is a micro CPU used in robotics project that execute the code and gives output.

GPS

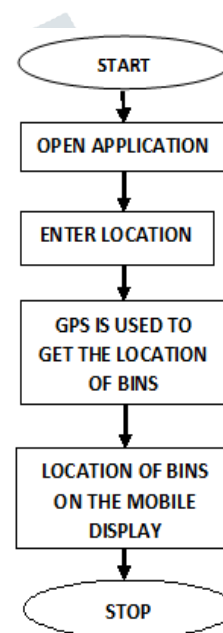
Global Positioning System (GPS) is a global navigation system developed by the configuration of 24 satellites and their ground stations. GPS tracking is a technology works on the object and inform where exactly it is. A GPS tracking system may be used in a vehicle, on a mobile phone, or on different devices. GPS gives exact location information.

5. Block Diagram



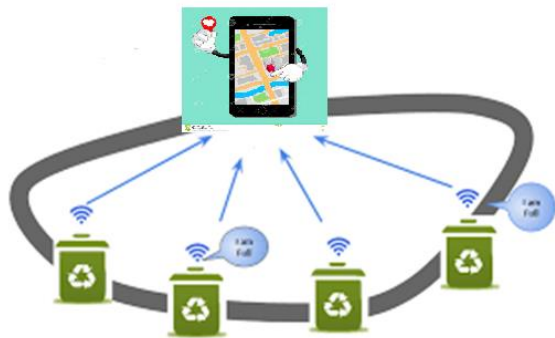
Block Diagram

6. Flow Chart



Flow Chart of the System

7. System Architecture



System Architecture

Conclusion

Currently waste management is a major problem faced by the public. Using this application waste collection methodology moves to next level. The waste collection in dustbins directly affects the environment and also effects the health. This paper is contributes to waste management in the city to overcome this problem. This paper is helpful for “Swachh Bharat Abhiyan”.

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