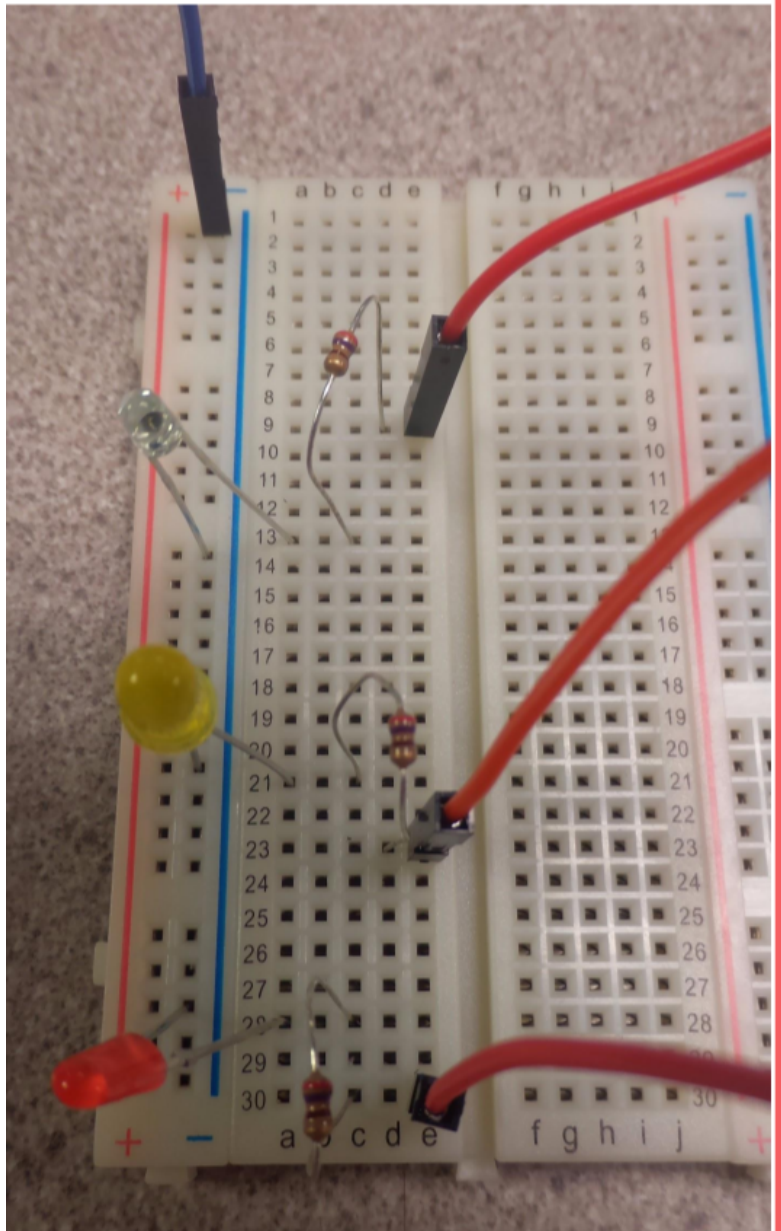


## Your assignment for today is to create a stoplight.

Google “Raspberry Pi 3 GPIO” and find an image for reference. We are using the **ORANGE GPIO** pins. You will need to wire each LED to a **separate** GPIO pin so that you can control them individually. (I recommend GPIO18, GPIO23, and GPIO24 so that the example code works).

If you missed yesterday, **DO THAT FIRST!!!**

It will look something like this:



## Things to keep in mind

1. Make sure you are using Raspberry Pi **3** GPIO. The third down on the right should be **GND** and the 6th down should be **GPIO18**.
2. You need to wire the positive of each LED to a separate GPIO pin
  - a. I would recommend using GPIO 18, 23, and 24 for your stoplight
3. All of your circuits can use the same ground
4. Long leg of the LED goes to positive, short leg goes to negative

I would recommend using this starting code:

```
# import the libraries we will need
import RPi.GPIO as GPIO
import time

# set the GPIO pins to the BCM address method
GPIO.setmode(GPIO.BCM)

# don't print useless warnings
GPIO.setwarnings(False)

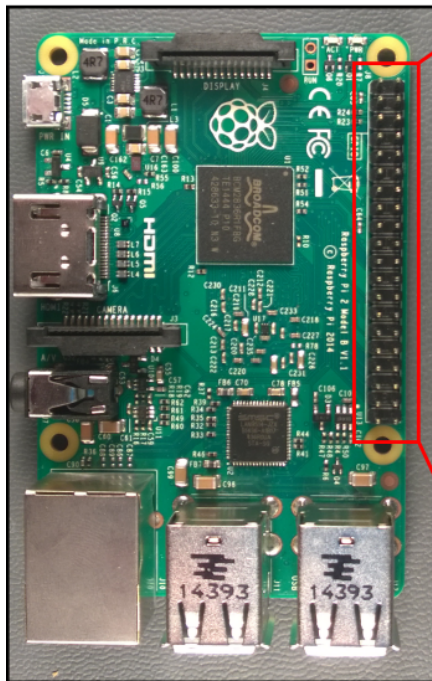
# Let's use some variables to keep track of the GPIO pin numbers
green = 18
yellow = 23
red = 24

# set the GPIO pins #18, 23 and 24 to be "output"
GPIO.setup(green ,GPIO.OUT) # green
GPIO.setup(yellow ,GPIO.OUT) # yellow
GPIO.setup(red ,GPIO.OUT) # red

for counter in range(0,10):
    print ("do something here!")
```

**\* When you've got your stoplight working, make the LED's count from 0 to 7 in binary. Remember binary? \***

**Once it counts to 7, have Python ask the user for a number between 1 and 7 and show them that number. Make sure to have a suitable error message if their input is invalid!**



Alternate Function			Alternate Function		
	3.3V PWR	1	2	5V PWR	
I2C1 SDA	GPIO 2	3	4	5V PWR	
I2C1 SCL	GPIO 3	5	6	GND	
	GPIO 4	7	8	UART0 TX	
	GND	9	10	UART0 RX	
	GPIO 17	11	12	GPIO 18	
	GPIO 27	13	14	GND	
	GPIO 22	15	16	GPIO 23	
	3.3V PWR	17	18	GPIO 24	
SPI0 MOSI	GPIO 10	19	20	GND	
SPI0 MISO	GPIO 9	21	22	GPIO 25	
SPI0 SCLK	GPIO 11	23	24	GPIO 8	SPI0 CS0
	GND	25	26	GPIO 7	SPI0 CS1
	Reserved	27	28	Reserved	
	GPIO 5	29	30	GND	
	GPIO 6	31	32	GPIO 12	
	GPIO 13	33	34	GND	
SPI1 MISO	GPIO 19	35	36	GPIO 16	SPI1 CS0
	GPIO 26	37	38	GPIO 20	SPI1 MOSI
	GND	39	40	GPIO 21	SPI1 SCLK