

# BLINKING LED AND TRAFFIC LIGHTS FOR RASPBERRY PI

## BLINKING LED

```
import RPi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO.setup(21,GPIO.OUT)

while(1):

    GPIO.output(21,GPIO.HIGH)

    time.sleep(1)

    GPIO.output(21,GPIO.LOW)

    time.sleep(1)
```

## TRAFFIC LIGHTS

```
import sys

import RPi.GPIO as GPIO

from threading import Timer

GPIO.setwarnings(False)

GPIO.setmode(GPIO.BOARD)

aLights = {

    "north": [36, 38, 40],

    "east": [33, 31, 29]

}
```

```
for i in aLights["north"]:
    GPIO.setup(i, GPIO.OUT)

for i in aLights["east"]:
    GPIO.setup(i, GPIO.OUT)

iLightDelay = 2
iGreenTime = 8
bOrangeBeforeGreen = False
sGreen = "north"

def init():
    changeLightTo("north", "red")
    changeLightTo("east", "red")
    Timer(iLightDelay, startUp).start()

def startUp():
    if bOrangeBeforeGreen == True:
        changeLightTo("north", "redorange")
        Timer(iLightDelay, changeNorthToGreen).start()
    else:
        changeNorthToGreen()

def changeNorthToGreen():
    changeLightTo("north", "green")
    switchLights()

def switchLights():
    Timer(iGreenTime, switchLightsTimed).start()
```

```

def switchLightsTimed():
    global sGreen
    if sGreen == "north":
        s1 = "north"
        s2 = "east"
    else:
        s1 = "east"
        s2 = "north"

    changeLightTo(s1, "yellow")
    if bOrangeBeforeGreen == True:
        changeLightTo(s2, "redorange")
    Timer(iLightDelay, switchLightsFinal, (s1, s2)).start()

def switchLightsFinal(s1, s2):
    global sGreen
    changeLightTo(s1, "red")
    changeLightTo(s2, "green")
    sGreen = s2
    switchLights()

def changeLightTo(sLight, sColor):
    turnAllOff(sLight)

```

```
if sColor == "red":
    setLed(aLights[sLight][0], "on")

elif sColor == "yellow":
    setLed(aLights[sLight][1], "on")

elif sColor == "green":
    setLed(aLights[sLight][2], "on")

elif sColor == "redorange":
    setLed(aLights[sLight][0], "on")
    setLed(aLights[sLight][1], "on")

def turnAllOff(sLight):
    for i in aLights[sLight]:
        setLed(i, "off")

def setLed(iLed, sState):
    if sState == "on":
        GPIO.output(iLed, True)
    else:
        GPIO.output(iLed, False)

init()
```