

SPRINT 2

Date	11 th November - 2022
Team ID	PNT2022TMID42737
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

Python code with random values generator:

```
import wiotp.sdk.device
import time
import os
import datetime
import random
myConfig = {
    "identity":{
        "orgId": "ik6mgw",
        "typeId": "smartfarmer",
        "deviceId": "147852369"
    },
    "auth": {
        "token": "9790375943"
    }
}
client = wiotp.sdk.device.DeviceClient (config=myConfig, logHandlers=None)
client.connect()

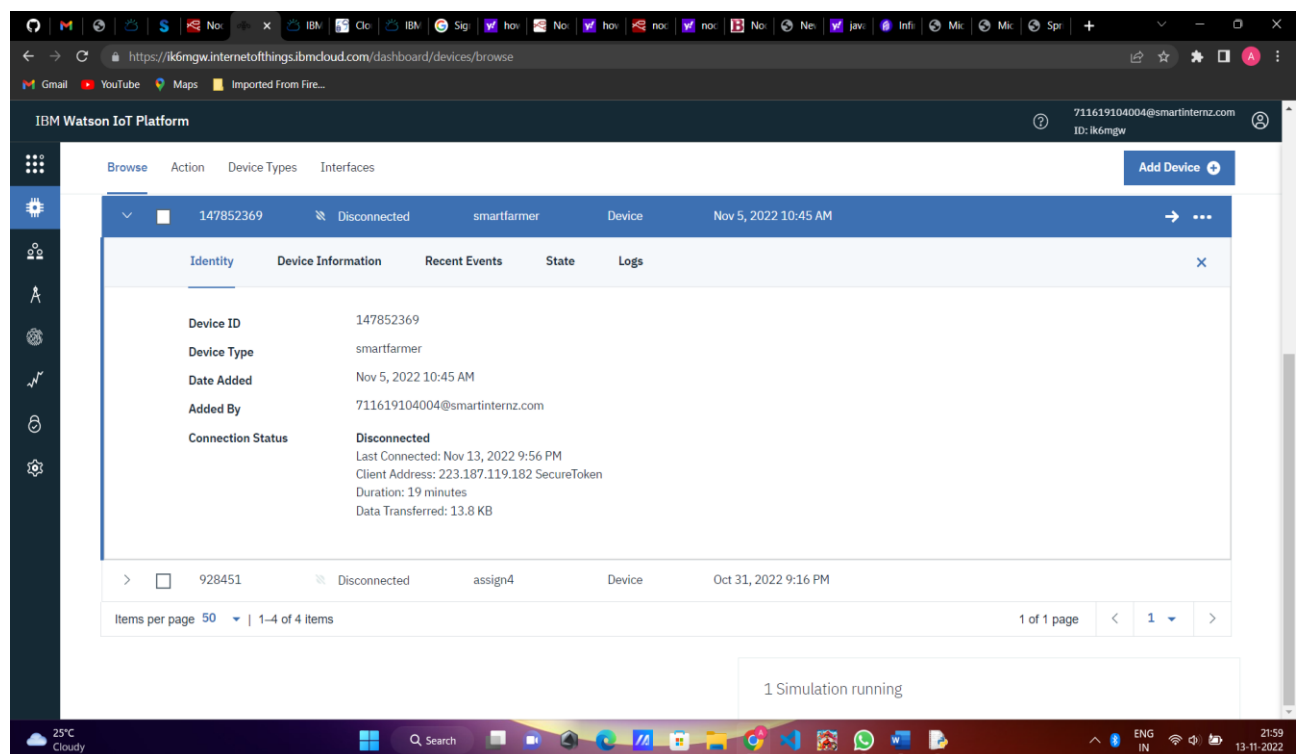
def myCommandCallback(cmd) :
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']
    if(m== "motoron"):
```

```

print("Motor is switched on")
elif (m== "motoroff"):
    print ("Motor is switched OFF")
print(" ")
while True:
    soil=random.randint(0,100)
    temp=random.randint(0,100)
    hum=random.randint(0,100)
    myData={'soil_moisture': soil, 'temperature':temp, 'humidity':hum}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None)
    print("Published data Successfully: %s", myData)
    time.sleep(10)
    client.commandCallback = myCommandCallback
client.disconnect();

```

Connecting IoT Simulator to IBM Watson IoT Platform:



IBM Watson IoT Platform

711619104004@smartinternz.com
ID: ik6mgw

Browse Action Device Types Interfaces

147852369 Connected smartfarmer Device Nov 5, 2022 10:45 AM

Identity Device Information Recent Events State Logs

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

Event	Value	Format	Last Received
status	{"soil_moisture":46,"temperature":3,"humidity":...	json	2 minutes ago
status	{"soil_moisture":51,"temperature":12,"humidity":...	json	8 minutes ago
status	{"soil_moisture":87,"temperature":78,"humidity":...	json	8 minutes ago
status	{"soil_moisture":69,"temperature":61,"humidity":...	json	8 minutes ago
status	{"soil_moisture":95,"temperature":71,"humidity":...	json	9 minutes ago

1 Simulation running

25°C Cloudy

IBM Watson IoT Platform

711619104004@smartinternz.com

147852369

Gauge

2.0

Donut chart

Total 70 %

Simulations

8 events sent 456 bytes sent

Device Type Device ID Event Type

- event_1 smartfarmer • 147852369 x 2
{"soil_moisture":69,"temperature":62,"humidity":49}
{"soil_moisture":17,"temperature":77,"humidity":13}
- event_1 smartfarmer • 147852369 x 2
{"soil_moisture":17,"temperature":26,"humidity":45}
{"soil_moisture":74,"temperature":12,"humidity":75}
- event_1 smartfarmer • 147852369 x 1
{"soil_moisture":96,"temperature":54,"humidity":21}
- event_1 smartfarmer • 147852369 x 2
{"soil_moisture":30,"temperature":22,"humidity":41}
{"soil_moisture":46,"temperature":39,"humidity":12}

25°C Cloudy

IBM Watson IoT Platform

147852369

Gauge: 95.0

Donut chart: Total 12 %

Device Type: smartfarmer

Events 1

Event type name: event_1

Schedule: 1 Every Minute

Payload

```
0 {
1   "soil_moisture": random(0, 100)
2   "temperature": random(0, 100)
3   "humidity": random(0, 100)
4 }
5
```

Upload a CSV file

Cancel Save

IBM Watson IoT Platform

147852369

31.0

Donut chart: Total 12 %

Bar chart: 39.0 °F

temperature

1 Simulation running

Configuration of Node-Red to collect Data from Ibm cloud:

This screenshot shows the Node-RED web interface in a browser. The main workspace displays a flow named 'Flow 1' with an 'IBM IoT' node connected to a 'Humidity' function node, which is then connected to a 'temperature' function node. A 'switch' node is also present, connected to a 'data' function node. The 'Edit IBM IoT node' dialog is open, showing the following configuration:

- Authentication: API Key
- API Key: event_1
- Output Type: Device Command
- Device Type: smartfarmer
- Device Id: 147852369
- Command Type: IOT
- Format: json
- Data: msg.payload
- QoS: 0
- Name: IBM IoT
- Service: registered

The 'debug' console on the right shows a series of messages received from the IoT node, including timestamps and payloads like 'msg.payload: number'.

This screenshot shows a more complex Node-RED flow for data collection from IBM IoT. The 'IBM IoT' node is connected to three function nodes: 'soil moisture', 'Humidity', and 'temperature'. These function nodes are connected to corresponding output nodes: 'Soil moisture', 'Humidity', and 'Temperature'. The 'temperature' function node is also connected to a 'switch' node, which is connected to an 'http request' node. The 'http request' node is connected to a 'data' function node, which is then connected to an 'http' node. The 'debug' console on the right shows a series of messages received from the IoT node, including timestamps and payloads like 'msg.payload: number'.