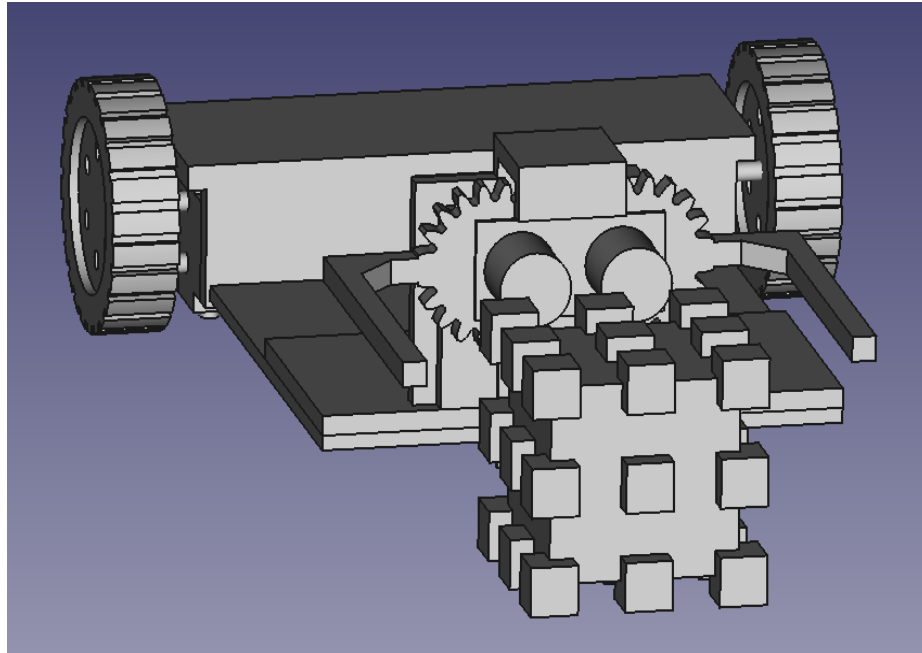
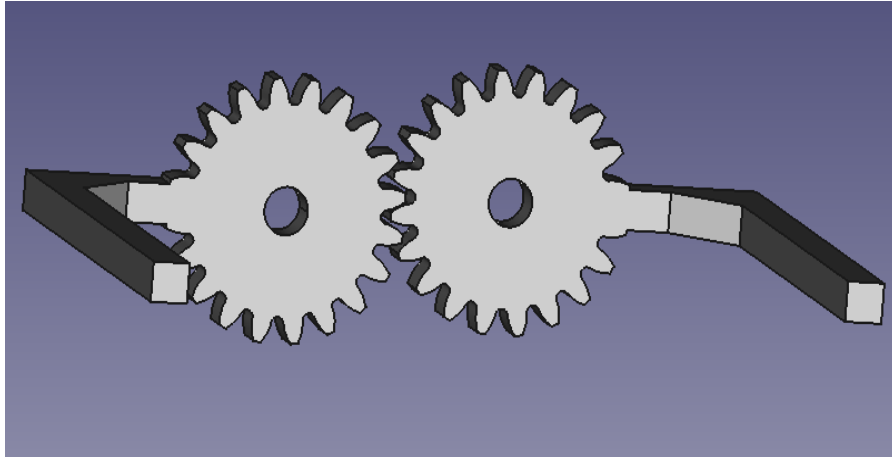


두돈 반

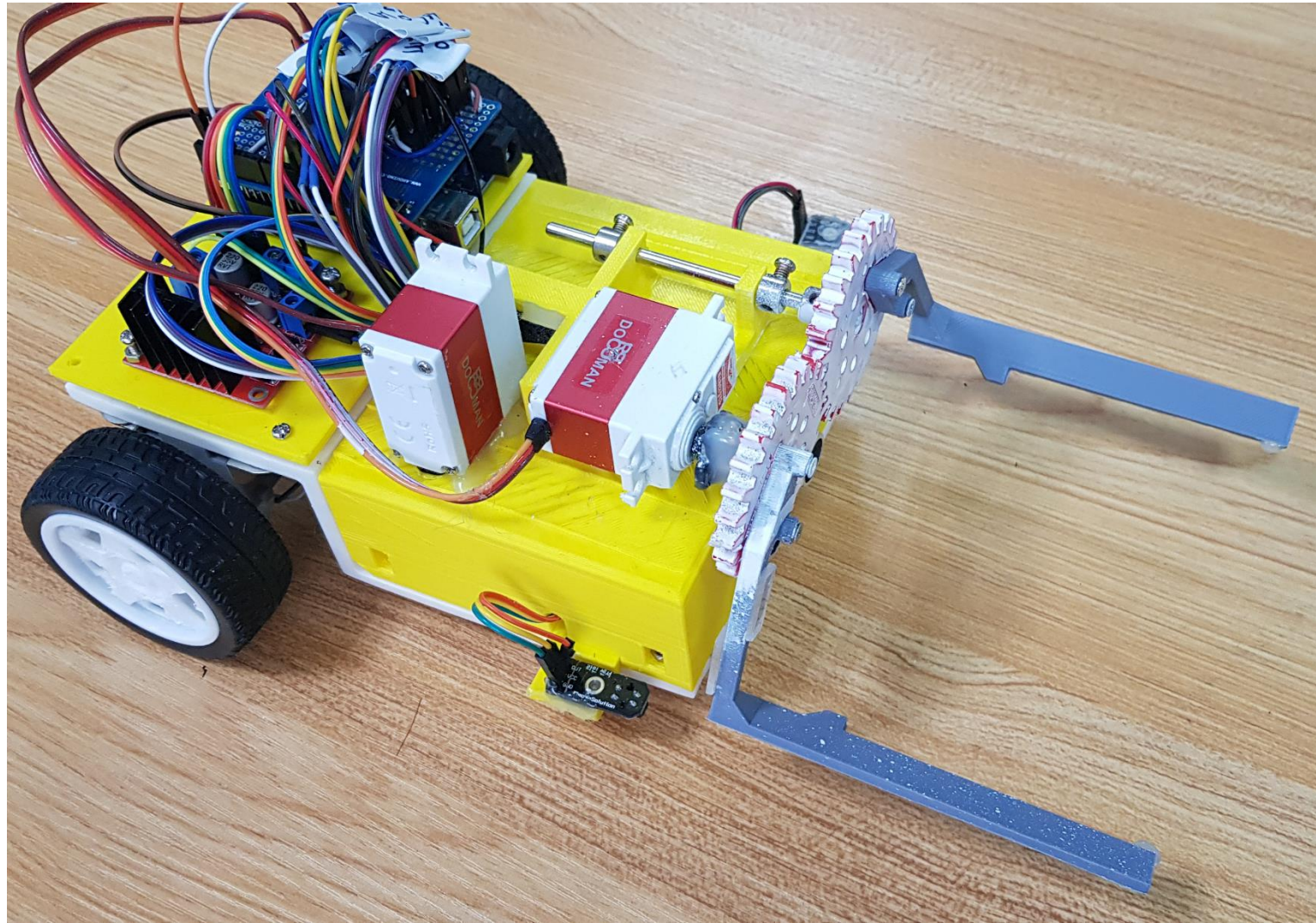
Simple is the Best

강인구
기인호
김은규
서혁준

Mechanism



Manufacture

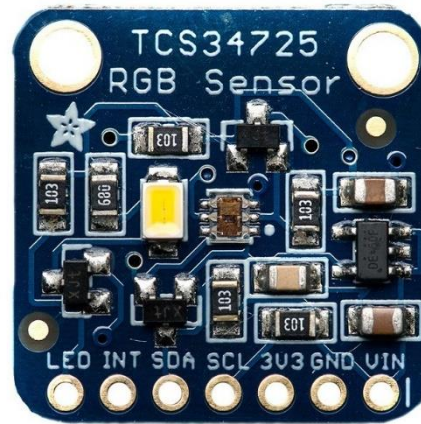


Sensors

IR



RGB



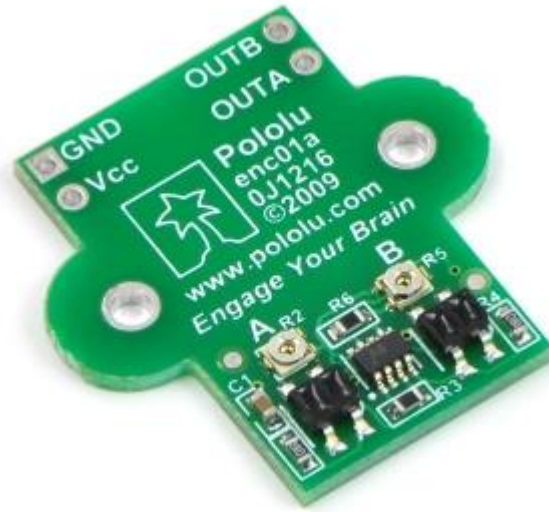
Ultrasonic



Problem | 라인 트레이싱, 큐브 거리 인식, 색 인식

Solution | IR 센서, RGB 센서, 초음파 센서

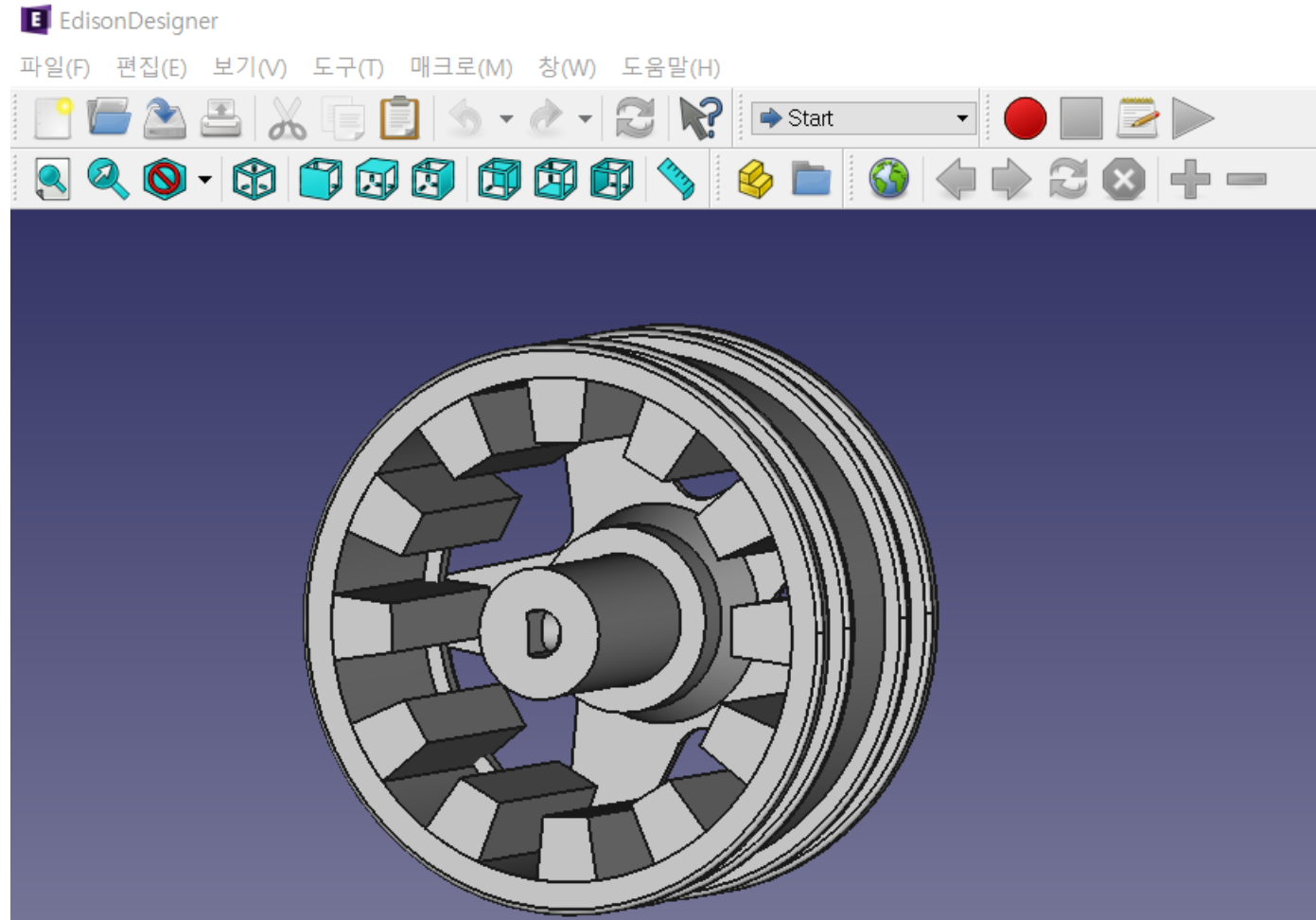
Motor Encoder



Problem | 양쪽 모터의 출력 차이가 생길 경우 직진 운행이 불가능할 수도 있다.

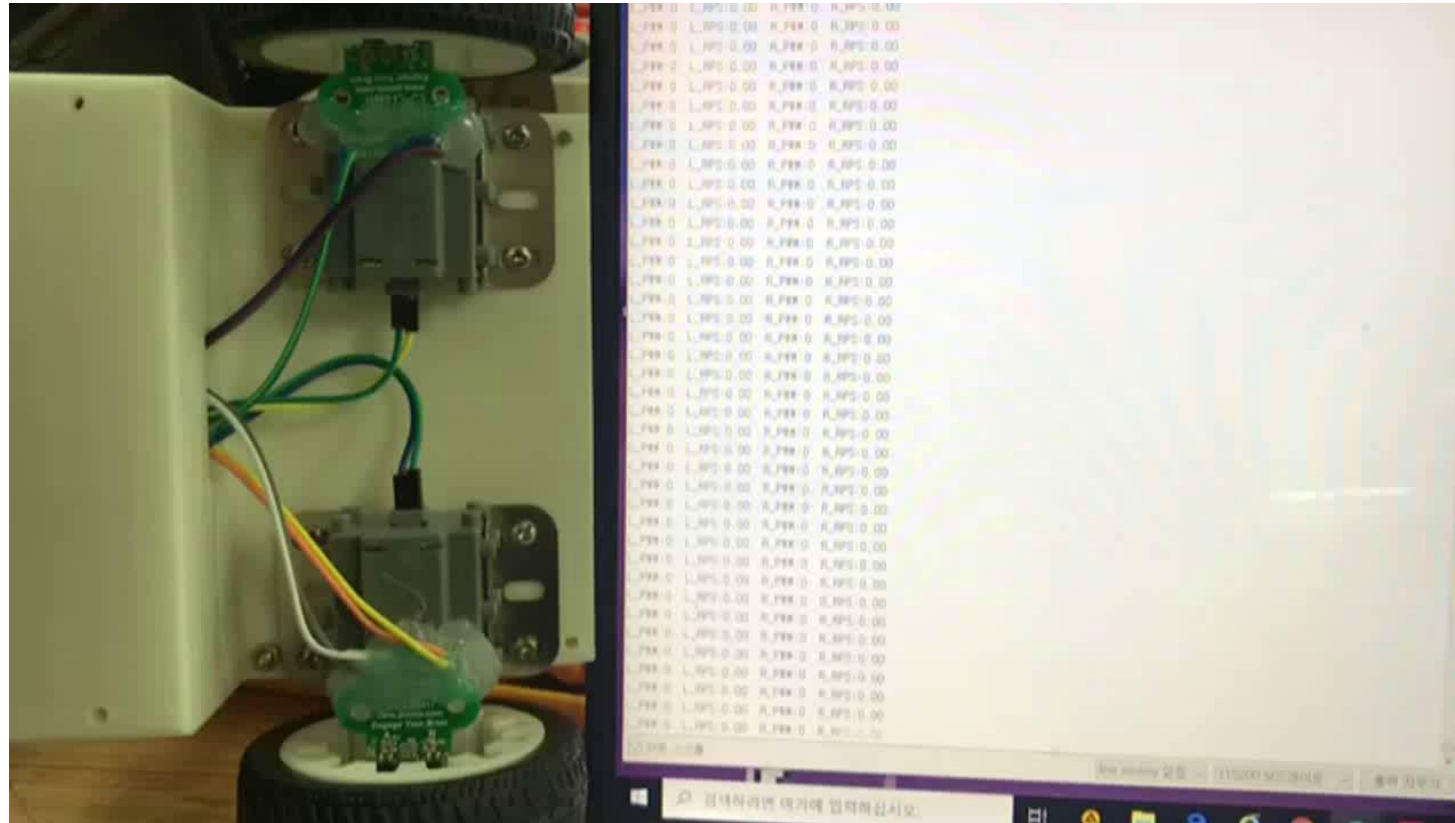
Solution | 엔코더를 사용하여 양쪽 모터의 rpm 수를 동일하게 맞추도록 한다.

Motor Encoder

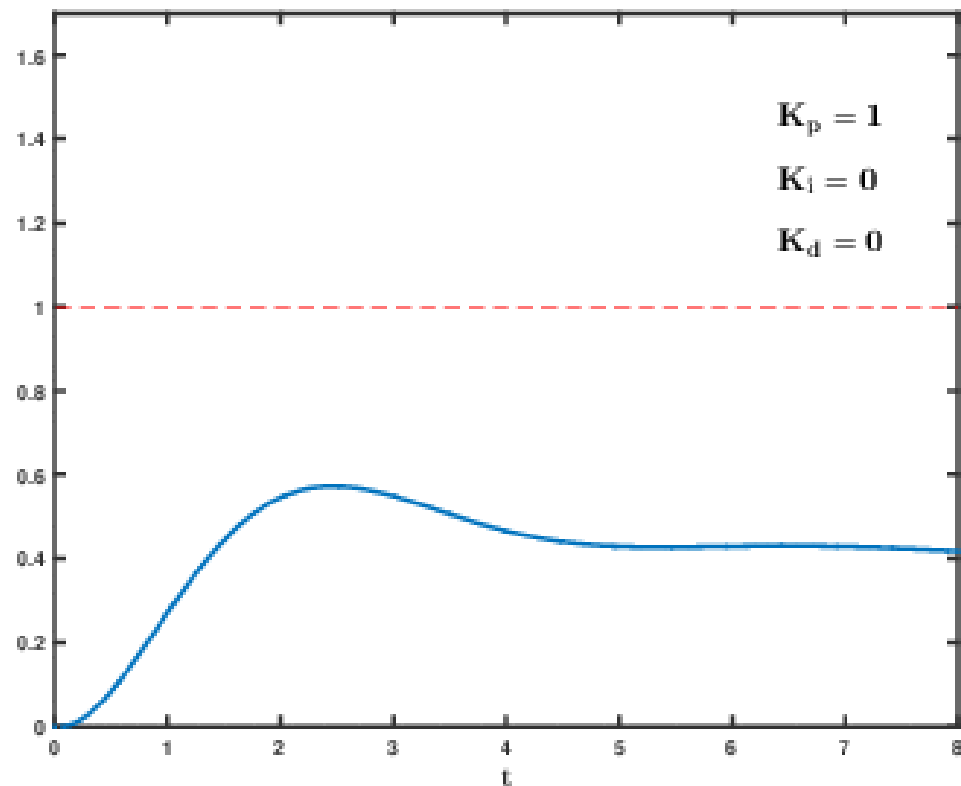
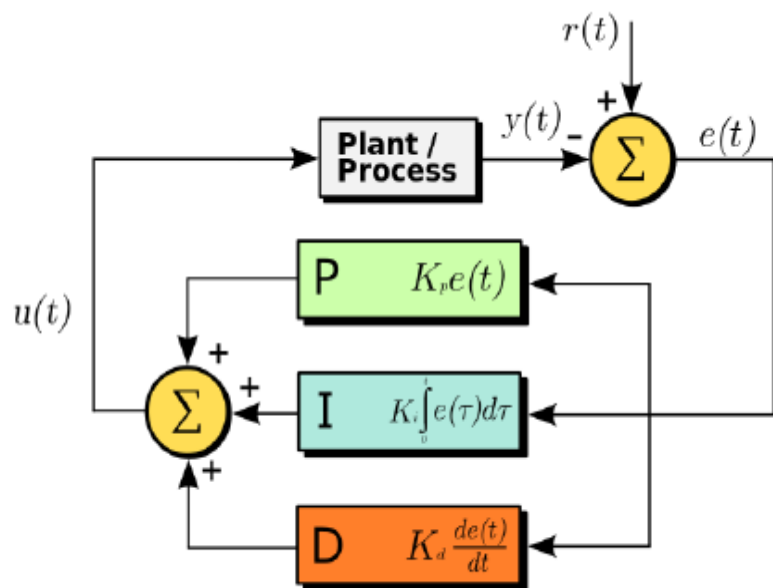


광학 엔코더를 사용하여 양쪽 바퀴 rpm 측정

Motor Encoder



PID Control



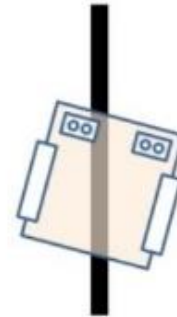
Input value	목표 rpm
Error	(목표 rpm) - (엔코더 측정 rpm)
Output value	모터 입력 pwm

Line tracing

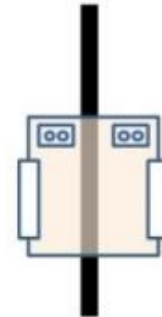
IR Sensor



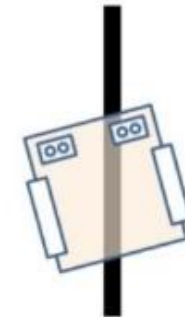
라인트레이서의 기본 움직임



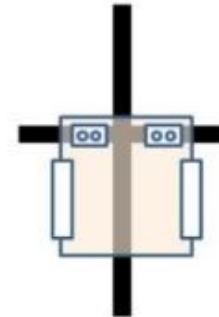
왼쪽 센서가
탐을 경우



검은선이
중앙일 경우

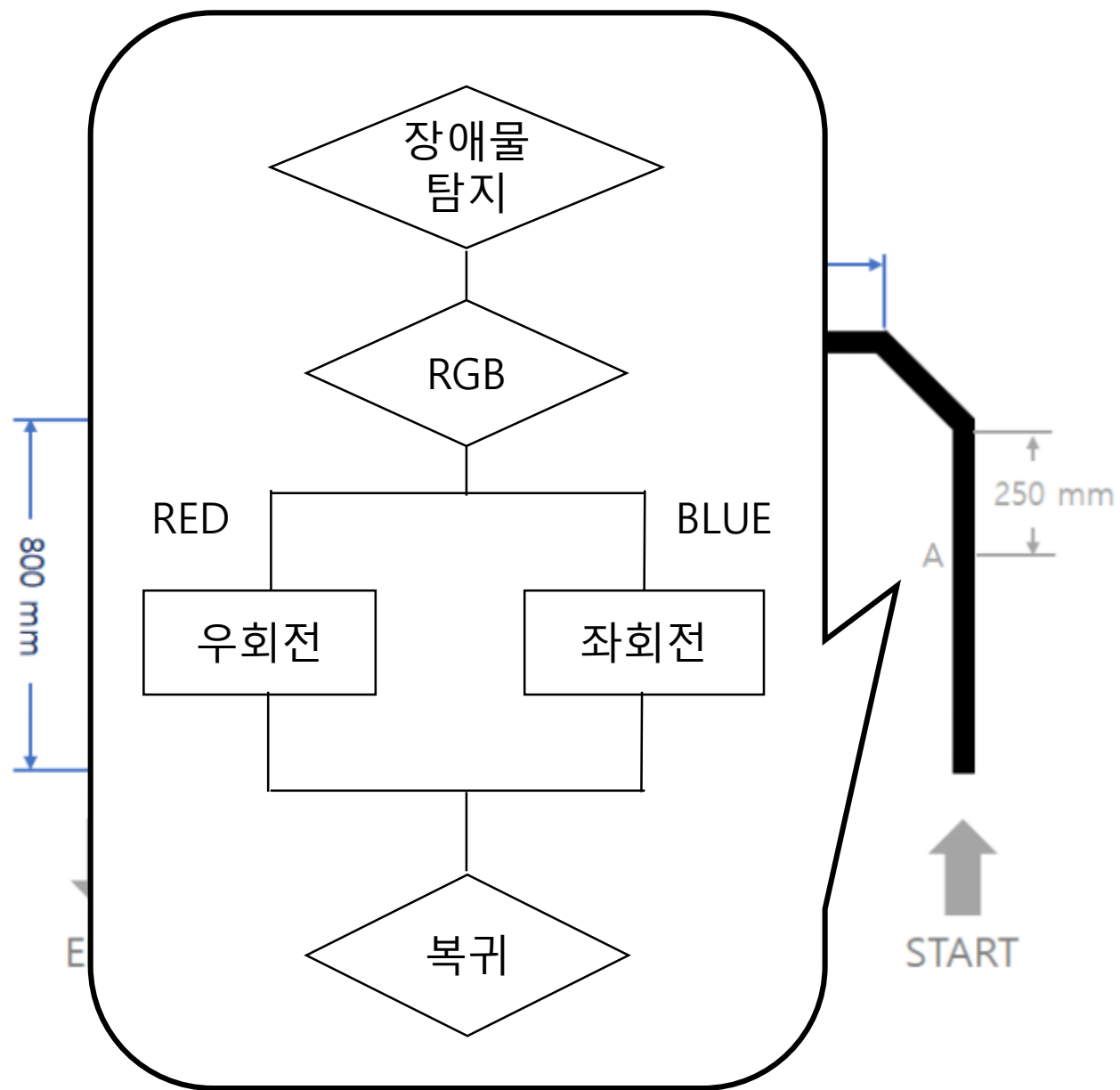


오른쪽 센서가
탐을 경우

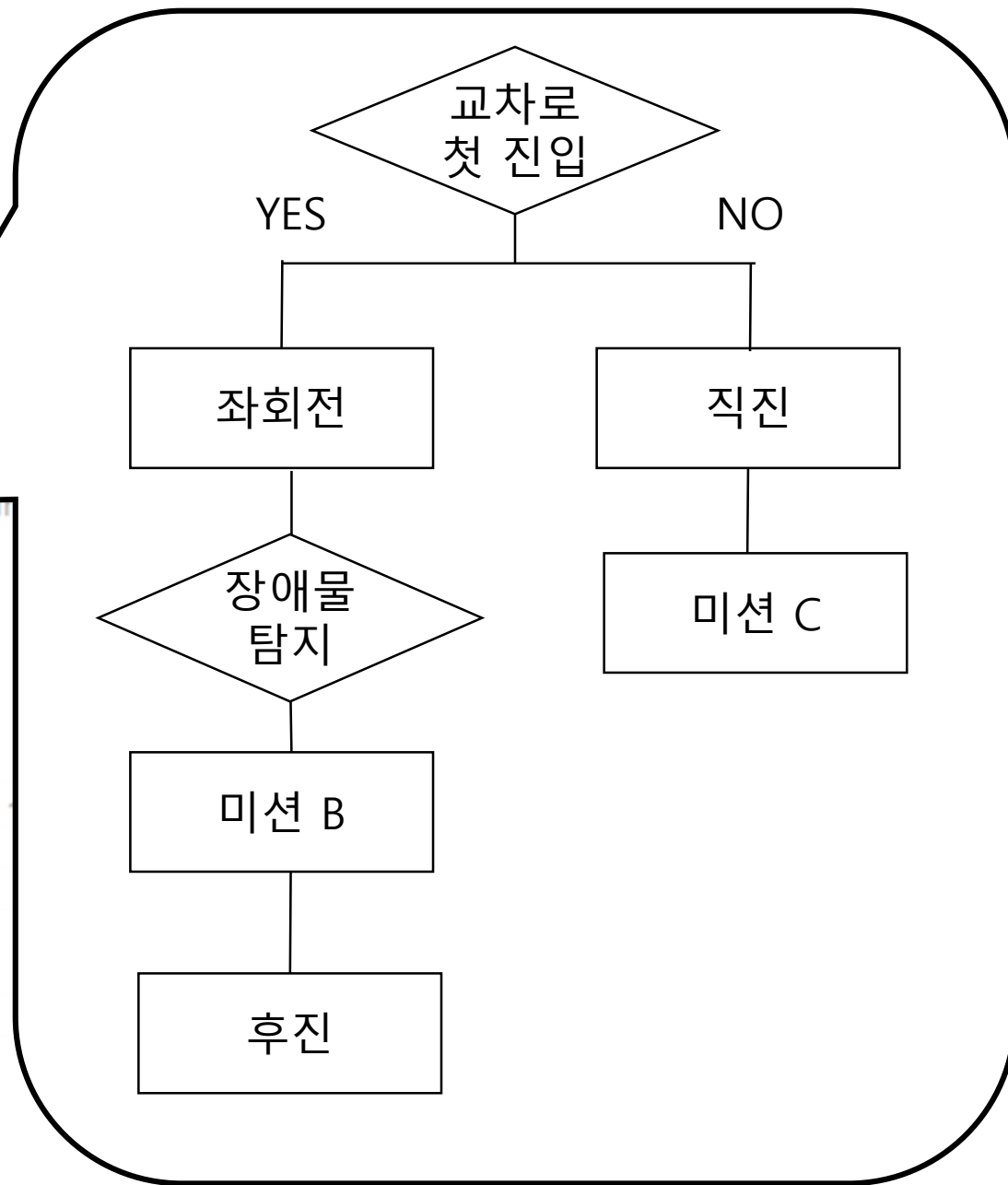
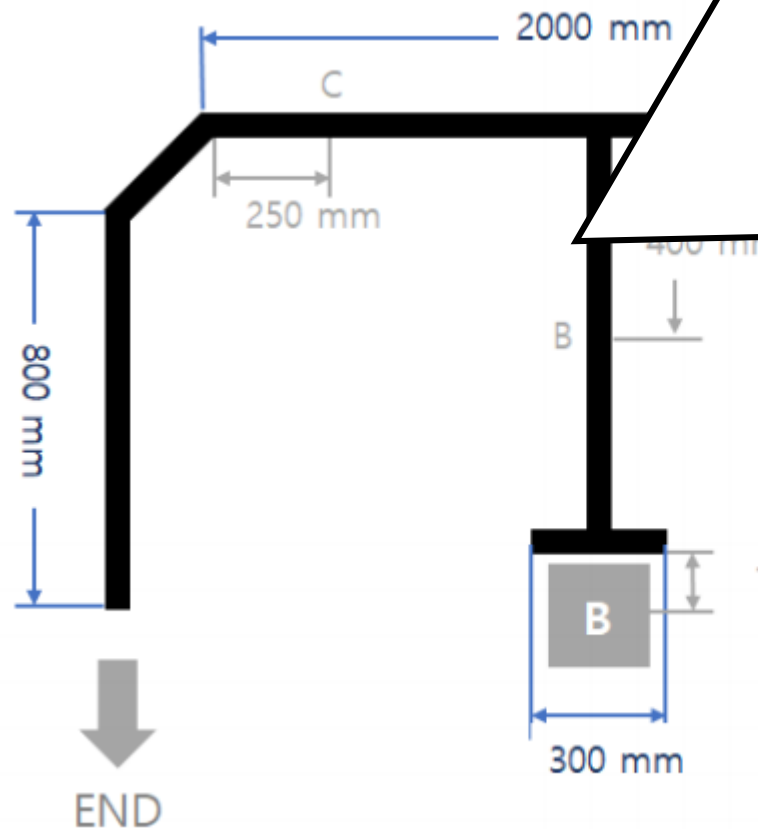


두 센서가
검은선 위에
있을 경우

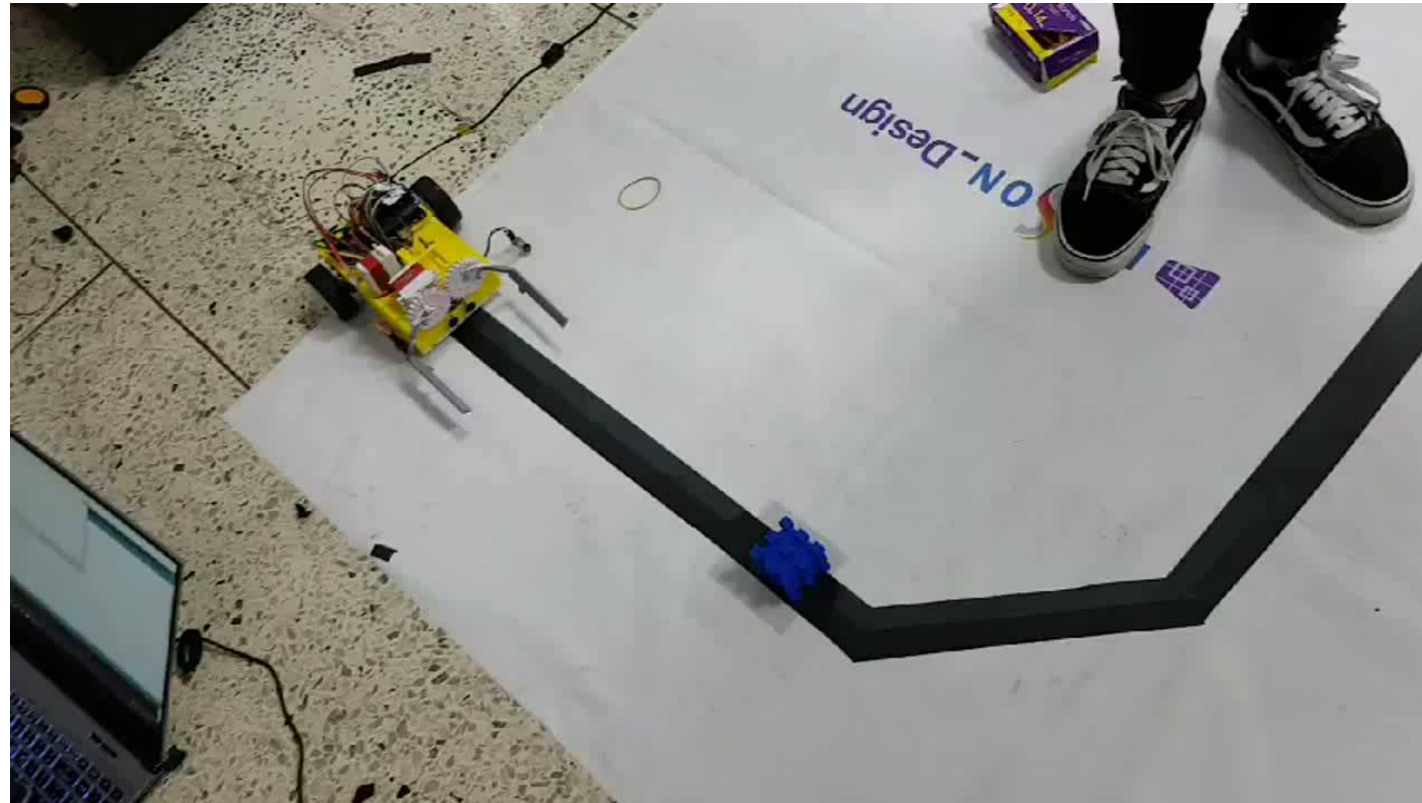
Algorithm



Algorithm



Result



The End

Thanks for watching