Assignment -3

Python Programming

Assignment Date	04 October 2022
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Maximum Marks	2 Marks

Question-1: Write python code for blinking LED and Traffic lights for Raspberry pi.

Solution:

```
import RPi.GPIO as GPIO
from time import sleep
from threading import Thread
from gpiozero import LED
#GPIO SETUP
red = LED(17)
gre=LED(24)
yel = LED(27)
channel = 23
emer_detec = False

GPIO.setmode(GPIO.BCM)
GPIO.setup(channel, GPIO.IN, pull_up_down = GPIO.PUD_UP)

def sound():
    GPIO.add_event_detect(channel, GPIO.BOTH, bouncetime=1000)  #
let us know when the pin goes HIGH or LOW
```

```python
    GPIO.add_event_callback(channel, callback)  # assign function to
GPIO PIN, Run function on change

def regular():
    while True:

        if not GPIO.input(channel):
            red.on()
            sleep(2)
            red.off()

            yel.on()
            sleep(2)
            yel.off()

            gre.on()
            sleep(2)
            gre.off()

def callback(channel):
    print('Emergency vehicle detected')
    red.off()
    yel.off()
    gre.on()
    sleep(5)
    gre.off()

sound_thread= Thread(target=sound)
sound_thread.daemon= True
sound_thread.start()

regular_thread= Thread(target=regular)
regular_thread.daemon= True
regular_thread.start()
```

```python
# infinite loop
while True:
    pass
```