IOT BASED WASTE WATER MANAGEMENT SYSTEM

SUBMITTED BY:

SERIAL NO-12
BATCH-2
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CODING

```
#include <Servo.h>
Servo myservo;
int pos = 20;
const int trigPin = 5;
const int echoPin = 6;
const int led = 13;

long duration;
float distance;

void setup()
{
  myservo.attach(11);
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(led, OUTPUT);
  myservo.write(pos);
}

void loop()
{
  //Serial.begin(9600);
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH);
  distance = 0.034*(duration/2);
  //Serial.println(distance);
  if (distance < 27)
  {
    digitalWrite(led,HIGH);
    myservo.write(pos+160);
    delay(1000);
  }
  else
  {
    digitalWrite(led,LOW);
    myservo.write(pos);
  }
  delay(300);
}
```
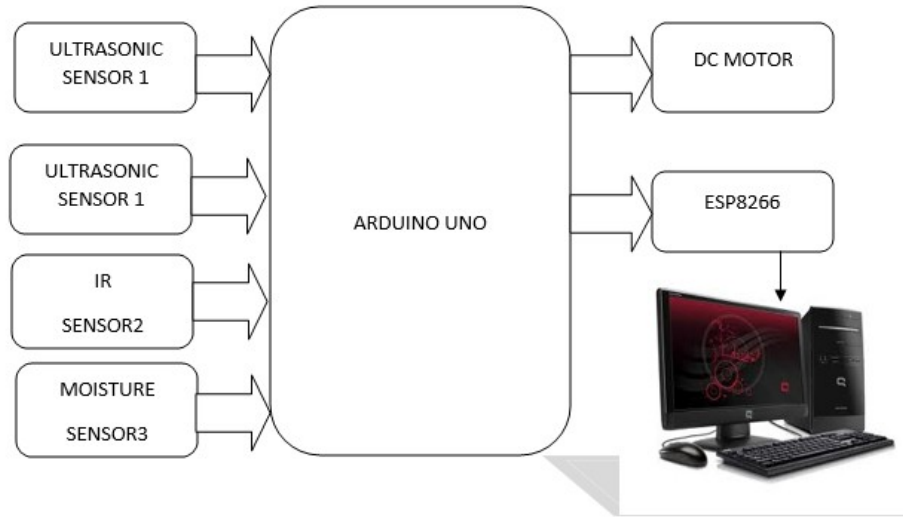
IMPLEMENTATION

- This is an IOT based smart waste management for smart city with sms service .in this project we have used sensor which should be inside the dustbin and have fitted with cosntant height in dustbin in this way that if he dustbin gets full then it sends a messge for removal of waste and if it is empty then also send message for to fill.
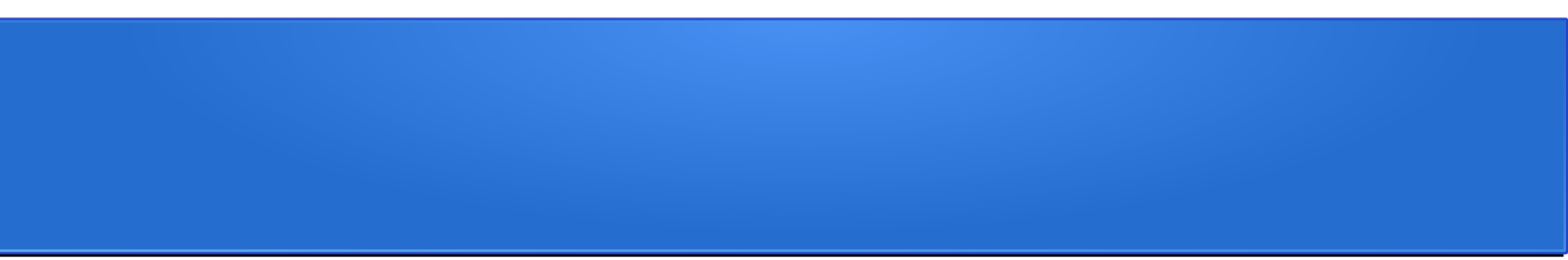
CONCLIUSION

- This project is very effective in managing waste in any big city. Rather than using conventional periodic collection methods here priority system is used to the city is clean all the time without any overflowing dumpsters. It has been tested and verified properly to make sure all the different parts work together for a smooth function of the whole system.S

CIRCUIT DIAGRAM

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METHODOLOGY

- Keil µVision IDE During the implementation of our project we have utilized certain software. The source code for the ARM microcontroller was written in programming language C. The IDE used was KeilµVision.The µVision IDE from Keil combines project management, make facilities, source code editing, program debugging, and complete simulation in one powerful environment. The µVision development platform is easy-to-use and helps you quickly create embedded programs that work. The µVision editor and debugger are integrated in a single application that provides a seamless embedded project development environment.

- ii. Arduino IDE The ArduinoSoftware (IDE) is an open source software and it makes easy to the code and upload it to the board. I t runs on the different plant from Windows, MAC OS, Linux. The environment is written in Java and before running the IDE Java software to be installed on the machine this software can be used with any Arduino board.

- IR SENSOR:-An infrared sensor is an electronic device, that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measure only infrared radiation, rather than emitting it that is called a passive IR sensor.

- Moisture sensor:-The soil moisture sensor is one kind of sensor used to gauge the volumetric content of water within the soil. As the straight gravimetric dimension of soil moisture needs eliminating, drying, as well as sample weighting. These sensors measure the volumetric water content not directly with the help of some other rules of soil like dielectric constant, electrical resistance, otherwise interaction with neutrons, and replacement of the moisture content.

- DC motor:-A DC motor is any of a class of rotary electrical motors that converts direct current electrical energy into mechanical energy. The most common types rely on the forces produced by magnetic fields. Nearly all types of DC motors have some internal mechanism, either electromechanical or electronic, to periodically change the direction of current in part of the motor.

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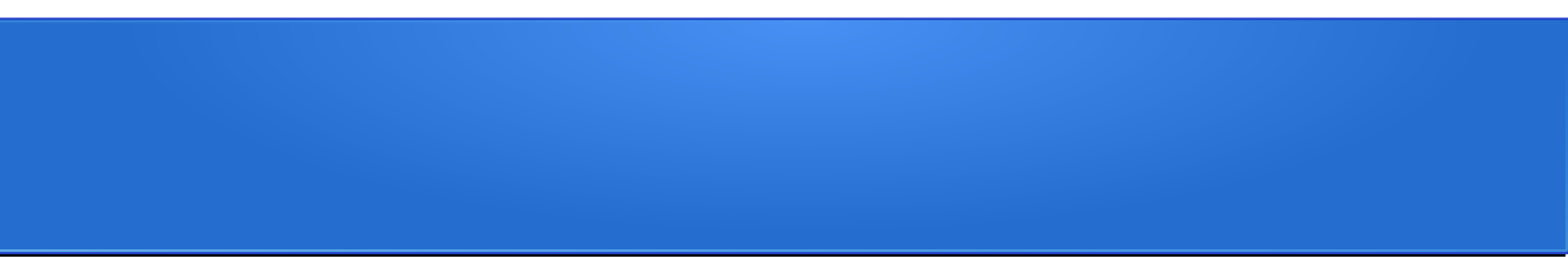
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ABSTARCT

- In the present day scenario, many times we see that the garbage bins or Dust bin are placed at public places in the cities are overflowing due to increase in the waste every day. It creates unhygienic condition for the people and creates bad smell around the surroundings this leads in spreading some deadly diseases & human illness, to avoid such a situation we are planning to design "IoT Based Waste Management for Smart Cities ". In this proposed System there are multiple dustbins located throughout the city or the Campus, these dustbins are provided with low cost embedded device which helps in tracking the level of the garbage bins and an unique ID will be provided for every dustbin in the city so that it is easy to identify which garbage bin is full. When the level reaches the threshold limit, the device will transmit the level along with the unique ID provided. These details can be accessed by the concern authorities from their place with the help of Internet and an immediate action can be made to clean the dustbins.

INTRODUCTION

- This system works using these components :
- Arduino Uno.
- Ultrasonic Sensor.
- IR Sensor.
- Moister Sensor.
- Dc Motor.
- Today big cities around the world are facing a common problem, managing the city waste effectively without making city unclean. Today's waste management systems involve a large number of employees being appointed to attend a certain number of dumpsters this is done every day periodically. This leads to a very inefficient and unclean system in which some dumpsters will be overflowing some dumpsters might not be even half full. This is caused by variation in population density in the city or some other random factor this makes it impossible to determine which part needs immediate attention. Here a waste management system is introduced in which each dumpster is embedded in a monitoring system that will notify the corresponding personal if the dumpster is full. In this system, it is also possible to separate wet and dry waste into two separate containers. This system provides an effective solution to the waste management problem

REQUIREMENTS

- ARDUINO UNO :-it is a microcontroller based on the ATmega328p(datasheet).it has 14 digital input/output pins (of which 6 can be used as pwm outputs),6 analog inputs, a 16 MHz ceramic resonator (CSTCE16MOV53-R0), a usb connection a power jack,an icp header and a reset button .

- ULTRASONIC SENSOR:-An ultrasonic sensor is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. Ultrasonic waves travel faster than the speed of audible sound (i.e. the sound that humans can hear). Ultrasonic sensors have two main components: the transmitter (which emits the sound using piezoelectric crystals) and the receiver (which encounters the sound after it has travelled to and from the target).

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