IBM ASSIGNMENT-3

Assignment Date	06 October 2022
Student Name	Durga Devi.S
Student Roll Number	510119104007
Maximum Marks	2marks

ASSIGNMENT DETAILS:

Technology: IOT

Domain: Smart solution for railways

ASSIGNMENT QUESTION

Write a python code for blinking LED and Traffic lights for Raspberry pi.

CODE:

1. Blinking LED

```
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
```

2. Traffic lights

```
import RPi.GPIO as GPIO
import time
import signal
import sys

#Setup
GPIO.setmode(GPIO.BCM)
GPIO.setup(9, GPIO.OUT)
GPIO.setup(10, GPIO.OUT)
GPIO.setup(11, GPIO.OUT)

#Turn off all lights when user ends demo
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)

#Loop forever
while True:
    #Red
    GPIO.output(9, True)
    time.sleep(3)
    #Red and yellow
    GPIO.output(10, True)
    time.sleep(1)
    #Yellow
    GPIO.output(11, False)
    GPIO.output(10, True)
    time.sleep(2)
    #Yellow off(red comes on at top of loop)
    GPIO.output(10, False)
    #Green
    GPIO.output(9, False)
    GPIO.output(10, False)
    GPIO.output(11, True)
    time.sleep(5)
```

Screenshot of code for Blinking LED

```
import RPi.GPIO as GPIO                    #Import raspberry Pi GPIO library
from time import sleep                     #Import the sleep function from the time module

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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
```
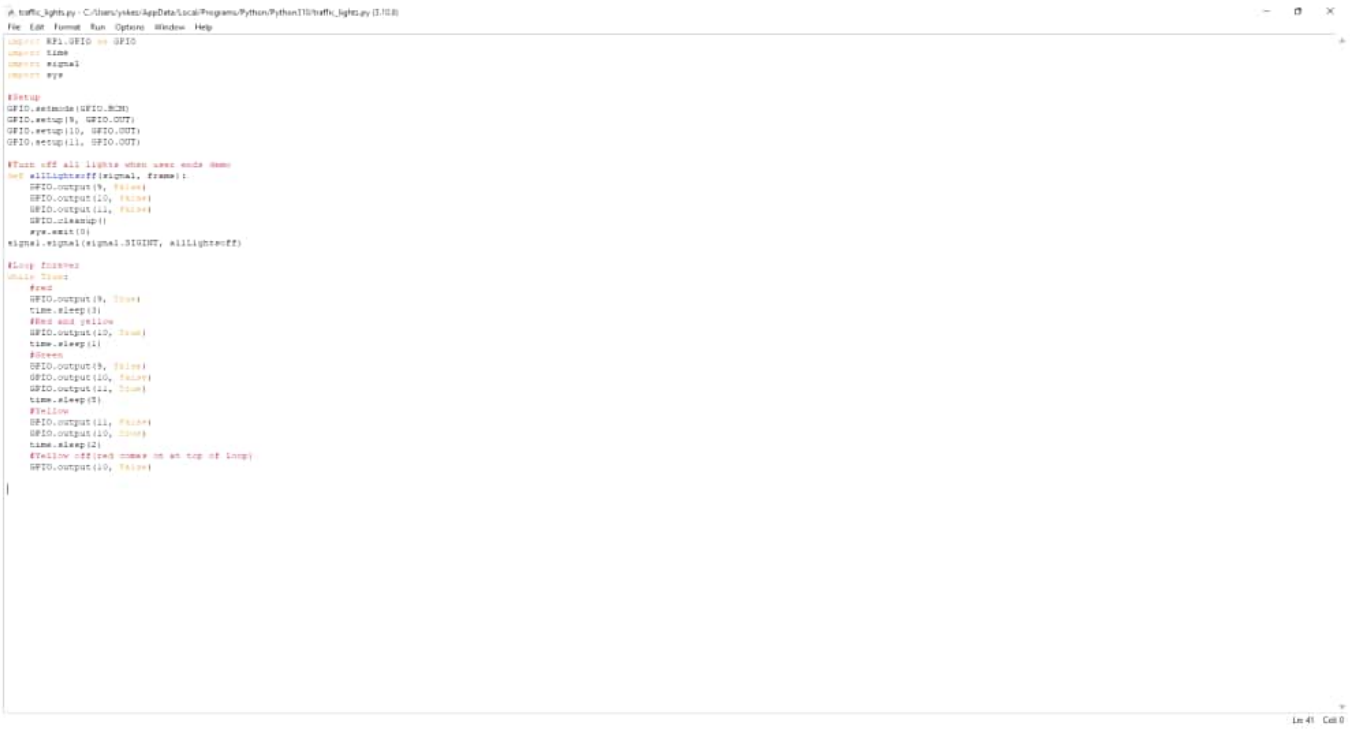

Screenshot of code for Traffic lights code



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    sys.exit(0)
signal.signal(signal.SIGINT, allLightsoff)

#Loop forever
while True:
    #red
    GPIO.output(9, True)
    time.sleep(3)
    #Red and yellow
    GPIO.output(10, True)
    time.sleep(1)
    #Green
    GPIO.output(9, False)
    GPIO.output(10, False)
    GPIO.output(11, True)
    time.sleep(5)
    #Yellow
    GPIO.output(11, False)
    GPIO.output(10, True)
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    #Yellow off(red comes on at top of loop)
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