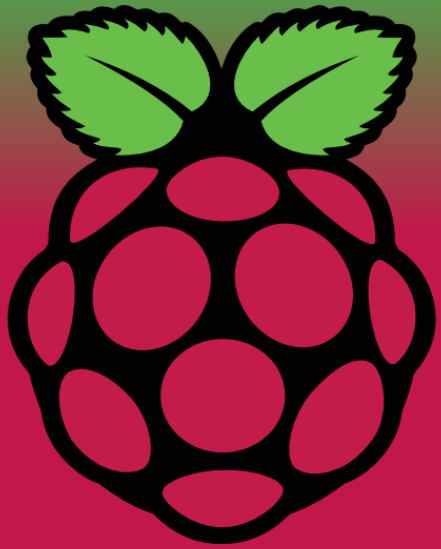




2026 Summer Tech Internship

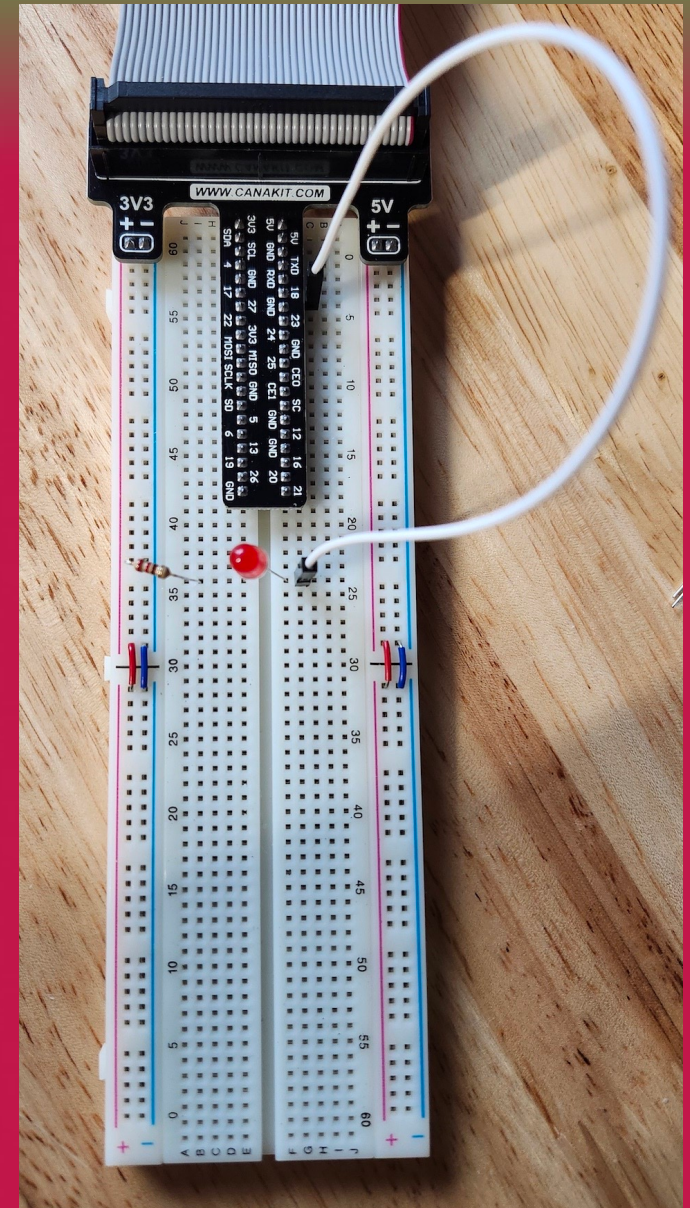
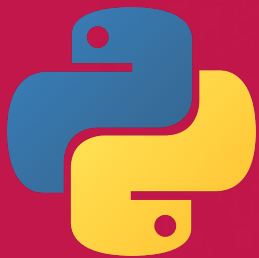
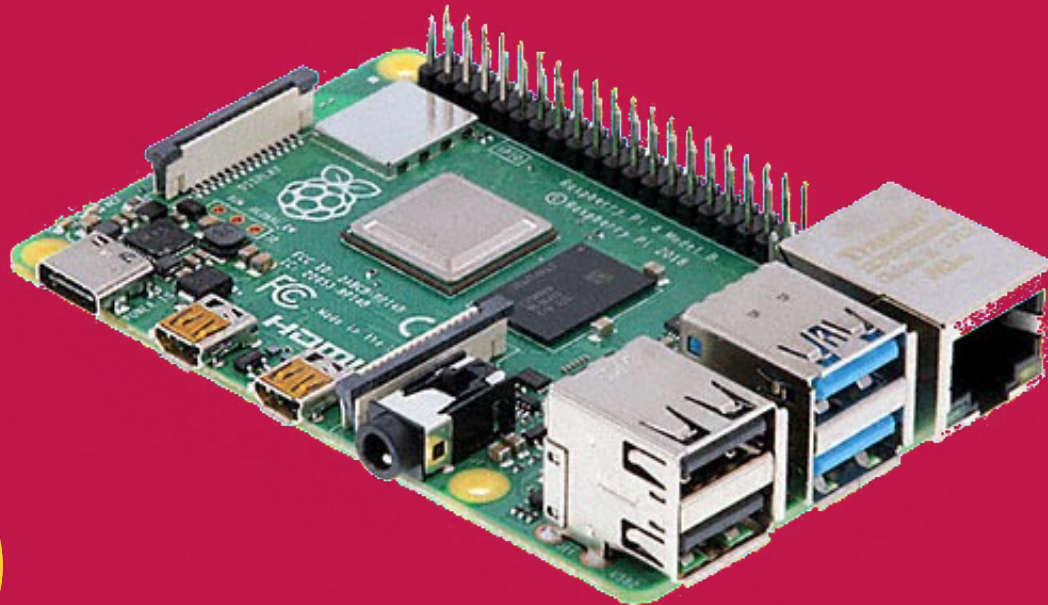
Blink LED

Thomas Trickel



Hands on Demo

Use Python and a Raspberry Pi to Blink an LED

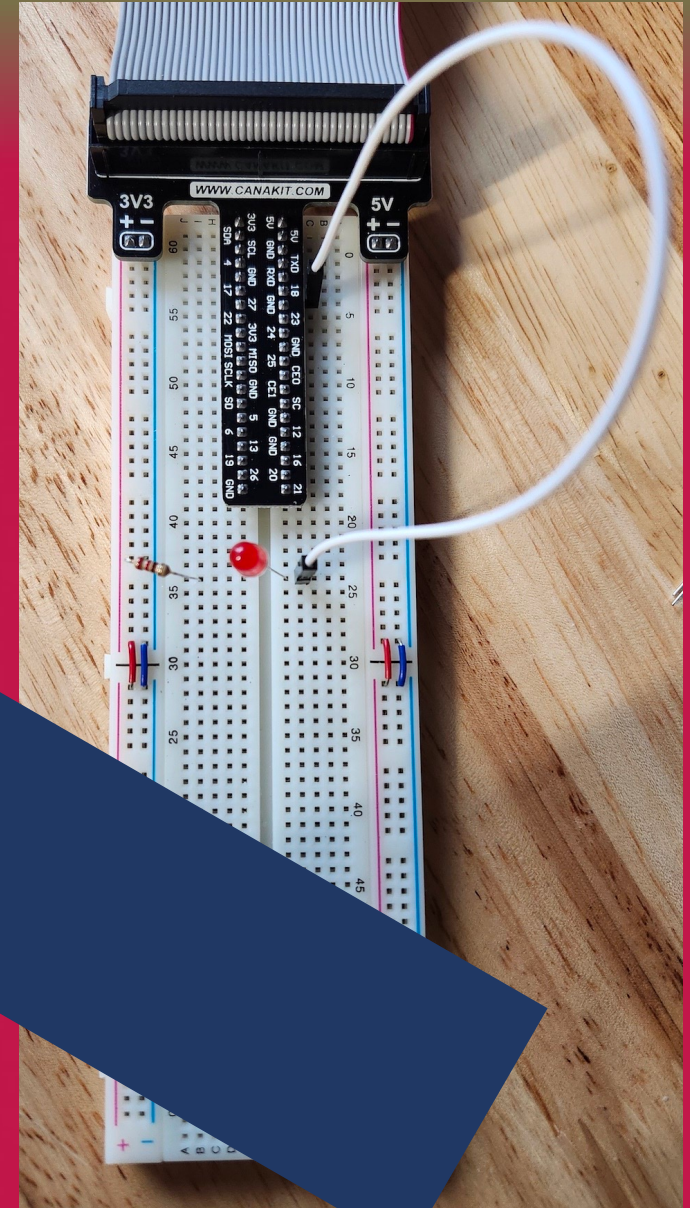




Python Demo

Use Python to control a Raspberry Pi to Blink an LED

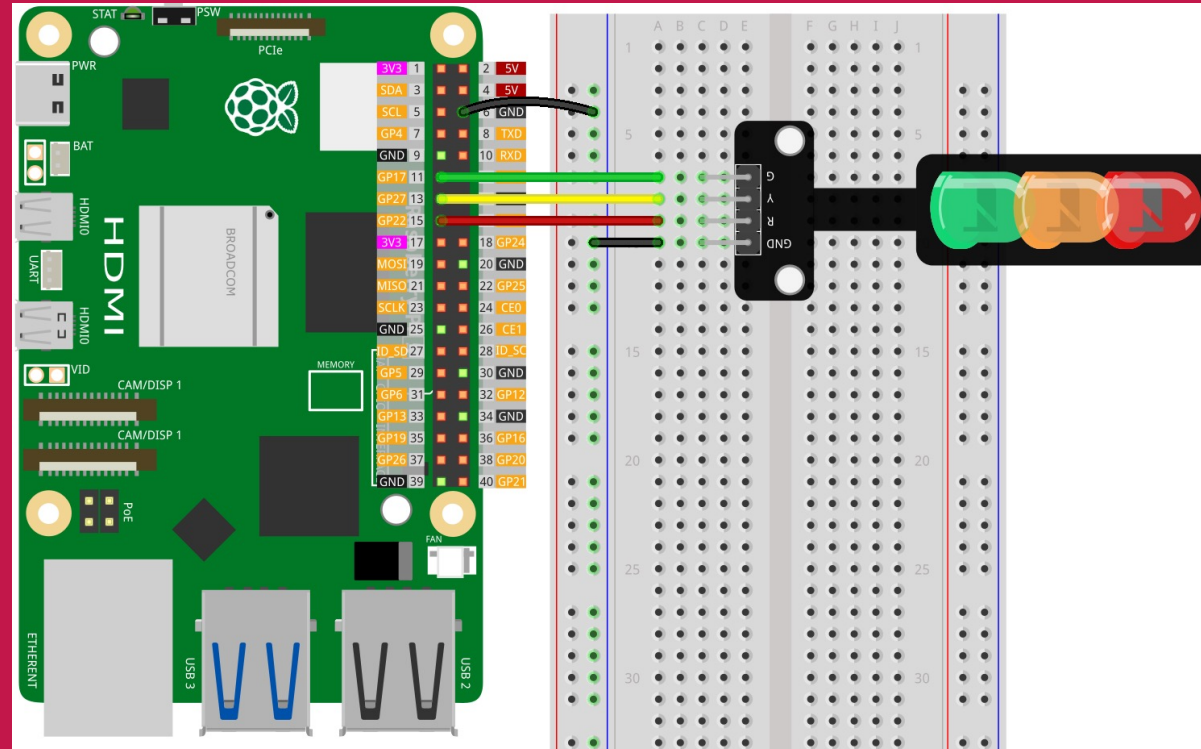
MODIFIED





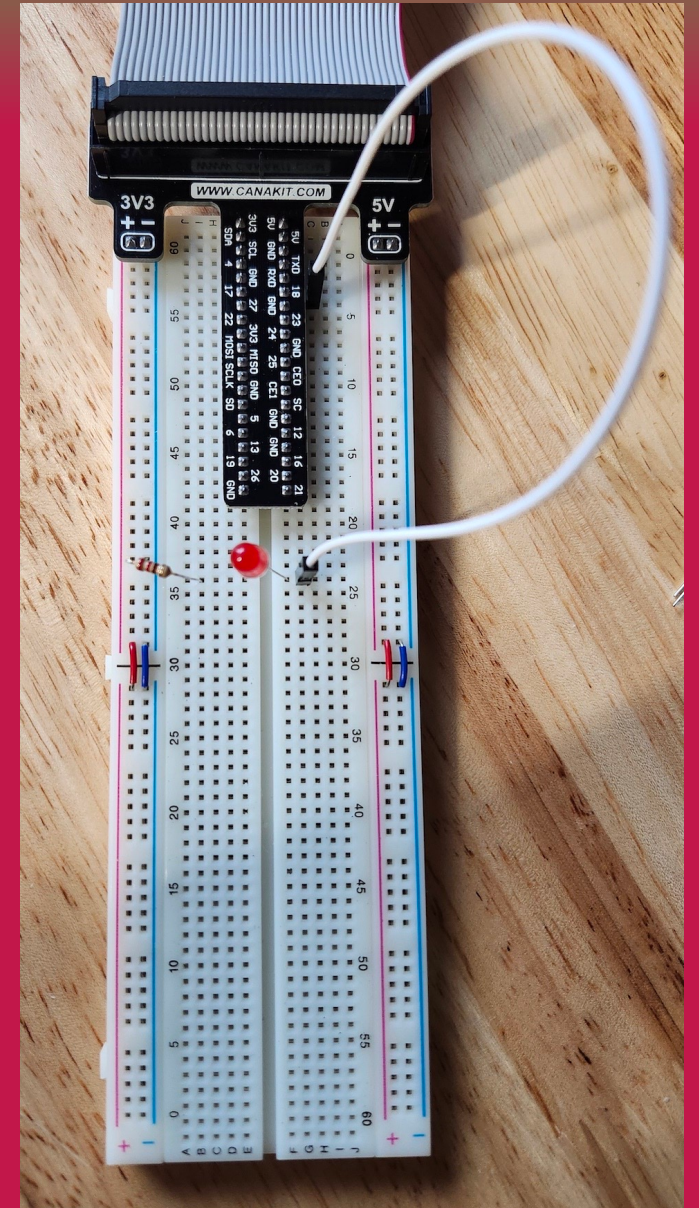
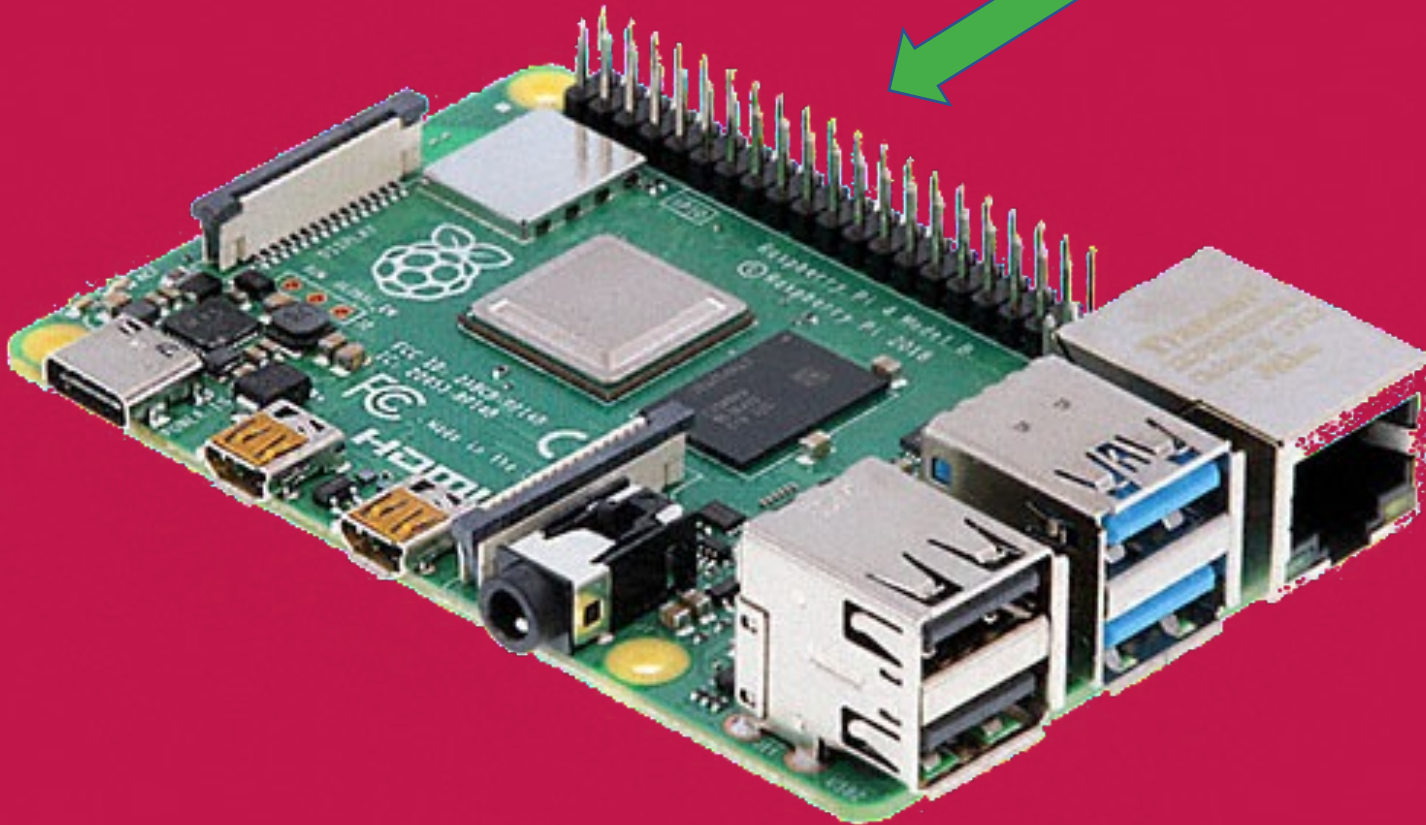
Blink LED

Use Python, a Raspberry Pi, and
Sunfounder Traffic Module to Blink an LED



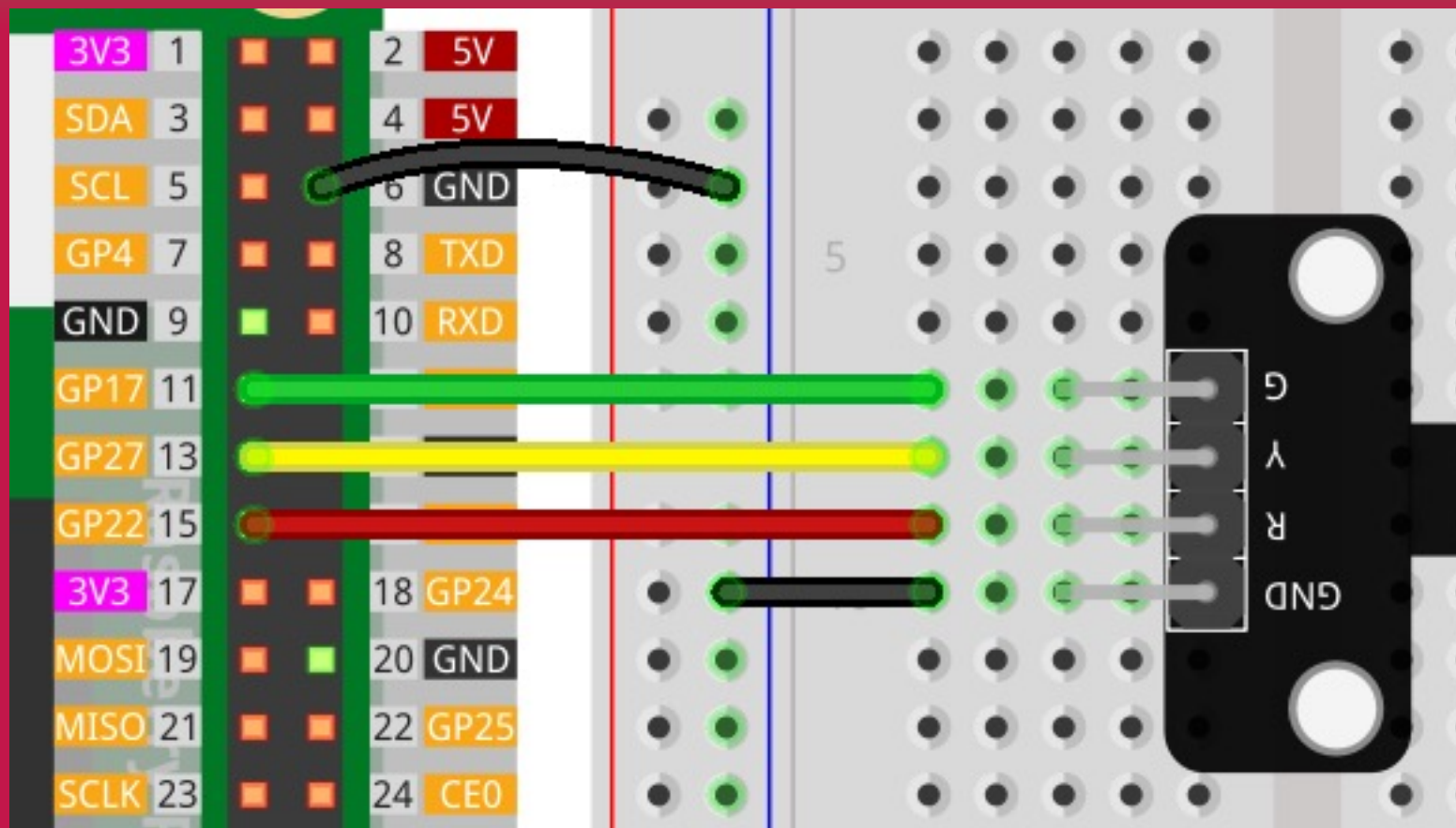
Connect up Raspberry Pi

GPIO





Wiring





GPIO LED - Software

Thony

```
from gpiozero import LED
from time import sleep
```

```
# Initialize LED pin
```

```
red = LED(22) # Red LED connected to GPIO22
```

```
# LED control in a continuous loop
```

```
while True: # Red LED cycle
```

```
    red.on() # Turn on red LED
```

```
    sleep(3) # Red LED on for 3 seconds
```

```
    red.off() # Turn off red LED
```

```
    sleep(3) # Red LED off for 3 seconds
```



Make LED Blink Faster

```
from gpiozero import LED  
from time import sleep
```

```
# Initialize LED pins
```

```
red = LED(22) # Red LED connected to GPIO
```

```
# LED control in a continuous loop
```

```
while True: # Red LED cycle
```

```
    red.on() # Turn on red LED
```

```
    sleep(3) # Red LED on for 3 seconds
```

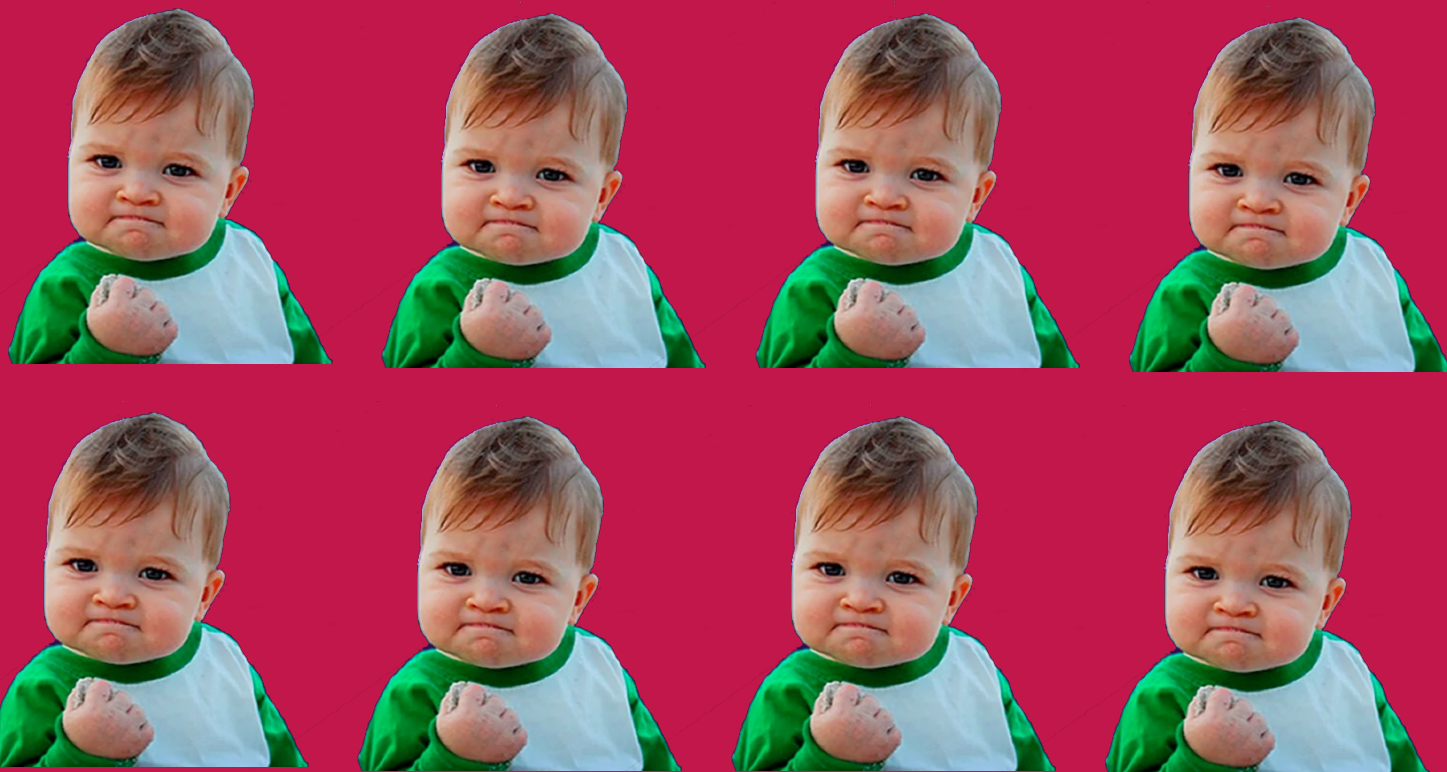
```
    red.off() # Turn off red LED
```

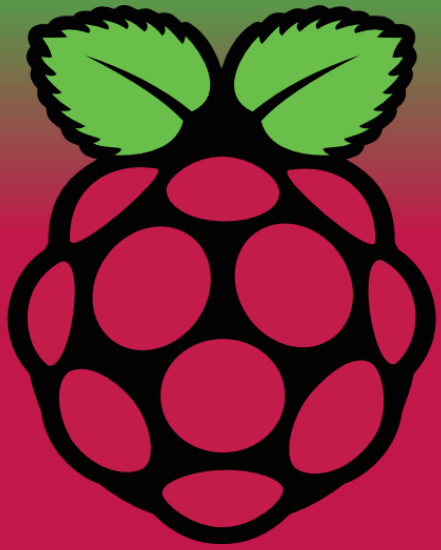
```
    sleep(3) # Red LED off for 3 seconds
```





Superbly Excellent!







Traffic Light

Enhance program to simulate a traffic light



Traffic Light

Enhance program to simulate a traffic light

- Turn on green LED for 30 seconds

- Turn off green LED

- Turn on yellow LED for 10 seconds

- Turn off yellow LED

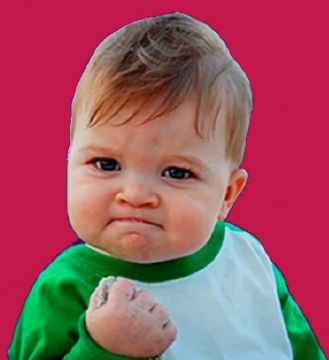
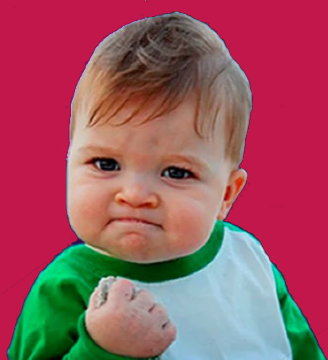
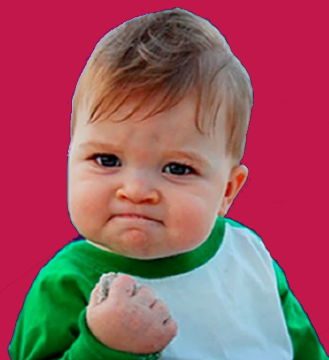
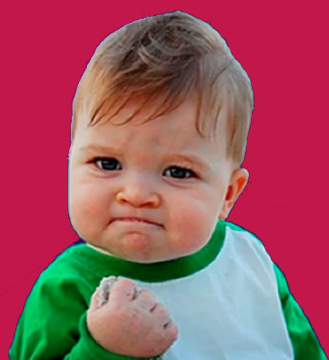
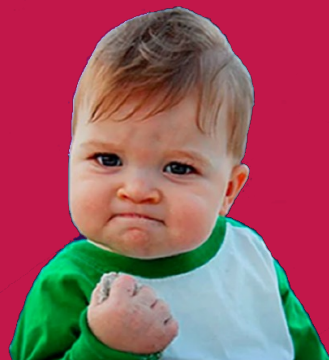
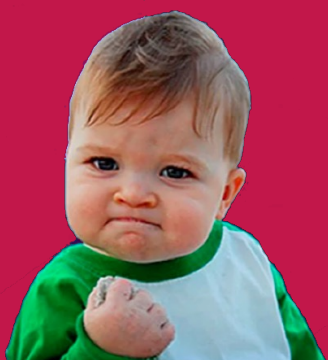
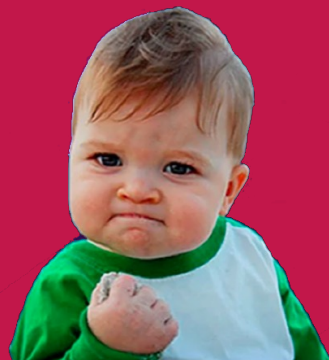
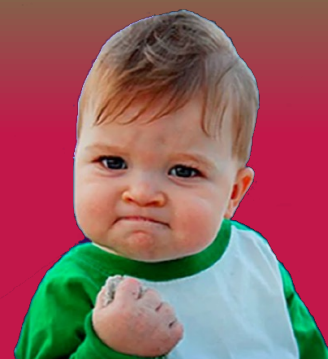
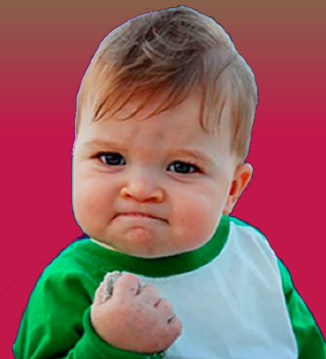
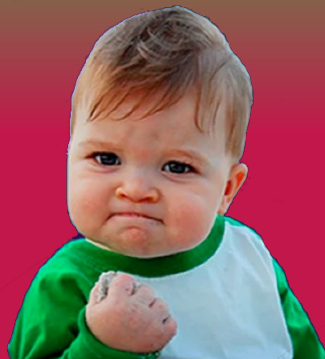
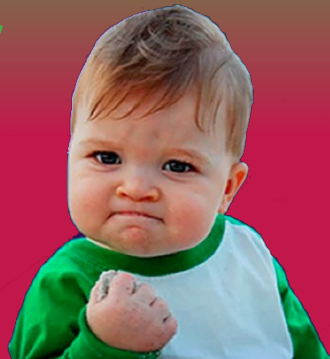
- Turn on red LED for 30 seconds

- Turn off red LED

- Loop



Magnificently
Excellent!





Concept

Add a walk button to traffic light



GPIO

General Purpose
Input
Output



		Pin No.	
3.3V	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7
DNC	27	28	DNC
GPIO5	29	30	GND
GPIO6	31	32	GPIO12
GPIO13	33	34	GND
GPIO19	35	36	GPIO16
GPIO26	37	38	GPIO20
GND	39	40	GPIO21



GPIO

General Purpose

Input

Output

Is the LED input or output?

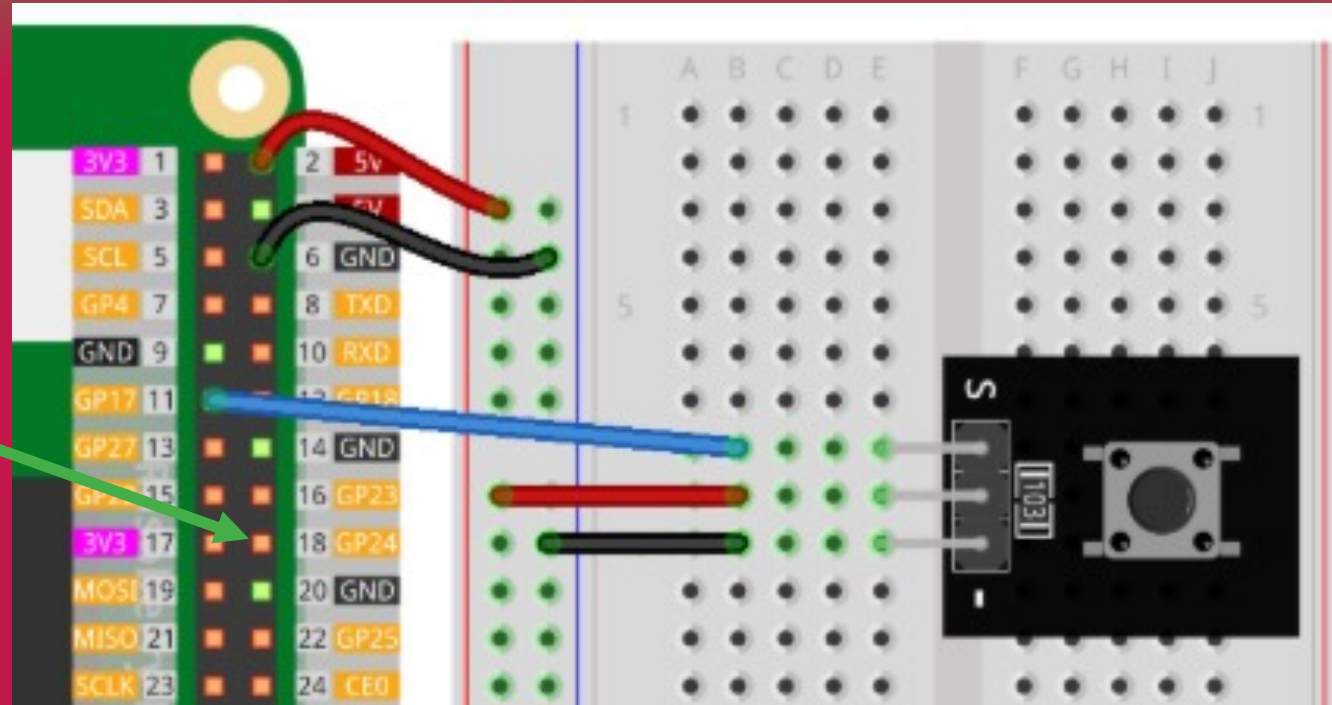


GPIO - Input

Start simple

print the value of a push button switch

Change blue wire
to GP24



Software

```
from gpiozero import Button
```

```
# Initialize button connected to GPIO pin 24
```

```
button = Button(24)
```

```
# Continuously check the button state
```

```
while True:
```

```
    if button.is_pressed:
```

```
        print("Button is pressed")
```

```
    else:
```

```
        print("Button is not pressed")
```

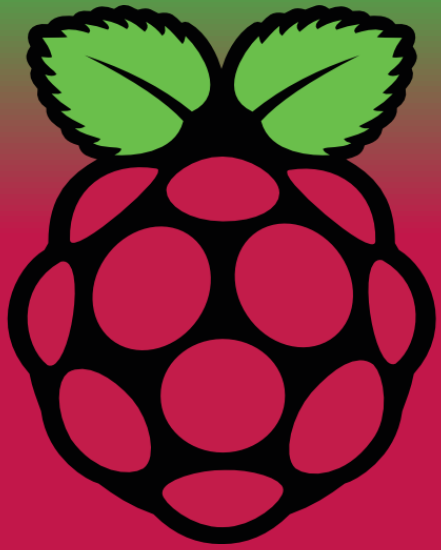
Program Thinking

- Add a walk button to traffic light



Stupendously Excellent!







Document Project

Lucidcharts wiring diagram
Code sharing

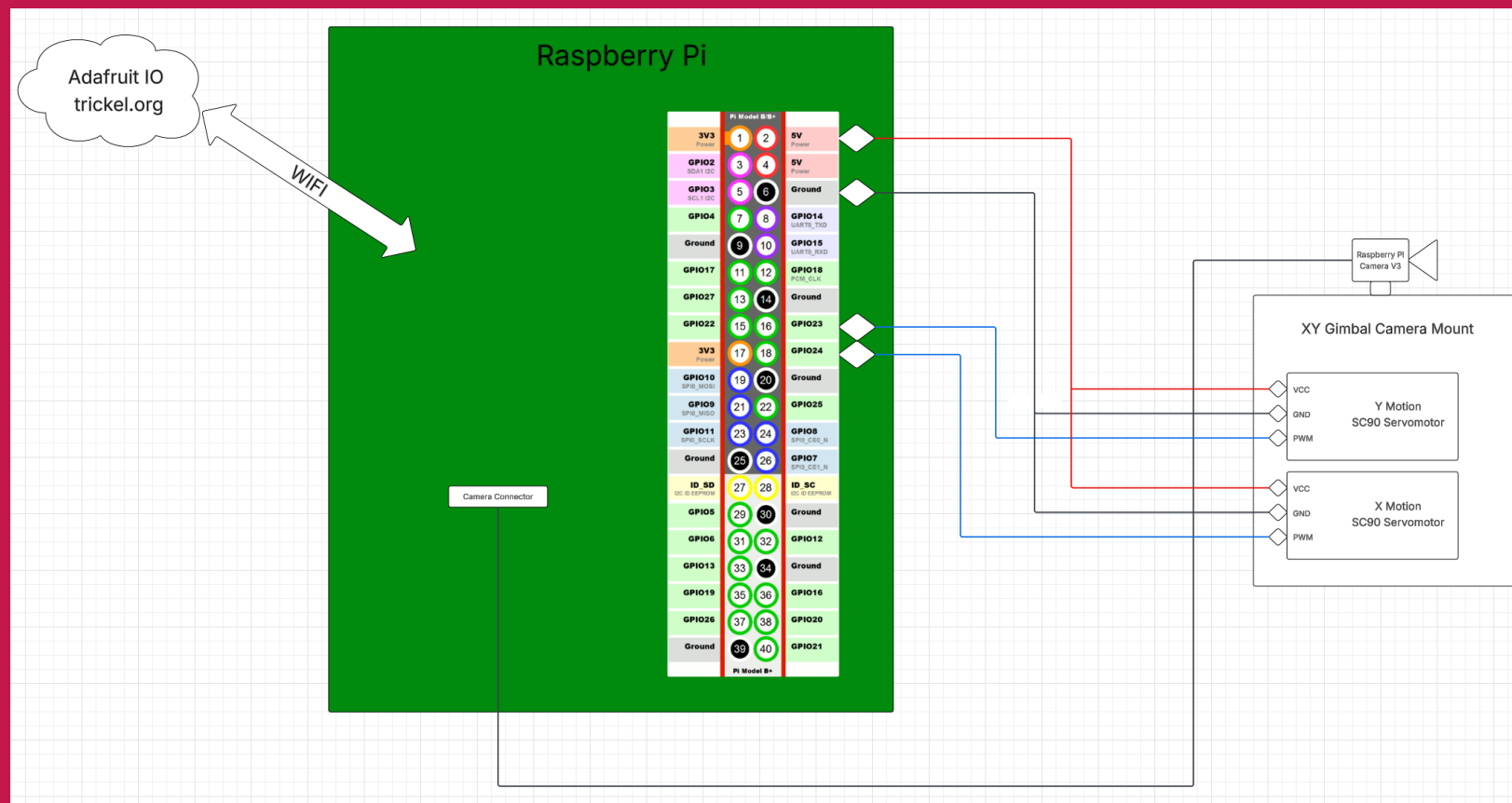


Lucidcharts

Lucidcharts setup account
limited to 3 charts



Lucidcharts





Document Project

Code sharing

- save on Google Drive

- share via link

