# Internet Status Indicator

This tutorial will be the guide to making a LED indicator of internet connectivity using a push button. I wanted to make a simple circuit that could make the checking of internet status a breeze. There are four LEDs used in this, clear, green, yellow, and red. Clear indicating their is power coming from the Pi, green shows a 100% successful connection to the internet, yellow is the standby/experiencing packet loss indicator, finally red is a complete loss of internet connectivity. This was all made simple by the press of a button on a breadboard.

## This is a tutorial on making a Internet Status Indicator using these key components

- Raspberri Pi
- Small breadboard x 1
- Jumper Wires x 8
- LEDs x 4
- Push button x 1
- 220 Ohm resistor x 4
- HDMI cable
- Monitor
- Mouse & keyboard

## If the components have been collected proceed below

Once the Pi has been booted you will need to install a key feature that will allow the use of ping(ICMP) in Python scripting. This can be obtained from Pypi using the hyperlink included.

Follow the instruction of typing this into your terminal:

**Pip install icmplib**

Wait for the process to resolve. Once completed we can begin producing the script needed to make the magic happen. I have included the script in this repository for easy copy/pasting.

## Assembling the Circuit

To begin, gather your supplies listed above. If your Raspberri Pi happens to be encased, remove the top to access the the pin board on the Pi.

## Stage one

Turn off your Raspberri Pi and disconnect the power supply. Once unpowered your Pi will be safe to work with.

- Place your LEDs on the bread board allowing for room for jumpers and resistors.
- Place your button in a position with room for its jumpers.
- Place an end of the resistor on the negative side line concurrent with the short leg(cathode) of the LED

## Stage two

Begin connecting your jumper wires onto the board:

- Connect a wire from 5v pin 2 to the board on the positive side line of the breadboard
- Connect a jumper wire from GPIO 2 to the line where the anode of the clear LED is connected.
- Connect a jumper wire from GPIO 3 to the line where the anode of the green LED is connected.
- Connect a jumper wire from GPIO 4 to the line where the anode of the yellow LED is connected.
- Connect a jumper wire from GPIO 27 to the line where the anode of the red LED is connected.
- For the push button connect a jumper to GPIO 26 and a jumper to ground 39 below.

## Stage three

Time to open the terminal on your Pi and begin inputting the code. For ease please see the internetindicator.py file located in the repository for a reference or copy/paste.
For the purpose of ease, the web address this indicator will ping is google.com but using its public DNS 8.8.8.8
For making the script use nano in terminal by typing nano internetindicator
Make sure to save your work using CTRL + O.

## Stage four

Once all the previous stages have been completed you can now run your script by typing in terminal:
You will have to run the script using sudo in order to have ping work.

- sudo python (yoursavedfilename)

When entered you will notice the Clear LED while be lit, this states the simple circuit has power, the yellow LED indicates waiting for press and should pulse with a loss of packets. The green LED represents a successful connection, the red LED would indicate total packet loss and no network connection.

The script will provide back in terminal that there is a connection inquired, the address requested and a summary of packets sent received, packet loss and jitter.

The status indicator is complete