

Assignment – 3

PYTHON PROGRAM

Assignment Date	07 october 2022
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Maximum Marks	2 Marks

Question 1 :

Write a python code for blinking LED in raspberry pi.

PROGRAM :

```
#!/usr/bin/env python
```

```
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()

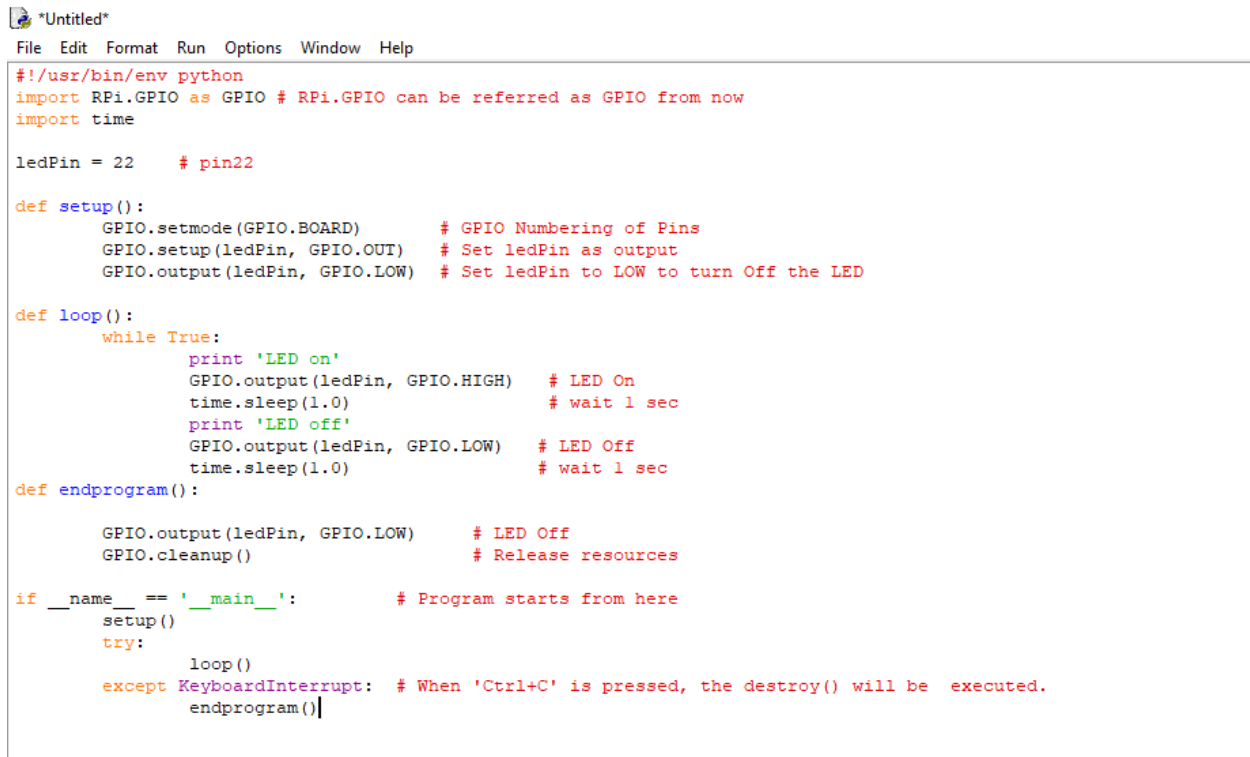
    try:

        loop()

    except KeyboardInterrupt: # When 'Ctrl+C' is pressed, the destroy() will be executed.

        endprogram()

```



```

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#!/usr/bin/env python
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__':
    setup()
    try:
        loop()
    except KeyboardInterrupt: # When 'Ctrl+C' is pressed, the destroy() will be executed.
        endprogram()

```

QUESTION-2 :

Write a python code for traffic light in raspberry pi .

PROGRAM

```
from gpiozero import Button , Trafficlights , Buzzer
```

```
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)
```

```
    light . amber . on()
```

```
    sleep(1)
```

```
    light . red . on()
```

```
    sleep(1)
```

```
    light . off()
```

```
    buzzer . off
```

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```
from gpiozero import Button, TrafficLights, Buzzer
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)
    light.amber.on()
    sleep(1)
    light.red.on()
    sleep(1)
    light.off()
    buzzer.off
```