

How to use 1 GPIO Pin to drive Raspberry Pi Power-on-off-status light

The default indicator light of Raspberry Pi is the red LED light next to the power light. As long as the raspberry pi is powered on, it will light up. It is hard for us to know whether the raspberry pi is on or off. It is even harder to notice the difference when you fit the board into a case. So if you want to place the indicator light outside the case, you may check out this tutorial.

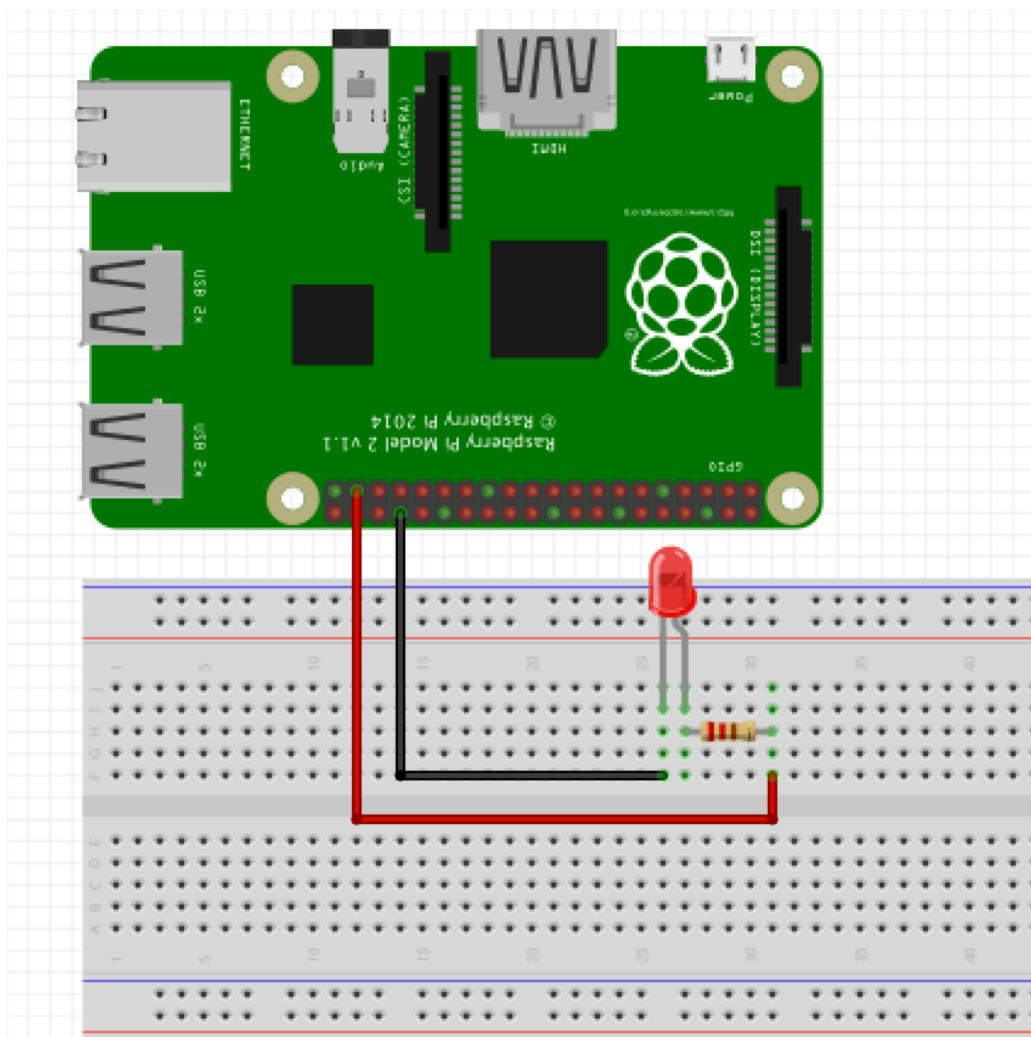
Electronic Components:

- 1*Raspberry Pi 3 Model B
- 1*Red LED light
- 1*220 Ohm resistor
- 1*Breadboard
- 2*Male/female DuPont Jump Wire

Installation Diagram:

Connect the GPIO 26 Pins to 220 Ohm resistor first. Then connect it to the red diode.

You may refer to this detailed diagram:



Configuration Modification:

First thing first, run a command to boost the function of Device Tree which will enable your raspberry pi to be compatible with more devices.

Take a look at the user guide: `sudo vim.tiny /boot/overlay/README`

Search for gpio-poweroff

Poweroff means that the indicator light will not light up when the system is shutdown. You can easily tell if the raspberry pi is turned off properly by checking the indicator light.

The default IO in the official user manual is defined as IO26 and the latest system has got wiringPi. It is very easy for you to set up and you may take this setup as the warm up for the Application Kit.

Here is the screenshot for the official README:

```
Name:  gpio-poweroff
Info:  Drives a GPIO high or low on reboot
Load:  dtoverlay=gpio-poweroff,<param>=<val>
Params: gpiopin          GPIO for signalling (default 26)

       active_low        Set if the power control device requires a
                          high->low transition to trigger a power-down.
                          Note that this will require the support of a
                          custom dt-blob.bin to prevent a power-down
                          during the boot process, and that a reboot
                          will also cause the pin to go low.
```

It is loaded by editing `/boot/config.txt` and by adding this command for module initialization: `dtoverlay=gpio-poweroff,gpiopin=26,active_low`

When it is updated, restart the Raspberry Pi:

```
sudo sync
sudo init 0
```

The indicator will light up when the system is running and it will be turned off as the system is shut down. In this way, you can easily tell the status of the Raspberry Pi. When you DIY some interesting applications, you can place the indicator outside to evaluate the status of the whole operation.