

A blue dustbin with a face made of two circular holes and a small green sticker on the left side.

# SMART ARDUINO DUSTBIN

IOT BASED PROJECT  
ON MANAGING  
GARBAGE

# INTRODUCTION

Dustbins (or Garbage bins, Trash Cans, whatever you call them) are small plastic (or metal) containers that are used to store trash (or waste) on a temporary basis. They are often used in homes, offices, streets, parks etc. to collect the waste.



In some places, littering is a serious offence and hence Public Waste Containers are the only way to dispose small waste.

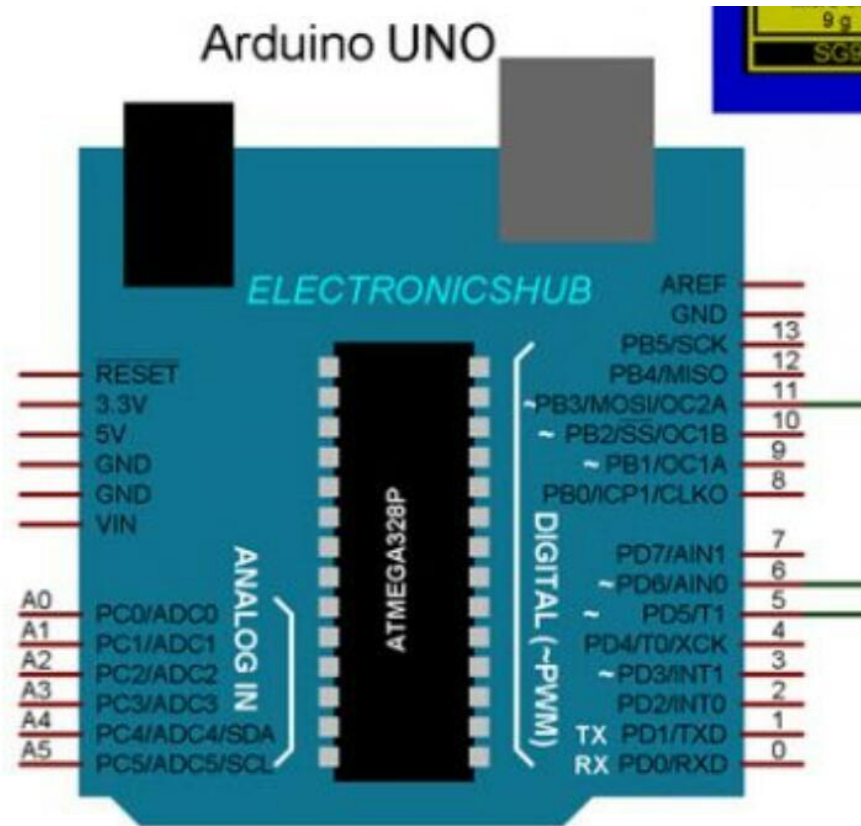


Usually, it is a common practice to use separate bins for collecting wet or dry, recyclable or non-recyclable waste.



In this project, I have designed a simple system called Smart Dustbin using Arduino, Ultrasonic Sensor and Servo Motor, where the lid of the dustbin will automatically open itself upon detection of human hand.





## ARDUINO STRUCTURE

- In 2005, HERNANDO CREATED ARDUINO TO PROGRAM FOR INTERACTIVE ART DESIGN PROJECTS
- ARDUINO IS THE OPEN SOURCE ELECTRONIC PROTOTYPING PLATFORM BASED ON EASY-TO-USE HARDWARE AND SOFTWARE .
- ARDUINO BOARDS ARE ABLE TO READ INPUTS –LIGHT ON A SENSOR, A FINGER ON A BUTTON OR TWITTER MESSAGE – AND TURN IT INTO AN OUTPUT –ACTIVITY A MOTOR ,TURNING ON AN LED,PUBLISHING SOMETHING ONLINE.

# CODE FOR ARDUINO (STRUCTURE OF ARDUINO)

```
#define
```



**Define pins with  
variable**

```
void setup()
```

```
{
```



**Define pin as  
OUTPUT or INPUT  
Using pinMode()**

```
}
```

```
void loop()
```

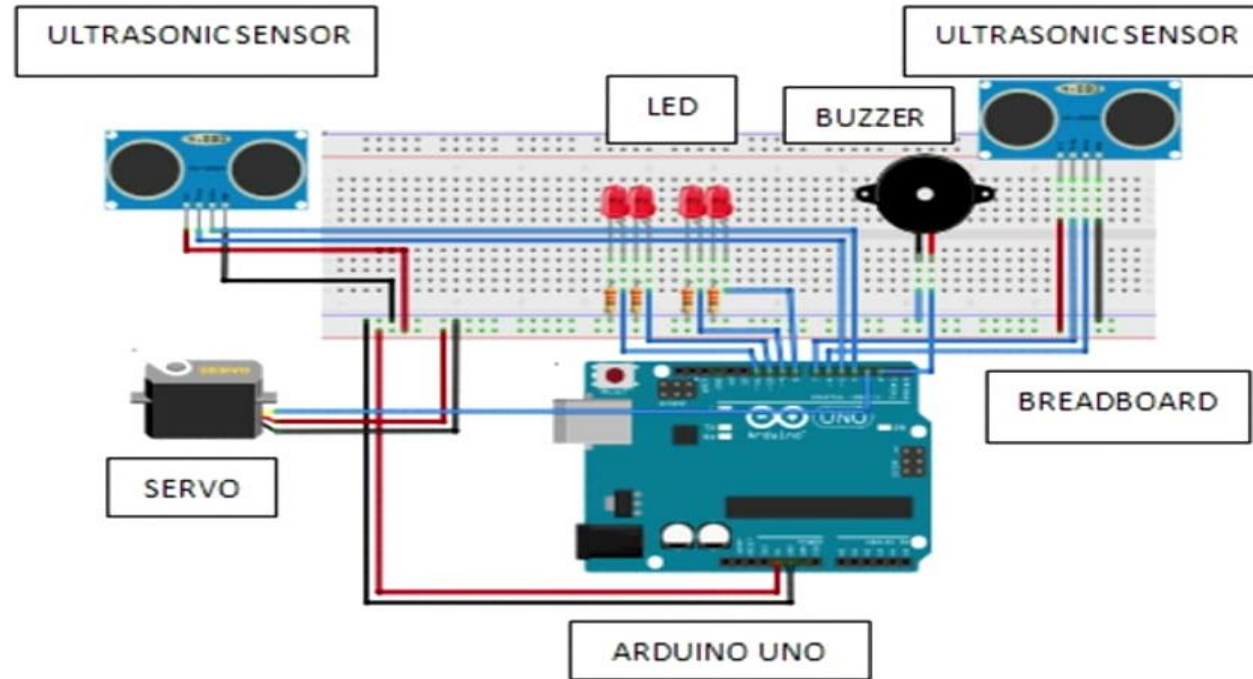
```
{
```



**Main Program,  
Commands & Logic of  
What to do?**

```
}
```





# CIRCUIT DIAGRAM

# CONCEPT BEHIND SMART DUSTBIN USING ARDUINO

- THE MAIN CONCEPT BEHIND THE SMART DUSTBIN USING ARDUINO PROJECT IS OBJECT DETECTION I HAVE ALREDY USED ALTRSONIC SENSOR IN OBJECT AVOIDING ROBOT.
- A SIMILAR METHODOLOGY IS IMPLIMENTED HERE,WHERE THE ALTRSONIC SENSOR IS PLACED ON TOP OF THE DUSTBIN'S LID AND WHEN THE SENSOR DETCTES ANY OBJECT LIKE A HUMAN HAND,IT WILL TRIGER ARDUINO TO OPEN THE LID





# TOOLS USED IN ARDUINO DUSTBIN (REQUIRED COMPONENTS)

## Required Components



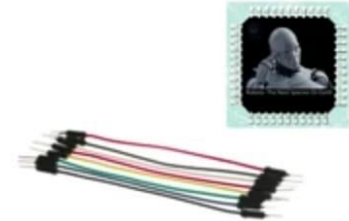
Arduino UNO



Motor Driver L293D



Bread Board



Connection Wires



Lock Assembly



LM 7805 IC



Sonar Sensor



12v DC Adapter





THANK YOU !