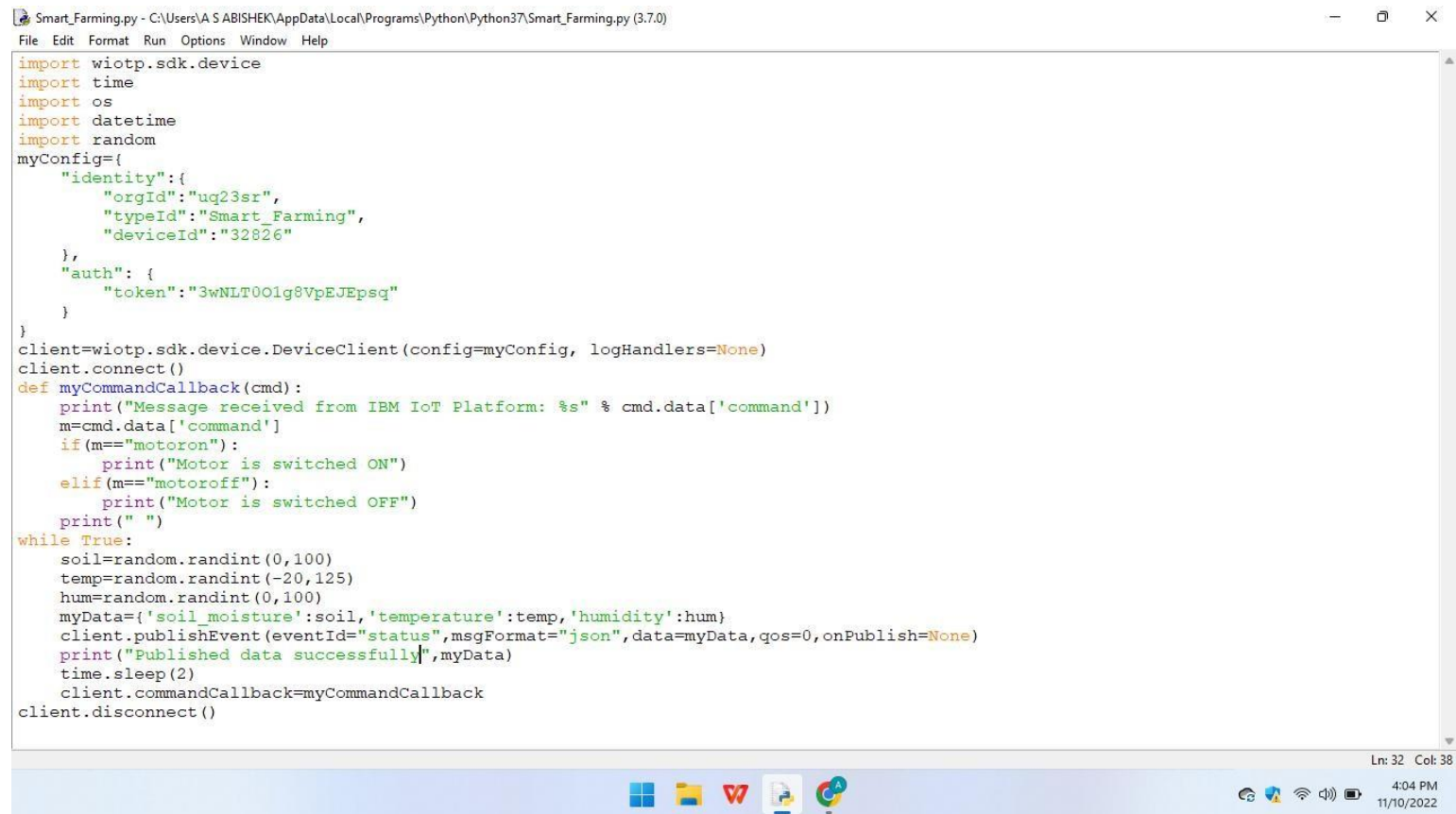


## PROJECT DEVELOPMENT PHASE

### Delivery of Sprint - 3

Date	10 November 2022
Team ID	PNT2022TMID16740
Project Name	Smart farmer - IoT Enabled Smart Farming Application



```
Smart_Farming.py - C:\Users\A S ABISHEK\AppData\Local\Programs\Python\Python37\Smart_Farming.py (3.7.0)
File Edit Format Run Options Window Help

import wiotp.sdk.device
import time
import os
import datetime
import random
myConfig={
    "identity":{
        "orgId":"uq23sr",
        "typeId":"Smart_Farming",
        "deviceId":"32826"
    },
    "auth": {
        "token":"3wNLT00lg8VpEJEpsq"
    }
}
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(-20,125)
    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",myData)
    time.sleep(2)
    client.commandCallback=myCommandCallback
client.disconnect()
```

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4:04 PM  
11/10/2022

Python 3.7.0 Shell

File Edit Shell Debug Options Window Help

Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32  
Type "copyright", "credits" or "license()" for more information.

>>>

RESTART: C:\Users\A S ABISHEK\AppData\Local\Programs\Python\Python37\Smart\_Farming.py

2022-11-10 16:04:42,463 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:uq23sr:Smart\_Farming:32826Published data successfully

{'soil\_moisture': 37, 'temperature': 1, 'humidity': 35}

Published data successfully {'soil\_moisture': 89, 'temperature': 94, 'humidity': 24}

Published data successfully {'soil\_moisture': 57, 'temperature': 28, 'humidity': 90}

Published data successfully {'soil\_moisture': 65, 'temperature': -18, 'humidity': 4}

Published data successfully {'soil\_moisture': 87, 'temperature': 81, 'humidity': 92}

Published data successfully {'soil\_moisture': 62, 'temperature': -16, 'humidity': 33}

Published data successfully {'soil\_moisture': 99, 'temperature': 105, 'humidity': 62}

Published data successfully {'soil\_moisture': 41, 'temperature': 114, 'humidity': 78}

Published data successfully {'soil\_moisture': 26, 'temperature': -15, 'humidity': 49}

Published data successfully {'soil\_moisture': 55, 'temperature': 84, 'humidity': 87}

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4:05 PM  
11/10/2022

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Service Details - IBM Cloud', 'IBM Watson IoT Platform', 'Node-RED : node-red-zncs', 'Getting Started with MIT App Inventor', and 'MIT App Inventor'. The main header shows the user's email '813819205004@smartinternz.com' and ID 'uq23sr'. The dashboard is divided into sections: 'Browse', 'Action', 'Device Types', and 'Interfaces'. A table lists devices, with one device '32826' highlighted, showing a 'Connected' status and 'Smart\_Farming' device type. Below the table, a section titled 'Recent Events' displays a stream of data with columns for 'Event', 'Value', 'Format', and 'Last Received'. The events show a continuous stream of data including soil moisture, temperature, and humidity. The bottom of the screen shows a Windows taskbar with various application icons and the system clock indicating 4:07 PM on 11/10/2022.

Event	Value	Format	Last Received
status	{"soil_moisture":29,"temperature":99,"humidity":...	json	a few seconds ago
status	{"soil_moisture":2,"temperature":42,"humidity":...	json	a few seconds ago
status	{"soil_moisture":2,"temperature":37,"humidity":...	json	a few seconds ago
status	{"soil_moisture":94,"temperature":106,"humidit...	json	a few seconds ago
status	{"soil_moisture":71,"temperature":-6,"humidity":...		

0 Simulations running

Service Details - IBM Cloud x IBM Watson IoT Platform x Node-RED : node-red-zncs- x Getting Started with MIT App x MIT App Inventor x

node-red-zncs-2022-11-04.au-syd.mybluemix.net/red/#flow/f23f5cad061e8487

Node-RED Deploy

filter nodes

Flow 1

common

- inject
- debug
- complete
- catch
- status
- link in
- link call
- link out
- comment

function

- function
- switch

Flow 1 Diagram:

```
graph LR; IoT1[IBM IoT connected] --> SM[Soil Moisture]; IoT1 --> Hum[Humidity]; IoT1 --> Temp[Temperature]; SM --> SMOut[Soil Moisture]; Hum --> HumOut[Humidity]; Temp --> TempOut[Temperature]; Temp --> MP1[msg payload]; [get] /data --> data[data]; data --> http1[http]; MOTOR_ON[MOTOR ON] --> MP2[msg payload]; MOTOR_OFF[MOTOR OFF] --> MP2; [get] /command --> http2[http]; MP2 --> MP2Out[msg payload];
```

debug

all nodes all

msg.payload : number

95

10/11/2022, 16:09:05 node: c7bc968f68e5d4e5  
iot-2/type/Smart\_Farming/id/32826/evt/status/fmt/json :  
msg.payload : number

71

10/11/2022, 16:09:05 node: c7bc968f68e5d4e5  
iot-2/type/Smart\_Farming/id/32826/evt/status/fmt/json :  
msg.payload : number

93

10/11/2022, 16:09:07 node: c7bc968f68e5d4e5  
iot-2/type/Smart\_Farming/id/32826/evt/status/fmt/json :  
msg.payload : number

16

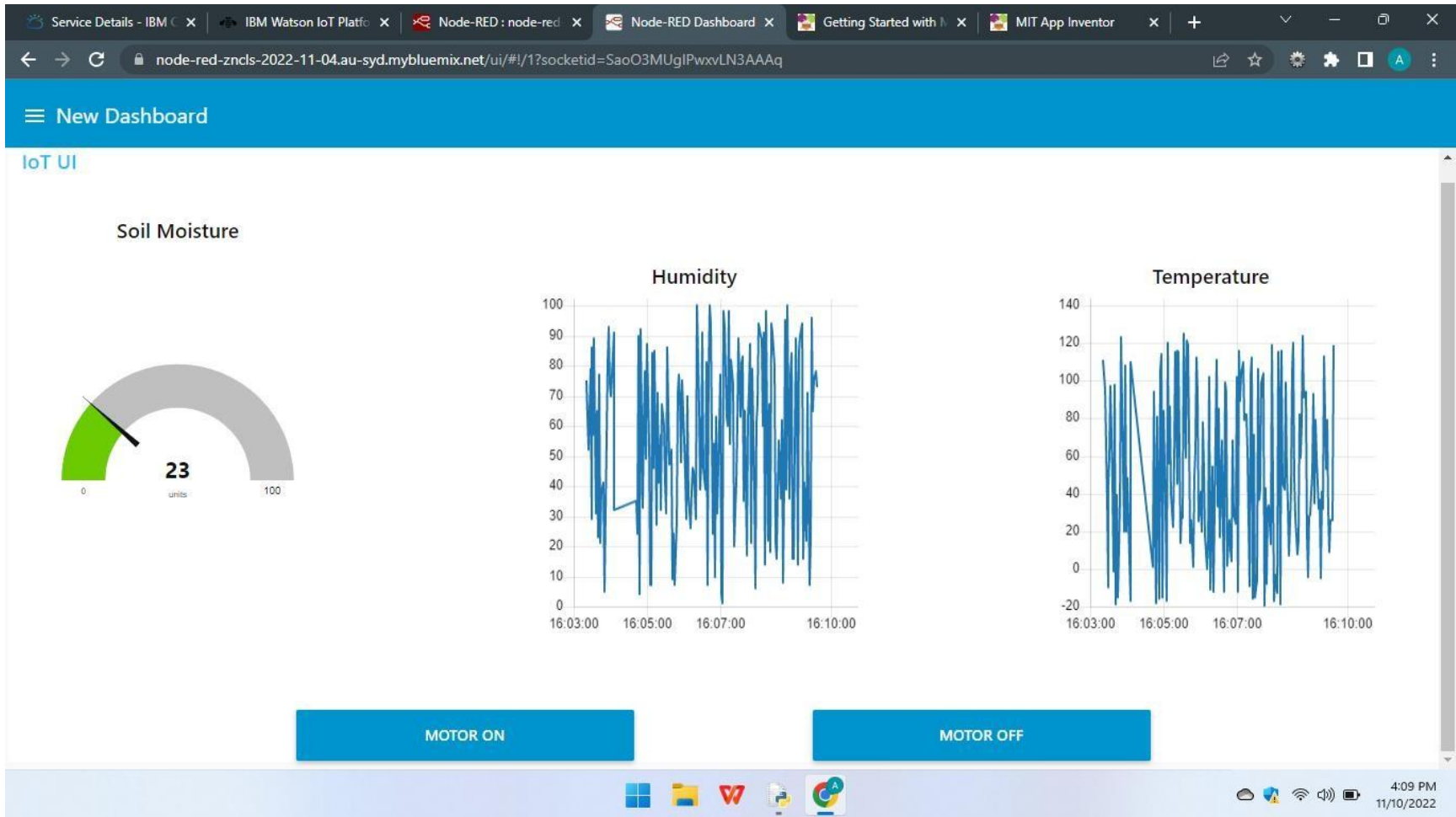
10/11/2022, 16:09:07 node: c7bc968f68e5d4e5  
iot-2/type/Smart\_Farming/id/32826/evt/status/fmt/json :  
msg.payload : number

14

10/11/2022, 16:09:07 node: c7bc968f68e5d4e5  
iot-2/type/Smart\_Farming/id/32826/evt/status/fmt/json :  
msg.payload : number

35

4:09 PM 11/10/2022





## After receiving MOTOR ON and MOTOR OFF command from the Web UI:

```
*Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Published data successfully {'soil_moisture': 50, 'temperature': 112, 'humidity': 71}
Published data successfully {'soil_moisture': 54, 'temperature': 112, 'humidity': 79}
Published data successfully {'soil_moisture': 37, 'temperature': -6, 'humidity': 74}
Published data successfully {'soil_moisture': 69, 'temperature': 96, 'humidity': 83}
Published data successfully {'soil_moisture': 57, 'temperature': 88, 'humidity': 84}
Published data successfully {'soil_moisture': 25, 'temperature': 54, 'humidity': 99}
Published data successfully {'soil_moisture': 27, 'temperature': 16, 'humidity': 7}
Published data successfully {'soil_moisture': 28, 'temperature': -1, 'humidity': 100}
Published data successfully {'soil_moisture': 64, 'temperature': 69, 'humidity': 19}
Published data successfully {'soil_moisture': 9, 'temperature': 39, 'humidity': 86}
Published data successfully {'soil_moisture': 8, 'temperature': -3, 'humidity': 61}
Published data successfully {'soil_moisture': 41, 'temperature': 61, 'humidity': 49}
Published data successfully {'soil_moisture': 87, 'temperature': 92, 'humidity': 8}
Published data successfully {'soil_moisture': 84, 'temperature': 92, 'humidity': 84}
Message received from IBM IoT Platform: motoron
Motor is switched ON

Published data successfully {'soil_moisture': 80, 'temperature': 26, 'humidity': 99}
Message received from IBM IoT Platform: motoroff
Motor is switched OFF

Published data successfully {'soil_moisture': 31, 'temperature': 108, 'humidity': 46}
Published data successfully {'soil_moisture': 36, 'temperature': 86, 'humidity': 69}
Published data successfully {'soil_moisture': 49, 'temperature': 99, 'humidity': 34}
Published data successfully {'soil_moisture': 91, 'temperature': 90, 'humidity': 15}
Published data successfully {'soil_moisture': 99, 'temperature': 75, 'humidity': 2}
Published data successfully {'soil_moisture': 25, 'temperature': 2, 'humidity': 99}
Published data successfully {'soil_moisture': 61, 'temperature': 7, 'humidity': 61}
Published data successfully {'soil_moisture': 17, 'temperature': 39, 'humidity': 85}
Published data successfully {'soil_moisture': 89, 'temperature': 51, 'humidity': 61}
Published data successfully {'soil_moisture': 72, 'temperature': 18, 'humidity': 7}
Published data successfully {'soil_moisture': 7, 'temperature': 42, 'humidity': 36}
Published data successfully {'soil_moisture': 67, 'temperature': -4, 'humidity': 94}
Published data successfully {'soil_moisture': 21, 'temperature': 41, 'humidity': 74}
Published data successfully {'soil_moisture': 26, 'temperature': 114, 'humidity': 71}
Published data successfully {'soil_moisture': 89, 'temperature': -2, 'humidity': 48}
Published data successfully {'soil_moisture': 10, 'temperature': -12, 'humidity': 2}
Ln: 406 Col: 0
4:18 PM
11/10/2022
```

