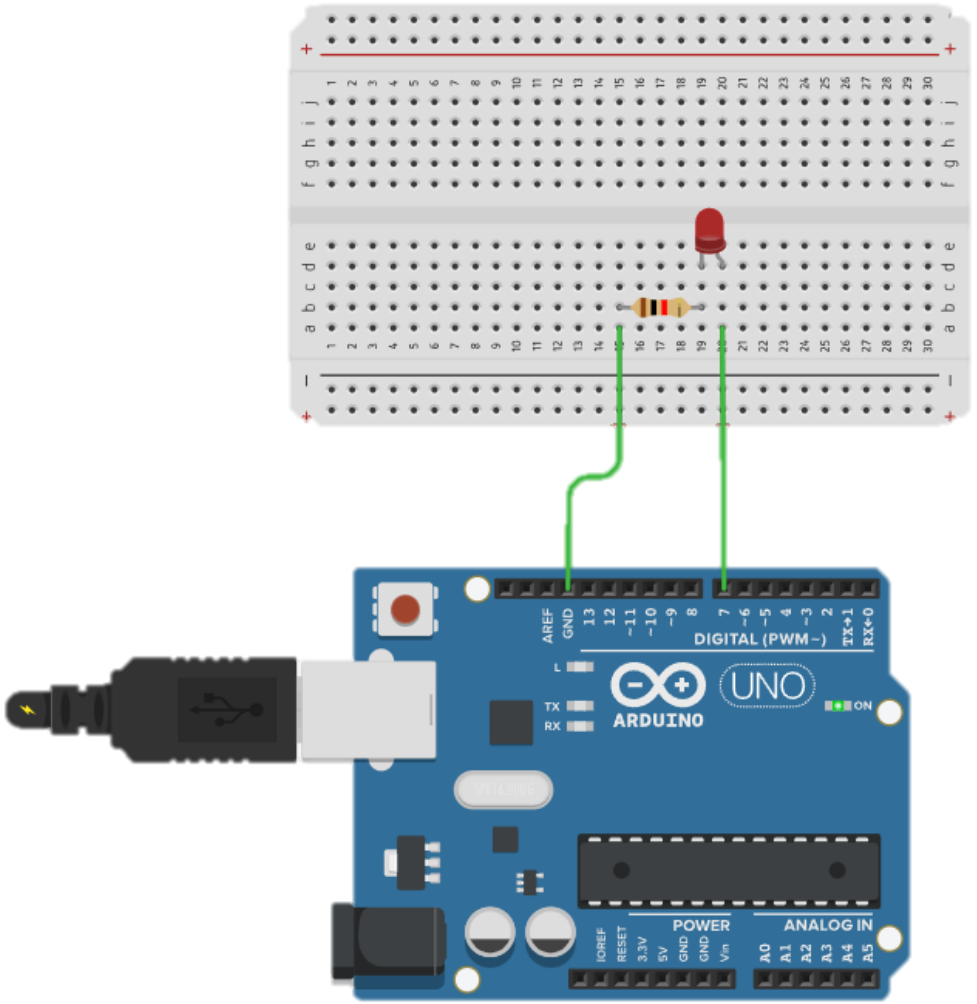
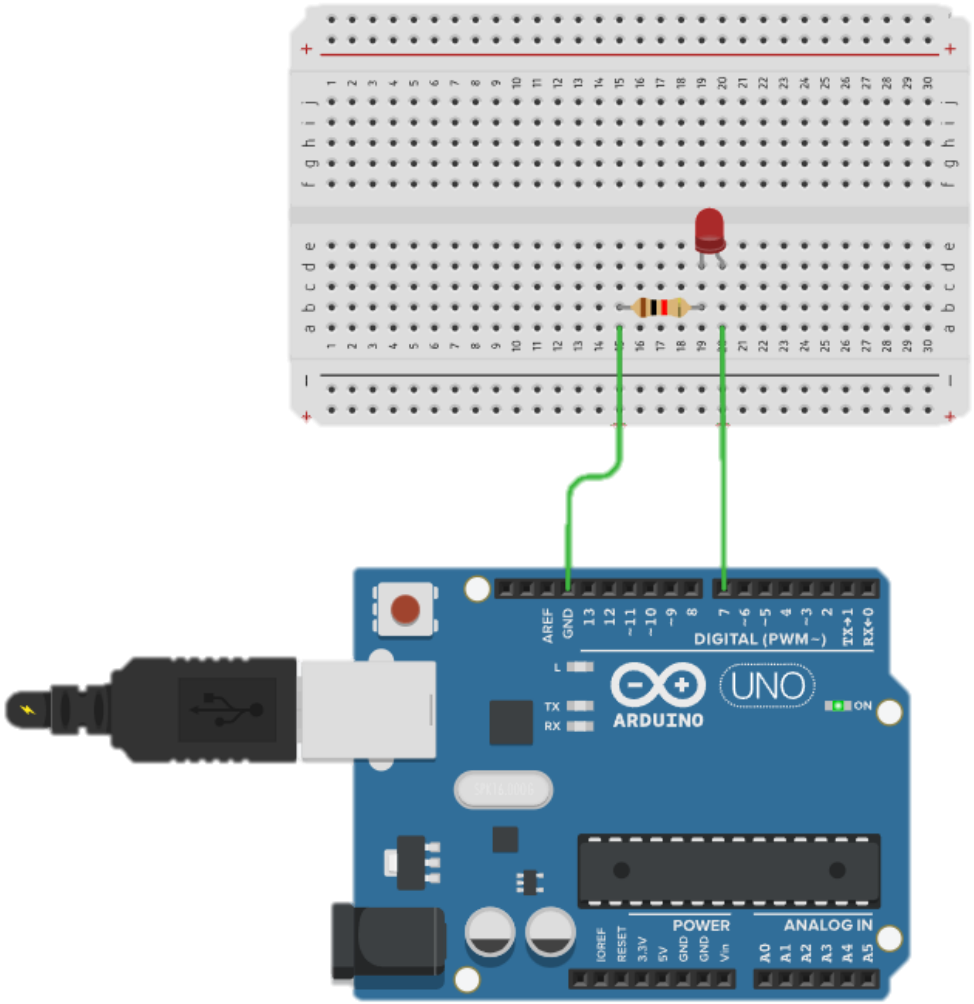
Products – SOFTWARE – Aduino IDE

아두이노 LED 제어하기




```
void setup(){
  pinMode(7, OUTPUT);
}

void loop() {
  digitalWrite(7, HIGH);
  delay(1000);
  digitalWrite(7, LOW);
  delay(1000);
}
```

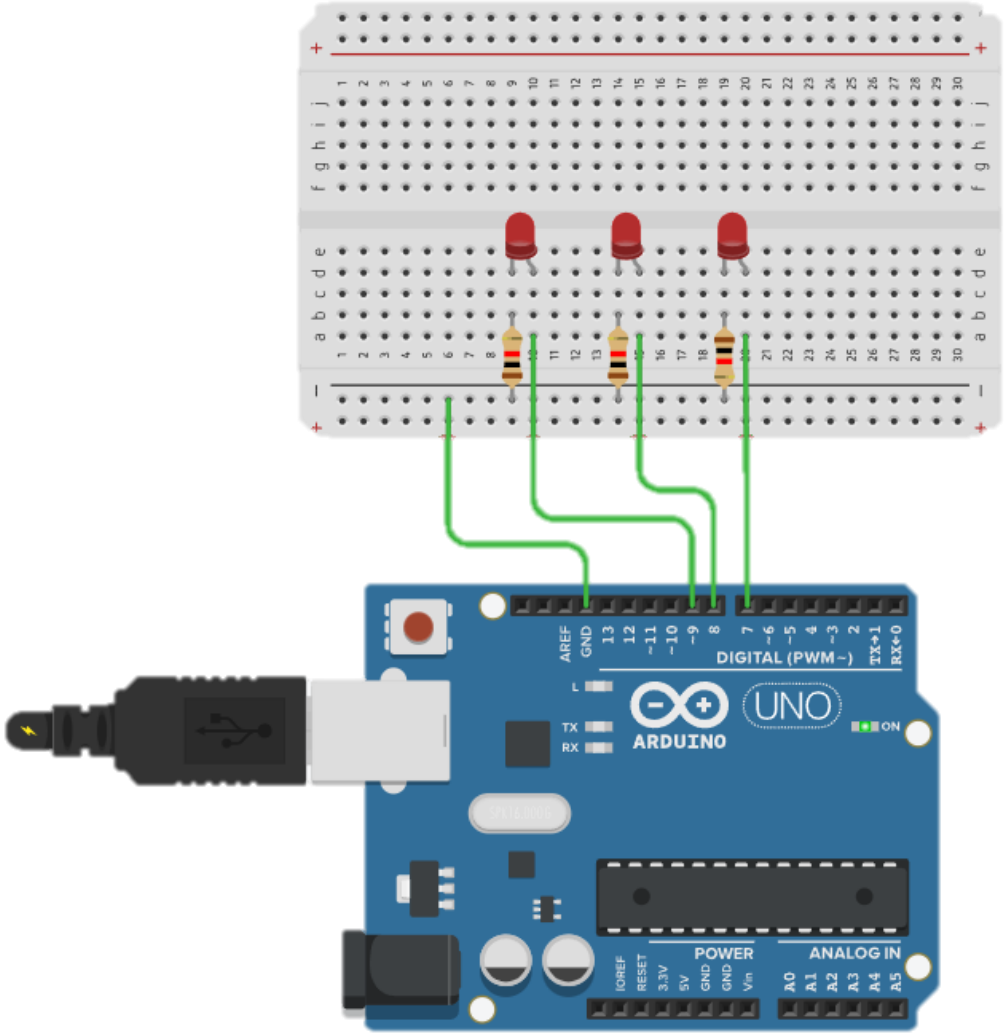
전송 데이터에 따라 LED 켜고 끄기




```
void setup(){
  Serial.begin(9600);
  pinMode(7, OUTPUT);
}

void loop() {
  if( Serial.available() > 0)
  {
     char sData = Serial.read();
     if(sData == 'a')
     {
       digitalWrite(7, HIGH);
     }
     else if(sData == 'b')
     {
       digitalWrite(7, HIGH);
     }
  }
}
```

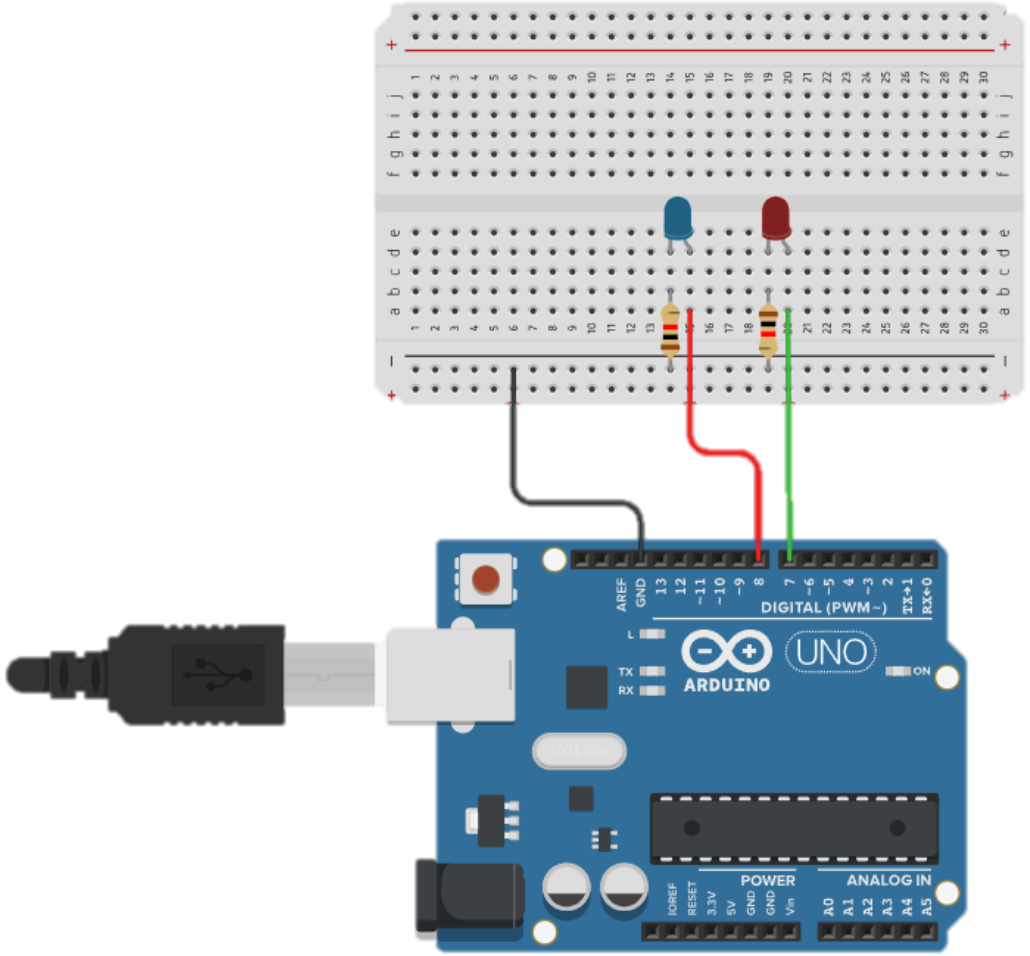
```
void setup(){
  Serial.begin(9600);
}

void loop() {
  Serial.println("Hello");
  delay(1000);
}
```

위험을 알리는 경광등 만들기



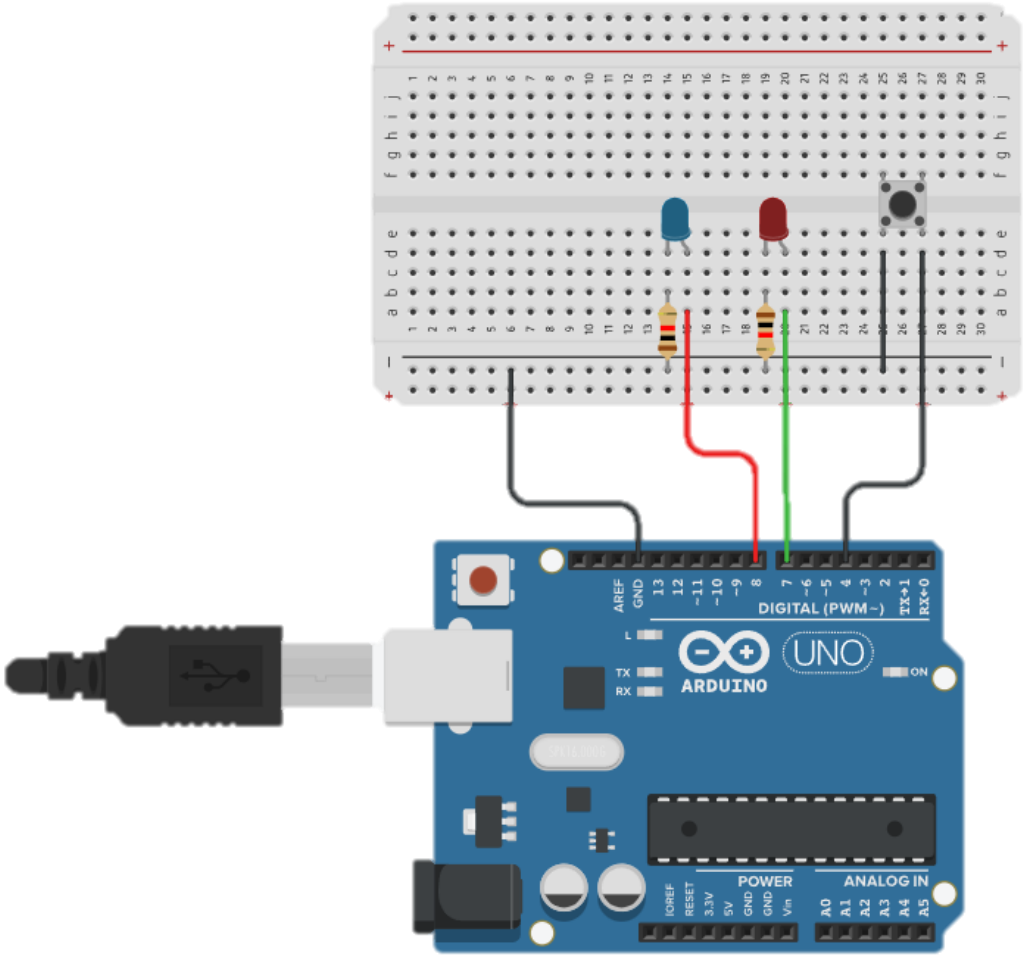

```
#define LED1 9
#define LED2 8
#define LED3 7


void setup(){
  pinMode(LED1, OUTPUT);
  pinMode(LED2, OUTPUT);
  pinMode(LED3, OUTPUT);
}

void loop() {
  digitalWrite(LED1, HIGH);
  digitalWrite(LED2, HIGH);
  digitalWrite(LED3, HIGH);
  delay(1000);
  digitalWrite(LED1, LOW);
  digitalWrite(LED2, LOW);
  digitalWrite(LED3, LOW);
  delay(1000);
}
```

경찰차에 표시하는 경광등 만들기




```
#define LED_BLUE 8
#define LED_RED 7
#define DELAY_TIME 80

void setup(){
  pinMode(LED_BLUE, OUTPUT);
  pinMode(LED_RED, OUTPUT);
}

void loop() {
  digitalWrite(LED_BLUE, HIGH);
  digitalWrite(LED_RED, LOW);
  delay(DELAY_TIME);
  digitalWrite(LED_RED, HIGH);
  digitalWrite(LED_BLUE, LOW);
  delay(DELAY_TIME);
}
```

경찰차에 표시하는 경광등 만들기



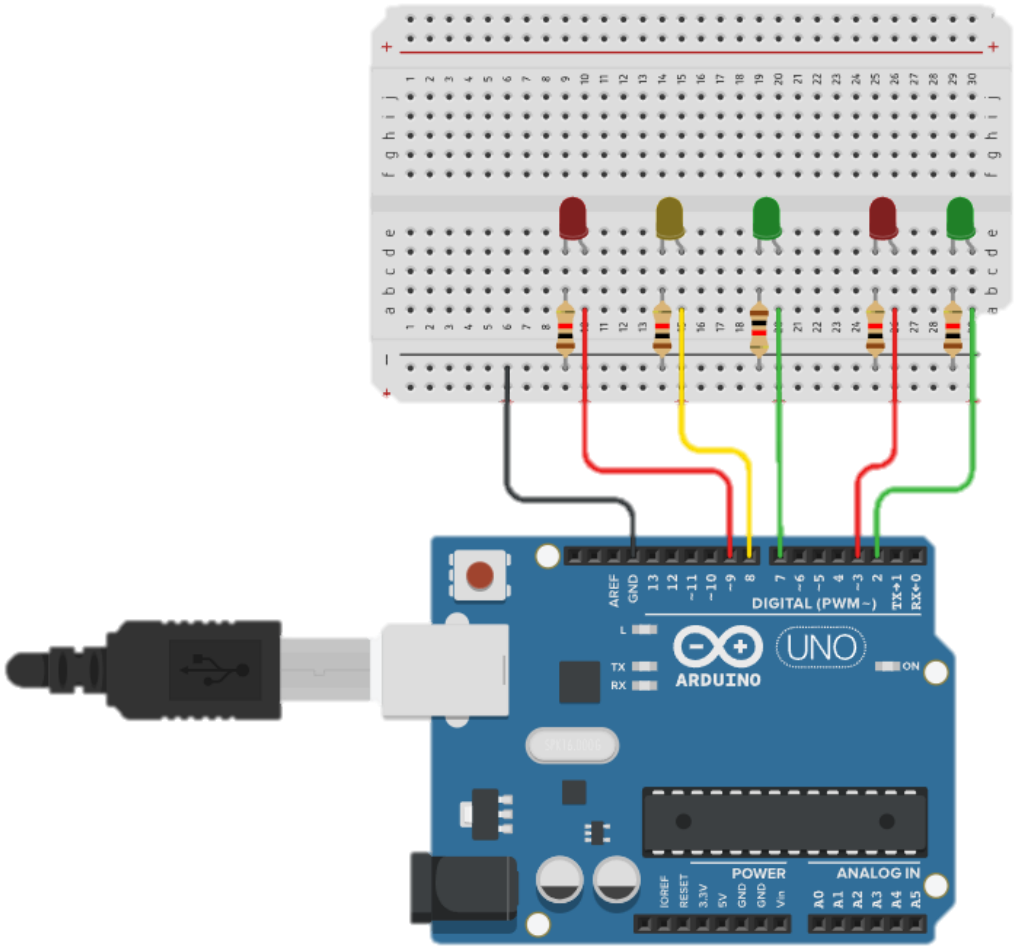

```
#define BUTTON 4

void setup() {
  Serial.begin(9600);
  pinMode(BUTTON, INPUT_PULLUP);
}

void loop() {
  int buttonValue=digitalRead(BUTTON);

  Serial.println (buttonValue);
  delay(100);
}
```

경찰차에 표시하는 경광등 만들기


```
#define BUTTON 4
#define LED_BLUE 8
#define LED_RED 7
#define DELAY_TIME 80

int state = 0;

void setup() {
  Serial.begin(9600);
  pinMode(BUTTON, INPUT_PULLUP);
  pinMode(LED_BLUE, OUTPUT);
  pinMode(LED_RED, OUTPUT);
}
```

```
void loop() {
  int buttonValue = !digitalRead(BUTTON);

  if(buttonValue == 1) {
    state = !state;
    delay(500);
  }

  if(state == 0){
    digitalWrite(LED_BLUE, HIGH);
    digitalWrite(LED_RED, LOW);
    delay(DELAY_TIME);
    digitalWrite(LED_RED, HIGH);
    digitalWrite(LED_BLUE, LOW);
    delay(DELAY_TIME);
  }
  else if(state == 1) {
    digitalWrite(LED_BLUE, LOW);
    digitalWrite(LED_RED, LOW);
  }
}
```

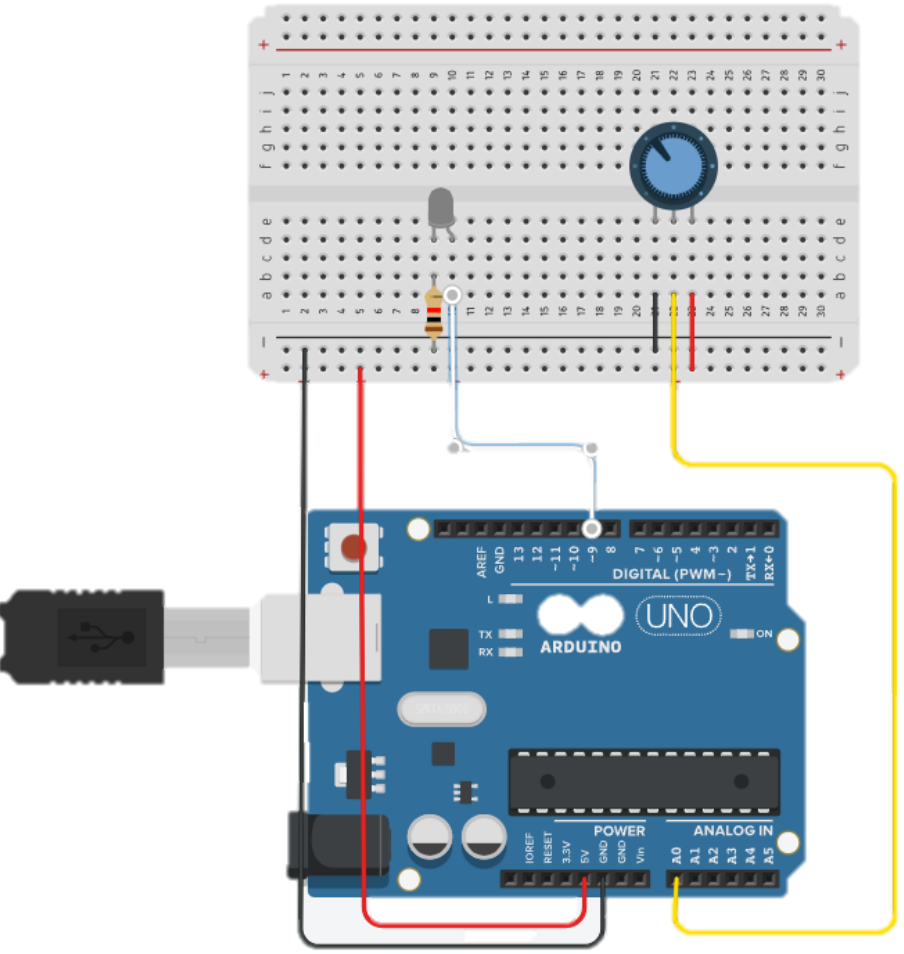
LED를 이용한 신호등 구현




```
#define CAR_LED_RED 9
#define CAR_LED_YELLOW 8
#define CAR_LED_GREEN 7
#define HUMAN_LED_RED 3
#define HUMAN_LED_GREEN 2

void setup() {
  pinMode(CAR_LED_RED, OUTPUT);
  pinMode(CAR_LED_YELLOW, OUTPUT);
  pinMode(CAR_LED_GREEN, OUTPUT);
  pinMode(HUMAN_LED_RED, OUTPUT);
  pinMode(HUMAN_LED_GREEN, OUTPUT);
}
void loop() {
  digitalWrite(CAR_LED_RED, LOW);
  digitalWrite(CAR_LED_YELLOW, LOW);
  digitalWrite(CAR_LED_GREEN, HIGH);
  digitalWrite(HUMAN_LED_RED, HIGH);
  digitalWrite(HUMAN_LED_GREEN, LOW);
  delay(5000);
  digitalWrite(CAR_LED_RED, LOW);
  digitalWrite(CAR_LED_YELLOW, HIGH);
  digitalWrite(CAR_LED_GREEN, LOW);
  digitalWrite(HUMAN_LED_RED, HIGH);
  digitalWrite(HUMAN_LED_GREEN, LOW);
  delay(5000);
```

```
  digitalWrite(CAR_LED_RED, HIGH);
  digitalWrite(CAR_LED_YELLOW, LOW);
  digitalWrite(CAR_LED_GREEN, LOW);
  digitalWrite(HUMAN_LED_RED, LOW);
  digitalWrite(HUMAN_LED_GREEN, HIGH);
  delay(2000);
  digitalWrite(HUMAN_LED_GREEN, LOW);
  delay(500);
  digitalWrite(HUMAN_LED_GREEN, HIGH);
  delay(500);
  digitalWrite(HUMAN_LED_GREEN, LOW);
  delay(500);
  digitalWrite(HUMAN_LED_GREEN, HIGH);
  delay(500);
  digitalWrite(HUMAN_LED_GREEN, LOW);
  delay(500);
  digitalWrite(HUMAN_LED_GREEN, HIGH);
  delay(500);
}
```

LED 스탠드 만들기 1_가변저항 사용

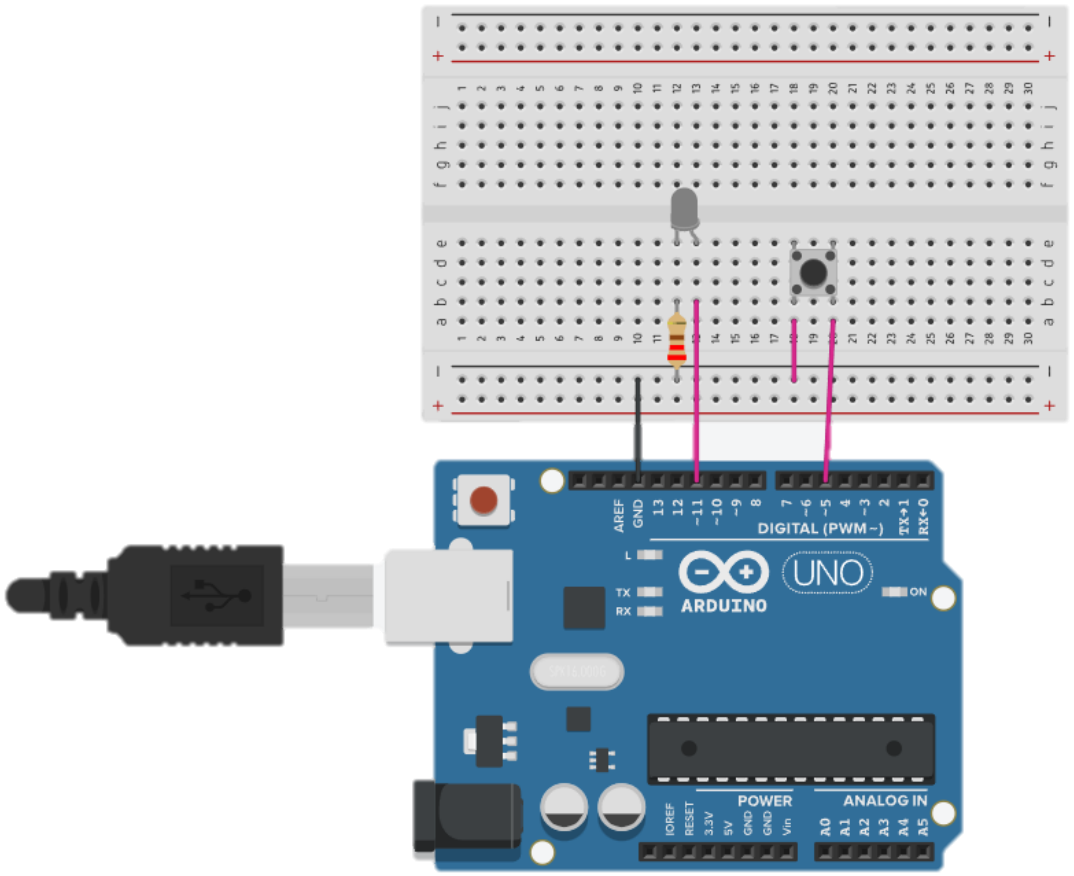



```
#define LED 9
#define VR A0

void setup(){
  Serial.begin(9600);
}

void loop(){
  Serial.println(analogRead(VR));
  delay(500);
}
```

```
#define LED 9
#define VR A0

void setup(){
  Serial.begin(9600);
}

void loop(){
  analogWrite(LED, 0);
  delay(500);
  analogWrite(LED, 50);
  delay(500);
  analogWrite(LED, 150);
  delay(500);
  analogWrite(LED, 255);
  delay(500);
}
```

```
#define LED 9
#define VR A0

void setup(){
  Serial.begin(9600);
}

void loop(){
  int analogValue = analogRead(VR);
  int analogMapping = map(analogValue, 0, 1023, 0, 255);

  analogWrite(LED, analogMapping);
}
```

LED 스탠드 만들기 2




```
#define SW_PIN 5

void setup() {
  Serial.begin(9600);
  pinMode(SW_PIN, INPUT_PULLUP);
}
void loop() {
  int swValue = digitalRead(SW_PIN);
  Serial.prntln(swValue);
}
```

```
#define SW_PIN 5

int newSwValue = 1;
int oldSwValue = 1;

void setup() {
  Serial.begin(9600);
  pinMode(SW_PIN, INPUT_PULLUP);
}

void loop() {
  newSwValue = digitalRead(SW_PIN);

  if(newSwValue != oldSwValue) {
    oldSwValue = newSwValue;
    Serial.println(newSwValue);
  }
}
```

```
#define SW_PIN 5
#define LED_PIN 11

int newSwValue = 1;
int oldSwValue = 1;
int cnt = 0;

void setup() {
  Serial.begin(9600);
  pinMode(SW_PIN, INPUT_PULLUP);
}

void loop() {
  newSwValue = digitalRead(SW_PIN);

  if(newSwValue != oldSwValue) {
    oldSwValue = newSwValue;
    if(newSwValue == 0) {
      cnt++;
      if(cnt >= 4) cnt = 0;
      Serial.println(newSwValue);
    }
    delay(200);
  }
  if(cnt == 0) analogWrite(LED_PIN, 0);
  else if(cnt == 1) analogWrite(LED_PIN, 50);
  else if(cnt == 2) analogWrite(LED_PIN, 150);
  else if(cnt == 3) analogWrite(LED_PIN, 255);
}
```

Reference

- 만들면서 배우는 아두이노와 40개의 작품들. 장문철, 앤써북