

SPRINT 1

TEAM ID	PNT2022TMID41919
PROJECT NAME	Smart Farmer - IoT Enabled Smart Farming Application
Date	29 October 2022

Python code:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "5myh1a" #replace the ORG ID
deviceType = "iot_device"#replace the Device type wi
deviceId = "12344321"#replace Device ID
authMethod = "token"
authToken = "1234567890" #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:
    temp=random.randint(0,100)
    Humid=random.randint(0,100)
    soilmoisture=random.randint(0,100)
    data = { 'temp' : temp, 'Humid': Humid, 'soilmoisture':
soilmoisture }
    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
deviceCli.disconnect()

```

Output:

```
Python 3.7.6 Shell
File Edit Shell Debug Options Window Help
Python 3.7.6 (tags/v3.7.6:433647ae0, Dec 18 2019, 23:46:00) [MSC v.1916 32 bit (Intel)] on <
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\prakesh\Documents\asfa.py =====
2022-11-21 21:26:13,083 ibmiotf.device.Client INFO Connected successfully: d:5myh1a
Published Temperature = 62 C Humidity = 4 % soilmoisture = 56 % to IBM Watson
Published Temperature = 21 C Humidity = 73 % soilmoisture = 32 % to IBM Watson
Published Temperature = 7 C Humidity = 64 % soilmoisture = 39 % to IBM Watson
Published Temperature = 82 C Humidity = 41 % soilmoisture = 41 % to IBM Watson

asfa.py - C:\Users\prakesh\Documents\asfa.py (3.7.6)
File Edit Format Run Options Window Help
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    elif status == "motor30" :
        print ("motor is on for 30 minutes")
    try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId,
            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
    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 %" % H
Ln: 19
Cok: 0
```

IBM Watson:

5myh1a.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

prakash775756@gmail.com
ID: 5myh1a

Browse Action Device Types Interfaces

Add Device

Device ID	Status	Device Type	Class ID	Date Added
12344321	Connected	iot_device	Device	Nov 20, 2022 10:55 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
IoTSensor	{"temp":54,"Humid":33,"soilmoisture":57}	json	a few seconds ago
IoTSensor	{"temp":10,"Humid":99,"soilmoisture":48}	json	a few seconds ago
IoTSensor	{"temp":45,"Humid":76,"soilmoisture":12}	json	a few seconds ago
IoTSensor	{"temp":19,"Humid":40,"soilmoisture":95}	json	a few seconds ago
IoTSensor	{"temp":42,"Humid":21,"soilmoisture":47}	json	a few seconds ago