

## SPRINT 2

|              |   |
|--------------|---|
| Date         | 2 November 2022                                       |
| Team ID      | PNT2022TMID43127                                      |
| Project Name | Smart Waste Management System for Metropolitan Cities |
| Story Point  | 20  |

### Python code (To Connect IBM Watson)

#### BIN 2:

```
import wiotp.sdk.device
import time
import random

myConfig = {
    "identity": {
        "orgId": "x3lifo",
        "typeId": "Bin_2",
        "deviceId": "1234"
    },
    "auth": {
        "token": "12345678"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform:%s"%cmd.data['command'])
    m=cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()
```

while True:

```
    level=random.randint(0,10)
```

```
    weight=random.randint(0,10)
```

```
    myData={'name': 'Bin_2','lat':14.092677,'lon':81.188314,'Level':level,'Weight':weight }
```

```
    if weight == 10:
```

```
        print ('ALERT !! Weight is HIGH')
```

```
    if level == 10:
```

```
        print ('ALERT !! Level is HIGH')
```

```
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,onPublish=None)
```

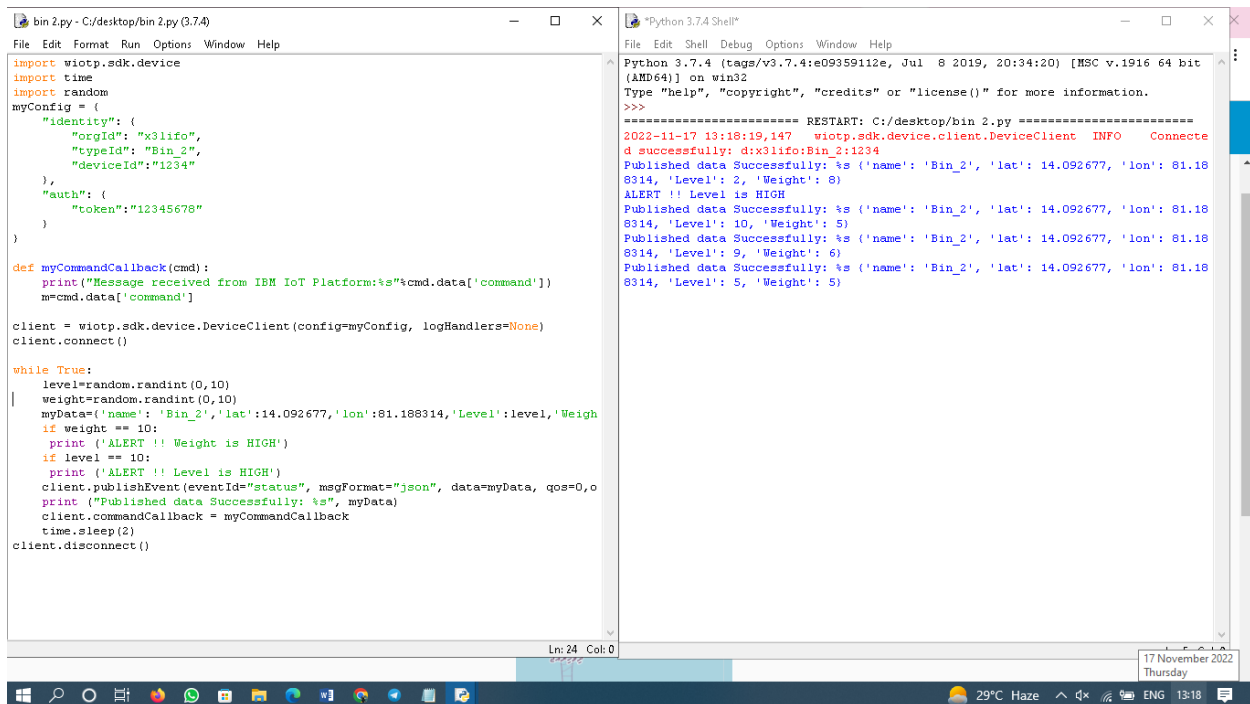
```
    print ("Published data Successfully: %s", myData)
```

```
    client.commandCallback = myCommandCallback
```

```
    time.sleep(2)
```

```
client.disconnect()
```

## Output in python IDLE:



```
bin 2.py - C:/desktop/bin 2.py (3.7.4)
File Edit Format Run Options Window Help

import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "x3lifo",
        "typeId": "Bin_2",
        "deviceId": "1234"
    },
    "auth": {
        "token": "12345678"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform:%s"%cmd.data['command'])
    m=cmd.data['command']

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    level=random.randint(0,10)
    weight=random.randint(0,10)
    myData={'name': 'Bin_2','lat':14.092677,'lon':81.188314,'Level':level,'Weight':weight }
    if weight == 10:
        print ('ALERT !! Weight is HIGH')
    if level == 10:
        print ('ALERT !! Level is HIGH')
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,o
    print ("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```

```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help

Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:/desktop/bin 2.py =====
2022-11-17 13:18:19,147 wiotp.sdk.device.client.DeviceClient INFO Connecte
d successfully: d:x3lifo:Bin_2:1234
Published data Successfully: %s ('name': 'Bin_2', 'lat': 14.092677, 'lon': 81.18
8314, 'Level': 2, 'Weight': 8)
ALERT !! Level is HIGH
Published data Successfully: %s ('name': 'Bin_2', 'lat': 14.092677, 'lon': 81.18
8314, 'Level': 10, 'Weight': 5)
Published data Successfully: %s ('name': 'Bin_2', 'lat': 14.092677, 'lon': 81.18
8314, 'Level': 9, 'Weight': 6)
Published data Successfully: %s ('name': 'Bin_2', 'lat': 14.092677, 'lon': 81.18
8314, 'Level': 5, 'Weight': 5)
```

Ln: 24 Col: 0

17 November 2022 Thursday

29°C Haze 13:18

## IBM Watson IOT platform:

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The main content area displays a table of devices. The selected device (ID 1234) is shown in a detailed view with tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, showing a stream of data events.

| Event  | Value   | Format | Last Received     |
|--------|---|--------|-------------------|
| status | { "name": "Bin_2", "lat": 14.092677, "lon": 81.188... | json   | a few seconds ago |
| status | { "name": "Bin_2", "lat": 14.092677, "lon": 81.188... | json   | a few seconds ago |
| status | { "name": "Bin_2", "lat": 14.092677, "lon": 81.188... | json   | a few seconds ago |

## Node Red platform:

The screenshot shows the Node-RED dashboard. The main workspace displays a flow with the following components:

- IBM IoT** (connected) - The starting node for the flow.
- Bin\_Level** (function node) - Processes the level data.
- level** (output node) - Outputs the level data.
- Bin\_Weight** (function node) - Processes the weight data.
- weight** (output node) - Outputs the weight data.
- worldmap** (connected 2) - Visualizes the location data on a world map.
- msg.payload** (debug node) - Displays the message payload.

The debug console on the right shows the following JSON payloads:

```
{ "name": "Bin_2", "lat": 14.092677, "lon": 81.188314, "Level": 0, "Weight": 10 }
```

```
{ "name": "Bin_2", "lat": 14.092677, "lon": 81.188314, "Level": 2, "Weight": 8 }
```

```
{ "name": "Bin_2", "lat": 14.092677, "lon": 81.188314, "Level": 7, "Weight": 8 }
```

```
{ "name": "Bin_2", "lat": 14.092677, "lon": 81.188314, "Level": 1, "Weight": 0 }
```

```
{ "name": "Bin_2", "lat": 14.092677, "lon": 81.188314, "Level": 2, "Weight": 6 }
```

# Output in Node Red:

