SMART FARMER – IoT ENABLED SMART FARMER APPLICATION

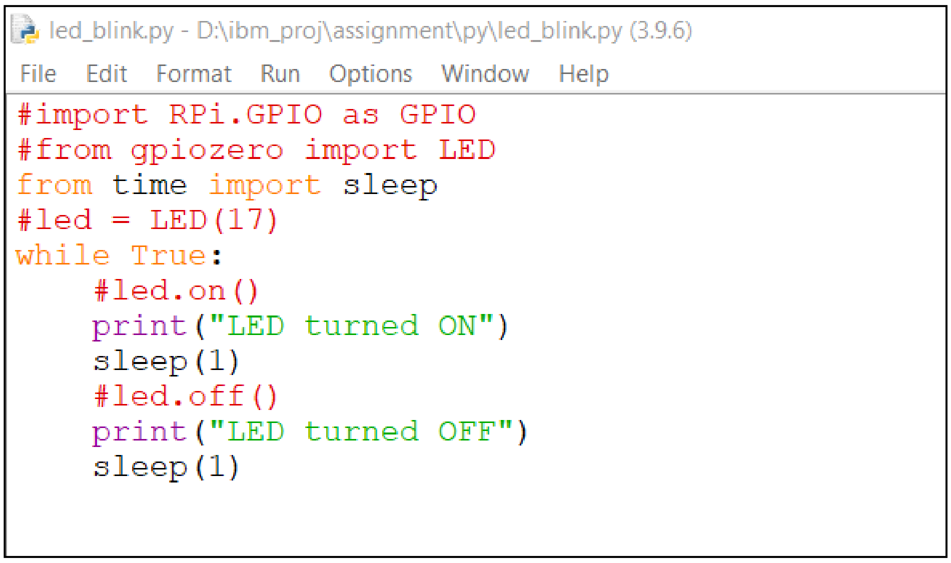
ASSIGNMENT - 3

Write a python code for blinking LED and Traffic Lights for Raspberry Pi.

(i) Python Code for Blinking LED:

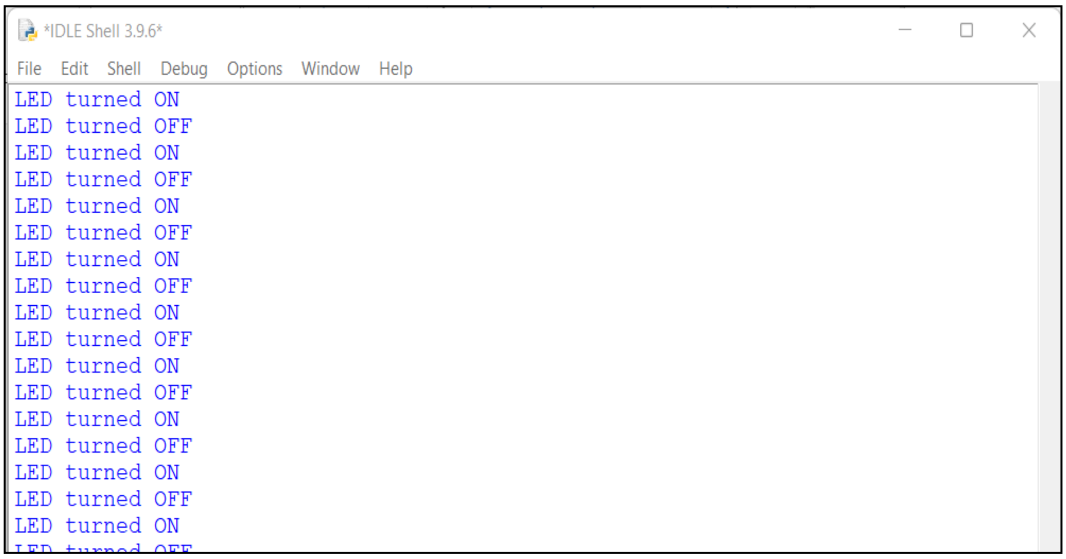
```
#import RPi.GPIO as GPIO
#from gpiozero import LED
from time import sleep
#led = LED(17)
while True:
  #led.on()
  print("LED turned ON")
  sleep(1)
  #led.off()
  print("LED turned OFF")
  sleep(1)
```

Editor Window:


led_blink.py - D:\ibm_proj\assignment\py\led_blink.py (3.9.6)
File Edit Format Run Options Window Help

```
#import RPi.GPIO as GPIO
#from gpiozero import LED
from time import sleep
#led = LED(17)
while True:
    #led.on()
    print("LED turned ON")
    sleep(1)
    #led.off()
    print("LED turned OFF")
    sleep(1)
```

Output Window:



```
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
LED turned OFF
LED turned ON
```

(ii) Python Code for 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

def allLightOff(signal, frame):

   GPIO.output(9,False)

   GPIO.output(10,False)

   GPIO.output(11,False)

   GPIO.cleanup()

   sys.exit(0)

signal.signal(signal.SIGINT, allLightsOff)

#Forever Loop

while True:

   #Red
```

```
GPIO.output(9, True)

time.sleep(3)

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)

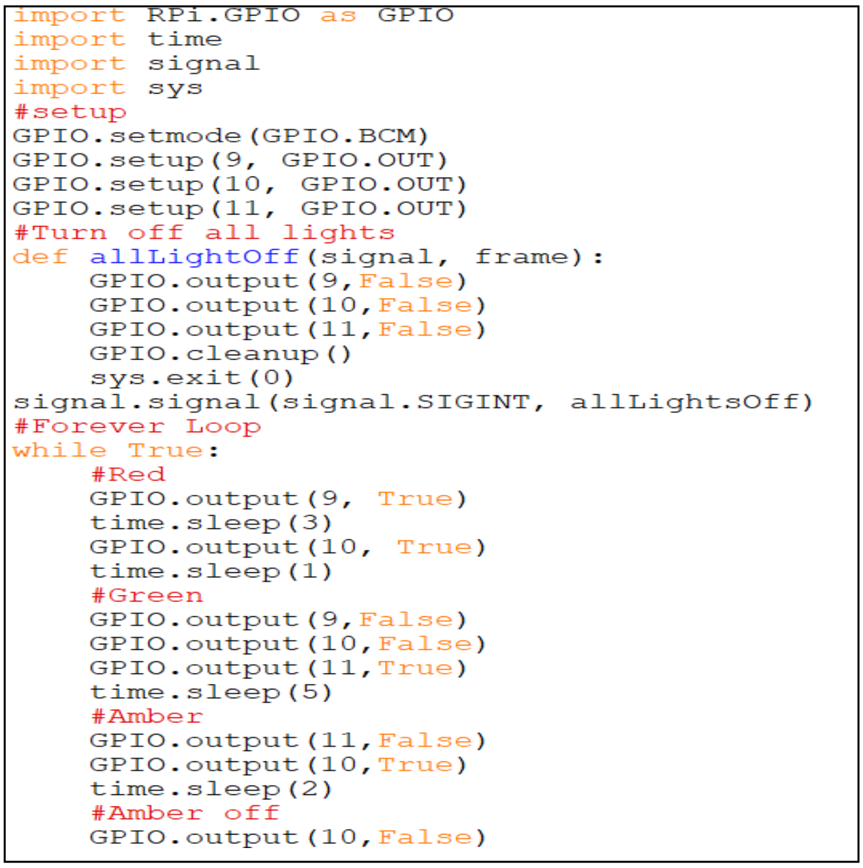
GPIO.output(10,True)

time.sleep(2)

#Amber off

GPIO.output(10,False)
```

Editor Window:



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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
def allLightOff(signal, frame):
    GPIO.output(9,False)
    GPIO.output(10,False)
    GPIO.output(11,False)
    GPIO.cleanup()
    sys.exit(0)
signal.signal(signal.SIGINT, allLightsOff)
#Forever Loop
while True:
    #Red
    GPIO.output(9, True)
    time.sleep(3)
    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
    GPIO.output(10,False)
```