PROJECT DEVELOPMENT PHASE

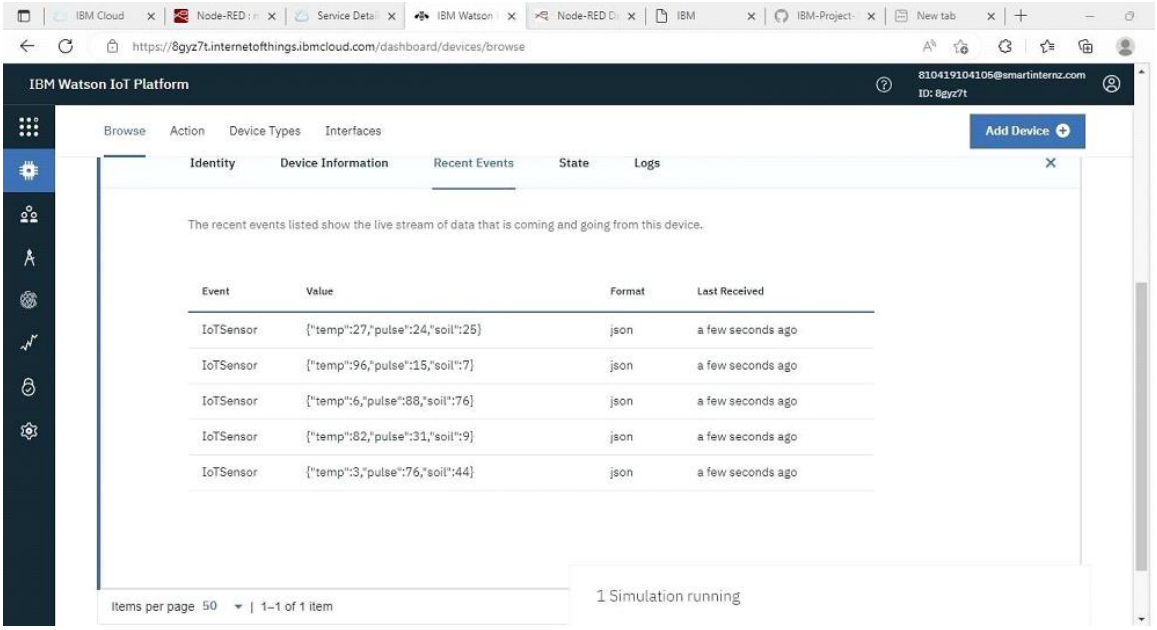
SPRINT 2

TEAM ID	**PNT2022TMID22839**
PROJECT NAME	**IOTBASEDSMART CROPPROTECTIONSYSTEMFOR AGRICULTURE**
DATE	**07-11-2022**

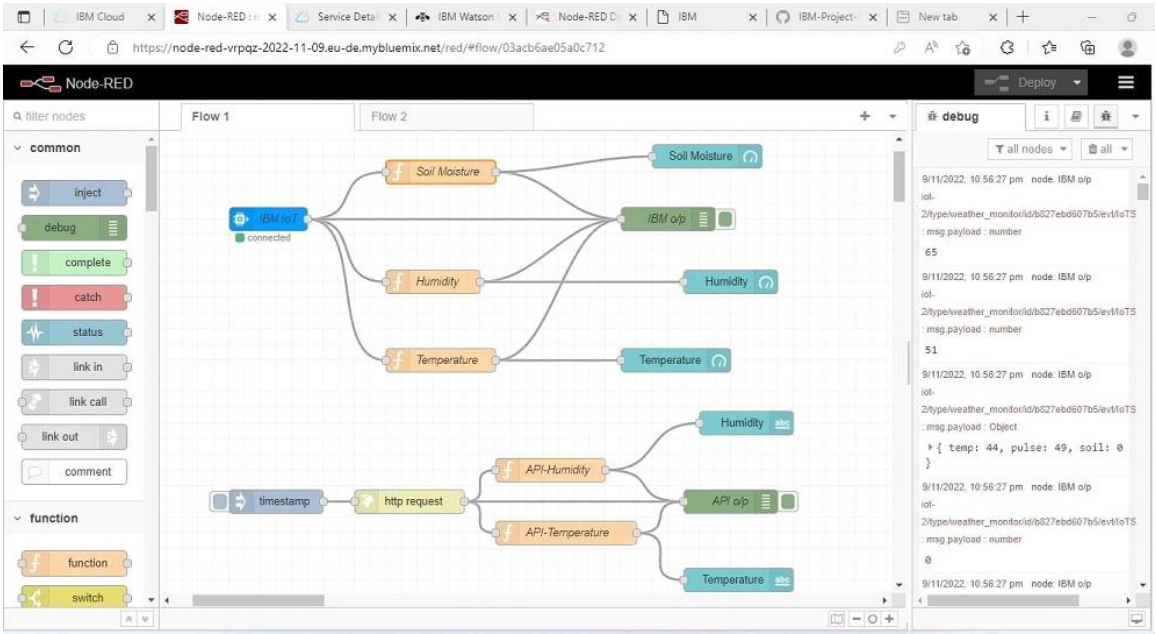
STEP 1: Write a python code for randomize Soil Moisture ,Temperature and Humidity.

```
sensor.py - C:/Users/murug/Desktop/sensor.py (3.7.0)
File  Edit  Format  Run  Options  Window  Help
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 = "LWVpQPaVQ166HWN48f"  # 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():
```

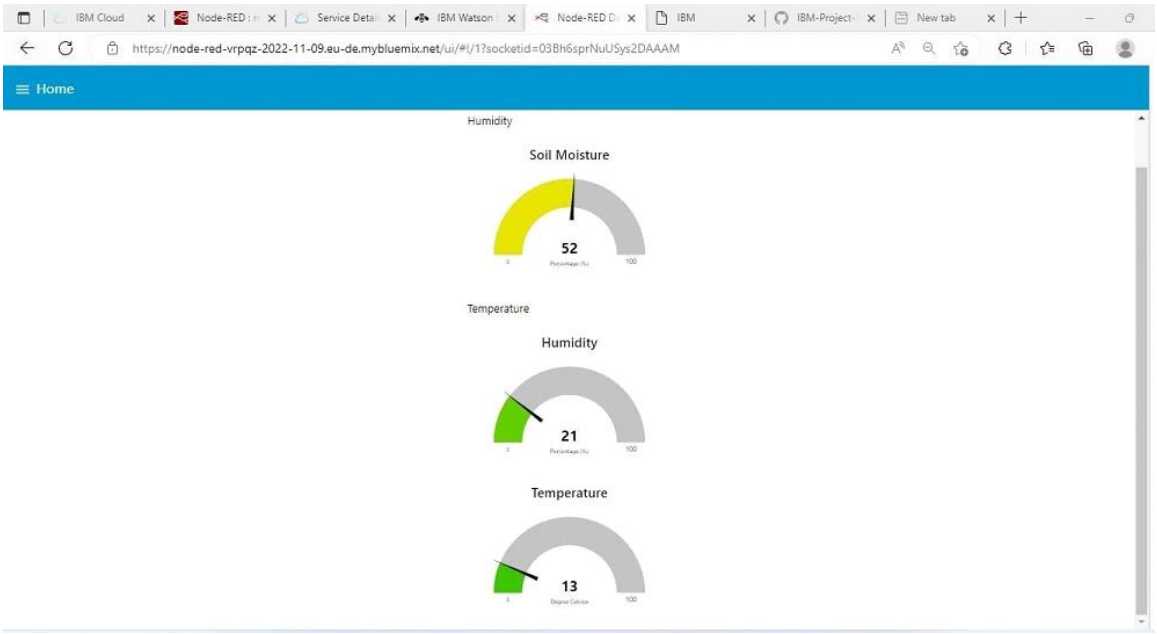
STEP 2: Run the python code it send data to IBM IoT Watson Platform.



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 :

```
import time
import sys
import ibmiotf.applicationimport
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 = "LWVpQPaVQ166HWN48f"  # 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 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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```

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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":630,"y":500
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msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":650,"y":580

```
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ture","label":"Degree
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"type":"ui_gauge","z":"03acb6ae05a0c712","name":"","group":"f4cb8513b95c9
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Moisture","label":"Percentage
(%)","format":"{{value}}","min":0,"max":"100","colors":["#00b500","#e6e600
","#ca3838"],"seg1":"","seg2":"","className":"","x":830,"y":100,"wires":[]},{"
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":"60","serverName":"","cleansession":true,"appId":"","shared":false},{"id":"f4
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b829.2fdee8","type":"ui_tab","name":"Home","icon":"dashboard","order":3,"di
sabled":false,"hidden":false}]
```