Assignment -3

Python Programming

Assignment Date	07October 2022
Student Name	Ms. Shobana S
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Maximum Marks	2 Marks

Question-1:

Write a Python code for Blinking LED and Traffic Light for Raspberry Pi

Solution:

Blinking Of an LED For Raspberry Pi

```
import RPi.GPIO as GPIO # RPi.GPIO can be referred as GPIO from now
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()
```

Traffic Light for Raspberry Pi

```
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()
```