

Automatic Garbage System

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Abstract:

As we are few years away from celebrating the silver jubilee of the 21th century. The 21th century is also known as the century of Asia. Because Asia is having so called future world powers like India, China etc. The Asia is having its own positives and negatives. In India specially, one of the main stream problem is of cleanness. cleanness is the basic requirement for any society. In rural areas, health issues are increasing day by day because of not having the proper garbage system. Similar case is with urban areas. So, to overcome this problem, the main and basic requirement is just a Dustbin. Dustbin can be manual as well as automatic. In the time of automation, the machine is preferred over the humans. everyone wants to reduce the human affords. So, the dustbin is also transforms and becomes automatic dustbin. In our society, there are many places where people don't want to touch dustbin while using it, like our holy places (temples, mosque, church etc.), hospitals, kitchen etc. so we can overcome this problem by using automatic dustbin and increase the cleanliness level. Our society have to reach to that extrema level where dustbins are also included in regular use. then only our society and humanity will prosper.

I. INTRODUCTION

The automatic garbage system which is a microcontroller-based system. The microcontroller which is used is Arduino Uno board. Which is connected with servo motor and Ultrasonic sensor. the ultrasonic sensor is a detecting device which will detect the object and person which is within the required distance.

II. COMPONENTS

Project consists of mainly three components. Those are

A. Arduino

Arduino is an open source software and hardware company. which is providing a free platform for the users to build their projects. The developer of this microcontroller is Arduino.cc. it is manufacture by many companies. It is the single-board microcontroller. It doesn't require any fixed operating system. The CPU required is Atmel AVR (8-bit), ARM cortex-M0+(32-bits), ARM cortex-M3+(32-bits), Intel quark(x86) (32-bit). The memory which is used in it, is SRAM. The storage is flash, EEPROM. The official website is www.arduino.cc. the Arduino UNO is one of the famous type of Arduino. it is the most widely used board among the microcontroller. The Arduino Uno has total number of pins equal to forty. The power supply which is needed to working of this board is 5v, which can be given directly by the system by connecting to it. One led is there to show the output on the Arduino board. it consist of analog as well as digital pins too. The microprocessor is known as the brain of the system. Arduino board manufacturing needs a variety of microprocessors and controllers. The boards are equipped with sets of digital and analogy input/output

(I/O) pins that may be interfaced to different extension boards (shields) and other circuits.

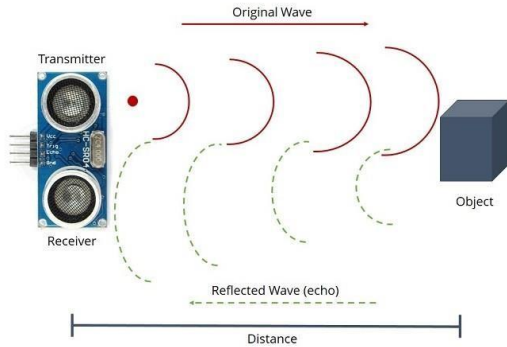
anything needed to support the microcontroller; simply interact it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get begun. we can work with your UNO without agitation too much about doing something wrong, outcome case scenario we can result the chip for some dollars and start over again. "Uno" means one in Italian and was chosen to mark the bring out of Arduino Software (IDE) The Uno board and version 1.0 of Arduino Software (IDE) were the allusion versions of Arduino, now developed to newer releases. The Uno board is the first in a serial of USB Arduino boards, and the reference model for the Arduino structure; for a large list of current, past or outdated boards see the Arduino index of boards.



B. Ultrasonic sensor

The ultrasonic sensor uses sonar to adjust the distant to a body. Here's what happens: The HC-SR04 ultrasonic sensor extend sonar to find distant to an object like bats do. It offers excellent non-contact extent appreciation with high exactness and stable

readings in an easy-to-use package. From 2cm to 400 cm or 1” to 13 feet. Its activity is not a by sunlight or black material like sharp comes complete with ultrasonic transmitter and receiver module.

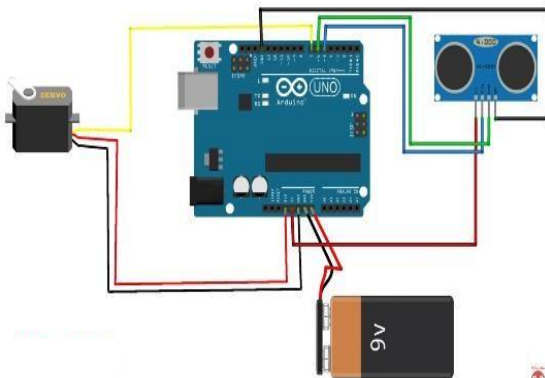


C. Arduino servo machine

A Servo Motor is a short appliance that has an output shaft. This shaft can be ordered to specific angular positions by transmitting the servo a coded signal. As long as the coded signal accurate on the input line, the servo will assist the angular position of the shaft. If the coded signal difference, the angular position of the shaft different. In process, servos are used in radio-controlled airplanes to situation control surfaces like the elevators and rudders. They are also utilised in radio-controlled cars, puppets, and of course, robots.



III. CONNECTIONS OF COMPONENTS



IV. WORKING

The automatic garbage system work on the base of Arduino, ultrasonic sensor, and a motor. Arduino is the main part of this project because of this the automatic garbage system is controlling. Inside the garbage all the above components are present and Arduino programme is used to control the motor and ultrasonic sensor.

A. Battery

It acts as a source in the automatic garbage system.

B. Arduino

The work of Arduino is to control the ultrasonic sensor and motor. The Arduino programming is done to control them.

C. Ultrasonic sensor

The work of ultrasonic sensor in automatic garbage system is to sense the object coming near to the dustbin if it is so then it sends the information to the motor to open the cap of the dustbin.

D. Motor

The work of motor is to open the cap of dustbin after getting the information from the ultrasonic sensor.

V. RESULT

The project automatic garbage system emblemizes the contaminated conditions of our urban and rural areas. The Automatic Garbage System uses the IR sensor, relay. This project is also free from getting rain water in the bin this project helps the people to stay hygienic in all holy places, functional halls and hospitals. and this also promote the people to stay clean in all the day life.



VI. CONCLUSION

This project functioning is the utilization of Automatic Garbage Fill Alerting system testing Ultrasonic sensor, Arduino Uno, servo machine. This project persuades the people to disprove the belief that putting waste in the bin is a hazard and by using this they can thoroughly check the garbage in the bin without touching the dustbin. It will catch power supply with the help of IR sensor. This garbage system is a good economic system. It finally helps to keep cleanliness in the environment. Thereupon, the Automatic Garbage Alerting scheme makes the garbage acquisition more adequate.

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