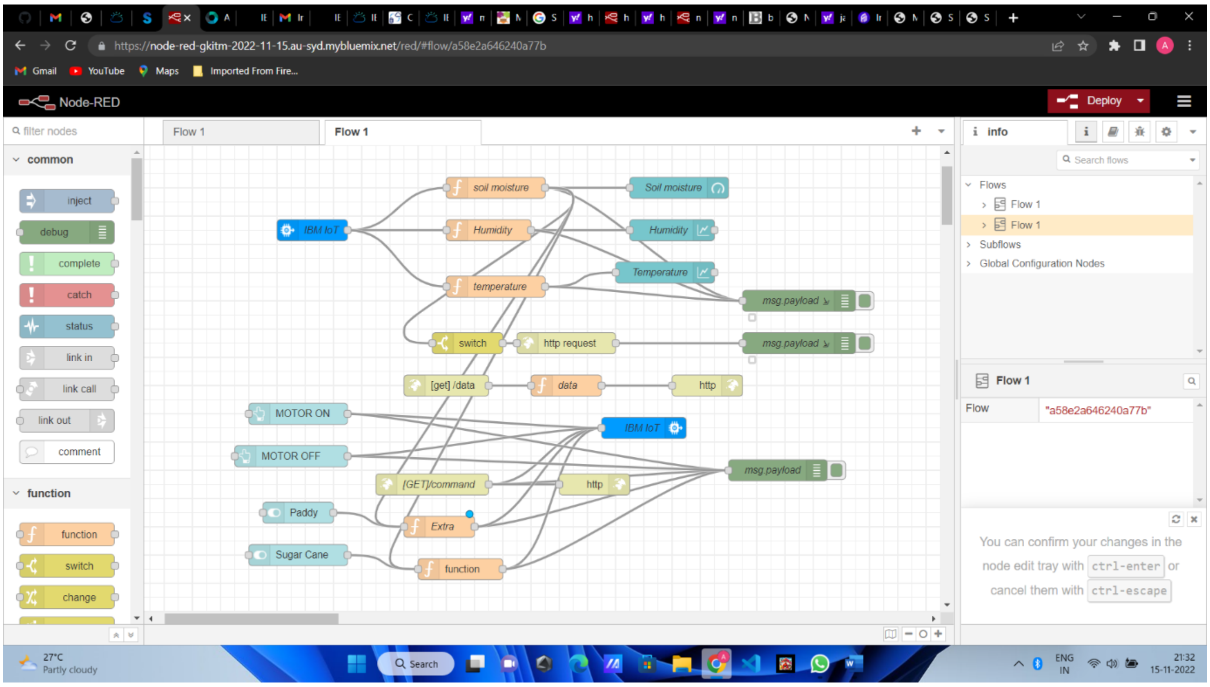
SPRINT 3

Date	15th November - 2022
Team ID	PNT2022TMID42737
Project Name	Project – Smart Farmer-IoT Enabled smart Farming Application

Complete Program Flow :

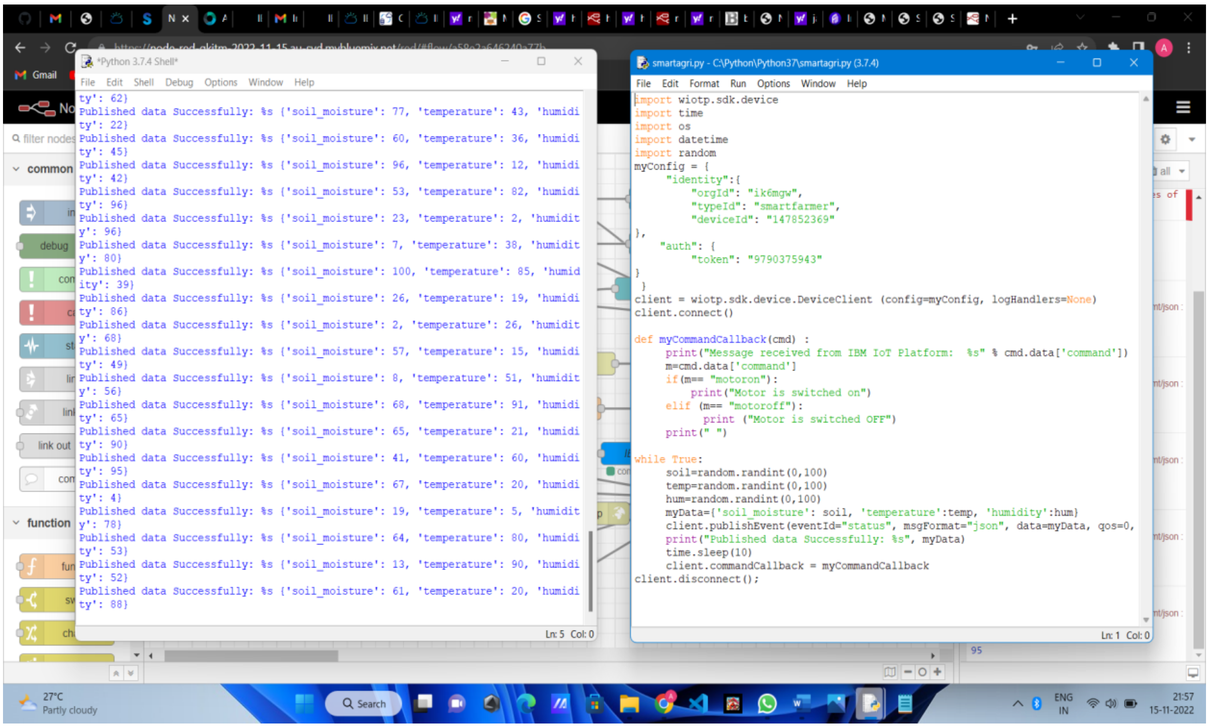
Adjusting User Interface In order to display the parsed JSON data a Node-Red dashboard is created Here we are using Gauges, text and button nodes to display in the UI and helps to monitor the parameters and control the farm equipment.



You can confirm your changes in the node edit tray with `ctrl-enter` or cancel them with `ctrl-escape`

We are using node red to create measurement of soil moisture controlling for specific crop or plant measurement of water irrigating to the plant for using control to motor ON and OFF simultaneously .

Random values are passing to the IBM Watson platform :


Python 3.7.4 Shell
File Edit Shell Debug Options Window Help
Ln: 5 Col: 0
smartagri.py - C:\Python\Python37\smartagri.py (3.7.4)
File Edit Format Run Options Window Help
Ln: 1 Col: 0
27°C
Partly cloudy
Search
ENG
IN
21:57
15-11-2022

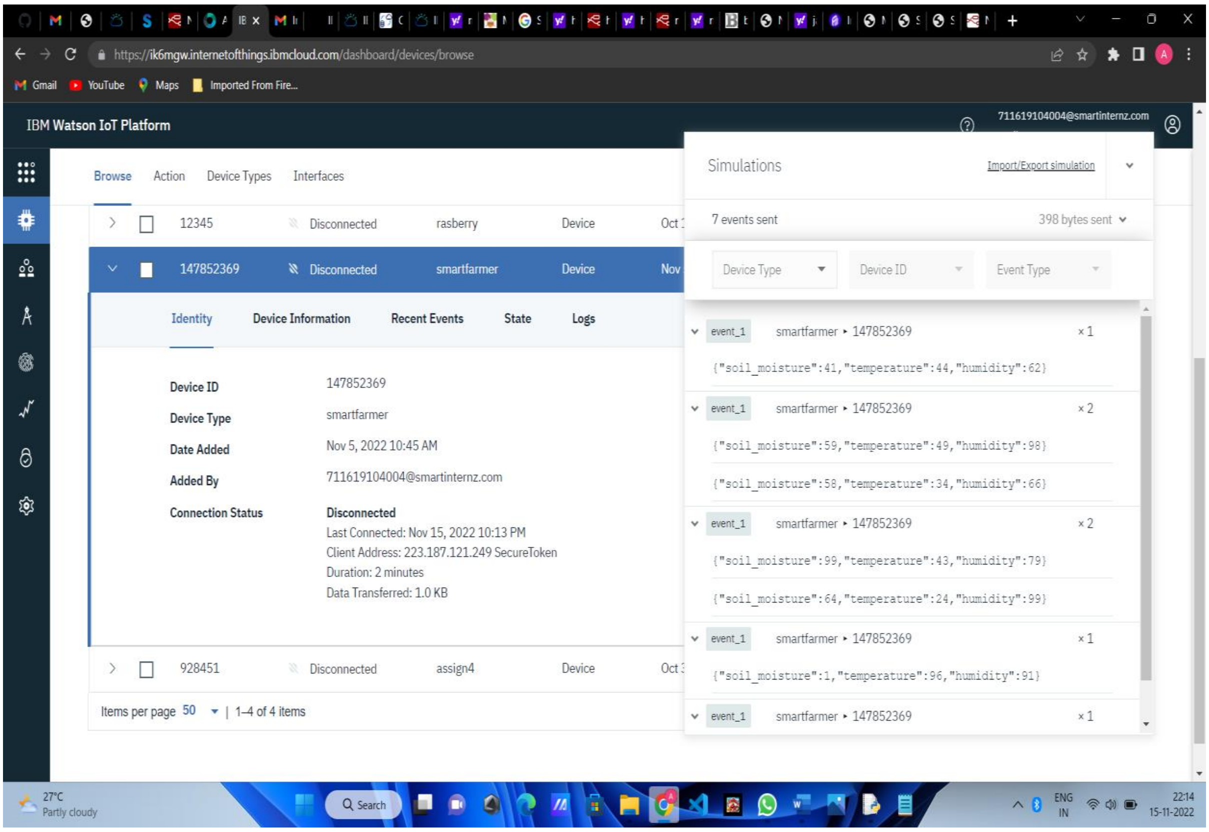
```
ty': 62}
Published data Successfully: %s {'soil_moisture': 77, 'temperature': 43, 'humidi
ty': 22}
Published data Successfully: %s {'soil_moisture': 60, 'temperature': 36, 'humidi
ty': 45}
Published data Successfully: %s {'soil_moisture': 96, 'temperature': 12, 'humidi
ty': 42}
Published data Successfully: %s {'soil_moisture': 53, 'temperature': 82, 'humidi
ty': 96}
Published data Successfully: %s {'soil_moisture': 23, 'temperature': 2, 'humidit
y': 96}
Published data Successfully: %s {'soil_moisture': 7, 'temperature': 38, 'humidit
y': 80}
Published data Successfully: %s {'soil_moisture': 100, 'temperature': 85, 'humid
ity': 39}
Published data Successfully: %s {'soil_moisture': 26, 'temperature': 19, 'humidi
ty': 86}
Published data Successfully: %s {'soil_moisture': 2, 'temperature': 26, 'humidit
y': 68}
Published data Successfully: %s {'soil_moisture': 57, 'temperature': 15, 'humidi
ty': 49}
Published data Successfully: %s {'soil_moisture': 8, 'temperature': 51, 'humidit
y': 56}
Published data Successfully: %s {'soil_moisture': 68, 'temperature': 91, 'humidi
ty': 65}
Published data Successfully: %s {'soil_moisture': 65, 'temperature': 21, 'humidi
ty': 90}
Published data Successfully: %s {'soil_moisture': 41, 'temperature': 60, 'humidi
ty': 95}
Published data Successfully: %s {'soil_moisture': 67, 'temperature': 20, 'humidi
ty': 4}
Published data Successfully: %s {'soil_moisture': 19, 'temperature': 5, 'humidit
y': 78}
Published data Successfully: %s {'soil_moisture': 64, 'temperature': 80, 'humidi
ty': 53}
Published data Successfully: %s {'soil_moisture': 13, 'temperature': 90, 'humidi
ty': 52}
Published data Successfully: %s {'soil_moisture': 61, 'temperature': 20, 'humidi
ty': 88}
```

```python
import wiotp.sdk.device
import time
import os
import datetime
import random
myConfig = {
     "identity":{
         "orgId": "ik6mgw",
         "typeId": "smartfarmer",
         "deviceId": "147852369"
},
    "auth": {
         "token": "9790375943"
}
 }
client = wiotp.sdk.device.DeviceClient (config=myConfig, logHandlers=None)
client.connect()

def myCommandCallback(cmd) :
     print("Message received from IBM IoT Platform:  %s" % cmd.data['command'])
     m=cmd.data['command']
     if(m== "motoron"):
         print("Motor is switched on")
     elif (m== "motoroff"):
           print ("Motor is switched OFF")
     print(" ")

while True:
     soil=random.randint(0,100)
     temp=random.randint(0,100)
     hum=random.randint(0,100)
     myData={'soil_moisture': soil, 'temperature':temp, 'humidity':hum}
     client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
     print("Published data Successfully: %s", myData)
     time.sleep(10)
     client.commandCallback = myCommandCallback
client.disconnect();
```

Events are received in the IoT device:



12345	Disconnected	rasberry	Device	Oct
147852369	Disconnected	smartfarmer	Device	Nov
928451	Disconnected	assign4	Device	Oct

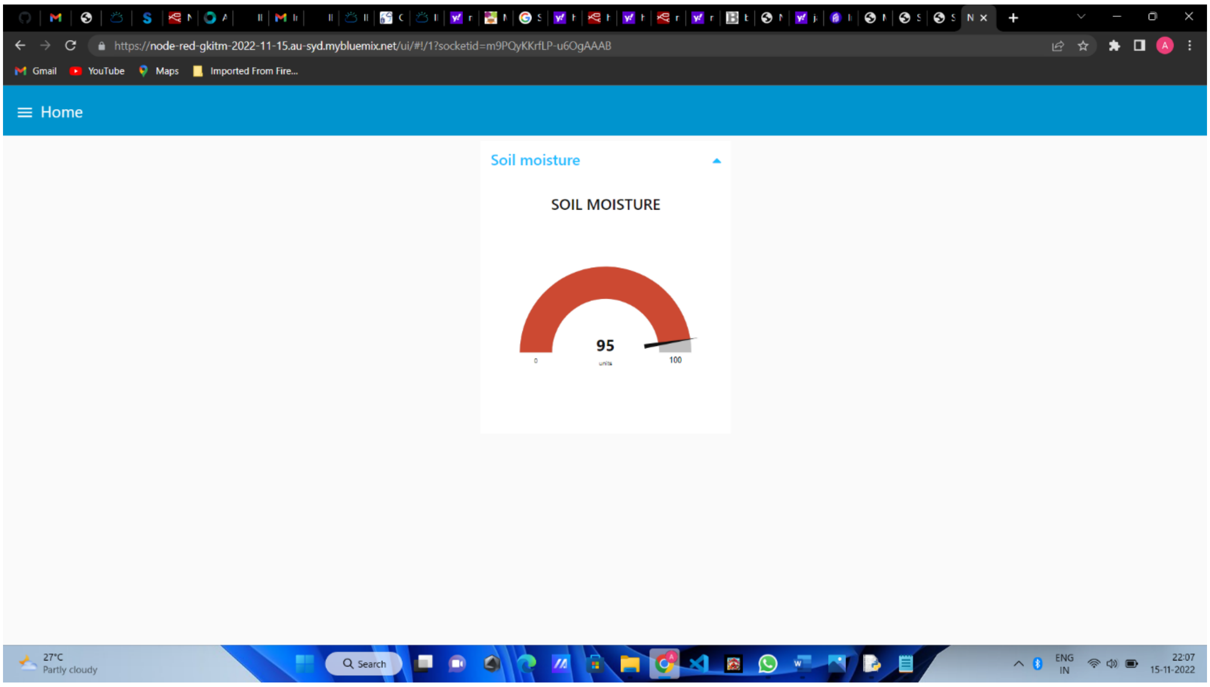
Device ID	147852369
Device Type	smartfarmer
Date Added	Nov 5, 2022 10:45 AM
Added By	711619104004@smartinternz.com
Connection Status	Disconnected Last Connected: Nov 15, 2022 10:13 PM Client Address: 223.187.121.249 SecureToken Duration: 2 minutes Data Transferred: 1.0 KB

Items per page 50 | 1–4 of 4 items

7 events sent   398 bytes sent

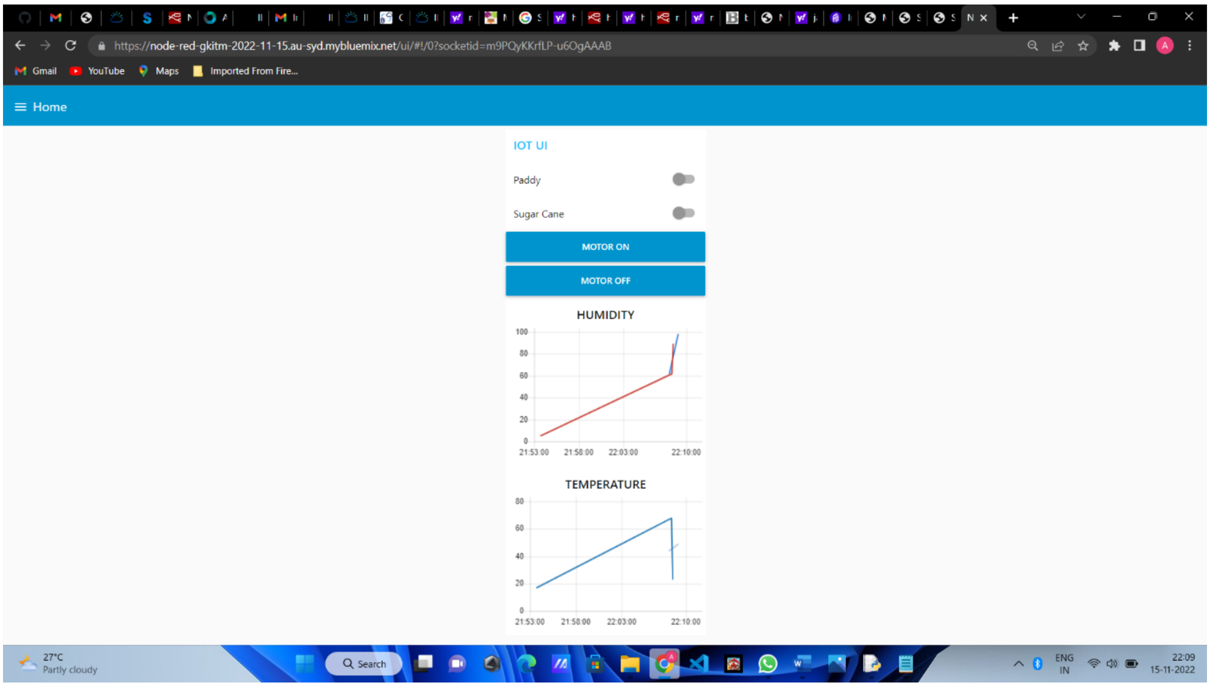
```
event_1   smartfarmer ▸ 147852369   × 1
{"soil_moisture":41,"temperature":44,"humidity":62}
event_1   smartfarmer ▸ 147852369   × 2
{"soil_moisture":59,"temperature":49,"humidity":98}
{"soil_moisture":58,"temperature":34,"humidity":66}
event_1   smartfarmer ▸ 147852369   × 2
{"soil_moisture":99,"temperature":43,"humidity":79}
{"soil_moisture":64,"temperature":24,"humidity":99}
event_1   smartfarmer ▸ 147852369   × 1
{"soil_moisture":1,"temperature":96,"humidity":91}
event_1   smartfarmer ▸ 147852369   × 1
```

WEB UI:



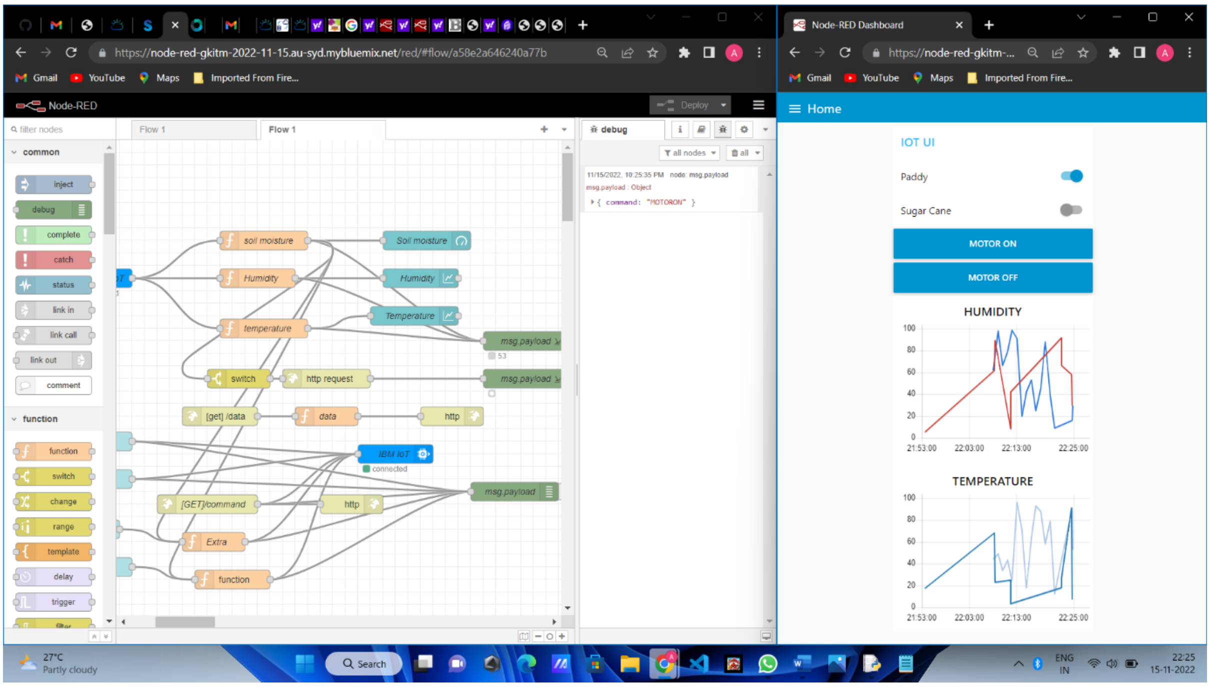
https://node-red-gkitm-2022-11-15.au-syd.mybluemix.net/ui/#!/1?socketid=m9PQyKKrfLP-u6OgAAAB

Specific crop to select the Button:

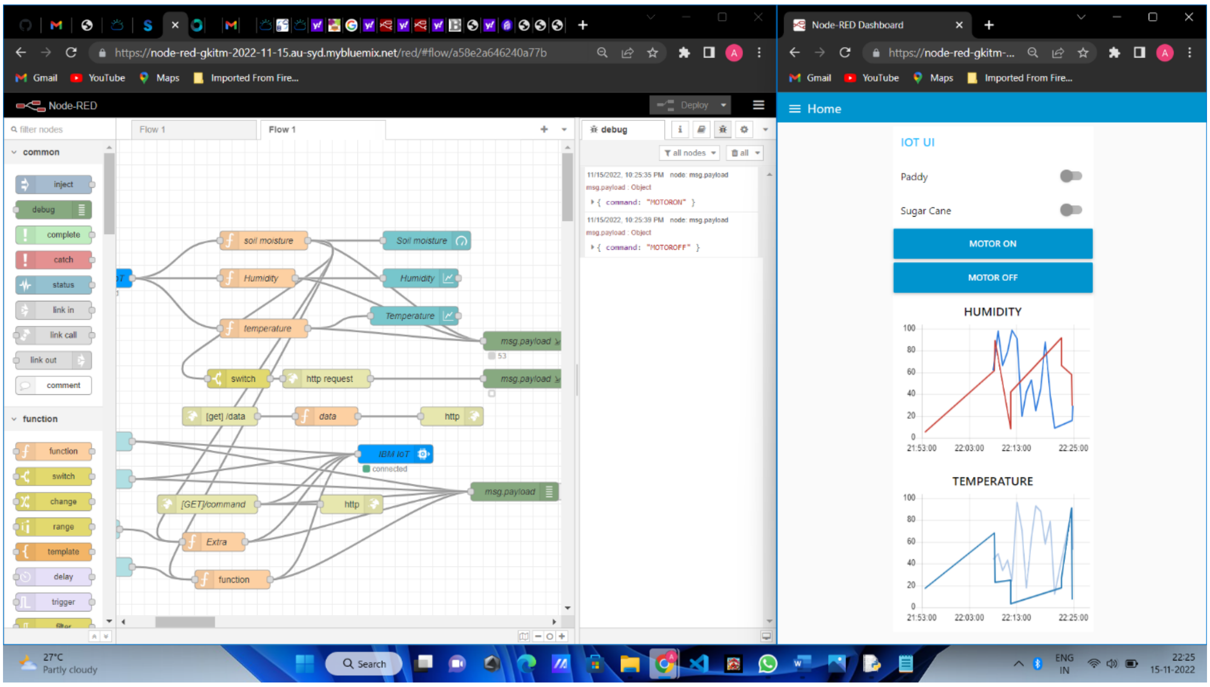


https://node-red-gkitm-2022-11-15.au-syd.mybluemix.net/ui/#!/0?socketid=m9PQyKKrfLP-u6OgAAAB

UI with controlling for Motor ON and OFF:



```
11/15/2022, 10:25:35 PM   node: msg.payload
msg.payload : Object
▸{ command: "MOTORON" }
```



```
11/15/2022, 10:25:35 PM   node: msg.payload
msg.payload : Object
▸{ command: "MOTORON" }
11/15/2022, 10:25:39 PM   node: msg.payload
msg.payload : Object
▸{ command: "MOTOROFF" }
```