

Project Development Phase

Sprint-2

Date	10 November 2022
Team Id	PNT2022TMID30274
Project Name	Gas Leakage Monitoring & Alerting System for Industries

In this sprint, we are getting the Data from python Code for random sensor data of Hazardous gas levels

Solution:

```
import wiotp.sdk.device
```

```
import time
```

```
import random
```

```
myConfig = {
```

```
    "identity": {
```

```
        "orgId": "b31tni",
```

```
        "typeId": "print1",
```

```
        "deviceId": "printid"
```

```
    },
```

```
    "auth": {
```

```
        "token": "z?7tcRfcekco08R6f2"
```

```
    }
```

```
}
```

```
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:  
    o2=random.randint(25,100)  
    def my_function():  
        othergas=random.randint(0,100)  
        time.sleep(5)  
        return othergas  
    othergas=my_function()  
    temp=random.randint(0,100)  
    humidity=random.randint(0,100)  
    limit=50  
    if(othergas >= limit):  
        myData = { 'Alert': "Alert the gas is leaked",'othergas':othergas}  
    else:  
        myData={'oxygen':o2, 'othergas':othergas,  
'temperture':temp,'humidity':humidity}
```

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

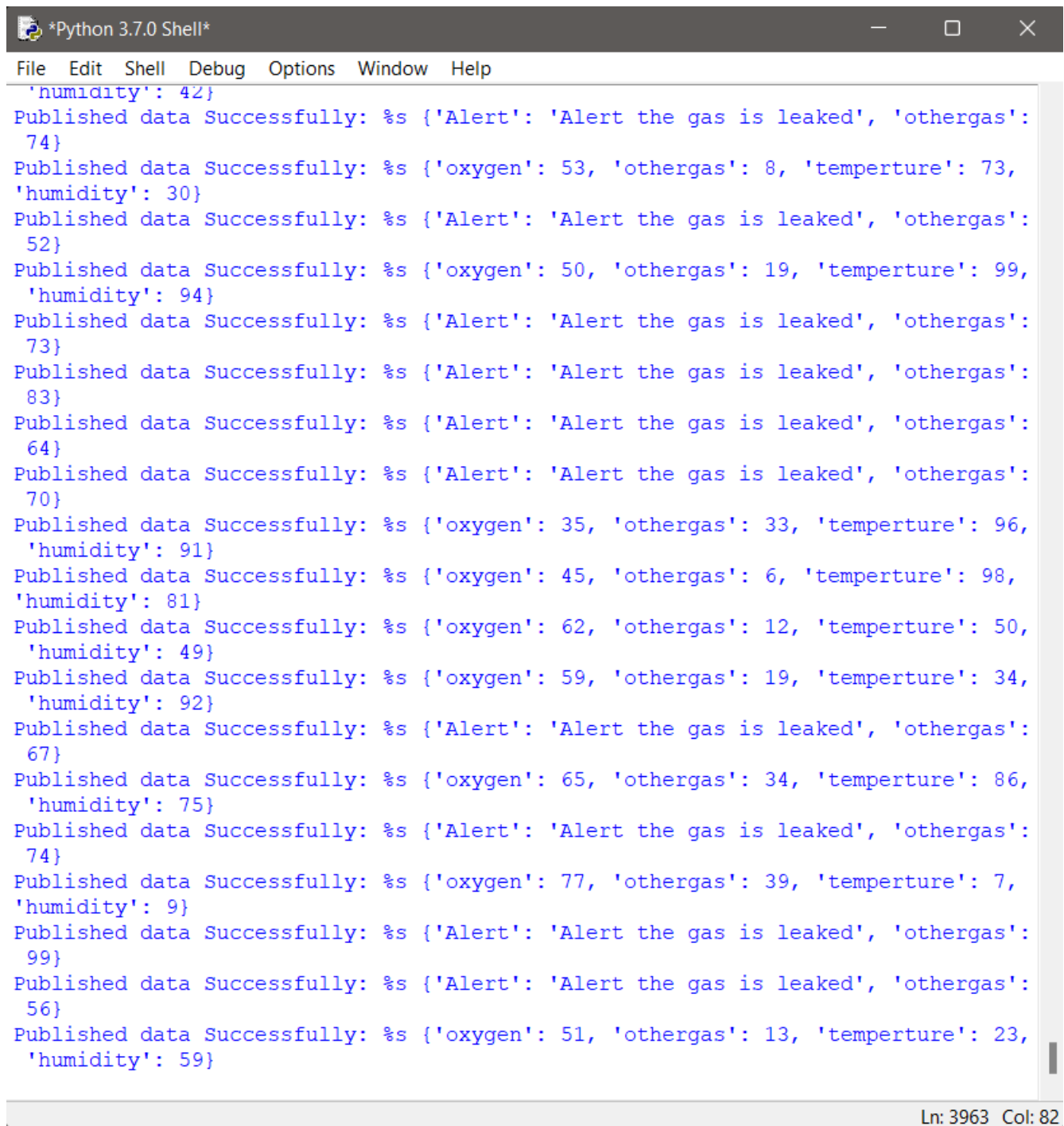
print("Published data Successfully: %s", myData)

client.commandCallback = myCommandCallback

time.sleep(5)

client.disconnect()
```

Output:



```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
'humidity': 42}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
74}
Published data Successfully: %s {'oxygen': 53, 'othergas': 8, 'temperture': 73,
'humidity': 30}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
52}
Published data Successfully: %s {'oxygen': 50, 'othergas': 19, 'temperture': 99,
'humidity': 94}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
73}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
83}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
64}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
70}
Published data Successfully: %s {'oxygen': 35, 'othergas': 33, 'temperture': 96,
'humidity': 91}
Published data Successfully: %s {'oxygen': 45, 'othergas': 6, 'temperture': 98,
'humidity': 81}
Published data Successfully: %s {'oxygen': 62, 'othergas': 12, 'temperture': 50,
'humidity': 49}
Published data Successfully: %s {'oxygen': 59, 'othergas': 19, 'temperture': 34,
'humidity': 92}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
67}
Published data Successfully: %s {'oxygen': 65, 'othergas': 34, 'temperture': 86,
'humidity': 75}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
74}
Published data Successfully: %s {'oxygen': 77, 'othergas': 39, 'temperture': 7,
'humidity': 9}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
99}
Published data Successfully: %s {'Alert': 'Alert the gas is leaked', 'othergas':
56}
Published data Successfully: %s {'oxygen': 51, 'othergas': 13, 'temperture': 23,
'humidity': 59}
Ln: 3963 Col: 82
```

IBM Cloud:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for navigation. The main content area shows details for a device named 'print1', which is currently 'Disconnected'. The 'Recent Events' tab is selected, showing a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events are from a 'Gas Sensor' and include data like oxygen levels, other gas levels, and temperature, as well as alerts about gas leaks. The bottom of the interface shows pagination information: 'Items per page 50' and '1-3 of 3 items'.

Event	Value	Format	Last Received
Gas Sensor	{"oxygen":86,"othergas":8,"temperture":37,"hum...	json	a few seconds ago
Gas Sensor	{"oxygen":36,"othergas":46,"temperture":67,"hu...	json	a few seconds ago
Gas Sensor	{"Alert":"Alert the gas is leaked","othergas":84}	json	a few seconds ago
Gas Sensor	{"Alert":"Alert the gas is leaked","othergas":71}	json	a few seconds ago
Gas Sensor	{"Alert":"Alert the gas is leaked","othergas":77}	json	a few seconds ago

Node-Red Receiver:

The screenshot shows the Node-RED web interface in a browser. The address bar indicates the URL: 'node-red-haefn-2022-11-07.eu-gb.mybluemix.net/red/#flow/7ecd4d8bf00659c'. The interface includes a top bar with various tabs and a sidebar with icons. The main workspace shows a flow with two nodes: an 'IBM IoT' node (blue) and a 'msg.payload' node (green). The 'debug' console on the right displays a log of messages received from the IoT node, including alerts about gas leaks and sensor data. The messages are timestamped and include details like node ID, device ID, and the payload object.

```
11/18/2022, 10:24:53 AM node: 89ce34d5d8b3603e  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 55 }  
11/18/2022, 10:24:53 AM node: 642ec79ab139d3c  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 55 }  
11/18/2022, 10:25:03 AM node: 642ec79ab139d3c  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { oxygen: 76, othergas: 6, temperature: 80, humidity: 29 }  
11/18/2022, 10:25:03 AM node: 89ce34d5d8b3603e  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { oxygen: 76, othergas: 6, temperature: 80, humidity: 29 }  
11/18/2022, 10:25:13 AM node: 642ec79ab139d3c  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 93 }  
11/18/2022, 10:25:13 AM node: 89ce34d5d8b3603e  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 93 }  
11/18/2022, 10:25:23 AM node: 642ec79ab139d3c  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 62 }  
11/18/2022, 10:25:23 AM node: 89ce34d5d8b3603e  
iot-2typeprint1fdprintdevtGas Sensorfmsg : msg.payload : Object  
> { Alert: "Alert the gas is leaked", othergas: 62 }
```