Nvidia Jetson Nano GPIO setup guide

The Nvidia Jetson Nano board is a new powerful single board $99 computer intended for use with AI applications – but it also makes a great regular PC, that plays 1080p YouTube content with no lag. It's similar to a Raspberry Pi 3 model B+, but has a much better spec: 4GB of DDR4 RAM, USB3 and USB2 ports, Gigabyte ethernet, runs Ubuntu 18.04, 64 bit Quad Core ARM A57 at 1.43GHz, 128 core Nvidia Maxwell GPU (Video: 4K @ 30 fps (H.264/H.265) / 4K @ 60 fps (H.264/H.265) encode and decode)

The board has a 40 way GPIO edge connector that's compatible with the Rapsberry Pi. Here's how you set it up and use it:

```
sudo apt install python3-pip
```

```
sudo pip3 install Jetson.GPIO
```

```
sudo groupadd -f -r gpio
```

```
sudo usermod -a -G gpio YOUR-USER-NAME-HERE
```

```
sudo cp /opt/nvidia/jetson-gpio/etc/99-gpio.rules /etc/udev/rules.d/
```

```
sudo udevadm control --reload-rules && sudo udevadm trigger
```

```
cd /opt/nvidia/jetson-gpio/samples
```

```
ls
```

You'll now see a list of sample Python3 files. There's a description of what each does here:

https://pypi.org/project/Jetson.GPIO/

to run one:

```
sudo python3 button_led.py
```

CTRL-C to exit. Install an editor

```
sudo apt install nano
```

To edit the file:

```
sudo nano simple_out.py
```

I altered simple_out.py so that it uses the Raspberry Pi equivalent of GPIO4 (marked pin 7 on the Jetson Nano) and GND, and attached an LED and 220 ohm resistor across those two pins.

This script now blinks the LED:

```
#!/usr/bin/env python

import RPi.GPIO as GPIO
import time

output_pin = 4  # BOARD pin 7, BCM pin 4

def main():
    GPIO.setmode(GPIO.BCM)
    GPIO.setup(output_pin, GPIO.OUT, initial=GPIO.HIGH)

    print("Press CTRL+C to exit")
    curr_value = GPIO.HIGH
    try:
        while True:
            time.sleep(1)
            # Toggle the output every second
            print("Outputting {} to pin {}".format(curr_value, output_pin))
            GPIO.output(output_pin, curr_value)
            curr_value ^= GPIO.HIGH
    finally:
        GPIO.cleanup()

if __name__ == '__main__':
    main()
```

same script but simpler version:

```
#!/usr/bin/env python

import RPi.GPIO as GPIO
import time

# Pin Definitions
output_pin = 4  # BOARD pin 7, BCM pin 4

GPIO.setmode(GPIO.BCM)
GPIO.setup(output_pin, GPIO.OUT, initial=GPIO.HIGH)
print("Press CTRL+C to exit")

while True:
    time.sleep(1)
    GPIO.output(output_pin, GPIO.HIGH)
    time.sleep(1)
    GPIO.output(output_pin, GPIO.LOW)
```