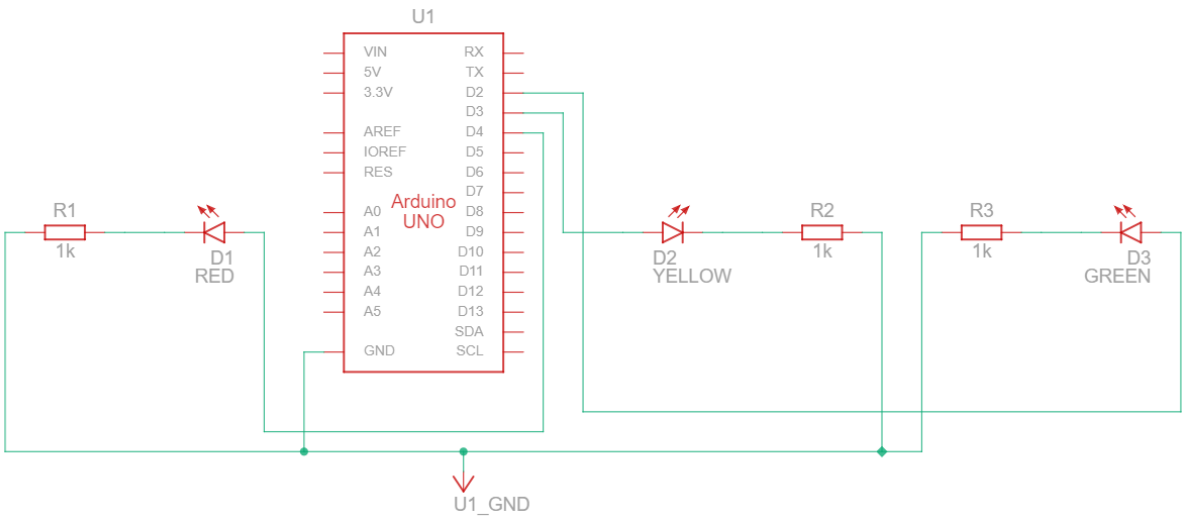
Tutorial 2: Blinking the LED



Step 1: Set up the Circuit

1. Place the Arduino 5V pin to the +ve sign rail and GND pin Arduino to the -ve sign rail of the breadboard.

2. Connect the anode leg of the LED to any digital pin on the Arduino. For example, in the diagram above green led connected to pin D2

3. Connect the cathode leg of the LED with the 220-ohm resistor and another leg of the resistor connects to the GND of the rail.

4. Repeat steps 2-3 for the other two LEDs, connecting them to any digital pins. You can choose any digital pin, D3 until D13.

Step 2 : Write the Arduino Code

Next, let's write the code that will control the blinking of the LED:

1. Declare the integer for the pin numbers of LEDs which connects to the Arduino pin.

2. Set up the setup() function, which will run once when the Arduino is powered on or reset. Inside the setup() function, configure the LED pins as output by adding the following lines:

```
int Redled = 4;
int Yellowled = 3;
int Greenled = 2;

//delay stop the program at amount time we put
void setup()
{
    pinMode(Redled,OUTPUT);
    pinMode(Yellowled,OUTPUT);
    pinMode(Greenled,OUTPUT);
}
```

3. Set up the loop() function, which will run repeatedly after the setup() function. Inside the loop() function, write the code to blink the LEDs. Add the following lines:

```
void loop()
{
    digitalWrite(Redled,HIGH);       //turn on the red led
    delay(1000);                     //wait 1 second
    digitalWrite(Redled,LOW);        //turn off red led
     delay(1000);                    //wait 1 second
     digitalWrite(Greenled,HIGH);    //turn on green led
     delay(1000);                    //wait 1 second
    digitalWrite(Greenled,LOW);      //turn off green led
     delay(1000);                    //wait 1 second
    digitalWrite(Yellowled,HIGH);    //turn on yellow led
    delay(1000);                     //wait 1 second
    digitalWrite(Yellowled,LOW);     //turn off yellow led
     delay(1000);                    //wait 1 second

}
```

Step 3: Upload the Code to the Arduino

1. Connect your Arduino board to your computer using a USB cable, select the appropriate board and port in the Arduino IDE, and upload the code to the board.

2. The LEDs should now start blinking in the following sequence: red LED on for 1 second, then off, green LED on for 1 second, then off, yellow LED on for 1 second, then off. The sequence repeats continuously.

Exercise

Try to display recreate a standard traffic light. Make sure that the light sequence is correct (Red > Green > Yellow).