Sprint Delivery – 3

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Project Name	Project - Smart Waste Management System for Meteropolitan Cities

In the last sprint phase(sprint - 2), a node-MCU device is created in Watson IOT Platform and randomly generated.

Now, using PYTHON CODE, we need to generate random values for Garbage weight, Level and Location of the Bin.

For that we need Python 3.7.0 IDLE. First of all, require the ibmiotf package using this command in the command prompt : **pip install ibmiotf.**

The required library files are included in the code ,then functions are written

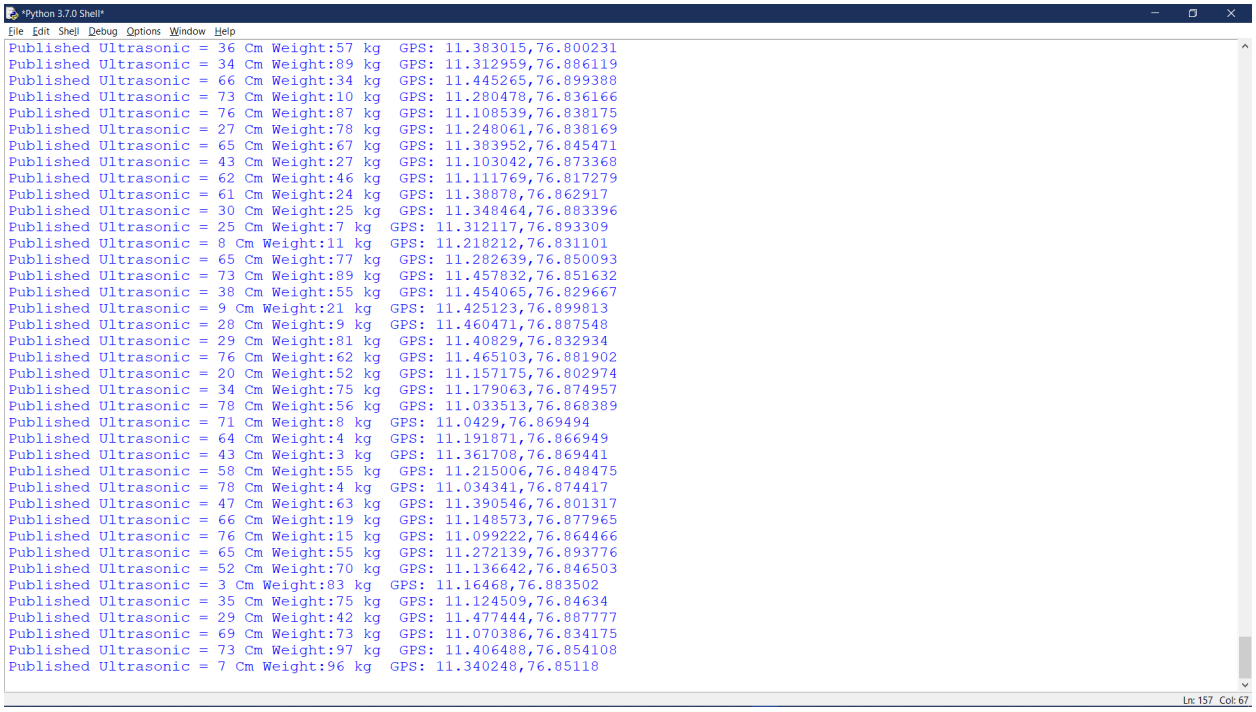
CODE:

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random


#Provide your IBM Watson Device Credentials

organization = "8wd932"

deviceType = "Node_Mcu"

deviceId = "123456789"

authMethod = "token"

authToken = "123456789"


# Initialize GPIO

def myCommandCallback(cmd):

    print("Command received: %s" % cmd.data['command'])
```

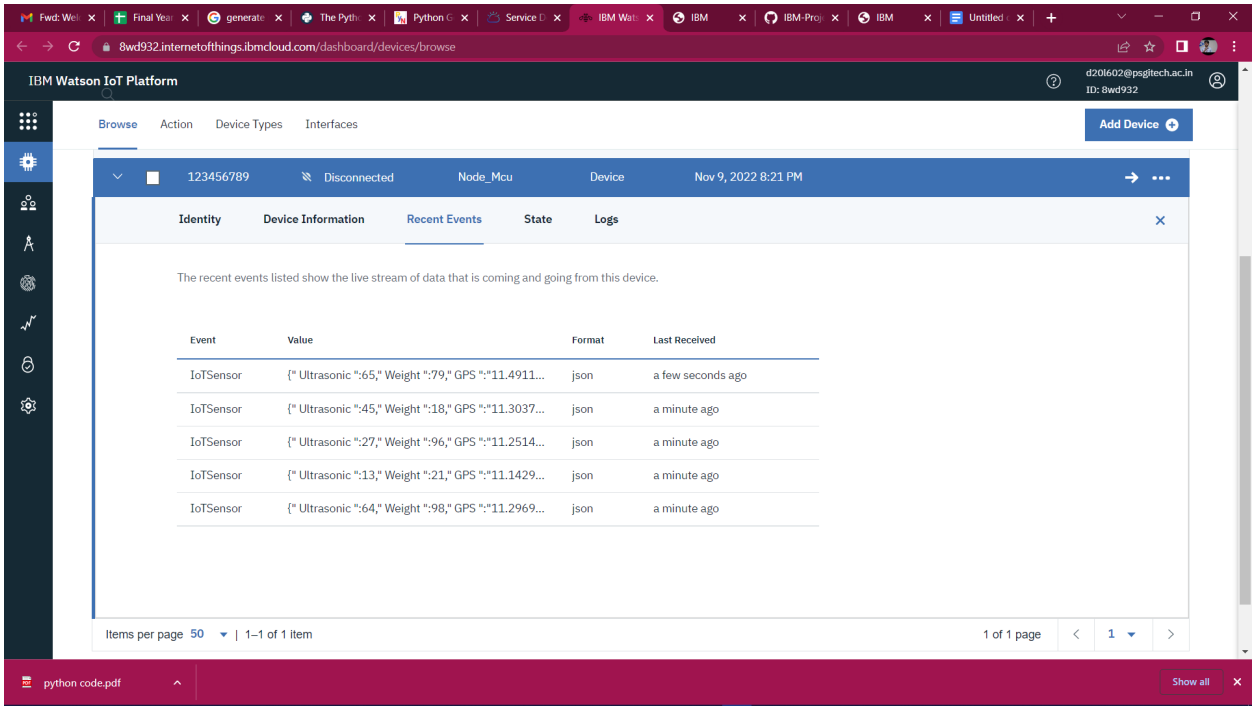
```
    status=cmd.data['command']
    if status =="lighton":
        print("led in on")
    else :
        print ("led is off")


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 of type "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(11.03, 11.50), 6)
        long = round(random.uniform(76.80, 76.90), 6)
        gps = str(lat) + str(',') + str(long)
        data = {'Ultrasonic' : ult_son, 'Weight' : weight , 'GPS' : gps}
        #print data
        def myOnPublishCallback():
            print ("Published Ultrasonic = %s Cm" %ult_son, "Weight:%s kg" %weight, "GPS: %s" %gps)
```

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


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

OUTPUT:

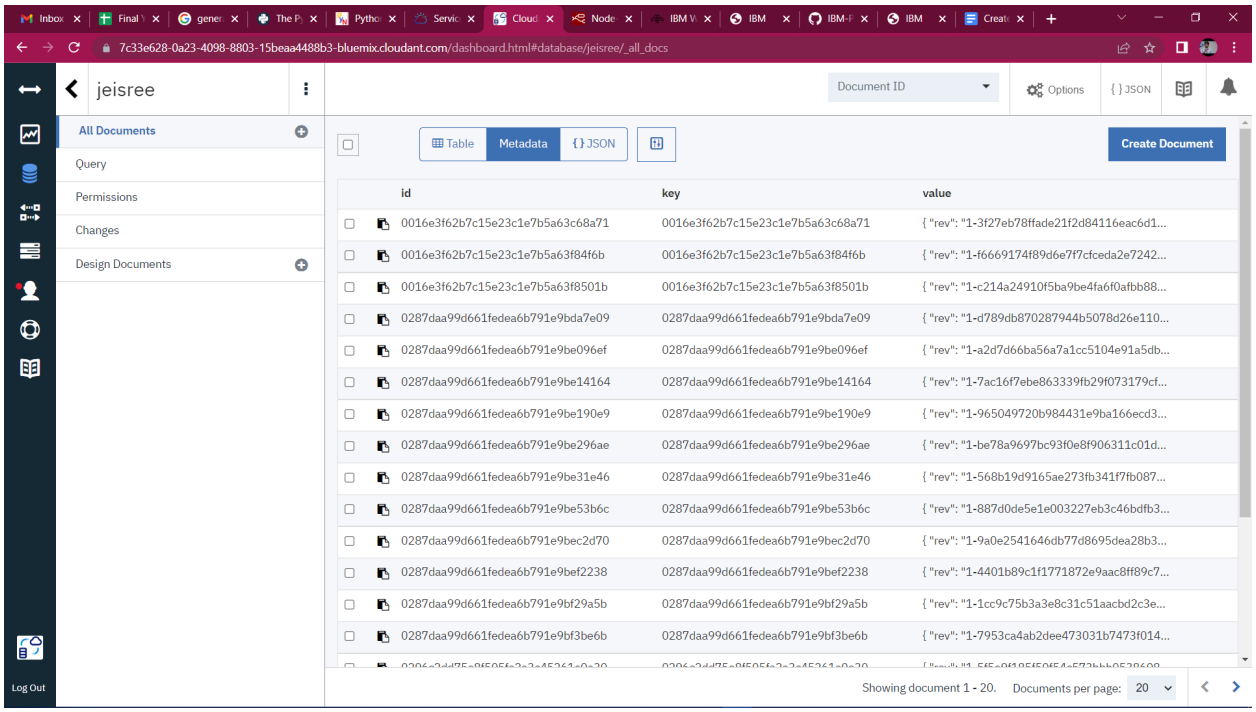


These randomly generated values can be seen in the IBM Watson IOT Platform which is the IBM Cloud in the area of device recent events with the help of IBM ibmiotf package and the device credentials.



The values are stored in the IBM Cloudant database

Storing data in cloud:



Actual Json format stored in cloud: