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Smart Dustbin Using IOT Notification

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ABSTRACT: Public dustbin requires frequent cleaning which is not easy. In our country many times we see that the garbage bins or dustbins placed at public places are always overflowing. It creates unhygienic environment for people. It leads to various hazards such as bad smell and uncleanliness to that place which may be the root cause of various diseases. To avoid this entire major problem and maintain public place clean and health this work is mounted on a smart garbage system. The main aim is to get the dustbin cleaned frequently using smart dustbin service.

KEYWORDS: Ultrasonic sensor, Internet of Things, Arduino UNO, Servo Motor, Dustbin, Smart.

I.INTRODUCTION

Only means of disposal is open the lid of the dustbin and dispose the waste in it and clean or empty it once it becomes full. Once an equivalent issue is applied during a neighbourhood or during a colony, the waste becomes additional to dispose and if the dustbin is full people begin throwing the waste around the dustbin those results in completely different diseases. The official World Health Organization ought to empty the bin are irregular in evacuation the bin and also the waste are lying in this street for weeks inflicting unhealthy setting and resulting in varied diseases. The upkeep of the bin is additionally not correct wherever the lid is broken that leads within the overflowing of the waste from the bin. If the upkeep of the bin isn't correct then the bin gets a smelly smell. If the bin isn't empty right away when it gets full then varied flies, mosquitoes and different insects are around it that results in an explanation for varied diseases. If the bin doesn't have a lid then the waste is overflowed out of the bin inflicting injury to the setting.

In our project without being able to touch the dustbin lid we can dispose the waste when we come in front of the bin it will automatically get open which is very hygienic. This dustbin also sends notifications to the mobile which tells us whether the dustbin is full or not if dustbin gets full it will send one more alert message so that we can empty this dustbin.

II.METHODOLOGY

SMART DUSTBIN USING ARDUINO is an IOT based project. Here we are using Arduino for code execution, for sensing we used ultrasonic sensor which will open lid and wait for few moment. It will bring drastic changes in tern of cleanliness with the help of technology. Everything is getting with smart technology for the betterment of human being. So this help in maintaining the environment clean with the help of technology. It is a sensor based dustbin so it would be easy to access/use for any age group.

Our aim is also to make it cost effective so that many numbers of people can get the benefit from this. And it should be usable to anyone and helpful for them

Required Software:

Arduino IDE, Blynk app (IOT)

Required Hardware:

1. ARDUINO UNO
2. ULTRASONIC SENSOR
3. SERVO MOTOR
4. JUMPER WIRES
5. DUSTBIN
6. ESP8266

System Architecture:

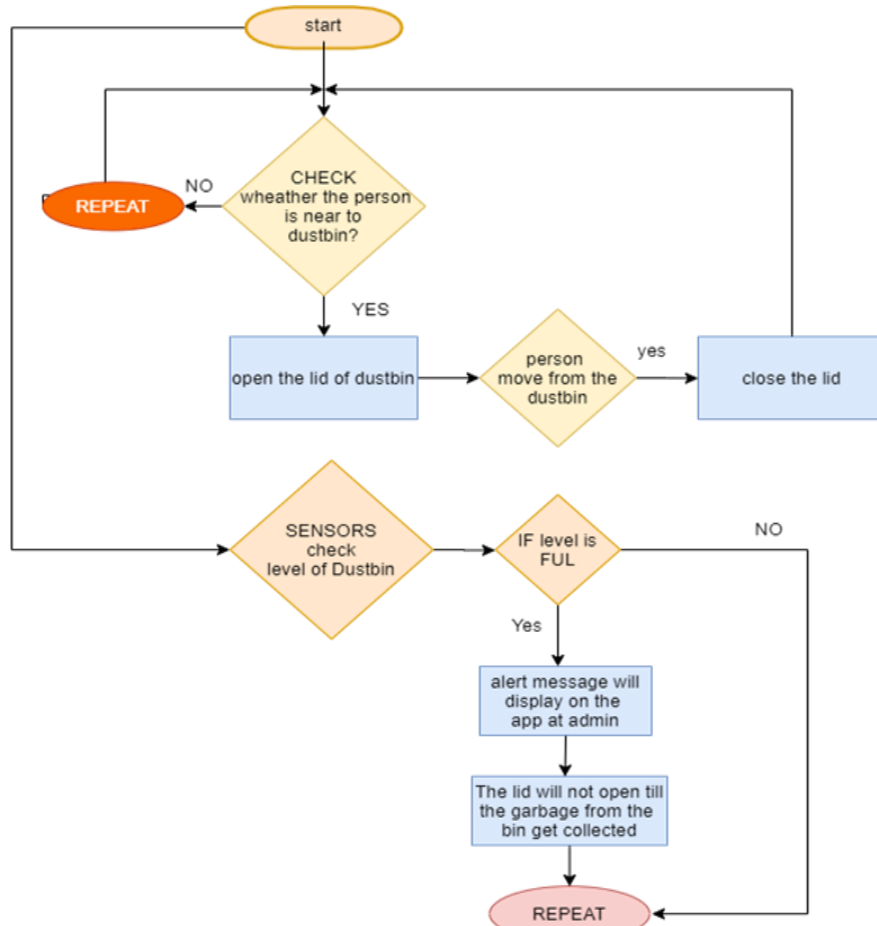


Fig. 1. System Architecture

Sequence Diagram:

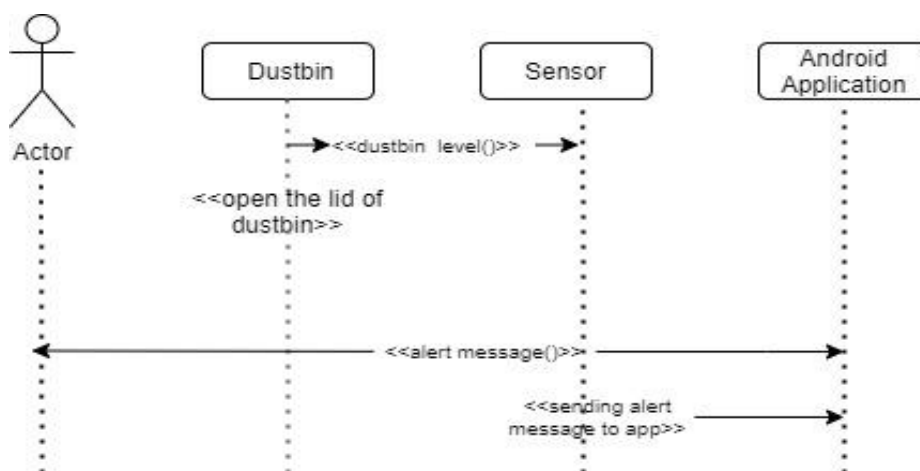


Fig. 2. Sequence Diagram

III.MODELING AND ANALYSIS

System Design:

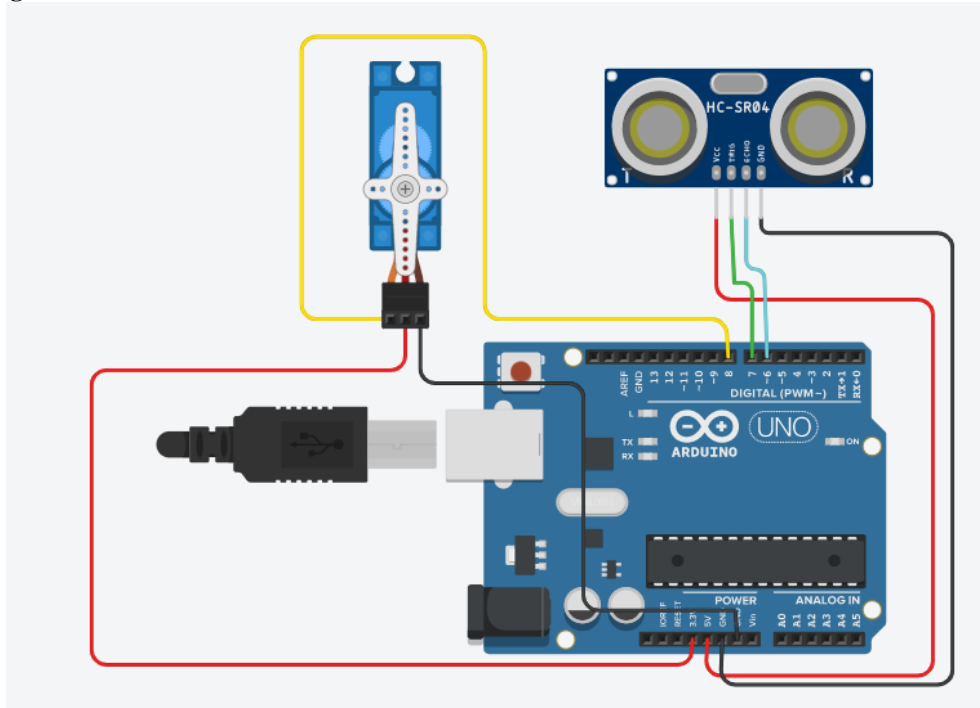


Fig. 3. System Design

Working Model:



Fig. 4. Working Model

As shown in fig. 1.4 we are using sensors which will help to indicate the presence of a people and automatically opens the lid of dustbin and once the people moves away from the dustbin the lid get closed this also be very useful in the current situation, a smart dustbin can play a crucial role in contactless waste management. With an intend to make our surrounding clean and healthy the another main thing is that we can see how much percent dustbin is filled with the waste and when it will get completely full it will notify the admin with the help of IOT, so that they can collect the waste as soon as possible.



IV. RESULTS

We have successfully developed a Smart Dustbin which uses IOT. This project Smart Waste Management using IOT is an innovative system which will help to keep the cities clean. This system monitors the garbage bins and informs about how much waste filled in the dustbin via a mobile application.

It saves time and money by using smart waste management system. It keeps surrounding clean and healthy. It reduces manpower requirement to handle garbage collection process.

V. CONCLUSION AND FUTURE WORK

A simple however helpful project referred to as sensible dustbin using Arduino is intended and developed here. Using this project, the lid of the dustbin stays closed, in order that waste isn't exposed (to avoid flies and mosquitos) and once you need dispose any waste, it will automatically open the lid. And if dustbin gets full it automatically sends alert message to admin.

VI. FUTURE WORK

Coordination among the Dustbins.

- Cloud Platform and Arduino can be used for Data Storage and Data Analysis.
- Daily Produce of waste can be monitored

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