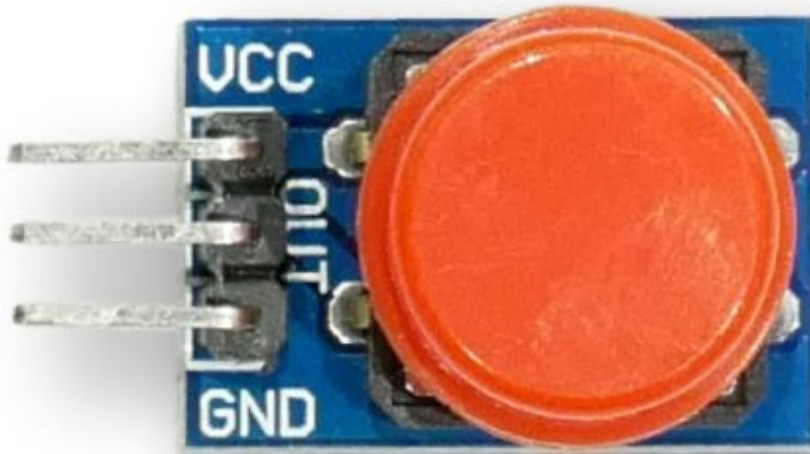
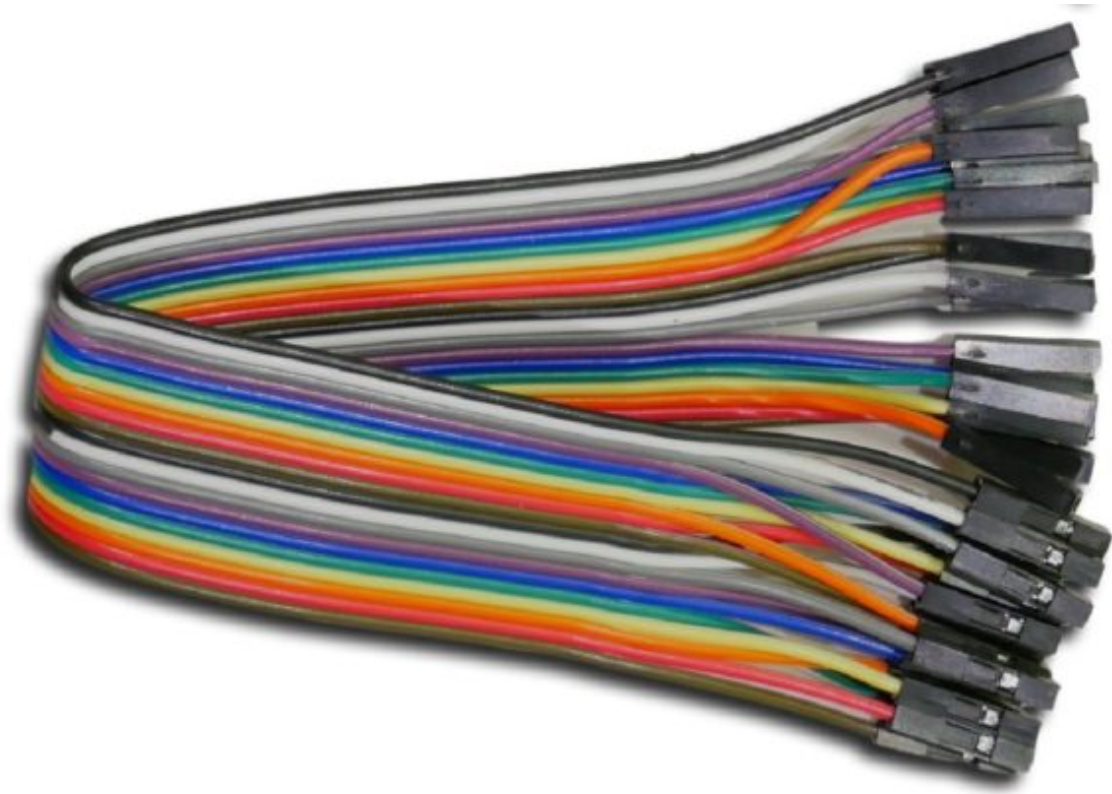


RPi Node-Red: Push Button

Parts List:



Push Button

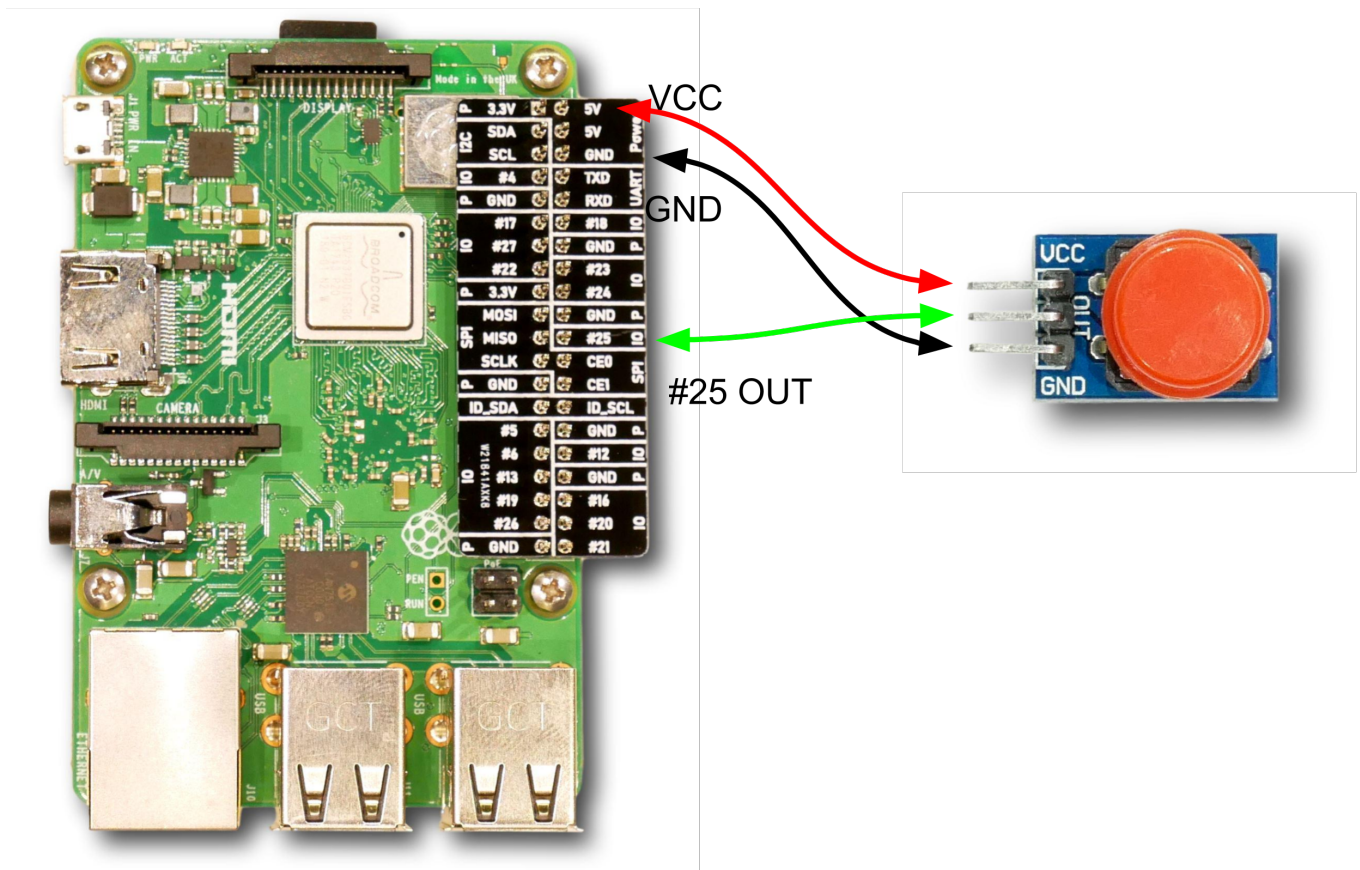


3x Female-Female Jumper Wires

What is a Push Button?

A push button is a momentarily activated button. When the button mechanism is fully depressed an internal electrical connection is made and this newly made connection can be read as the activation of the button.

Getting Started:



Setting up Node-Red

Start Node-Red and navigate to 127.0.0.1:1880. Drag a Raspberry Pi input node and a Debug node into the flow area.



Double click on the Raspberry Pi input node to open its configuration menu. Set the **Pin** to **GPI025**. Set **Resistor?** to **pulldown**. You can **Name** the node anything, I chose "button".

Edit rpi-gpio in node

Delete
Cancel
Done

▼ node properties

● Pin

3.3V Power - 1	2 - 5V Power
SDA1 - GPIO02 - 3	4 - 5V Power
SCL1 - GPIO03 - 5	6 - Ground
GPIO04 - 7	8 - GPIO14 - TxD
Ground - 9	10 - GPIO15 - RxD
GPIO17 - 11	12 - GPIO18
GPIO27 - 13	14 - Ground
GPIO22 - 15	16 - GPIO23
3.3V Power - 17	18 - GPIO24
MOSI - GPIO10 - 19	20 - Ground
MISO - GPIO09 - 21	22 - GPIO25
SCLK - GPIO11 - 23	24 - GPIO8 - CE0
Ground - 25	26 - GPIO7 - CE1
SD - 27	28 - SC
GPIO05 - 29	30 - Ground
GPIO06 - 31	32 - GPIO12
GPIO13 - 33	34 - Ground
GPIO19 - 35	36 - GPIO16
GPIO26 - 37	38 - GPIO20
Ground - 39	40 - GPIO21

↑ Resistor?

pulldown

Debounce

25

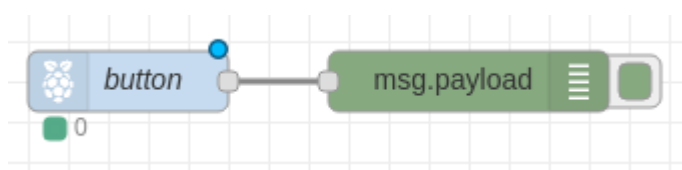
mS

☐ Read initial state of pin on deploy/restart?

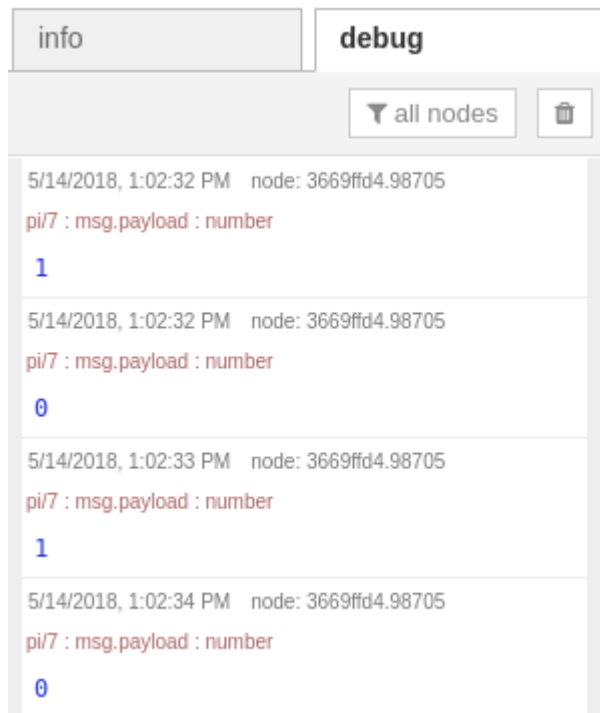
🔑 Name

button

The debug node can be left with it's default settings, wire the button node to the debug node and deploy the flow.



If everything has been put together correctly you should see the number under the button node in the Node-Red flow change from a 0 to a 1 when the button is activated and from 1 to 0 when the button is deactivated. You should also be able to see a record of the button activation in the debug tab of Node-Red.



Whats Next?

- [RPI Node-Red Push Button + LED or Buzzer](#)

RPi Node-Red: Push Button + LED or Buzzer

Goal:

Combine the use of Raspberry Pi input and output nodes in Node-Red to control an LED or buzzer with a push button.

What You Will Learn:

- Basic Circuit Prototyping
- Basic Node-Red Programming

What You Need to Know:

- [RPi Node-Red: Push Button Tutorial](#)
- [RPi Node-Red: LED Tutorial](#)
- [RPi Node-Red: Piezoelectric Buzzer Tutorial](#)

Parts List:

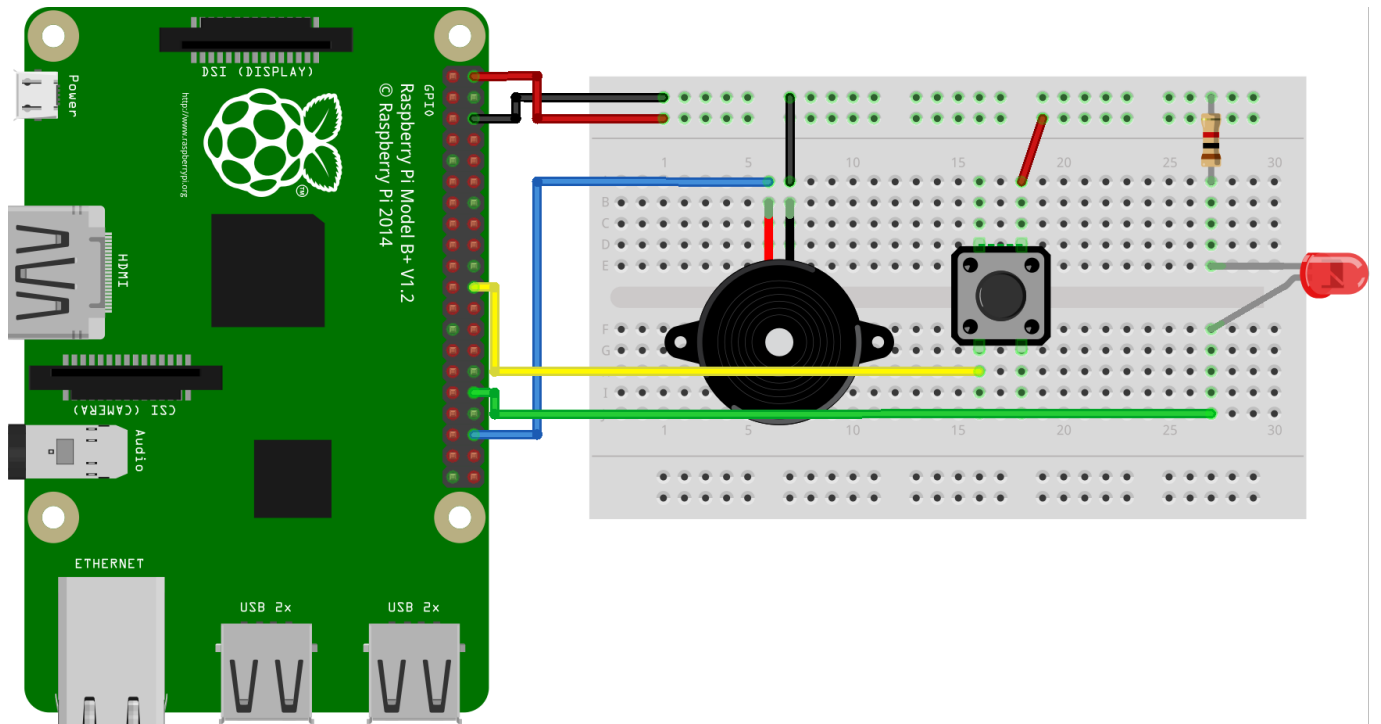
- At Least 1 LED
- At Least 1 Resistor
- Piezoelectric Buzzer
- Some Jumper Wires
- Breadboard

Optional

- Needle Nose Pliers

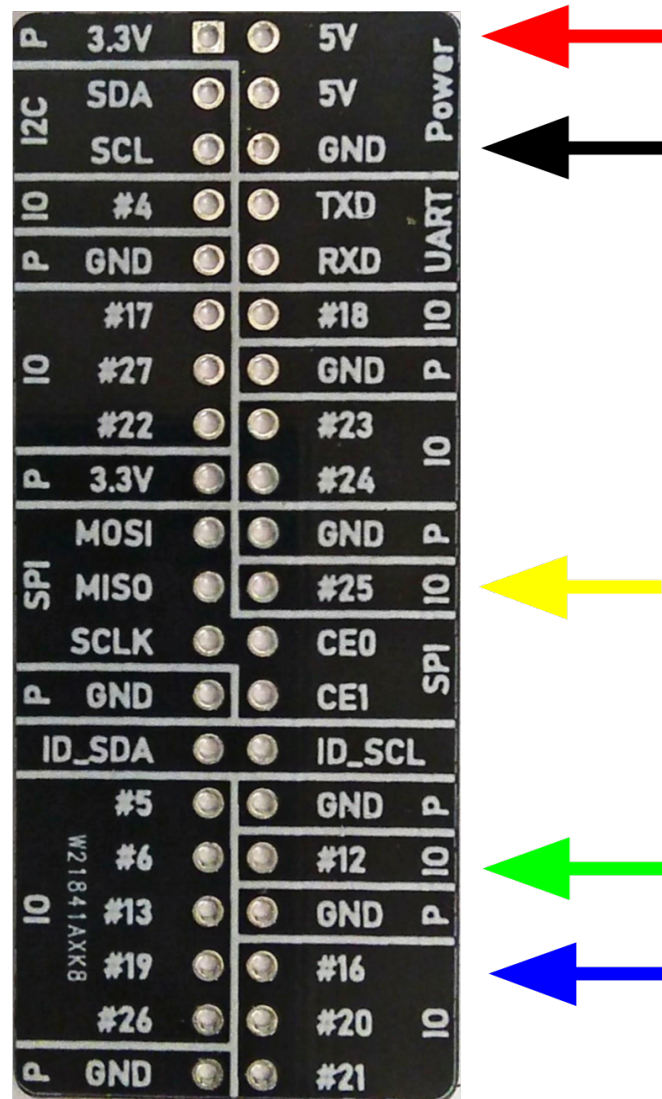
Getting Started:

Setting up the Hardware



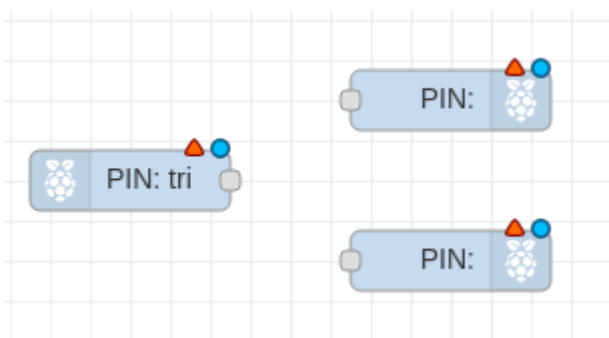
This wiring diagram is simply the combination of the individual LED, buzzer, and push button circuits. Make sure that the LED has a resistor on it. Wire a pin on the buzzer to GPIO16, wire the positive leg of the LED to GPIO12, and wire one of the pins on the button to GPIO25. You can wire all the grounds to a rail and then to the GPIO GND or the connections can be made individually.

If it is difficult to put the components into the breadboard without the legs bending try and use needle nose pliers to help push the pins in.



Setting up Node-Red

Start Node-Red and navigate to 127.0.0.1:1880. Drag one Raspberry Pi input node and two Raspberry Pi output nodes into the flow area.



Double click the Raspberry Pi input node to open its

configuration menu. Set the **Pin** to **GPI025**. Set **Resistor?** to **pulldown**. I set the **Name** to “button”.

Edit rpi-gpio in node

Delete

Cancel

Done

node properties

● Pin

3.3V Power - 1	2 - 5V Power
SDA1 - GPIO02 - 3	4 - 5V Power
SCL1 - GPIO03 - 5	6 - Ground
GPIO04 - 7	8 - GPIO14 - TxD
Ground - 9	10 - GPIO15 - RxD
GPIO17 - 11	12 - GPIO18
GPIO27 - 13	14 - Ground
GPIO22 - 15	16 - GPIO23
3.3V Power - 17	18 - GPIO24
MOSI - GPIO10 - 19	20 - Ground
MISO - GPIO09 - 21	22 - GPI025
SCLK - GPIO11 - 23	24 - GPIO8 - CE0
Ground - 25	26 - GPIO7 - CE1
SD - 27	28 - SC
GPIO05 - 29	30 - Ground
GPIO06 - 31	32 - GPIO12
GPIO13 - 33	34 - Ground
GPIO19 - 35	36 - GPIO16
GPIO26 - 37	38 - GPIO20
Ground - 39	40 - GPIO21

↑ Resistor?

pulldown

Debounce

25

mS

☐ Read initial state of pin on deploy/restart?

🔑 Name

button

Double click one of the Raspberry Pi output nodes to open its configuration menu. This will be the LED so set the **Pin** to **GPI012**. Leave **Type** set to **Digital output**, Initialise the pin state to **low**. **Name** the node “LED”

Edit rpi-gpio out node

Delete
Cancel
Done

▼ node properties

● Pin

3.3V Power - 1	2 - 5V Power
SDA1 - GPIO02 - 3	4 - 5V Power
SCL1 - GPIO03 - 5	6 - Ground
GPIO04 - 7	8 - GPIO14 - TxD
Ground - 9	10 - GPIO15 - RxD
GPIO17 - 11	12 - GPIO18
GPIO27 - 13	14 - Ground
GPIO22 - 15	16 - GPIO23
3.3V Power - 17	18 - GPIO24
MOSI - GPIO10 - 19	20 - Ground
MISO - GPIO09 - 21	22 - GPIO25
SCLK - GPIO11 - 23	24 - GPIO8 - CE0
Ground - 25	26 - GPIO7 - CE1
SD - 27	28 - SC
GPIO05 - 29	30 - Ground
GPIO06 - 31	32 - GPIO12
GPIO13 - 33	34 - Ground
GPIO19 - 35	36 - GPIO16
GPIO26 - 37	38 - GPIO20
Ground - 39	40 - GPIO21

Type

Digital output ▼

☐ Initialise pin state?

Name

LED

Double click the other Raspberry Pi output node to open it's configuration menu. Set **Pin** to **GPIO16**. Set **Type** to **PWM output**. Set **Frequency** to **100**. **Name** the node "buzzer".

Edit rpi-gpio out node

▼ node properties

● Pin

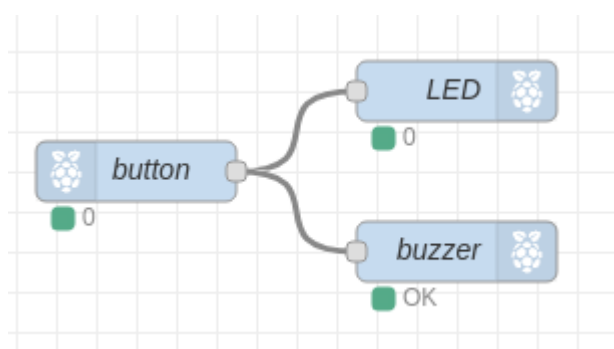
3.3V Power - 1	2 - 5V Power
SDA1 - GPIO02 - 3	4 - 5V Power
SCL1 - GPIO03 - 5	6 - Ground
GPIO04 - 7	8 - GPIO14 - TxD
Ground - 9	10 - GPIO15 - RxD
GPIO17 - 11	12 - GPIO18
GPIO27 - 13	14 - Ground
GPIO22 - 15	16 - GPIO23
3.3V Power - 17	18 - GPIO24
MOSI - GPIO10 - 19	20 - Ground
MISO - GPIO09 - 21	22 - GPIO25
SCLK - GPIO11 - 23	24 - GPIO8 - CE0
Ground - 25	26 - GPIO7 - CE1
SD - 27	28 - SC
GPIO05 - 29	30 - Ground
GPIO06 - 31	32 - GPIO12
GPIO13 - 33	34 - Ground
GPIO19 - 35	36 - GPIO16
GPIO26 - 37	38 - GPIO20
Ground - 39	40 - GPIO21

Type:

Frequency: Hz

Name:

Wire each output node to the single input node and deploy the flow.





If everything works properly activating the button should turn on the LED and activate the buzzer. To stop either output node from activating just remove its connection to the button node and redeploy the flow.

Whats Next?

- What other combinations can you make with the items in your kit?