

PYTHON SCRIPT

Date	19 NOVEMBER 2022
Team ID	PNT2022TMID29726
Project Name	Project – IoT based smart crop protection system for agriculture

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

#Provide your IBM Watson Device Credentials
organization = "6t0grq"
deviceType = "arduino"
deviceId = "12345"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="motoron":
        print ("MOTOR is on")
    elif status == "motoroff":
        print ("MOTOR is off")
    else :
        print ("please send proper command")

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(90,110)
    Humid=random.randint(60,100)
    moisture=random.randint(10,30)
```

```
    data = { 'temp' : temp, 'Humid': Humid,'moisture':moisture }
```

```
    #print data
```

```
    def myOnPublishCallback():
```

```
        print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid,
"Moisture = %s %%" % moisture, "to IBM Watson")
```

```
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
```

```
        if not success:
```

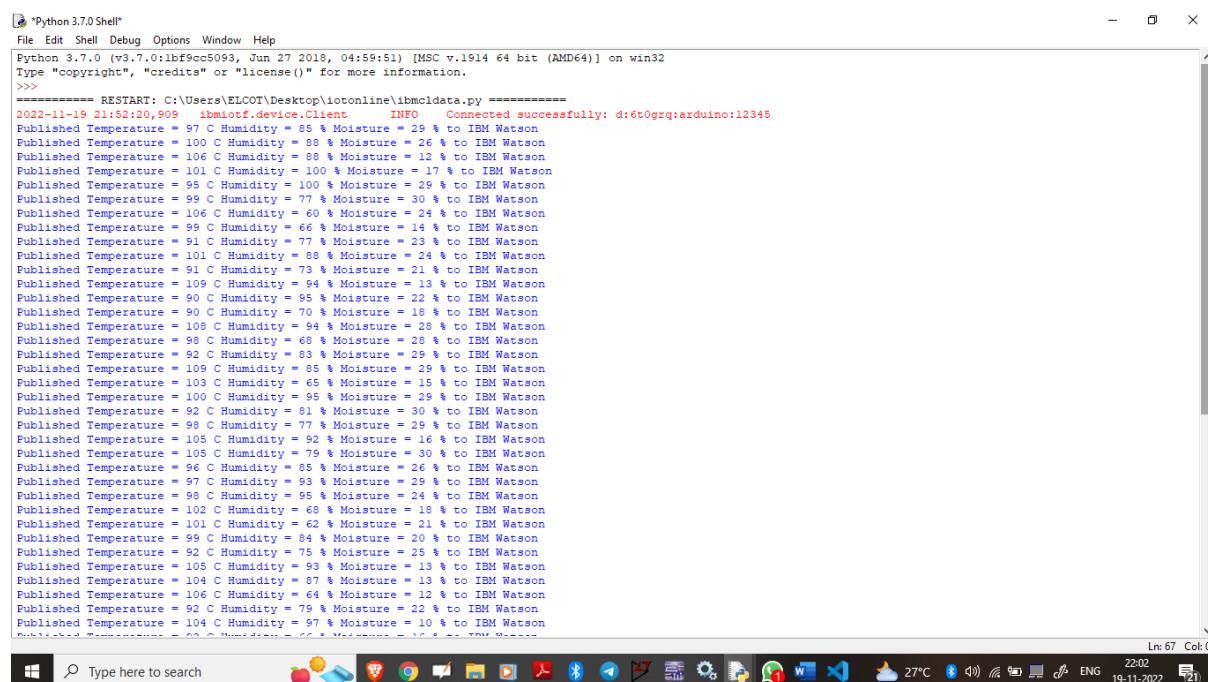
```
            print("Not connected to IoTF")
```

```
            time.sleep(10)
```

```
deviceCli.commandCallback = myCommandCallback
```

```
# Disconnect the device and application from the cloud
```

```
deviceCli.disconnect()
```



The screenshot shows a terminal window titled "Python 3.7.0 Shell". The window displays a series of sensor data points being published to IBM Watson. The data includes temperature in Celsius, humidity in percent, and moisture levels. The output is as follows:

```
Python 3.7.0 (v3.7.0:bbfdd18, 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\ELCOT\Desktop\iotonline\ibmcldata.py ======
2022-11-19 21:52:20,909  ibmiotf.device.Client      INFO  Connected successfully: d:6t0grq:arduino:12345
Published Temperature = 97 C Humidity = 85 % Moisture = 29 % to IBM Watson
Published Temperature = 100 C Humidity = 88 % Moisture = 26 % to IBM Watson
Published Temperature = 106 C Humidity = 88 % Moisture = 12 % to IBM Watson
Published Temperature = 101 C Humidity = 100 % Moisture = 17 % to IBM Watson
Published Temperature = 95 C Humidity = 100 % Moisture = 29 % to IBM Watson
Published Temperature = 99 C Humidity = 77 % Moisture = 30 % to IBM Watson
Published Temperature = 106 C Humidity = 60 % Moisture = 24 % to IBM Watson
Published Temperature = 99 C Humidity = 66 % Moisture = 14 % to IBM Watson
Published Temperature = 91 C Humidity = 77 % Moisture = 23 % to IBM Watson
Published Temperature = 101 C Humidity = 88 % Moisture = 24 % to IBM Watson
Published Temperature = 91 C Humidity = 73 % Moisture = 21 % to IBM Watson
Published Temperature = 109 C Humidity = 94 % Moisture = 13 % to IBM Watson
Published Temperature = 90 C Humidity = 95 % Moisture = 22 % to IBM Watson
Published Temperature = 90 C Humidity = 70 % Moisture = 18 % to IBM Watson
Published Temperature = 108 C Humidity = 94 % Moisture = 28 % to IBM Watson
Published Temperature = 98 C Humidity = 65 % Moisture = 28 % to IBM Watson
Published Temperature = 92 C Humidity = 83 % Moisture = 29 % to IBM Watson
Published Temperature = 109 C Humidity = 85 % Moisture = 29 % to IBM Watson
Published Temperature = 103 C Humidity = 65 % Moisture = 15 % to IBM Watson
Published Temperature = 100 C Humidity = 95 % Moisture = 29 % to IBM Watson
Published Temperature = 92 C Humidity = 81 % Moisture = 30 % to IBM Watson
Published Temperature = 98 C Humidity = 77 % Moisture = 29 % to IBM Watson
Published Temperature = 105 C Humidity = 92 % Moisture = 16 % to IBM Watson
Published Temperature = 105 C Humidity = 79 % Moisture = 30 % to IBM Watson
Published Temperature = 96 C Humidity = 85 % Moisture = 26 % to IBM Watson
Published Temperature = 97 C Humidity = 93 % Moisture = 29 % to IBM Watson
Published Temperature = 98 C Humidity = 95 % Moisture = 24 % to IBM Watson
Published Temperature = 102 C Humidity = 68 % Moisture = 18 % to IBM Watson
Published Temperature = 101 C Humidity = 62 % Moisture = 21 % to IBM Watson
Published Temperature = 99 C Humidity = 81 % Moisture = 20 % to IBM Watson
Published Temperature = 92 C Humidity = 75 % Moisture = 25 % to IBM Watson
Published Temperature = 105 C Humidity = 93 % Moisture = 13 % to IBM Watson
Published Temperature = 104 C Humidity = 87 % Moisture = 13 % to IBM Watson
Published Temperature = 106 C Humidity = 64 % Moisture = 12 % to IBM Watson
Published Temperature = 92 C Humidity = 79 % Moisture = 22 % to IBM Watson
Published Temperature = 104 C Humidity = 97 % Moisture = 10 % to IBM Watson
```

