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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.

Rasberry 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 ('Padestrian: Safe to cross on')
```

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

time.sleep(5)

print ('Padestrian: 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 ('Padestrian: 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 ('Padestrian button blocked to let traffic flow')

time.sleep(4)

print ('Padestrian 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 padestrian light off

GPIO.output(GreenLed, GPIO.LOW)

GPIO.output(safeCrossing, GPIO.HIGH)


# Wait until button is presses

print ('Waiting for a padestrian 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()
```