

**SPRINT-3**  
**TEAM ID: PNT2022TMID12045**

**CREATE A NODE RED WEBAPP**

```
CODE: import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "owxp6u"
deviceType = "Smartbin"
deviceId = "Bin1"
authMethod = "token"
authToken = "12345678910"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status = cmd.data['command']
    if status == "lighton":
        print("led is 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 of type "greeting" 10 times
deviceCli.connect()

while True:
    #Get Sensor Data from DHT11
    time.sleep(5)
    ultrasensor = random.randint(0,80)
    capacity = random.randint(0,100)
    lat = round(random.uniform(12.03,13.05),6)
    lon = round(random.uniform(80.80,85.90),6)
    data = {'ultrasonicsensor': ultrasensor, 'capacity': capacity, 'lat': lat, 'lon': lon}
    #print data
    def myOnPublishCallback():
        print("Published ultrasonicsensor = %s Cm" % ultrasensor, "capacity= %s kg" % capacity, "lat:%s"%lat, "lon:%s"%lon)

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
        time.sleep(1)
        deviceCli.commandCallback = myCommandCallback
```

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

### PYTHON OUTPUT:

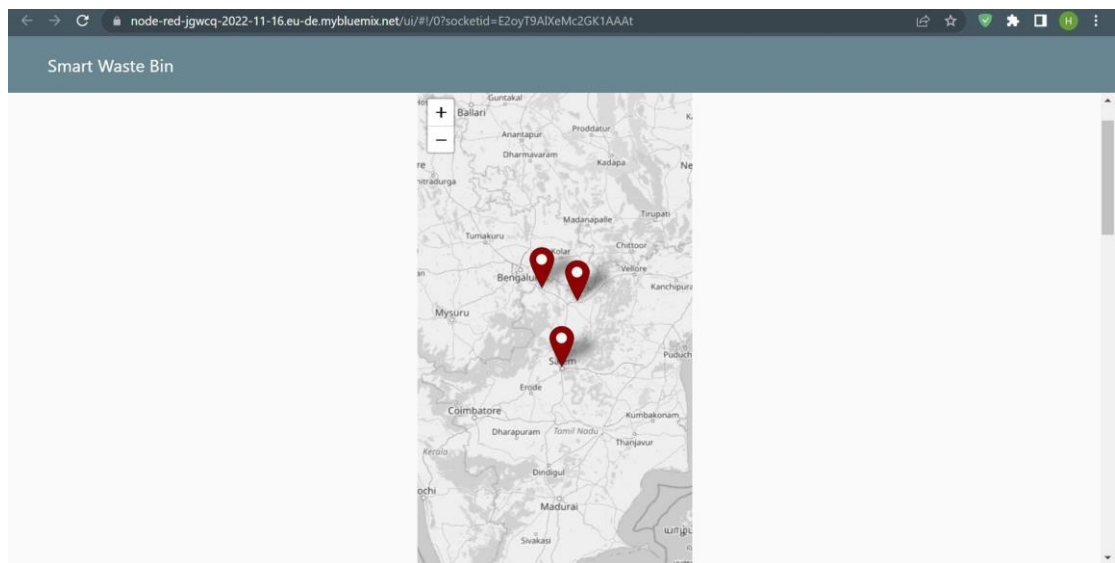
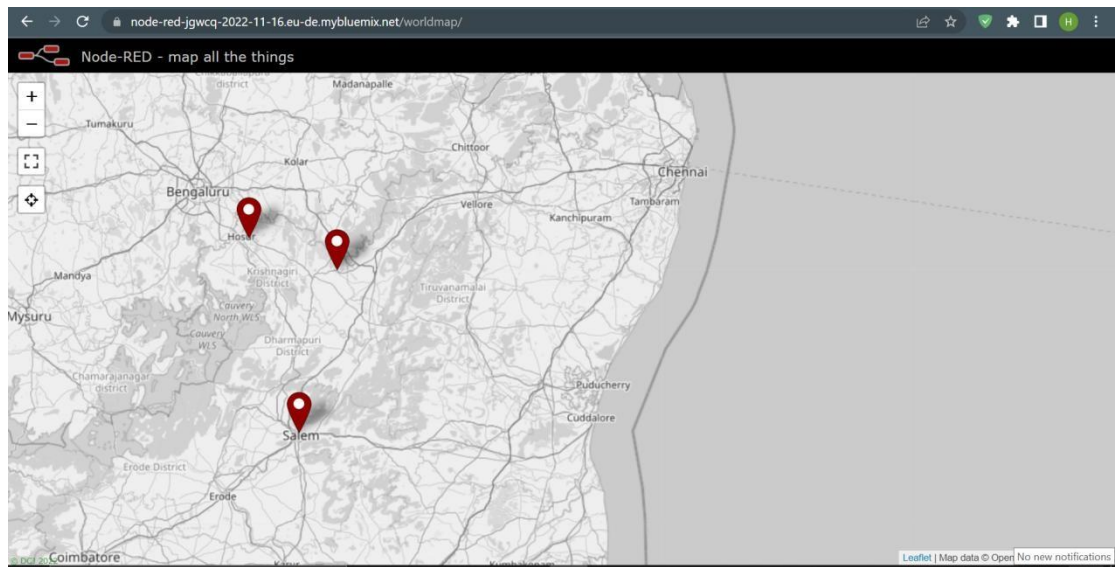
```
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\senth\AppData\Local\Programs\Python\Python37\ibmiotpublishsubscribe.py
2022-11-16 19:19:15,836 ibmiotf.device.Client INFO Connected successfully: d:owxp6u:Smart
bin:Bin1
Published ultrasonicsensor = 40 Cm capacity= 23 kg lat:12.610228 lon:81.56987
Published ultrasonicsensor = 69 Cm capacity= 24 kg lat:12.393958 lon:82.869649
Published ultrasonicsensor = 15 Cm capacity= 66 kg lat:12.657194 lon:83.691184
Published ultrasonicsensor = 63 Cm capacity= 50 kg lat:12.739014 lon:84.899586
Published ultrasonicsensor = 9 Cm capacity= 99 kg lat:12.316724 lon:85.601792
Published ultrasonicsensor = 60 Cm capacity= 17 kg lat:12.213293 lon:82.890856
Published ultrasonicsensor = 70 Cm capacity= 76 kg lat:12.863203 lon:81.322346
Published ultrasonicsensor = 72 Cm capacity= 9 kg lat:12.679009 lon:83.959883
Published ultrasonicsensor = 28 Cm capacity= 82 kg lat:12.915193 lon:82.125455
Published ultrasonicsensor = 11 Cm capacity= 16 kg lat:13.005646 lon:85.396263
Published ultrasonicsensor = 24 Cm capacity= 64 kg lat:12.282416 lon:83.144915
Published ultrasonicsensor = 41 Cm capacity= 2 kg lat:12.098037 lon:83.9634
Published ultrasonicsensor = 15 Cm capacity= 11 kg lat:12.655447 lon:84.466328
Published ultrasonicsensor = 57 Cm capacity= 89 kg lat:12.840414 lon:81.376711
Published ultrasonicsensor = 16 Cm capacity= 76 kg lat:12.469298 lon:84.480634
Published ultrasonicsensor = 48 Cm capacity= 17 kg lat:12.629949 lon:82.306184
Published ultrasonicsensor = 76 Cm capacity= 51 kg lat:12.15338 lon:85.604701
```

### IBM WATSON OUTPUT:

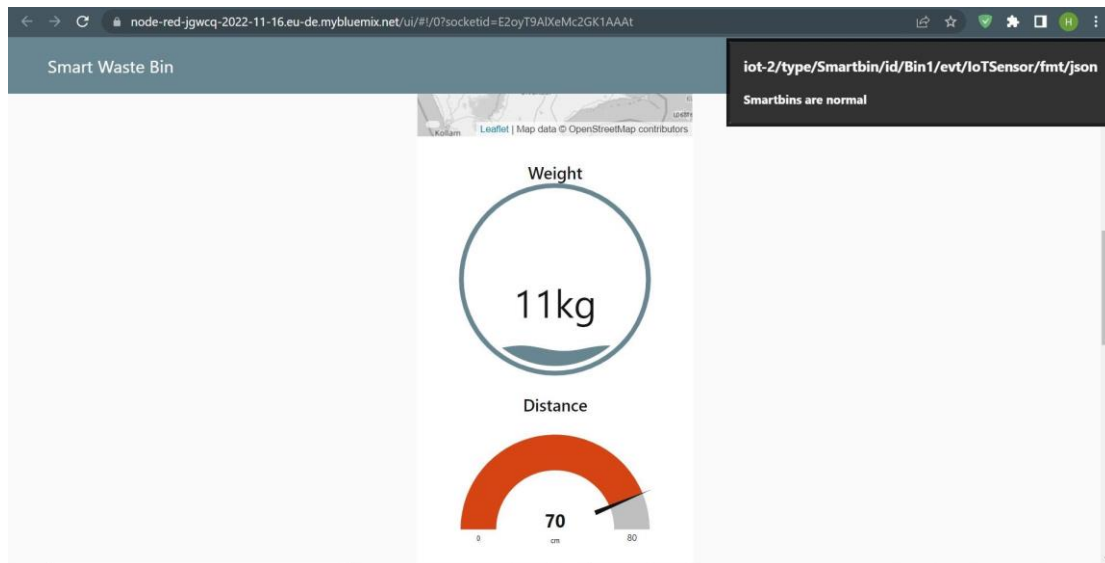
The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for navigation. The main content area displays a table of recent events for a device named 'Binproject12'. The table has four columns: 'Event', 'Value', 'Format', and 'Last Received'. The events are listed as 'IoT Sensor' with JSON values containing ultrasonicsensor, capacity, lat, and lon data. The 'Last Received' column indicates that the data was received 'a few seconds ago'. At the bottom of the dashboard, there is a status bar showing 'Binproject12' as 'Disconnected' and '0 Simulations running'.

Event	Value	Format	Last Received
IoT Sensor	{"ultrasonicsensor":45,"capacity":49,"lat":12.57...	json	a few seconds ago
IoT Sensor	{"ultrasonicsensor":76,"capacity":51,"lat":12.15...	json	a few seconds ago
IoT Sensor	{"ultrasonicsensor":48,"capacity":17,"lat":12.62...	json	a few seconds ago
IoT Sensor	{"ultrasonicsensor":16,"capacity":76,"lat":12.46...	json	a few seconds ago
IoT Sensor	{"ultrasonicsensor":57,"capacity":89,"lat":12.84...	json	a few seconds ago

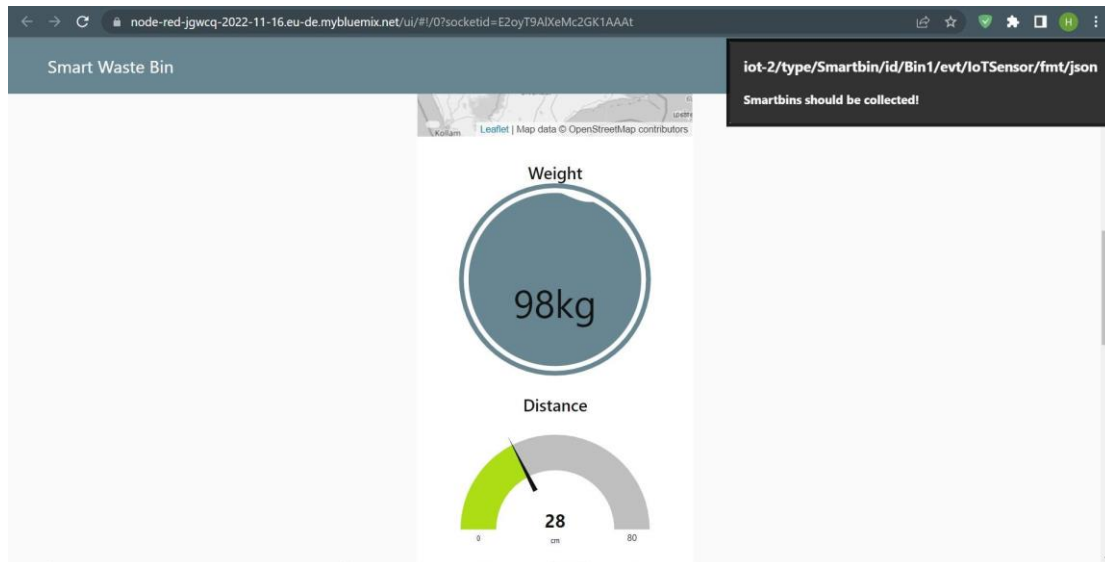
### WEB UI MAP:



**SMART BINS WHEN IT IS IN NORMAL WEIGHT:**



### SMART BINS SHOULD BE COLLECTED:



### RESULT:

The weight of the smart bins is collected, the node red web app is successfully established, and alarm notifications are successfully made.