PROJECT DEVELOPMENT PHASE

SPRINT 2

TEAM ID	PNT2022TMID15778
PROJECT NAME	IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE
DATE	31 OCTOBER 2022

STEP 1: Write a python code for randomize Soil Moisture ,Temperature and Humidity.


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

# Provide your IBM Watson Device Credentials
organization = "8gyz7t"  # replace the ORG ID
deviceType = "weather_monitor"  # replace the Device type
deviceId = "b827ebd607b5"  # replace Device ID
authMethod = "token"
authToken = "LWVpQFaVQl66HWN48f"  # 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():
```
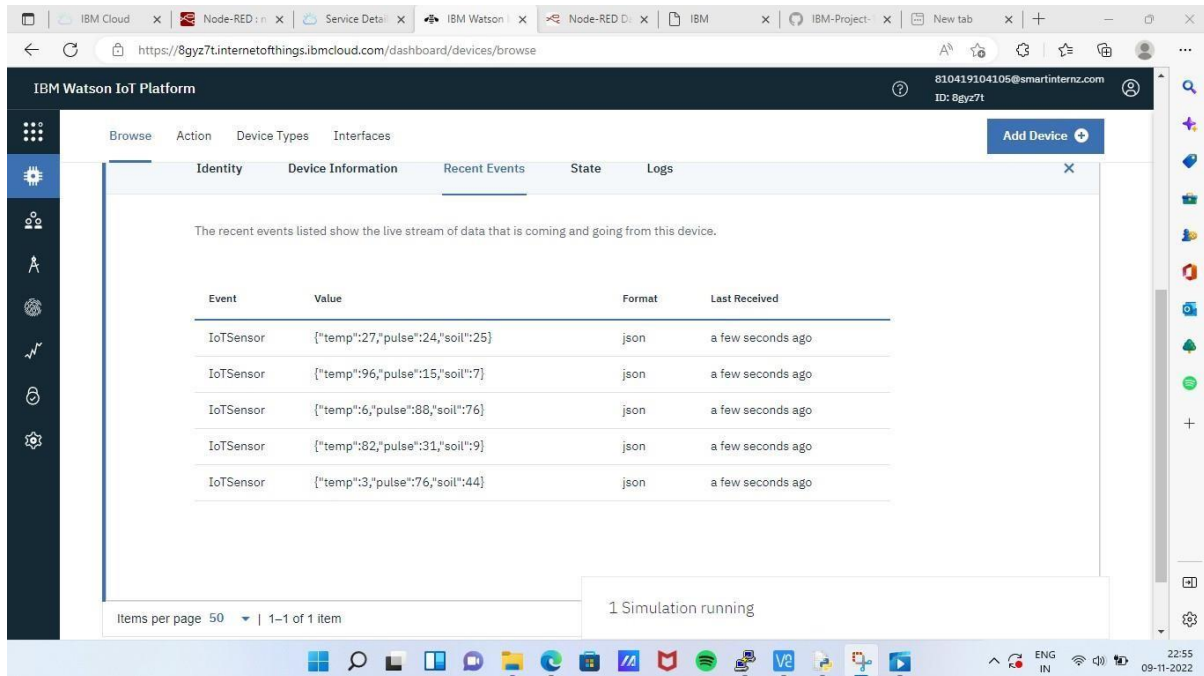
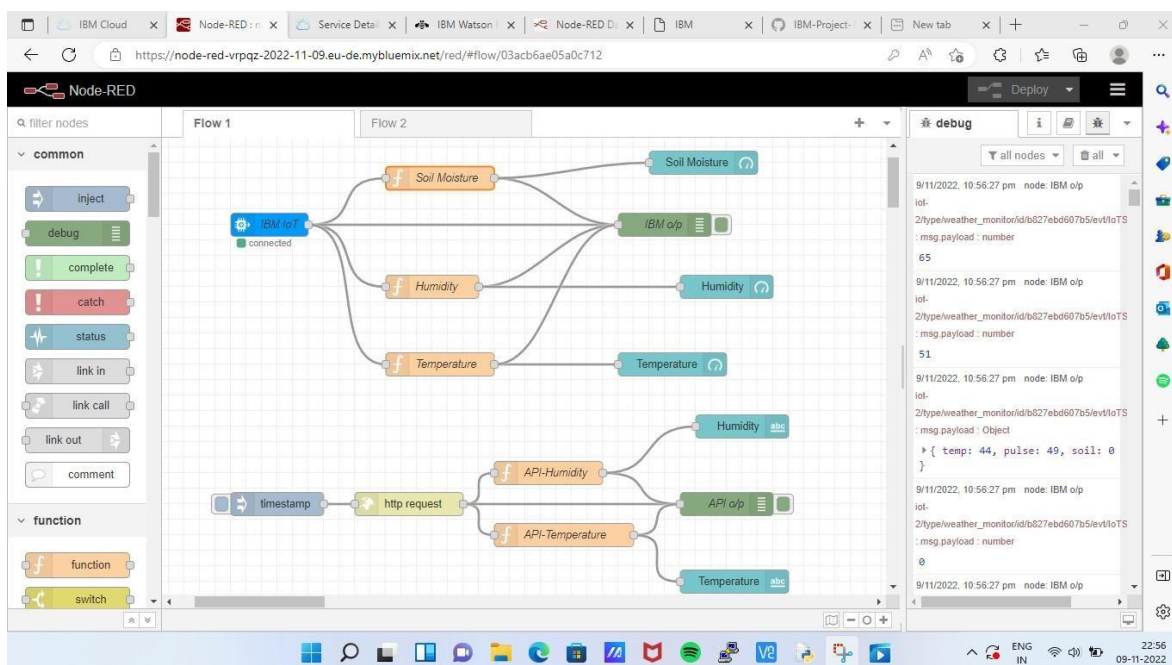**STEP 2: Run the python code it send data to IBM IoT Watson Platform.**

STEP 3: Open Node-RED flow dashboard.

STEP 4: Open Node-RED user interface to show the Soil Moisture, Humidity and Temperature value in gauge.
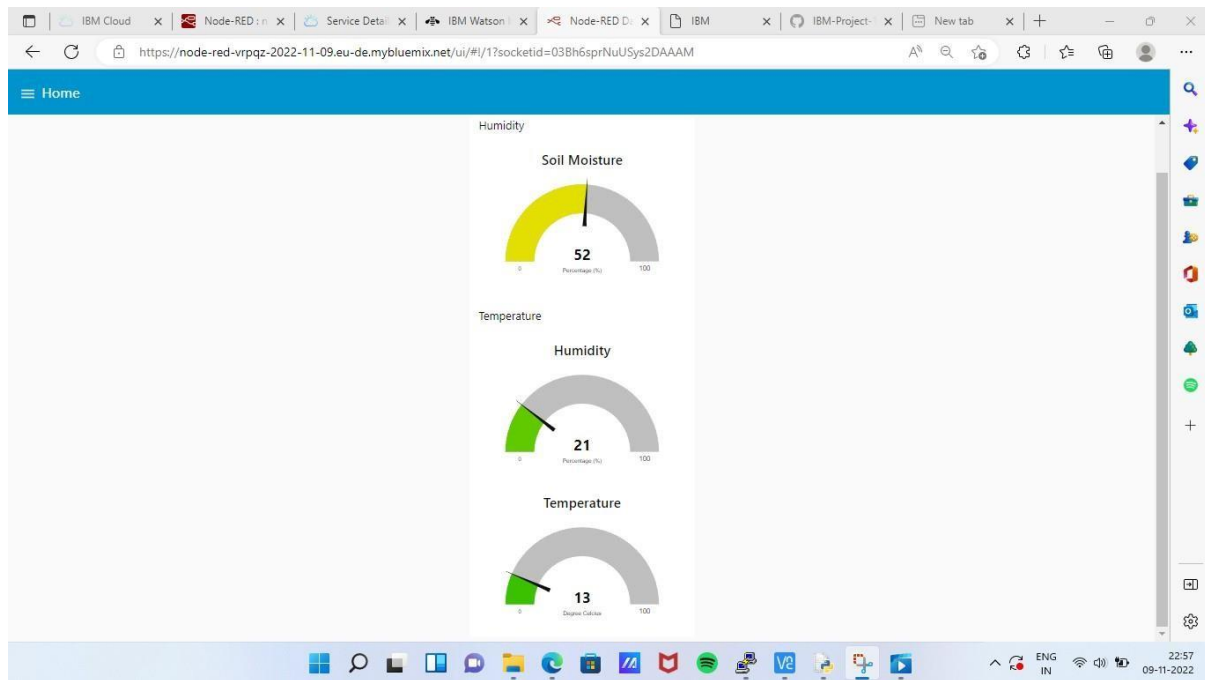
PYTHON CODE :

```
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        soil=random.randint(0,100)

        data = { 'temp' : temp, 'pulse': pulse ,'soil':soil}
        #print data
        def myOnPublishCallback():
```

```python
        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 IoTF")
    time.sleep(1)


    deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud
deviceCli.disconnect()
```

Node-RED :

[{"id":"b42b5519fee73ee2","type":"ibmiot
in","z":"03acb6ae05a0c712","authentication":"apiKey","apiKey":"ef745d48e39
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wad,%20IN&appid=6aa2b89eb478ce7baebf384e671bfd15","tls":"","persist":fal
se,"proxy":"","authType":"","senderr":false,"x":450,"y":540,"wires":[["f7c149a
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msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":650,"y":580
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ture","label":"Degree
Celcius","format":"{{value}}","min":0,"max":"100","colors":["#00b500","#e6e
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