Controlling An LED

Within this tutorial you are going to learn how to create a simple circuit and using the Raspberry Pi and Python to control an LED.

You Will Need

- 1 x LED
- 2 x Male to Female jumper wires
- 1 x breadboard
- A Raspberry Pi

NOTE: *The LED has one short leg known as the cathode (Negative = -) and one long leg known as the anode (positive = +)*

The Anode is connected to pin 18 on the Raspberry Pi
The Cathode is connected to ground on the Raspberry Pi

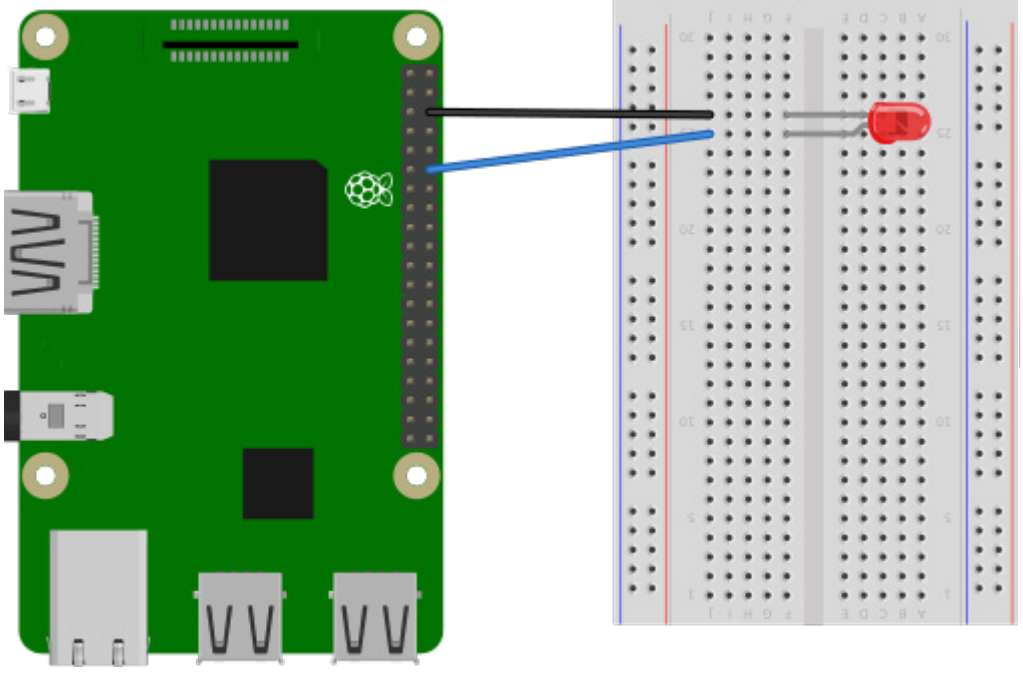
Once the LED is wired to the Raspberry Pi this completes our electronic circuit.

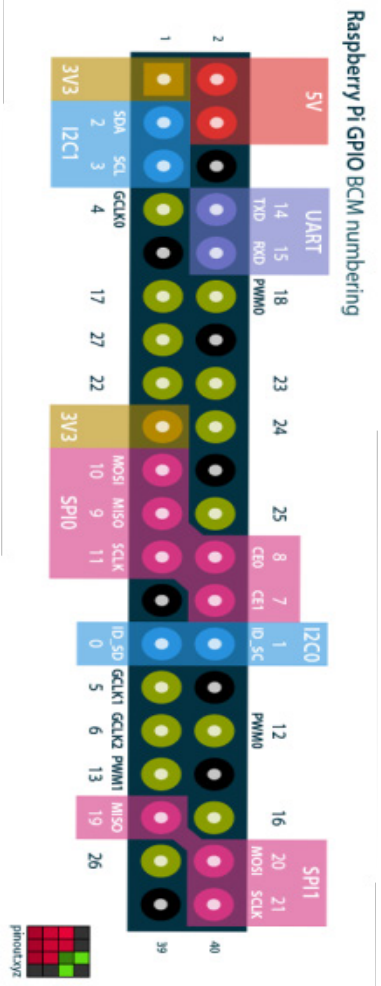
We can now code our LED to do something.

Creating The Circuit

Let's create the electronic circuit that we are going to control using Python and a Raspberry Pi.

The Circuit will look like this:





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Coding The LED

Turning The LED On

1. Open up your favourite Python Editor. I will be using Mu through this tutorial as it is a beginner friendly editor.

2. Type the following code:

```
from gpiozero import LED

led = LED(18)

led.on ()
```

This will import the LED module from the gpiozero library. Set the LED at pin 18 making it programmable and then turn the LED on.

3. Click on Run. You should now see the LED light up. If it doesn't make sure you have it wired correctly and the code is the same above.

Turning The LED Off

Change the line

```
led.on ()
```

to

```
led.off ()
```

Click on Run and you should now see the LED turn off.

Making The LED Blink on and off

1. under the line

```
from gpiozero import LED
```

type

```
from time import sleep
```

2. Delete

```
led.off ()
```

Type

```
while True:
    led.on ()
    sleep (1)
    led.off ()
    sleep (1)
```

3. Click on Run. You should now see the light blink on and off.

Completed Code for Blinking LED

```
from gpiozero import LED
from time import sleep

led = LED(18)

while True:
    led.on ()
    sleep (1)
    led.off ()
    sleep (1)
```

You now know how to control an LED.

Why don't you adjust the number after the sleep block and see what happens.