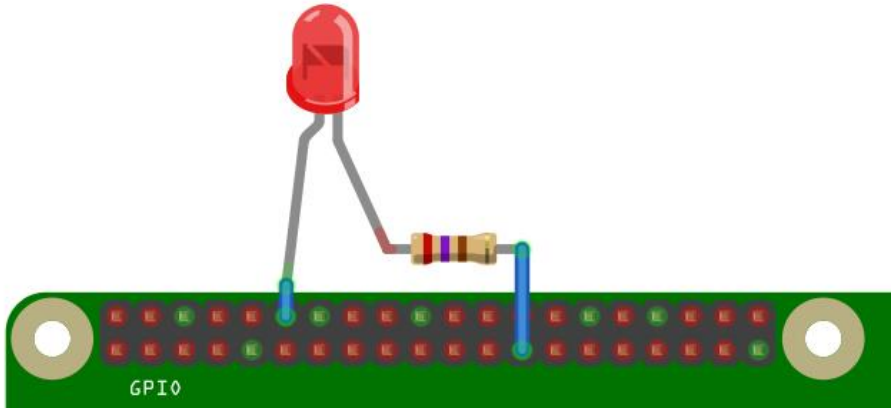
Raspberry Pi GPIO

Slides prepared from https://www.raspberrypi.org/learning/physical-computing-with-scratch/worksheet/

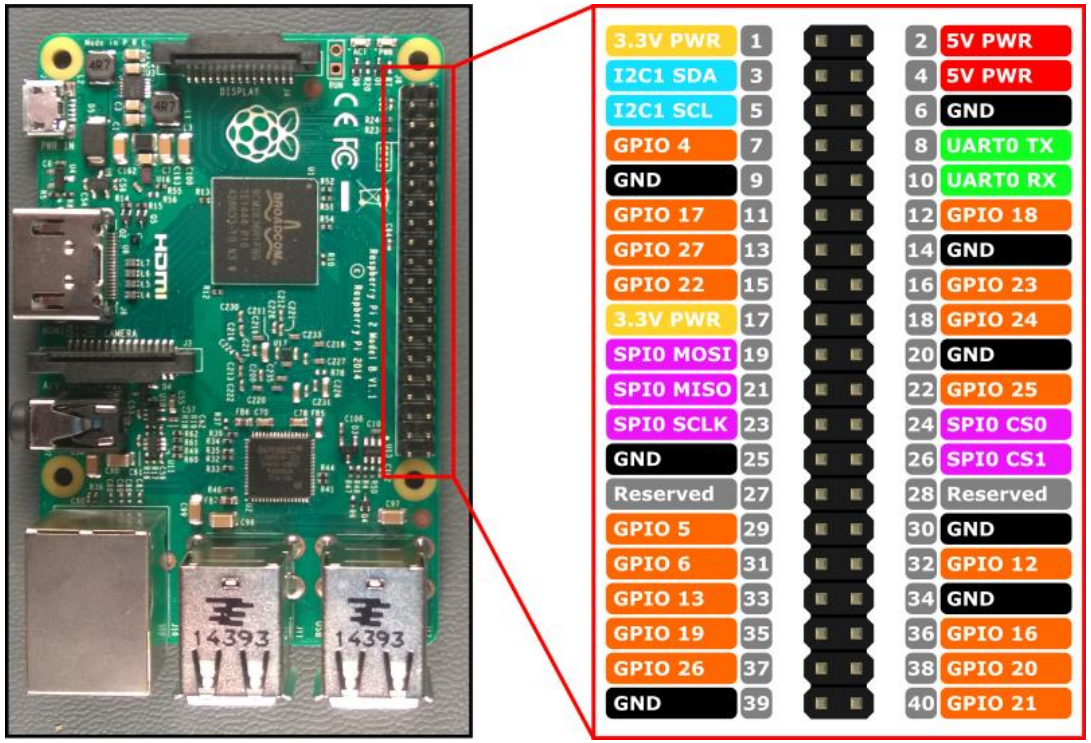
GPIO

- The Pi has a row of pins along the top edge of the board called General Purpose Input Output(GPIO) pins.
- Lets you connect your Pi to other things.



GPIO Pinouts

- The 40 pins on the Raspberry Pi provide various different functions.



GPIO Pinouts

- You'll see pins labelled as 3V3, 5V, GND and GPIO 2, GPIO 3,

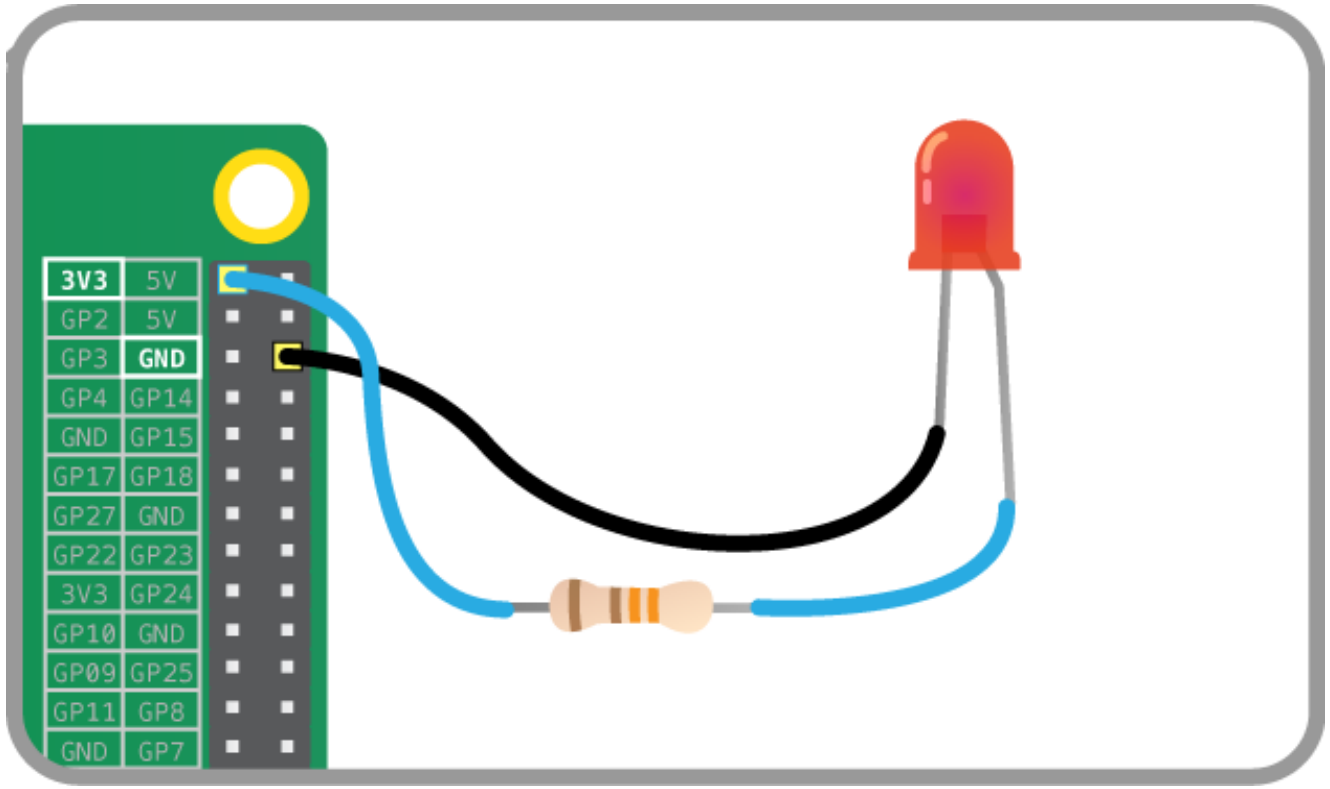
Pin Label	Function	Description
3.3V	3.3 Volts	Anything connected will receive 3.3 volts
5V	% Volts	Anything connected will receive 5 volts
GND	Ground	Zero volts. Used to complete a circuit
GPIO 5	GPIO pin 5	These pins are for general input and output and can be used to connect other electonic devices.
ID_SC/ID_SD/DNC	Other functions not addressed here	

WARNING:

- Randomly plugging wires and power sources into a Pi may destroy it, especially if using the 5V pins.
- Bad things can also happen if you try to connect things to your Pi that use a lot of power; LEDs are fine, motors are not.
- Make sure to check your circuit is OK before connecting it to the Pi or switching the Pi on.

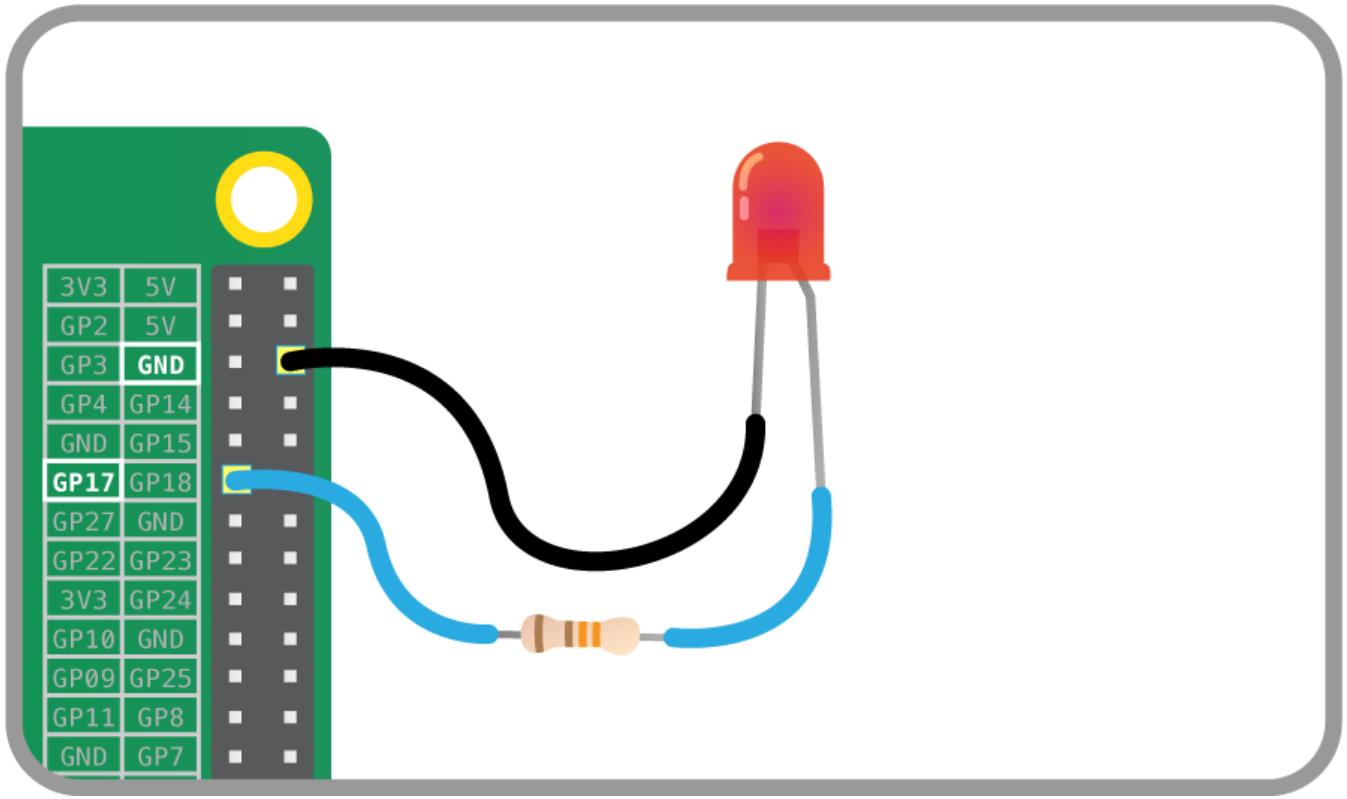
Simple Example – Lighting an LED

- **The LED is connected directly to the 3.3V and GND** pins, and should light up. The longer leg of LED should be connected to the 3V3 pin



Control LED using Scratch

- Connect **pin 17** to LED (or you can use any numbered pin you wish)



Control LED using Scratch

- Open Scratch on the Pi. Create and run the following program. Before you run it, what will the following program do?