Assignment-3

Smart Waste Management System

Python Code For Blinking LED:

```
import RPI.GPIO as GPIO

import time

leo Pin=22

def setup():

        GPIO.setnode(GPIO.BOARD)

        GPIO.setup(ledPin,GPIO.OUT)

        GPIO.output(ledPin,GPIO.LOW)

def loop():

        while true:

                print 'LED on'

                GPIO.output(ledPin,GPIO.HIGH)

                Time.sleep(1.0)

                Print 'LED off'

                GPIO.output(ledPin,GPIO.LOW)

                Time.sleep(1.0)

def endprogram():

                GPIO.output(ledPin,GPIO.LOW)

                GPIO.cleanup()

if_name__ == '__ main__ ':

        setup()

        try:
```
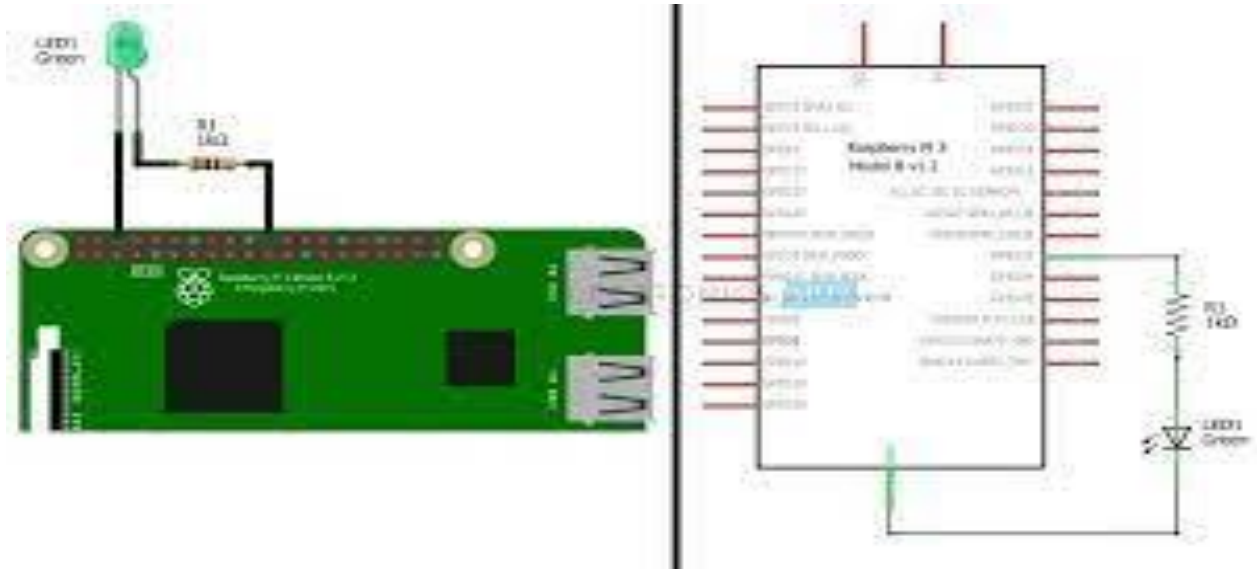
```
            loop()
    except keyboardInterrupt:
        endprogram()
```

Circuit Diagram:

Python Code For Traffic Light For Raspberry pi:

Traffic Light:

```python
from gpiozero import Button
button = Button(21)
while True:
    print(button.is_pressed)
while True:
    if button.is_pressed:
        print("Hello")
    else:
        print("Goodbye")
while True:
    button.wait_for_press()
```

```python
    print("Pressed")
    button.wait_for_release()
    print("Released")
```

Add An LED

```python
from gpiozero import Button, LED
led = LED(25)
while True:
    button.wait_for_press()
    led.on()
    button.wait_for_release()
    led.off()
while True:
    led.on()
    button.wait_for_press()
    led.off()
    button.wait_for_release()
while True:
    led.blink()
    button.wait_for_press()
    led.off()
    button.wait_for_release()
```

Traffic Lights:

```python
from gpiozero import Button, TrafficLights
lights = TrafficLights(25, 8, 7)
while True:
    button.wait_for_press()
    lights.on()
```

```python
    button.wait_for_release()
    lights.off()
while True:
    lights.blink()
    button.wait_for_press()
    lights.off()
    button.wait_for_release()
```

Add A Buzzer:

```python
from gpiozero import Button, TrafficLights, Buzzer
buzzer = Buzzer(15)
while True:
    lights.on()
    buzzer.off()
    button.wait_for_press()
    lights.off()
    buzzer.on()
    button.wait_for_release()
    while True:
        lights.blink()
        buzzer.beep()
        button.wait_for_press()
        lights.off()
        buzzer.off()
        button.wait_for_release()
```

Traffic lights sequence

```python
from time import sleep
while True:
    lights.green.on()
    sleep(1)
    lights.amber.on()
    sleep(1)
    lights.red.on()
    sleep(1)
lights.off()
while True:
    button.wait_for_press()
    lights.green.on()
    sleep(1)
    lights.amber.on()
    sleep(1)
    lights.red.on()
    sleep(1)
    lights.off()
```

Circuit Diagram: