

Python Script

Project Title	SmartFarmer – IoT Enabled Smart Farming Application
Team ID	PNT2022TMID31438

Code:

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

#Provide your IBM Watson Device Credentials

organization = "x0fxss" #replace the ORG ID

deviceType = "Testing"#replace the Device type wi

deviceId = "Testdevice1"#replace Device ID

authMethod = "token"

authToken = "123456789" #Replace the authtoken

# Initialize GPIO


#Receives Command from Node-red

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")

    elif status == "motor30" :

        print ("motor is on for 30 minutes")


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)

    soilmoisture=random.randint(0,100)


    data = { 'temp' : temp, 'Humid': Humid, 'soilmoisture': soilmoisture }

    #print data

    def myOnPublishCallback():

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

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

    if not success:

        print("Not connected to IoT")

    time.sleep(5)

    deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud

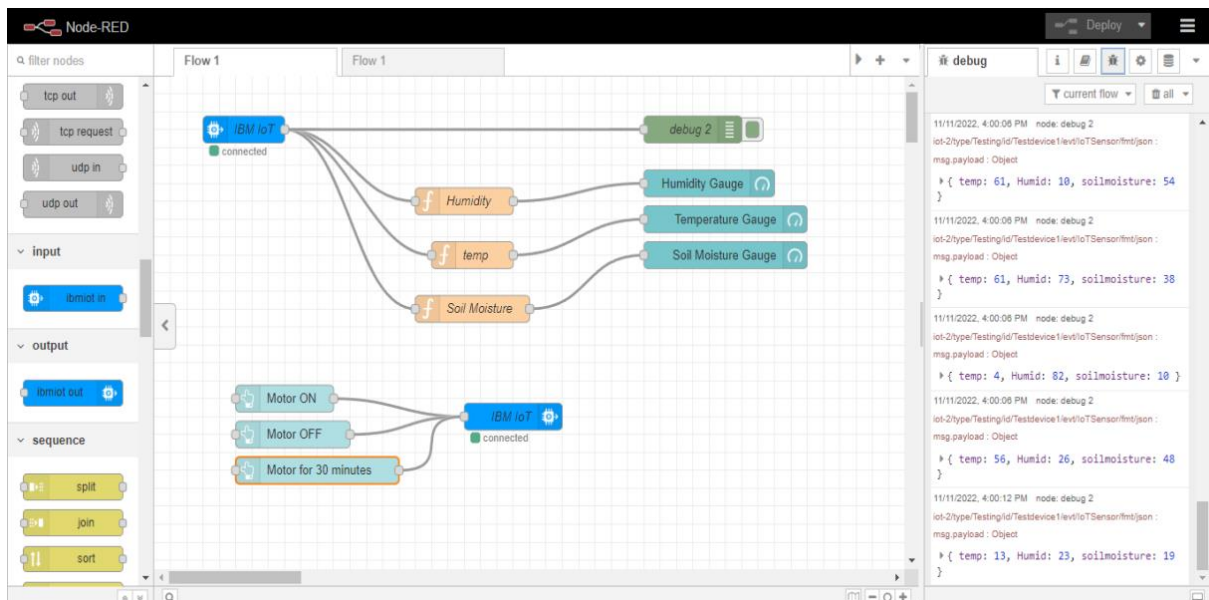
deviceCli.disconnect()

```

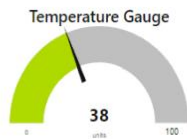
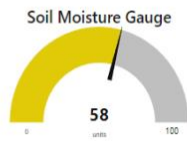
Output:

```
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\charu\Downloads\ibmiotpublishsubscribe.py =====
2022-11-11 15:56:49,907 ibmiotf.device.Client INFO Connected successfully: d:x0fxss:Testing:Testdevice1
Published Temperature = 8 C Humidity = 44 % soilmoisture = 3 % to IBM Watson
Published Temperature = 13 C Humidity = 95 % soilmoisture = 43 % to IBM Watson
Published Temperature = 78 C Humidity = 83 % soilmoisture = 83 % to IBM Watson
Published Temperature = 100 C Humidity = 52 % soilmoisture = 60 % to IBM Watson
Published Temperature = 45 C Humidity = 93 % soilmoisture = 16 % to IBM Watson
Published Temperature = 53 C Humidity = 12 % soilmoisture = 59 % to IBM Watson
Published Temperature = 15 C Humidity = 49 % soilmoisture = 32 % to IBM Watson
Published Temperature = 37 C Humidity = 73 % soilmoisture = 25 % to IBM Watson
```



Default



Group 2

MOTOR ON

MOTOR OFF

MOTOR FOR 30 MINUTES

```
Published Temperature = 25 C Humidity = 32 % soilmoisture = 86 % to IBM Watson
Published Temperature = 27 C Humidity = 16 % soilmoisture = 26 % to IBM Watson
Command received: motoron
motor is on
Command received: motoron
motor is on
Published Temperature = 10 C Humidity = 69 % soilmoisture = 82 % to IBM Watson
Published Temperature = 75 C Humidity = 37 % soilmoisture = 2 % to IBM Watson
Published Temperature = 63 C Humidity = 59 % soilmoisture = 11 % to IBM Watson
Published Temperature = 31 C Humidity = 20 % soilmoisture = 43 % to IBM Watson
Published Temperature = 47 C Humidity = 38 % soilmoisture = 95 % to IBM Watson
Published Temperature = 62 C Humidity = 5 % soilmoisture = 93 % to IBM Watson
Command received: motoroff
motor is off
Command received: motor30
motor is on for 30 minutes
Published Temperature = 19 C Humidity = 99 % soilmoisture = 96 % to IBM Watson
Published Temperature = 6 C Humidity = 56 % soilmoisture = 85 % to IBM Watson
```