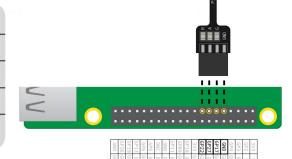
CONTROLLING A TRAFFIC LIGHT SEQUENCE WITH SCRATCH



Connecting the pi-stop

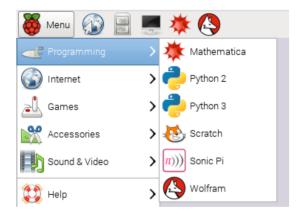
Take the pi-stop and put it directly onto the Raspberry Pi's GPIO pins, connecting it as follows.

pi-stop	GPIO pin
Red	22
Amber	27
Green	17
Ground	GND

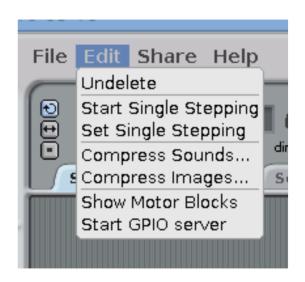


Scratch setup

1 Start Scratch from the Menu



Now tell it you want to use the GPIO pins
To do this, click on edit and select "Start GPIO server"



Setting up Scratch for controlling LEDs

Create 3 variables red, amber, green



2 Set the 3 variable to their GPIO pin values

```
when clicked
broadcast gpioserveronv
set redv to 22
set amberv to 27
set greenv to 17
```

Configure the pins as outputs using config22out config27out config17out

NOTE: there are 2 joins that add together the

3 pieces of text config-value red - out

```
when clicked

broadcast gpioserveron

set red to 22

set amber to 27

set green to 17

broadcast join join config red out

broadcast join join config amber out

broadcast join join config green out
```

Turn on the LEDs

Add this code to the end of the previous code to turn the LEDs on one at a time.
Waiting one second between each LED

```
broadcast join join gpio red on
wait 1 secs
broadcast join join gpio amber on
wait 1 secs
broadcast join join gpio green on
wait 1 secs
```

Let's turn all the LEDs off again





```
broadcast join join gpio red off
wait 1 secs
broadcast join join gpio amber off
wait 1 secs
broadcast join join gpio green off
wait 1 secs
```

- Try repeating this by putting the code inside a **forever** loop
- Now we know how to control the lights individually, and time the pauses between commands, can you create a traffic light sequence?

The sequence goes:

- Green On
- Amber
- Red On
- Red and amber on
- Green On

It's important to think about timing.
How long should the light stay on at each stage?

```
clicked
when 🚐
broadcast gpioserveron -
set red⊽ to 22
set amber to 27
set green⊽ to 17
broadcast join join config red out
broadcast join join config
                          amber
                                  out
broadcast join join config
                                 out
                          green
 broadcast join join gpio red on
 wait 1 secs
 broadcast join join gpio
                                   on
 wait 1 secs
 broadcast join join gpio green
                                  on
 wait 1 secs
 broadcast join join gpio red off
 wait 1 secs
 broadcast join join gpio
                                   off
                           amber
 wait 1 secs
 broadcast join join gpio
                                  off
  wait 📵 secs
```