

Wiring Pi Libraries

Now that you have a running Raspberry Pi OS, it is time to install the wiringPi libraries. This will allow you to use the GPIO (General Purpose Input Output) Pins on your Raspberry Pi for reading and writing voltage digitally; just like you do on a Micro-Controller.

Note: Raspberry is different from Arduino as it does not have Analog Pins

Download and Install WiringPi Libraries

Installing the library is easy once you have downloaded them. Using internet is the best way however if you haven't connected to the internet yet, you can ask your TA for a flash drive containing the materials.

Via Internet

If you have not downloaded the WiringPi libraries, you must do so as you cannot write a program to work with the GPIO pins otherwise. Instructions are below:

If you have Internet connection follow these steps.

Connect to your Pi and, in the terminal, type:

```
sudo aptitude install git-core
```

Allow the installation of git, and once it is installed, type:

```
git clone git://git.drogon.net/wiringPi
cd wiringPi
./build
```

Via USB Flash Drive

If you do not have Internet connection, ask your lab instructor for a flash drive containing the wiringPi libraries and connect it to your Pi.

```
sudo mkdir /mnt/usb
sudo mount /dev/sda1 /mnt/usb
cp -r /mnt/usb/wiringPi .
sudo umount /mnt/usb
cd wiringPi
./build
```

The build script included in the wiringPi package will automatically install wiringPi for you.

You can make sure the installation worked correctly by typing:

```
gpio -v
gpio readall
```

It should print out a table with GPIO pins listed.

GPIO Table

This is the output you get from running `gpio readall`.

For using wiring Pi libraries we are only concerned with the wPi column on both sides

```
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
--+
| BCM | wPi | Name | Mode | V | Physical | V | Mode | Name | wPi |
BCM |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
--+
|      |      | 3.3v |      |   | 1 || 2 |   |      | 5v   |      |
|
| 2 | 8 | SDA.1 | IN | 1 | 3 || 4 |   |      | 5V   |      |
|
| 3 | 9 | SCL.1 | IN | 1 | 5 || 6 |   |      | 0v   |      |
|
| 4 | 7 | GPIO. 7 | IN | 1 | 7 || 8 | 1 | ALT0 | TxD   | 15 | 14
|
|      |      | 0v   |      |   | 9 || 10 | 1 | ALT0 | RxD   | 16 | 15
|
| 17 | 0 | GPIO. 0 | IN | 0 | 11 || 12 | 0 | IN   | GPIO. 1 | 1 | 18
|
| 27 | 2 | GPIO. 2 | IN | 0 | 13 || 14 |   |      | 0v   |      |
|
| 22 | 3 | GPIO. 3 | IN | 0 | 15 || 16 | 0 | IN   | GPIO. 4 | 4 | 23
|
|      |      | 3.3v |      |   | 17 || 18 | 0 | IN   | GPIO. 5 | 5 | 24
|
| 10 | 12 | MOSI | IN | 0 | 19 || 20 |   |      | 0v   |      |
|
| 9 | 13 | MISO | IN | 0 | 21 || 22 | 0 | IN   | GPIO. 6 | 6 | 25
|
| 11 | 14 | SCLK | IN | 0 | 23 || 24 | 1 | IN   | CE0    | 10 | 8
|
|      |      | 0v   |      |   | 25 || 26 | 1 | IN   | CE1    | 11 | 7
|
| 0 | 30 | SDA.0 | IN | 1 | 27 || 28 | 1 | IN   | SCL.0  | 31 | 1
|
```

```

|  5 | 21 | GPIO.21 | IN | 1 | 29 || 30 |  |  | 0v |  |
|
|  6 | 22 | GPIO.22 | IN | 1 | 31 || 32 | 0 | IN | GPIO.26 | 26 | 12
|
| 13 | 23 | GPIO.23 | IN | 0 | 33 || 34 |  |  | 0v |  |
|
| 19 | 24 | GPIO.24 | IN | 0 | 35 || 36 | 0 | IN | GPIO.27 | 27 | 16
|
| 26 | 25 | GPIO.25 | IN | 0 | 37 || 38 | 0 | IN | GPIO.28 | 28 | 20
|
|  |  |  | 0v |  |  | 39 || 40 | 0 | IN | GPIO.29 | 29 | 21
|
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
--+
| BCM | wPi | Name | Mode | V | Physical | V | Mode | Name | wPi |
BCM |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
--+

```

From:

<http://courses.cs.purdue.edu/> - **Computer Science Courses**

Permanent link:

<http://courses.cs.purdue.edu/cs25000:fall2016:labs:tutorial1>

Last update: **2016/10/03 21:06**