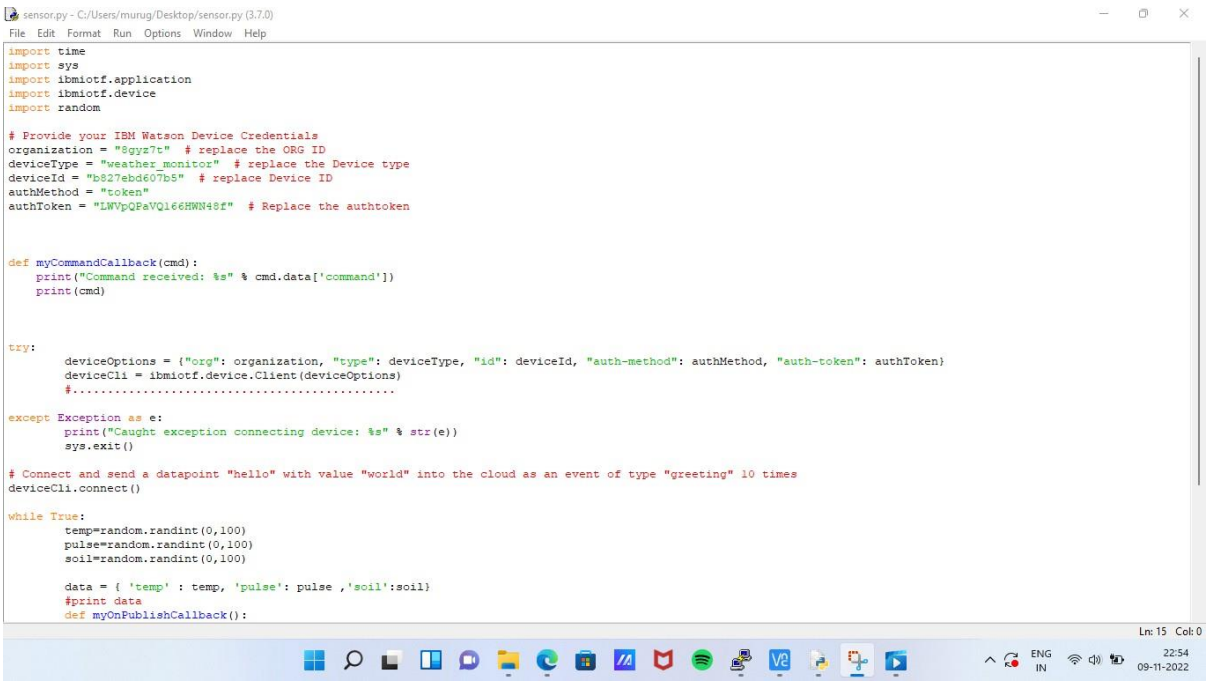
PROJECT DEVELOPMENT PHASE

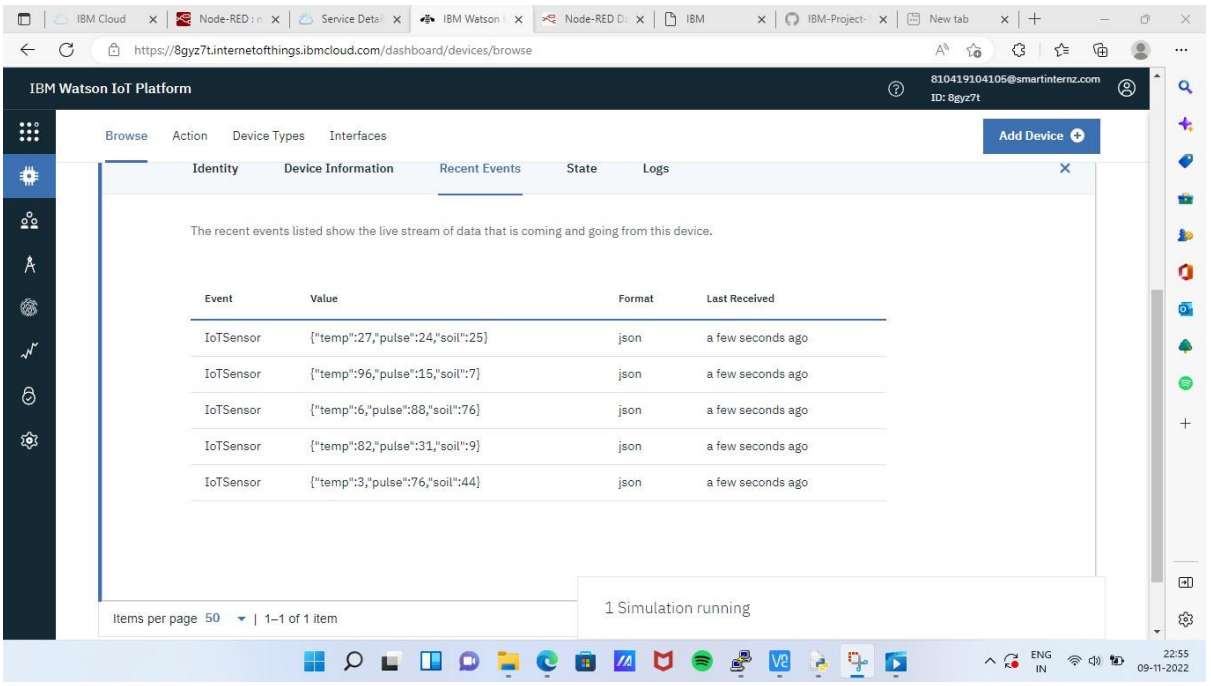
SPRINT 2

TEAM ID	**PNT2022TMID08369**
PROJECT NAME	**IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE**
DATE	**31 OCTOBER 2022**

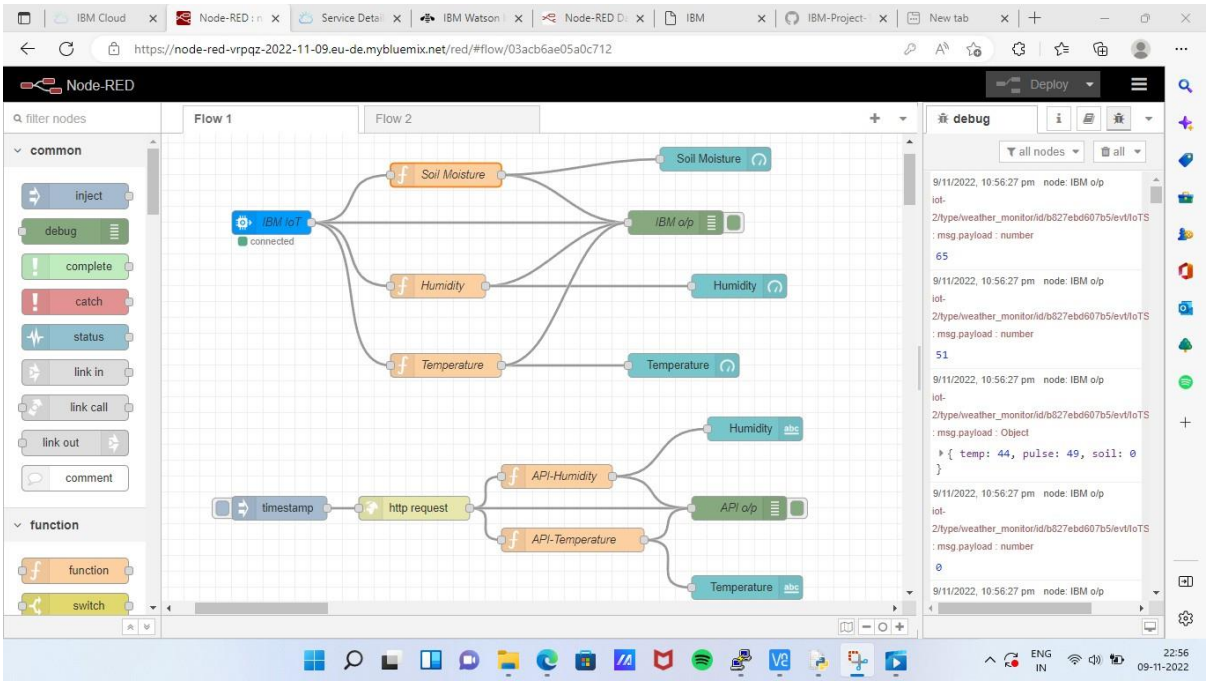
STEP 1: Write a python code for randomize Soil Moisture ,Temperature and Humidity.



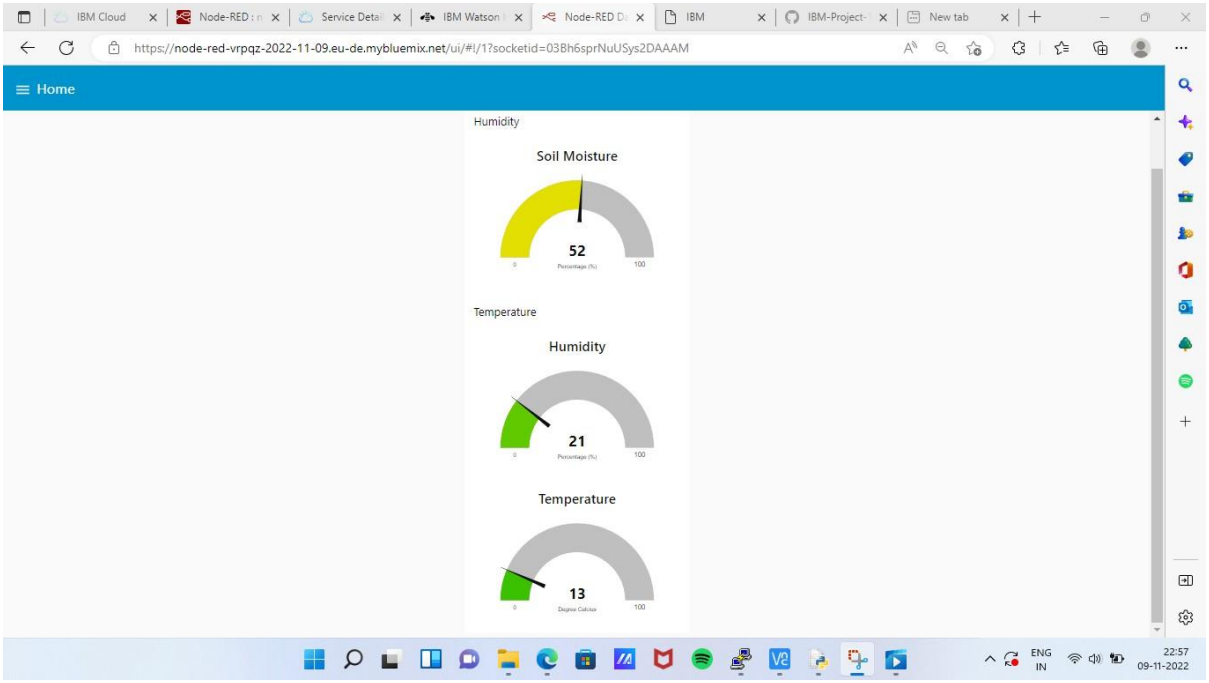
STEP 2: Run the python code it send data to IBM IoT Watson Platform.



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.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():
```

```
        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
5ccc0","inputType":"evt","logicalInterface":"","ruleId":"","deviceId":"b827ebd
607b5","applicationId":"","deviceType":"weather_monitor","eventType":"+","c
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msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","libs":[],"x":480,"y":260
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```

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