

Sprint – 1

Team ID: PNT2022TMID25221

Python Code:

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import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

#Provide your IBM Watson Device Credentials

organization = "lcft5g"

deviceType = "Final"

deviceId = "Hello"

authMethod = "token"

authToken = "8300113450"

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
    temp=random.randint(0,100)
    Humid=random.randint(0,100)
    Gas=random.randint(0,100)

    data = { 'temp' : temp, 'Humid': Humid,'Gas':gas }
    #print data

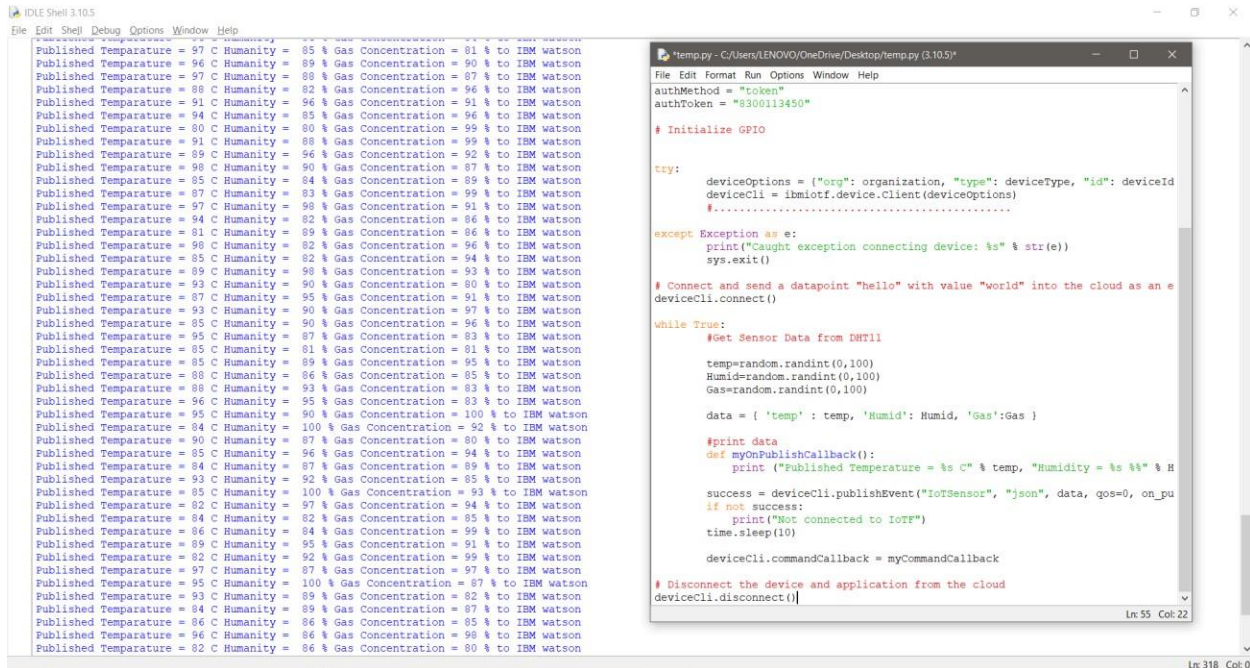
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity = %s %" %
Humid, "Gas Concentration = %s"%Gas"to IBM Watson")

    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
# Disconnect the device and application from the cloud
deviceCli.disconnect()

```

Output:



The screenshot shows an IDE with two windows. The left window displays the output of a program, consisting of 30 lines of text. Each line represents a data point with three values: Temperature (in degrees Celsius), Humidity (in %), and Gas Concentration (in %). The values for each parameter vary slightly across the lines. The right window shows a Python script named 'temp.py' located at 'C:/Users/LENOVO/OneDrive/Desktop/temp.py (3.10.5)'. The script is designed to connect to an IBM IoT Cloud, publish sensor data, and handle errors. It includes a try-except block for connection errors and a while loop for continuous data publishing. The script uses the 'ibmiotf.device' module and the 'deviceCli' object to interact with the cloud. The output in the left window matches the data generated by the script in the right window.

```
Published Temperature = 97 C Humidity = 85 % Gas Concentration = 81 % to IBM watson
Published Temperature = 96 C Humidity = 89 % Gas Concentration = 90 % to IBM watson
Published Temperature = 97 C Humidity = 88 % Gas Concentration = 87 % to IBM watson
Published Temperature = 88 C Humidity = 82 % Gas Concentration = 96 % to IBM watson
Published Temperature = 91 C Humidity = 96 % Gas Concentration = 91 % to IBM watson
Published Temperature = 94 C Humidity = 85 % Gas Concentration = 96 % to IBM watson
Published Temperature = 90 C Humidity = 90 % Gas Concentration = 99 % to IBM watson
Published Temperature = 91 C Humidity = 88 % Gas Concentration = 99 % to IBM watson
Published Temperature = 89 C Humidity = 96 % Gas Concentration = 92 % to IBM watson
Published Temperature = 98 C Humidity = 90 % Gas Concentration = 87 % to IBM watson
Published Temperature = 85 C Humidity = 84 % Gas Concentration = 89 % to IBM watson
Published Temperature = 87 C Humidity = 83 % Gas Concentration = 99 % to IBM watson
Published Temperature = 97 C Humidity = 99 % Gas Concentration = 91 % to IBM watson
Published Temperature = 94 C Humidity = 82 % Gas Concentration = 86 % to IBM watson
Published Temperature = 81 C Humidity = 89 % Gas Concentration = 86 % to IBM watson
Published Temperature = 98 C Humidity = 82 % Gas Concentration = 96 % to IBM watson
Published Temperature = 85 C Humidity = 92 % Gas Concentration = 94 % to IBM watson
Published Temperature = 89 C Humidity = 98 % Gas Concentration = 93 % to IBM watson
Published Temperature = 93 C Humidity = 90 % Gas Concentration = 80 % to IBM watson
Published Temperature = 87 C Humidity = 95 % Gas Concentration = 91 % to IBM watson
Published Temperature = 93 C Humidity = 90 % Gas Concentration = 97 % to IBM watson
Published Temperature = 85 C Humidity = 90 % Gas Concentration = 96 % to IBM watson
Published Temperature = 87 C Humidity = 87 % Gas Concentration = 83 % to IBM watson
Published Temperature = 85 C Humidity = 81 % Gas Concentration = 81 % to IBM watson
Published Temperature = 85 C Humidity = 89 % Gas Concentration = 95 % to IBM watson
Published Temperature = 88 C Humidity = 86 % Gas Concentration = 85 % to IBM watson
Published Temperature = 88 C Humidity = 93 % Gas Concentration = 83 % to IBM watson
Published Temperature = 95 C Humidity = 87 % Gas Concentration = 83 % to IBM watson
Published Temperature = 95 C Humidity = 90 % Gas Concentration = 100 % to IBM watson
Published Temperature = 84 C Humidity = 100 % Gas Concentration = 92 % to IBM watson
Published Temperature = 90 C Humidity = 87 % Gas Concentration = 80 % to IBM watson
Published Temperature = 85 C Humidity = 96 % Gas Concentration = 94 % to IBM watson
Published Temperature = 84 C Humidity = 87 % Gas Concentration = 89 % to IBM watson
Published Temperature = 93 C Humidity = 92 % Gas Concentration = 85 % to IBM watson
Published Temperature = 85 C Humidity = 100 % Gas Concentration = 93 % to IBM watson
Published Temperature = 82 C Humidity = 97 % Gas Concentration = 94 % to IBM watson
Published Temperature = 84 C Humidity = 82 % Gas Concentration = 85 % to IBM watson
Published Temperature = 86 C Humidity = 84 % Gas Concentration = 99 % to IBM watson
Published Temperature = 89 C Humidity = 95 % Gas Concentration = 91 % to IBM watson
Published Temperature = 82 C Humidity = 92 % Gas Concentration = 99 % to IBM watson
Published Temperature = 97 C Humidity = 87 % Gas Concentration = 97 % to IBM watson
Published Temperature = 95 C Humidity = 100 % Gas Concentration = 87 % to IBM watson
Published Temperature = 93 C Humidity = 89 % Gas Concentration = 82 % to IBM watson
Published Temperature = 84 C Humidity = 89 % Gas Concentration = 87 % to IBM watson
Published Temperature = 86 C Humidity = 86 % Gas Concentration = 85 % to IBM watson
Published Temperature = 96 C Humidity = 86 % Gas Concentration = 98 % to IBM watson
Published Temperature = 82 C Humidity = 86 % Gas Concentration = 80 % to IBM watson
```

```
temp.py - C:/Users/LENOVO/OneDrive/Desktop/temp.py (3.10.5)
File Edit Format Run Options Window Help

authMethod = "token"
authToken = "9300113450"

# Initialize GPIO

try:
    deviceOptions = {"org": organization, "type": deviceType, "id": deviceId}
    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 e
deviceCli.connect()

while True:
    #Get Sensor Data from DHT11

    temp=random.randint(0,100)
    Humid=random.randint(0,100)
    Gas=random.randint(0,100)

    data = { 'temp' : temp, 'Humid': Humid, 'Gas':Gas }

    #print data
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity = %s %" % H

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

    deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

Ln: 55 Col: 22

Ln: 318 Col: 0