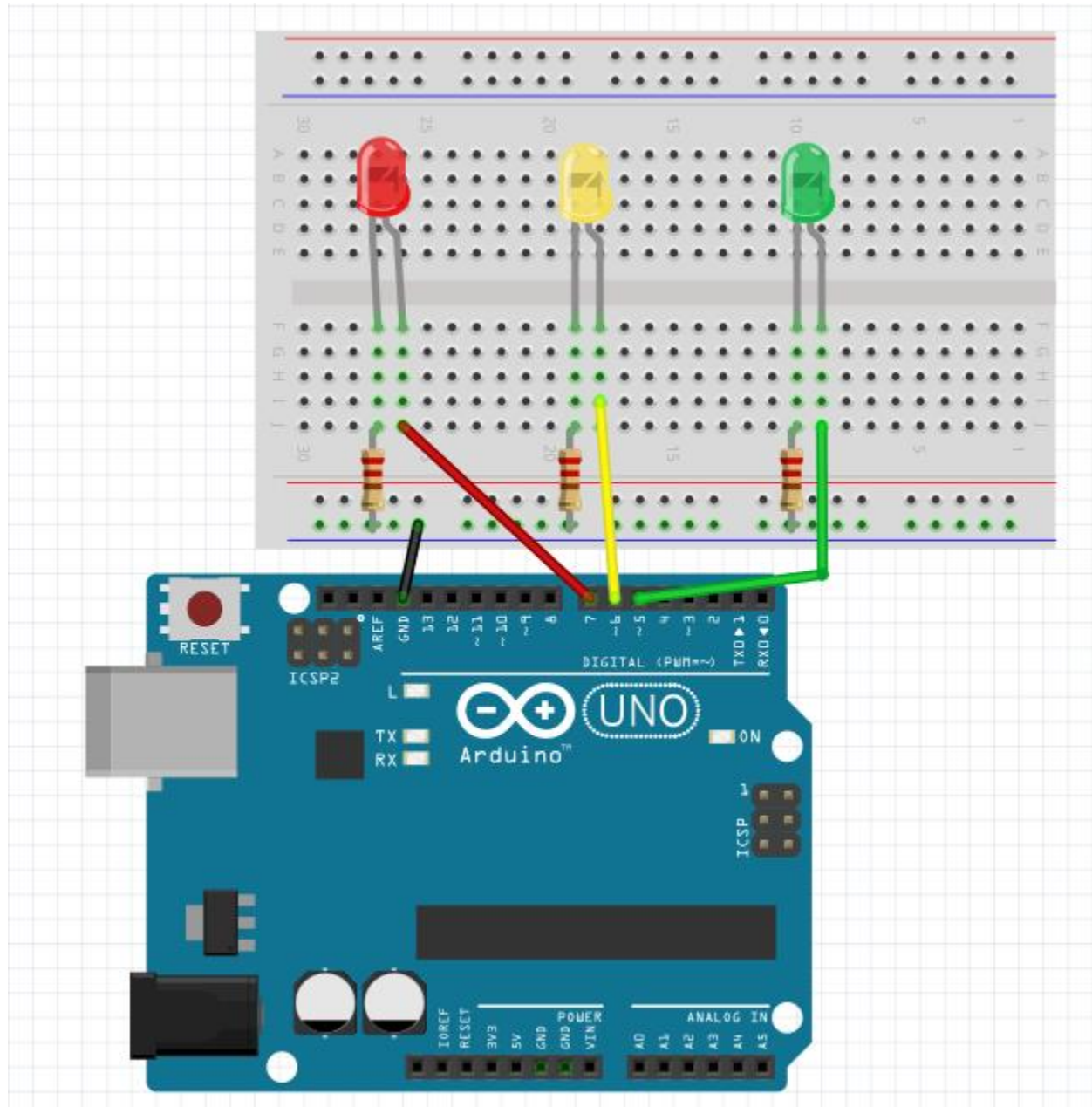


## Circuit Recipe: Circuit 3 – An LED Stop Light

### Circuit Description:

This project creates an LED stop light. Conceptually, it is very similar to the previous project except that now we are controlling three LEDs instead of just one. Also, to save space, we are setting up the blue bar on the breadboard as ground, and using our resistors to bridge straight to ground after leaving the LED.

### Circuit Diagram:



## Notes:

- Place a wire from the blue bar on the breadboard to GND (ground) on the Arduino
- Place red, yellow and green LEDs on the breadboard. Leave some room between them. In my diagram, the positive leg (longer leg) for each LED is on the right.
- Run a 220 resistor from the negative leg of each LED to the blue bar on the breadboard
- Run a line from digital pin 7 on the Arduino to the positive leg of the Red LED
- Run a line from digital pin 6 on the Arduino to the positive leg of the Yellow LED
- Run a line from digital pin 5 on the Arduino to the positive leg of the Green LED

## Arduino Code:

When coding this project, note the similarities to the previous project. The complexity comes in that we have to control 3 LEDs at the same time – always turning one on and the other two off.

The program could be a little more efficient by removing a couple of unneeded lines – for example, we don't need to turn off the red LED when we turn on the green LED.

```
stoplight$  
1 void setup() {  
2   pinMode(5, OUTPUT);  
3   pinMode(6, OUTPUT);  
4   pinMode(7, OUTPUT);  
5 }  
6  
7 void loop() {  
8   //turn on green  
9   digitalWrite(5, HIGH);  
10  digitalWrite(6, LOW);  
11  digitalWrite(7, LOW);  
12  delay(3000);  
13  //turn on yellow  
14  digitalWrite(5, LOW);  
15  digitalWrite(6, HIGH);  
16  digitalWrite(7, LOW);  
17  delay(1000);  
18  //turn on red  
19  digitalWrite(5, LOW);  
20  digitalWrite(6, LOW);  
21  digitalWrite(7, HIGH);  
22  delay(3000);  
23 }
```