Headline

GPIO Basics

Basis Wissen http://elinux.org/RPi_Low-level_peripherals#Introduction

Basics inkl. Beispiele in C, C++, Perl, python, c#, Scratch
http://elinux.org/RPi_Low-level_peripherals#Introduction

Basics http://sourceforge.net/p/raspberry-gpio-python/wiki/BasicUsage/

GUI on Pi

webiopi https://code.google.com/p/webiopi/

webiopi integrated devices https://code.google.com/p/webiopi/wiki/DEVICES

Help and instructions

Gute Beschreibung: http://raspberrypiguide.de/howtos/raspberry-pi-gpio-how-to/

Beispiele und Basics http://sourceforge.net/p/raspberry-gpio-python/wiki/BasicUsage/

Simple Guide to the RPi GPIO Header and Pins
http://www.raspberrypi-spy.co.uk/2012/06/simple-guide-to-the-rpi-gpio-header-and-pins/

GPIO basic usage http://sourceforge.net/p/raspberry-gpio-python/wiki/BasicUsage/

Configure pi

see also https://www.raspberrypi.org/documentation/configuration/device-tree.md

```
Manual extract

Name:   w1-gpio
Info:   Configures the w1-gpio Onewire interface module.
        Use this overlay if you *don't* need a GPIO to drive an external
pullup.
Load:   dtoverlay=w1-gpio,<param>=<val>
Params: gpiopin                 GPIO for I/O (default "4")

        pullup                  Non-zero, "on", or "y" to enable the
```

```
parasitic
                                power (2-wire, power-on-data) feature


Name:   w1-gpio-pullup
Info:   Configures the w1-gpio Onewire interface module.
        Use this overlay if you *do* need a GPIO to drive an external
pullup.
Load:   dtoverlay=w1-gpio-pullup,<param>=<val>
Params: gpiopin                 GPIO for I/O (default "4")

        pullup                  Non-zero, "on", or "y" to enable the
parasitic
                                power (2-wire, power-on-data) feature

extpullup GPIO for external pullup (default "5")
```

edit /boot/config.txt

```
dtoverlay=w1-gpio,gpiopin=4,pullup=on
```

Reading Pins

```
GPIO.setup(3, GPIO.IN)
GPIO.input(3)
```

Checking GPIO function

```
test pins
wiringPi/gpio/pintest
```

gpio_function(channel)

Shows the function of a GPIO channel. For example:

```
import RPi.GPIO as GPIO

GPIO.setmode(GPIO.BOARD)
func = GPIO.gpio_function(pin)
```

will return a value from: GPIO.INPUT, GPIO.OUTPUT, GPIO.SPI, GPIO.I2C, GPIO.HARD_PWM, GPIO.SERIAL, GPIO.UNKNOWN