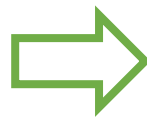
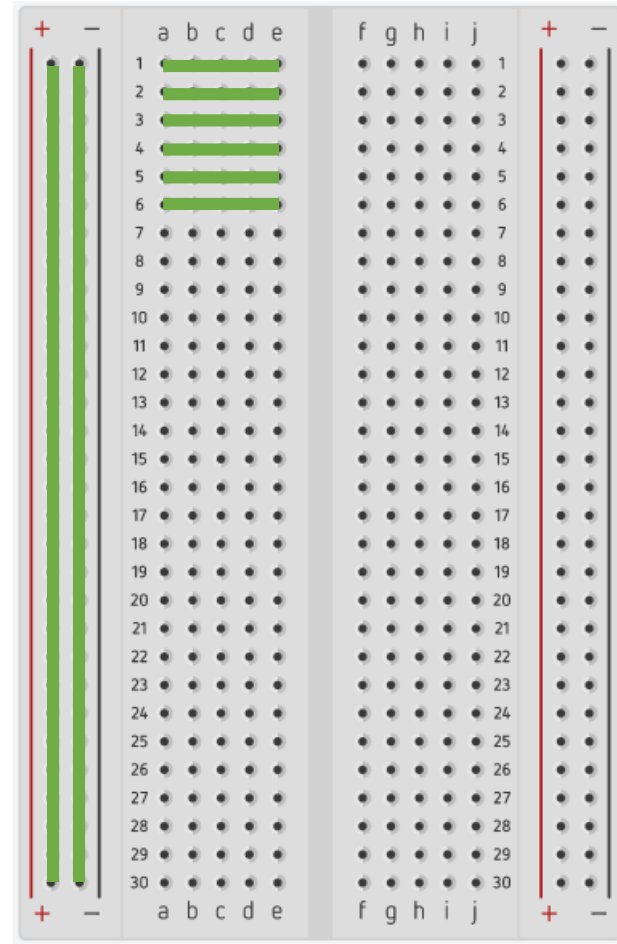
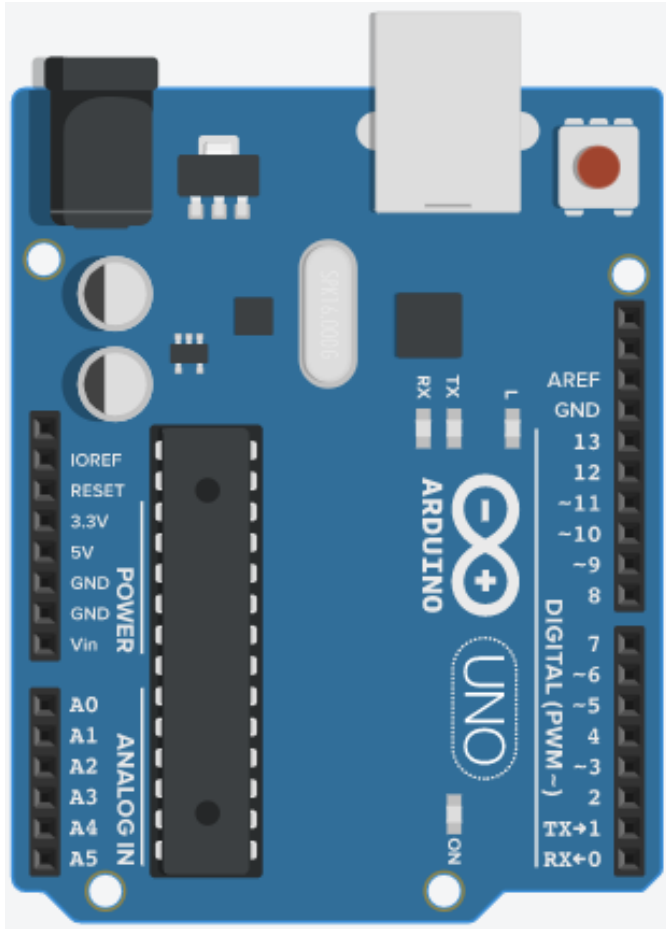

내가 만든 자동차

복습해보자
아두이노



+ : 5V

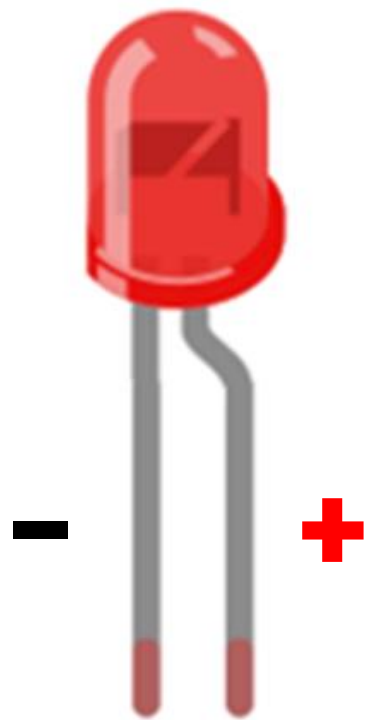
- : GND

```
void setup()  
{  
  pinMode(8,OUTPUT);  
}
```

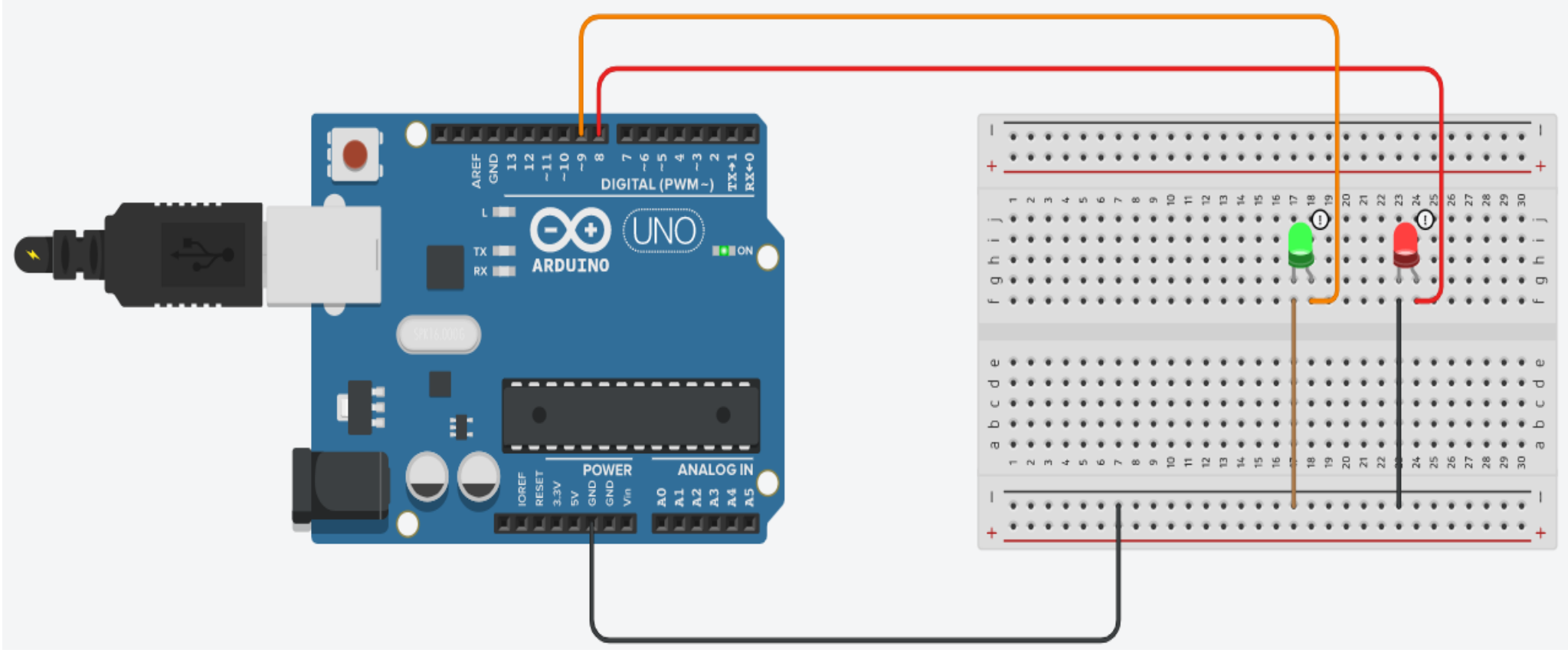
```
void loop()  
{  
  digitalWrite(8, HIGH);  
}
```

복습해보자

LED 센서



개수를 늘려볼까
LED 2개 연결하기



```
void setup()
```

```
{
```

```
    pinMode(8, OUTPUT);
```

```
    pinMode(9, OUTPUT);
```

```
}
```

```
void loop()
```

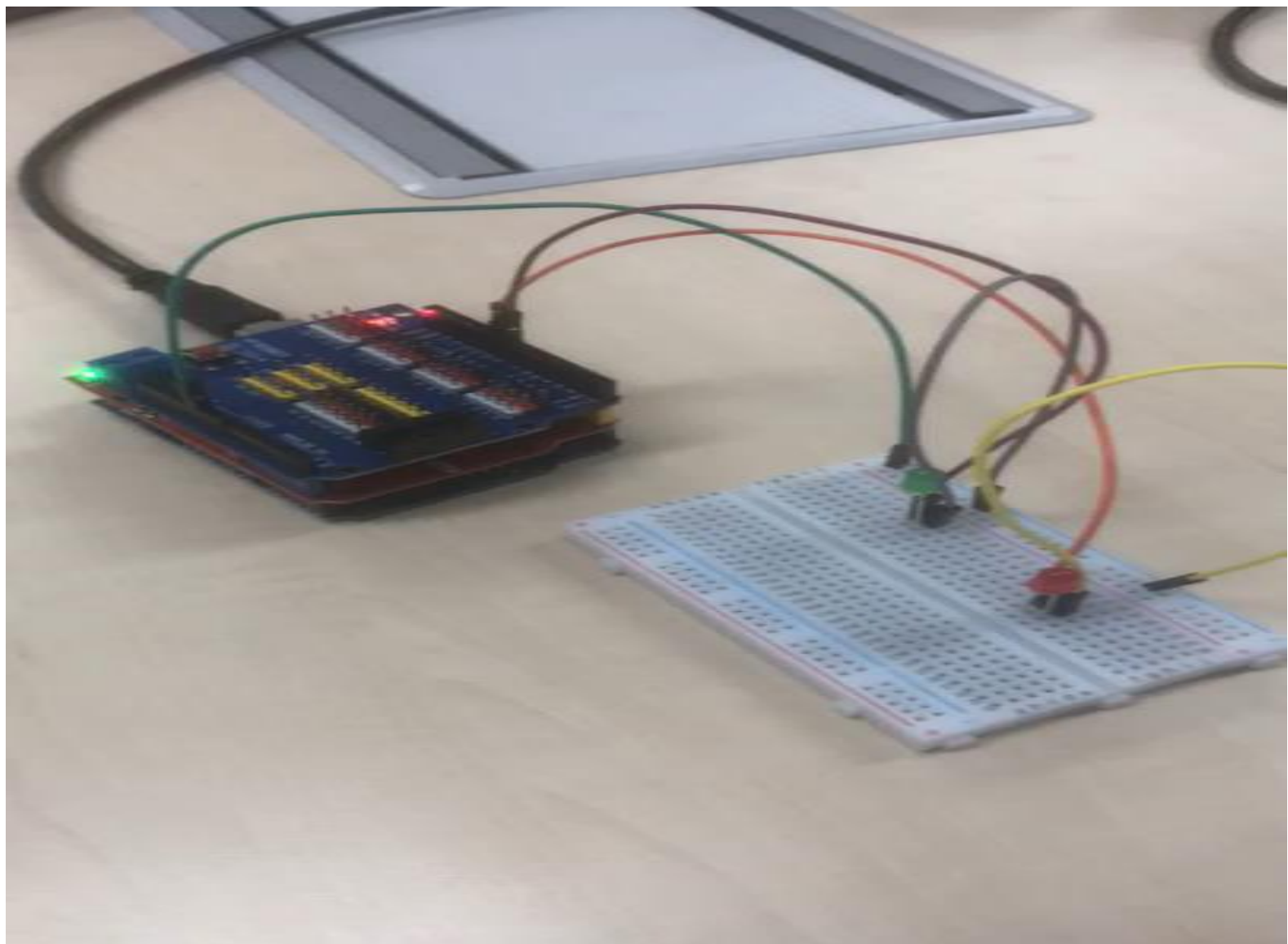
```
{
```

```
    digitalWrite(8, HIGH); //빨간색 켜기
```

```
    digitalWrite(9, HIGH); //초록색 켜기
```

```
}
```

이번엔 좀 더 어렵게
LED 2개 깜빡이기



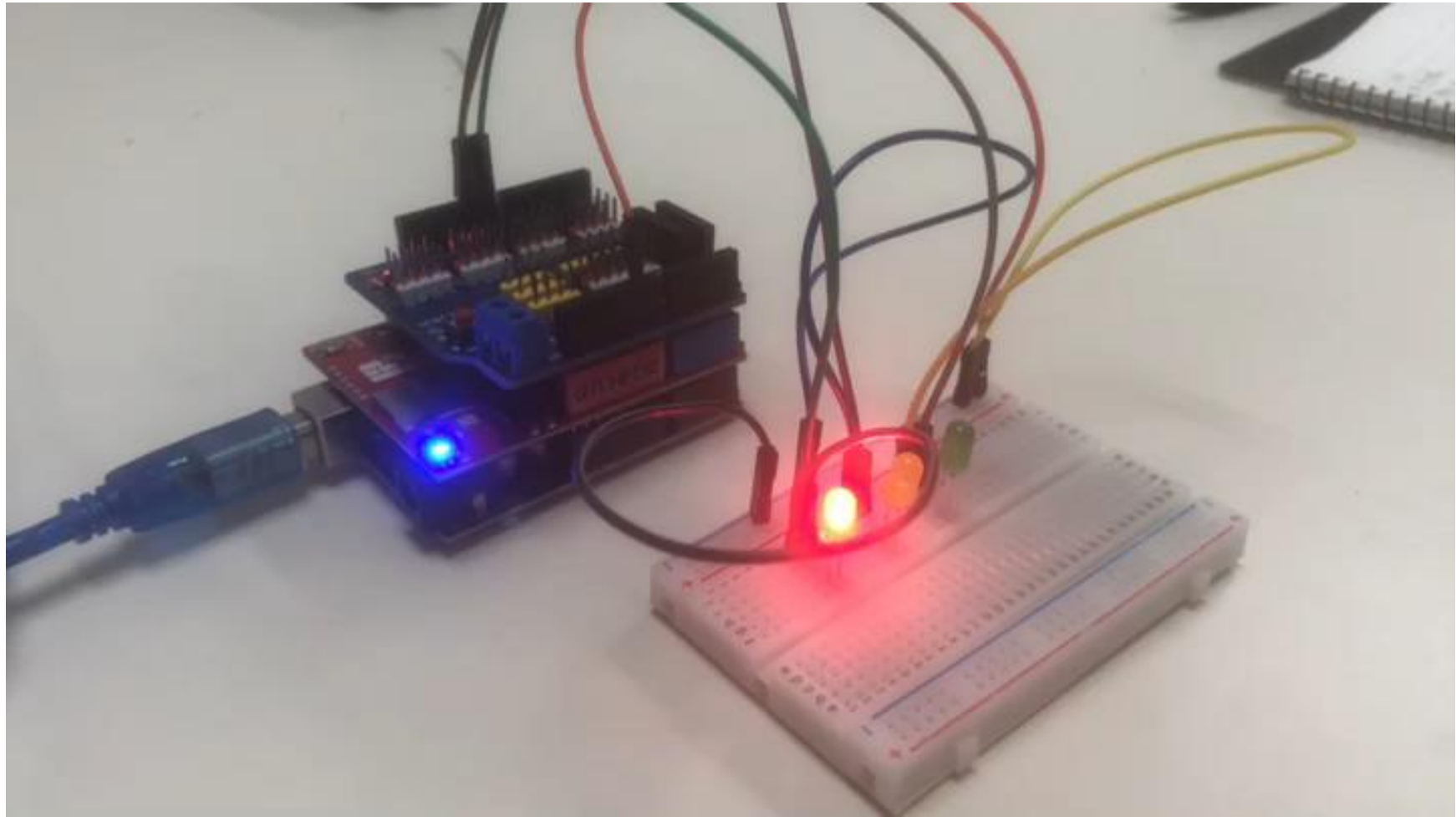
HINT

1초동안 그대로 : `delay(1000);`
HIGH 의 반대말은 **LOW**

```
void setup()  
{  
    pinMode(8, OUTPUT);  
    pinMode(9, OUTPUT);  
}
```

```
void loop()  
{  
    digitalWrite(8, HIGH);  
    digitalWrite(9, LOW);  
    delay(1000);  
  
    digitalWrite(8, LOW);  
    digitalWrite(9, HIGH);  
    delay(1000);  
}
```

이건 어때?
신호등 만들기



빨간불 5초 켜고

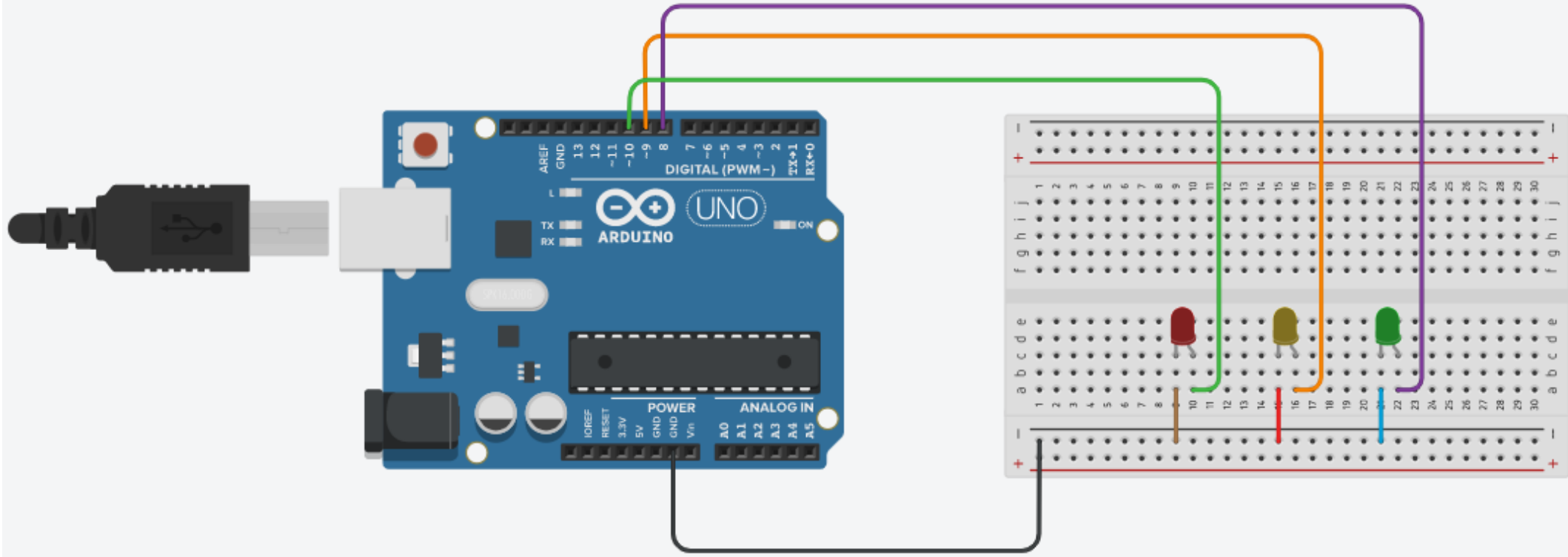
빨간불 끄고

초록불 4초 켜고

초록불 끄고

노란불 3번 깜빡이고

빨간불 켜기



void setup()

{

pinMode(8, OUTPUT);
pinMode(9, OUTPUT);
pinMode(10, OUTPUT);

}

void loop()

{

digitalWrite(8, HIGH);
delay(5000);
digitalWrite(8, LOW);

digitalWrite(10, HIGH);
delay(4000);
digitalWrite(10, LOW);

digitalWrite(9, HIGH);

delay(1000);

digitalWrite(9, LOW);

delay(1000);

digitalWrite(9, HIGH);

delay(1000);

digitalWrite(9, LOW);

delay(1000);

digitalWrite(9, HIGH);

delay(1000);

digitalWrite(9, LOW);

delay(1000);

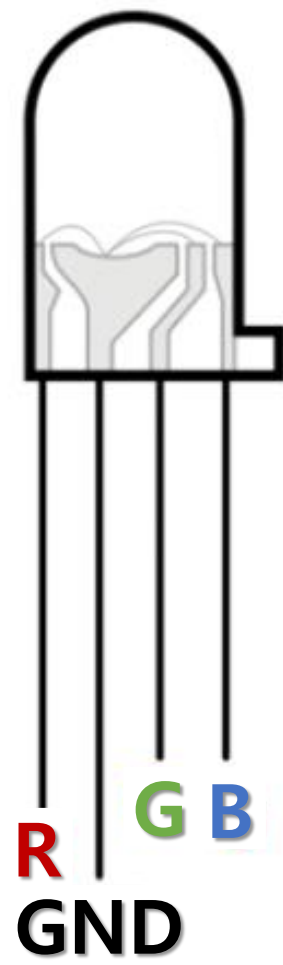
digitalWrite(8, HIGH);

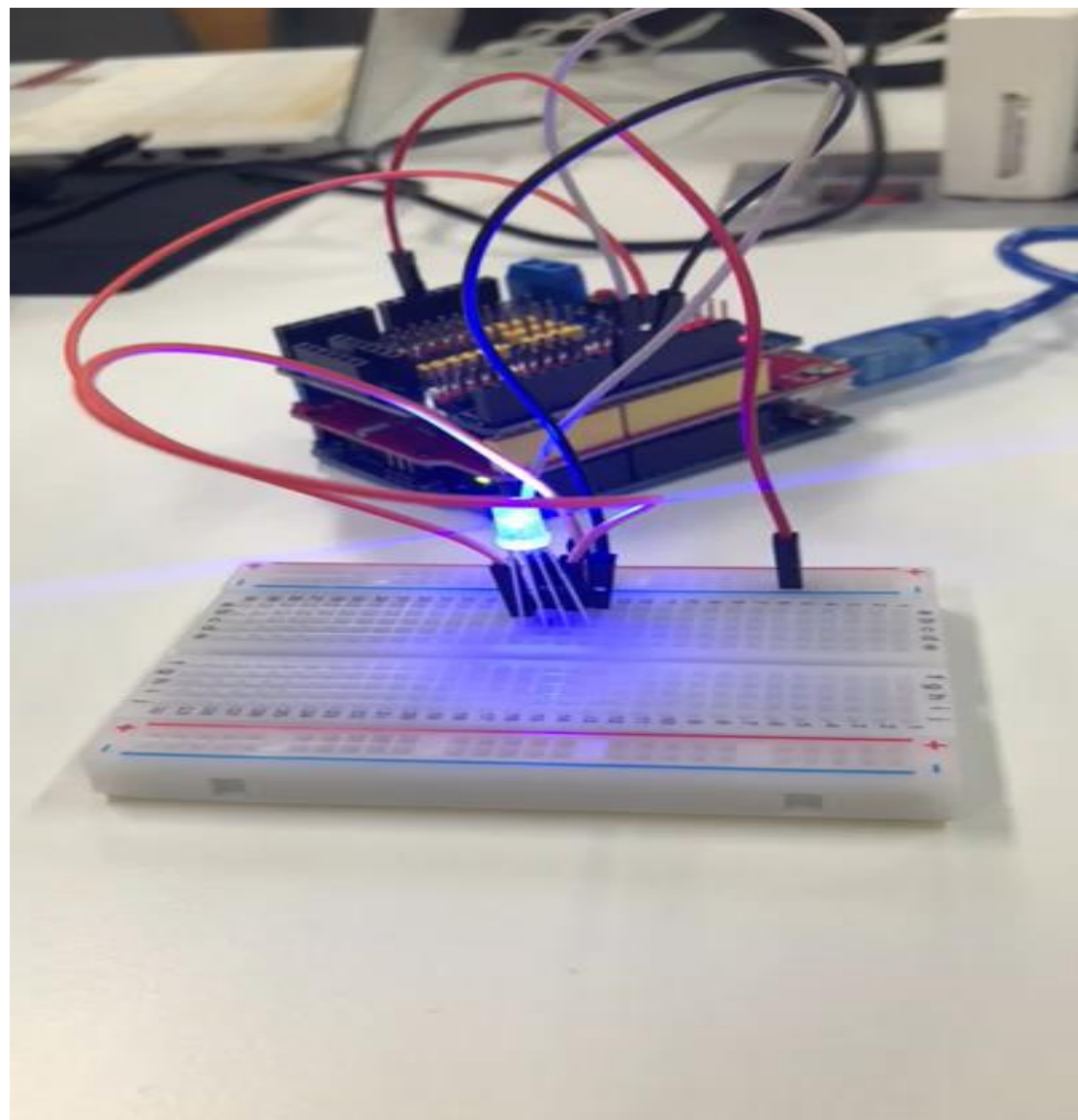
}

다양하게 표현하자

RGB LED 센서

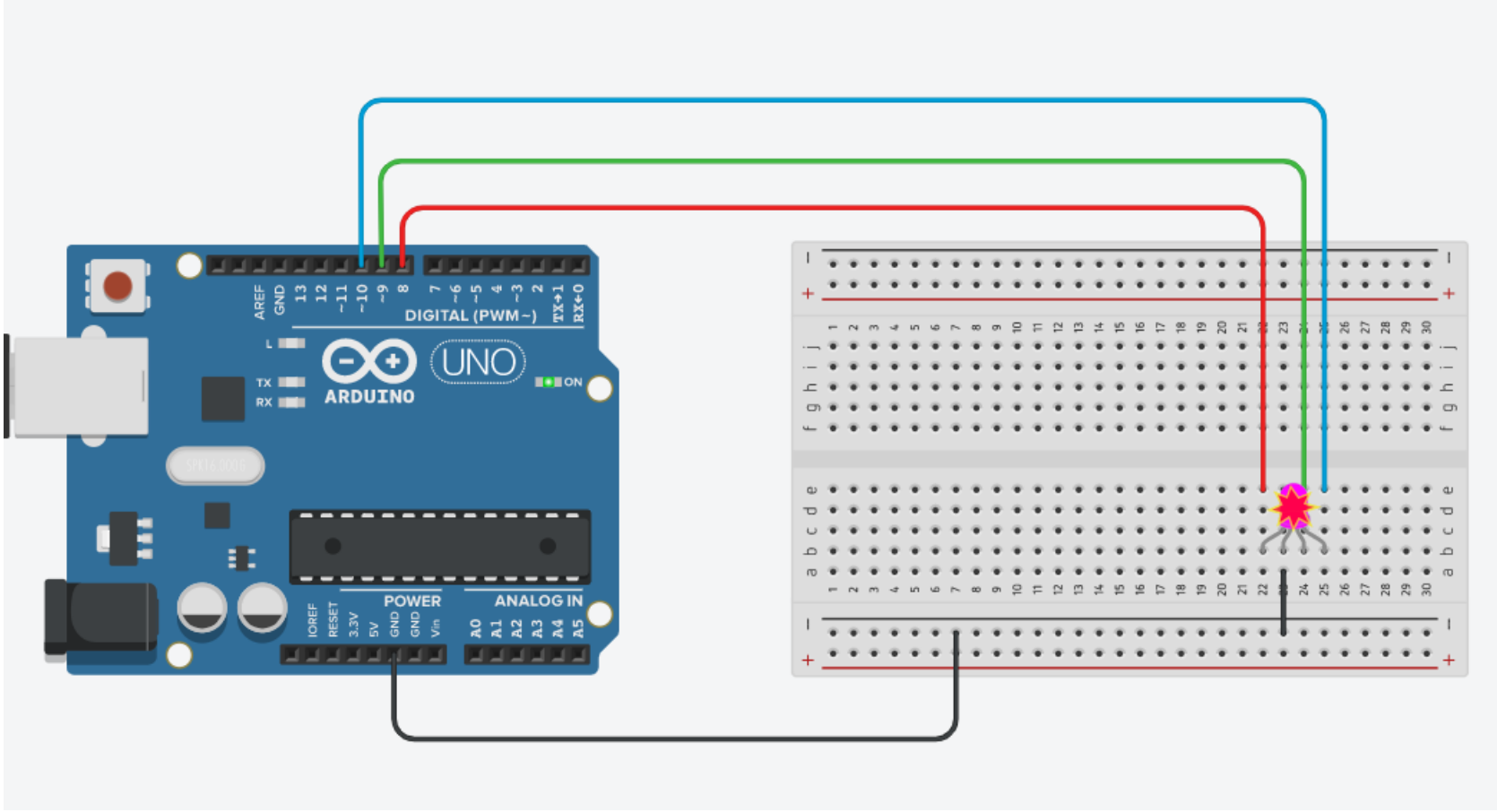






불을 켜보자

빨강초록파랑



```
void setup()  
{  
  pinMode(8, OUTPUT);  
  pinMode(9, OUTPUT);  
  pinMode(10, OUTPUT);  
}
```

```
void loop()  
{  
  //빨간색 켜기  
  digitalWrite(8, HIGH);  
  digitalWrite(9, LOW);  
  digitalWrite(10, LOW);  
  delay(1000);  
}
```

//초록색 켜기

```
digitalWrite(8, LOW);  
digitalWrite(9, LOW);  
digitalWrite(10, HIGH);  
delay(1000);
```

//파란색 켜기

```
digitalWrite(8, LOW);  
digitalWrite(9, LOW);  
digitalWrite(10, HIGH);  
delay(1000);  
}
```

불을 켜보자
노랑자홍청록

```
void setup()  
{  
  pinMode(8, OUTPUT);  
  pinMode(9, OUTPUT);  
  pinMode(10, OUTPUT);  
}
```

```
void loop()  
{  
  //노란색 켜기  
  digitalWrite(8, HIGH);  
  digitalWrite(9, HIGH);  
  digitalWrite(10, LOW);  
  delay(1000);  
}
```

//자홍색 켜기

```
digitalWrite(8, HIGH);  
digitalWrite(9, LOW);  
digitalWrite(10, HIGH);  
delay(1000);
```

//청록색 켜기

```
digitalWrite(8, LOW);  
digitalWrite(9, HIGH);  
digitalWrite(10, HIGH);  
delay(1000);  
}
```

마지막 불켜기

흰색

```
void setup()  
{  
    pinMode(8, OUTPUT);  
    pinMode(9, OUTPUT);  
    pinMode(10, OUTPUT);  
}
```

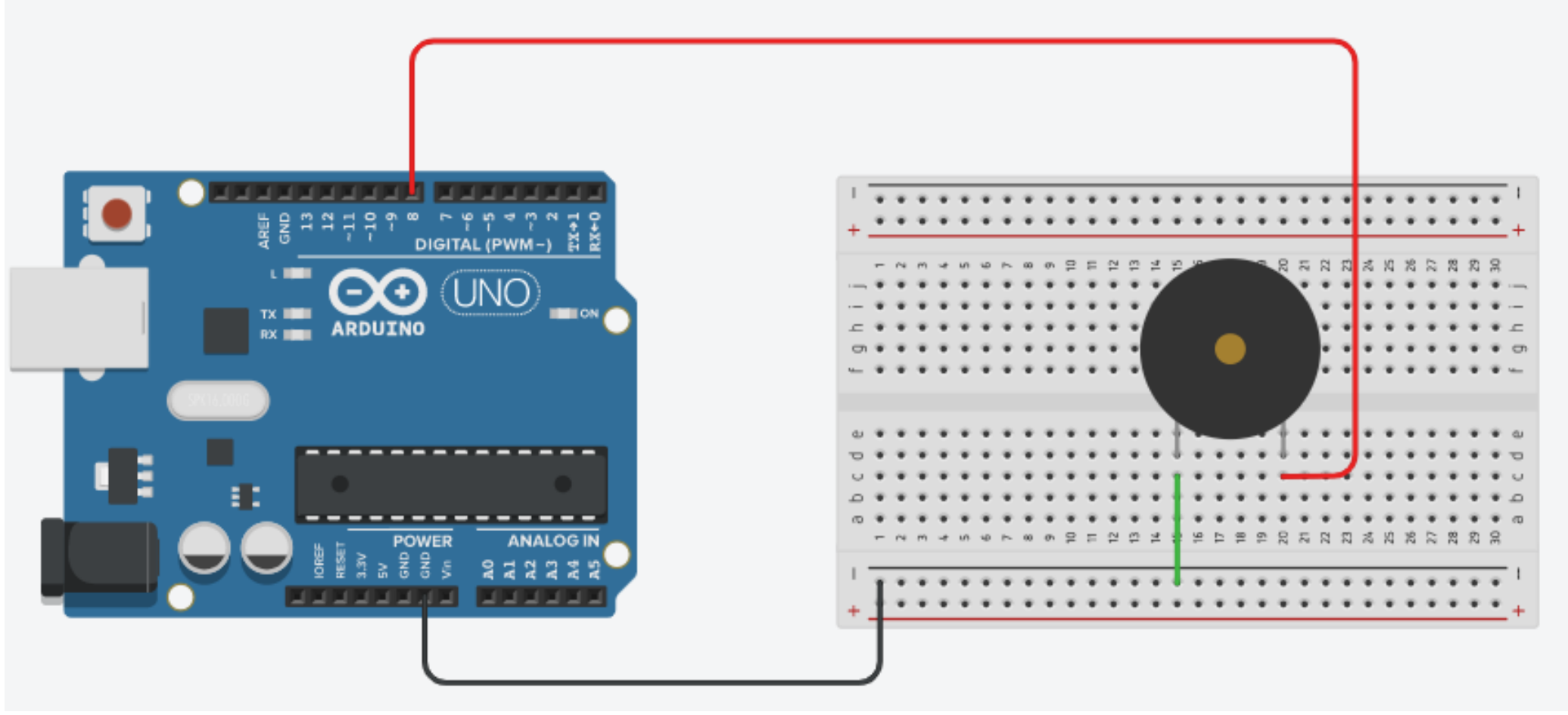
```
void loop()  
{  
    //흰색 켜기  
    digitalWrite(8, HIGH);  
    digitalWrite(9, HIGH);  
    digitalWrite(10, HIGH);  
    delay(1000);  
}
```

내맘대로 켜보자

빨초파노자청흰

소리내보자
피에조 부저





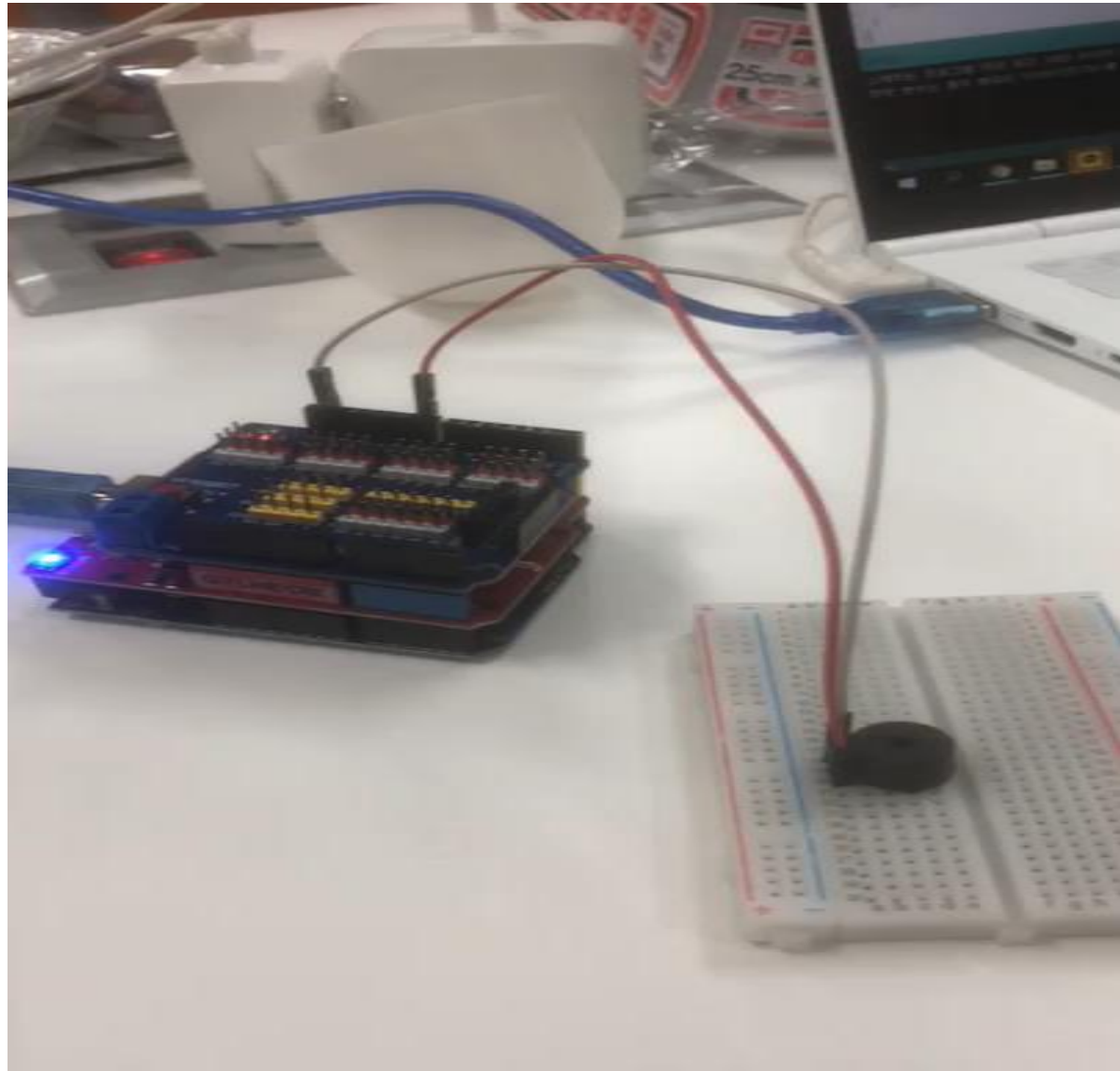
tone(핀 숫자, 음의 높낮이, 음의 지속시간);

```
void setup() {  
  pinMode(8,OUTPUT);  
}
```

```
void loop() {  
  tone(8, 500, 1000);  
  delay(2000);  
}
```

연주해보자

동요 부르기



비행기

미레도레 미미미 레레레 미미미
미레도레 미미미 레레미레도

작은별

도도솔솔 라라솔 파파미미 레레도
솔솔파파 미미레 솔솔파파 미미레
도도솔솔 라라솔 파파미미 레레도

학교종

솔솔라라 솔솔미 솔솔미미 레
솔솔라라 솔솔미 솔미레미 도

퐁당퐁당

도레미미 도미 솔라솔
도레미미 도미 솔라솔
라 솔미 라 솔미 레레도레 미솔솔
라라솔라 도도도 솔 솔 미래 도
레미도미 솔솔솔 레 미파 미래 도

tone(8 , **음의 높낮이** , 1000);

도 : 262

레 : 294

미 : 330

파 : 349

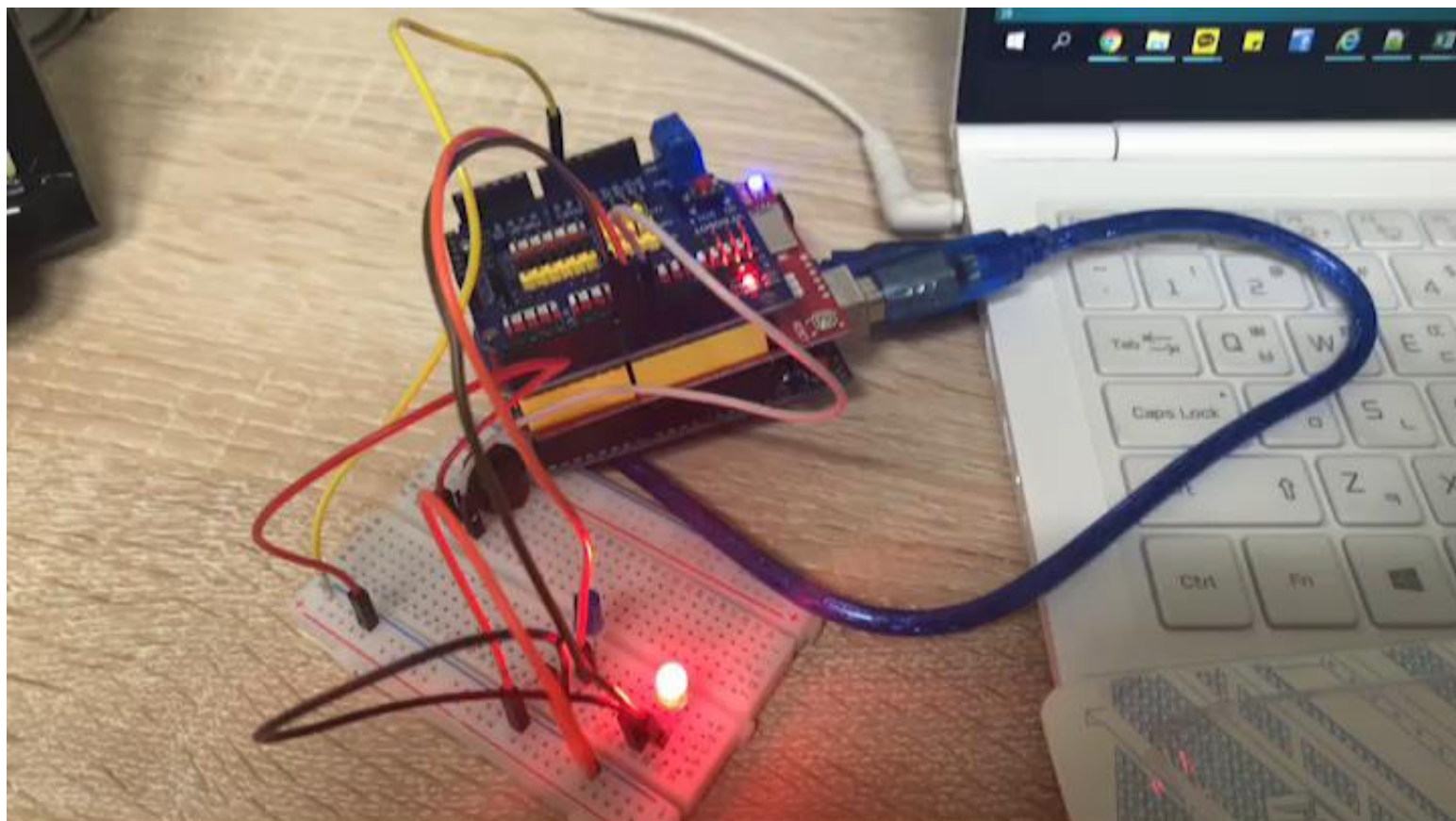
솔 : 392

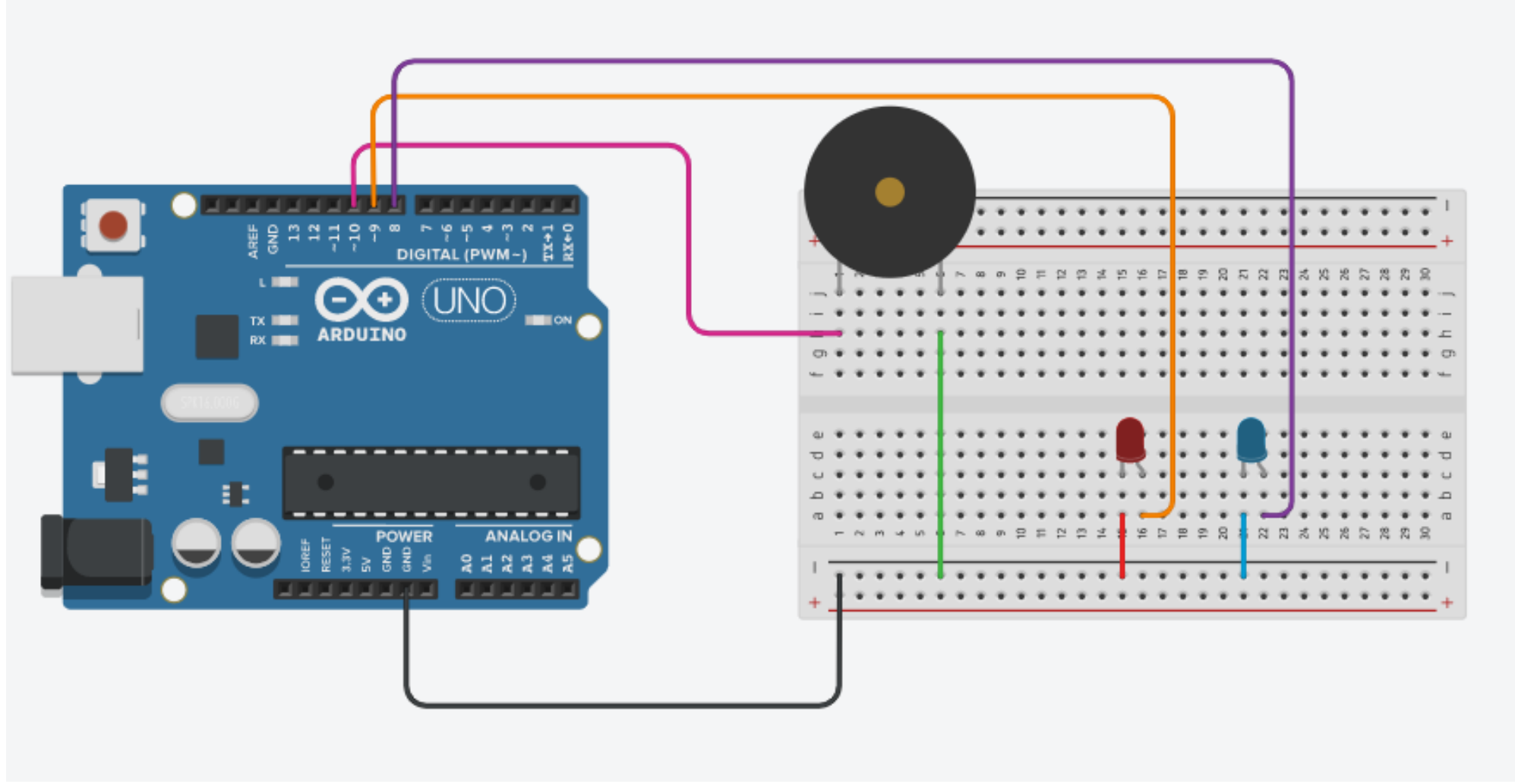
라 : 440

시 : 494

도 : 523

경찰차 소방차 구급차
사이렌 만들기





```
void setup() {  
    pinMode(10, OUTPUT);  
    pinMode(9, OUTPUT);  
    pinMode(8, OUTPUT);  
}
```

```
void loop() {  
    tone(10,500,100);  
    digitalWrite(9, HIGH); //파란불 켜기  
    digitalWrite(8, LOW); //빨간불 끄기  
    delay(200);  
  
    tone(10, 1000, 100);  
    digitalWrite(9, LOW); //파란불 끄기  
    digitalWrite(8, HIGH); //빨간불 켜기  
    delay(200);  
}
```