

PYTHON CODE FOR GAS, TEMPERATURE AND HUMIDITY

Date	24 NOV 2022
Team ID	PNT2022TMID47518
Project Name	Project - Gas Leakage monitoring & Alerting system for Industries

CODING:

```
import random
import sys
import time

import ibmiotf.device

# Provide your IBM Watson Device Credentials
organization = "nqgnxe"
deviceType = "IOT"
deviceId = "1234567890"
authMethod = "token"
authToken = "1234567890"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status = cmd.data['command']
    if status == "lighton":
        print("led is on")
    elif status == "lightoff":
        print("led is off")
    else:
        print("please send proper command")

try:
    deviceOptions = {"org": organization, "type": deviceType, "id":
deviceId, "auth-method": authMethod, "auth-token": authToken}
    deviceCli = ibmiotf.device.Client(deviceOptions)
    # .....
except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
    sys.exit()

# Connect and send a datapoint "hello" with value "world" into the cloud as
an event of type "greeting" 10 times
deviceCli.connect()

while True:
    # Get Sensor Data from DHT11
    temperature = random.randint(90, 110)
    Humidity = random.randint(60, 100)
```

```

data = {'temperature': temperature, 'Humidity': Humidity}

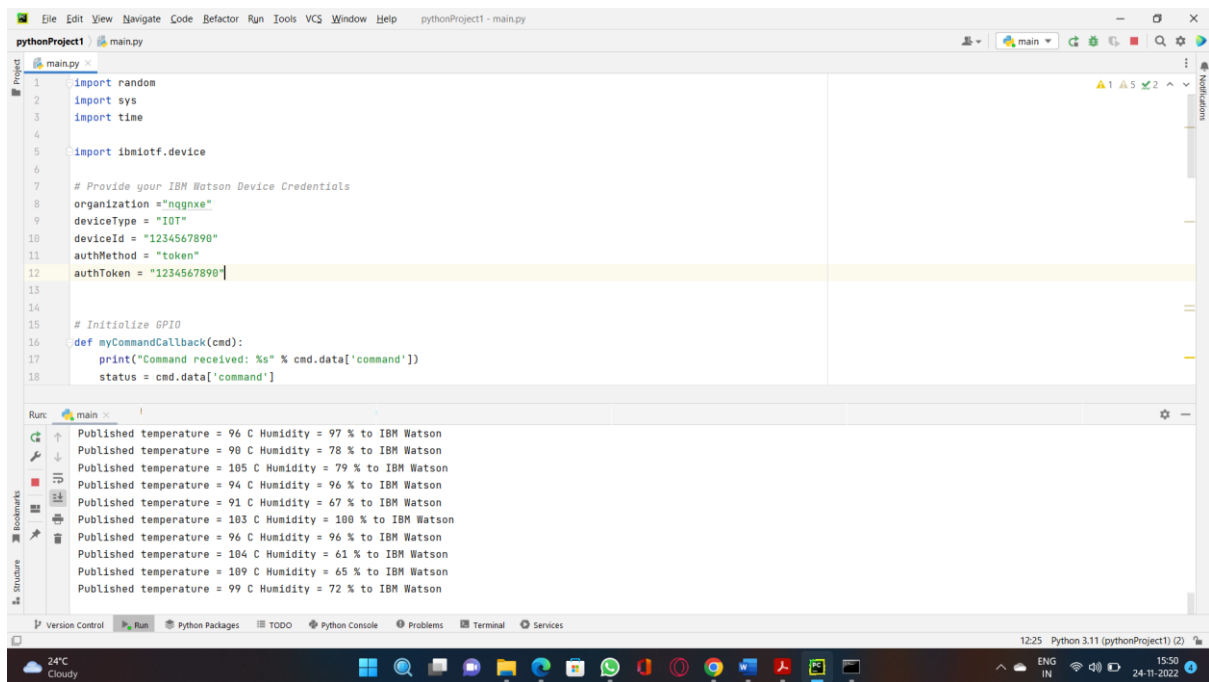
# print data
def myOnPublishCallback():
    print("Published temperature = %s C" % temperature, "Humidity = %s" % Humidity, "to IBM Watson")

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
        time.sleep(10)

    deviceCli.commandCallback = myCommandCallback
deviceCli.disconnect()

```

OUTPUT:



The screenshot shows an IDE window with a Python script named `main.py` and its execution output in the Run console.

Code in `main.py`:

```

1 import random
2 import sys
3 import time
4
5 import ibmiotf.device
6
7 # Provide your IBM Watson Device Credentials
8 organization = "ngnxe"
9 deviceType = "IOT"
10 deviceId = "1234567890"
11 authMethod = "token"
12 authToken = "1234567890"
13
14
15 # Initialize GPIO
16 def myCommandCallback(cmd):
17     print("Command received: %s" % cmd.data['command'])
18     status = cmd.data['command']

```

Output in the Run console:

```

Published temperature = 96 C Humidity = 97 % to IBM Watson
Published temperature = 98 C Humidity = 78 % to IBM Watson
Published temperature = 105 C Humidity = 79 % to IBM Watson
Published temperature = 94 C Humidity = 96 % to IBM Watson
Published temperature = 91 C Humidity = 67 % to IBM Watson
Published temperature = 103 C Humidity = 100 % to IBM Watson
Published temperature = 96 C Humidity = 96 % to IBM Watson
Published temperature = 104 C Humidity = 61 % to IBM Watson
Published temperature = 109 C Humidity = 65 % to IBM Watson
Published temperature = 99 C Humidity = 72 % to IBM Watson

```

The IDE interface includes a menu bar (File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help), a toolbar, and a status bar at the bottom showing the system clock (12:25), Python version (3.11), and date (24-11-2022).

IBM Watson IoT Platform

Search by Device ID

Device Simulator ☒

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
1234567890	Connected	IOT	Device	16 Nov 2022 3:49 PM	

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
IoTSensor	{"temperature":106,"humidity":86}	json	a few seconds ago
IoTSensor	{"temperature":97,"humidity":84}	json	a few seconds ago
IoTSensor	{"temperature":107,"humidity":77}	json	a few seconds ago
IoTSensor	{"temperature":109,"humidity":83}	json	a few seconds ago

1 Simulation running

Node-RED

Flow 1

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

function

temperature humidity

temp humid

msg.payload

get /data

ddata

http

light on light off

IBM IoT

msg.payload

debug

```

msg.payload : number
85
11/24/2022, 3:51:28 PM node: msg.payload
iot-2/type/IOT/id/1234567890/ev/IOTSensor/rmt/json :
msg.payload : number
91
11/24/2022, 3:51:28 PM node: msg.payload
iot-2/type/IOT/id/1234567890/ev/IOTSensor/rmt/json :
msg.payload : number
75
11/24/2022, 3:51:28 PM node: msg.payload
iot-2/type/IOT/id/1234567890/ev/IOTSensor/rmt/json :
msg.payload : number
104
11/24/2022, 3:51:28 PM node: msg.payload
iot-2/type/IOT/id/1234567890/ev/IOTSensor/rmt/json :
msg.payload : Object
{ temperature: 91, Humidity: 64 }
11/24/2022, 3:51:28 PM node: msg.payload
iot-2/type/IOT/id/1234567890/ev/IOTSensor/rmt/json :
msg.payload : Object
{ temperature: 107, Humidity: 76 }
  
```

IBM

IBM-EPBL/IBM-Project-3726-16

IBM Watson IoT Platform

Node-RED

Node-RED Dashboard

127.0.0.1:1880/ui/#/I/O?socketid=FhESjskwqcShQXymAAAB

GmailMaps(4) YouTubeYouTubeTranslateFATIMA MICHAEL C...

gas

LIGHT ON

LIGHT OFF

humid

75

temp

108

Develop The Pytho....pdf

Show all

24°C Cloudy

ENG IN

15:51

24-11-2022