

## IOT SMART DUSTBIN

### **AIM:**

Design and development of IOT smart dusting with effortless and touch less.

### **PURPOSE:**

In daily life we are using dustbins to drop dust into the bin. But general dust bins are closed with cap and small in size. While dropping dust/waste some dust/waste dropped outside of the bin due to negligence. Sometimes we are not ready to touch bin cap to open because it contains infected and bad ambiance. Also whenever bin got filled no one knows without opening cap. So here we have solution like IOT smart dustbin.

### **DESCRIPTION:**

This project includes WIFI (Esp8266/IOT module) and IR, Ultrasonic sensor (HC-SR04). Dc gear motor also part project which helps to open bin cap. IR sensor placed bottom of bin. It can detect to person who wants to open bin cap. Ultrasonic sensor (HC-SR04) placed inside bin to detect dust/waste level.

### **WORKING:**

When some comes near to bin and activate IR sensor then bin cap will open. At the same time Bin level will be estimated by ultrasonic sensor. The information of IR and ultrasonic sensor will be transmitted to IOT server. Whenever bin cap open in that particular time data of IR and ultrasonic will transmitted to IOT server through (ESP8266/IOT) IOT module. Here user can't touch any part of bin. The information in the server will helps to collect bin whenever it filled completely.

## TECHNICAL SPECIFICATIONS:

### HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
WIFI	:	Esp8266 (IOT module)
H-bridge	:	L293d
Dc gear Motor	:	3 or 10 r.p.m
Ultrasonic Sensor	:	HC-SR04
IR sensor	:	Digital Type
Buzzer	:	5v DC
Power Source	:	12v 2 amp Adaptor

### SOFTWARE:

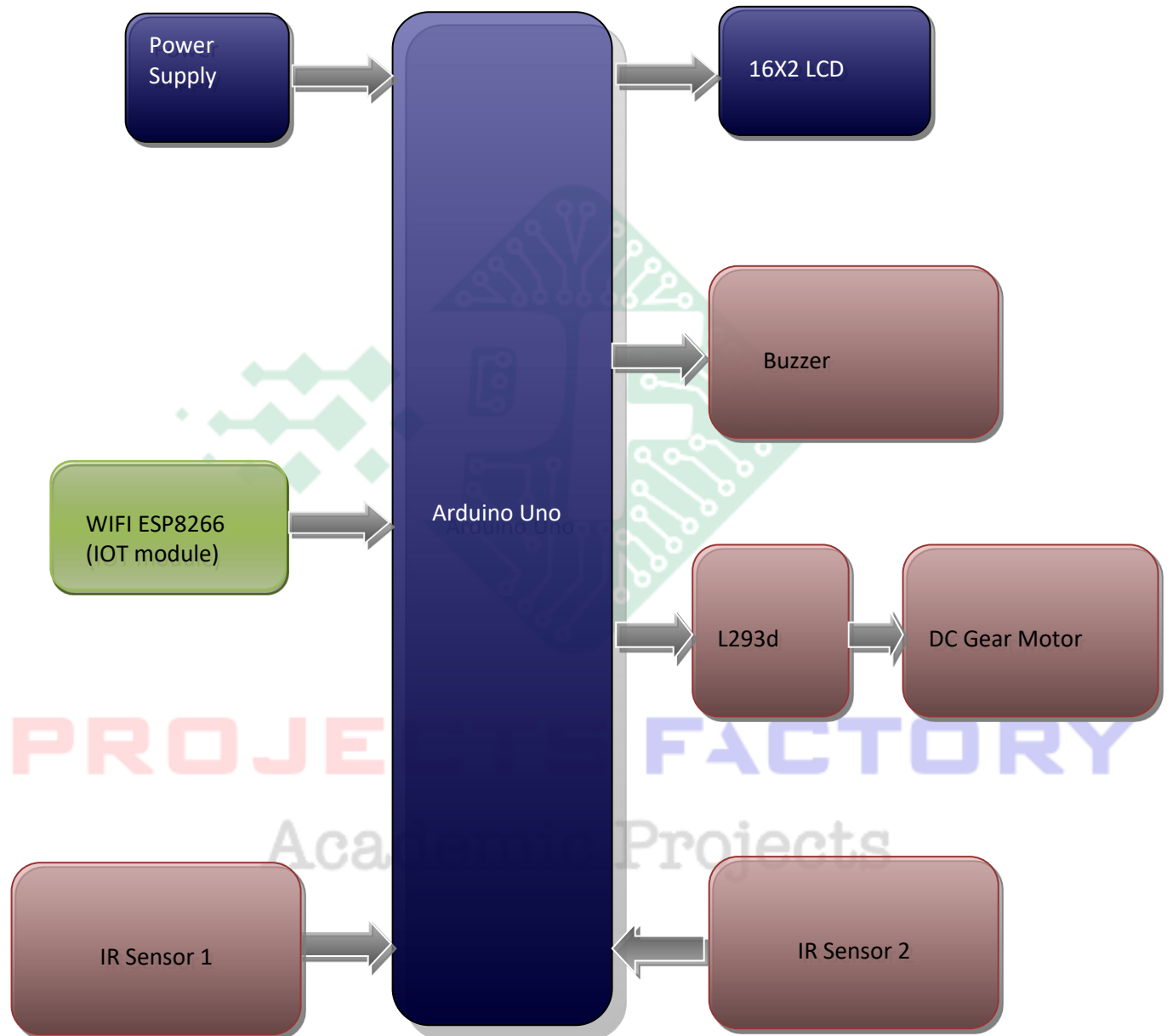
Arduino IDE

Proteus based circuit diagram

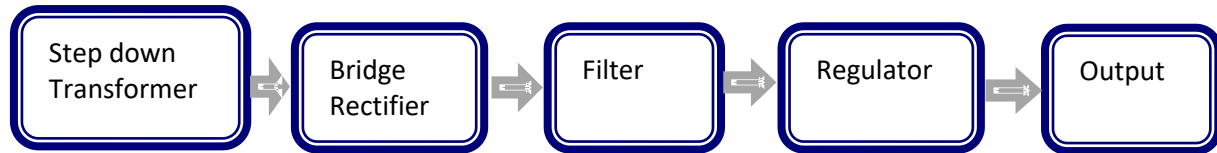
### APPLICATIONS:

- Waste management
- Touch less
- Smart Dustbin

**BLOCK DIAGRAM:**



## POWER SUPPLY BLOCKDIAGRAM:



## INTERFACES COVERD:

- In this project we have covered WIFI (ESP8266/IOT) module interface. Also sensors like IR and ultrasonic sensors along with Servo motor interface.



**PROJECTS FACTORY**  
Academic Projects