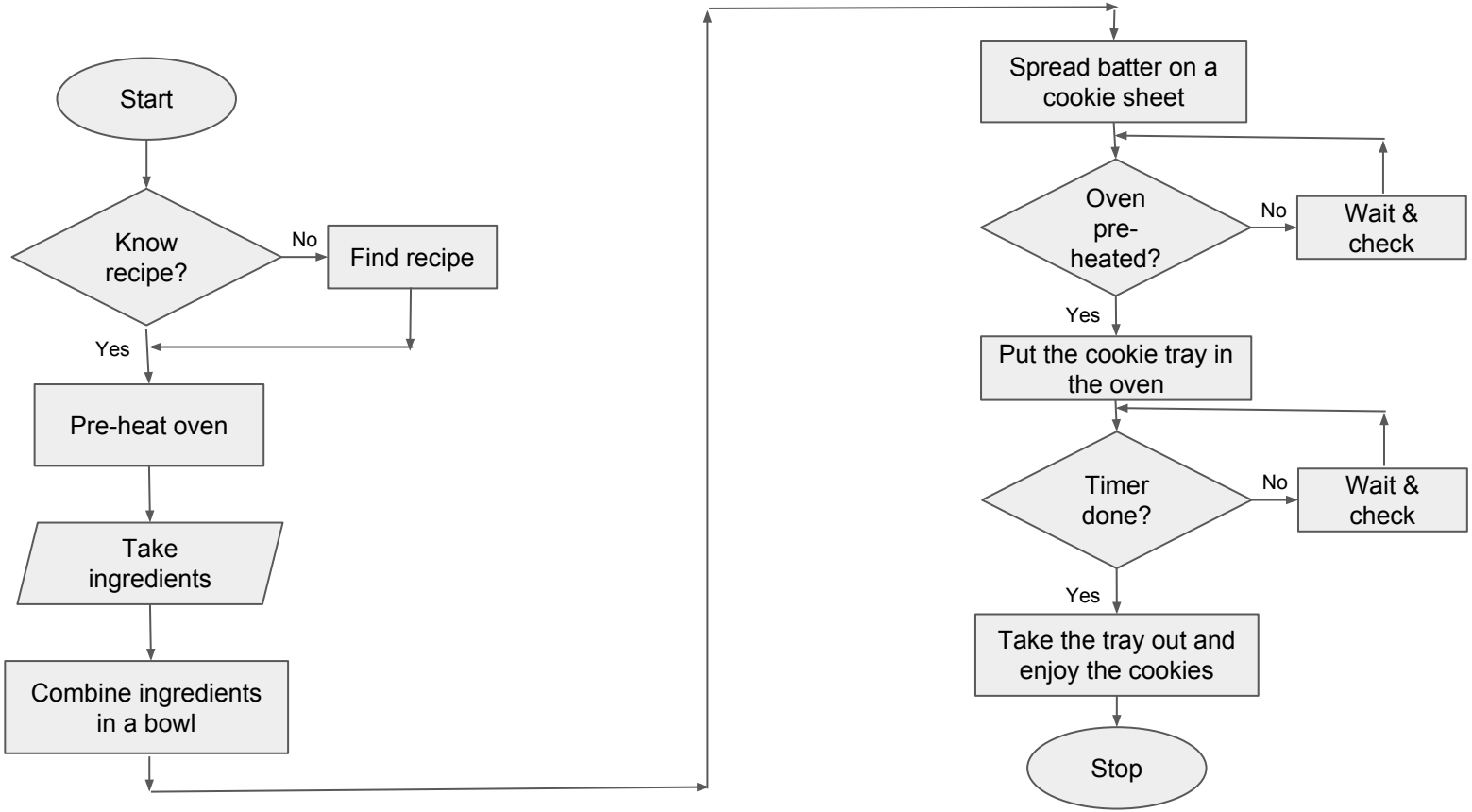
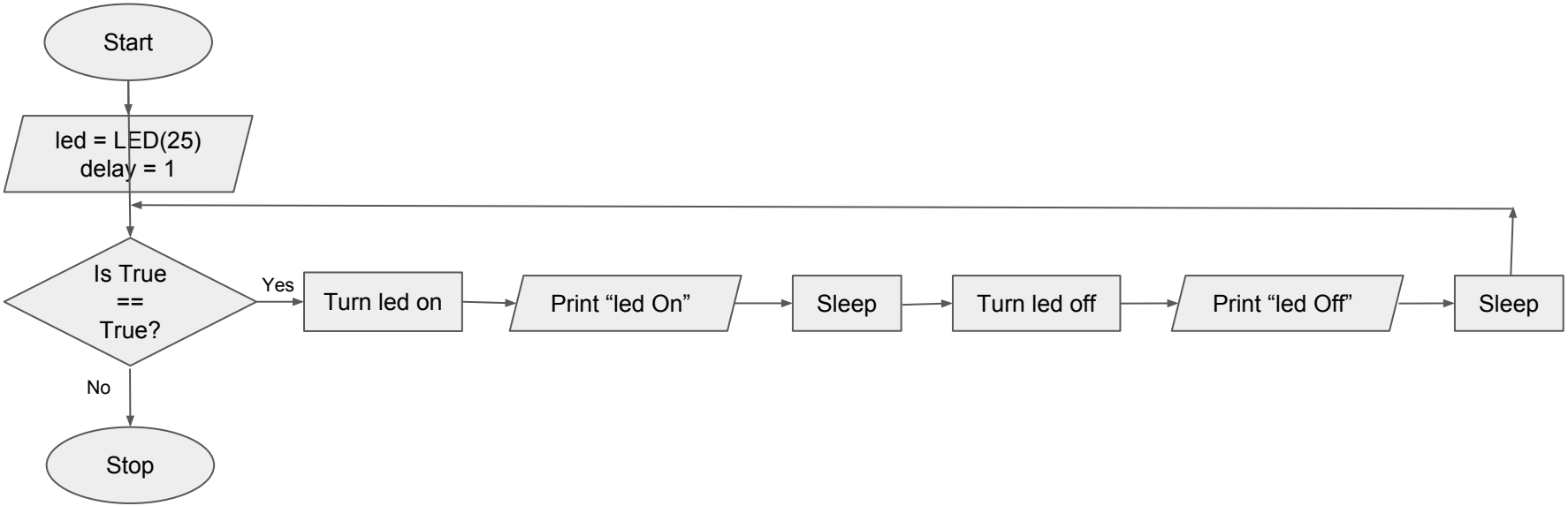
Wayland GWC Reference

Flowcharts and diagrams - examples

How to bake cookies?

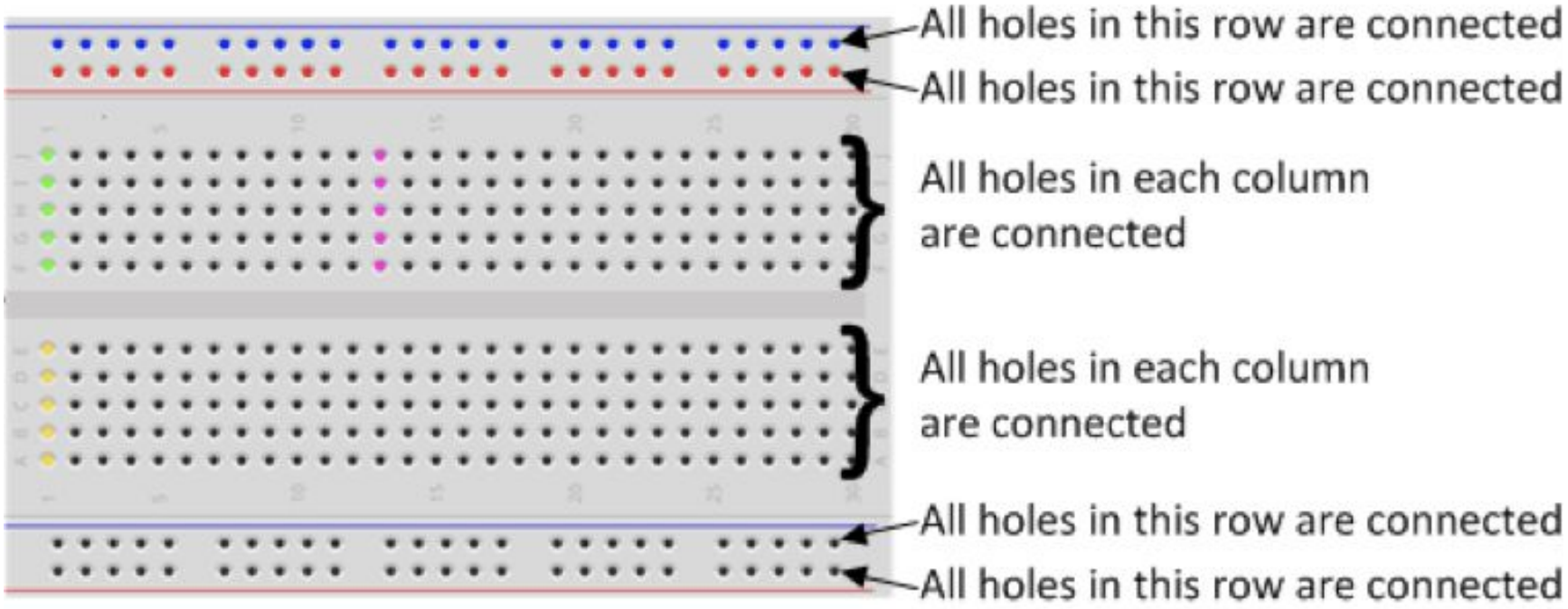


Last week’s code



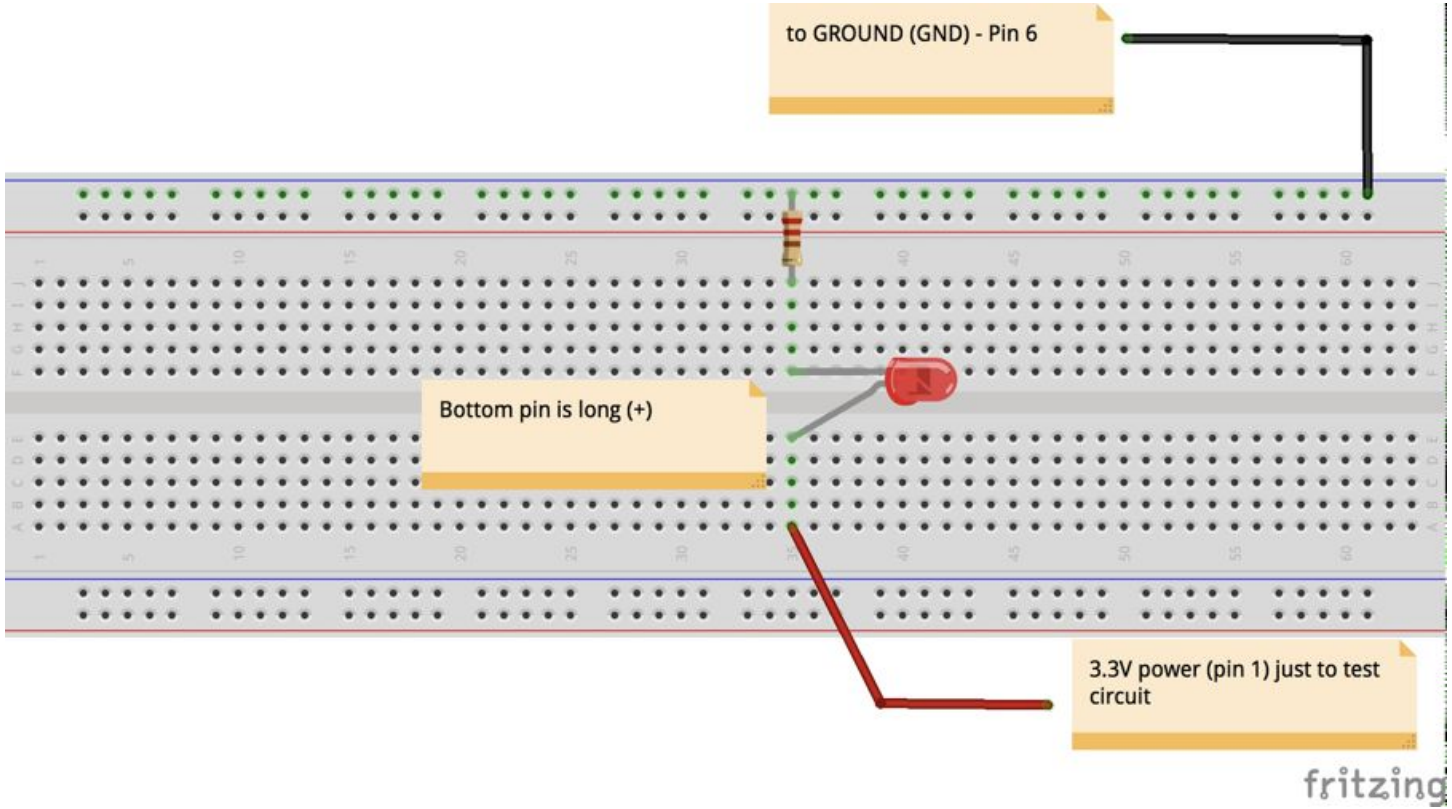
Circuit reference

Quick review: Breadboards

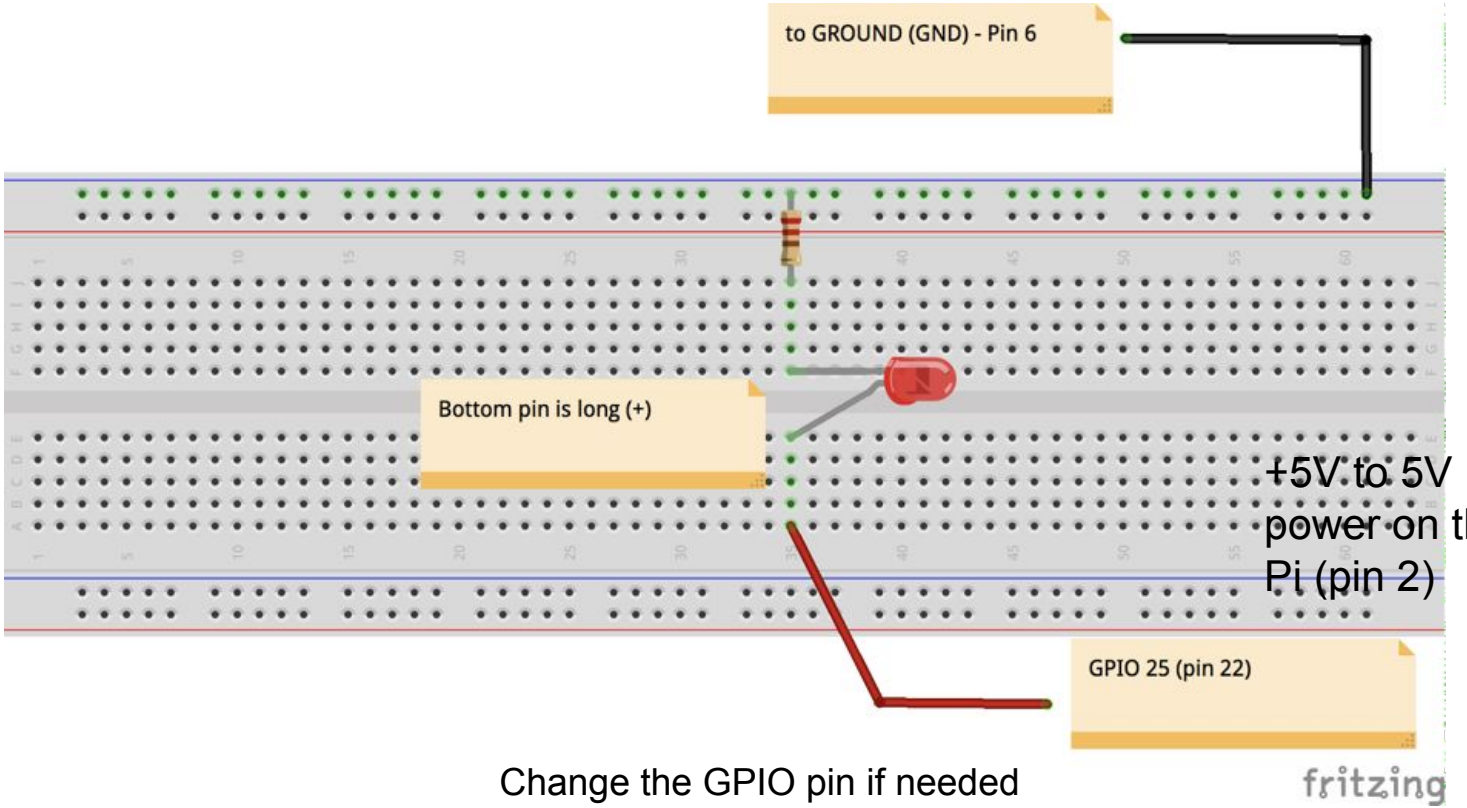


Simple LED

Wire up an LED - test with power



LED: connect for software



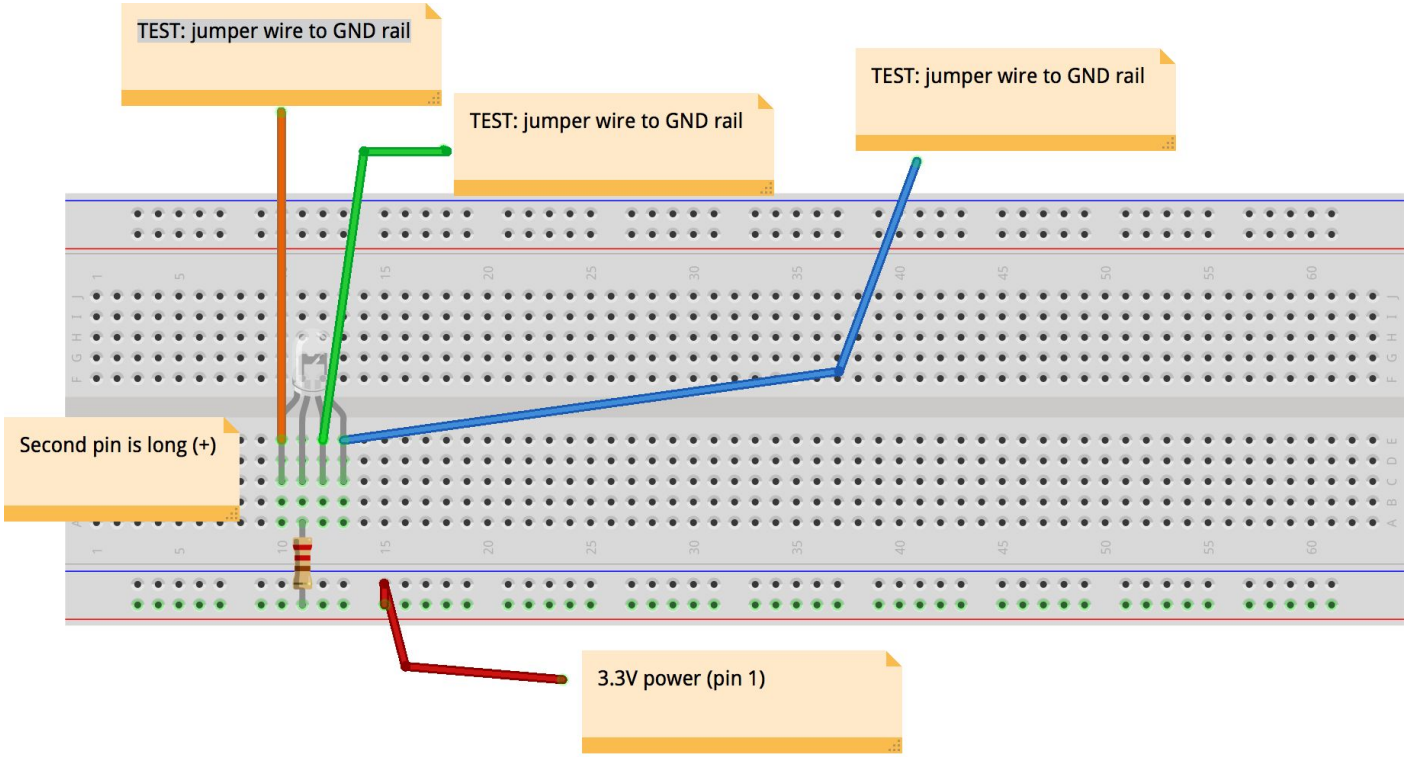
Change the GPIO pin if needed

Example LED code (also good for testing!)

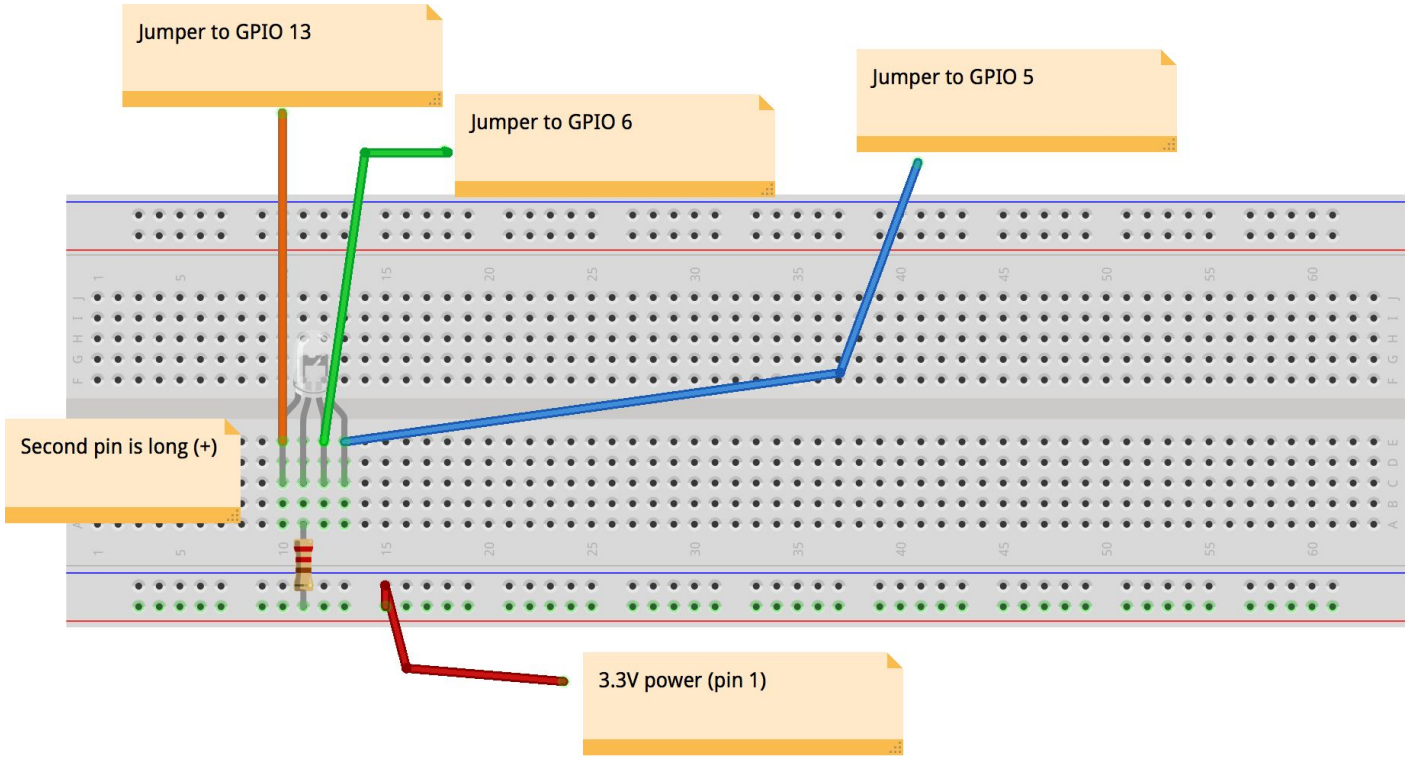
```
from gpiozero import LED
from time import sleep

led = LED(25)  # 25 is the GPIO number (not the actual number of the pin!!!)
delay = 1      # in seconds

while True:
    led.on()
    sleep(delay)
    led.off()
    sleep(delay)
```

RGB LED

RGB LED breadboard layout



Connect RGB LED to the Raspberry Pi



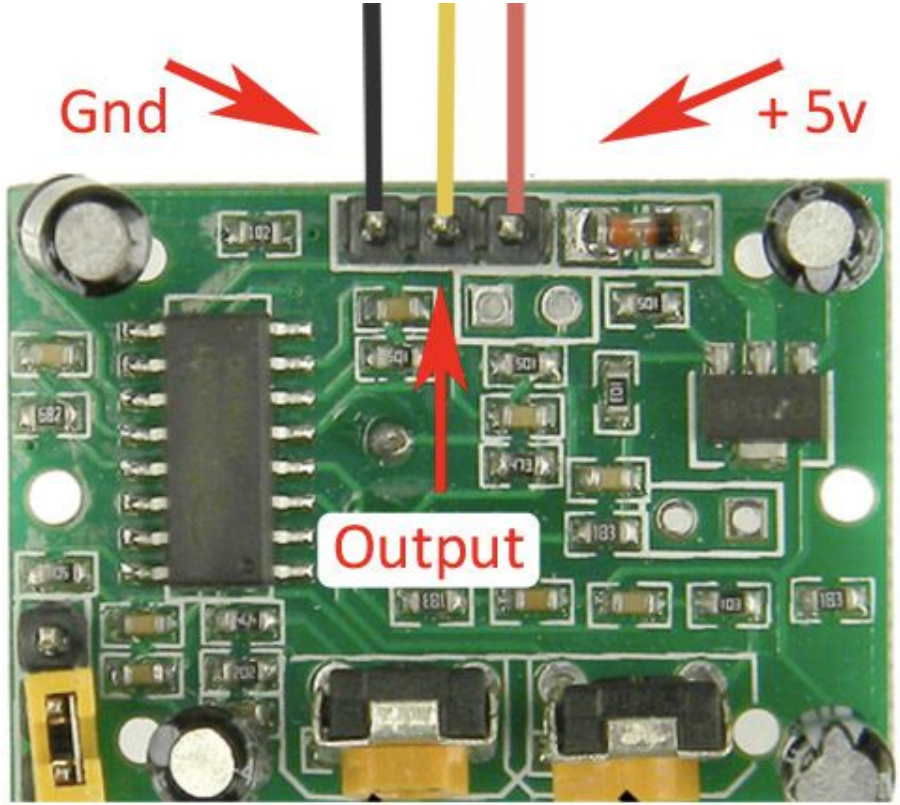
RGB LED code

```
from gpiozero import RGBLED
from time import sleep

rgb = RGBLED(red=13, green=6, blue=5, active_high = False)

# test each color
led.color = (1, 0, 0) # red
led.color = (0, 1, 0) # green
led.color = (0, 0, 1) # blue
```

Motion detector that lights up

Motion detector circuits

GND to GND on the Pi (pin 14)



Output to GPIO 4 (can you figure out the pin?)

+5V to 5V power on the Pi (pin 2)

Let’s code a motion detector light!

```
from gpiozero import MotionSensor, LED
import time

led = LED(25)    # LED GPIO number
pir = MotionSensor(4)  # Motion detector GPIO number

for i in range(1, 4):
    pir.wait_for_motion()
    led.on()
    print("Something moved", i, “times” )
    pir.wait_for_no_motion()
    led.off()
    print('everything is still')
```

Cleanup checklist

Cleanup checklist

1. sudo shutdown -h now
2. Unplug everything. Put parts in their bags.
3. Wrap up the power cord and twist-tie it
4. Put the cover on
5. Put everything except your USB key back in the box.

Write in your notebook:

- What you learned
- Ideas for things you could build
- Questions you have