

# **IBM-Nalaiya Thiran Project**

## **Assignment-3**

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**2019503534**

**1). Write python code for blinking LED for Ras berry Pi.**

### **SOURCE CODE:**

```
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()
```

## **2). Write python code for traffic lights using Ras berry Pi.**

### **SOURCE CODE:**

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

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

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)
```

```
while True:
    # Red
    GPIO.output(9, True)
    time.sleep(3)
    # Red and amber
    GPIO.output(10, True)
    time.sleep(1)
    # Green
    GPIO.output(9, False)
    GPIO.output(10, False)
    GPIO.output(11, True)
    time.sleep(5)
    # Amber
    GPIO.output(11, False)
    GPIO.output(10, True)
    time.sleep(2)
    # Amber off (red comes on at top of loop)
    GPIO.output(10, False)
```