VEHICLE MANAGEMENT SYSTEM

REVIEW-III REPORT

Submitted by

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Project Code

```
// Define pins for ultrasonic and LED
int const trigPin = 4;  //exit
int const echoPin = 5;

int const trigPin2 = 11;  // entery
int const echoPin2 = 10;

int const trigPin3 = 13;  //entery
int const echoPin3 = 12;

int const trigPin4 = 2;  //exit
int const echoPin4 = 3;

int const led = 6;
int const led2 = 7;
int const led3 = 8;

//int const led5 = 0;

int const counter_led = 9;
long count=0;
long count2=0;
long count3=0;
long count4=0;
long tk=0;

void setup()
{
  Serial.begin(115200);
  pinMode(trigPin, OUTPUT); // trig pin will have pulses output
  pinMode(echoPin, INPUT); // echo pin should be input to get pulse width

  pinMode(trigPin2, OUTPUT); // trig pin will have pulses output
  pinMode(echoPin2, INPUT); // echo pin should be input to get pulse width

  pinMode(trigPin3, OUTPUT); // trig pin will have pulses output
  pinMode(echoPin3, INPUT); // echo pin should be input to get pulse width

  pinMode(trigPin4, OUTPUT); // trig pin will have pulses output
  pinMode(echoPin4, INPUT); // echo pin should be input to get pulse width

  pinMode(led, OUTPUT); // led pin is output to control LED lights
  pinMode(led2, OUTPUT); // led pin is output to control LED lights
  pinMode(led3, OUTPUT); // led pin is output to control LED lights
//  pinMode(led4, OUTPUT); // led pin is output to control LED lights
  pinMode(led5, OUTPUT); // led pin is output to control LED lights
```

```
  pinMode(counter_led, OUTPUT);
}

void loop()
{

  if(tk>10)
    digitalWrite(counter_led, HIGH);
  else
    digitalWrite(counter_led, LOW);

  entry1();

  entry2();

  exit1();

//  exit2();

}

void entry1()
{

  int duration2, distance2;

  digitalWrite(trigPin2, HIGH);
  delay(1);
  digitalWrite(trigPin2, LOW);

  duration2 = pulseIn(echoPin2, HIGH);

   distance2 = (duration2/2) / 74;

   if (distance2 < 5) {

      count2++;
      digitalWrite(led2, HIGH);

    } else {

       if(count2!=0)
      {
     //increment tk value and display the count

        tk++;
        Serial.print("\n++++++++++++++++++++");
        Serial.print('\n');
```

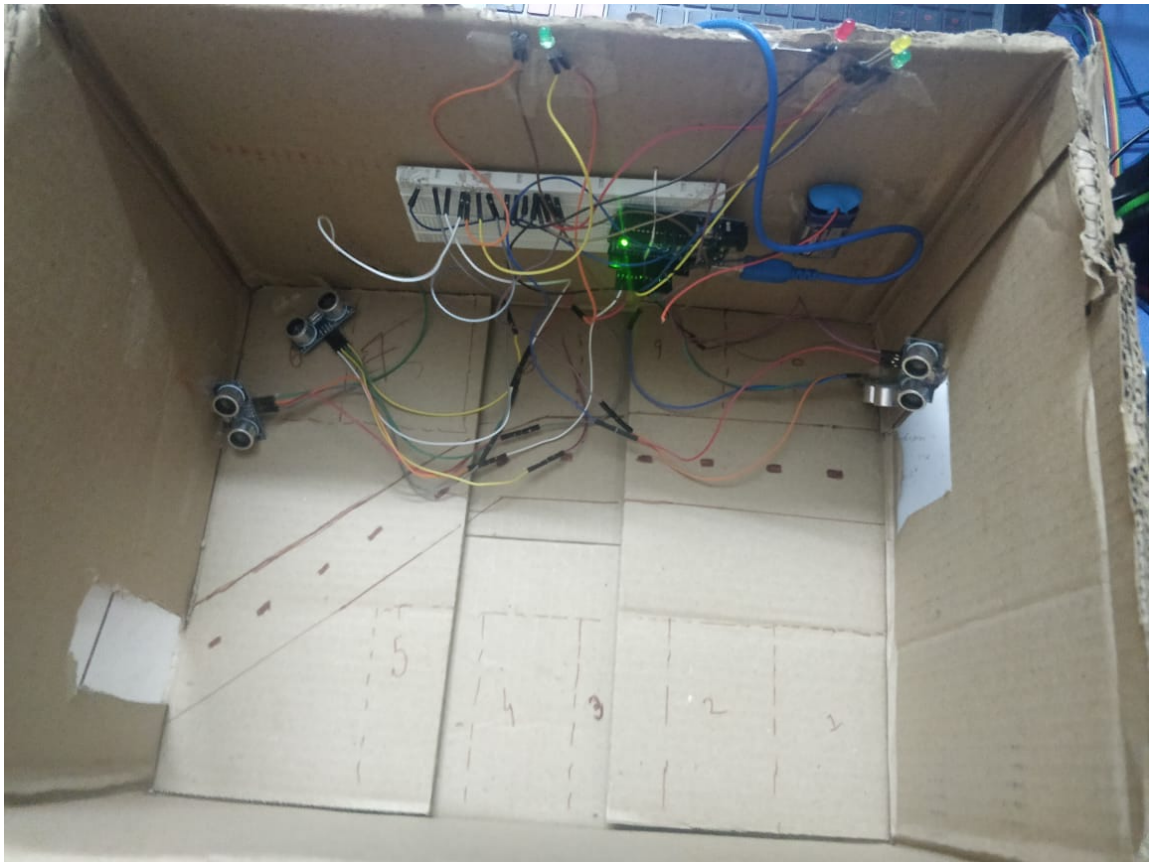
```
        Serial.print(tk);
        Serial.print('\n');
        Serial.print("++++++++++++++++++++++");

      }

      count2=0;

      // LED off
      digitalWrite(led2, LOW);
    }
    delay(60);

  }

void entry2()
{
  int duration3, distance3;

  digitalWrite(trigPin3, HIGH);
  delay(1);
  digitalWrite(trigPin3, LOW);

  duration3 = pulseIn(echoPin3, HIGH);

  distance3 = (duration3/2) / 74;

   if (distance3 < 5) {

      count3++;
      digitalWrite(led, HIGH);

    } else {

       if(count3!=0)
      {
        //increment tk value and display the count

        tk++;
        Serial.print("\n++++++++++++++++++++");
        Serial.print('\n');
        Serial.print(tk);
        Serial.print('\n');
        Serial.print("++++++++++++++++++++++");

      }

      count3=0;
```

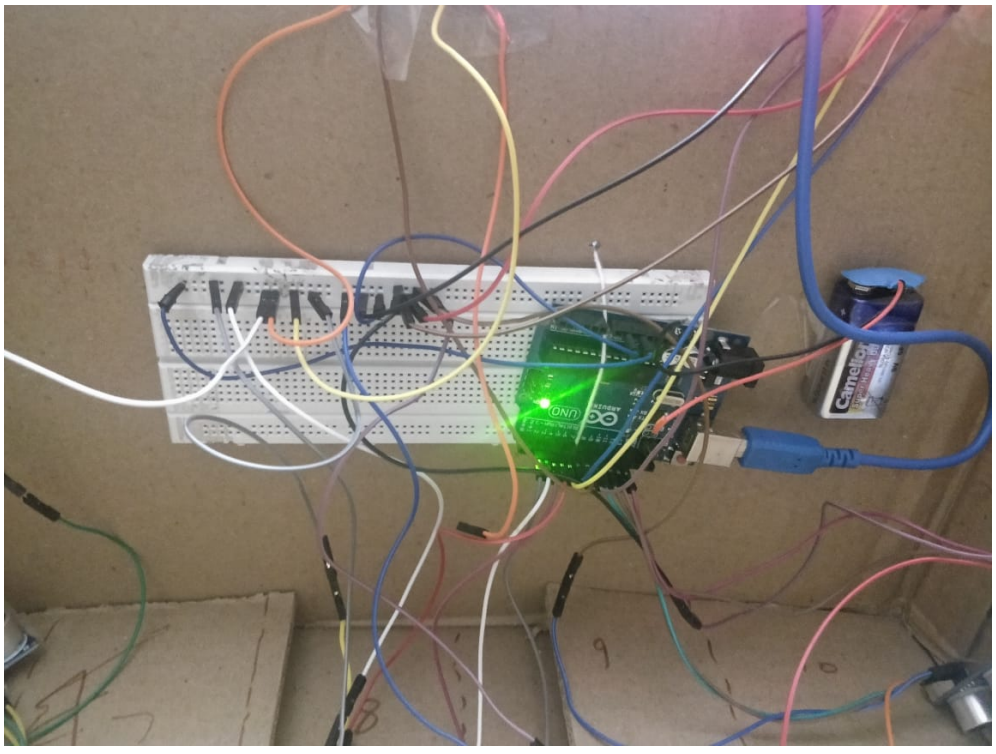
```
      // LED off
      digitalWrite(led, LOW);
    }
    delay(60);

  }

  void exit1()
{
  int duration, distance;

  digitalWrite(trigPin, HIGH);
  delay(1);
  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH);

  distance = (duration/2) / 74;

   if (distance < 5) {

      count++;
      digitalWrite(led3, HIGH);

    } else {

       if(count!=0)
      {
        //increment tk value and display the count

        tk--;
        Serial.print("\n------------------");
        Serial.print('\n');
        Serial.print(tk);
        Serial.print('\n');
        Serial.print("--------------------");

      }

      count=0;

      // LED off
      digitalWrite(led3, LOW);
    }
    delay(60);

  }
  void exit2()
{
```

```
  int duration4, distance4;

  digitalWrite(trigPin4, HIGH);
  delay(1);
  digitalWrite(trigPin4, LOW);

  duration4 = pulseIn(echoPin3, HIGH);

  distance4 = (duration4/2) / 74;

   if (distance4 < 5) {

      count4++;
//      digitalWrite(led4, HIGH);

    } else {

       if(count4!=0)
      {
        //increment tk value and display the count

        tk--;
        Serial.print("\n------------------");
        Serial.print('\n');
        Serial.print(tk);
        Serial.print('\n');
        Serial.print("--------------------");

      }

      count4=0;

      // LED off
//      digitalWrite(led4, LOW);
    }
    delay(60);

  }
```

Implementation

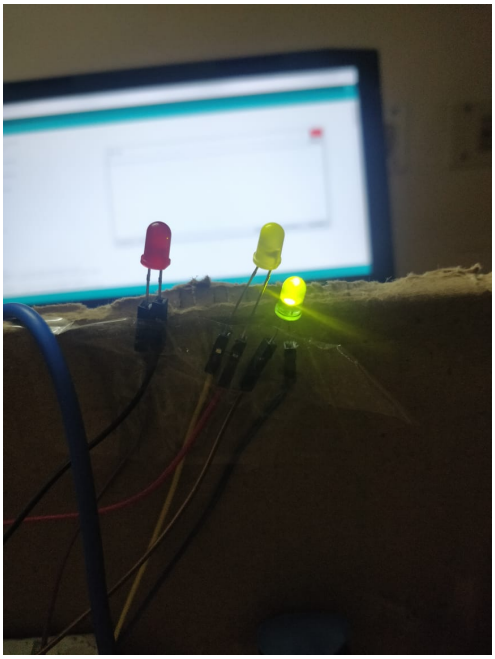
Setup of the vehicle management system:



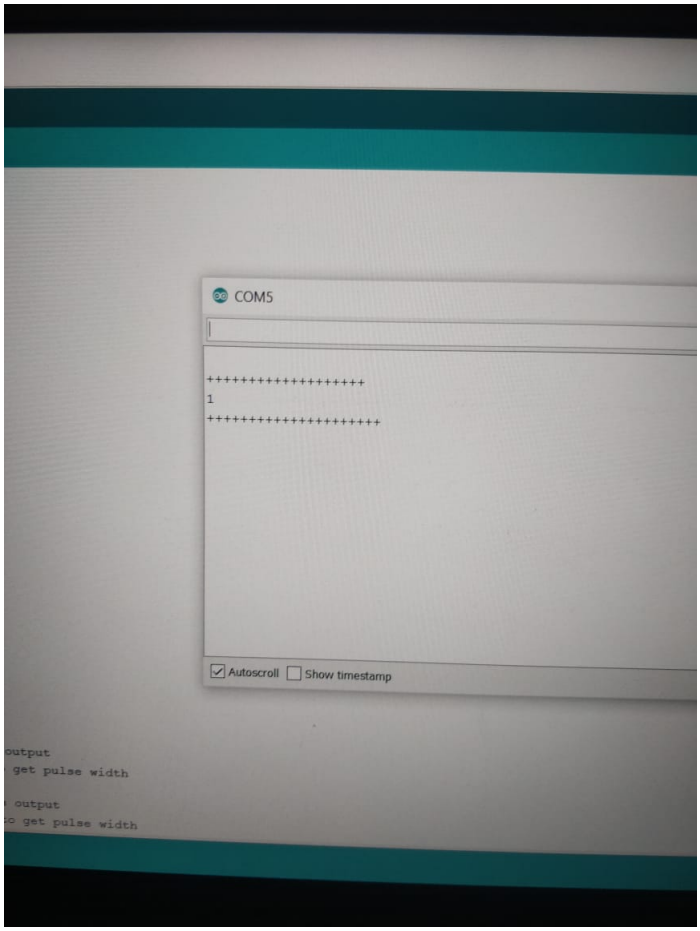


Entry of car:

Detection of entry of car will be confirmed by the glowing of Green LED at the entry gate

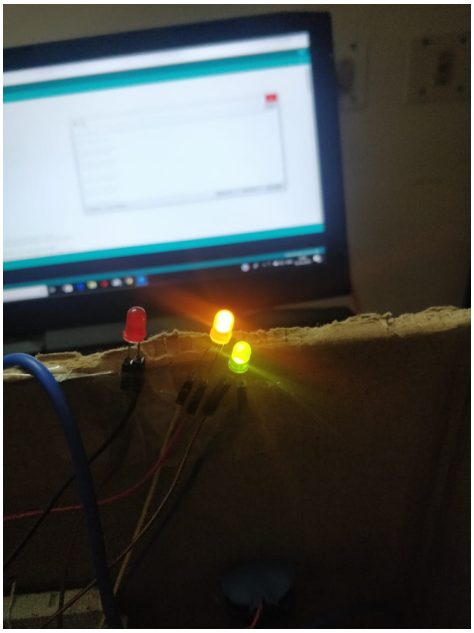


Counter decreases and the number of vehicles is decreased and counted. Here it is **one** parking space for car

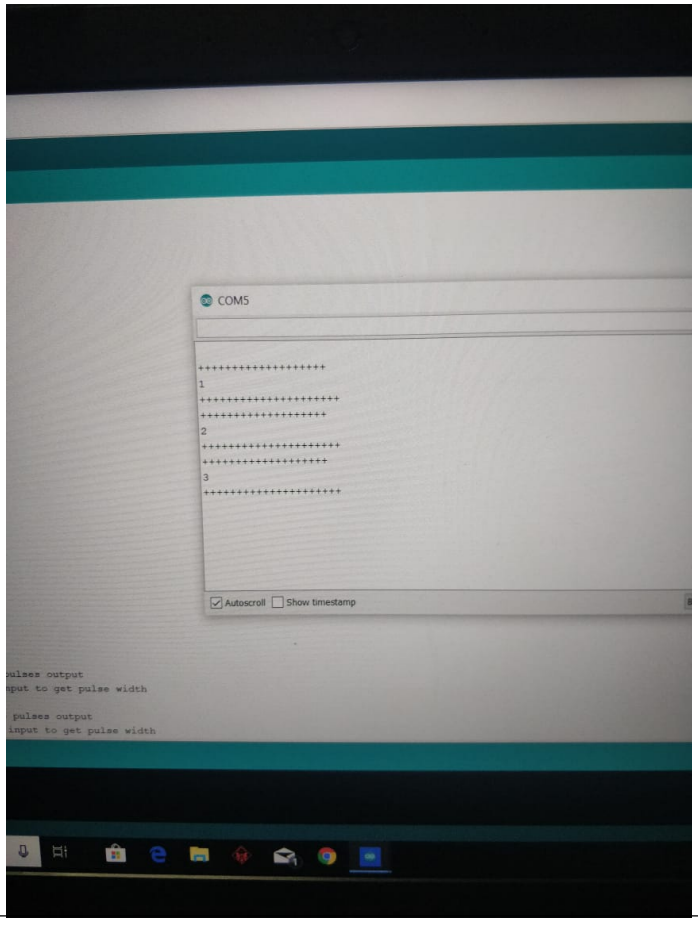


Entry of Truck: (Here in the picture wallet is assumed as truck) Truck has height greater than car. So we have taken a long object here.

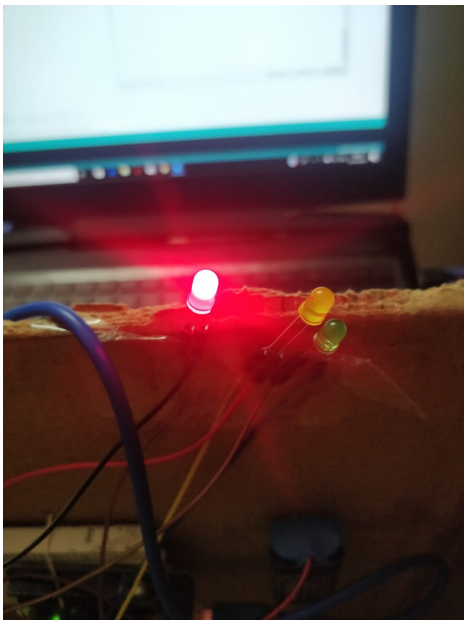
Detection of entry of truck will be confirmed by the glowing of Green LED and Yellow LED simultaneously at the entry gate



Counter decreases and the number of vehicles is decreased and counted. Here it is **two** parking space for truck

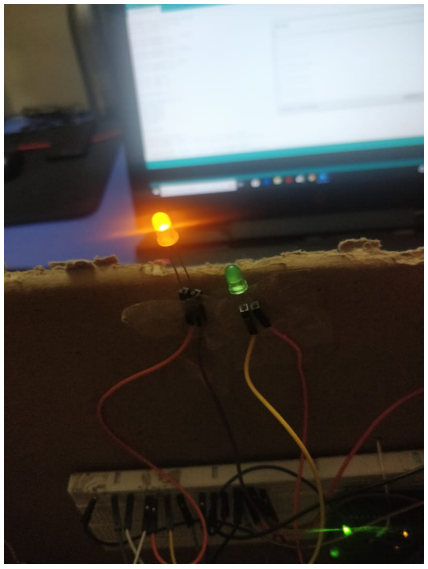


Parking limitation: We have assumed that there are 10 parking space. If all parking space are full then red LED will glow at the entry gate



Exit of vehicle:

Detection of exit of vehicle will be confirmed by the glowing of yellow LED at the exit gate



Counter decreases and the number of vehicles is decreased and counted.