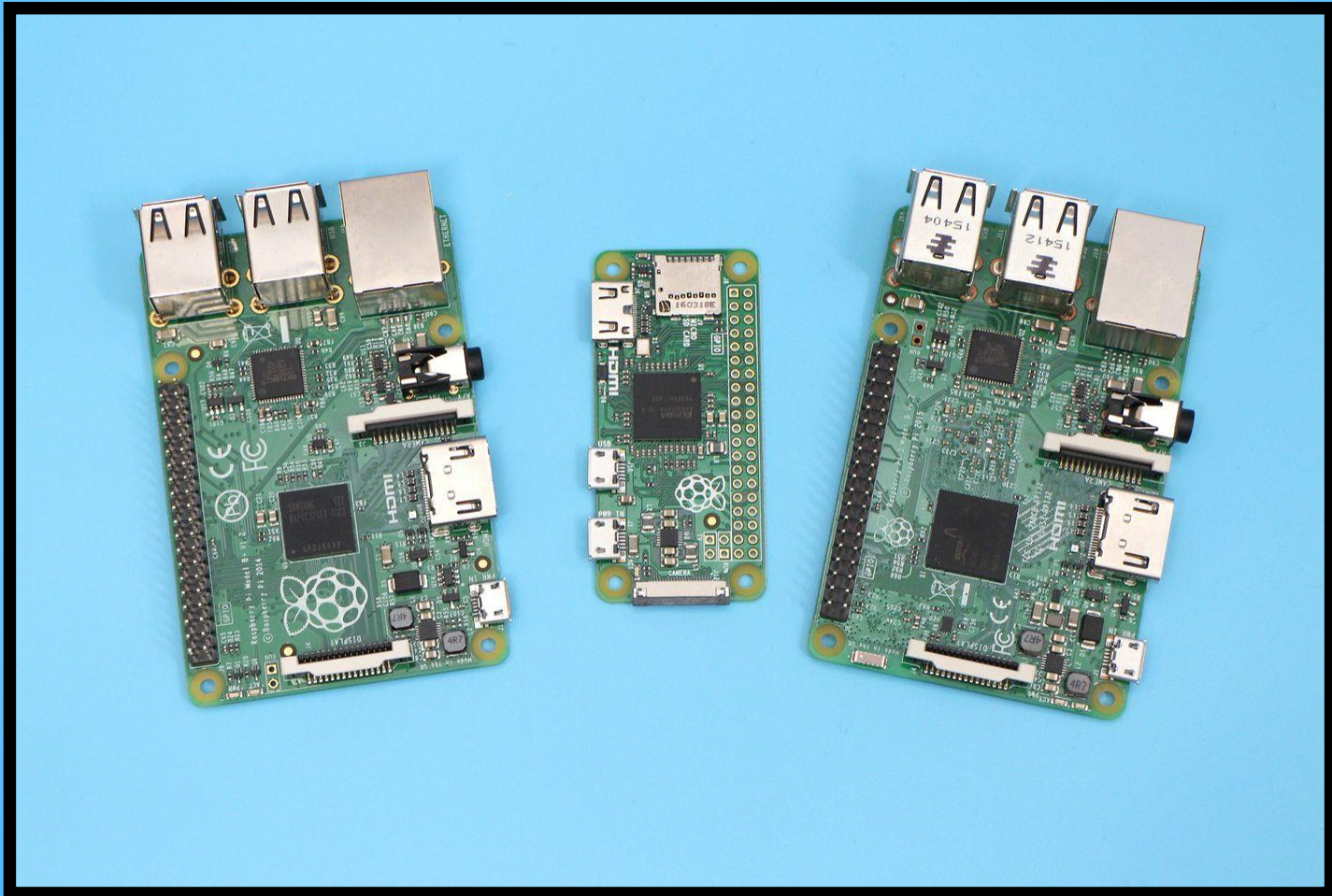


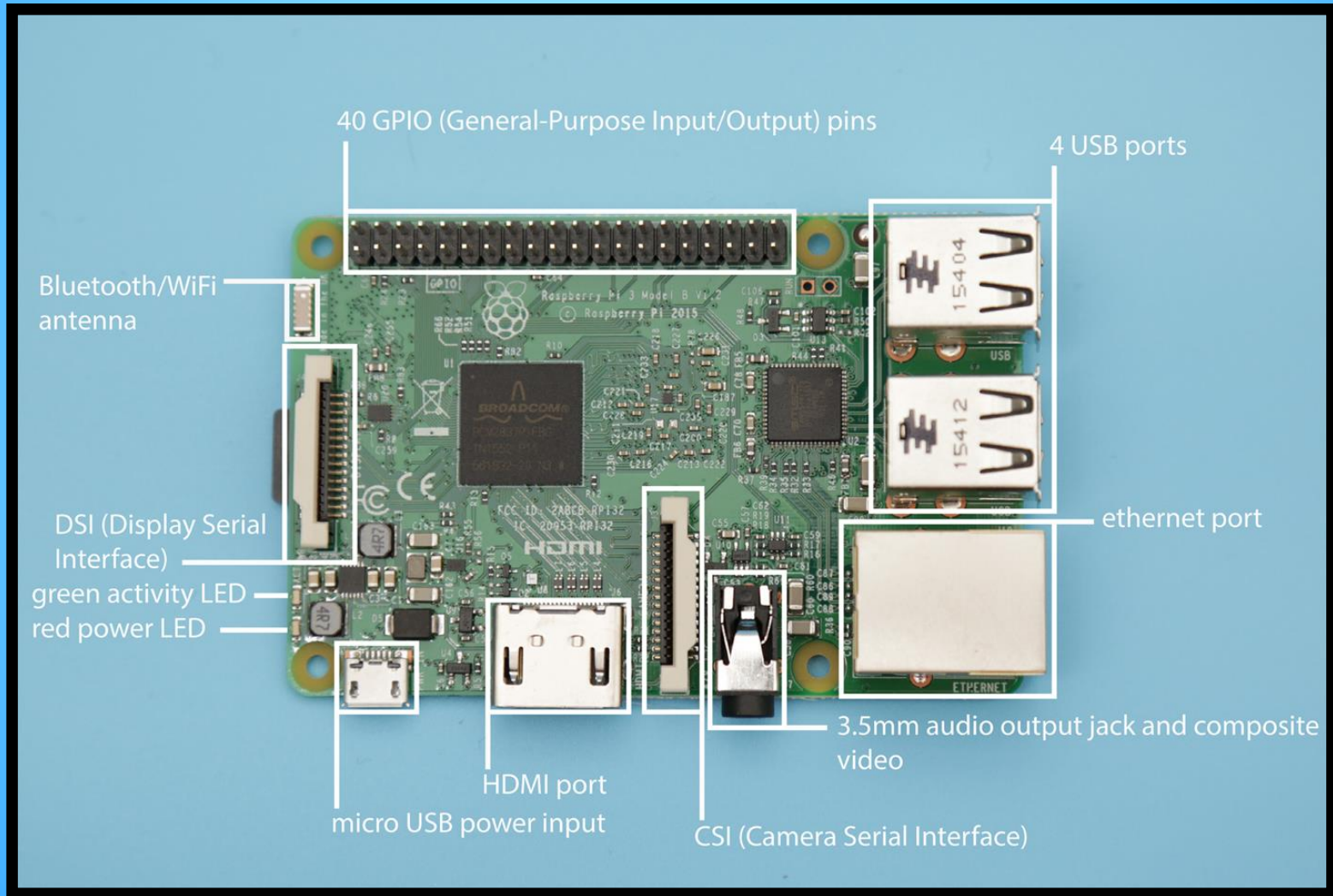
Welcome to

Raspberry Pi Basics

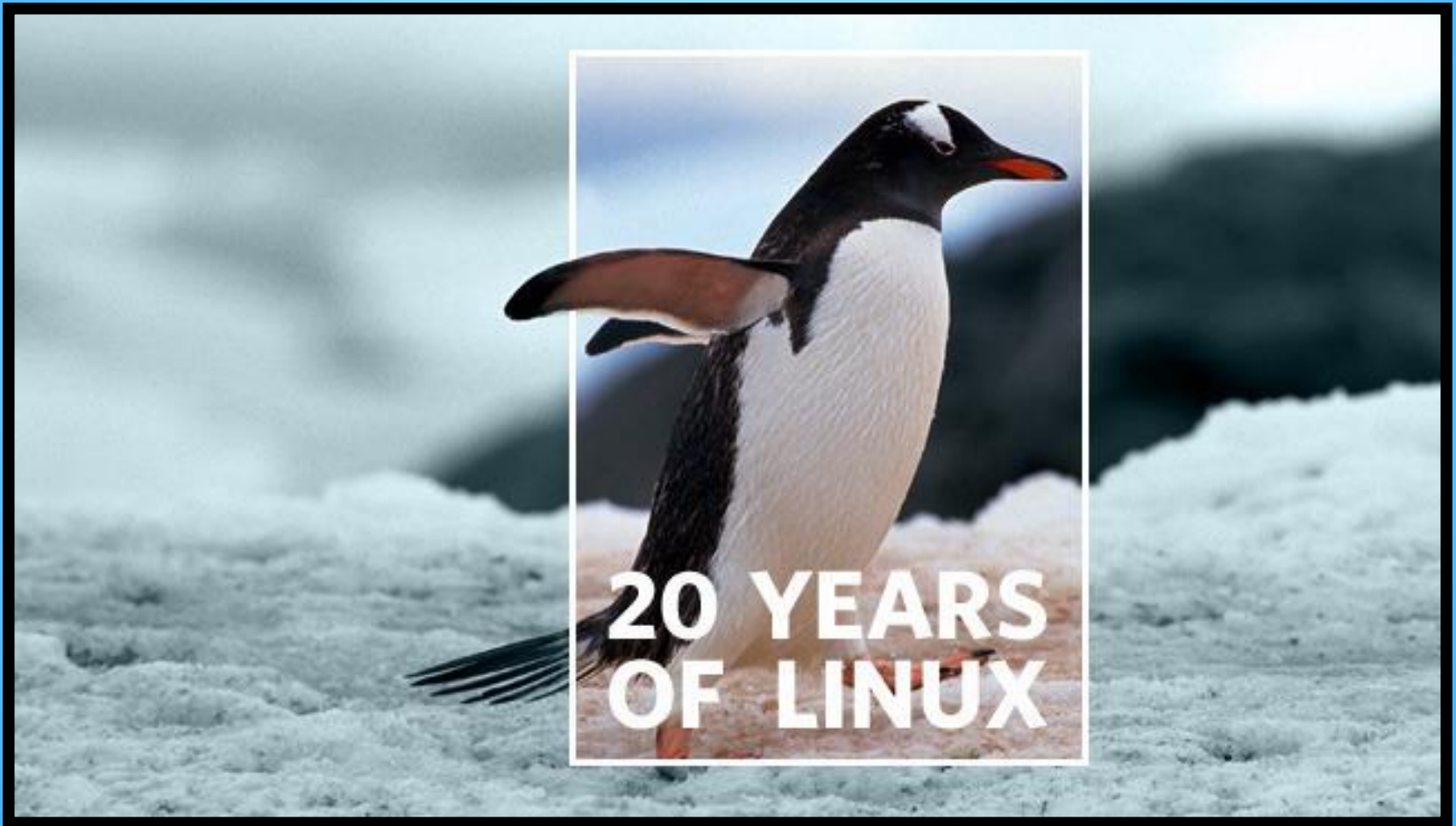
Raspberry Pi



Raspberry Pi 3



Linux



CAUTION

Proper Shutdowns

Short Circuit Avoidance

ESD Avoidance

Overheating

Introducing Terminal

man	Explains command	cp	Copy
ls	List files	rmdir	Remove directory
cd	Change directory	ssh	Secure Shell
touch	Create file	find	Find file
mkdir	Make directory	nano	Edit file
mv	Move or rename	sudo	Root permissions
rm	Remove	pwd	Print working directory

```
sudo apt-get install vlc
```

Why python?

High-Level language

Short code

Numpy module

Easy to learn

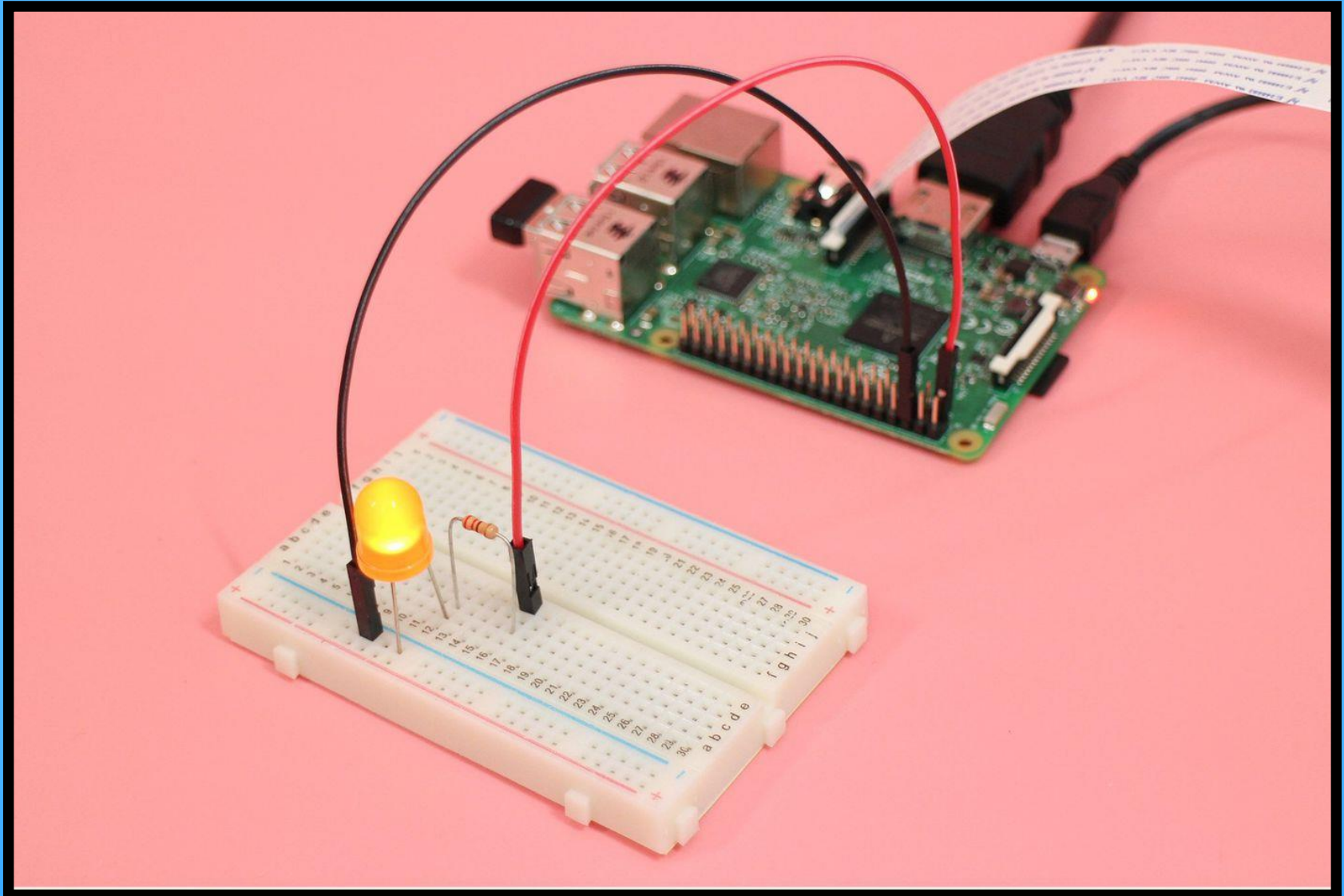
Python Syntax

EXAMPLE CODE

Introducing OpenCV



Introduction to GPIO



GPIO Pins

BCM Pin#	Board Pin#
3.3V	1
GPIO 02	3
GPIO 03	5
GPIO 04	7
GND	9
GPIO 17	11
GPIO 27	13
GPIO 22	15
3.3V	17
GPIO 10	19
GPIO 09	21
GPIO 11	23
GND	25
ID_SD	27
GPIO 05	29
GPIO 06	31
GPIO 13	33
GPIO 19	35
GPIO 26	37
GND	39
2	5V
4	5V
6	GND
8	GPIO 14
10	GPIO 15
12	GPIO 18
14	GND
16	GPIO 23
18	GPIO 24
20	GND
22	GPIO 25
24	GPIO 08
26	GPIO 07
28	ID_SC
30	GND
32	GPIO 12
34	GND
36	GPIO 16
38	GPIO 20
40	GPIO 21

Digital Signals

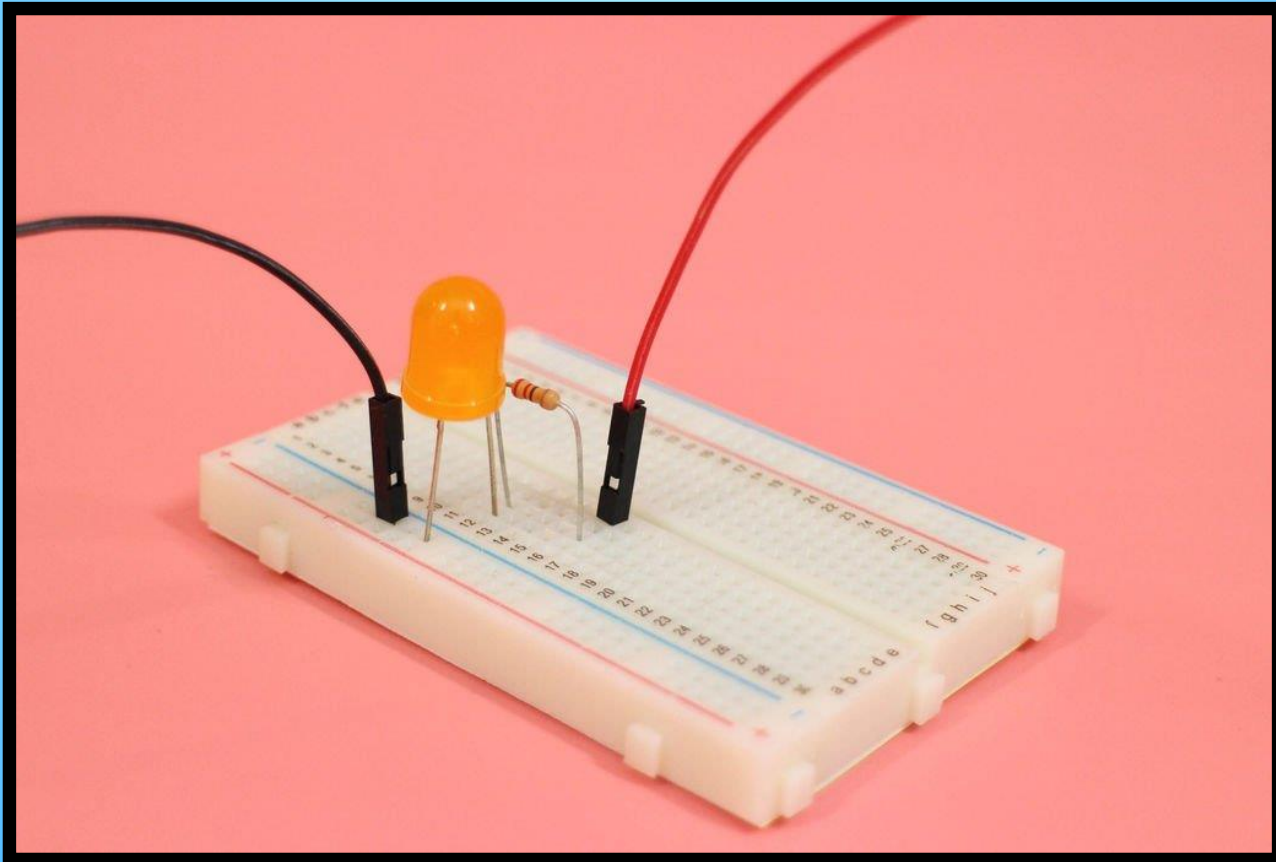
HIGH/LOW

1/0

True/False

RPi.GPIO Module

```
import RPi.GPIO as GPIO
```



GPIO Output Code

```
GPIO.setmode(GPIO.BCM)
yellowLed = 2
GPIO.output(yellowLed, True-1-GPIO.HIGH)
GPIO.output(yellowLed, False-0-GPIO.LOW)
GPIO.cleanup()
```

GPIO Output Code

BLINKING LED EXAMPLE

GPIO Input Code

```
GPIO.setup(button, GPIO.IN,  
pull_up_down=GPIO.PUD_DOWN)
```

```
input_state = GPIO.input(button)
```