

Assignment -3
Python Programming

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 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)  #LED Off

        time.sleep(1.0)          #wait 1 sec

def endprogram():

    GPIO.output(ledPin,GPIO.LOW)  #LED Off
```

```

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)
ifinput_state== False:
    print('Button Pressed')
    lightTraffic(ledGreen,ledYellow,ledRed,1)
else:
    GPIO.output(ledGreen,0)
    GPIO.output(ledYellow,0)
    GPIO.output(ledRed,0)
exceptKeyboardInterrupt:
    print "You'veexitedtheprogram"
finally:
    GPIO.cleanup()
```