SPRINT – 3

Assignment Date	15 NOVEMBER 2022
Team ID	PNT2022TMID42272
Project Tittle	Smart Waste Management system for metropolitan cities

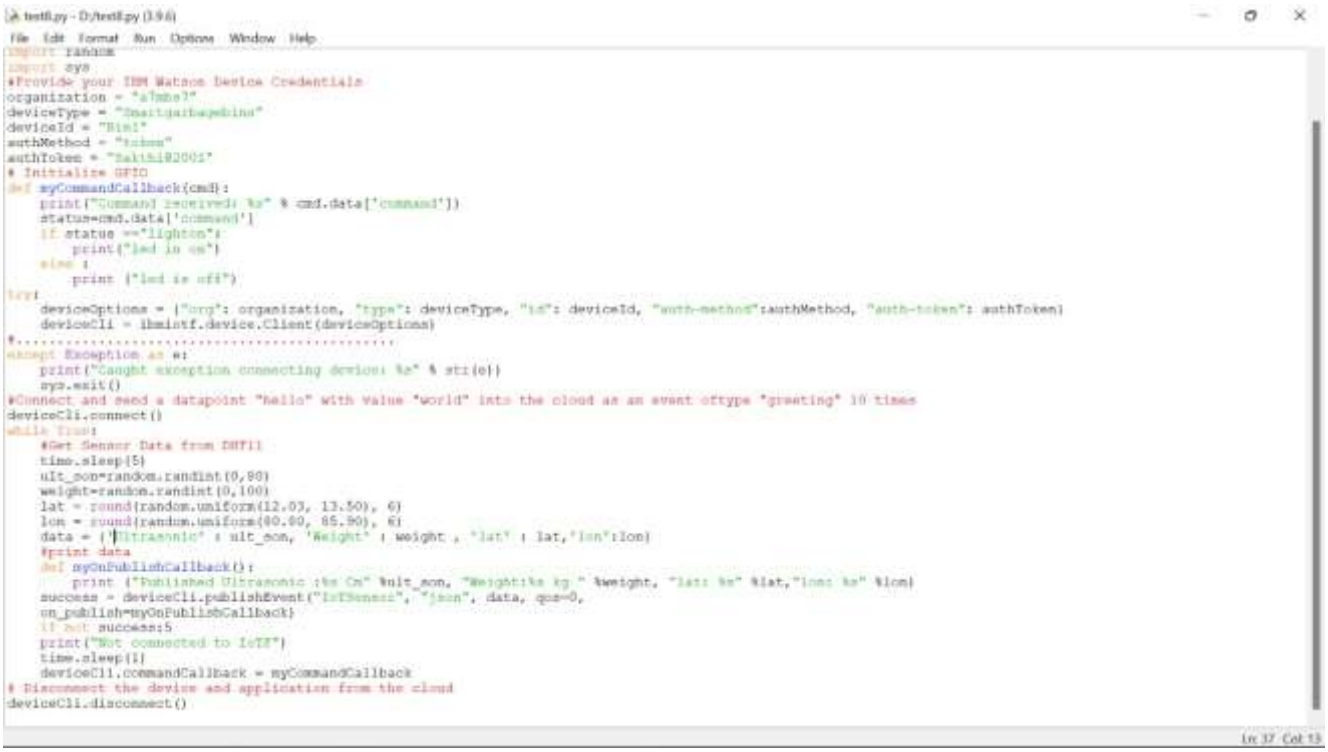
Create a node red application UI.

Code:

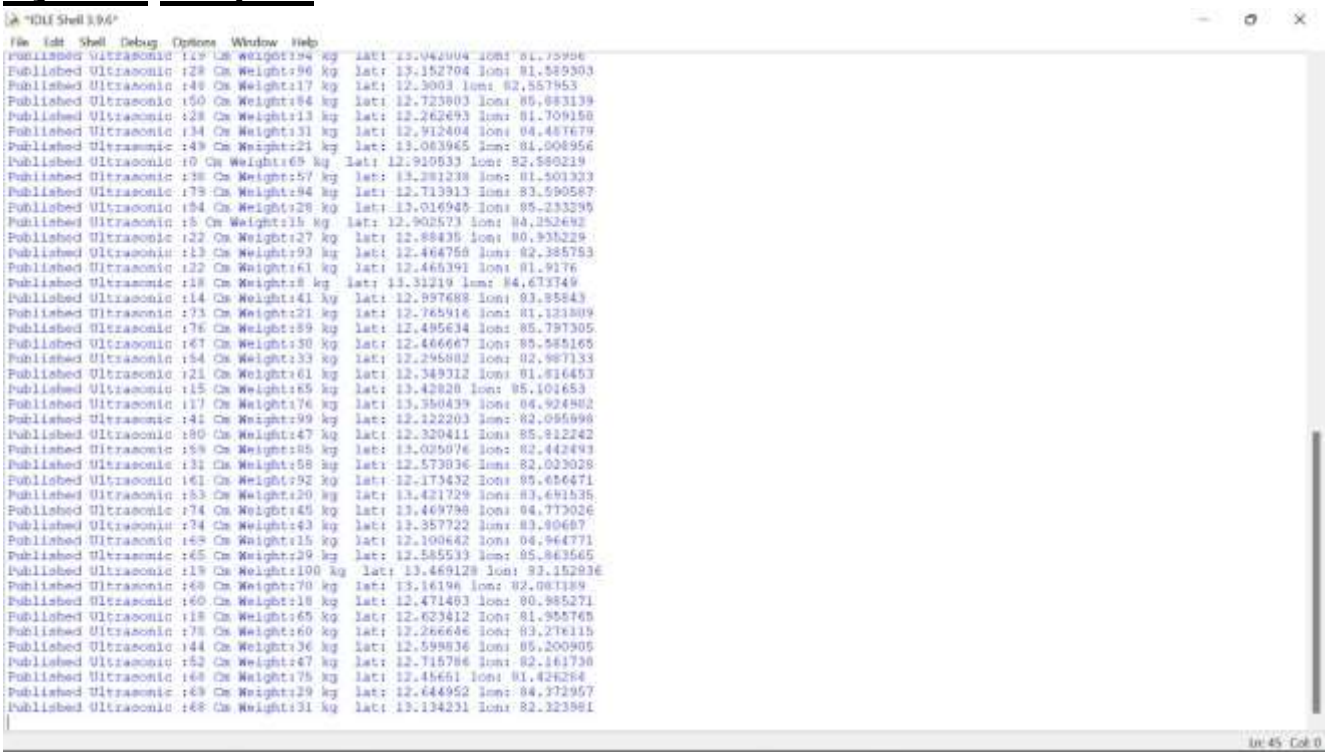
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
import sys
#Provide your IBM Watson Device Credentials
organization = "a7mbs7"
deviceType = "Smartgarbagebins"
deviceId = "Bin1"
authMethod = "token"
authToken = "Sakthi@2001"
# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status =="lighton":
        print("led in on")
    else :
```

```
        print ("led is off")
try:
    deviceOptions = {"org": organization, "type": deviceType, "id":
deviceId, "auth-method":authMethod, "auth-token": authToken}
    deviceCli = ibmiotf.device.Client(deviceOptions)
#.....................................
except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
    sys.exit()
#Connect and send a datapoint "hello" with value "world" into the
cloud as an event oftype "greeting" 10 times
deviceCli.connect()
while True:
    #Get Sensor Data from DHT11
    time.sleep(5)
    ult_son=random.randint(0,80)
    weight=random.randint(0,100)
    lat = round(random.uniform(12.03, 13.50), 6)
    lon = round(random.uniform(80.80, 85.90), 6)
    data = {'Ultrasonic' : ult_son, 'Weight' : weight , 'lat' : lat,'lon':lon}
    #print data
    def myOnPublishCallback():
        print ("Published Ultrasonic :%s Cm" %ult_son, "Weight:%s kg "
%weight, "lat: %s" %lat,"lon: %s" %lon)
    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
    on_publish=myOnPublishCallback)
    if not success:5
    print("Not connected to IoTF")
    time.sleep(1)
```

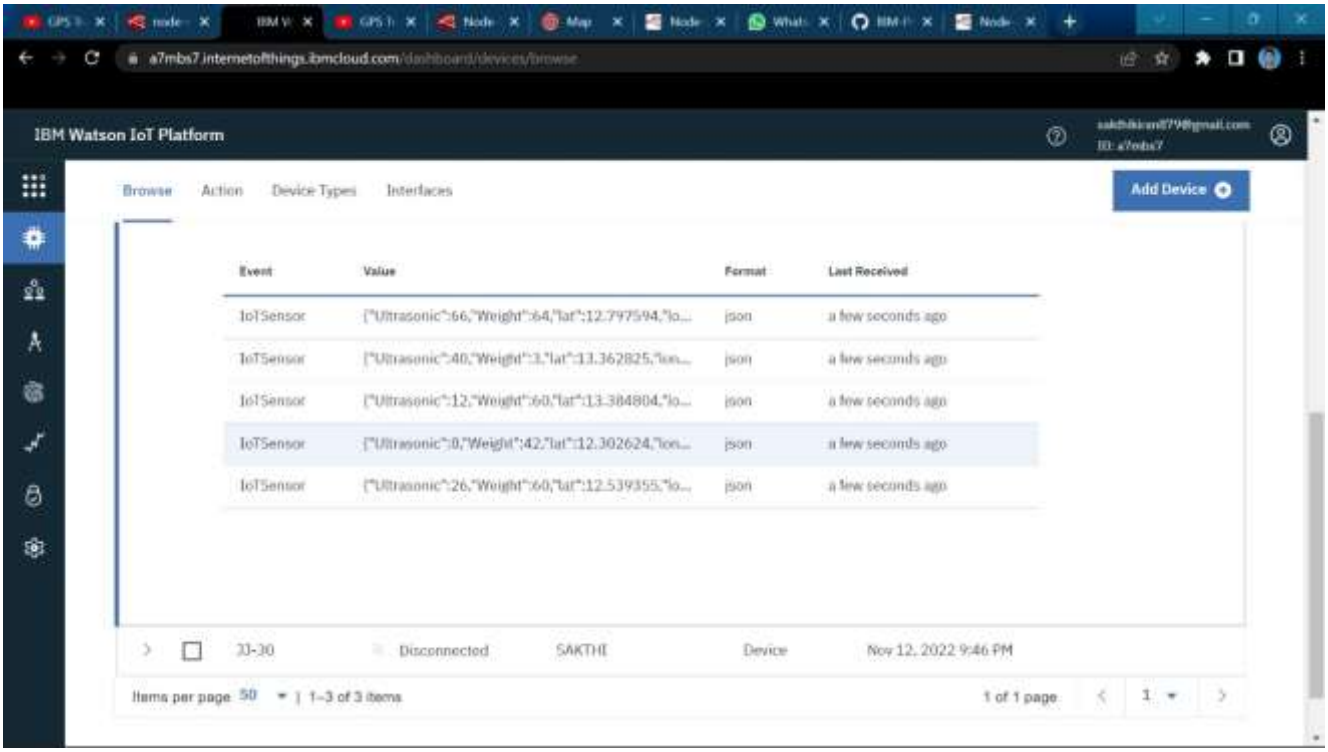
```
    deviceCli.commandCallback = myCommandCallback
# Disconnect the device and application from the cloud
deviceCli.disconnect()
```



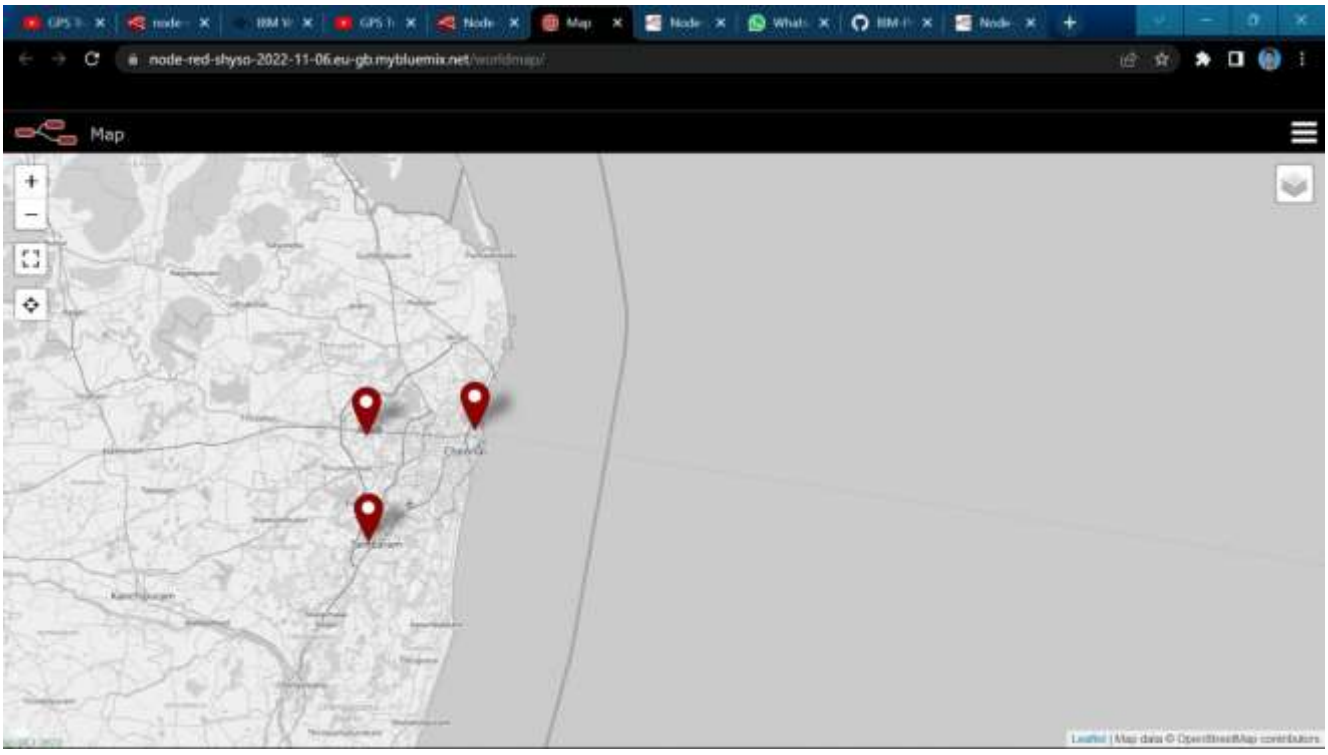
Python Output:

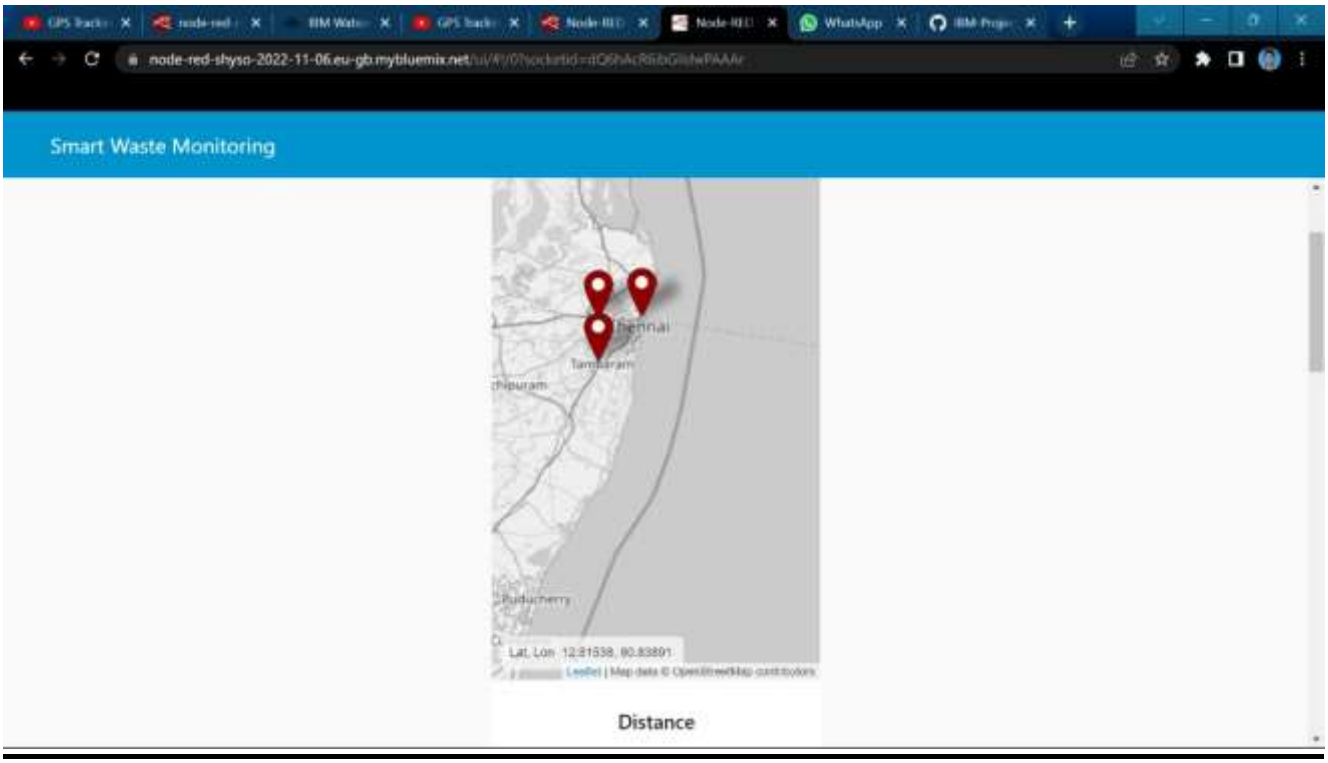


IBM Watson Output:

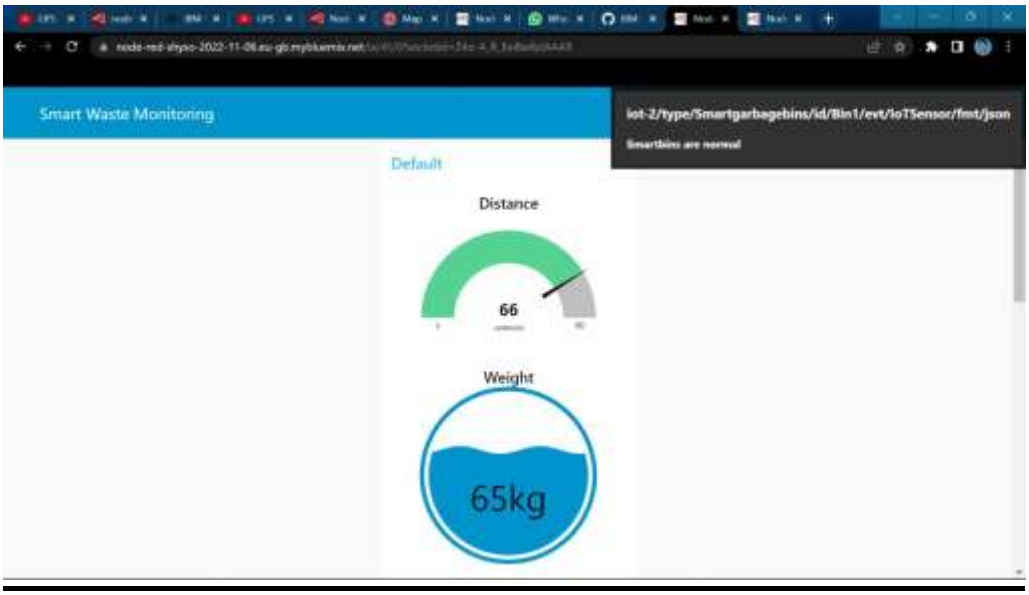


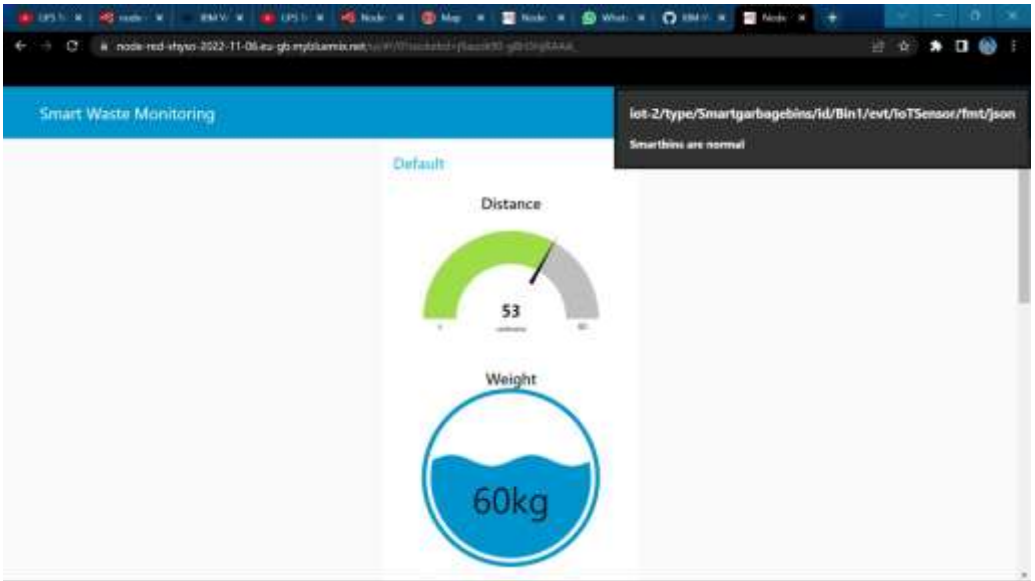
Web UI map:



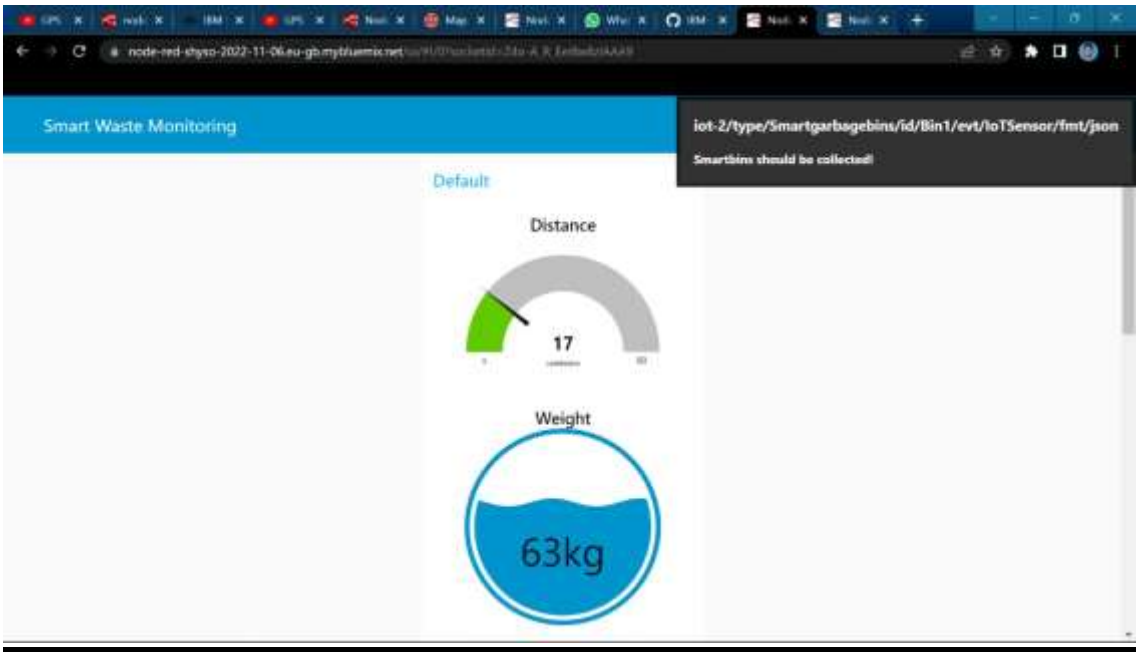


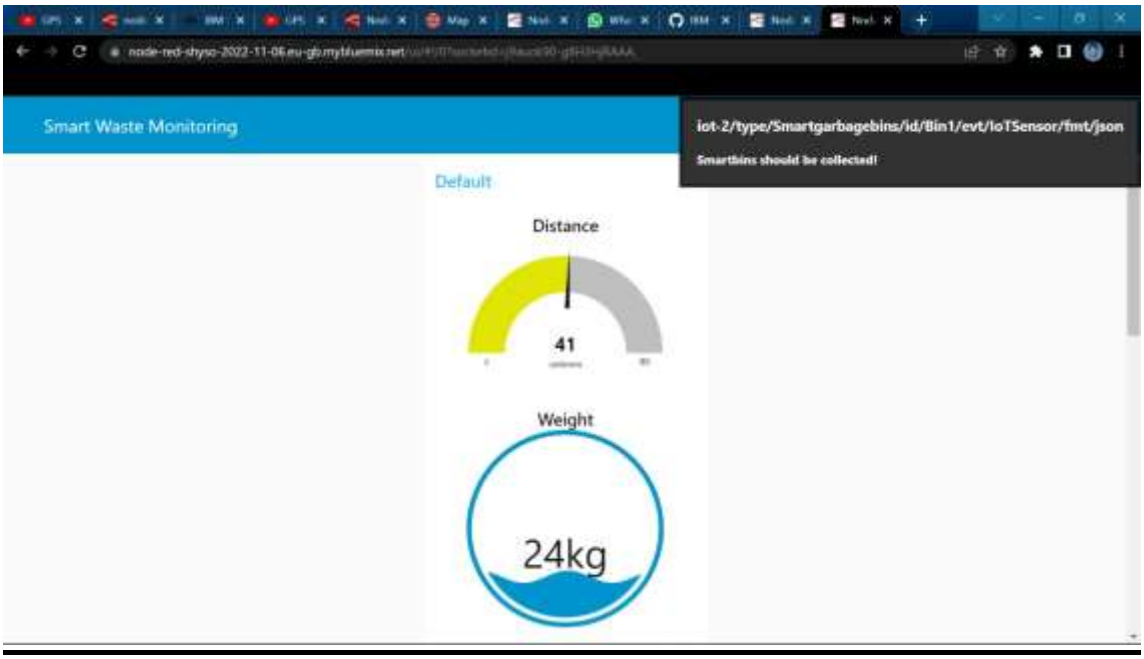
Smart bins are in normal weight:





Smart bins should be collected:





Result:

The node red application was successfully created and the weight of the smart bins are collected and the alert notifications are created successfully.