Sprint-1

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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 = "041ole"
deviceType = "IoT"
deviceId = "12345"
authMethod = "token"
authToken = "12345689"

# 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 }
```

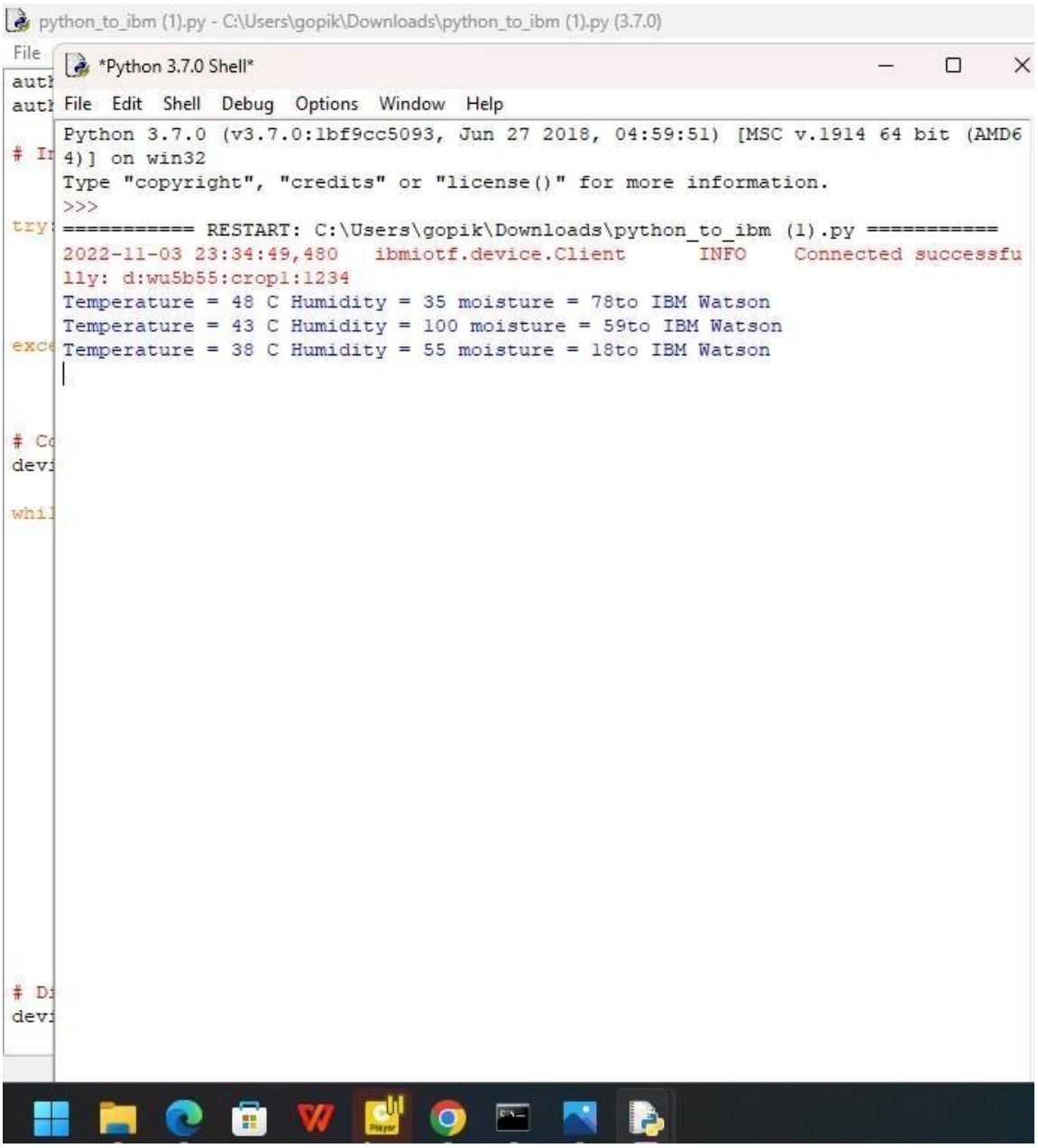
```
    def myOnPublishCallback():
        print ("Temperature = " + str(temp)+" C Humidity = " + str(hum)+ " moisture = " +
str(moisture) + "to IBM Watson")

      success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
      if not success:
        print("Not connected to IoTF")
      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
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\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
Temperature = 38 C Humidity = 55 moisture = 18to IBM Watson

Source code is deployed on IBM Watson IoT platform to generate sensor data.

Source Code:

```
{
    "temperature": random(0, 100),
    "humidity": random(0, 100),
    "moisture": random(0, 100),
    " animalDetected ":random(0,2)
}
```

Output: