#include<Servo.h>

#include <dht.h>

Servo myservo;

#define dht\_apin A0

dht DHT;

int trig=2;

int echo=3;

int motor1p=10;

int motor1n=11;

int motor2p=12;

int motor2n=13;

int t=0,d=0;

void setup()

{

pinMode(trig,OUTPUT);

pinMode(echo,INPUT);

pinMode(motor1p,OUTPUT);

pinMode(motor1n,OUTPUT);

pinMode(motor2p,OUTPUT);

pinMode(motor2n,OUTPUT);

Serial.begin(115200);

myservo.attach(9); //this statement should be always, inside the void setup, we cant declare it globally since alreday we declared globally by using "Servo myservo"

myservo.write(98);

digitalWrite(motor1p,LOW);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

}

void loop()

{

Serial.println("\n\nDHT11 Humidity & temperature Sensor");

DHT.read11(dht\_apin);

Serial.print("Current humidity = ");

Serial.print(DHT.humidity);

delay(500);

Serial.print("% ");

Serial.print("temperature = ");

Serial.print(DHT.temperature);

Serial.println("C ");

delay(500);

digitalWrite(trig,LOW);

delayMicroseconds(50);

digitalWrite(trig,HIGH);

delayMicroseconds(50);

digitalWrite(trig,LOW);

delayMicroseconds(50);

t=pulseIn(echo,HIGH);

Serial.print("time taken by waveform:");

Serial.println(t);

delay(500);

d=t\*0.034/2;

Serial.print("distance(d) in cm:");

Serial.println(d);

delay(500);

if(d<=30)

{

Serial.println("stoped");

digitalWrite(motor1p,LOW);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

Serial.println("servo rotating 20 degrees");

delay(500);

myservo.write(20);

delay(2000);

//again sending wave for checking distance

digitalWrite(trig,LOW);

delayMicroseconds(50);

digitalWrite(trig,HIGH);

delayMicroseconds(50);

digitalWrite(trig,LOW);

delayMicroseconds(50);

t=pulseIn(echo,HIGH);

Serial.print("time taken by waveform:");

Serial.println(t);

delay(500);

int d1=t\*0.034/2;

Serial.print("distance(d1) after 20 degrees:");

Serial.println(d1);

delay(500);

if(d1<=30) //checking distance for 20 degrees i.e right side

{

Serial.println("stoped");

digitalWrite(motor1p,LOW);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

Serial.println("servo rotating 180 degrees");

myservo.write(180);

delay(2000);

//again sending wave for checking distance

digitalWrite(trig,LOW);

delayMicroseconds(50);

digitalWrite(trig,HIGH);

delayMicroseconds(50);

digitalWrite(trig,LOW);

delayMicroseconds(50);

t=pulseIn(echo,HIGH);

Serial.print("time taken by waveform:");

Serial.println(t);

delay(500);

int d2=t\*0.034/2;

Serial.print("distance(d2) after 180 degrees:");

Serial.println(d2);

delay(500);

if(d2<=30) // checking distance for left side i.e 180 degrees

{

Serial.println("stoped");

digitalWrite(motor1p,LOW);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

Serial.println("servo rotating 98 degrees");

myservo.write(98);

delay(2000);

Serial.println("moving left for 2 seconds");

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

delay(2000); // rotating for 2 seconds

Serial.println("moving forward");

delay(500);

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,HIGH);

digitalWrite(motor2n,LOW);

}

else

{

Serial.println("moving left");

delay(500);

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,LOW);

digitalWrite(motor2n,LOW);

delay(1000);

Serial.println("servo rotating 98 degrees");

myservo.write(98);

delay(2000);

Serial.println("moving forward");

delay(500);

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,HIGH);

digitalWrite(motor2n,LOW);

}

}

else

{

Serial.println("moving right");

delay(500);

digitalWrite(motor1p,LOW);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,HIGH);

digitalWrite(motor2n,LOW);

delay(1000);

Serial.println("servo rotating 98 degrees");

myservo.write(98);

delay(2000);

Serial.println("moving forward");

delay(500);

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,HIGH);

digitalWrite(motor2n,LOW);

}

}

else

{

Serial.println("servo rotating 98 degrees");

delay(500);

myservo.write(98);

Serial.println("moving forward");

delay(500);

digitalWrite(motor1p,HIGH);

digitalWrite(motor1n,LOW);

digitalWrite(motor2p,HIGH);

digitalWrite(motor2n,LOW);

}

}