

Assignment -3
Python Programming

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| Assignment Date | 07 October 2022 |
| Student Name | NARESH KUMAR V |
| Student Roll Number | 312319106108 |
| Maximum Marks | 2 Marks |

Question:

Write a python code for blinking LED and Traffic lights for Raspberry Pi.

PROGRAM:

```
import RPi.GPIO as GPIO
import time
import os
import signal
import sys

if('TRAFFIC_LIGHT_COUNTRY' in os.environ) and (os.environ['TRAFFIC_LIGHT_COUNTRY'] in ['UK', 'USA']):
    pattern = os.environ['TRAFFIC_LIGHT_COUNTRY'].lower()
else:
    print('TRAFFIC_LIGHT_COUNTRY should be set to UK or USA')
    sys.exit(1)

# Setup
GPIO.setmode(GPIO.BCM)
GPIO.setup(9, GPIO.OUT)
GPIO.setup(10, GPIO.OUT)
GPIO.setup(11, GPIO.OUT)

# Turn off all lights when user ends demo
def allLightsOff(signal, frame):
    GPIO.output(9, False)
    GPIO.output(10, False)
    GPIO.output(11, False)
    GPIO.cleanup()
    sys.exit(0)
```

```
signal.signal(signal.SIGINT, allLightsOff)

# Loop forever
while True:
    # Red GPIO.output(9,
    True) time.sleep(3)

    # Red and amber for UK only
    if (pattern == 'uk'):
        GPIO.output(10, True)

    time.sleep(1)

    # Green
    GPIO.output(9, False)
    GPIO.output(10, False)
    GPIO.output(11, True)
    time.sleep(5)

    # Amber, longer in US than UK
    GPIO.output(11, False)
    GPIO.output(10, True)
    if (pattern == 'uk'):
        time.sleep(2)
    else:
        time.sleep(3)

    # Amber off (red comes on at top of loop)
    GPIO.output(10, False)
```