

### Assignment -3

#### Python Programming

Team ID:PNT2022TMID53952

Assignment Date	6 October 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 bereferred as GPIO from now on

import time

ledPin=22 #pin22

def setup():

    GPIO.setmode(GPIO.BOARD) #GPIO NumberingofPins

    GPIO.setup(ledPin, GPIO.OUT) #Set ledPinasoutput

    GPIO.output(ledPin,GPIO.LOW) #Set ledPintoLOWto turnOfftheLED

def loop():

while True:

    print'LEDOn'

    GPIO.output(ledPin, GPIO.HIGH) #LEDOn

    time.sleep(1.0) #wait 1sec

    print'LEDOff'

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

    time.sleep(1.0) #wait 1sec

def endprogram():

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

    GPIO.cleanup()          #Releaseresources
```

```

if __name__ == '__main__': #Program starts from here setup()

    try:

        loop()

    except KeyboardInterrupt: #When 'Ctrl+C' is pressed, 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

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()
```