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QN: 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.

Raspberry Pi python code :

```
import RPi.GPIO as GPIO
```

```
import time
```

```
# Using physical pin locations
```

```
GPIO.setmode(GPIO.BOARD)
```

```
# Pin header IDs for LEDs and button
```

```
YellowLed = 35
```

```
RedLed = 33
```

```
GreenLed = 37
```

```
safeCrossing = 38
```

```
button = 11
```

```
# Set up LEDs
```

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

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

GPIO.setup(GreenLed, GPIO.OUT)

GPIO.setup(safeCrossing, GPIO.OUT)

GPIO.output(RedLed, GPIO.HIGH)

GPIO.output(YellowLed, GPIO.HIGH)

GPIO.output(GreenLed, GPIO.HIGH)

# Set up button

GPIO.setup(button,GPIO.IN,pull_up_down=GPIO.PUD_DOWN)

def cycleLights ():

    print ('Traffic: GREEN off, AMBER on')

    GPIO.output(GreenLed, GPIO.HIGH)

    GPIO.output(YellowLed, GPIO.LOW)

    time.sleep(1)

    print ('Traffic: AMBER off, RED on')

    GPIO.output(YellowLed, GPIO.HIGH)

    GPIO.output(RedLed, GPIO.LOW)

    time.sleep(1)

    print ('Pedestrian: Safe to cross on')
```

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

time.sleep(5)

print ('Pedestrian: Safe to cross flashing')

for flash in range(0, 5):

    GPIO.output(safeCrossing, GPIO.HIGH)

    time.sleep(0.8)

    GPIO.output(safeCrossing, GPIO.LOW)

    time.sleep(0.8)

print ('Pedestrian: Safe to cross off')

GPIO.output(safeCrossing, GPIO.HIGH)

time.sleep(1)

print ('Traffic: AMBER and RED on')

GPIO.output(YellowLed, GPIO.LOW)

time.sleep(1.5)

print ('Traffic: AMBER and RED off, GREEN on')

GPIO.output(RedLed, GPIO.HIGH)

GPIO.output(YellowLed, GPIO.HIGH)

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

```
print ('Pedestrian button blocked to let traffic flow')

time.sleep(4)

print ('Pedestrian button unblocked')

return

def teardown ():

    GPIO.output(RedLed, GPIO.HIGH)

    GPIO.output(YellowLed, GPIO.HIGH)

    GPIO.output(GreenLed, GPIO.HIGH)

    GPIO.cleanup()

    return

try:

    while True:

        ButtonPress = False

        # Lights start with the green traffic light on

        # and the pedestrian light off

        GPIO.output(GreenLed, GPIO.LOW)

        GPIO.output(safeCrossing, GPIO.HIGH)

        # Wait until button is presses

        print ('Waiting for a pedestrian to press the button', end="")
```

```
while not ButtonPress:
```

```
# Check every 2 seconds for a press
```

```
print('.', end="")
```

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

```
ButtonPress = GPIO.input(button)
```

```
print ("\nPadestrian button press detected!")
```

```
cycleLights()
```

```
except KeyboardInterrupt:
```

```
teardown()
```