SMART DUSTBIN

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ABSTRACT

We have designed a project of smart dustbin with the main objective of the environment being clean, green, and eco-friendly. Here the smart dustbin is designed by using Arduino in order to remain up to date with technology as we all know that now-a-days technologies are getting updated day-by-day. Dustbins are very important in our life and also they need a proper maintenance if they are not maintained properly than they will lead to an environment which will be unhealthy for us and it will also cause a lot of pollution that affects our health. In the given technology I have designed a dustbin which works smartly using ARDUINO along with ultrasonic sensor, servo motor and jumper wires.

After all the connections of software and hardware, the program of Smart Dustbin will run. When someone comes near the dustbin its lid will open and after some time it will be closed when the person is not in range.

1. INTRODUCTION

As we all know that the dustbins are nothing but the containers which we use to kept waste (or trash) on a temporary basis and they are made up of plastic (or metal). In my project, I have prepare a simple system called "Smart Dustbin" by the help of components such as Arduino, ultrasonic sensor and servo motor in this the dustbin's lid will be open automatically on the detection of human hand or leg. My project is based on IOT. By this carefully designed "Smart Dustbin" the issue of waste disposal is also solved.

2. COMPONENTS USED

I have used the following components

Fig. 1: Arduino Nano

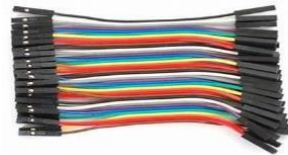Fig. 2: Servo Motor   Fig. 3: Ultrasonic Sensor

Fig. 4: Connecting wires

3. TECHNOLOGY

In this system Arduino is interfaced with Ultrasonic sensor and the Servo motor. Ultrasonic sensor is placed at the dustbin's top so that the dustbin's stature can be measured.

When power is provided to the system, Arduino will keep monitoring for the things that come near the sensor at given range.

When Ultrasonic sensor detects any object for example:- a hand or any other thing, the Arduino will calculate its distance and if it is less than a certain predefined value then the servo motor will be activated and then with the support of the extended arm lid will be open for that person (so that he/she can put the waste into the dustbin) for a given time than it will automatically close.

4. CIRCUIT DIAGRAM
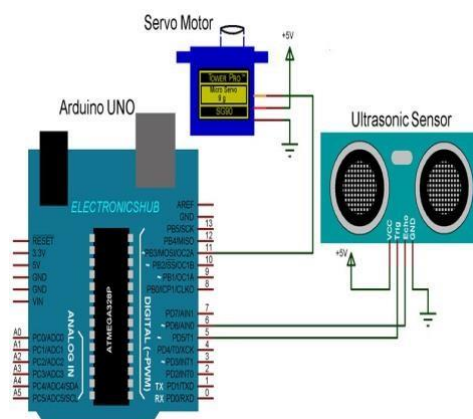
The circuit diagram is as following

Fig. 5: Circuit Diagram

5. RESULT

A smart dustbin coordinates has been displayed successfully which is further capable to be implemented in the crowded places where the wastes are generated in the large amount.

As, there is no contact between the dustbin and the person. So, it prevents us from the germs & the diseases and also Maintains environment hygiene i.e., there will be no overflow of waste and also unpleasant odour will be less.

6. CONCLUSION

Here we are going to make an evolutionary change towards the cleanliness of society. With the combination of the intelligent waste monitoring system and the trash compaction technologies the "Smart Dustbins" are much better and inches above the traditional garbage dustbins. I have equipped it with smart devices like a sensor, servo motor and Arduino etc. Dustbin's lid will automatically open when an object comes near to the dustbin and after a certain period of time the lid will be closed automatically.

It will help towards our health and hygiene as a member of society and I had also tried to make my circuitry cheap so that it is affordable to as many as possible, so that anyone from middle class to rich can take benefit of it.

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