

SPRINT-2

Date	31 October 2022
Team ID	PNT2022TMID31899
Project Name	IOT BASED CROP PROTECTION SYSTEM FOR AGRICULTURE

Description :

To generate the random values for temperature , humidity and soil moisture of the field . Below the python code is deployed and tested .

Python Code :

```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

# Provide your IBM Watson Device Credentials

organization = "ebf2oy" # replace the ORG ID

deviceType = "Humidity" # replace the Device type

deviceId = "123456" # replace Device ID

authMethod = "token"

authToken = "C4b(zFlpnKm_OT_C+c" # Replace the authtoken

def myCommandCallback(cmd):

    print("Command received: %s" % cmd.data['command'])

    print(cmd)

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)

    pulse=random.randint(0,100)

    soil=random.randint(0,100)

    data = { 'temp' : temp, 'pulse': pulse , 'soil':soil}

    #print data

    def myOnPublishCallback():

        print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % pulse,"Soil Moisture
= %s %%" % soil,"to IBM Watson")

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

        if not success:

            print("Not connected to IoT")

            time.sleep(1)

            deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud

deviceCli.disconnect()

```

Output :

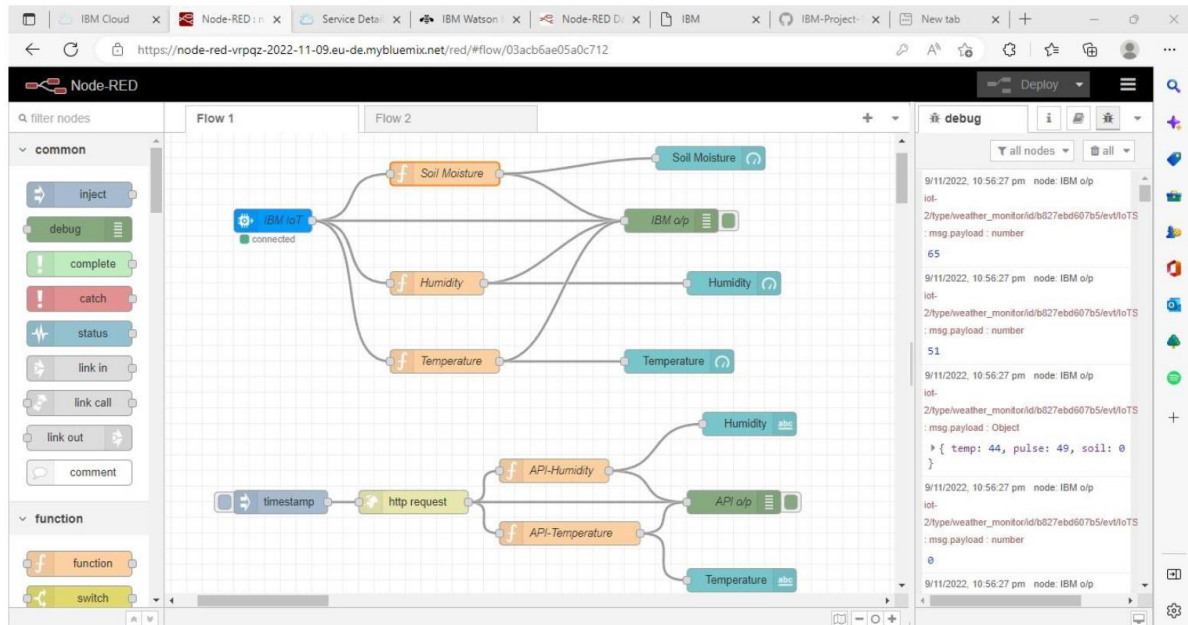
```
Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\darun\OneDrive\Documents\monitor.py =====
2022-11-18 14:55:56,531 ibmiotf.device.Client INFO Connected successfully: d:ebf2oy:Humidity:123456
Published Temperature = 50 C Humidity = 24 % Soil Moisture = 26 % to IBM Watson
Published Temperature = 20 C Humidity = 16 % Soil Moisture = 35 % to IBM Watson
Published Temperature = 7 C Humidity = 82 % Soil Moisture = 47 % to IBM Watson
Published Temperature = 92 C Humidity = 19 % Soil Moisture = 42 % to IBM Watson
Published Temperature = 21 C Humidity = 10 % Soil Moisture = 98 % to IBM Watson
Published Temperature = 61 C Humidity = 37 % Soil Moisture = 75 % to IBM Watson
Published Temperature = 55 C Humidity = 2 % Soil Moisture = 6 % to IBM Watson
Published Temperature = 31 C Humidity = 42 % Soil Moisture = 65 % to IBM Watson
Published Temperature = 48 C Humidity = 1 % Soil Moisture = 58 % to IBM Watson
Published Temperature = 53 C Humidity = 18 % Soil Moisture = 65 % to IBM Watson
Published Temperature = 90 C Humidity = 14 % Soil Moisture = 88 % to IBM Watson
Published Temperature = 61 C Humidity = 63 % Soil Moisture = 22 % to IBM Watson
Published Temperature = 68 C Humidity = 36 % Soil Moisture = 52 % to IBM Watson
Published Temperature = 92 C Humidity = 54 % Soil Moisture = 4 % to IBM Watson
Published Temperature = 41 C Humidity = 97 % Soil Moisture = 61 % to IBM Watson
Published Temperature = 33 C Humidity = 72 % Soil Moisture = 0 % to IBM Watson
Published Temperature = 68 C Humidity = 36 % Soil Moisture = 79 % to IBM Watson
|
```

The above python code is connected IoT Watson Platform :

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various platform features. The main content area shows the details for a specific device with ID 123456, which is in a 'Connected' state. Below the device header, there are tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, displaying a table of live data events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are from an 'IoTSensor' and contain JSON strings representing temperature, pulse, and soil moisture data. At the bottom right, a status box indicates '0 Simulations running'.

Event	Value	Format	Last Received
IoTSensor	{"temp":94,"pulse":96,"soil":87}	json	a few seconds ago
IoTSensor	{"temp":54,"pulse":81,"soil":88}	json	a few seconds ago
IoTSensor	{"temp":11,"pulse":100,"soil":70}	json	a few seconds ago
IoTSensor	{"temp":93,"pulse":7,"soil":97}	json	a few seconds ago
IoTSensor	{"temp":31,"pulse":70,"soil":93}	json	a few seconds ago

Open the Node Red Flow Chart to show the Temperature , Humidity and Soil moisture :



Open the Node Red User Interface to show the Temperature , Humidity and Soil moisture value in gauge :

