

**Assignment -3**  
Python Programming

Assignment Date	03 NOVEMBER 2022
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Maximum Marks	2 Marks

**Question-1:**

**Write a python code to blink LED for Raspberry pi**

Solution:

```
import RPi.GPIO as GPIO#RPi.GPIO can be referred as GPIO from now on

import time

ledPin = 22  #pin22

def setup():

    GPIO.setmode(GPIO.BOARD)    #GPIO Numbering of Pins

    GPIO.setup(ledPin, GPIO.OUT) #Set ledPin as output

    GPIO.output(ledPin, GPIO.LOW) #Set ledPin to LOW to turn Off the LED

def loop():

    while True:

        print 'LED on'

        GPIO.output(ledPin, GPIO.HIGH) #LED On

        time.sleep(1.0)          #wait 1 sec

        print 'LED off'

        GPIO.output(ledPin, GPIO.LOW) #LEDOff

        time.sleep(1.0)          #wait 1 sec

def endprogram():

    GPIO.output(ledPin, GPIO.LOW)  #LEDOff
```

```

GPIO.cleanup()          #Releaseresources

if __name__ == '__main__':    #Programstartsfromhere
    setup()
    try:
        loop()
    except KeyboardInterrupt: #When'Ctrl+C'ispressed,the destroy() will be  executed.
        endprogram()

```

### Question-2:

## Write a python code for traffic lights for Raspberry pi

SOLUTION:

```

import RPi.GPIO as GPIO
import time
try:
def lightTraffic(led1,led2,led3,delay):
GPIO.output(led1,1)
time.sleep(delay)
GPIO.output(led1,0)
GPIO.output(led2,1)
time.sleep(delay)
GPIO.output(led2,0)
GPIO.output(led3,1)
time.sleep(delay)
GPIO.output(led3,0)
GPIO.setmode(GPIO.BCM)
button = 19
GPIO.setup(button,GPIO.IN,pull_up_down=GPIO.PUD_UP)
ledGreen = 16
ledYellow = 12
ledRed = 23
GPIO.setup(ledGreen,GPIO.OUT)
GPIO.setup(ledYellow,GPIO.OUT)
GPIO.setup(ledRed,GPIO.OUT)
while True:

```

```
input_state = GPIO.input(button)
if input_state == False:
    print('Button Pressed')
    lightTraffic(ledGreen, ledYellow, ledRed, 1)
else:
    GPIO.output(ledGreen, 0)
    GPIO.output(ledYellow, 0)
    GPIO.output(ledRed, 0)
except KeyboardInterrupt:
    print "You've exited the program"
finally:
    GPIO.cleanup()
```