RasPi.TV RPi.GPIO Quick Reference


```
# RPi.GPIO Basics cheat sheet - Don't try to run this. It'll fail!
# Alex Eames http://RasPi.TV
# http://RasPi.TV/?p=4320

# RPi.GPIO Official Documentation http://code.google.com/p/raspberry-gpio-python/

import RPi.GPIO as GPIO                 # import RPi.GPIO module

# choose BOARD or BCM
GPIO.setmode(GPIO.BCM)                  # BCM for GPIO numbering
GPIO.setmode(GPIO.BOARD)                # BOARD for P1 pin numbering

# Set up Inputs
GPIO.setup(port_or_pin, GPIO.IN)        # set port/pin as an input
GPIO.setup(port_or_pin, GPIO.IN,  pull_up_down=GPIO.PUD_DOWN) # input with pull-down
GPIO.setup(port_or_pin, GPIO.IN,  pull_up_down=GPIO.PUD_UP)   # input with pull-up

# Set up Outputs
GPIO.setup(port_or_pin, GPIO.OUT)               # set port/pin as an output
GPIO.setup(port_or_pin, GPIO.OUT, initial=1)    # set initial value option (1 or 0)

# Switch Outputs
GPIO.output(port_or_pin, 1)     # set an output port/pin value to 1/GPIO.HIGH/True
GPIO.output(port_or_pin, 0)     # set an output port/pin value to 0/GPIO.LOW/False

# Read status of inputs OR outputs
i = GPIO.input(port_or_pin)     # read status of pin/port and assign to variable i
if GPIO.input(port_or_pin):     # use input status directly in program logic

# Clean up on exit
GPIO.cleanup()

# What Raspberry Pi revision are we running?
GPIO.RPI_REVISION

# What version of RPi.GPIO are we running?
GPIO.VERSION

# What Python version are we running?
import sys; sys.version
```

You can download the **.txt** version of this for cutting and pasting from
http://RasPi.TV/download/rpigpio.txt

or directly on your Raspberry Pi with...

`wget` **`http://RasPi.TV/download/rpigpio.txt`**

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Breakdown of the P1 GPIO header for both Rev 1 and Rev 2 covering both GPIO numbers and alternative functions.

GPIO Numbers

Rev 1 Raspberry Pi P1 GPIO Header

	Pin	No.	
3.3V	1	2	5V
GPIO0	3	4	5V
GPIO1	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO21	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7

Rev 2 Raspberry Pi P1 GPIO Header

	Pin	No.	
3.3V	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7

Key
Power +
GND
I²C
GPIO
UART
SPI

Alternative Functions

Rev 1 Raspberry Pi P1 GPIO Header

	Pin	No.	
3.3V	1	2	5V
SDA0	3	4	5V
SCL0	5	6	GND
GPCLK0	7	8	TXD
GND	9	10	RXD
GPIO17	11	12	PWM
GPIO21	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
MOSI	19	20	GND
MISO	21	22	GPIO25
SCLK	23	24	CE0
GND	25	26	CE1

Rev 2 Raspberry Pi P1 GPIO Header

	Pin	No.	
3.3V	1	2	5V
SDA1	3	4	5V
SCL1	5	6	GND
GPCLK0	7	8	TXD
GND	9	10	RXD
GPIO17	11	12	PWM
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
MOSI	19	20	GND
MISO	21	22	GPIO25
SCLK	23	24	CE0
GND	25	26	CE1

Key
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RPi.GPIO Tutorials

RPi.GPIO Basics

1. How to check what RPi.GPIO version you have
2. How to check what Pi board Revision you have
3. How to Exit GPIO programs cleanly, avoid warnings and protect your Pi
4. Setting up RPi.GPIO, numbering systems and inputs
5. Setting up and using outputs with RPi.GPIO
6. Using inputs and outputs at the same time with RPi.GPIO, and pull-ups/pull-downs
7. RPi.GPIO cheat sheet

Interrupts (needs RPi.GPIO 0.5.2+)

1. **Background and simple interrupt:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO
2. **Threaded callback:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO – part 2
3. **Multiple threaded callback:** How to use interrupts with Python on the Raspberry Pi and RPi.GPIO – part 3

Software PWM

1. **PWM explained:** RPi.GPIO 0.5.2a now has software PWM – How to use it
2. **PWM practical:** How to use soft PWM in RPi.GPIO 0.5.2a pt 2 – led dimming and motor speed control

Have fun taking over the world with RPi.GPIO.

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