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,thedestroy()willbe  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()
```