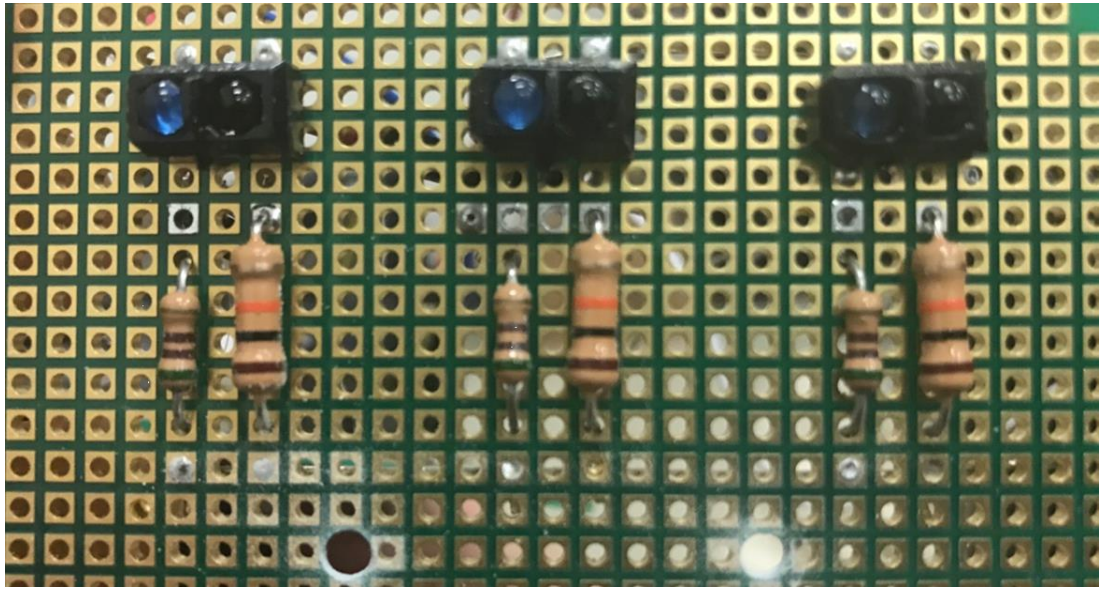
라인트레이서

아이디어

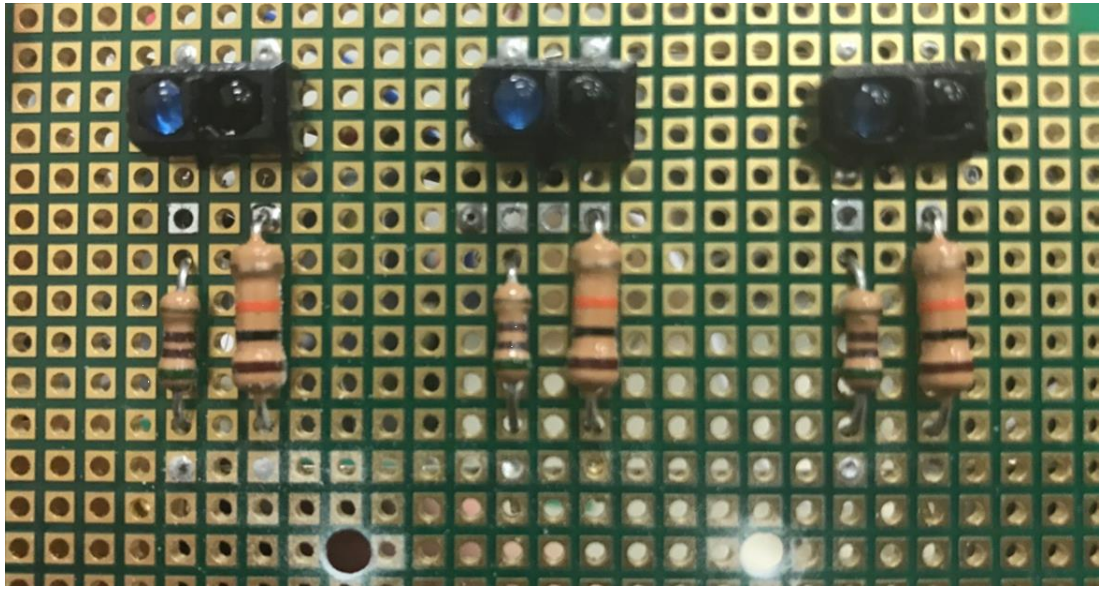
Sensor1 Sensor2 Sensor3



총 3개의 적외선 발광부와 수광부 사용

[Case 1]

Sensor1 Sensor2 Sensor3

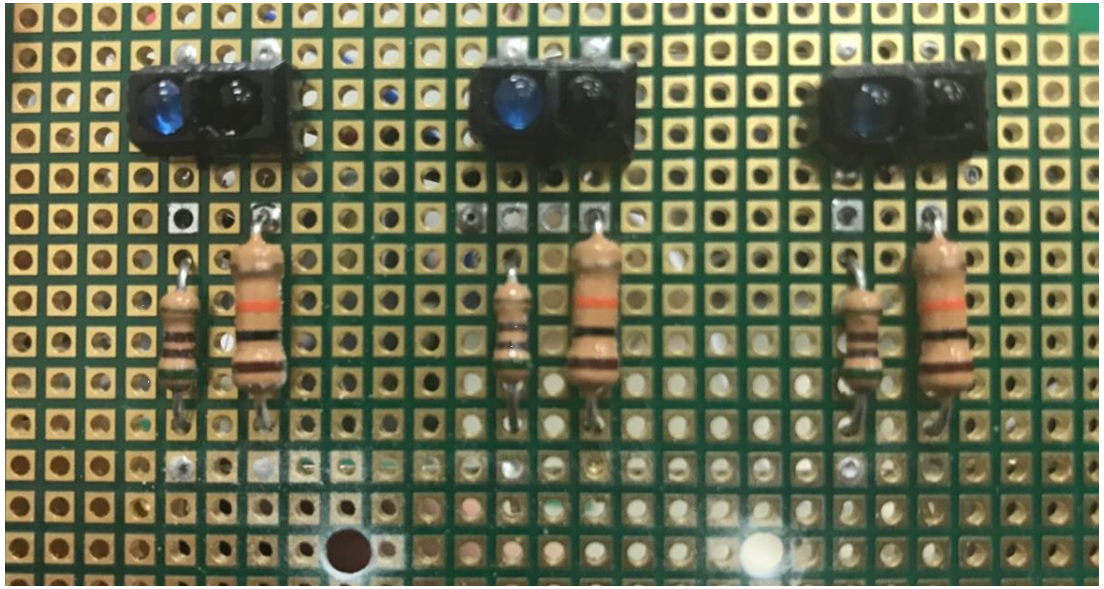


sensor1 하나만 검정색으로 인식할 때와
sensor1과 sensor2가 동시에 검정색 인식할 때

-> 오른쪽 바퀴를 왼쪽 바퀴보다 빠르게 돌려줌

[Case 2]

Sensor1 Sensor2 Sensor3

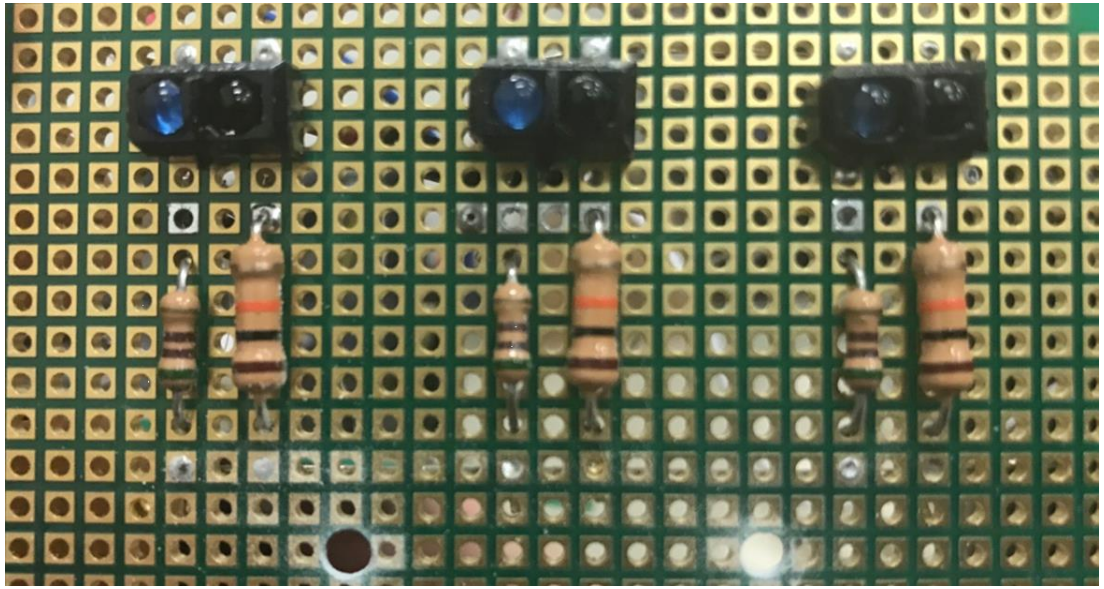


sensor2만 검정색을 인식할 때

-> 직진

[Case 3]

Sensor1 Sensor2 Sensor3



sensor3 하나만 검정색을 인식할 때와 sensor2와 sensor3이 동시에 검정색을 인식할 때

-> 왼쪽 바퀴를 오른쪽 바퀴보다 빠르게 돌려줌

코드설명

```
if(sensor2.read() > 0.5 && sensor1.read() < 0.5 && sensor3.read() < 0.5) { run(); }
else if(sensor1.read() > 0.5 && sensor2.read() < 0.5&&sensor3.read() < 0.5) { turn_left(); }
else if(sensor3.read() > 0.5 && sensor1.read() < 0.5 && sensor2.read() < 0.5) { turn_right(); }
else if(sensor3.read() > 0.5 && sensor1.read() < 0.5 && sensor2.read() > 0.5) { turn_right(); }
else if(sensor1.read() > 0.5 && sensor2.read() > 0.5&&sensor3.read() < 0.5) { turn_left(); }
wait_ms(10);
```

코드설명

```
void turn_right(){
flipper1.attach(&run_Lmotor, 0.002);
flipper2.attach(&run_Rmotor, 0.01);
}

void turn_left(){
flipper1.attach(&run_Lmotor, 0.01);
flipper2.attach(&run_Rmotor, 0.002);
}

void run(){
flipper1.attach(&run_Lmotor, 0.002);
flipper2.attach(&run_Rmotor, 0.002);
}
```

코드설명

```
void run_Lmotor(){
    if(state == 0){
        L_motor_A = 1;
        L_motor_B = 0;
        L_motor_C = 0;
        L_motor_D = 1;
        state += 1;
    }

    else if(state == 1){
        L_motor_A = 0;
        L_motor_B = 0;
        L_motor_C = 0;
        L_motor_D = 1;
        state += 1;
    }

else if(state == 2){
        L_motor_A = 0;
        L_motor_B = 0;
        L_motor_C = 1;
        L_motor_D = 1;
        state += 1;
    }

    else if(state == 3){
        L_motor_A = 0;
        L_motor_B = 0;
        L_motor_C = 1;
        L_motor_D = 0;
        state += 1;
    }

else if(state == 4){
        L_motor_A = 0;
        L_motor_B = 1;
        L_motor_C = 1;
        L_motor_D = 0;
        state += 1;
    }

    else if(state ==5){
        L_motor_A = 0;
        L_motor_B = 1;
        L_motor_C = 0;
        L_motor_D = 0;
        state += 1;
    }

else if(state == 6){
        L_motor_A = 1;
        L_motor_B = 1;
        L_motor_C = 0;
        L_motor_D = 0;
        state += 1;
    }

    else if(state == 7){
        L_motor_A = 1;
        L_motor_B = 0;
        L_motor_C = 0;
        L_motor_D = 0;
        state = 0;
    }
}
```

코드설명

```
void run_Rmotor(){
  if(state == 0){
    R_motor_A = 1;
    R_motor_B = 0;
    R_motor_C = 0;
    R_motor_D = 0;
    state += 1;
  }

  else if(state == 1){
    R_motor_A = 1;
    R_motor_B = 1;
    R_motor_C = 0;
    R_motor_D = 0;
    state += 1;
  }

  else if(state == 2){
    R_motor_A = 0;
    R_motor_B = 1;
    R_motor_C = 0;
    R_motor_D = 0;
    state += 1;
  }

  else if(state == 3){
    R_motor_A = 0;
    R_motor_B = 1;
    R_motor_C = 1;
    R_motor_D = 0;
    state += 1;
  }

  else if(state == 4){
    R_motor_A = 0;
    R_motor_B = 0;
    R_motor_C = 1;
    R_motor_D = 0;
    state += 1;
  }

  else if(state ==5){
    R_motor_A = 0;
    R_motor_B = 0;
    R_motor_C = 1;
    R_motor_D = 1;
    state += 1;
  }

  else if(state == 6){
    R_motor_A = 0;
    R_motor_B = 0;
    R_motor_C = 0;
    R_motor_D = 1;
    state += 1;
  }

  else if(state == 7){
    R_motor_A = 1;
    R_motor_B = 0;
    R_motor_C = 0;
    R_motor_D = 1;
    state = 0;
  }
}
```