

GSM BASED SMART DUSTBIN

AIM:

Design and Development of GSM based smart dustbin.

PURPOSE:

Waste management is important task in indoor and outdoor. There is some dedicated staff available for outside waste management like municipality staff. But for indoor waste management is individual responsible and everyone should take care of that. Here smart dustbins are helpful to manage and operate dustbins in smart way. We can use these kinds of dustbins in crowded areas. Also we will get dustbin filling status through SMS, so that collection of dustbin after filling is easy. Here project title is GSM based smart dustbin using Arduino.

DESCRIPTION:

Arduino is main core on this project and it can process all required functions. GSM module connected to Arduino UART port which can send and receive SMS. L293D controls DC gear motor and L293D connected to Arduino digital pins. Two IR sensors connected to Arduino digital pins.

WORKING:

Here DC motor attached to dustbin cap which can be closed and opened. One IR sensor placed at cap of dustbin which can detect bin filling status. When this sensor activated, then SMS will be send to mobile number as “Dustbin filled”. Second IR sensor placed at bottom of dust bin. When this sensor activated then Cap will be open with the help of DC gear motor and we can drop waste material into dustbin.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
GSM Module	:	SIM800C
IR Sensor	:	5v DC
H-Bridge	:	L293D
Buzzer	:	5v DC
DC gear Motor	:	DC 3.5 R.P.M
Power Source	:	12v 2 amp Adaptor

SOFTWARE:

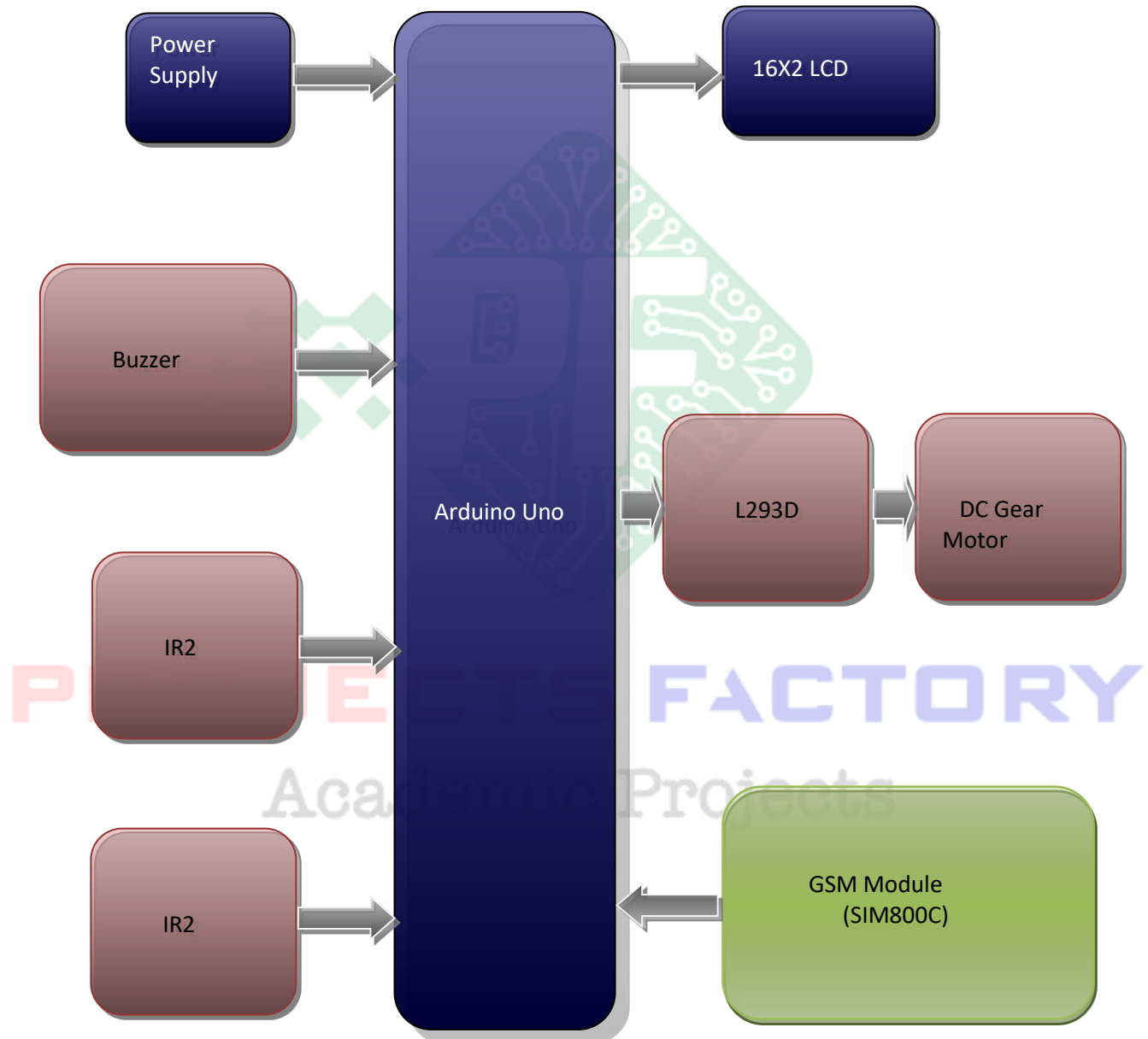
Arduino IDE

Proteus based circuit diagram

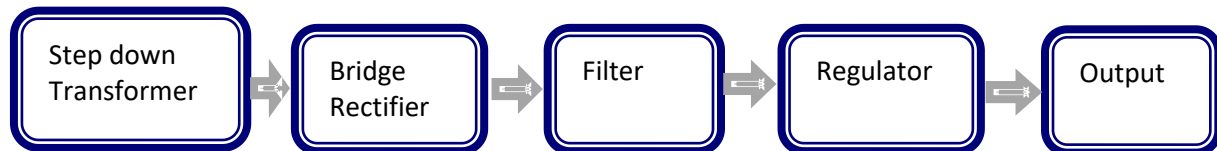
APPLICATIONS:

- Dustbin automation
- Smart dustbin
- Wireless Dustbin

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered GSM module (SIM800C) Interfacing
- IR Sensors, L293d and DC gear motors

PROJECTS FACTORY
Academic Projects