2015

TENET TECHNETRONICS

Interfacing LED with Raspberry PI

Author: Palani K

Introduction:

Raspberry Pi is a credit card sized computer that plugs into a computer monitor or TV,and uses standard keyboard and mouse. It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video, to making spreadsheets, word-processing, and playing games. Here we are going to do interface LED with Raspberry Pi.

Hardware Requirements:

1. Raspberry Pi board.
2. Tenet LED breakout board.
3. Hookup wires

LED:

A light-emitting diode (LED) is a two-lead semiconductor light source. It is a p–n junction diode, which emits light when activated.[4]When a suitable voltage is applied to the leads, electrons are able to recombine with electron holes within the device, releasing energy in the form of photons. This effect is called electroluminescence, and the color of the light (corresponding to the energy of the photon) is determined by the energy band gap of the semiconductor.

Figure 1

Coding in Raspberry Pi:

Step 1: Raspberry pi home screen like this.Open LXTERMINAL which is available on left corner of the screen.

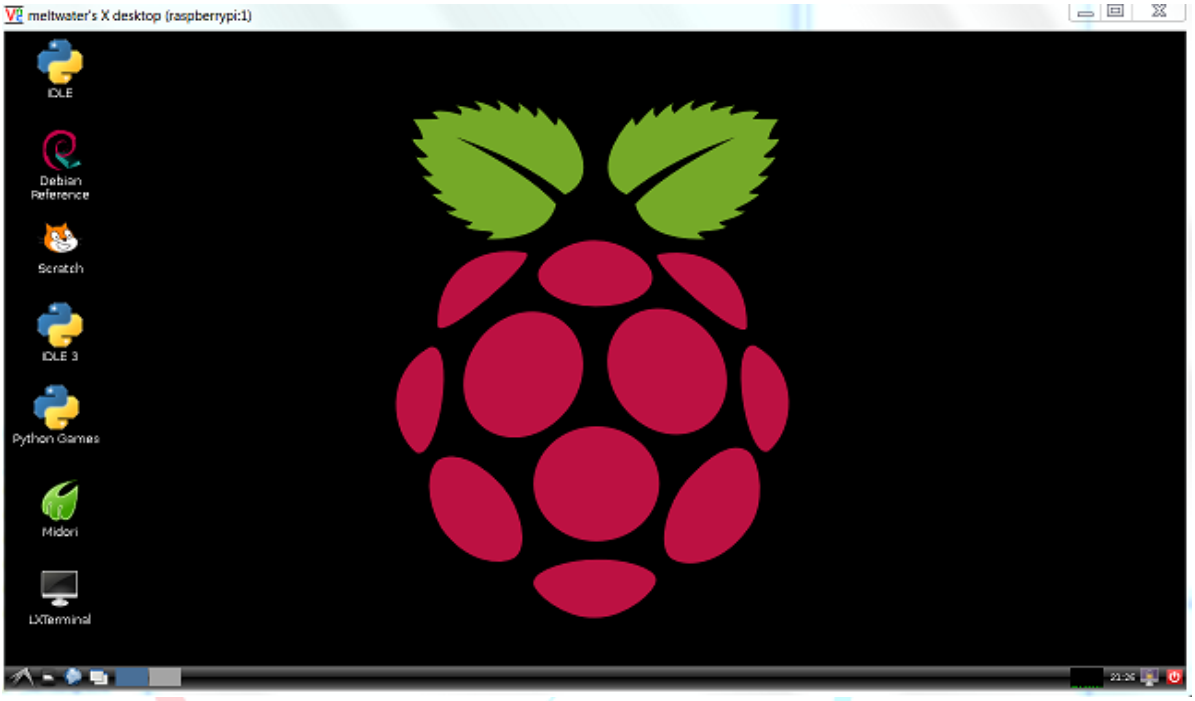

Figure 2

Step 2: Create a new file by using sudo nano filename.py command.

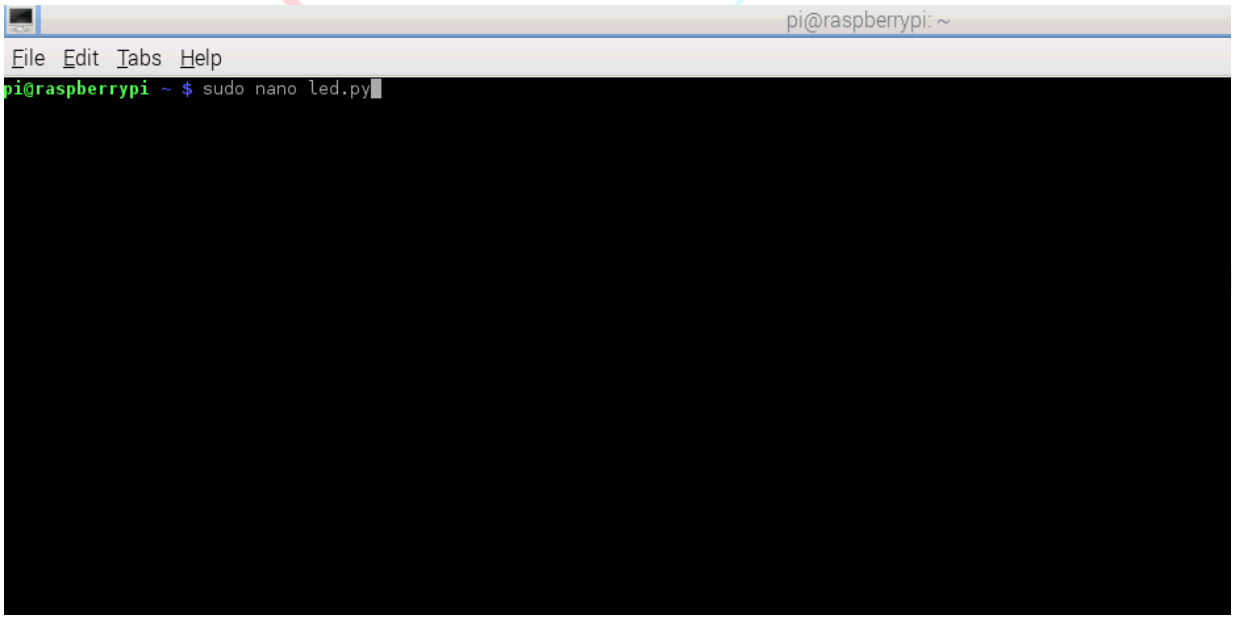

Figure 3

Step 3: Hitting ENTER key will take you in the new window where you can type your code.

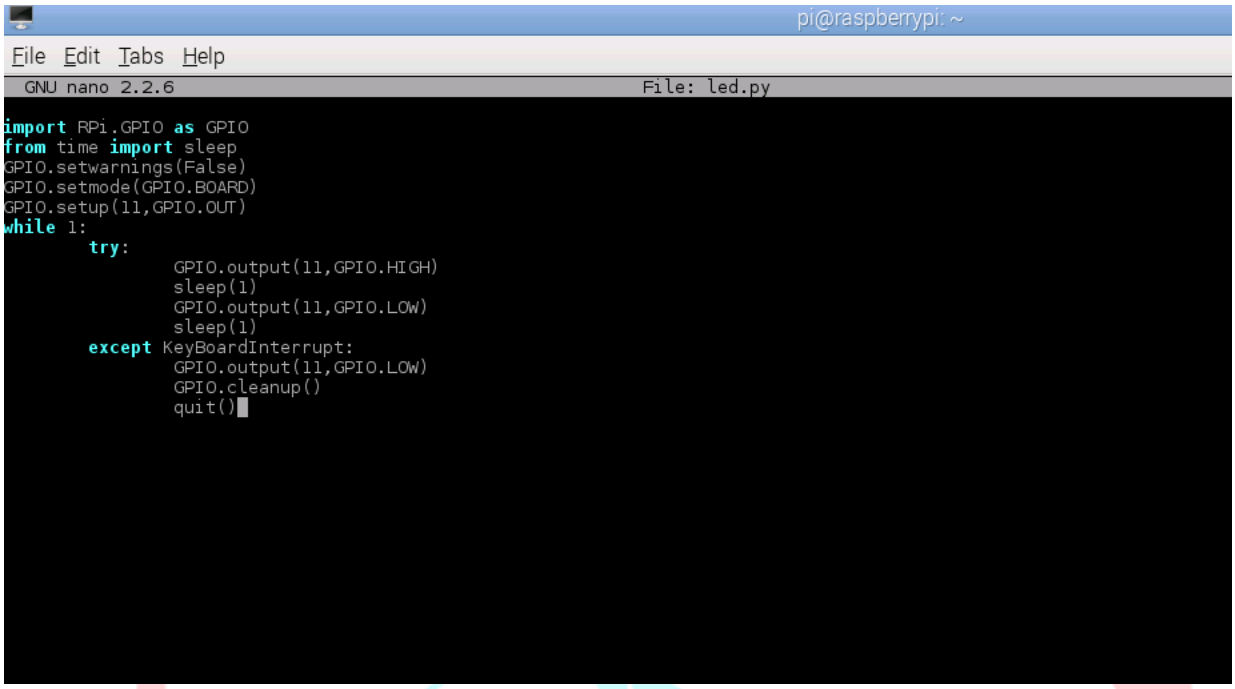

Figure 4

Step 4: After entering your code press the CTRLX to save your code.And it will prompt you that save mod at the bottom of the window. Press Y and hit enter key

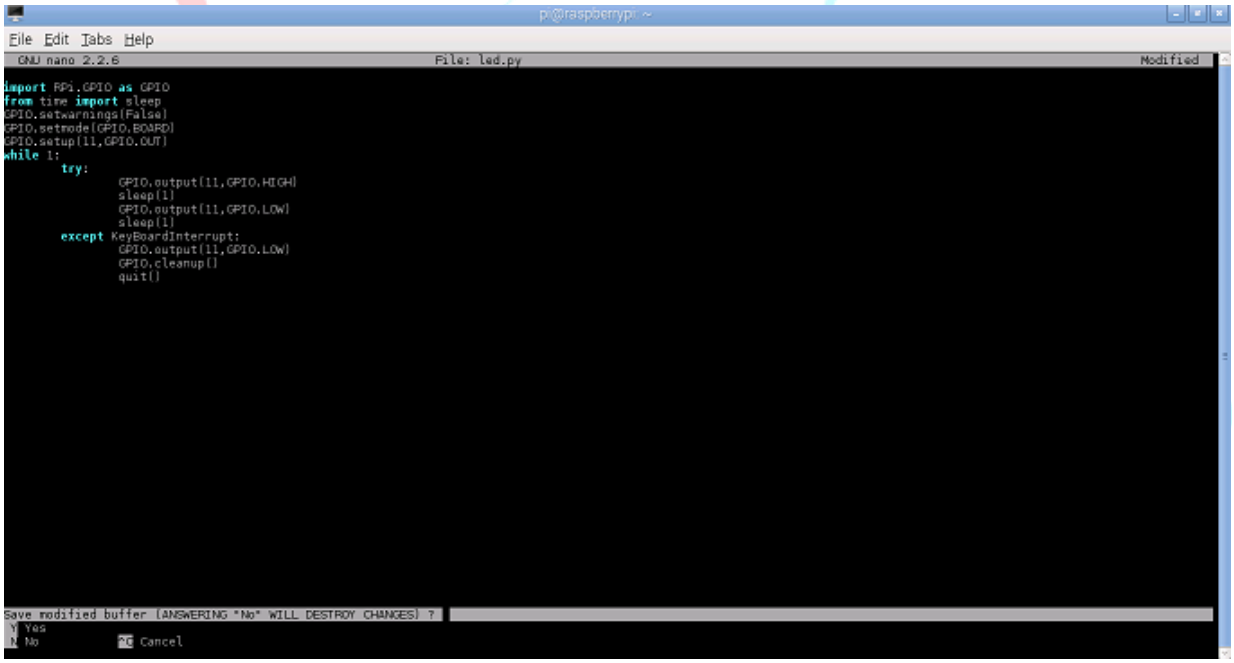

Figure5

Step 5: Run the code by using sudo python filename.py command. Hit enter key.On hitting ENTER key , your program will start to run and find the window as given below.And the cursor blinking in the below of your command.

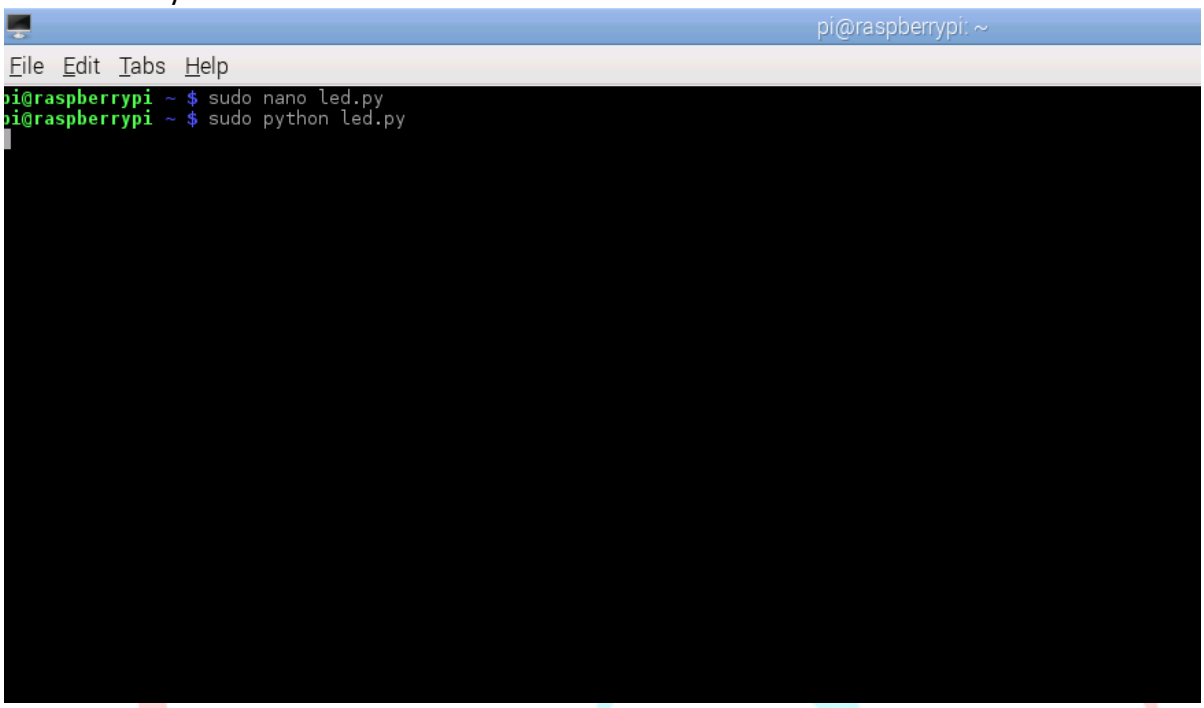

Figure6

Coding:

```
Import  RPi.GPIO as GPIO                    // Import GPIO library file
From time import sleep                      // Import delay library file
GPIO.setwarnings(False)                     // This will hide your warnings when you executing code
GPIO.setmode(GPIO.BOARD)                    // Setting GPIO configuration .You can also use BCM(Pin differ)
GPIO.setup(11,GPIO.OUT)                     // Setting GPIO 11th pin as output pin
While 1:
        try:
                GPIO.output(11,GPIO.HIGH)   // enabling 11th pin to high
                Sleep(1)
                GPIO.output(11,GPIO.LOW)
                Sleep(1)                    // enabling 11th pin to LOW

        except KeyboardInterrupt:           // Code terminated when entering CTRL+C button
                GPIO.output(11,GPIO.LOW)
                GPIO.cleanup()
                quit()
```

OUTPUT:

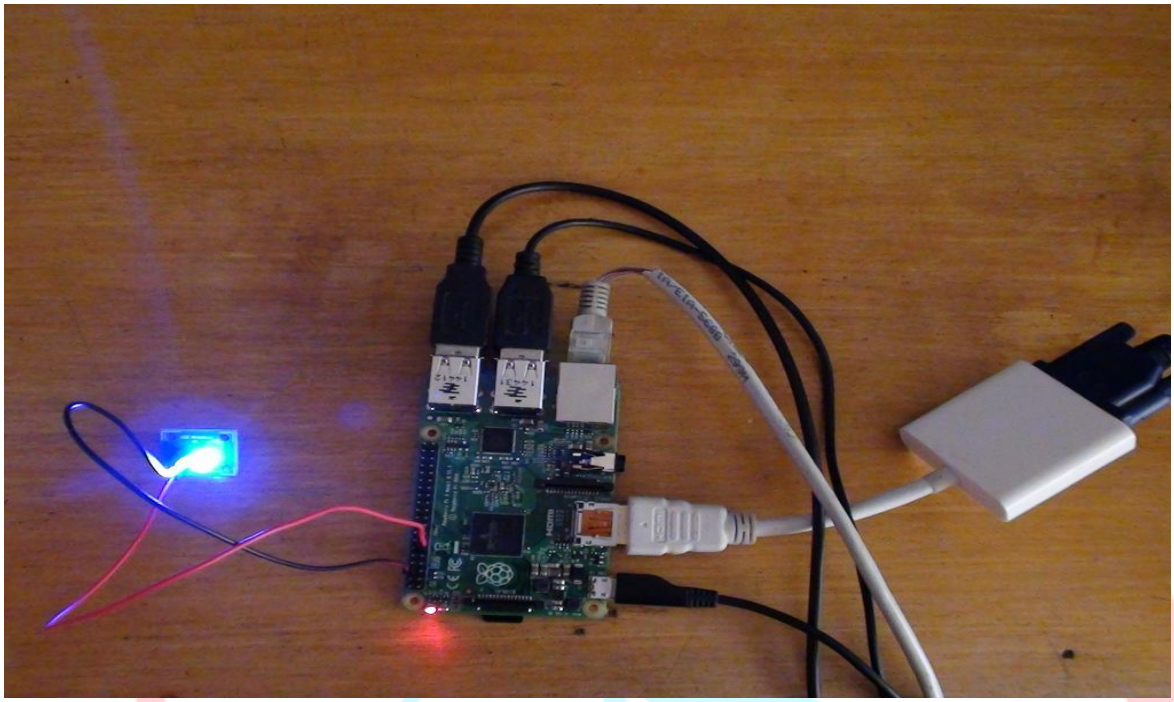

Figure7

For product link:

1. http://tenettech.com/product/7021/raspberry-pi-2-model-b-basic-kit-tt-sp-19022015
2. http://www.tenettech.com/product/6068/power-supply-breakout-board.

For more information please visit: www.tenettech.com

For technical query please send an e-mail: info@tenettech.com