

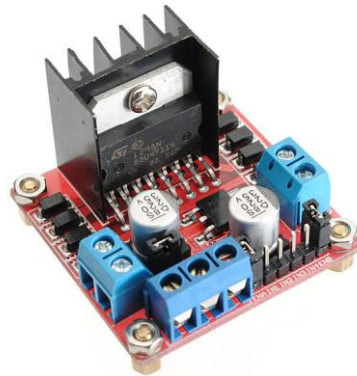
ROBOT DÒ LINE TRÁNH VẬT CẢN

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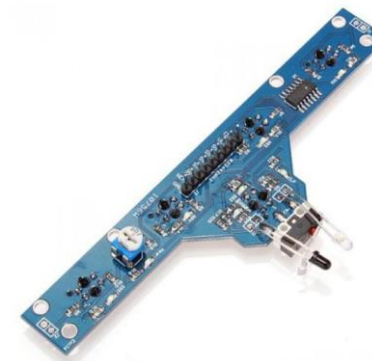
1. Thành phần cấu tạo



Arduino Uno R3



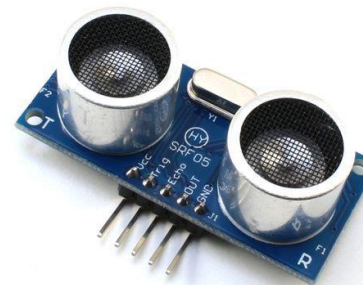
Module L298N



Cảm biến dò line 5 led

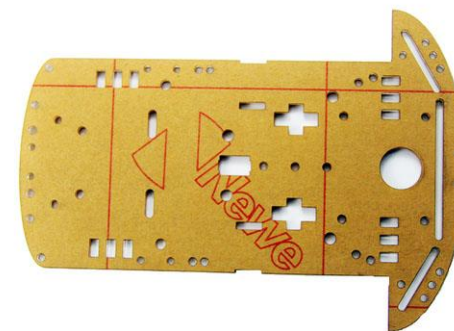


Servo sg90

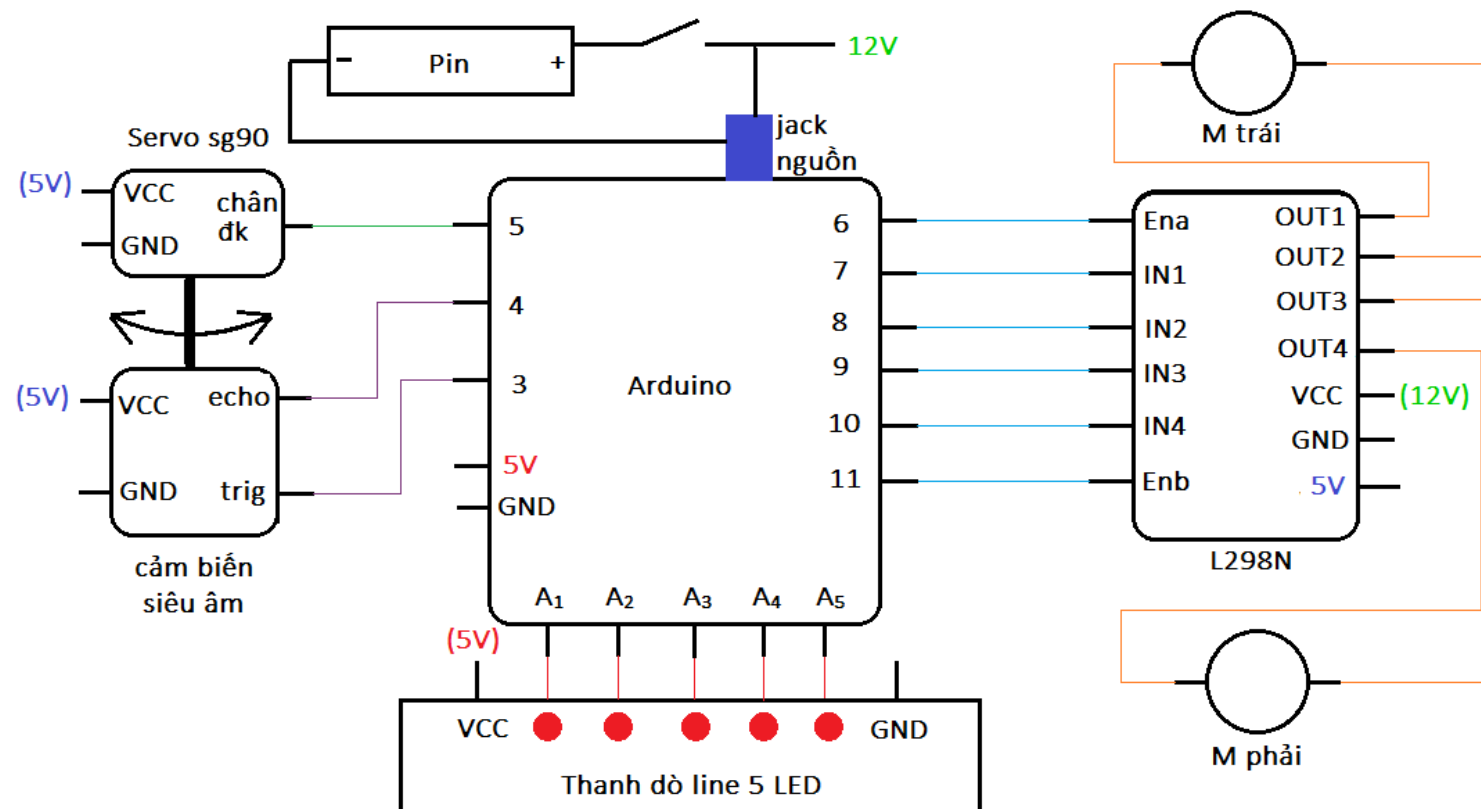


Ultrasonic sensor

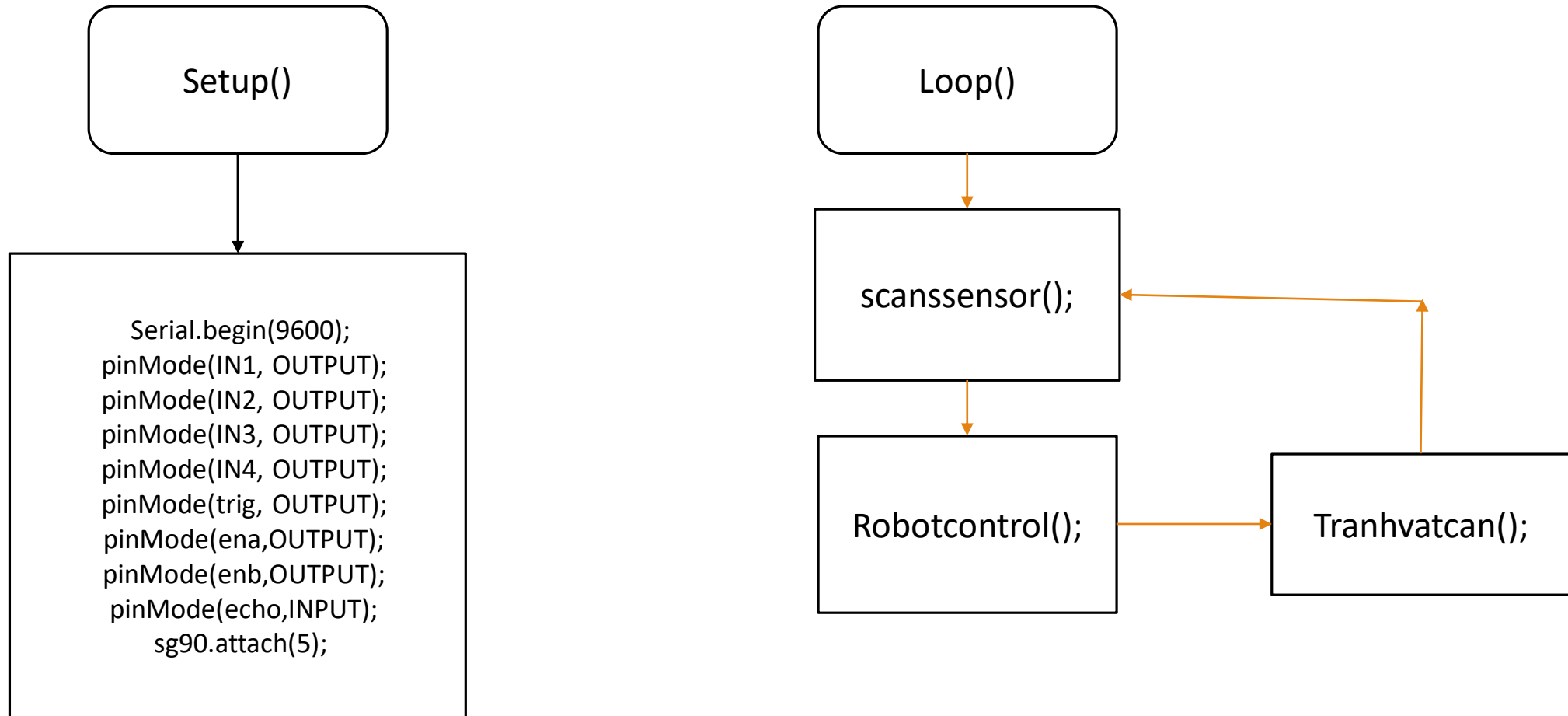
1. Thành phần cấu tạo

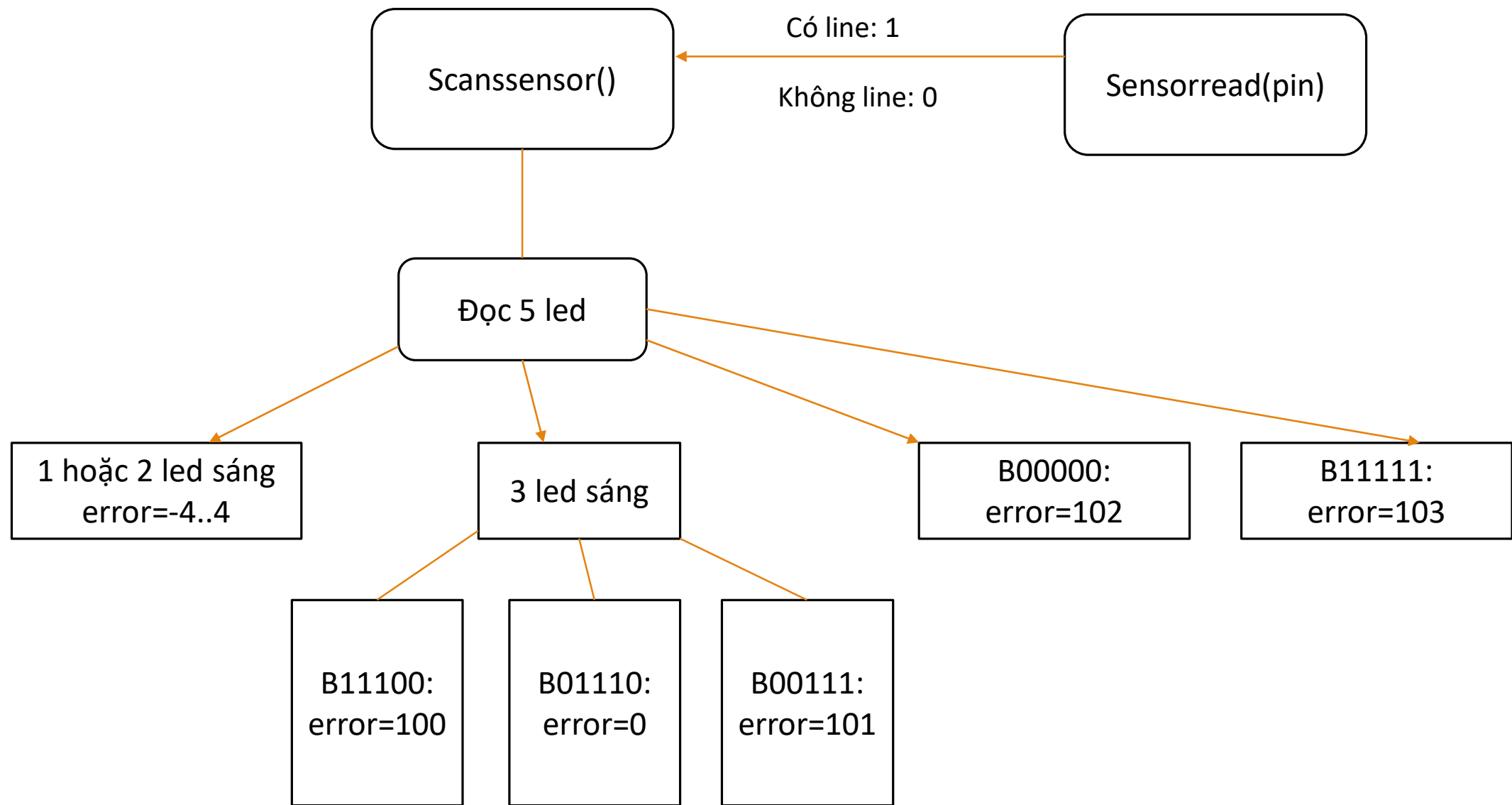


2. Sơ đồ lắp ráp



3. Thuật toán





PID()

Kp=15;Ki=0;Kd=101.8

P=error;
I+=error;
D=error-previous_error;
PID_value=Kp*P+Ki*I+Kd*D
Previous_error=error;

Khởi tạo: Previous_error=0;
Rspeed=70;
Lspeed=70;

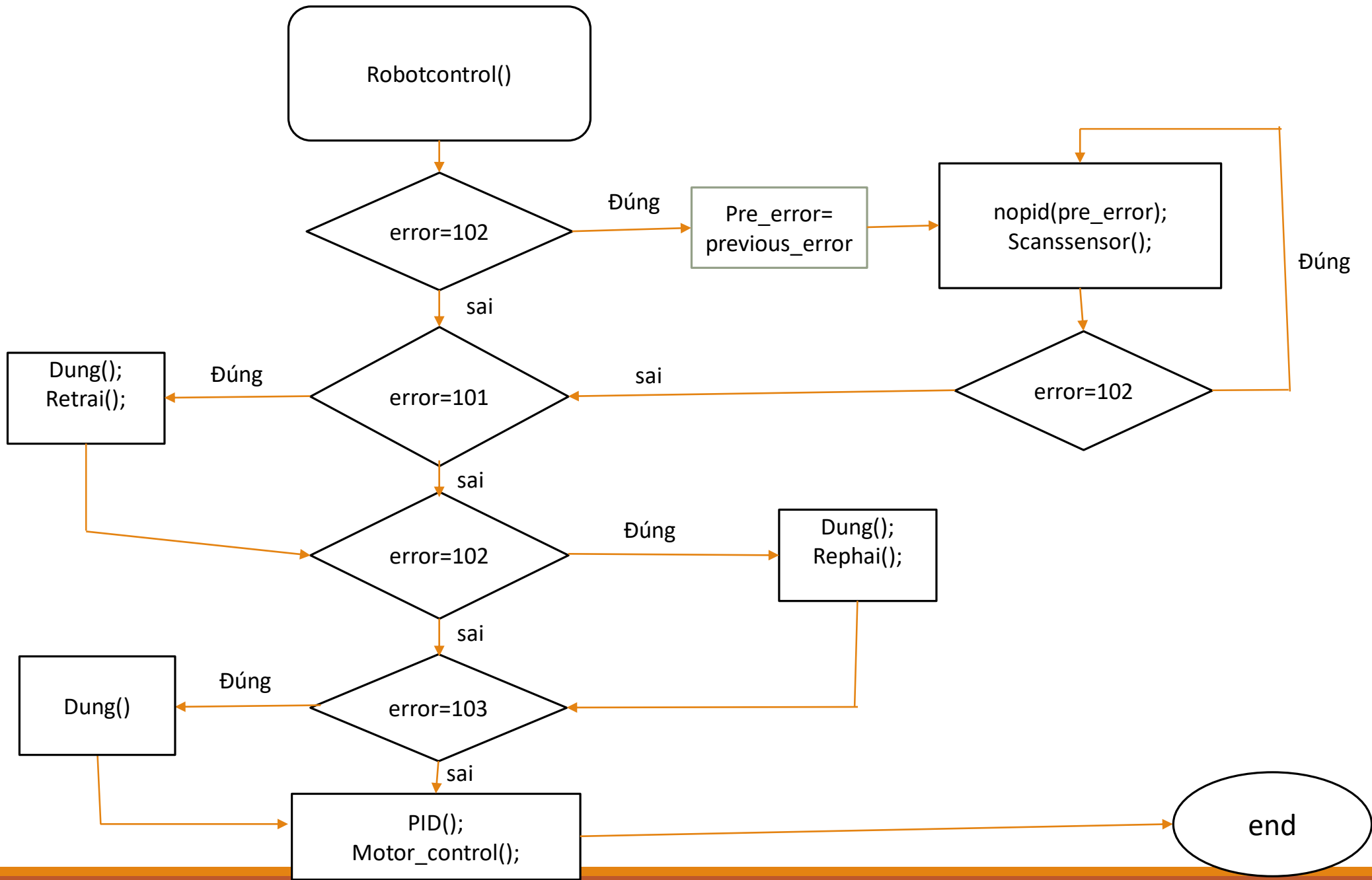
Motor_control()

Rpid = constrain(Rspeed + PID_value,20,180);
Lpid = constrain(Lspeed - PID_value,20,180);

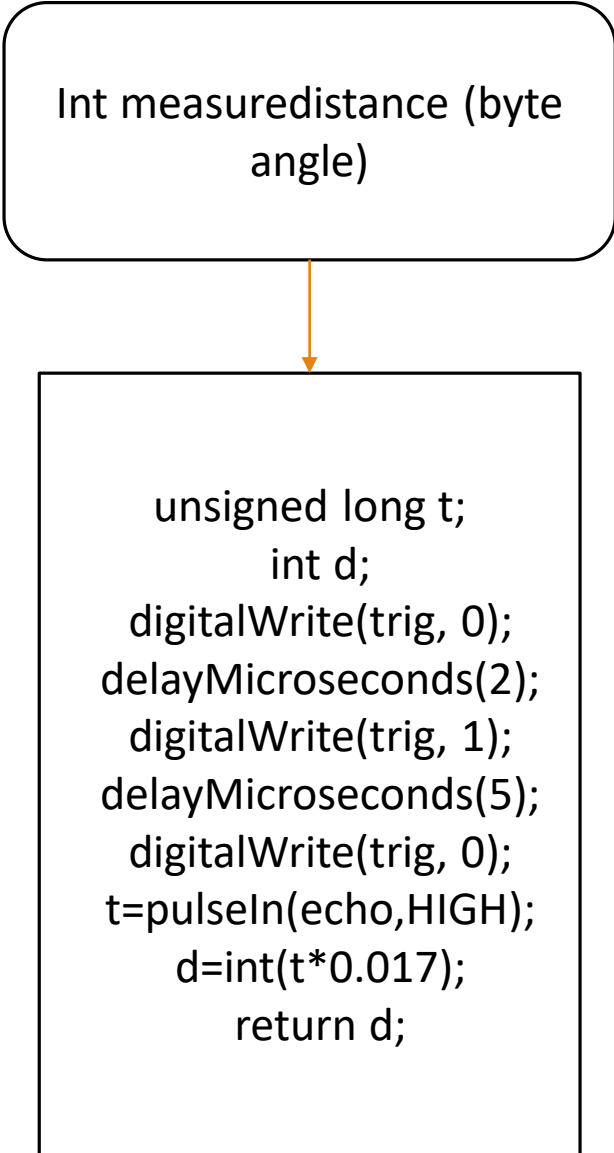
analogWrite(enb,Rpid-20);
analogWrite(ena,Lpid);

Robotspeed()

0: dừng xe.
1: Tiến.
2: lùi.
3: rẽ phải.
4: rẽ trái.
5: tiến phải.
6: tiến trái.



Int measuredistance (byte
angle)



```
graph TD; A[Int measuredistance (byte angle)] --> B[Code Block]
```

```
unsigned long t;  
int d;  
digitalWrite(trig, 0);  
delayMicroseconds(2);  
digitalWrite(trig, 1);  
delayMicroseconds(5);  
digitalWrite(trig, 0);  
t=pulseIn(echo,HIGH);  
d=int(t*0.017);  
return d;
```

