

Python:

<https://raspberrypi.com/python-tutorial-raspberry-pi/>

<https://duckduckgo.com/?q=raspberry+pi+thonny+tutorial&atb=v321-1&t=chromentp&iax=videos&ia=videos&iai=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DGssM7hkwJrc>

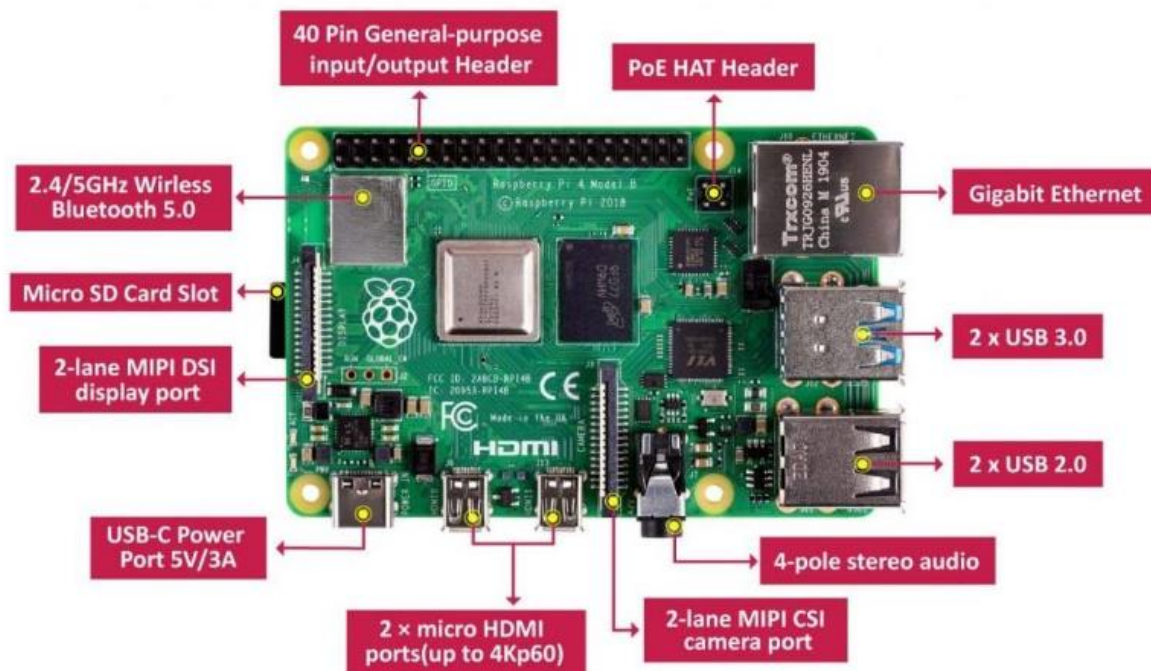
https://duckduckgo.com/?q=raspberry+pi+thonny+blinking+led+tutorial&atb=v321-1&t=chromentp&iar=videos&iax=videos&ia=videos&iai=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DOEilz2Cq_xY

Breadboard:

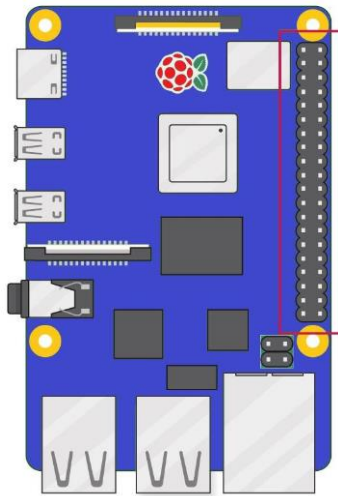
<https://magpi.raspberrypi.com/articles/breadboard-tutorial>

Raspberry Pi:

<https://www.hackatronic.com/raspberry-pi-4-specifications-pin-diagram-and-description/>

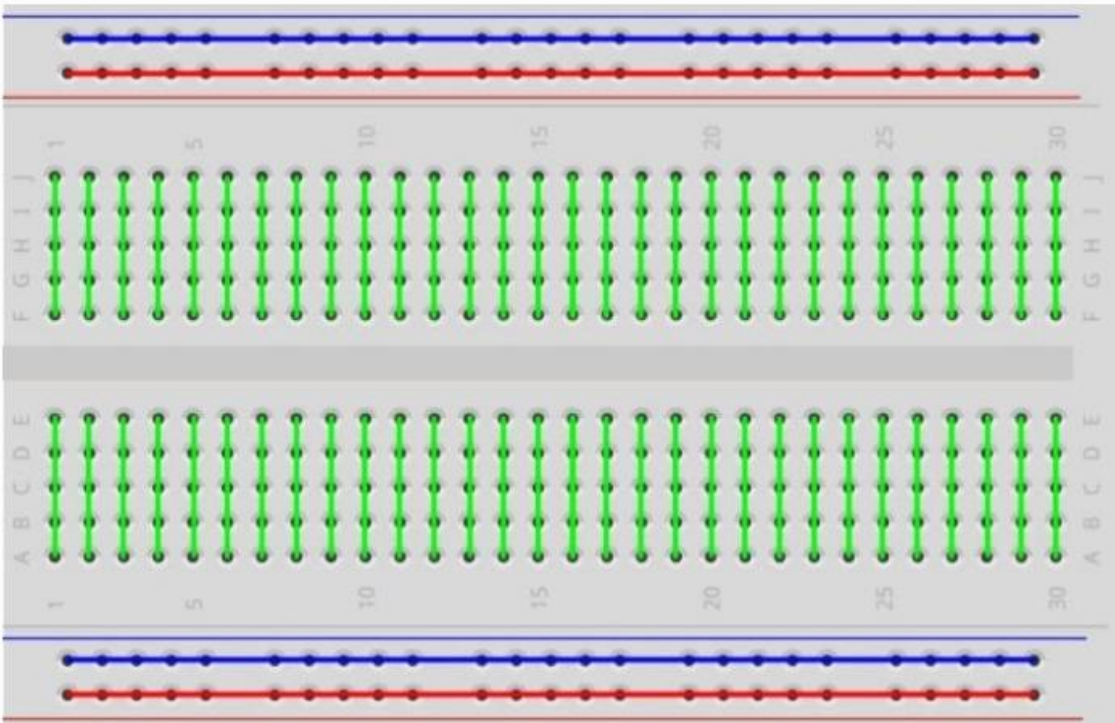


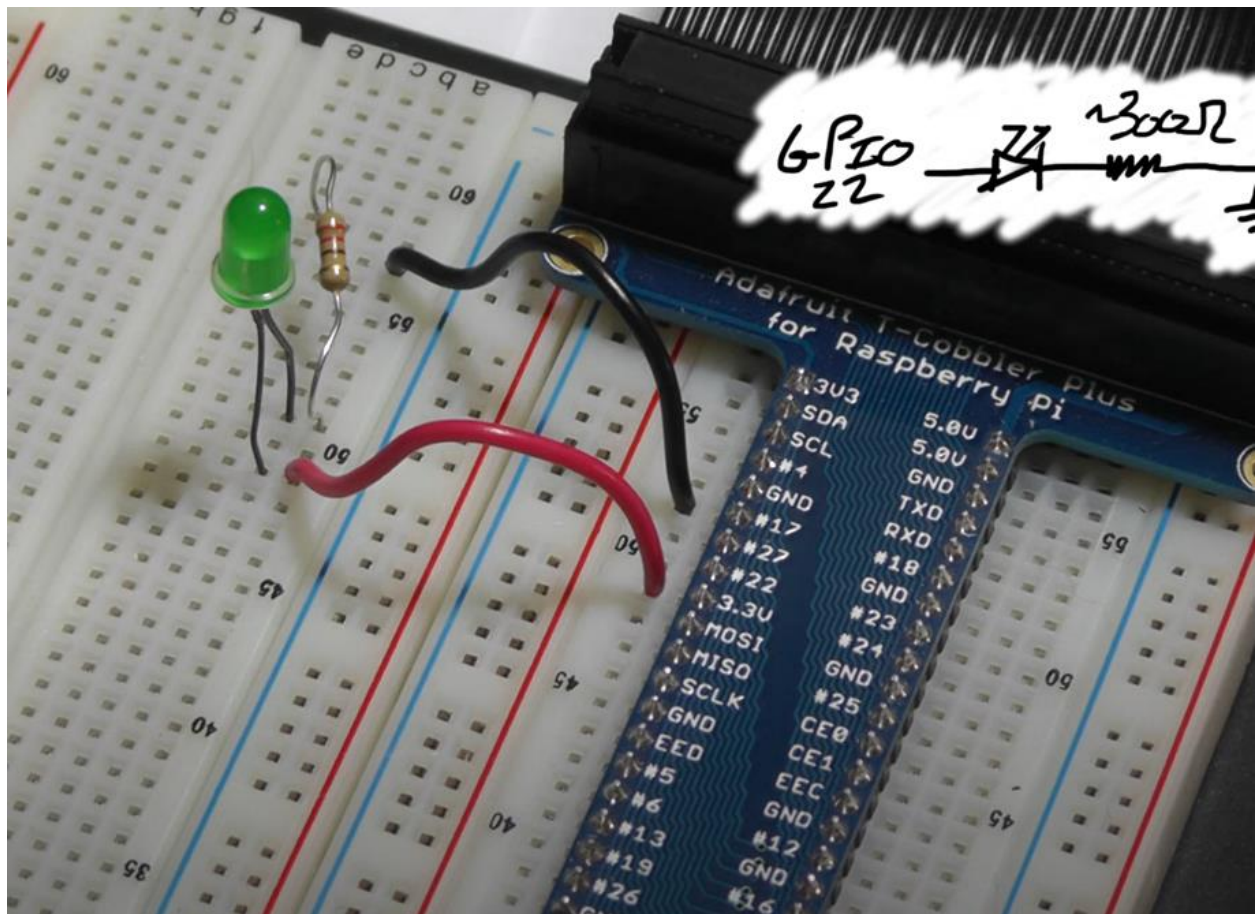
40 GPIO Pins Description of Raspberry Pi 4



3V3 power	1	2	5V power
GPIO 2 (SDA)	3	4	5V power
GPIO 3 (SCL)	5	6	Ground
GPIO 4 (GPCLK0)	7	8	GPIO 14 (TXD)
Ground	9	10	GPIO 15 (RXD)
GPIO 17	11	12	GPIO 18 (PCM_CLK)
GPIO 27	13	14	Ground
GPIO 22	15	16	GPIO 23
3V3 power	17	18	GPIO 24
GPIO 10 (MOSI)	19	20	Ground
GPIO 9 (MISO)	21	22	GPIO 25
GPIO 11 (SCLK)	23	24	GPIO 8 (CE0)
Ground	25	26	GPIO 7 (CE1)
GPIO 0 (ID_SD)	27	28	GPIO 1 (ID_SC)
GPIO 5	29	30	Ground
GPIO 6	31	32	GPIO 12 (PWM0)
GPIO 13 (PWM1)	33	34	Ground
GPIO 19 (PCM_FS)	35	36	GPIO 16
GPIO 26	37	38	GPIO 20 (PCM_DIN)
Ground	39	40	GPIO 21 (PCM_DOUT)

hackatronic.com





PYTHON: BLINK **Thonny** PROJECT:

```
import RPi.GPIO as GPIO    # Import Pi GPIO library
from time import sleep     # Import the sleep function

GPIO.setwarnings(False)    # Ignore warning
GPIO.setmode(GPIO.BCM)    # Use physical pin numbering
GPIO.setup(22, GPIO.OUT, initial=GPIO.LOW) # Set pin 22
to be an output pin and set initial value to False(off)

myCounter = 1
while myCounter<5:    # Loop five times

    GPIO.output(22, True)    # Turn on
    sleep(3) # Sleep for 3 seconds
    print( 'LED  on' )

    GPIO.output(22, False)    # Turn off
    sleep(1) # Sleep for 1 second
    print( 'LED  off' )

    myCounter = myCounter + 1
    print('myCounter')
```



```
GPIO.output(22, True)    # Turn on
Print('Done!')
```