

Assignment -3
Python Programming for Raspberry pi

Assignment Date	28 September 2022
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Maximum Marks	2 Marks

Question-1:

Write python code for blinking LED and Traffic lights for Raspberry pi.

Only python code is enough, no need to execute in raspberry pi.

Note: you are allowed to use web search and complete the assignment.

SOLUTION :

PYTHON CODE FOR BLINKING LED FOR RASPBERRY PI

```
import RPi.GPIO as GPIO
import time
#assign numbering for the GPIO using BCM
GPIO.setmode(GPIO.BCM)
#assingn number for the GPIO using Board
#GPIO.setmode(GPIO.BOARD)

cnt = 0
MAIL_CHECK_FREQ = 1 # change LED status every 1 seconds
RED_LED = 4
GPIO.setup(RED_LED, GPIO.OUT)
while True:
    if cnt == 0 :
        GPIO.output(RED_LED, False)
        cnt = 1
    else:
        GPIO.output(RED_LED, True)
        cnt = 0

    time.sleep(MAIL_CHECK_FREQ)
GPIO.cleanup()
```

PYTHON CODE FOR TRAFFIC LIGHTS 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()