#define lmotorf 4 //Motor A1

#define lmotorb 5 //Motor A2

#define rmotorf 6 //Motor B1

#define rmotorb 7 //Motor B2

int EN1=100;

int EN2=100;

//HIGH white

//LOW black

void setup() {

pinMode(lmotorf,OUTPUT);

pinMode(rmotorf,OUTPUT);

pinMode(lmotorb,OUTPUT);

pinMode(rmotorb,OUTPUT);

pinMode(8,INPUT);

pinMode(2,INPUT);//9

pinMode(10,INPUT);

pinMode(11,INPUT);

pinMode(12,INPUT);

pinMode(13,INPUT);

pinMode(9,OUTPUT);//right//2

pinMode(3,OUTPUT);//left

}

void loop() {

int sensor1=digitalRead(8);//sensor1

int sensor2=digitalRead(2);//sensor2//9

int sensor3=digitalRead(10);//sensor3

int sensor4=digitalRead(11);//sensor4

int sensor5=digitalRead(12);//sensor5

if((sensor2==LOW)&&(sensor3==LOW)&&(sensor4==LOW)) //When ALL ARE on WHITE line

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==HIGH)&&(sensor3==LOW)&&(sensor4==HIGH))

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==LOW)&&(sensor3==HIGH)&&(sensor4==LOW))

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==HIGH)&&(sensor5==LOW)&&(sensor2==LOW)&&(sensor3==HIGH)&&(sensor4==LOW))//1 LEFT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==LOW)&&(sensor5==HIGH)&&(sensor2==LOW)&&(sensor3==HIGH)&&(sensor4==HIGH))//1 LEFT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==HIGH)&&(sensor5==LOW)&&(sensor2==LOW)&&(sensor3==LOW)&&(sensor4==LOW))//1 LEFT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==LOW)&&(sensor5==HIGH)&&(sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==HIGH))//NULL

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==LOW)&&(sensor3==LOW)&&(sensor4==HIGH))//1 LEFT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==LOW)&&(sensor3==HIGH)&&(sensor4==HIGH))//1 LEFT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==HIGH)&&(sensor3==LOW)&&(sensor4==LOW))//FOR RIGHT

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==LOW))//FOR RIGHT

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==HIGH)&&(sensor5==LOW)&&(sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==HIGH))//1 LEFT

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==HIGH)&&(sensor5==LOW)&&(sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==LOW))//1 LEFT

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==LOW)&&(sensor5==HIGH)&&(sensor2==LOW)&&(sensor3==HIGH)&&(sensor4==LOW))

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor1==HIGH)&&(sensor5==LOW)&&(sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==HIGH))

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else if((sensor2==HIGH)&&(sensor3==HIGH)&&(sensor4==HIGH))//FOR RIGHT

{

digitalWrite(lmotorf,HIGH);

digitalWrite(rmotorf,HIGH);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

else

{

digitalWrite(lmotorf,LOW);

digitalWrite(rmotorf,LOW);

digitalWrite(lmotorb,LOW);

digitalWrite(rmotorb,LOW);

analogWrite(9,EN1);

analogWrite(3,EN2);

}

}