

# Web Interface in Raspberry Pi Applications

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# WiringPi

- WiringPi is a PIN based GPIO access library written in C for the BCM2835 used in the Raspberry Pi.
- It's released under the GNU LGPLv3 license and is usable from C, C++ and RTB (BASIC) as well as many other languages with suitable wrappers

# Install WiringPi

- WiringPi is not included with Raspbian, so, to begin, you'll need to download and install it. That means your Pi will need a connection to the Internet – either via Ethernet or WiFi.
- We highly recommend using Git to download the latest version. As long as you have Git installed, these commands should be all you need to download and install WiringPi:

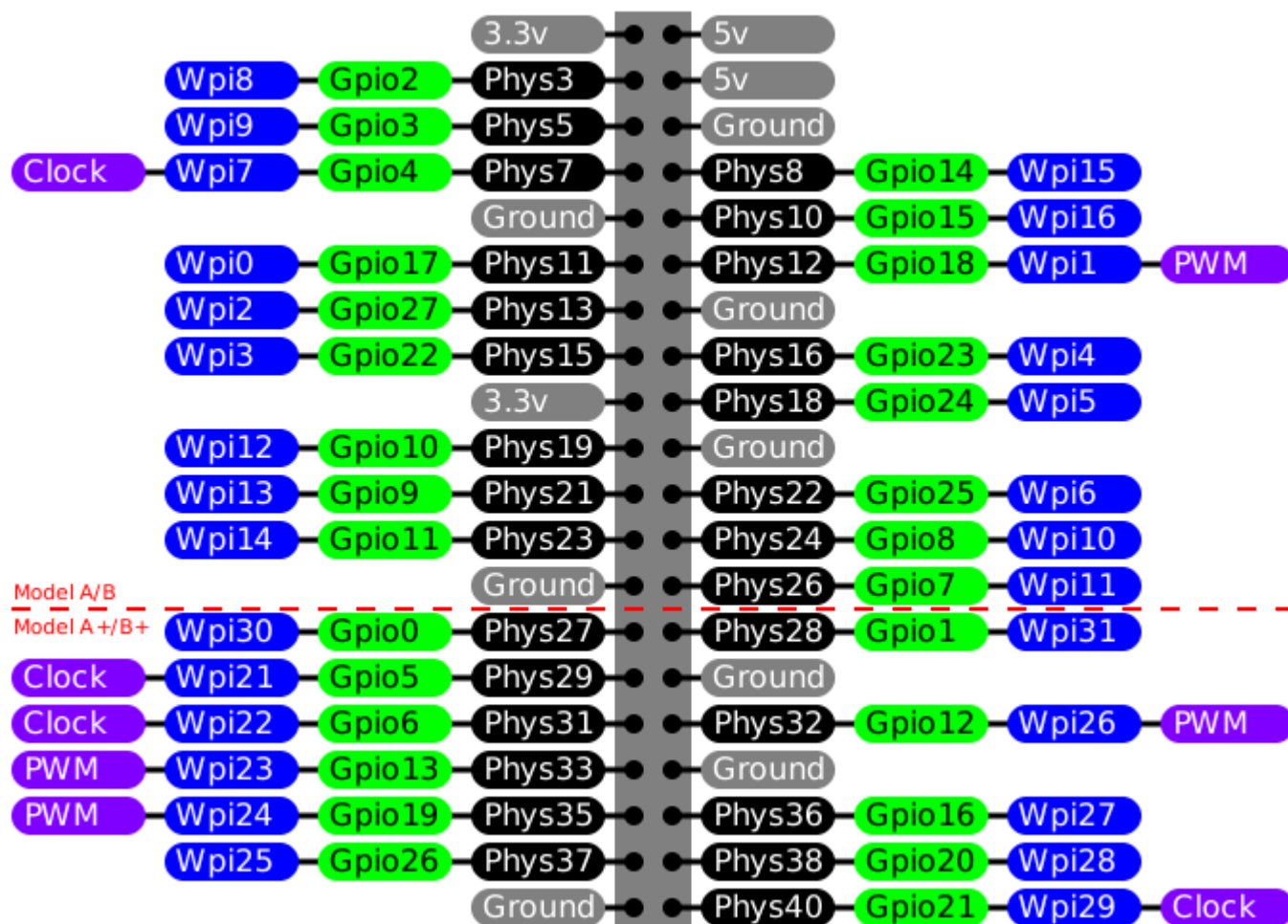
```
pi@raspberrypi ~$ git clone
```

```
git://git.drogon.net/wiringPi
```

```
pi@raspberrypi ~$ cd wiringPi
```

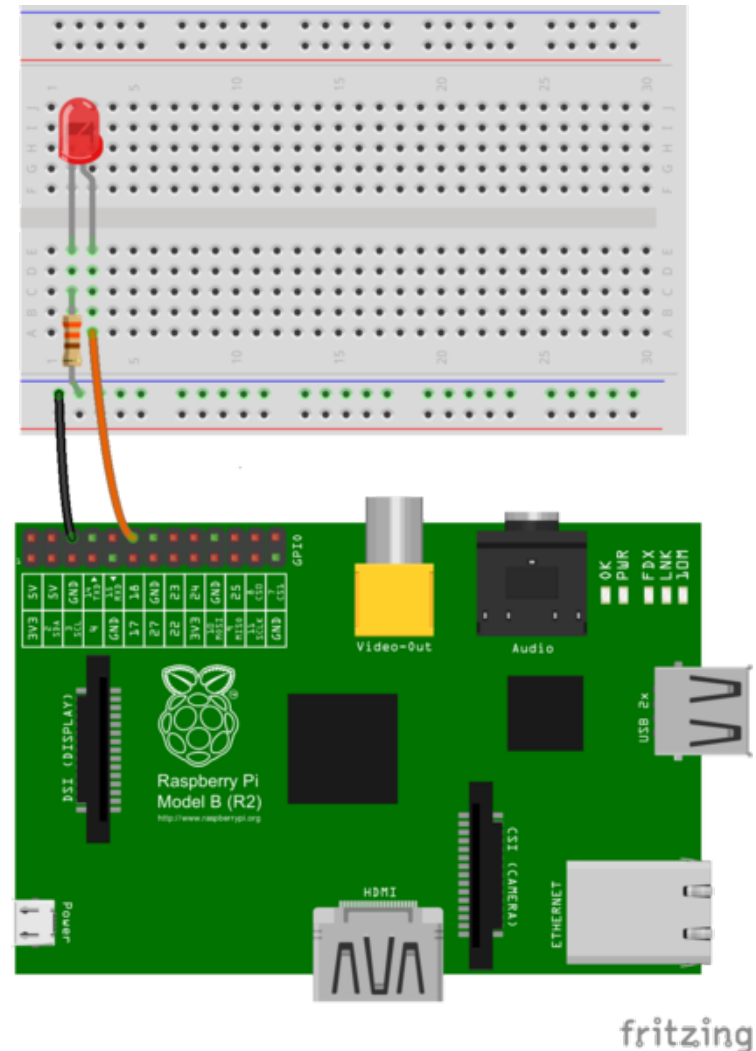
```
pi@raspberrypi ~/wiringPi/wiringPi $ ./build
```

# WiringPi PINs



# GPIO Command Line utility

- Task: Connect the LED GND to Short Pin GPIO18 to Long Pin
- Remember:  
GPIO18 is **PIN 1** in WiringPI



# GPIO Command Line utility

- Glow the LED by

```
gpio write 1 1
```

Value

- Off the LED by

```
gpio write 1 0
```

WiringPi pin

# Blink LED using C

```
#include <wiringPi.h>
int main (void)
{
    wiringPiSetup () ;
    pinMode (0, OUTPUT) ;
    while (1)
    {
        digitalWrite (0, HIGH) ; delay (500) ;
        digitalWrite (0, LOW) ; delay (500) ;
    }
    return 0 ;
}
```

# Blink LED using C – Running Code

```
gcc -o blink blink.c -lwiringPi
```

```
sudo ./blink
```



# Communicating using PHP

- In order to control the LED using PHP, you must install the php and apache2 web server.

```
sudo apt-get install php apache2
```

- Your programs of PHP on Linux are always saved in the **/var/www/html** folder.

# Control LED using PHP

```
<?php  
    system ( 'gpio write 1 0' );  
}  
?>
```

Executes the Shell command in PHP



# Web Interface to LED

- Create the front page using HTML which contains two buttons to put the LED in ON or OFF state.
- Control the data input from buttons using PHP page.
- Lets code it...

# HTML Page

```
<html>
<head>
  <title> LED CONTROL </title>
</head>
<body>
<h1 align="center"> Control Your LED </h1>
<form method="post">
  <table align="center">
    <tr align="center">
      <th align="center"><input type="submit" name="on" value="ON"></th>
      <th align="center"><input type="submit" name="off" value="OFF"></th>
    </tr>
  </table>
</form>
```

Method: Get/Post

Button Label

Action Generator

Variable name

# PHP Code

```
<?php
if(isset($_POST['on']))
{
    system ('gpio write 1 1');
}
if(isset($_POST['off']))
{
    system ('gpio write 1 0');
}
?>
```

Associative array contains HTML variables

# Combine Both – Final Code

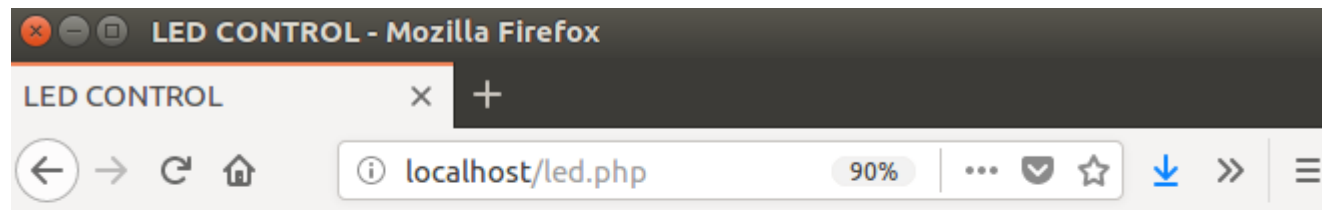
```
<html>
<head>
  <title> LED CONTROL </title>
</head>
<body>
<h1 align="center"> Control Your LED  </h1>
<form method="post">
  <table align="center">
    <tr align="center">
      <th align="center"><input type="submit" name="on" value="ON"></th>
      <th align="center"><input type="submit" name="off" value="OFF"></th>
    </tr>
  </table>
</form>
<?php
if(isset($_POST['on']))
{
    system ('gpio write 1 1');
}
if(isset($_POST['off']))
{
    system ('gpio write 1 0');
}
?>
```

# How to Access?

- Open web browser in any PC/Laptop/Mobile in the same network. Type:

**http://192.168.43.164/led.php**

IP Address of RPi



## Control Your LED

ON OFF

# Thank you

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## Web Resources

<http://mitu.co.in>  
<http://tusharkute.com>

## Blogs

<http://digitallocha.blogspot.in>  
<http://kyamputar.blogspot.in>

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