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()                    # Release resources

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
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()
```