

FINAL CODE:-

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Team ID	PNT2022TMID52394
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

TEAM MEMBERS:-

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PYTHON CODE

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

organization = "zxnybt"
deviceType = "dominators"
deviceId = "12345"
authMethod = "token"
authToken = "123456789"

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data)
    for key in cmd.data.keys():
        if key == 'motor':
            if cmd.data['motor'] == 'ON':
                print("MOTOR is turned ON")

            elif cmd.data['motor'] == 'OFF':
```

```

        print("MOTOR is turned OFF")
    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()

    deviceCli.connect()

    while True:

        temp=random.randint(0,40)
        Humid=random.randint(0,100)
        moist=random.randint(0,40)
        data = { 'temperature' : temp, 'humidity': Humid, 'soil_moisture':moist
}

        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temp, "Humidity = %s
%%%" % Humid, "soil moisture =%s" % moist,"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

    deviceCli.disconnect()

```

PYTHON CODE CONNECTED WITH IBM:-

The image shows a dual-screen setup. On the left is a Python 3.9.8 IDLE Shell window. On the right is a web browser displaying the IBM Watson IoT Platform dashboard for a device named 'dominators'.

Python Shell Output:

```
Python 3.9.8 (tags/v3.9.8:bb3fdecf, Nov 5 2021, 20:48:33) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more in
>>>
===== RESTART: C:\Users\sugen\OneDrive\Desktop\try1.
py =====
2022-11-17 19:33:43,811 ibmiotf.device.Client INFO C
connected successfully: d:zxnybt:dominators:12345
Published Temperature = 22 C Humidity = 0 % to IBM Watson
Published Temperature = 25 C Humidity = 77 % to IBM Watson
Published Temperature = 13 C Humidity = 10 % to IBM Watson
Published Temperature = 39 C Humidity = 34 % to IBM Watson
Published Temperature = 22 C Humidity = 43 % to IBM Watson
Published Temperature = 1 C Humidity = 63 % to IBM Watson
```

IBM Watson IoT Platform Dashboard:

The dashboard shows the device '12345' is 'Connected'. The 'Recent Events' tab is active, displaying a table of sensor data.

Event	Value	Format	Last Received
IoTSensor	{"temperature":1,"humidity":63,"soil_moisture":...	json	a few seconds ago
IoTSensor	{"temperature":22,"humidity":43,"soil_moisture":...	json	a few seconds ago
IoTSensor	{"temperature":39,"humidity":34,"soil_moisture":...	json	a few seconds ago

At the bottom of the dashboard, it indicates '0 Simulations running'.