**Assignment -1**

Python Programming

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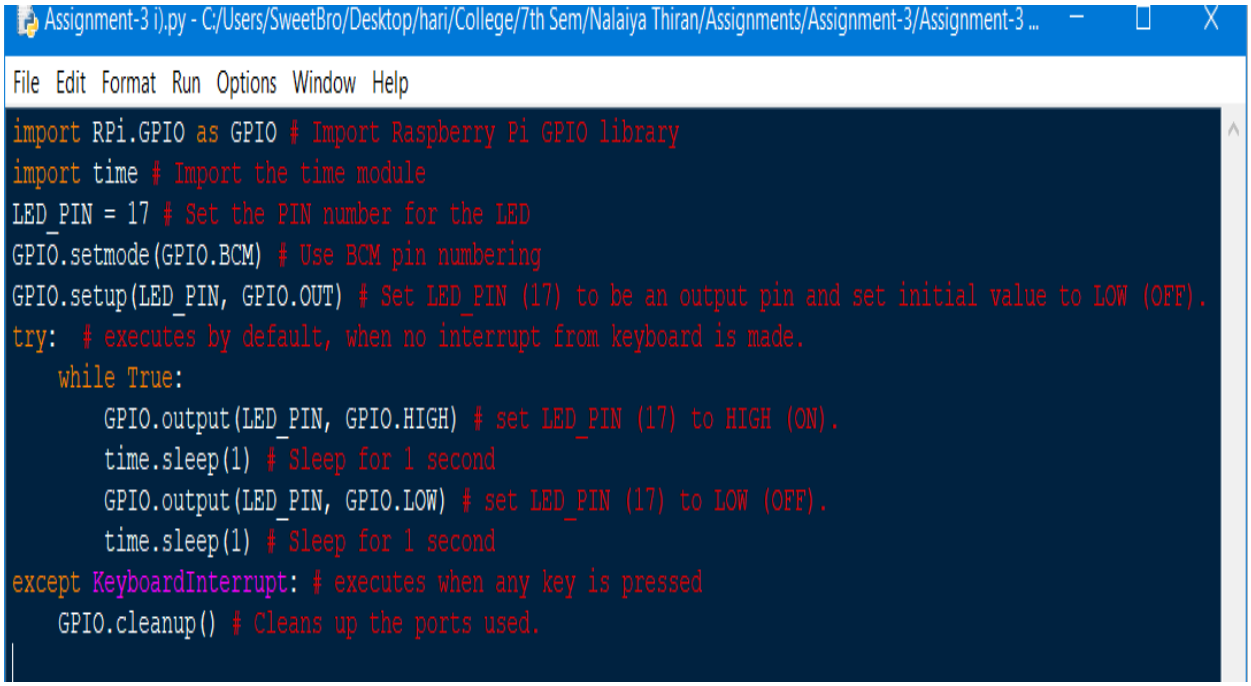
| Assignment Date | 1 October 2022 |
| Student Name | Haribooobaalan P N |
| Student Roll Number | 722819104042 |
| Maximum Marks | 2 Marks |

**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.
```



**Question-2:**

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
```