

ASSIGNMENT-03

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Question-1:

A) Write a python program to blink an LED in Raspberry Pi.

Python code:

```
import RPi.GPIO as GPIO # Import Raspberry Pi GPIO library from time
import sleep # Import the sleep function from the time module
GPIO.setwarnings(False) # Ignore warning for now
GPIO.setmode(GPIO.BOARD) # Use physical pin numbering
GPIO.setup(8, GPIO.OUT, initial=GPIO.LOW) # Set pin 8 to be an output
pin and set initial value to low (off) while True: # Run forever
GPIO.output(8, GPIO.HIGH) # Turn on sleep(1) # Sleep for 1 second
GPIO.output(8, GPIO.LOW) # Turn off sleep(1) # Sleep for 1 second
```

B) Write a python code for blinking Traffic lights for Raspberry Pi.

Python code:

```
from gpiozero import Button, TrafficLights
from time import sleep
button = Button(21)
lights = TrafficLights(25, 8, 7)
while True:
    button.wait_for_press()
    light.green.on()
    sleep(1)
    lights.amber.on()
    sleep(1)
    lights.red.on()
    sleep(1)
    lights.off()
```

CODE:

```
from gpiozero import Button  
  
button = Button(21)  
  
while True:  
    print(button.is_pressed)  
while True:  
    if button.is_pressed:  
        print("Hello")  
    else:  
        print("Goodbye")  
while True:  
    button.wait_for_press()  
    print("Pressed")  
    button.wait_for_release()  
    print("Released")
```

Adding an LED:

```
from gpiozero import Button, LED  
led = LED(25)  
while True:  
    button.wait_for_press()  
    led.on()  
    button.wait_for_release()  
    led.off()  
while True:  
    led.on()  
    button.wait_for_press()  
    led.off()  
    button.wait_for_release()  
while True:  
    led.blink()  
    button.wait_for_press()  
    led.off()
```

```
button.wait_for_release()
```

Traffic lights

```
from gpiozero import Button, TrafficLights  
lights = TrafficLights(25, 8, 7)  
while True:  
    button.wait_for_press()  
    lights.on()  
    button.wait_for_release()  
    lights.off()  
while True:  
    lights.blink()  
    button.wait_for_press()  
    lights.off()  
    button.wait_for_release()
```

Traffic lights sequence

```
from time import sleep  
while True:  
    lights.green.on()  
    sleep(1)  
    lights.amber.on()  
    sleep(1)  
    lights.red.on()  
    sleep(1)  
    lights.off()  
while True:  
    button.wait_for_press()  
    lights.green.on()  
    sleep(1)  
    lights.amber.on()  
    sleep(1)  
    lights.red.on()  
    sleep(1)  
    lights.off()
```

