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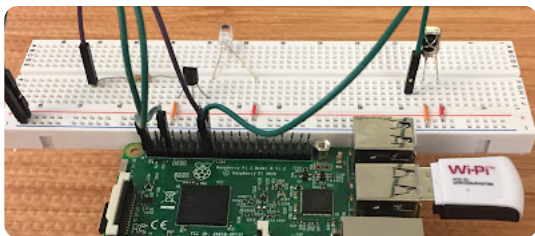
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Universal GPIO library for Raspberry Pi

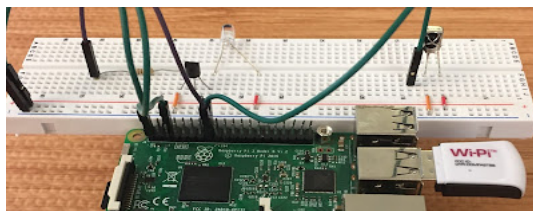


by Techiebouncer - 1 years ago in RPI

0 comments



Python Library for interfacing GPIO Pins on Linux based Routers, Network Devices, and embedded devices like Raspberry pi and OpenWRT based Routers.



Installation

The latest stable version is available on PyPI. Either add `UniversalGPIO` to your requirements.txt file or install with pip:

```
pip install UniversalGPIO
```

Getting Started

You can interface with GPIO Pins on the supported devices. You can use the `setup()` method in the GPIO Module.

```
>>> import UniversalGPIO.GPIO as GPIO
>>> pin_out = setup(12,GPIO.OUTPUT)
>>> pin_in = setup(13,GPIO.INPUT)
```

Writing state to the OUTPUT Pin:

```
>>> pin_out.state(1)
1

# OR

>>> pin_out.high()
1
```

Reading States from the INPUT Pin:

```
>>> pin_in.read()
1
```

Cleaning Pins After Use:

```
>>> pin_out.cleanup()
>>> pin_in.cleanup()
```

To communicate with the GPIO Pins on your Device, you first need to instantiate a Pin. The easiest way to do that is by calling the function `setup()`. It can also be configured manually by instantiating a Pin class.

`setup()`

Return a Pin configured to Communicate with the GPIO Pin with the corresponding parameters.

Parameters :

- `gpio_pin (int)` - The Pin number which you want to use.
- `mode (str)` - The Pin Mode to communicate direction either input or output. The following Variables can be used:
 - `UniversalGPIO.GPIO.OUTPUT` - For output
 - `UniversalGPIO.GPIO.OUT` - For output
 - `UniversalGPIO.GPIO.INPUT` - For input
 - `UniversalGPIO.GPIO.IN` - For input
- `initial_state (int)` - *Default: 0* Only if the mode is output else it will be ignored The state with which you want to initialize the Pin either 1 / 0. The following Variables can be used:
 - `UniversalGPIO.GPIO.HIGH` - For on/1
 - `UniversalGPIO.GPIO.ON` - For on/1
 - `UniversalGPIO.GPIO.LOW` - For off/0
 - `UniversalGPIO.GPIO.OFF` - For off/0
- `reverse_state (bool)` - *Default: False* Set True if you want to reverse the output state. Only if the mode is output else it will be ignored.

Example:

```
>>> import UniversalGPIO.GPIO as GPIO
>>> pin_p0_number=12
>>> pin_p0=GPIO.setup(pin_p0_number, GPIO.OUTPUT)
```

Variables in the Module

For States

- `UniversalGPIO.GPIO.HIGH`
- `UniversalGPIO.GPIO.Low`
- `UniversalGPIO.GPIO.ON`
- `UniversalGPIO.GPIO.OFF`

For Mode

- `UniversalGPIO.GPIO.INPUT`
- `UniversalGPIO.GPIO.OUTPUT`
- `UniversalGPIO.GPIO.IN`
- `UniversalGPIO.GPIO.OUT`

Pin Reference

`class Pin`

A Pin Object for communicating with GPIO Pin.

Example:

```
>>> import UniversalGPIO.GPIO as GPIO
>>> pin_p0_number=12
>>> pin_p0=GPIO.Pin(pin_p0_number, GPIO.OUTPUT, initial_state=0,reverse_state=False)
>>> pin_p0.cleanup()
```

Parameters :

- `gpio_pin` (int) - The Pin number which you want to use.
- `mode` (str) - The Pin Mode to communicate direction either input or output. The following Variables can be used:
 - `UniversalGPIO.GPIO.OUTPUT` - For output
 - `UniversalGPIO.GPIO.OUT` - For output
 - `UniversalGPIO.GPIO.INPUT` - For input
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- `initial_state` (int) - *Default: 0* Only if the mode is output else it will be ignored The state with which you want to initialize the Pin either 1 / 0. The following Variables can be used:
 - `UniversalGPIO.GPIO.HIGH` - For on/1
 - `UniversalGPIO.GPIO.ON` - For on/1
 - `UniversalGPIO.GPIO.LOW` - For off/0
 - `UniversalGPIO.GPIO.OFF` - For off/0
- `reverse_state` (bool) - *Default: False* Set True if you want to reverse the output state. Only if the mode is output else it will be ignored.

write()

For Writing state to the pin. Only use this method if the mode set to output.

- Returns (int) : `0` if no errors were found and `1` if there was errors in writing state.
- Raises :
 - `illegalUseOfClassMethod` - If called when mode is set to OUTPUT.
 - `fileIOError` - If there are errors in writing state to the kernel.
 - `invalidState` - If the state passed in the Parameter is invalid.
- Parameters :
 - `state` (int) - The state which you want to write to the GPIO Pin.

high()

For Writing ON/HIGH state to the pin. Only use this method if the mode set to output.

- Returns (int) : `0` if no errors were found and `1` if there was errors in writing state.
- Raises :
 - `illegalUseOfClassMethod` - If called when mode is set to OUTPUT.

- `fileIOError` - If there are errors in writing state to the kernel.
- Parameters :

low()

For Writing OF/LOW state to the pin. Only use this method if the mode set to output.

- Returns (int) : `0` if no errors were found and `1` if there was errors in writing state.
- Raises :
 - `illegalUseOfClassMethod` - If called when mode is set to OUTPUT.
 - `fileIOError` - If there are errors in writing state to the kernel.
- Parameters :

state()

For Reading existng state of the pin. Only use this method if the mode set to output.

- Returns (int) : current `state` of the GPIO Pin.
- Raises :
 - `illegalUseOfClassMethod` - If called when mode is set to OUTPUT.
- Parameters :

read()

For Reading state of the pin. Only use this method if the mode set to input.

- Returns (int) : current `state` of the GPIO Pin.
- Raises :
 - `illegalUseOfClassMethod` - If called when mode is set to INPUT.
 - `fileIOError` - If there are errors in Reading state to the kernel.
- Parameters :

cleanup()

It is recomented to clean the GPIO Pins to tell the kernel that the pins are not in use any more.

- Returns : `None`
- Raises :
 - `fileIOError` - If there are errors in Reading state to the kernel.

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