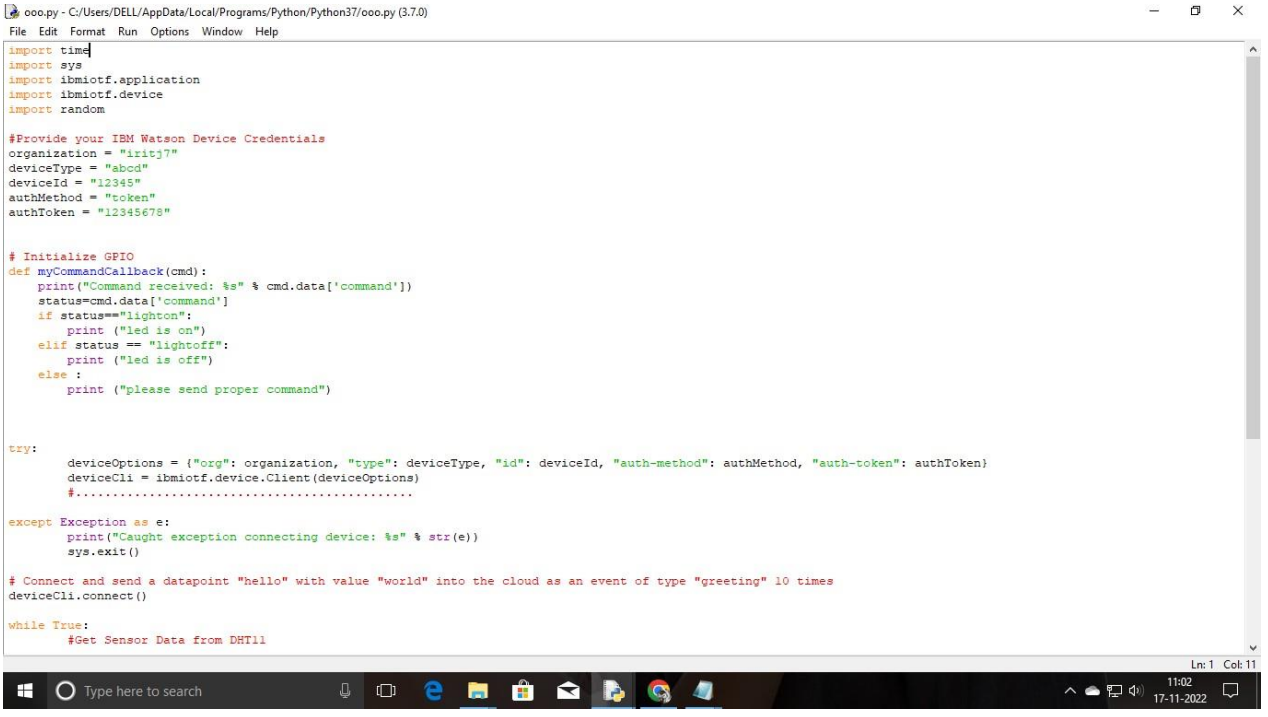
PROJECT DEVELOPMENT PHASE

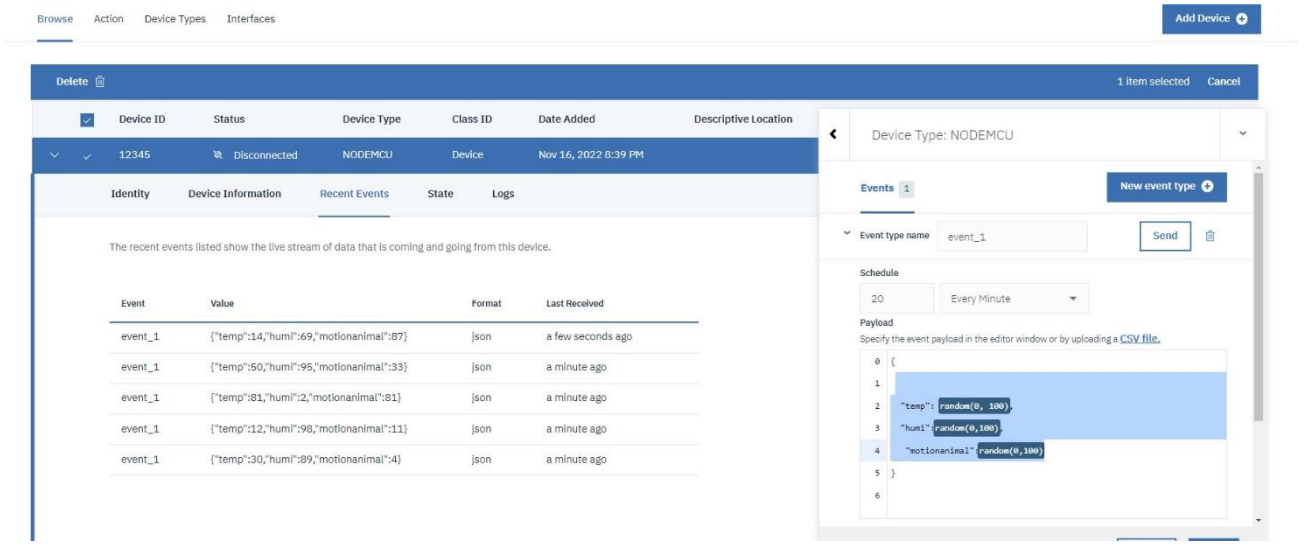
SPRINT-3

Team ID	PNT2022TMID04659
Project Name	IoT Based Smart Crop Protection System for Agriculture
Date	05-Nov-2022

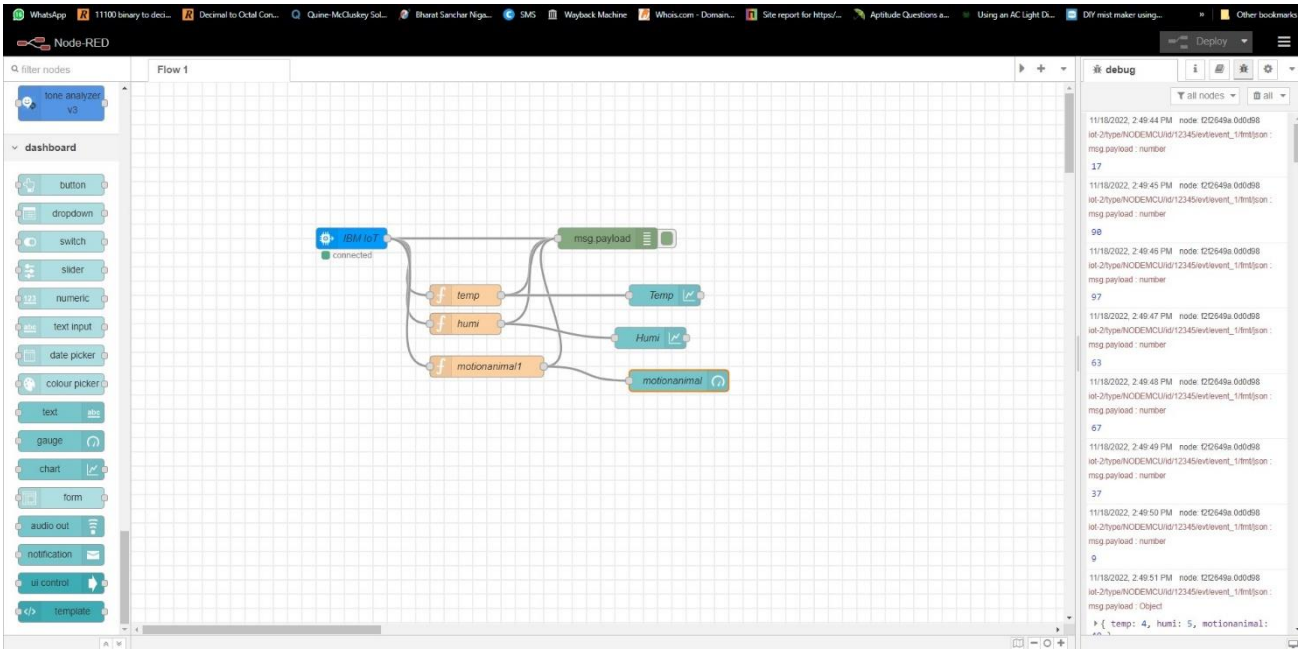
STEP 1: Write a python code for randomize Soil Moisture ,Temperature, Humidity and Animal detection.



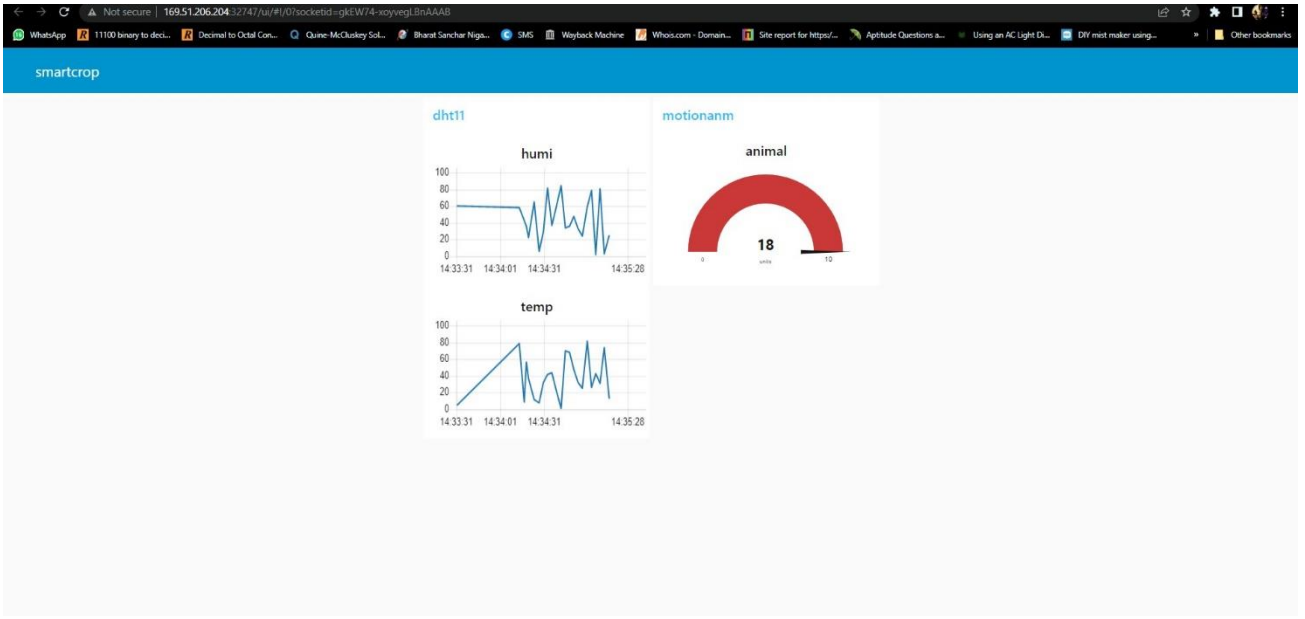
STEP 2: Run the python code and send data to IBM IoT Watson Platform.

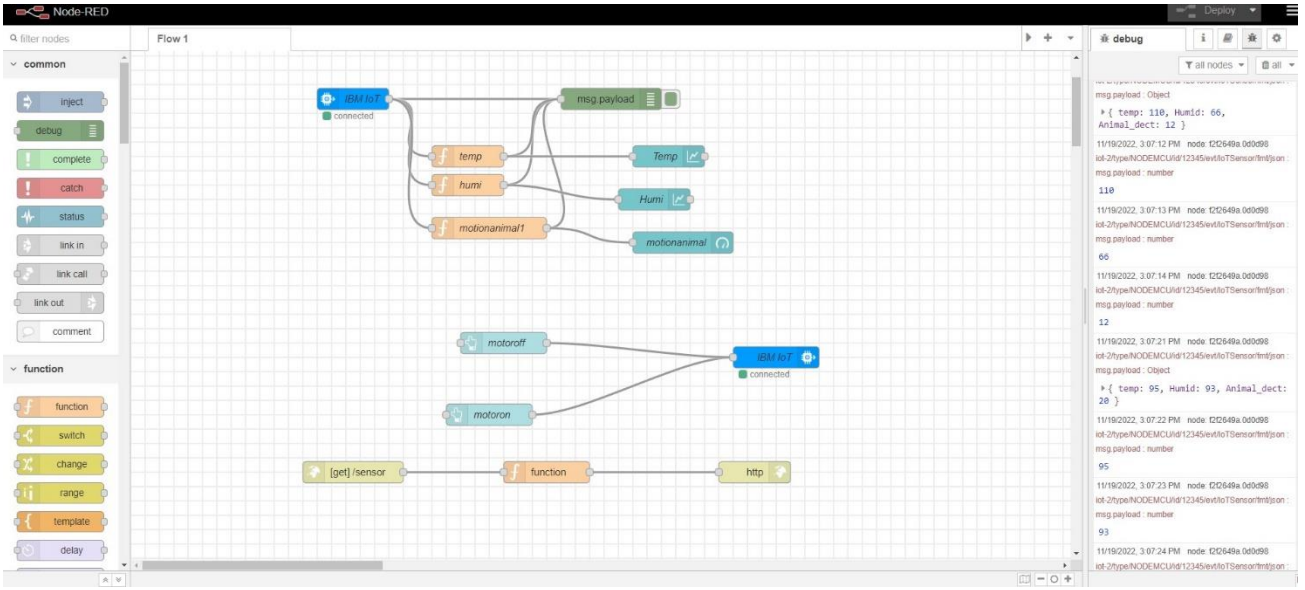


STEP 3: Open Node-RED flow dashboard.



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 = "iritj7"

deviceType = "abcd"
deviceId = "12345"
authMethod = "token"
authToken = "12345678"



# Initialize GPIO

def myCommandCallback(cmd):

    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']

    if status=="lighton":
        print ("led is on")

    elif status == "lightoff":
```

```
        print ("led is off")
    else :
        print ("please send proper command")




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:
        #Get Sensor Data from DHT11


        temp=random.randint(90,110)
        Humid=random.randint(60,100)
        Moist=random.randint(20,100)
        Animal_dect=random.randint(1,20)




        data = { 'temp' : temp, 'Humid': Humid, 'Moist' : Moist, 'Animal_dect' :
Animal_dect }
        #print data
        def myOnPublishCallback():
```

```
        print ("Published Temperature = %s C" % temp, "Humidity = %s %%" %
    Humid, "to IBM Watson", "Published Moisture= %s" % Moist, "Published
    Animal detection = " , Animal_dect)


        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
    on_publish=myOnPublishCallback)
        if not success:
            print("Not connected to IoTF")
        time.sleep(10)


        deviceCli.commandCallback = myCommandCallback

    # Disconnect the device and application from the cloud

deviceCli.disconnect()
```