## SPRINT – 3

| | |
|---|---|
| **DATE** | 16 NOVEMBER 2022 |
| **TEAM ID** | PNT2022TMID05379 |
| **PROJECT NAME** | SMART WASTE MANAGEMENT FOR METROPOLITAN CITIES-IOT |

**PYTHON CODE** : [ To connect IBM WATSON ]

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


#Provide your IBM Watson Device Credentials
organization = "cbseji"
deviceType = "abcd"
deviceId = "1234"
authMethod = "token"
authToken = "12345678"

# 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")
    #print(cmd)



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

        level=random.randint(0,100)
        weight=random.randint(0,100)

        data = { 'level' : level, 'weight': weight }
        #print data
        def myOnPublishCallback():
            print ("Published level = %s C" % level, "weight = %s %%"
% weight, "to IBM Watson")

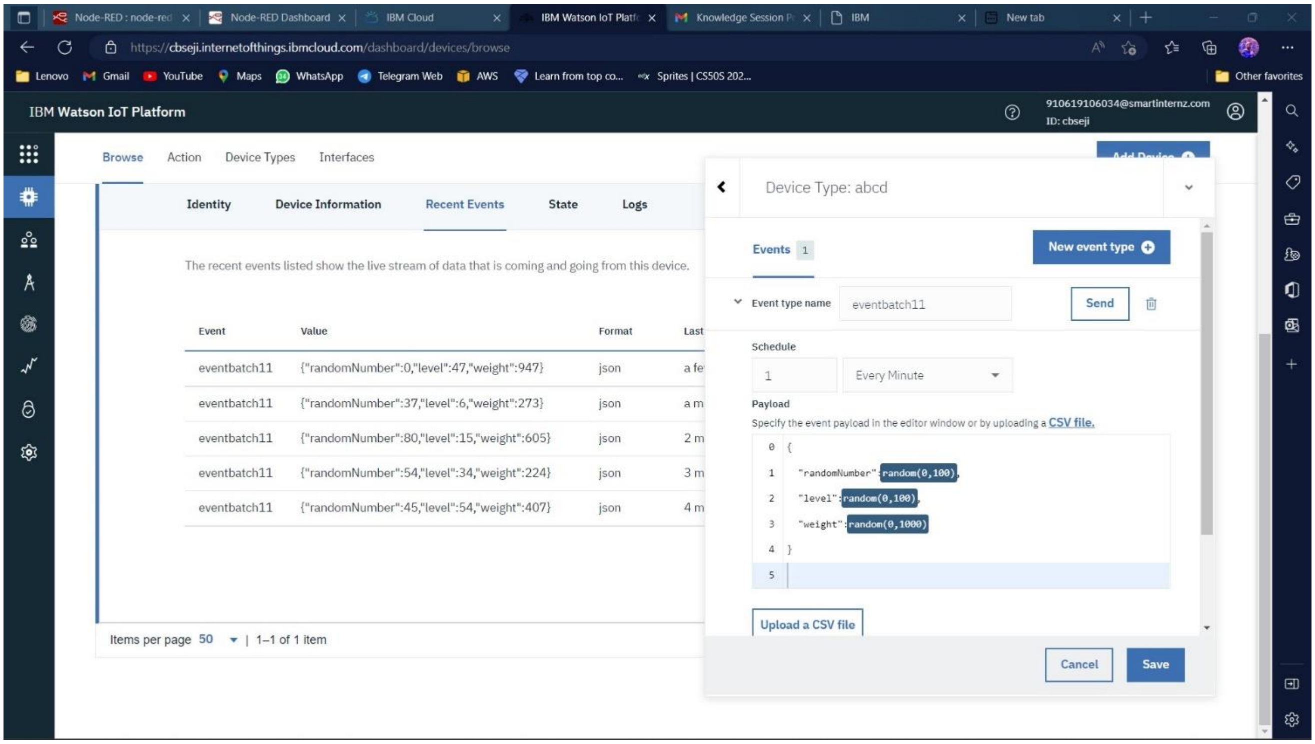
        success = deviceCli.publishEvent("IoTSensor", "json", data,
qos=0, on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(1)

        deviceCli.commandCallback = myCommandCallback

if (level>=75):
            print("Full LED ON")

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

OUTPUT :



https://cbseji.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

910619106034@smartinternz.com
ID: cbseji

The recent events listed show the live stream of data that is coming and going from this device.

| Event | Value | Format | Last |
|---|---|---|---|
| eventbatch11 | {"randomNumber":0,"level":47,"weight":947} | json | a fe |
| eventbatch11 | {"randomNumber":37,"level":6,"weight":273} | json | a m |
| eventbatch11 | {"randomNumber":80,"level":15,"weight":605} | json | 2 m |
| eventbatch11 | {"randomNumber":54,"level":34,"weight":224} | json | 3 m |
| eventbatch11 | {"randomNumber":45,"level":54,"weight":407} | json | 4 m |

Items per page 50 | 1–1 of 1 item

Device Type: abcd

Events 1

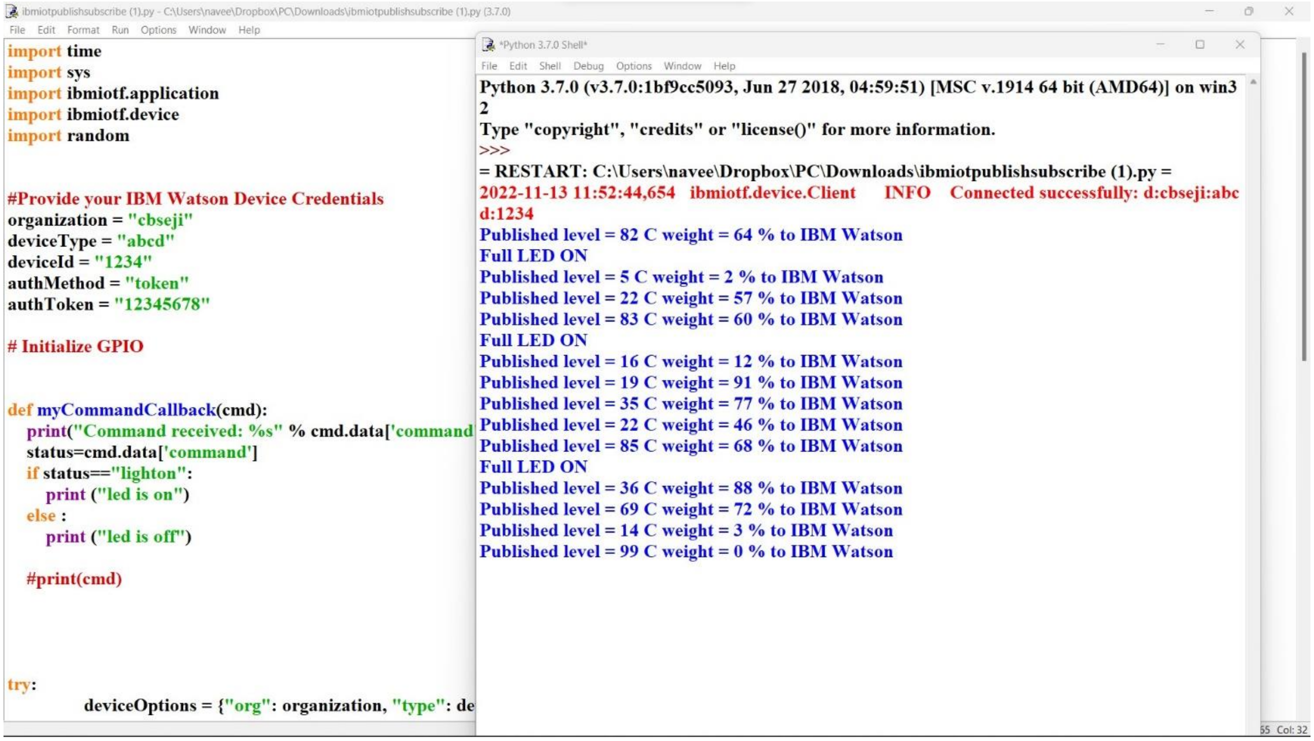
Event type name: eventbatch11

Schedule: 1 Every Minute

Payload

Specify the event payload in the editor window or by uploading a CSV file.

```
{
  "randomNumber":random(0,100),
  "level":random(0,100),
  "weight":random(0,1000)
}
```



ibmiotpublishsubscribe (1).py - C:\Users\navee\Dropbox\PC\Downloads\ibmiotpublishsubscribe (1).py (3.7.0)
File Edit Format Run Options Window Help
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
55 Col: 32

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      print ("led is on")
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      print ("led is off")

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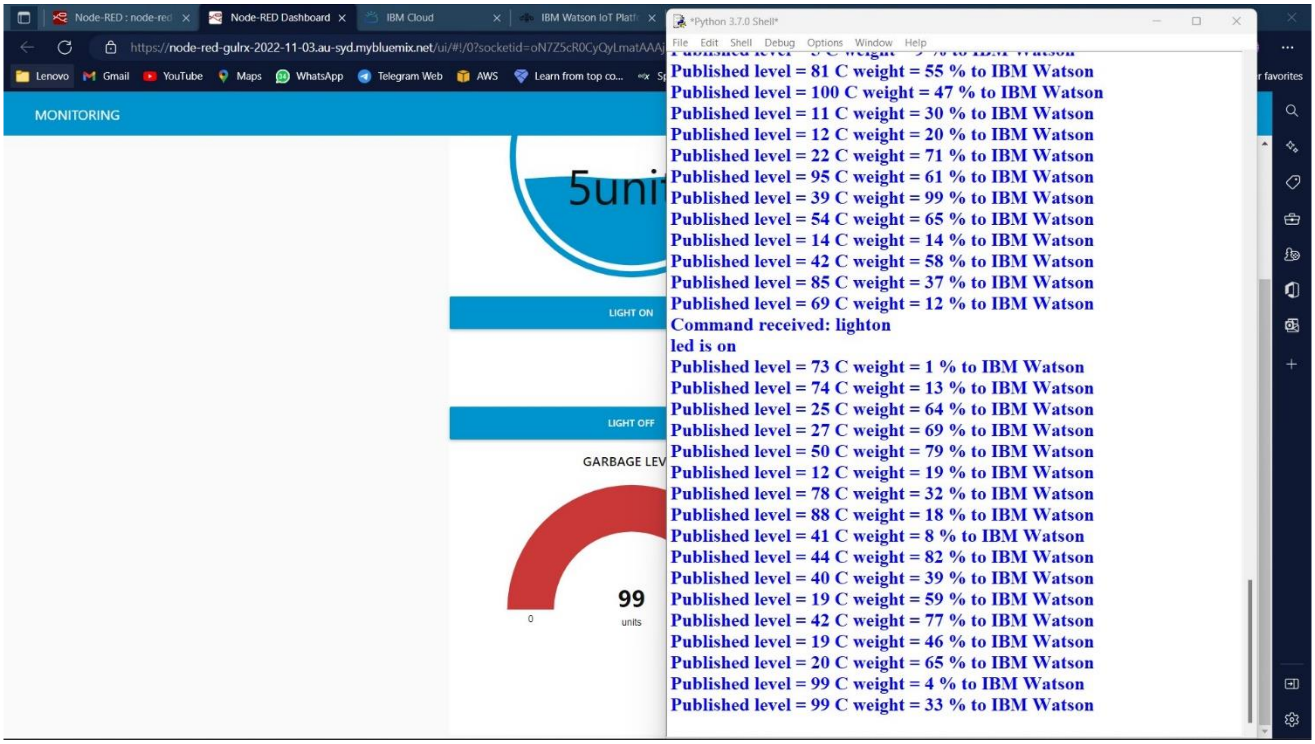
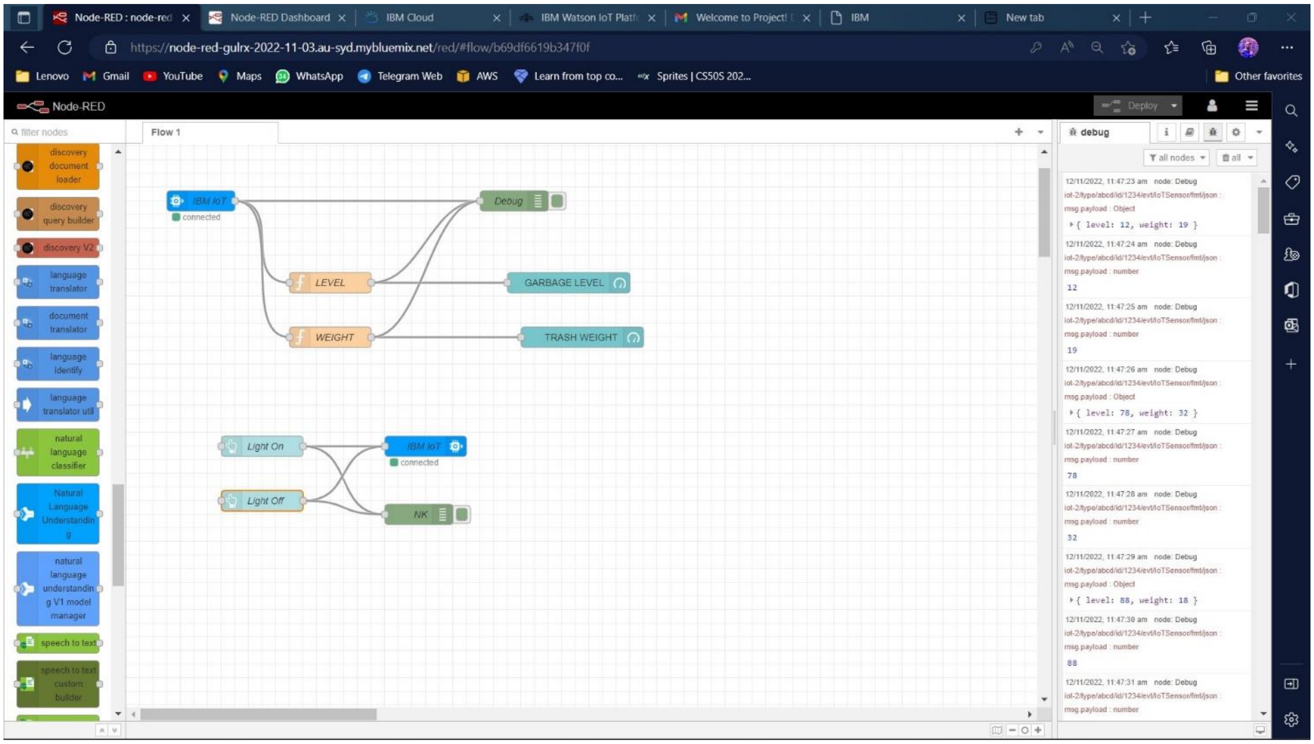
try:
        deviceOptions = {"org": organization, "type": de
```

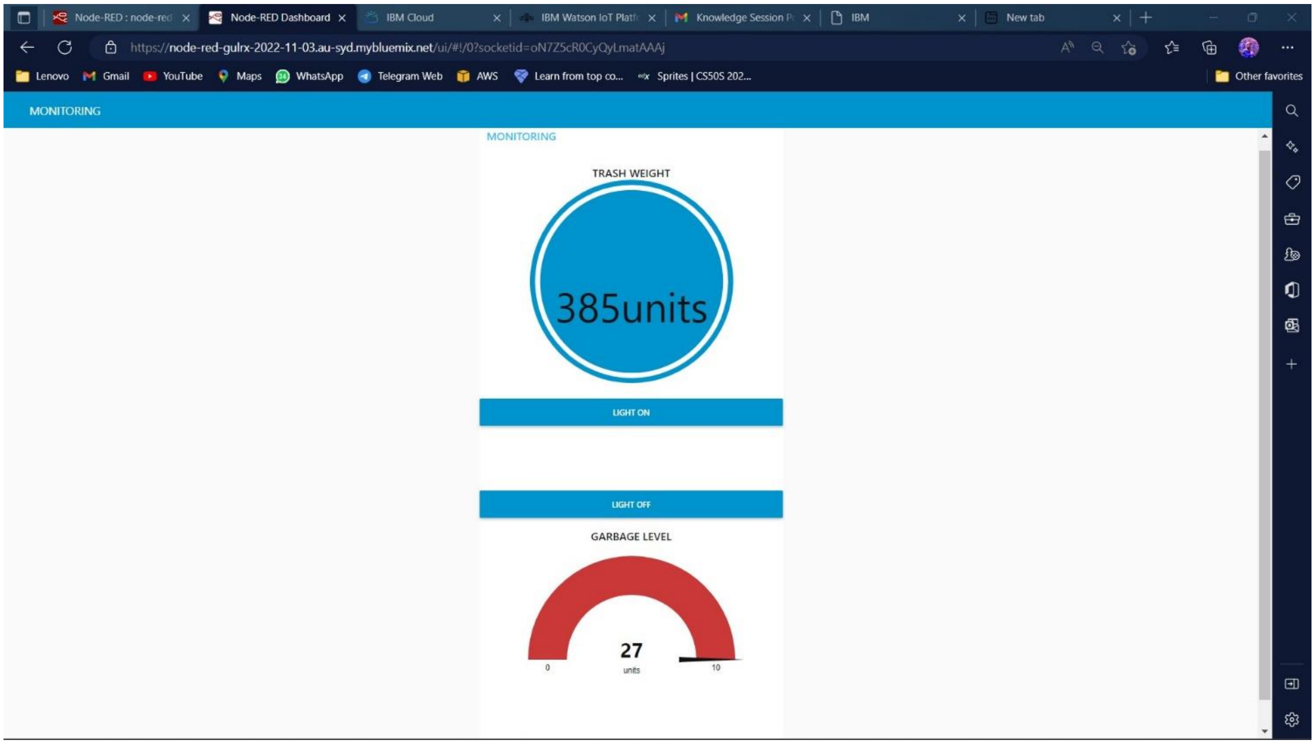
```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win3
2
Type "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\navee\Dropbox\PC\Downloads\ibmiotpublishsubscribe (1).py =
2022-11-13 11:52:44,654  ibmiotf.device.Client     INFO    Connected successfully: d:cbseji:abc
d:1234
Published level = 82 C weight = 64 % to IBM Watson
Full LED ON
Published level = 5 C weight = 2 % to IBM Watson
Published level = 22 C weight = 57 % to IBM Watson
Published level = 83 C weight = 60 % to IBM Watson
Full LED ON
Published level = 16 C weight = 12 % to IBM Watson
Published level = 19 C weight = 91 % to IBM Watson
Published level = 35 C weight = 77 % to IBM Watson
Published level = 22 C weight = 46 % to IBM Watson
Published level = 85 C weight = 68 % to IBM Watson
Full LED ON
Published level = 36 C weight = 88 % to IBM Watson
Published level = 69 C weight = 72 % to IBM Watson
Published level = 14 C weight = 3 % to IBM Watson
Published level = 99 C weight = 0 % to IBM Watson
```



```
Published level = 81 C weight = 55 % to IBM Watson
Published level = 100 C weight = 47 % to IBM Watson
Published level = 11 C weight = 30 % to IBM Watson
Published level = 12 C weight = 20 % to IBM Watson
Published level = 22 C weight = 71 % to IBM Watson
Published level = 95 C weight = 61 % to IBM Watson
Published level = 39 C weight = 99 % to IBM Watson
Published level = 54 C weight = 65 % to IBM Watson
Published level = 14 C weight = 14 % to IBM Watson
Published level = 42 C weight = 58 % to IBM Watson
Published level = 85 C weight = 37 % to IBM Watson
Published level = 69 C weight = 12 % to IBM Watson
Command received: lighton
led is on
Published level = 73 C weight = 1 % to IBM Watson
Published level = 74 C weight = 13 % to IBM Watson
Published level = 25 C weight = 64 % to IBM Watson
Published level = 27 C weight = 69 % to IBM Watson
Published level = 50 C weight = 79 % to IBM Watson
Published level = 12 C weight = 19 % to IBM Watson
Published level = 78 C weight = 32 % to IBM Watson
Published level = 88 C weight = 18 % to IBM Watson
Published level = 41 C weight = 8 % to IBM Watson
Published level = 44 C weight = 82 % to IBM Watson
Published level = 40 C weight = 39 % to IBM Watson
Published level = 19 C weight = 59 % to IBM Watson
Published level = 42 C weight = 77 % to IBM Watson
Published level = 19 C weight = 46 % to IBM Watson
Published level = 20 C weight = 65 % to IBM Watson
Published level = 99 C weight = 4 % to IBM Watson
Published level = 99 C weight = 33 % to IBM Watson
```



```
12/11/2022, 11:47:23 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ level: 12, weight: 19 }
12/11/2022, 11:47:24 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
12
12/11/2022, 11:47:25 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
19
12/11/2022, 11:47:26 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ level: 78, weight: 32 }
12/11/2022, 11:47:27 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
78
12/11/2022, 11:47:28 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
32
12/11/2022, 11:47:29 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ level: 88, weight: 18 }
12/11/2022, 11:47:30 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
88
12/11/2022, 11:47:31 am   node: Debug
iot-2/type/abcd/id/1234/evt/IoTSensor/fmt/json :
msg.payload : number
```


Node-RED : node-red
Node-RED Dashboard
IBM Cloud
IBM Watson IoT Platf
Knowledge Session P
IBM
New tab
https://node-red-gulrx-2022-11-03.au-syd.mybluemix.net/ui/#!/0?socketid=oN7Z5cR0CyQyLmatAAAj
Lenovo
Gmail
YouTube
Maps
WhatsApp
Telegram Web
AWS
Learn from top co...
Sprites | CS50S 202...
Other favorites
MONITORING
MONITORING
TRASH WEIGHT
385units
LIGHT ON
LIGHT OFF
GARBAGE LEVEL
27
units
0
10