# SPRINT DELIVERY – 2

| | |
|---|---|
| Team ID | PNT2022TMID32030 |
| Project Name | SMART FARMER - IOT ENABLED SMART FARMINGAPPLICATION SYSTEM |

## 5Building Project  : Connecting Simulators For Readings:

By using wokwi to generate sensor stimulator output randomly for temperature,humidity,soilmoisture and connect them with the device credentials

OrgID: xhlz7n,

Api key: a-xhlz7n-qlpqdlk0oo

Api token : lzwf0ESiqGkQQcPg*G

Device type: iotsensor ,

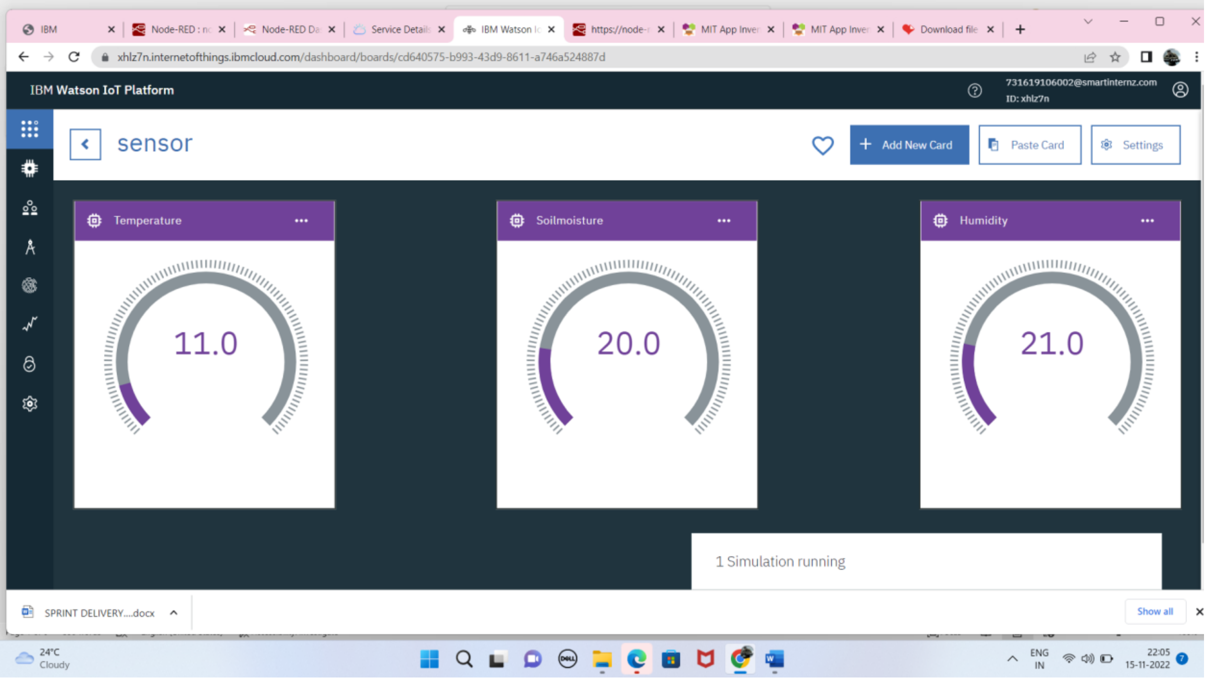
Device ID : iotsensor

Device Token : 2x_okYGd6qMY77S(S7

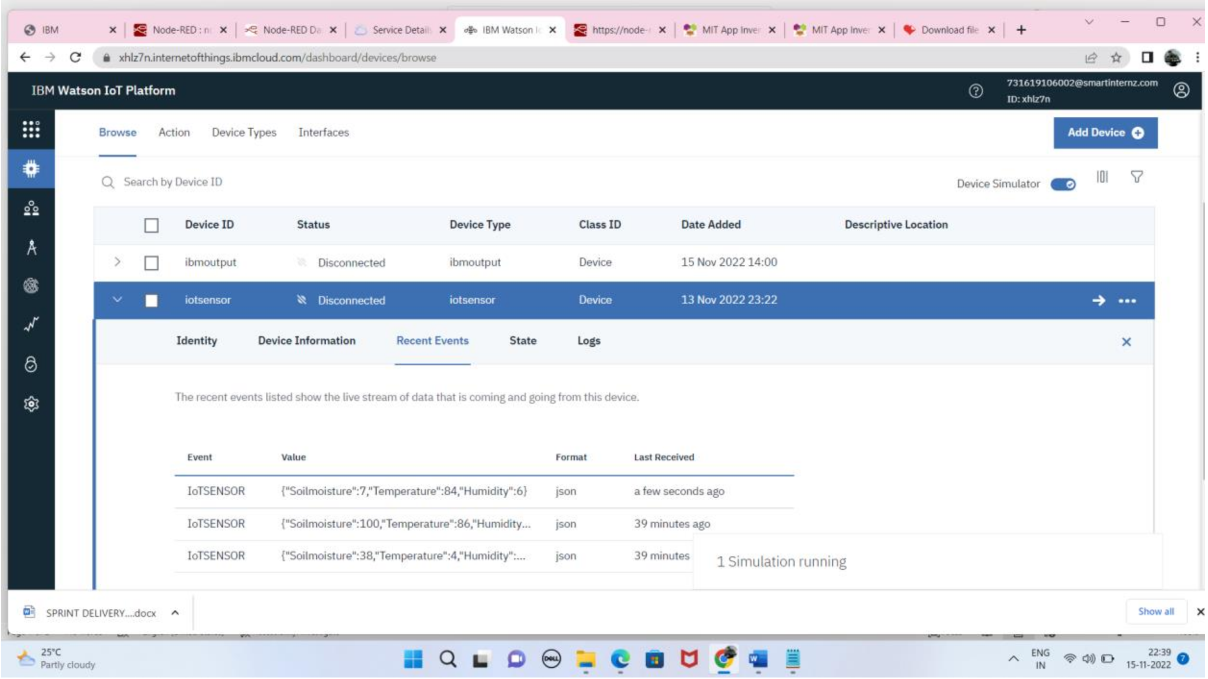
You can see the received data in graphs by creating cards in Boards tab:

- To view in board need to add and create new boards with stimulated output value
- The values can be seen in recent tab

The following image is the board value of my team:



Recent :

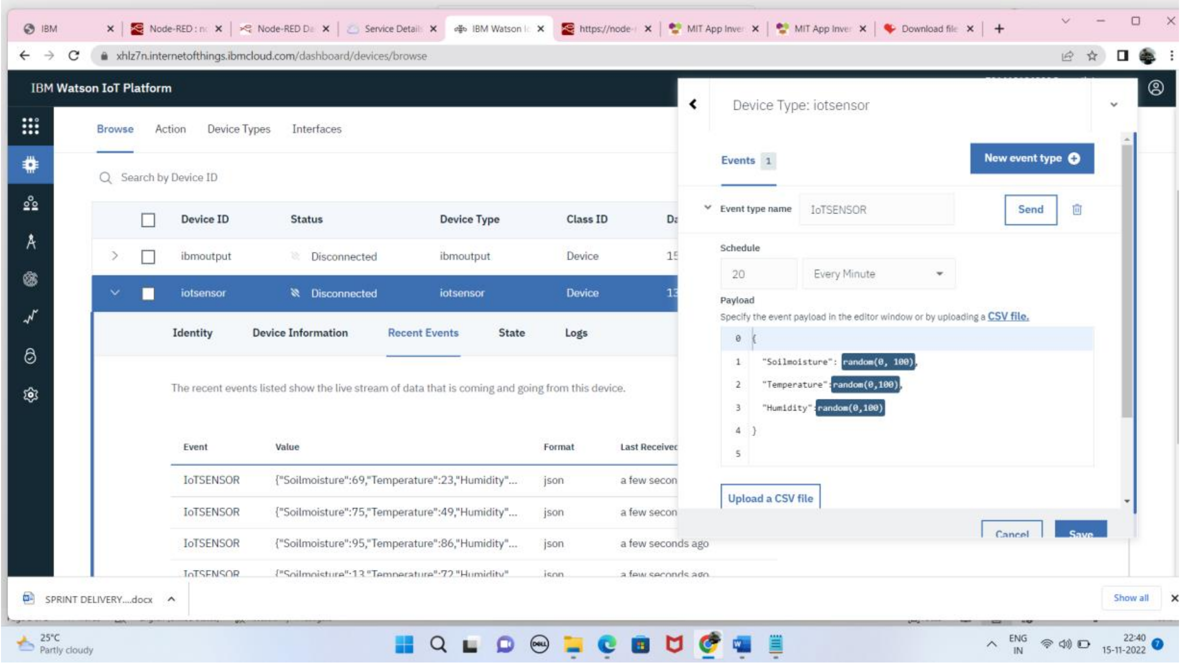


| | Device ID | Status | Device Type | Class ID | Date Added | Descriptive Location |
|---|---|---|---|---|---|---|
| □ | ibmoutput | Disconnected | ibmoutput | Device | 15 Nov 2022 14:00 | |
| □ | iotsensor | Disconnected | iotsensor | Device | 13 Nov 2022 23:22 | |

The recent events listed show the live stream of data that is coming and going from this device.

| Event | Value | Format | Last Received |
|---|---|---|---|
| IoTSENSOR | {"Soilmoisture":7,"Temperature":84,"Humidity":6} | json | a few seconds ago |
| IoTSENSOR | {"Soilmoisture":100,"Temperature":86,"Humidity... | json | 39 minutes ago |
| IoTSENSOR | {"Soilmoisture":38,"Temperature":4,"Humidity":... | json | 39 minutes |

You can also stimulate using device stimulator program:



IBM Watson IoT Platform

Browse  Action  Device Types  Interfaces

Search by Device ID

| | Device ID | Status | Device Type | Class ID | Da |
|---|---|---|---|---|---|
| □ | ibmoutput | Disconnected | ibmoutput | Device | 15 |
| □ | iotsensor | Disconnected | iotsensor | Device | 13 |

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 | {"Soilmoisture":69,"Temperature":23,"Humidity"... | json | a few secon |
| IoTSENSOR | {"Soilmoisture":75,"Temperature":49,"Humidity"... | json | a few secon |
| IoTSENSOR | {"Soilmoisture":95,"Temperature":86,"Humidity"... | json | a few seconds ago |
| IoTSENSOR | {"Soilmoisture":13,"Temperature":72,"Humidity" | json | a few seconds ago |

Device Type: iotsensor

Events 1  New event type

Event type name: IoTSENSOR  Send

Schedule: 20  Every Minute

Payload

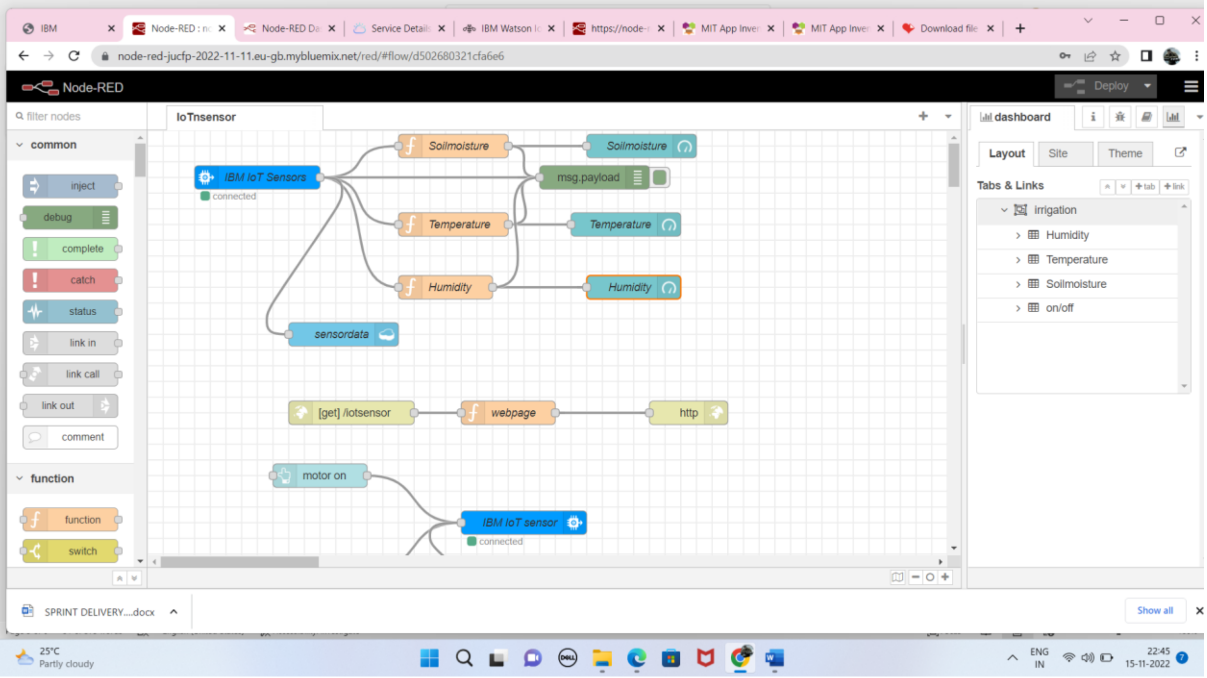
Specify the event payload in the editor window or by uploading a CSV file.

```
{
  "Soilmoisture": random(0, 100),
  "Temperature":random(0,100),
  "Humidity":random(0,100)
}
```

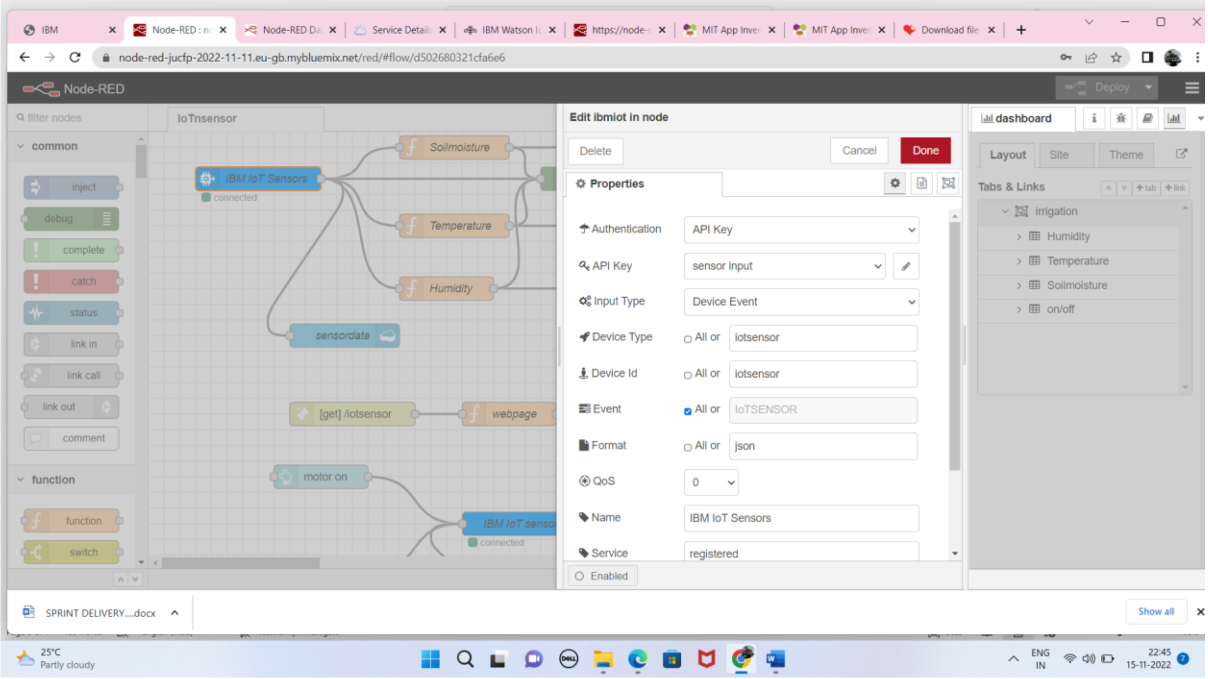
Upload a CSV file  Cancel  Save

# Configuration of Node-Red to collect IBM cloud data :

The node IBM IoT App In is added to Node-Red workflow. Then the appropriatedevice credentials obtained earlier are entered into the node to connect and fetch device telemetry to Node-Red.



## Configuring ibm input node :



Edit ibmiot in node

Delete Cancel Done

Properties

Authentication: API Key

API Key: sensor input

Input Type: Device Event

Device Type: □ All or iotsensor

Device Id: □ All or iotsensor

Event: ☑ All or IoTSENSOR

Format: □ All or json

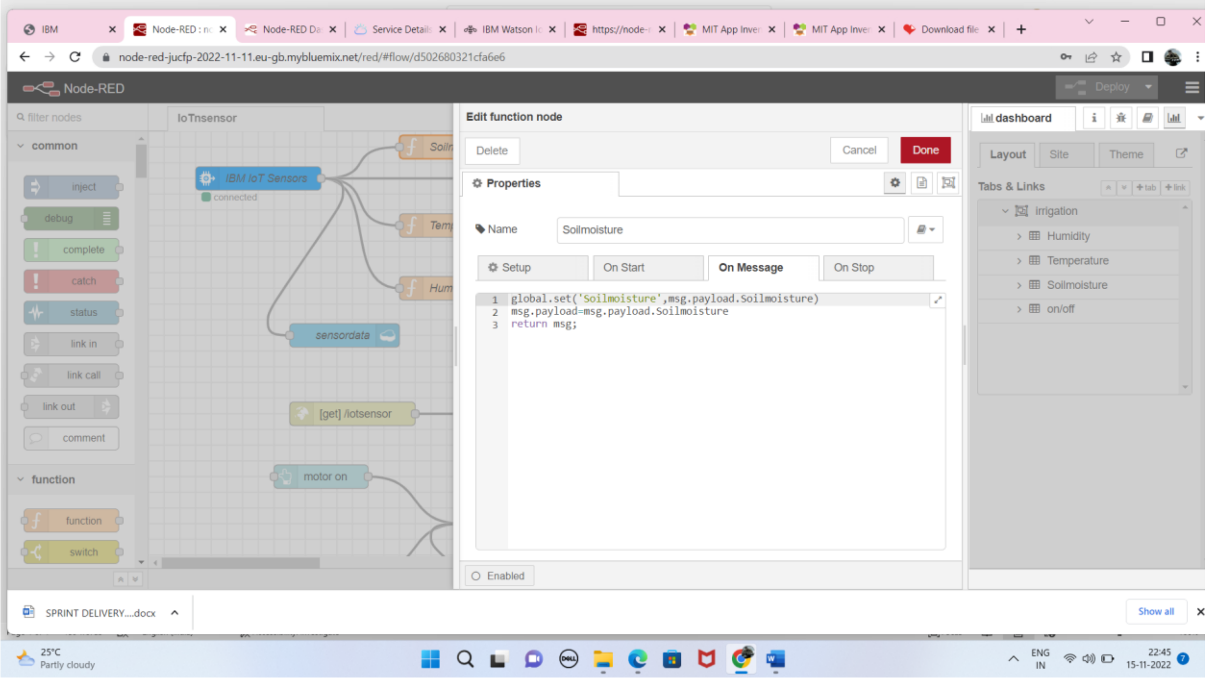
QoS: 0

Name: IBM IoT Sensors

Service: registered

○ Enabled

## Configuring Function nodes as sensor input receiver:



Edit function node

Delete Cancel Done

Properties

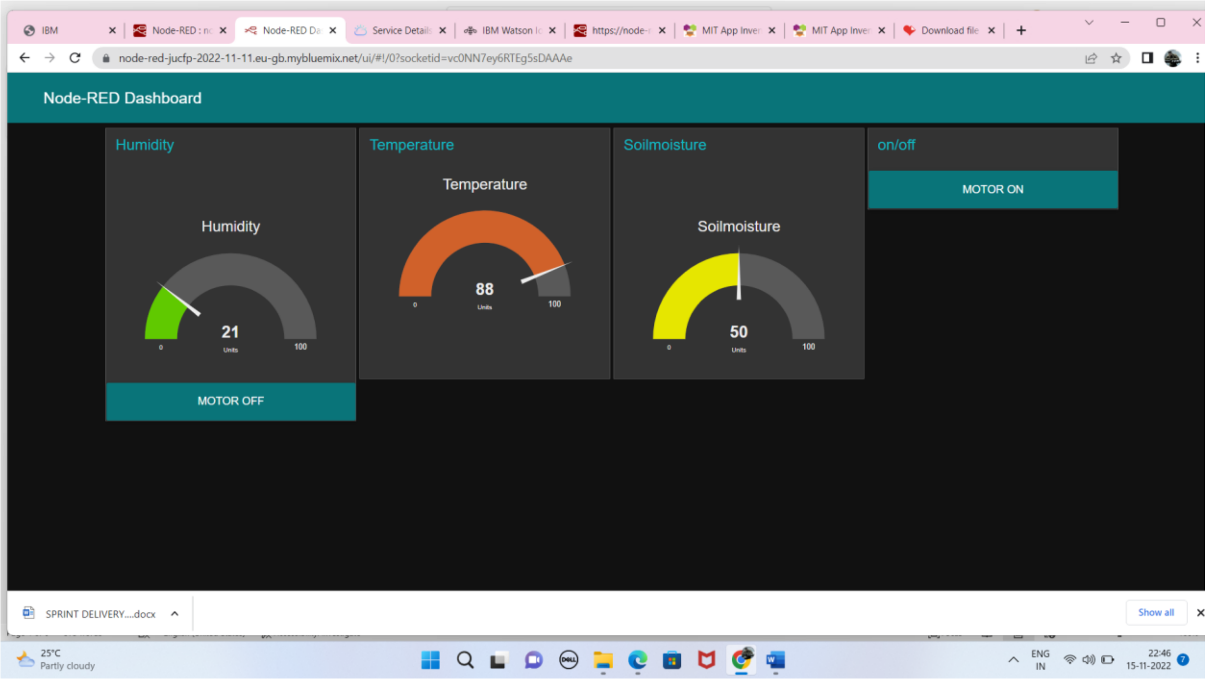
Name: Soilmoisture

Setup | On Start | On Message | On Stop

```
global.set('Soilmoisture',msg.payload.Soilmoisture)
msg.payload=msg.payload.Soilmoisture
return msg;
```

○ Enabled

Creating Dashboard :



## Open Weather Api:

The Node-Red also receive data from the OpenWeather API by HTTP GET request.An inject trigger is added to perform HTTP request for every certain interval.HTTP request node is configured with URL . Thedata we receive from OpenWeather after request is in below JSON

Generate api code and with api code you can generate a locations weather detail

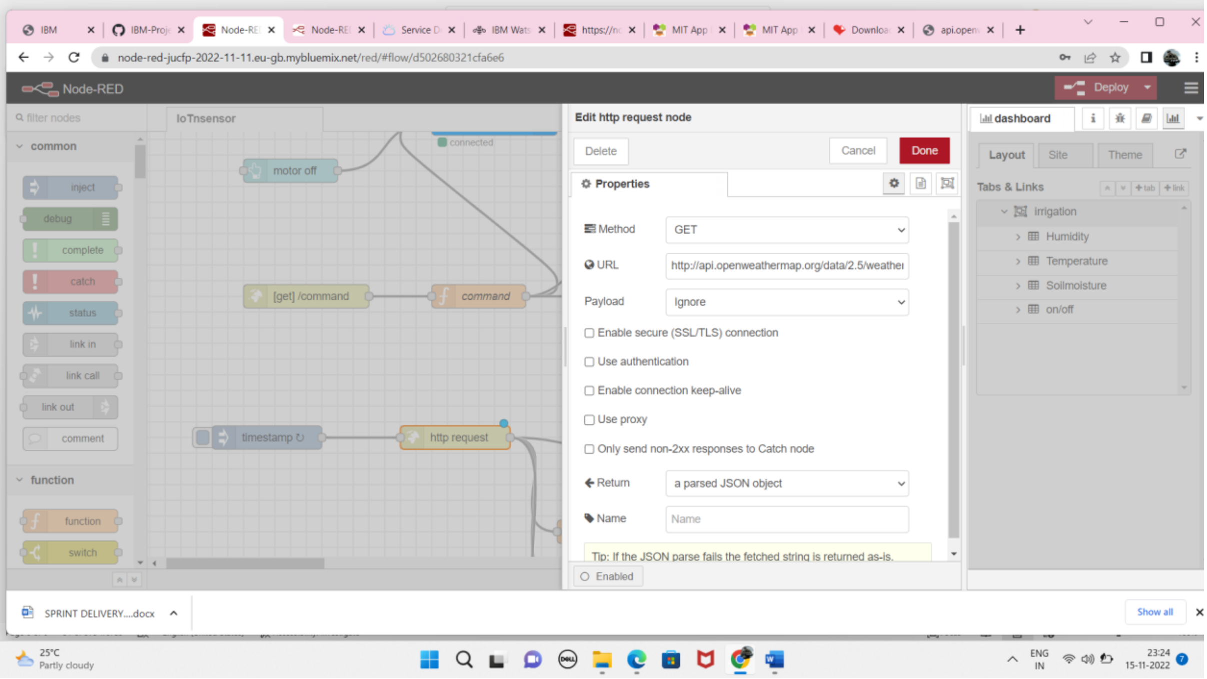
http://api.openweathermap.org/data/2.5/weather?q=erode,in&appid=b35d78d080636812518bcb784dad5903

the link I was generated in the openweatherapi app

The url outcome is:

{"coord":{"lon":77.7333,"lat":11.35},"weather":[{"id":802,"main":"Clouds","description":"scattered clouds","icon":"03n"}],"base":"stations","main":{"temp":295.96,"feels_like":296.59,"temp_min":295.96,"temp_max":295.96,"pressure":1013,"humidity":88,"sea_level":1013,"grnd_level":993},"visibility":10000,"wind":{"speed":0.84,"deg":98,"gust":1.19},"clouds":{"all":32},"dt":1668534424,"sys":{"country":"IN","sunrise":1668473127,"sunset":1668514918},"timezone":19800,"id":1272013,"name":"Erode","cod":200}

Use the link in HTTP REQUEST :



Edit http request node

Delete | Cancel | Done

Properties

Method: GET

URL: http://api.openweathermap.org/data/2.5/weather

Payload: Ignore

☐ Enable secure (SSL/TLS) connection

☐ Use authentication

☐ Enable connection keep-alive

☐ Use proxy

☐ Only send non-2xx responses to Catch node

Return: a parsed JSON object

Name: Name

Tip: If the JSON parse fails the fetched string is returned as-is.

○ Enabled