

Project Development Phase

Sprint-1

Date	14-11-2022
Team ID	PNT2022TMID51106
Project Name	Hazardous Area Monitoring for Industrial Plants Powered by IoT

Python Code:

```
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")

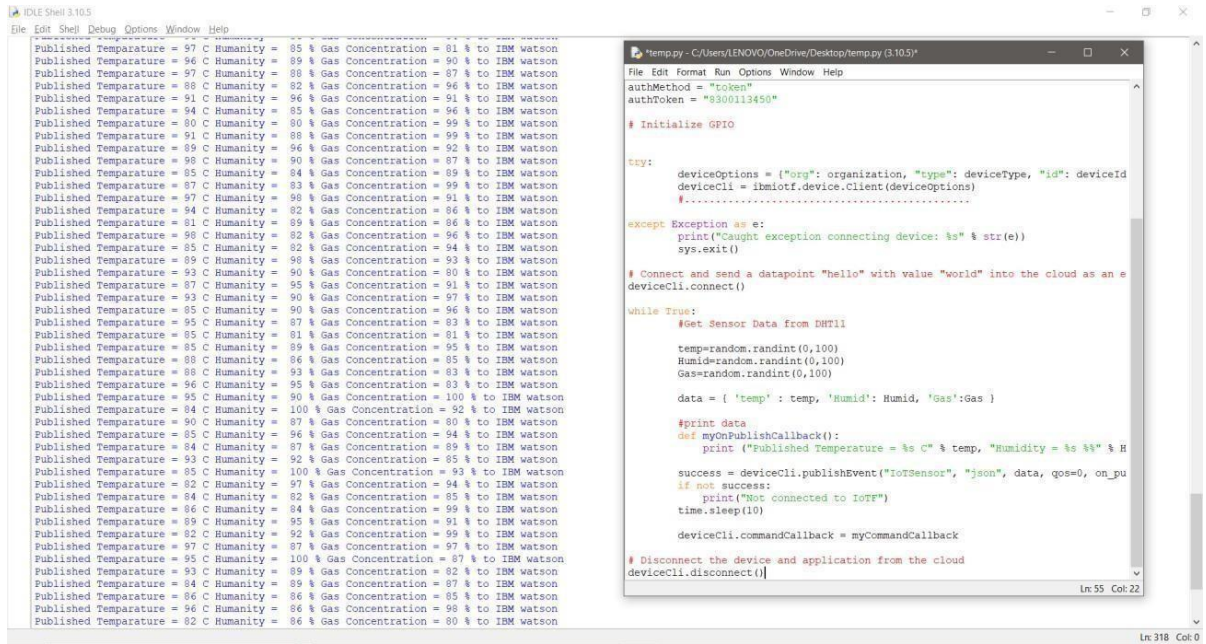
        time.sleep(10)

    deviceCli.commandCallback = myCommandCallback

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

```

Output:



The image shows a Python IDE with two windows. The main window displays a loop of 40 iterations, each publishing a datapoint with Temperature, Humidity, and Gas Concentration values to IBM Watson IoT. The second window shows the code for the IoT client, including initialization, connection, data generation, and publishing logic.

```
Published Temperature = 97 C Humanity = 85 % Gas Concentration = 81 % to IBM watson
Published Temperature = 96 C Humanity = 89 % Gas Concentration = 90 % to IBM watson
Published Temperature = 97 C Humanity = 88 % Gas Concentration = 87 % to IBM watson
Published Temperature = 88 C Humanity = 82 % Gas Concentration = 96 % to IBM watson
Published Temperature = 91 C Humanity = 96 % Gas Concentration = 91 % to IBM watson
Published Temperature = 94 C Humanity = 85 % Gas Concentration = 96 % to IBM watson
Published Temperature = 80 C Humanity = 80 % Gas Concentration = 89 % to IBM watson
Published Temperature = 91 C Humanity = 88 % Gas Concentration = 89 % to IBM watson
Published Temperature = 89 C Humanity = 96 % Gas Concentration = 92 % to IBM watson
Published Temperature = 98 C Humanity = 90 % Gas Concentration = 87 % to IBM watson
Published Temperature = 85 C Humanity = 84 % Gas Concentration = 89 % to IBM watson
Published Temperature = 87 C Humanity = 83 % Gas Concentration = 99 % to IBM watson
Published Temperature = 97 C Humanity = 98 % Gas Concentration = 91 % to IBM watson
Published Temperature = 94 C Humanity = 82 % Gas Concentration = 86 % to IBM watson
Published Temperature = 81 C Humanity = 89 % Gas Concentration = 86 % to IBM watson
Published Temperature = 98 C Humanity = 82 % Gas Concentration = 96 % to IBM watson
Published Temperature = 85 C Humanity = 82 % Gas Concentration = 94 % to IBM watson
Published Temperature = 89 C Humanity = 98 % Gas Concentration = 93 % to IBM watson
Published Temperature = 93 C Humanity = 90 % Gas Concentration = 80 % to IBM watson
Published Temperature = 87 C Humanity = 95 % Gas Concentration = 91 % to IBM watson
Published Temperature = 93 C Humanity = 90 % Gas Concentration = 97 % to IBM watson
Published Temperature = 85 C Humanity = 90 % Gas Concentration = 96 % to IBM watson
Published Temperature = 95 C Humanity = 87 % Gas Concentration = 83 % to IBM watson
Published Temperature = 85 C Humanity = 81 % Gas Concentration = 81 % to IBM watson
Published Temperature = 85 C Humanity = 89 % Gas Concentration = 85 % to IBM watson
Published Temperature = 88 C Humanity = 86 % Gas Concentration = 85 % to IBM watson
Published Temperature = 88 C Humanity = 93 % Gas Concentration = 83 % to IBM watson
Published Temperature = 96 C Humanity = 95 % Gas Concentration = 83 % to IBM watson
Published Temperature = 95 C Humanity = 90 % Gas Concentration = 100 % to IBM watson
Published Temperature = 84 C Humanity = 100 % Gas Concentration = 92 % to IBM watson
Published Temperature = 90 C Humanity = 87 % Gas Concentration = 80 % to IBM watson
Published Temperature = 85 C Humanity = 96 % Gas Concentration = 94 % to IBM watson
Published Temperature = 84 C Humanity = 87 % Gas Concentration = 89 % to IBM watson
Published Temperature = 93 C Humanity = 92 % Gas Concentration = 85 % to IBM watson
Published Temperature = 85 C Humanity = 100 % Gas Concentration = 93 % to IBM watson
Published Temperature = 82 C Humanity = 87 % Gas Concentration = 94 % to IBM watson
Published Temperature = 84 C Humanity = 82 % Gas Concentration = 85 % to IBM watson
Published Temperature = 86 C Humanity = 84 % Gas Concentration = 99 % to IBM watson
Published Temperature = 89 C Humanity = 95 % Gas Concentration = 91 % to IBM watson
Published Temperature = 82 C Humanity = 92 % Gas Concentration = 89 % to IBM watson
Published Temperature = 97 C Humanity = 87 % Gas Concentration = 97 % to IBM watson
Published Temperature = 95 C Humanity = 100 % Gas Concentration = 87 % to IBM watson
Published Temperature = 93 C Humanity = 89 % Gas Concentration = 82 % to IBM watson
Published Temperature = 84 C Humanity = 89 % Gas Concentration = 87 % to IBM watson
Published Temperature = 86 C Humanity = 86 % Gas Concentration = 85 % to IBM watson
Published Temperature = 96 C Humanity = 86 % Gas Concentration = 98 % to IBM watson
Published Temperature = 82 C Humanity = 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 = "8300113450"

# 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 IoTTF")
        time.sleep(10)

    deviceCli.commandCallback = myCommandCallback

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

Ln 55 Col 22
Ln 318 Col 0
```