

PROJECT DEVELOPMENT PHASE

SPRINT-2

Team ID	PNT2022TMID04659
Project Name	IoT Based Smart Crop Protection System for Agriculture
Date	05-Nov-2022

Source code to deployed on IBM Watson Iot platform to generate the sensor data.

SOURCE CODE:

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

#Provide your IBM Watson Device Credentials
organization = "iritj7"
deviceType = "abcd"
deviceId = "12345"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
```

```

status=cmd.data['command']if
status=="lighton":
    print ("led is on") elif
status == "lightoff":
    print ("led 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) Moist=random.randint(20,100)
```

```
Animal_dect=random.randint(1,20)
```

```
data = { 'temp' : temp, 'Humid': Humid, 'Moist' : Moist, 'Animal_dect' :  
Animal_dect }
```

```
#print data
```

```
def myOnPublishCallback():
```

```
    print ("Published Temperature = %s C" % temp, "Humidity = %s  
%%" % Humid, "to IBM Watson", "Published Moisture= %s" % Moist,  
"Published Animal detection = " , Animal_dect)
```

```
    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 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/DELL/AppData/Local/Programs/Python/Python37/ooo.py =====
2022-11-17 11:01:00,744 ibmiotf.device.Client INFO Connected successfully: d:\r1tj7:abod:12345
Published Temperature = 107 C Humidity = 87 % to IBM Watson Published Moisture= 51 Published Animal detection = 10
Published Temperature = 109 C Humidity = 72 % to IBM Watson Published Moisture= 33 Published Animal detection = 18
Published Temperature = 99 C Humidity = 60 % to IBM Watson Published Moisture= 42 Published Animal detection = 20
Published Temperature = 109 C Humidity = 94 % to IBM Watson Published Moisture= 33 Published Animal detection = 4
Published Temperature = 95 C Humidity = 72 % to IBM Watson Published Moisture= 67 Published Animal detection = 15
Published Temperature = 97 C Humidity = 88 % to IBM Watson Published Moisture= 54 Published Animal detection = 14
```

SENSOR DATA:

Delete 

<input checked="" type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added	Description
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12345	 Disconnected	NODEMCU	Device	Nov 16, 2022 8:39 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
event_1	{"temp":19,"humi":32}	json	a few seconds ago
event_1	{"temp":77,"humi":39}	json	a few seconds ago
event_1	{"temp":24,"humi":19}	json	a few seconds ago
event_1	{"temp":69,"humi":76}	json	a few seconds ago
event_1	{"temp":12,"humi":6}	json	a few seconds ago

Device Type: NODEMCU

Events 1

New event type +

Event type name event_1

Send

Schedule

20

Every Minute

Payload

Specify the event payload in the editor window or by uploading a [CSV file](#).

0 {

1

2 "temp": random(0, 100),

3 "humi": random(0,100)

4

5 }

6

Cancel

Save

