Wiring Pi

GPIO Interface library for the Raspberry Pi

Core Functions

These functions work directly on the Raspberry Pi and also with external GPIO modules such as GPIO expanders and so on, although not all modules support all functions – e.g. the PiFace is pre-configured for its fixed inputs and outputs, and the Raspberry Pi has no on-board analog hardware.

- **void pinMode (int pin, int mode) ;**

  This sets the mode of a pin to either **INPUT**, **OUTPUT**, **PWM_OUTPUT** or **GPIO_CLOCK**. Note that only ***wiringPi*** pin 1 (BCM_GPIO 18) supports PWM output and only ***wiringPi*** pin 7 (BCM_GPIO 4) supports CLOCK output modes.

  This function has no effect when in *Sys* mode. If you need to change the pin mode, then you can do it with the **gpio** program in a script before you start your program.

- **void pullUpDnControl (int pin, int pud) ;**

  This sets the pull-up or pull-down resistor mode on the given pin, which should be set as an input. Unlike the Arduino, the BCM2835 has both pull-up an down internal resistors. The parameter **pud** should be; **PUD_OFF**, (no pull up/down), **PUD_DOWN** (pull to ground) or **PUD_UP** (pull to 3.3v) The internal pull up/down resistors have a value of approximately 50KΩ on the Raspberry Pi.

  This function has no effect on the Raspberry Pi's GPIO pins when in *Sys* mode. If you need to activate a pull-up/pull-down, then you can do it with the **gpio** program in a script before you start your program.

- **void digitalWrite (int pin, int value) ;**

  Writes the value **HIGH** or **LOW** (1 or 0) to the given pin which must have been previously set as an output.

  WiringPi treats any non-zero number as **HIGH**, however 0 is the only representation of **LOW**.

- **void pwmWrite (int pin, int value) ;**

  Writes the value to the PWM register for the given pin. The Raspberry Pi has one on-board PWM pin, pin 1 (BMC_GPIO 18, Phys 12) and the range is 0-1024. Other PWM devices may have other PWM ranges.

This function is not able to control the Pi's on-board PWM when in *Sys* mode.

- **int digitalRead (int pin) ;**

  This function returns the value read at the given pin. It will be **HIGH** or **LOW** (1 or 0) depending on the logic level at the pin.

- **analogRead (int pin) ;**

  This returns the value read on the supplied analog input pin. You will need to register additional analog modules to enable this function for devices such as the Gertboard, quick2Wire analog board, etc.

- **analogWrite (int pin, int value) ;**

  This writes the given value to the supplied analog pin. You will need to register additional analog modules to enable this function for devices such as the Gertboard.