

Practical 2

Aim: Demonstrate Arduino Uno/Raspberry Pi and its pin interfacing with IDE.

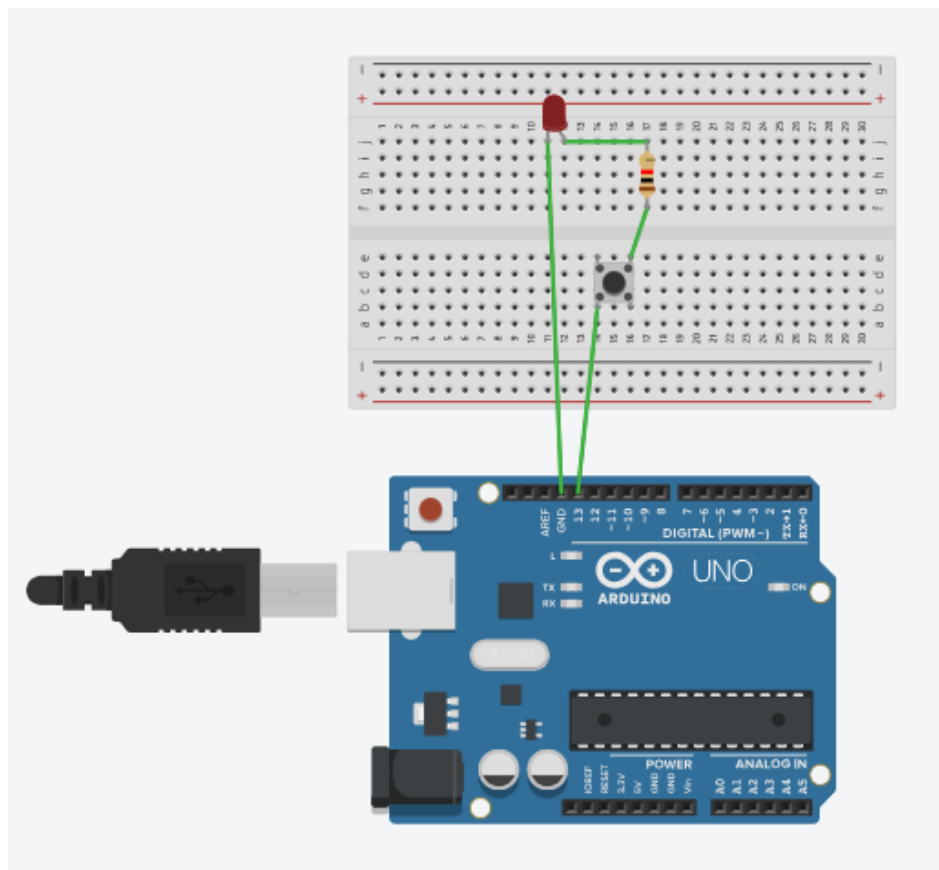
Arduino Code:

```
prc2.py x
1 import RPi.GPIO as GPIO
2 from time import sleep
3
4 GPIO.setmode(GPIO.BCM)
5 LedPin=4
6 GPIO.setup(LedPin,GPIO.OUT)
7
8 try:
9     while True:
10        GPIO.output(LedPin,True)
11        print("LED ON")
12        sleep(0.55)
13        GPIO.output(LedPin,False)
14        print("LED OFF")
15        sleep(0.45)
16
17 finally:
18     GPIO.output(LedPin,False)
19     GPIO.cleanup()
20
```

Shell

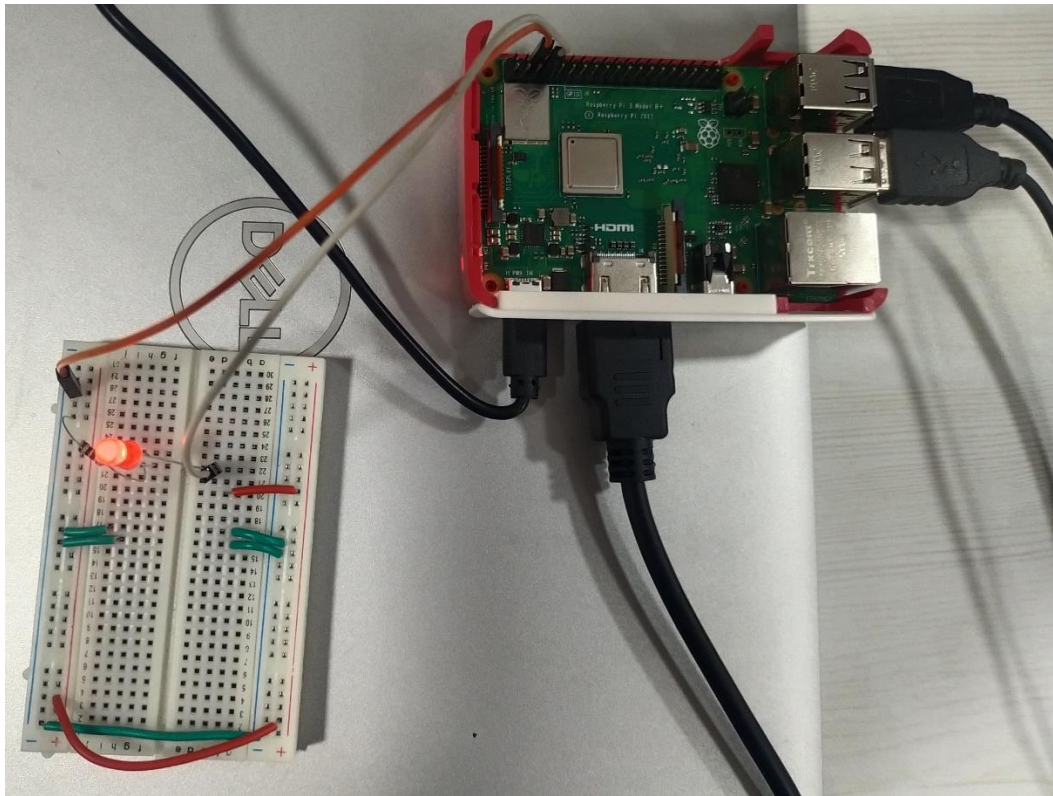
```
LED ON
LED OFF
LED ON
LED OFF
```

Output:



Conclusion: We have successfully completed Arduino Uno and its pins interfacing with IDE.

Using Raspberry Pi, we can use GPIO pin 4 to light up the LED and GND



Switch on and off the LED using python code. When using Python make sure to run these commands before. make sure you python idle or you can also use thonny

```
Edit  Tabs  Help
@monu:~$ sudo apt RPi.GPIO
Invalid operation RPi.GPIO
@monu:~$ sudo apt- get install python3-rpi.gpio
o: apt-: command not found
@monu:~$ sudo apt-get install python3-rpi.gpio
ding package lists... Done
lding dependency tree... Done
ding state information... Done
following additional packages will be installed:
pi.gpio-common
e following packages will be REMOVED:
python3-rpi-igpio
e following NEW packages will be installed:
python3-rpi.gpio rpi.gpio-common
upgraded, 2 newly installed, 1 to remove and 52 not upgraded.
ed to get 28.0 kB of archives.
ter this operation, 122 kB of additional disk space will be used.
o you want to continue? [Y/n] Y
gn:1 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf
n armhf 0.7.1~a4-1+b2
et:2 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf
io armhf 0.7.1~a4-1+b2 [21.2 kB]
et:1 http://raspbian.raspberrypi.com/raspbian bookworm/main armhf
n armhf 0.7.1~a4-1+b2 [6,898 B]
```


Type the python code to control on and off of the LED

```
1 from gpiozero import LED
2 import time
3 led=LED(4)
4 for _ in range (10):
5     led.on()
6     print('Led on')
7     time.sleep(1)
8     led.off()
9     print('Led Off')
10    time.sleep(1)
11
```

