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PROJECT:INTERNET OF THINGS(PERSONAL ASSISTANCE FOR ELDERLY PEOPLE)

ASSIGNMENT 3

INTERNET OF THINGS

PROBLEM STATEMENT:

TO MAKE A PYTHON CODE FOR TRAFFIC LIGHTS USING LED

PROGRAM:

```
import RPi.GPIO as GPIO

import time

import signal

import sys

GPIO.setmode(GPIO.BCM)

GPIO.setup(9, GPIO.OUT)

GPIO.setup(10, GPIO.OUT)

GPIO.setup(11, GPIO.OUT)

def allLightsOff(signal, frame):

    GPIO.output(9, False)

    GPIO.output(10, False)

    GPIO.output(11, False)

    GPIO.cleanup()

    sys.exit(0)

signal.signal(signal.SIGINT, allLightsOff)

while True:

    # Red

    GPIO.output(9, True)

    time.sleep(3)
```

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```
# Red and amber

GPIO.output(10, True)

time.sleep(1)

# Green

GPIO.output(9, False)

GPIO.output(10, False)

GPIO.output(11, True)

time.sleep(5)

# Amber

GPIO.output(11, False)

GPIO.output(10, True)

time.sleep(2)

# Amber off (red comes on at top of loop)

GPIO.output(10, False)
```

WORKING OF PROGRAM:

we put the GPIO library into “BCM” or “Broadcom” mode (so we can refer to pins by the same numbers as are labeled with in GPIO pin diagrams), and sets pins 9 (red LED), 10 (amber LED) and 11 (green LED) to be used as

The main part of the program will run in an infinite loop until the user exits it by stopping Python with Ctrl-C. It’s a good idea to add a handler function that will run whenever this happens, so that we can turn off all the lights prior to exiting (thus ensuring they’ll also be in the state we expect them to start in the next time the program is run):

The main body of the code then consists of an infinite while loop that turns on the red light (pin 9), waits, turns on the amber light (pin 10), waits, then cycles through the rest of the traffic light pattern by turning the appropriate LEDs on and off:

When Control-C is pressed an interrupt signal signal.SIGINT is sent. This is handled by the allLightsOff function that switches all the lights off, tidies up the GPIO library state and exits cleanly back to the operating system.