

## Sprint-2

**Team ID: PNT2022TMID20272**

**Project Name: IoT Based Smart Crop Protection System for Agriculture**

Python code to generate random data and pass it to IBM Watson IoT platform

**Source Code:**

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "kd5lkd"
deviceType = "ibm"
deviceId = "12345678"
authMethod = "token"
authToken = "87654321"

# Initialize GPIO
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:

    temp=random.randint(0,100)
    Hum=random.randint(0,100)
    moisture=random.randint(0,100)

    data = { 'temperature' : temp, 'Humidity': Hum, 'Moisture':moisture }
```

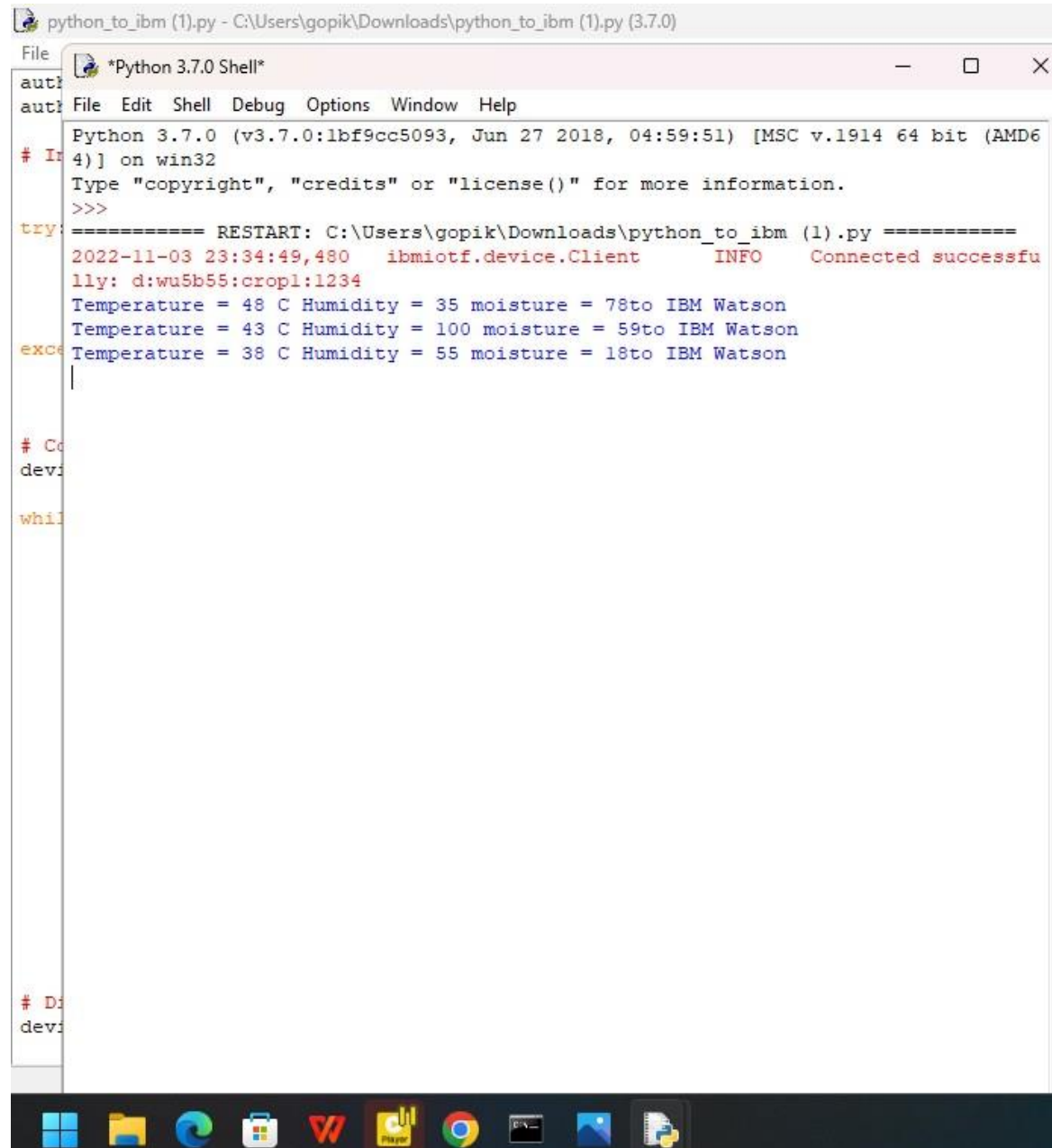
```
def myOnPublishCallback():
    print ("Temperature = " + str(temp)+" C Humidity = " + str(hum)+ " moisture = " +
str(moisture) + "to IBM Watson")

    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:



```
python_to_ibm (1).py - C:\Users\gopik\Downloads\python_to_ibm (1).py (3.7.0)
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.
>>>
try:
    ===== RESTART: C:\Users\gopik\Downloads\python_to_ibm (1).py =====
    2022-11-03 23:34:49,480    ibmiotf.device.Client    INFO    Connected successfully: d:wu5b55:cropl:1234
    Temperature = 48 C Humidity = 35 moisture = 78to IBM Watson
    Temperature = 43 C Humidity = 100 moisture = 59to IBM Watson
except:
    Temperature = 38 C Humidity = 55 moisture = 18to IBM Watson

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The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. The main content area displays details for a device with ID '12345678', which is 'Disconnected'. The 'Recent Events' tab is selected, showing a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. Five events are listed, all in JSON format, with timestamps ranging from 'a few seconds ago' to '4 minutes ago'. A status message at the bottom right indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"temperature":46,"humidity":40,"moisture":9,"..."}	json	a few seconds ago
event_1	{"temperature":52,"humidity":94,"moisture":77,"..."}	json	a minute ago
event_1	{"temperature":3,"humidity":54,"moisture":20,"..."}	json	2 minutes ago
event_1	{"temperature":61,"humidity":47,"moisture":73,"..."}	json	3 minutes ago
event_1	{"temperature":92,"humidity":64,"moisture":16,"..."}	json	4 minutes ago