

## Developing a python script

Date	19 November 2022
Team Id	PNT2022TMID23518
Title	Hazardous Area Monitoring for Industrial Plant using IoT

### Python Code

```
Python Script IOT.py - C:\Users\91934\Downloads\Python Script IOT.py (3.7.0)
File Edit Format Run Options Window Help

import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "4wj0mx"
deviceType = "NodeMCU"
deviceId = "IoT001"
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 in on")
    else:
        print ("led is off")

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)
    data = {'temp' : temp, 'humid' : humid}
    #print data
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity:%s" %humid)

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0, on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
    time.sleep(1)

    deviceCli.commandCallback = myCommandCallback

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

## Generated Values

```
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\91934\Downloads\Python Script IOT.py =====
2022-11-09 22:48:15,741 ibmiotf.device.Client INFO Connected successfully: d:4wj0mx:NodeMCU:IoT001
Published Temperature = 68 C Humidity:97
Published Temperature = 12 C Humidity:10
Published Temperature = 0 C Humidity:79
Published Temperature = 95 C Humidity:56
Published Temperature = 91 C Humidity:64
Published Temperature = 25 C Humidity:78
Published Temperature = 24 C Humidity:69
Published Temperature = 52 C Humidity:50
Published Temperature = 75 C Humidity:45
Published Temperature = 44 C Humidity:9
Published Temperature = 59 C Humidity:44
Published Temperature = 67 C Humidity:12
Published Temperature = 0 C Humidity:31
Published Temperature = 3 C Humidity:21
Published Temperature = 32 C Humidity:8
Published Temperature = 7 C Humidity:90
Published Temperature = 71 C Humidity:42
Published Temperature = 99 C Humidity:76
Published Temperature = 97 C Humidity:45
Published Temperature = 10 C Humidity:95
Published Temperature = 18 C Humidity:19
Published Temperature = 85 C Humidity:13
Published Temperature = 11 C Humidity:57
Published Temperature = 70 C Humidity:86
Published Temperature = 54 C Humidity:81
Published Temperature = 59 C Humidity:8
Published Temperature = 35 C Humidity:11
Published Temperature = 39 C Humidity:42
Published Temperature = 17 C Humidity:85
Published Temperature = 68 C Humidity:46
Published Temperature = 40 C Humidity:9
Published Temperature = 90 C Humidity:90
Published Temperature = 64 C Humidity:41
Published Temperature = 70 C Humidity:81
Published Temperature = 17 C Humidity:89
Published Temperature = 20 C Humidity:58
Published Temperature = 63 C Humidity:65
Published Temperature = 60 C Humidity:82
Published Temperature = 87 C Humidity:1
Published Temperature = 58 C Humidity:37
Published Temperature = 70 C Humidity:85
Published Temperature = 90 C Humidity:43
Published Temperature = 58 C Humidity:0
Published Temperature = 0 C Humidity:3
Published Temperature = 52 C Humidity:26
```

## Publishing the value to IBM cloud

Service Details - IBM Cloud x IBM Watson IoT Platform x +

4wj0mx.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

Search by Device ID

Device Simulator

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
IoT001	Connected	NodeMCU	Device	8 Nov 2022 5:24 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	["temp":69,"humid":46]	json	a few seconds ago
IoTSensor	["temp":17,"humid":85]	json	a few seconds ago
IoTSensor	["temp":39,"humid":42]	json	a few seconds ago
IoTSensor	["temp":35,"humid":11]	json	a few seconds ago
IoTSensor	["temp":59,"humid":8]	json	a few seconds ago