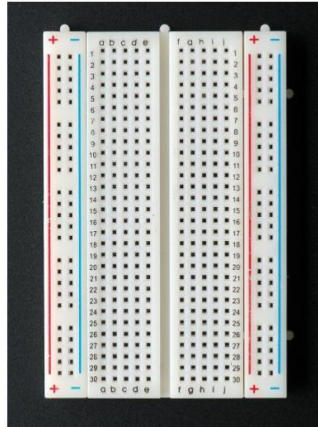


7Make an LED blink using the Raspberry Pi

We are going to make an LED light up using Python and the Raspberry Pi!

Things we will use:

LED
Resistor
2 wires

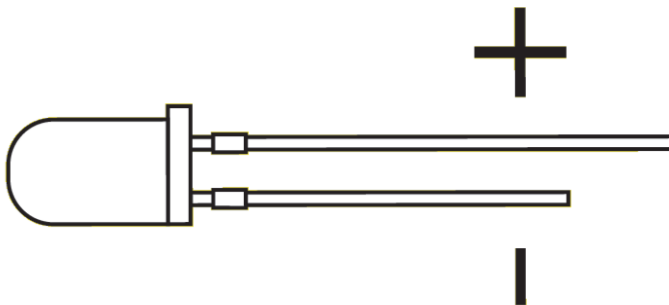


How do we make the Pi talk to the LED?



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
	GND	25		26 GPIO 7
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
	GPIO 26	37		38 GPIO 20
	GND	39		40 GPIO 21

LED only goes one way



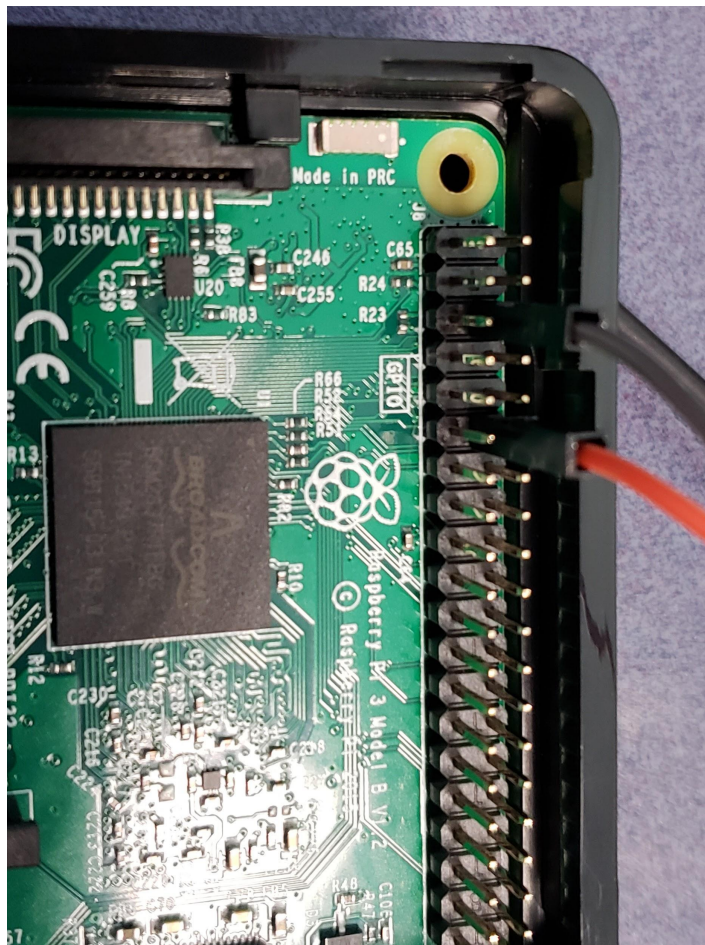
You will need:

- 1 Breadboard
- 1 LED

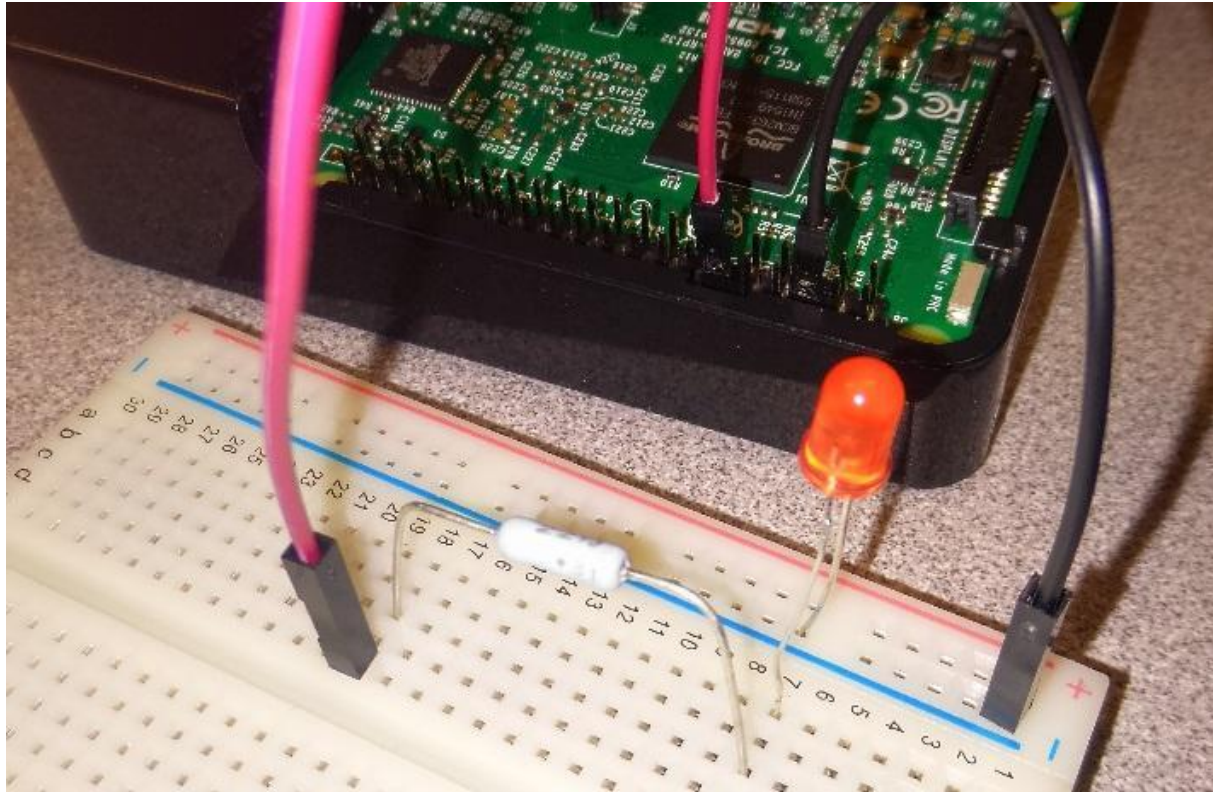
- 1 Resistor
- 1 red/orange wire
- 1 blue/green/black wire

Google “Raspberry Pi 3 GPIO”

1. Connect a **BLACK** wire from one of the **GROUND** pins to the blue rail
2. Connect the **SHORT** leg of the LED to the **blue** rail and the **LONG** leg somewhere in the middle of the board
3. Connect one leg of the resistor to the same row as the long leg of the LED
4. Connect a **RED** wire from GPIO 18 (6th down on the right hand side) to the other leg of the resistor by putting them side by side in another numbered row



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In the "Programming" Menu on the Raspberry Pi, start **Thonny**

Click the + sign to create a new file

Copy and paste the code below, then click the "run" button (you will have to save the file, just call it "blinky" or something like that)

```
# 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)

# set GPIO18 to be "output"
GPIO.setup(18,GPIO.OUT)

# Turn the LED on
GPIO.output(18,GPIO.HIGH)
print ("LED on")
time.sleep(1)

# Turn the LED off
GPIO.output(18,GPIO.LOW)
print ("LED off")
time.sleep(1)
```