LED DRIVER FOR GPIO SUBSYSTEM

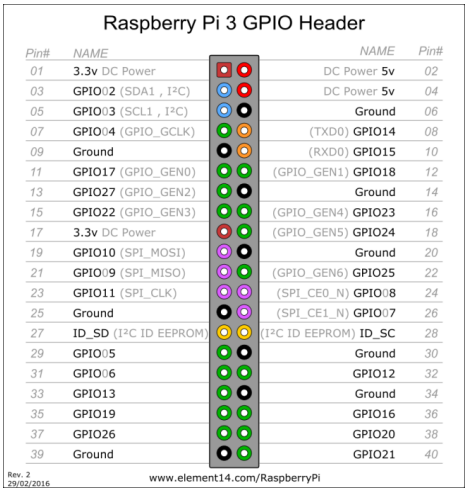
This project is a demonstration of using GPIO subsystem in the raspberry Pi 3. There are two LEDs and one press button connected to the Raspberry Pi. One LED is connected to GPIO 25 (Red), another LED (Green) to GPIO 24 and the button connected to GPIO 20.

The functionality is quite simple. On pressing the button, the LED on GPIO 25 turns on, and remains on until button is pressed again. On the button press again, the LED turns off, the LED on GPIO 24 can be turned on, turned off or kept into flashing mode depending upon the input given form the terminal. The flashing period can also be changed by the user.

Requirements

- linux kernel source
  - download kernel source into `/usr/src/linux`
- Raspberry Pi 3
- 2 LEDs
- resistor
  - 330[ohm]
  - 10k[ohm]
- Button

Hardware



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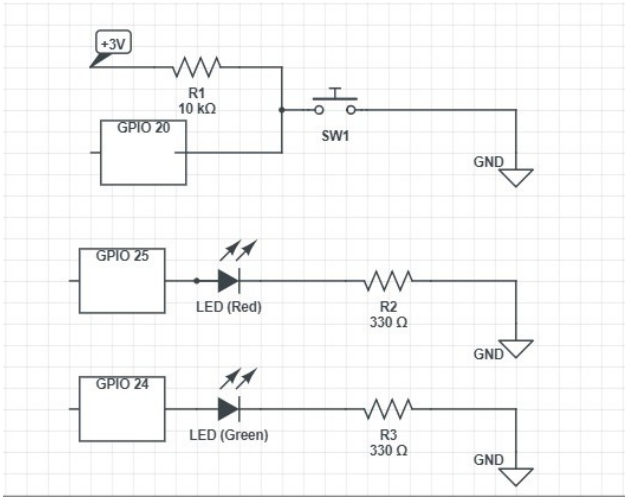
The Pinout of Raspberry Pi 3 is given below. The pins used in the project are as follows:

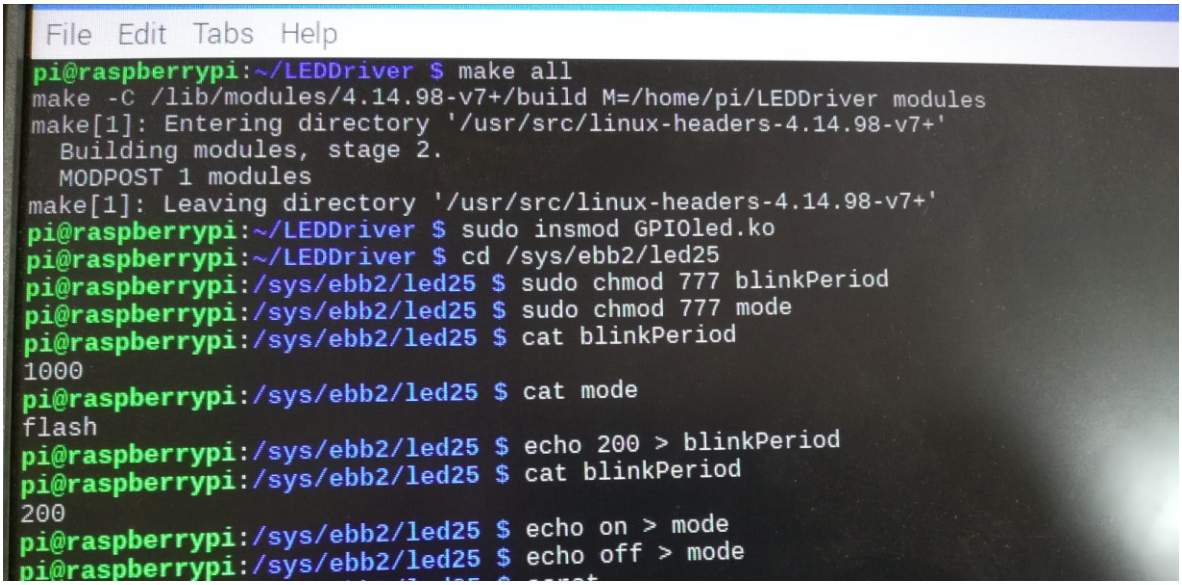
Pin No. 38	GPIO 20	push Button
Pin No. 22	GPIO 25	Red LED
Pin No. 18	GPIO 24	Green LED
Pin No. 06	GND	All Ground
Pin No. 17	3.3V	DC Power

Schematic



Connect led, resistors, switch to Raspberry Pi as shown in schematic.

Usage



echo on > mode	Turns LED on
echo off> mode	Turns LED off
echo 200 blinkPeriod	Blinks the LED connected to GPIO 24 with time period of 200ms