int StateVar = 1;

int LOOP6counter = 0;

int x = 0;

int state2counter = 0;

int yetanothercounter = 0;

int rightForwardPin = 5;

int leftForwardPin = 6;

int rightReversePin = 3;

int leftReversePin = 9;

int LineSensorPin = A0;

int RightSensorPin = 11;

int LeftSensorPin = 12;

int BigSensorPin = A3;

int BigSensorValue = 0;

int BigSensorValue2 = 0;

int LeftSensorValue = 0;

int RightSensorValue = 0;

int LineSensorValue = 0;

void setup() {

pinMode(rightForwardPin, OUTPUT);

pinMode(leftForwardPin, OUTPUT);

pinMode(rightReversePin, OUTPUT);

pinMode(leftReversePin, OUTPUT);

pinMode(RightSensorPin, INPUT);

pinMode(LeftSensorPin, INPUT);

delay(4000);

Serial.begin(9600);

}

void loop() {

switch (StateVar){

case 1: // spin Right and look at big sensor

SpinRight();

BigSensorValue = ReadBigSensor();

Serial.println("Case 1");

if (BigSensorValue > 60){

StateVar = 2;

}

break;

case 2:

Forward();

BigSensorValue = ReadBigSensor();

RightSensorValue = ReadRightSensor();

LeftSensorValue = ReadLeftSensor();

state2counter = state2counter +1;

Serial.println("Case 2");

if (((LeftSensorValue == 0) || (RightSensorValue == 0))&&(BigSensorValue > 230)){

StateVar = 5;

}

else if(((BigSensorValue < 60) && (LeftSensorValue == 1) && (RightSensorValue == 1))&&(state2counter>100)){

state2counter =0;

StateVar = 6;

}

else if(((BigSensorValue < 60) && (LeftSensorValue == 1) && (RightSensorValue == 1))&&(state2counter<=100)){

StateVar = 1;

}

break;

case 3:

RightCorrect();

RightSensorValue = ReadRightSensor();

Serial.println("Case 3");

if (RightSensorValue == 0) {

StateVar = 5;

}

break;

case 4:

LeftCorrect();

LeftSensorValue = ReadLeftSensor();

Serial.println("Case 4");

if (LeftSensorValue == 0) {

StateVar = 5;

}

break;

case 5:

Forward();

RightSensorValue = ReadRightSensor();

LeftSensorValue = ReadLeftSensor();

Serial.println("Case 5");

if ((RightSensorValue == 1) && (LeftSensorValue == 0)) {

StateVar = 3;

}

else if ((RightSensorValue == 0) && (LeftSensorValue == 1)) {

StateVar = 4;

}

break;

case 6:

LookLeft();

BigSensorValue = ReadBigSensor();

RightSensorValue = ReadRightSensor();

LeftSensorValue = ReadLeftSensor();

Serial.println("Case 6");

if ((BigSensorValue > 60)||(RightSensorValue == 0)||(LeftSensorValue == 0)) {

LOOP6counter = 0;

StateVar = 2;

}

else if(((LOOP6counter < 1994)&&(BigSensorValue < 60))||(yetanothercounter < 30)){

LOOP6counter = LOOP6counter +1;

}

else{

yetanothercounter = yetanothercounter + 1;

LOOP6counter = 0;

StateVar = 1;

}

break;

default:

StateVar = 1;

break;

}

}

void Forward(){

digitalWrite(rightReversePin, LOW);

digitalWrite(leftReversePin, LOW);

digitalWrite(rightForwardPin, HIGH);

digitalWrite(leftForwardPin, HIGH);

}

void SpinRight(){

digitalWrite(leftReversePin, LOW);

digitalWrite(rightForwardPin, LOW);

digitalWrite(leftForwardPin, HIGH);

digitalWrite(rightReversePin, HIGH);

}

void LookLeft(){

digitalWrite(rightReversePin, LOW);

digitalWrite(leftForwardPin, LOW);

digitalWrite(leftReversePin, HIGH);

digitalWrite(rightForwardPin, HIGH);

}

void RightCorrect(){

digitalWrite(leftForwardPin, LOW);

digitalWrite(rightReversePin, LOW);

digitalWrite(rightForwardPin, HIGH);

digitalWrite(leftReversePin, HIGH);

}

void LeftCorrect(){

digitalWrite(leftReversePin, LOW);

digitalWrite(rightForwardPin, LOW);

digitalWrite(rightReversePin, HIGH);

digitalWrite(leftForwardPin, HIGH);

}

int ReadBigSensor(){

x = 3;

analogRead(BigSensorPin); //discard 1st measurement

BigSensorValue = analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin);

BigSensorValue2 =analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin) + analogRead(BigSensorPin);

return ((BigSensorValue+BigSensorValue2)/18);

}

int ReadRightSensor(){

RightSensorValue = digitalRead(RightSensorPin);

return RightSensorValue;

}

int ReadLeftSensor(){

LeftSensorValue = digitalRead(LeftSensorPin);

return LeftSensorValue;

}

//void stopp(){

// digitalWrite(leftReversePin, LOW);

// digitalWrite(rightForwardPin, LOW);

// digitalWrite(rightReversePin, LOW);

// digitalWrite(leftForwardPin, LOW);

//}