#include <NewPing.h>

#include <Servo.h>

#define LM1 4 // left motor

#define LM2 5 // left motor

#define RM1 6 // right motor

#define RM2 7 // right motor

#define TRIGGER\_PIN 10

#define ECHO\_PIN 11

#define MAX\_DISTANCE 200

boolean goesForward = false;

int distance = 100;

NewPing sonar(TRIGGER\_PIN, ECHO\_PIN, MAX\_DISTANCE);

Servo servo\_motor; //our servo nam

void setup() {

// put your setup code here, to run once:

Serial.begin(9600);

pinMode(LM1, OUTPUT);

pinMode(LM2, OUTPUT);

pinMode(RM1, OUTPUT);

pinMode(RM2, OUTPUT);

pinMode(A0,INPUT);

pinMode(A1,INPUT);

pinMode(A2,INPUT);

pinMode(A3,INPUT);

pinMode(A4,INPUT);

pinMode(A5,INPUT);

pinMode(12,OUTPUT);

digitalWrite(12,LOW);

servo\_motor.attach(9); //our servo pin

servo\_motor.write(115);

delay(2000);

distance = readPing();

delay(100);

distance = readPing();

delay(100);

distance = readPing();

delay(100);

distance = readPing();

delay(100);

//digitalWrite(A0,LOW);

}

void loop() {

int f=digitalRead(A0);

Serial.print("F");

Serial.println(f);

int l=digitalRead(A1);

Serial.print("L");

Serial.println(l);

int r=digitalRead(A2);

Serial.print("R");

Serial.println(r);

int c=digitalRead(A3);

Serial.print("C");

Serial.println(c);

int a=digitalRead(A4);

Serial.print("A");

Serial.println(a);

int s=digitalRead(A5);

Serial.print("S");

Serial.println(s);

// put your main code here, to run repeatedly:

if(f==1)

{

moveForward();

}

if(l==1)

{

turnLeft();

}

if(r==1)

{

turnRight();

}

if(c==1)

{

moveForward();

digitalWrite(12,HIGH);

}

if(a==1)

{

digitalWrite(12,HIGH);

int distanceRight = 0;

int distanceLeft = 0;

delay(50);

if (distance <= 20){

moveStop();

delay(300);

moveBackward();

delay(400);

moveStop();

delay(300);

distanceRight = lookRight();

delay(300);

distanceLeft = lookLeft();

delay(300);

if (distance >= distanceLeft){

turnRight();

moveStop();

}

else{

turnLeft();

moveStop();

}

}

else{

moveForward();

}

distance = readPing();

}

if(s==1)

{

moveStop();

digitalWrite(12,LOW);

}

}

int lookRight(){

servo\_motor.write(50);

delay(500);

int distance = readPing();

delay(100);

servo\_motor.write(115);

return distance;

}

int lookLeft(){

servo\_motor.write(170);

delay(500);

int distance = readPing();

delay(100);

servo\_motor.write(115);

return distance;

delay(100);

}

int readPing(){

delay(70);

int cm = sonar.ping\_cm();

if (cm==0){

cm=250;

}

return cm;

}

void autoClean(){

moveForward();

digitalWrite(13,HIGH);

}

void moveStop(){

digitalWrite(LM1, LOW);

digitalWrite(LM2, LOW);

digitalWrite(RM1, LOW);

digitalWrite(RM2, LOW);

}

void moveForward(){

if(!goesForward){

goesForward=true;

digitalWrite(LM1, LOW);

digitalWrite(LM2, HIGH);

digitalWrite(RM1, LOW);

digitalWrite(RM2, HIGH);

}

}

void moveBackward(){

goesForward=false;

digitalWrite(LM1, HIGH);

digitalWrite(LM2, LOW);

digitalWrite(RM1, HIGH);

digitalWrite(RM2, LOW);

}

void turnRight(){

digitalWrite(LM1, LOW);

digitalWrite(LM2, HIGH);

digitalWrite(RM1, HIGH);

digitalWrite(RM2, LOW);

delay(500);

digitalWrite(LM1, LOW);

digitalWrite(LM2, HIGH);

digitalWrite(RM1, LOW);

digitalWrite(RM2, HIGH);

}

void turnLeft(){

digitalWrite(LM1, HIGH);

digitalWrite(LM2, LOW);

digitalWrite(RM1, LOW);

digitalWrite(RM2, HIGH);;

delay(500);

digitalWrite(LM1, LOW);

digitalWrite(LM2, HIGH);

digitalWrite(RM1, LOW);

digitalWrite(RM2, HIGH);

}