

SPRINT - 3

Date	12 NOV 2022
Team ID	PNT2022TMID53567
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:

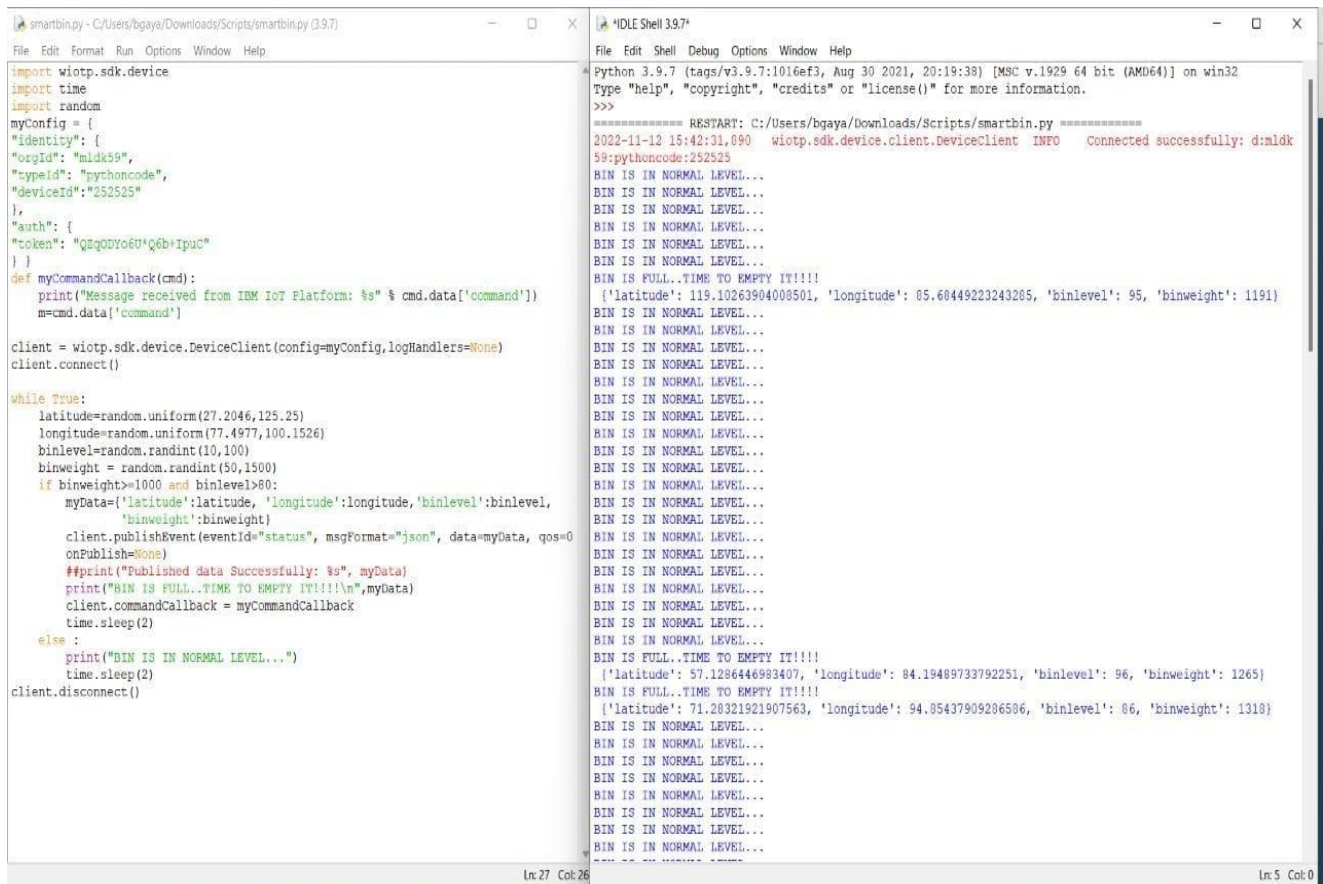
smartbin.py:

```
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()

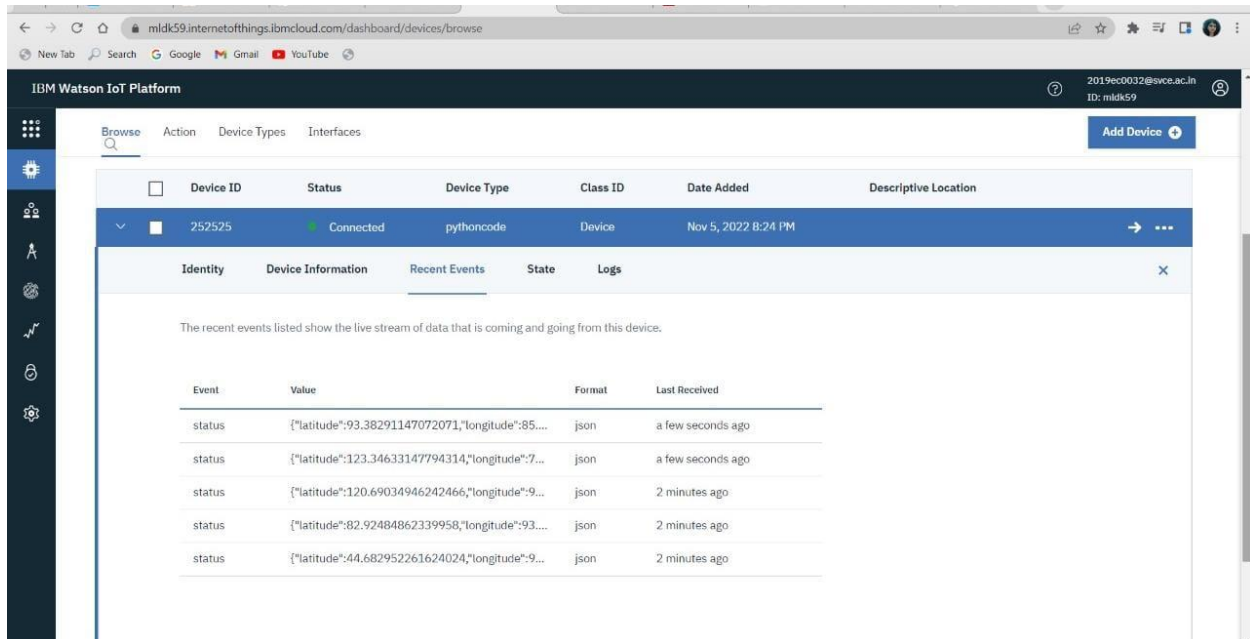
while True:
    latitude=random.uniform(27.2046,125.25)
    longitude=random.uniform(77.4977,100.1526)
    binlevel=random.randint(10,100)
    binweight = random.randint(50,1500)
    if binweight>=1000 and binlevel>80:
        myData={'latitude':latitude, 'longitude':longitude, 'binlevel':binlevel,
                'binweight':binweight}
        client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
                            onPublish=None)
        ##print("Published data Successfully: %s", myData)
```

Python IDE output:



2. Data is transferred to IBM Watson IoT platform.

IBM Platform output:

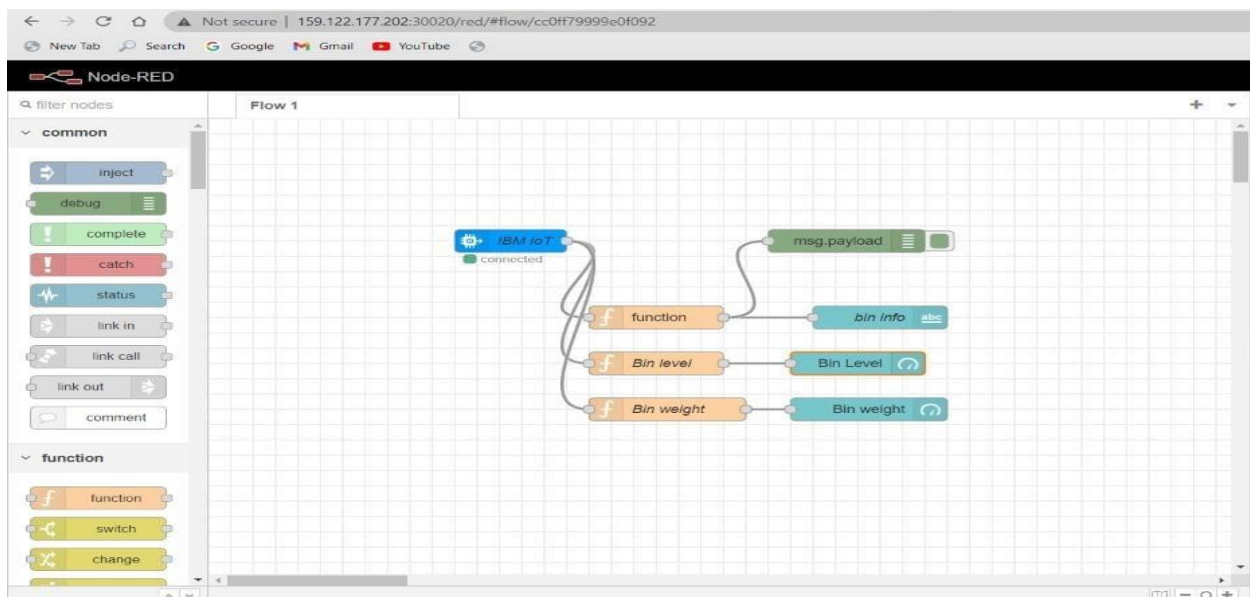


The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area displays a table of devices. The selected device is '252525', which is 'Connected' and has a 'pythoncode' device type. Below the device information, the 'Recent Events' tab is active, showing a list of events with their values and timestamps.

Event	Value	Format	Last Received
status	{"latitude":93.38291147072071,"longitude":85....	json	a few seconds ago
status	{"latitude":123.34633147794314,"longitude":7...	json	a few seconds ago
status	{"latitude":120.69034946242466,"longitude":9...	json	2 minutes ago
status	{"latitude":82.92484862339958,"longitude":93....	json	2 minutes ago
status	{"latitude":44.682952261624024,"longitude":9...	json	2 minutes ago

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

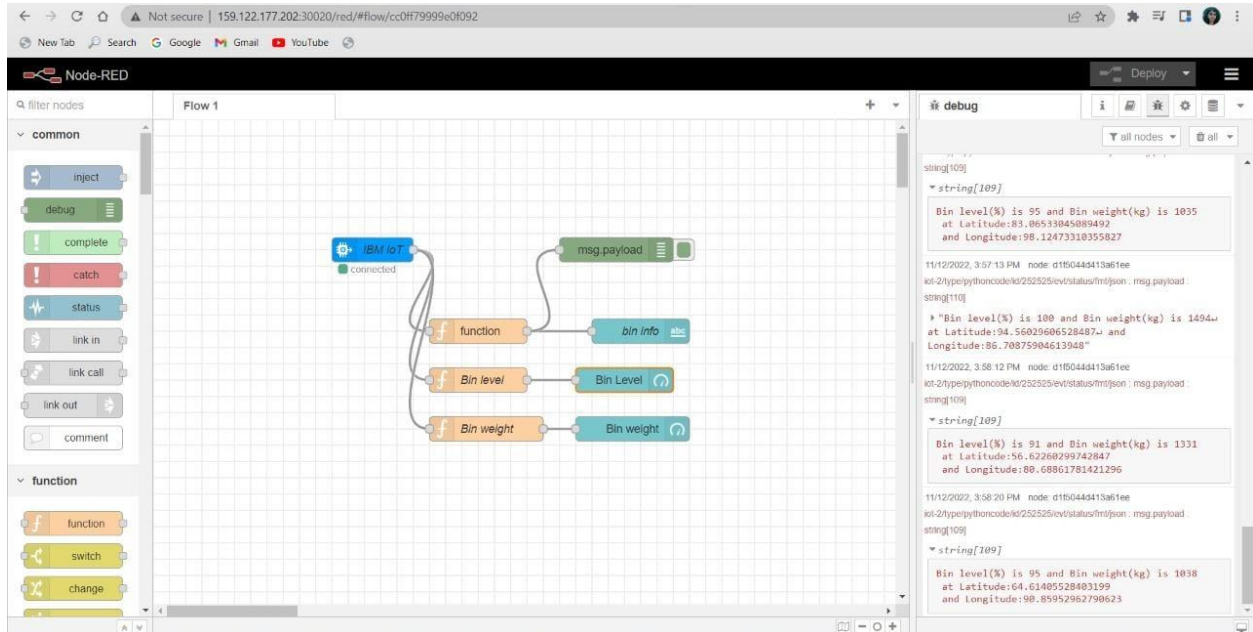
Node-RED:



The screenshot shows the Node-RED web interface. The left sidebar contains a list of nodes under 'common' and 'function' categories. The main workspace displays a flow named 'Flow 1'. The flow starts with an 'IBM IoT' node, which is connected to a 'function' node. The 'function' node is connected to three output nodes: 'bin info', 'Bin level', and 'Bin weight'. Each output node is connected to a corresponding 'msg.payload' node.

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:

