Pie-4 PWM I/O Connector Info
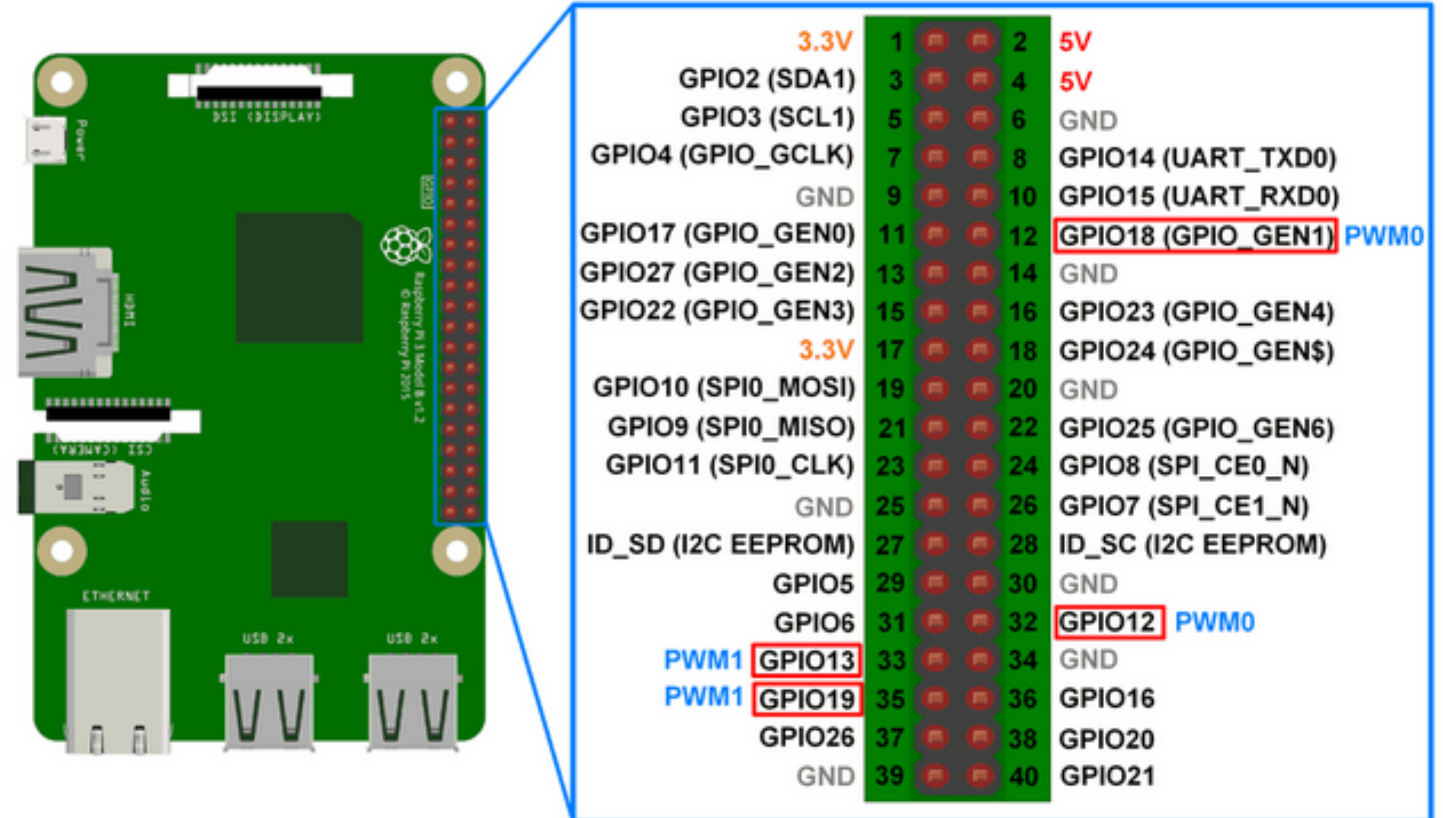
https://www.electronicwings.com/raspberry-pi/raspberry-pi-pwm-generation-using-python-and-c
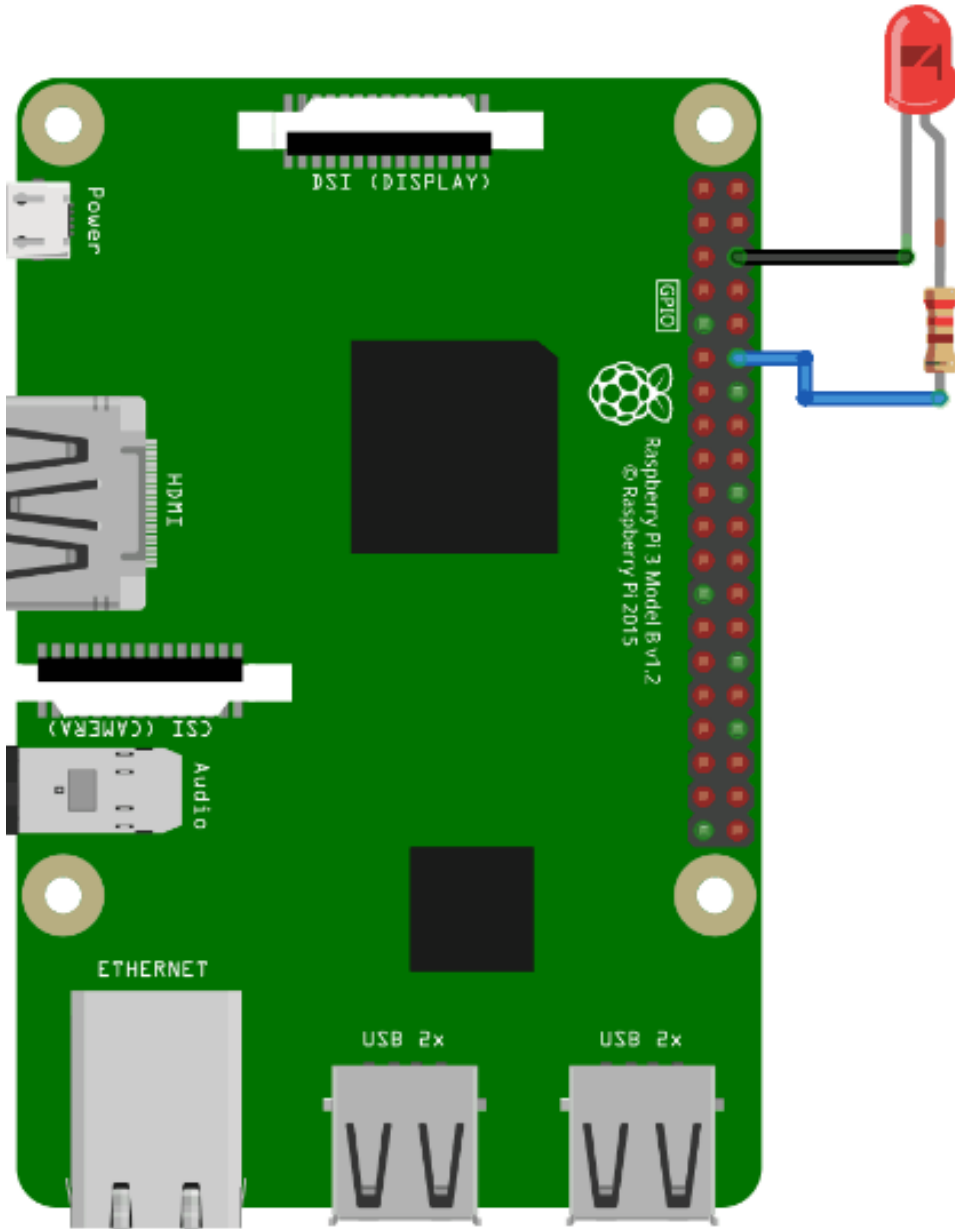
Raspberry Pi has two PWM channels i.e. PWM0 and PWM1.

PWM pins for the two PWM channels on 40-pin P1 header are as follows:

GPIO Pin	PWM0/PWM1
GPIO12	PWM0
GPIO18	PWM0
GPIO13	PWM1
GPIO19	PWM1

3.3V	1	2	5V
GPIO2 (SDA1)	3	4	5V
GPIO3 (SCL1)	5	6	GND
GPIO4 (GPIO_GCLK)	7	8	GPIO14 (UART_TXD0)
GND	9	10	GPIO15 (UART_RXD0)
GPIO17 (GPIO_GEN0)	11	12	GPIO18 (GPIO_GEN1) PWM0
GPIO27 (GPIO_GEN2)	13	14	GND
GPIO22 (GPIO_GEN3)	15	16	GPIO23 (GPIO_GEN4)
3.3V	17	18	GPIO24 (GPIO_GEN$)
GPIO10 (SPI0_MOSI)	19	20	GND
GPIO9 (SPI0_MISO)	21	22	GPIO25 (GPIO_GEN6)
GPIO11 (SPI0_CLK)	23	24	GPIO8 (SPI_CE0_N)
GND	25	26	GPIO7 (SPI_CE1_N)
ID_SD (I2C EEPROM)	27	28	ID_SC (I2C EEPROM)
GPIO5	29	30	GND
GPIO6	31	32	GPIO12 PWM0
PWM1 GPIO13	33	34	GND
PWM1 GPIO19	35	36	GPIO16
GPIO26	37	38	GPIO20
GND	39	40	GPIO21

C++ for Pie PWM Interface

```cpp
/* PWM http://www.electronicwings.com*/
#include <wiringPi.h>
#include <stdio.h>
#include <stdlib.h>
const int PWM_pin = 1; //GPIO 1 for WiringPi, GPIO18 (BCM)
int main (void)
{
  int intensity ;
  if (wiringPiSetup () == -1)
    exit (1) ;
  pinMode (PWM_pin, PWM_OUTPUT) ; // set PWM
  while (1)
  {
    for (intensity = 0 ; intensity < 1024 ; ++intensity)
    {
      pwmWrite (PWM_pin, intensity) ;  /* duty cycle */
      delay (1) ;
    }
    delay(1);
    for (intensity = 1023 ; intensity >= 0 ; --intensity)
    {
      pwmWrite (PWM_pin, intensity) ;
      delay (1) ;
    }
    delay(1);
  }
}
```

Python for Pie PWM Interface