

Assignment -3
Python Programming

Assignment Date	1 October 2022
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Question-1:

Write a python code for Blinking LED for Raspberry Pi.

Blinking LED – Python Code for Raspberry Pi

```
import RPi.GPIO as GPIO # Import Raspberry Pi GPIO library

import time # Import the time module

LED_PIN = 17 # Set the PIN number for the LED

GPIO.setmode(GPIO.BCM) # Use BCM pin numbering

GPIO.setup(LED_PIN, GPIO.OUT) # Set LED_PIN (17) to be an output pin and set initial value to LOW (OFF).

try: # executes by default, when no interrupt from keyboard is made.

    while True:

        GPIO.output(LED_PIN, GPIO.HIGH) # set LED_PIN (17) to HIGH (ON).

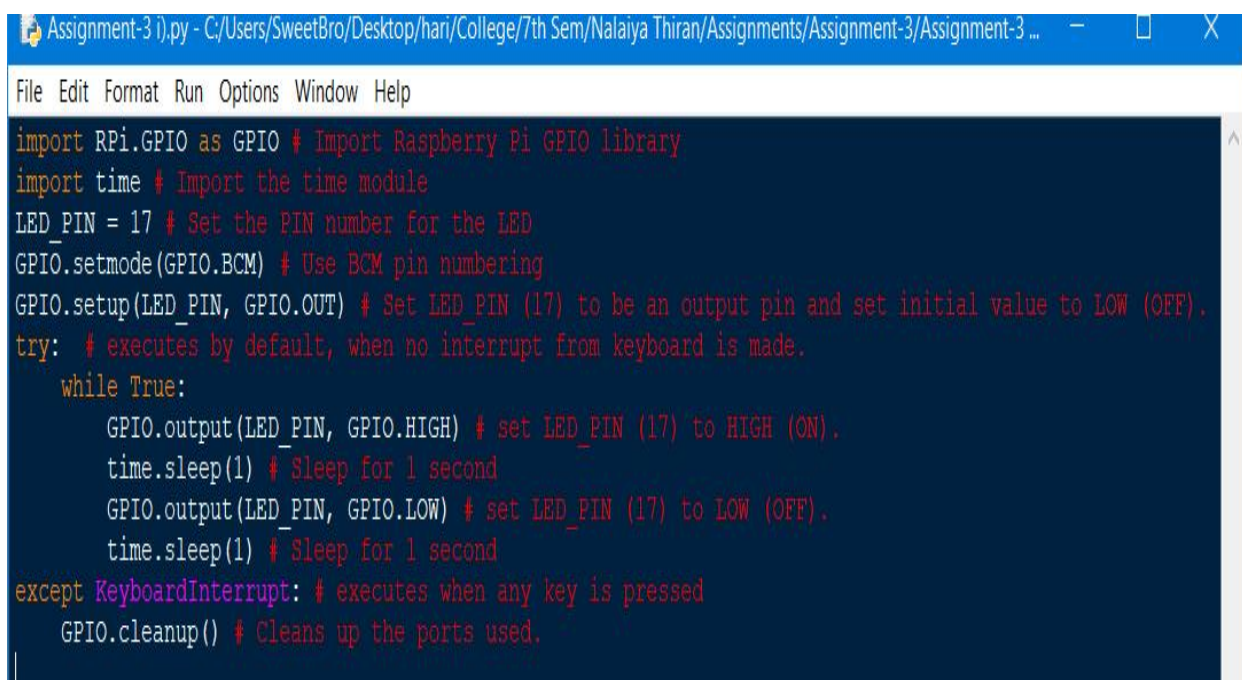
        time.sleep(1) # Sleep for 1 second

        GPIO.output(LED_PIN, GPIO.LOW) # set LED_PIN (17) to LOW (OFF).

        time.sleep(1) # Sleep for 1 second

except KeyboardInterrupt: # executes when any key is pressed

    GPIO.cleanup() # Cleans up the ports used.
```

A screenshot of a Python IDE window titled "Assignment-3 i).py". The window shows the same Python code for blinking an LED as provided in the previous block. The code is displayed on a dark blue background with syntax highlighting: keywords like 'import', 'while', 'except', and 'try' are in orange; comments are in red; and function calls and variables are in white. The IDE has a menu bar with "File", "Edit", "Format", "Run", "Options", "Window", and "Help". The file path in the title bar is "C:/Users/SweetBro/Desktop/hari/College/7th Sem/Nalaiya Thiran/Assignments/Assignment-3/Assignment-3 ...".

Write a python code for Traffic Lights Simulation for Raspberry Pi.

Traffic Lights – Python Code for Raspberry Pi

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

red = 17 # Set the PIN number for the red light
yellow = 22 # Set the PIN number for the yellow light
green = 27 # Set the PIN number for the green light

GPIO.setmode(GPIO.BCM) # Use BCM pin numbering

# Set the red, green and yellow lights PINs as OUTPUT pins.

GPIO.setup(red, GPIO.OUT)

GPIO.setup(yellow, GPIO.OUT)

GPIO.setup(green, GPIO.OUT)

while True:

    GPIO.output(red, GPIO.HIGH) # turn ON RED signal.

    GPIO.output(yellow, GPIO.LOW) # turn OFF yellow signal.

    GPIO.output(green, GPIO.LOW) # turn OFF green signal.

    time.sleep(60) # Sleep for 60 seconds

    GPIO.output(red, GPIO.LOW) # turn OFF RED signal.

    GPIO.output(yellow, GPIO.HIGH) # turn ON yellow signal.

    time.sleep(5) # Sleep for 5 seconds

    GPIO.output(yellow, GPIO.LOW) # turn OFF yellow signal.

    GPIO.output(green, GPIO.HIGH) # turn ON green signal

    time.sleep(30) # Sleep for 30 seconds
```

