

R .VIJITHA

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Assignment 3:

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.

Program :

```
gpiozero import Button, TrafficLights, Buzzer
```

```
mport RPi.GPIO as GPIO
```

```
import time
```

```
from time import sleep
```

```
buzzer = Buzzer(15)
```

```
button = Button(21)
```

```
lights = TrafficLights(25, 8, 7)
```

```
while True:
```

```
    button.wait_for_press()
```

```
    buzzer.on()
```

```
    light.green.on()
```

```
    sleep(1)
```

```
    lights.amber.on()
```

```
    sleep(1)
```

```
    lights.red.on()
```

```
    sleep(1)
```

```
lights.off()
```

```
buzzer.off()
```

```
GPIO.setmode(GPIO.BCM)
```

```
GPIO.setup(LED_PIN, GPIO.OUT)
```

```
while True:
```

```
    GPIO.output(LED_PIN, GPIO.HIGH)
```

```
    time.sleep(1)
```

```
    GPIO.output(LED_PIN, GPIO.LOW)
```

```
    time.sleep(1)
```

```
GPIO.cleanup()
```

Screenshot 1 :

The screenshot displays the Visual Studio Code interface with a Python script for controlling an LED and a buzzer using the RPi.GPIO library. The script is located in the file explorer on the left, and the code editor shows the following code:

```
1 gpizero import Button, TrafficLights, Buzzer
2 import RPi.GPIO as GPIO
3 import time
4 from time import sleep
5 buzzer = Buzzer(15)
6 button = Button(21)
7 lights = TrafficLights(25, 8, 7)
8
9 while True:
10     button.wait_for_press()
11     buzzer.on()
12     light.green.on()
13     sleep(1)
14     lights.amber.on()
15     sleep(1)
16     lights.red.on()
17     sleep(1)
18     lights.off()
19     buzzer.off()
20
21 GPIO.setmode(GPIO.BCM)
22 GPIO.setup(LED_PIN, GPIO.OUT)
23
24 while True:
25     GPIO.output(LED_PIN, GPIO.HIGH)
26     time.sleep(1)
27     GPIO.output(LED_PIN, GPIO.LOW)
28     time.sleep(1)
29
30 GPIO.cleanup()
```

The output window at the bottom shows the execution of the script:

```
[Running] python -u "c:\Users\ANBURAJA\libm"
[Done] exited with code=0 in 0.344 seconds
```

The status bar at the bottom indicates the file is at line 29, column 16, using UTF-8 encoding and CRLF line endings. The system tray shows the date and time as 04-10-2022, 09:15 PM.

Screenshot 2 :

Program :

```
ers > ANBURAJA > ibm > ...
gpiozero import Button, TrafficLights, Buzzer
import RPi.GPIO as GPIO
import time
from time import sleep
buzzer = Buzzer(15)
button = Button(21)
lights = TrafficLights(25, 8, 7)

while True:
    button.wait_for_press()
    buzzer.on()
    light.green.on()
    sleep(1)
    lights.amber.on()
    sleep(1)
    lights.red.on()
    sleep(1)
    lights.off()
    buzzer.off()

GPIO.setmode(GPIO.BCM)
GPIO.setup(LED_PIN, GPIO.OUT)

while True:
    GPIO.output(LED_PIN, GPIO.HIGH)
    time.sleep(1)
    GPIO.output(LED_PIN, GPIO.LOW)
    time.sleep(1)

GPIO.cleanup()
```

Screenshot 3 :

Output :

```
PROBLEMS 15 OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
[Running] python -u "c:\Users\ANBURAJA\ibm"
[Done] exited with code=0 in 0.344 seconds

Ln 29, Col 16 Spaces: 4 UTF-8 CRLF Python 3.10.7 64-bit (microsoft store)
ENG IN 09:35 PM 04-10-2022
```