SPRINT - 3

| Date | 12 NOV 2022 |
|--------------|--------------------------------|
| Team ID | PNT2022TMID48570 |
| Project Name | Smart Waste Management |
| | System for Metropolitan Cities |

1, Simulate python code in Python IDE software to transmit data to IBM Watson IOT platform

Python code:

smartbin.py:

```
import
wiotp.sdk.device import
time import random
myConfig = {
"identity": {
"orgId": "mldk59",
"typeId": "pythoncode",
"deviceId": "252525"
},
"auth": {
"token": "QZqODYo6U*Q6b+IpuC"
} } 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:
    latitude=random.uniform(27.2046,125.25)
longitude=random.uniform(77.4977,100.1526)
                                               binlevel=random.randint(10,100)
binweight = random.randint(50,1500)
                                        if binweight>=1000 and binlevel>80:
myData={'latitude':latitude, 'longitude':longitude, 'binlevel':binlevel,
                'binweight':binweight}
client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None)
        ##print("Published data Successfully: %s", myData)
        print("BIN IS FULL..TIME TO EMPTY IT!!!!\n",myData)
client.commandCallback = myCommandCallback
time.sleep(2)
                  else :
        print("BIN IS IN NORMAL LEVEL...")
time.sleep(2)
```

client.disconnect()

Python IDE output:

```
File Edit Format Run Options Window Help
                                                                                                                            File Edit Shell Debug Options Window Help
                                                                                                                           Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32 Type "help", "copyright", "credits" or "license()" for more information.
import wiotp.sdk.device
import time
 import random
Import random
myConfig = {
  "identity": {
  "orgId": "midk59",
  "typeId": "pythoncode",
  "deviceId":"252525"
                                                                                                                                               RESTART: C:/Users/bgaya/Downloads/Scripts/smartbin.py =
                                                                                                                            2022-11-12 15:42:31,090 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:mldk
                                                                                                                            59:pythoncode:252525
                                                                                                                            BIN IS IN NORMAL LEVEL ...
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
"auth": {
"token": "QZQDYYO6U*Q6b*Ipuc"
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS FULL.TIME TO EMPTY IT!!!
['latitude': 119.10263904008501, 'longitude': 85.68449223243285, 'binlevel': 95, 'binweight': 1191)
) ) def myCommandCallback(cmd):
     print("Message received from IBM IOT Flatform: %s" % cmd.data['command']) m=cmd.data['command']
                                                                                                                            BIN IS IN NORMAL LEVEL...
                                                                                                                            BIN IS IN NORMAL LEVEL...
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
client = wiotp.sdk.device.DeviceClient(config=myConfig,logHandlers=None)
client.connect()
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
      latitude=random.uniform(27.2046,125.25)
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
      longitude=random.uniform(77.4977,100.1526)
                                                                                                                           BIN IS IN NORMAL LEVEL...
     binlevel=random.randint(10,100)
      binweight = random.randint(50,1500)
                                                                                                                            BIN IS IN NORMAL LEVEL...
     if binweight>=1000 and binlevel>80:
    myData={'latitude':latitude, 'longitude':longitude, 'binlevel':binlevel,
    'binweight':binweight)
                                                                                                                            BIN IS IN NORMAL LEVEL ...
                                                                                                                            BIN IS IN NORMAL LEVEL...
                                                                                                                            BIN IS IN NORMAL LEVEL ...
           client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0 onPublish=None)
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
           ##print("Published data Successfully: %s", myData)
print("BIN IS FULL..TIME TO EMPTY IT!!!!\n",myData)
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
            client.commandCallback = myCommandCallback
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
                                                                                                                            BIN IS IN NORMAL LEVEL ..
                                                                                                                           BIN IS FULL.TIME TO EMPTY IT!!!!

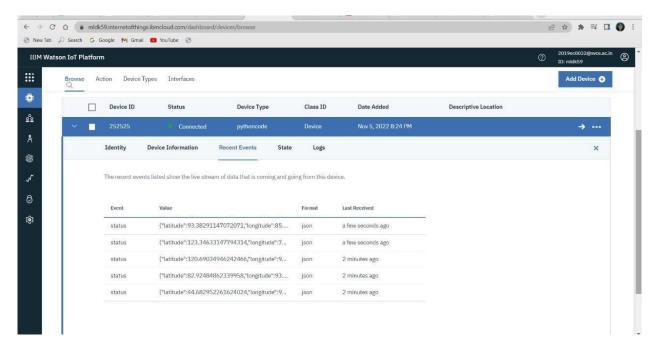
['latitude': 57.1286446983407, 'longitude': 84.19489733792251, 'binlevel': 96, 'binweight': 1265]

BIN IS FULL.TIME TO EMPTY IT!!!!

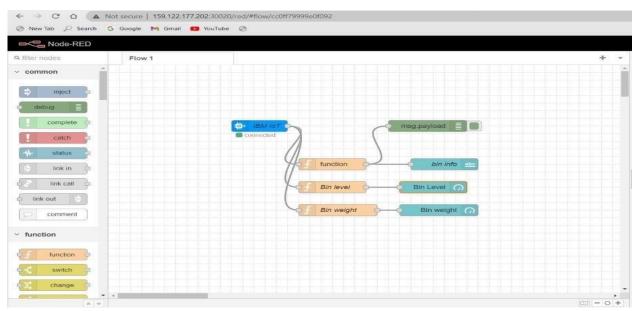
['latitude': 71.20821921907563, 'longitude': 94.85437909286586, 'binlevel': 86, 'binweight': 1318]
            print("BIN IS IN NORMAL LEVEL...")
            time.sleep(2)
client.disconnect()
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
                                                                                                                           BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
                                                                                                                            BIN IS IN NORMAL LEVEL ...
                                                                                                                            BIN IS IN NORMAL LEVEL...
                                                                                                                            BIN IS IN NORMAL LEVEL ...
                                                                                                                            BIN IS IN NORMAL LEVEL...
                                                                                                            Ln: 27 Col: 26
                                                                                                                                                                                                                                                                        Ln: 5 Cot: 0
```

2. Data is transferred to IBM Watson IoT platform.

IBM Platform output:

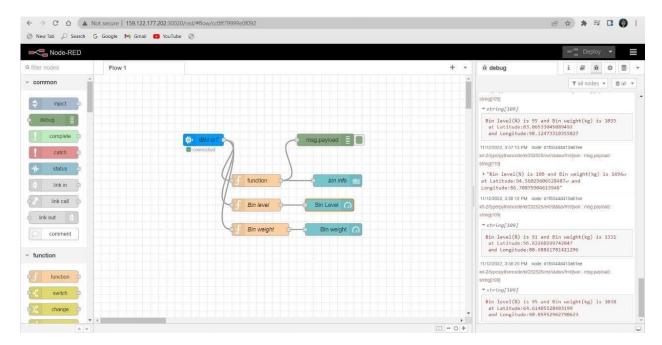


3. Data transfer from IBM Watson IOT platform and Python IDE to Node RED. Node-RED:



4. Node-RED Connection setup for data transmission from IBM Watson IoT platform to Node-RED dashboard and viewing in Web UI .

Node-RED:



Web UI:

