

```

int vSpeed = 130;
int turn_speed = 250;    // 0 - 255 max
int t_p_speed = 170;
int stop_distance = 6;
int turn_delay = 150;
int LED =13;

//HC-SR04 Sensor connection
const int trigPin = 11;
const int echoPin = 12;

//L293 Connection
const int motorA1    = 3;
const int motorA2    = 4;
const int motorAspeed = 5;
const int motorB1    = 7;
const int motorB2    = 8;
const int motorBspeed =6;

//Sensor Connection
const int left_sensor_pin =9;
const int right_sensor_pin =10;

int turnspeed;
int left_sensor_state;
int right_sensor_state;

long duration;
int distance;

void setup() {
  pinMode(motorA1, OUTPUT);
  pinMode(motorA2, OUTPUT);
  pinMode(motorB1, OUTPUT);
  pinMode(motorB2, OUTPUT);
  pinMode (LED, OUTPUT); //Declaring pin 13 as output pin

  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);

  Serial.begin(9600);

  delay(100);

}

```

```

void loop() {
  digitalWrite(trigPin, LOW);
  delayMicroseconds(5);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(5);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance= duration*0.034/2;
  Serial.print("Distance: ");
  Serial.println(distance);

  digitalWrite (LED, HIGH); //Turn ON the LED
  delay(00); //Wait for 1sec
  //digitalWrite (LED, LOW); // Turn off the LED
  //delay(500); // Wait for 1sec

  left_sensor_state = digitalRead(left_sensor_pin);
  right_sensor_state = digitalRead(right_sensor_pin);

  if(right_sensor_state == HIGH && left_sensor_state == LOW)
  {
    Serial.println("turning right");

    digitalWrite (motorA1,LOW);
    digitalWrite(motorA2,HIGH);
    digitalWrite (motorB1,LOW);
    digitalWrite(motorB2,HIGH);

    analogWrite (motorAspeed, vSpeed);
    analogWrite (motorBspeed, turn_speed);

    delay(300);
  }
  if(right_sensor_state == LOW && left_sensor_state == HIGH)
  {
    Serial.println("turning left");

    digitalWrite (motorA1,HIGH);
    digitalWrite(motorA2,LOW);
    digitalWrite (motorB1,HIGH);
    digitalWrite(motorB2,LOW);
  }
}

```

```

analogWrite (motorAspeed, vSpeed);
analogWrite (motorBspeed, turn_speed);

delay(300);
}

if(right_sensor_state == LOW && left_sensor_state == LOW)
{
    Serial.println("going forward");

    digitalWrite (motorA1,LOW);
    digitalWrite(motorA2,HIGH);
    digitalWrite (motorB1,HIGH);
    digitalWrite(motorB2,LOW);

    analogWrite (motorAspeed, vSpeed);
    analogWrite (motorBspeed, vSpeed);

    delay(100);

}
if(right_sensor_state == HIGH && left_sensor_state == HIGH)
{
    Serial.println("stop");

    analogWrite (motorAspeed, 0);
    analogWrite (motorBspeed, 0);

    while(true){

    }
}

if(distance < stop_distance)
{

    digitalWrite (motorA1,HIGH);
    digitalWrite(motorA2,LOW);
    digitalWrite (motorB1,LOW);
    digitalWrite(motorB2,HIGH);
    delay(100);
    analogWrite (motorAspeed, 0);
    analogWrite (motorBspeed, 0);
    delay(100);
    digitalWrite (motorA1,HIGH);
    digitalWrite(motorA2,LOW);

```

```
digitalWrite (motorB1,HIGH);  
digitalWrite(motorB2,LOW);
```

```
analogWrite (motorAspeed, t_p_speed);  
analogWrite (motorBspeed, t_p_speed);  
delay(1300);
```

```
digitalWrite (motorA1,LOW);  
digitalWrite(motorA2,HIGH);  
digitalWrite (motorB1,HIGH);  
digitalWrite(motorB2,LOW);
```

```
analogWrite (motorAspeed, t_p_speed);  
analogWrite (motorBspeed, t_p_speed);  
delay(1800);
```

```
digitalWrite (motorA1,LOW);  
digitalWrite(motorA2,HIGH);  
digitalWrite (motorB1,LOW);  
digitalWrite(motorB2,HIGH);  
delay(1500);
```

```
digitalWrite (motorA1,LOW);  
digitalWrite(motorA2,HIGH);  
digitalWrite (motorB1,HIGH);  
digitalWrite(motorB2,LOW);
```

```
delay(2000);
```

```
digitalWrite (motorA1,LOW);  
digitalWrite(motorA2,HIGH);  
digitalWrite (motorB1,LOW);  
digitalWrite(motorB2,HIGH);  
delay(1200);
```

```
digitalWrite (motorA1,LOW);  
digitalWrite(motorA2,HIGH);  
digitalWrite (motorB1,HIGH);  
digitalWrite(motorB2,LOW);  
delay(1600);  
digitalWrite (motorA1,HIGH);  
digitalWrite(motorA2,LOW);  
digitalWrite (motorB1,HIGH);  
digitalWrite(motorB2,LOW);
```

```
analogWrite (motorAspeed, t_p_speed);
analogWrite (motorBspeed, t_p_speed);
delay(1200);

left_sensor_state == HIGH;

while(left_sensor_state == LOW){

left_sensor_state = digitalRead(left_sensor_pin);
right_sensor_state = digitalRead(right_sensor_pin);
Serial.println("in the first while");

}

digitalWrite (motorA1,HIGH);
digitalWrite(motorA2,LOW);
digitalWrite (motorB1,LOW);
digitalWrite(motorB2,HIGH);
delay(100);

}
}
```