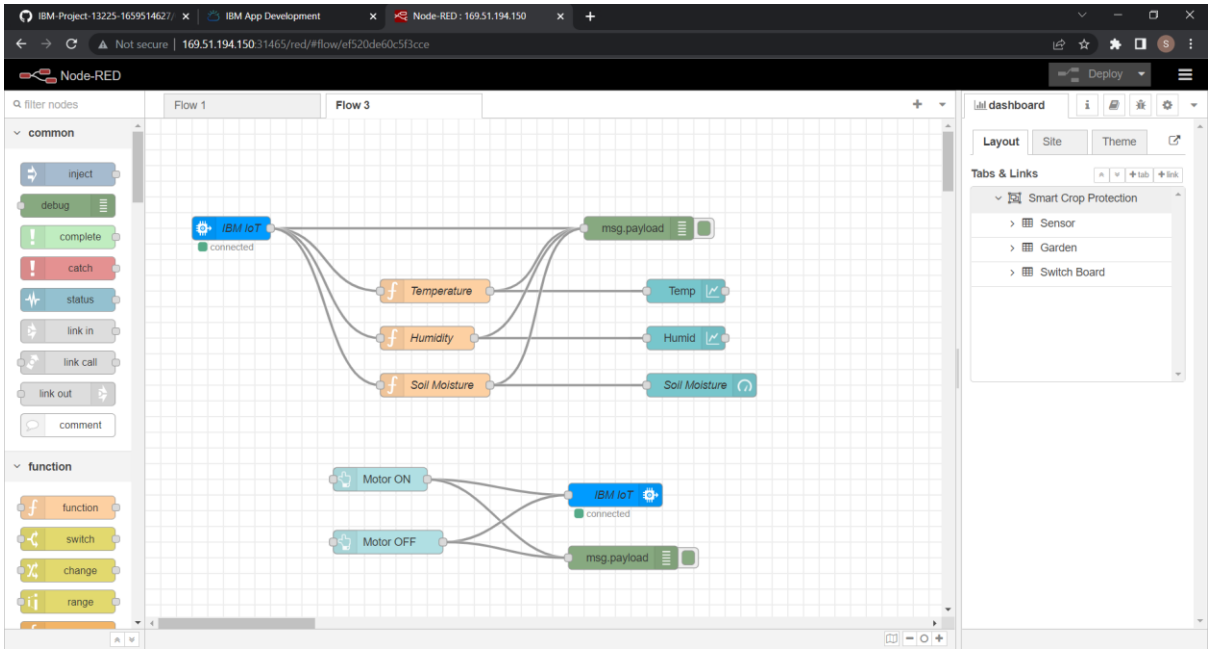
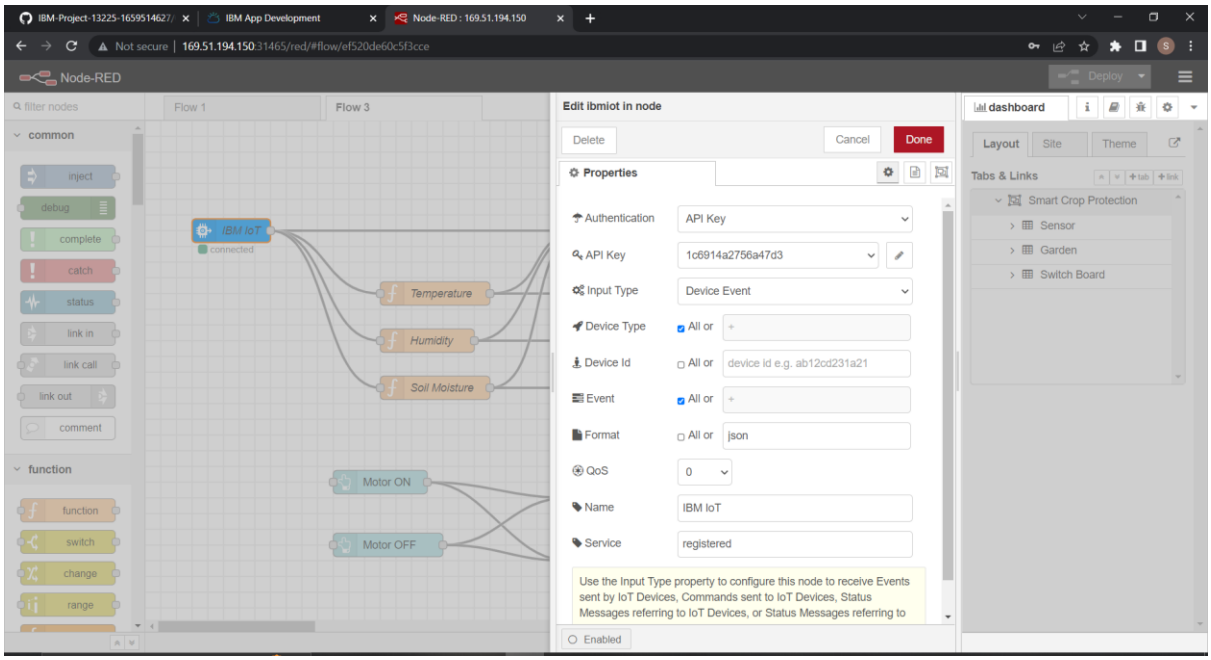
Date	05 November 2022
Team ID	PNT2022TMID04692
Project Name	IoT Based Smart Crop Protection System for Agriculture

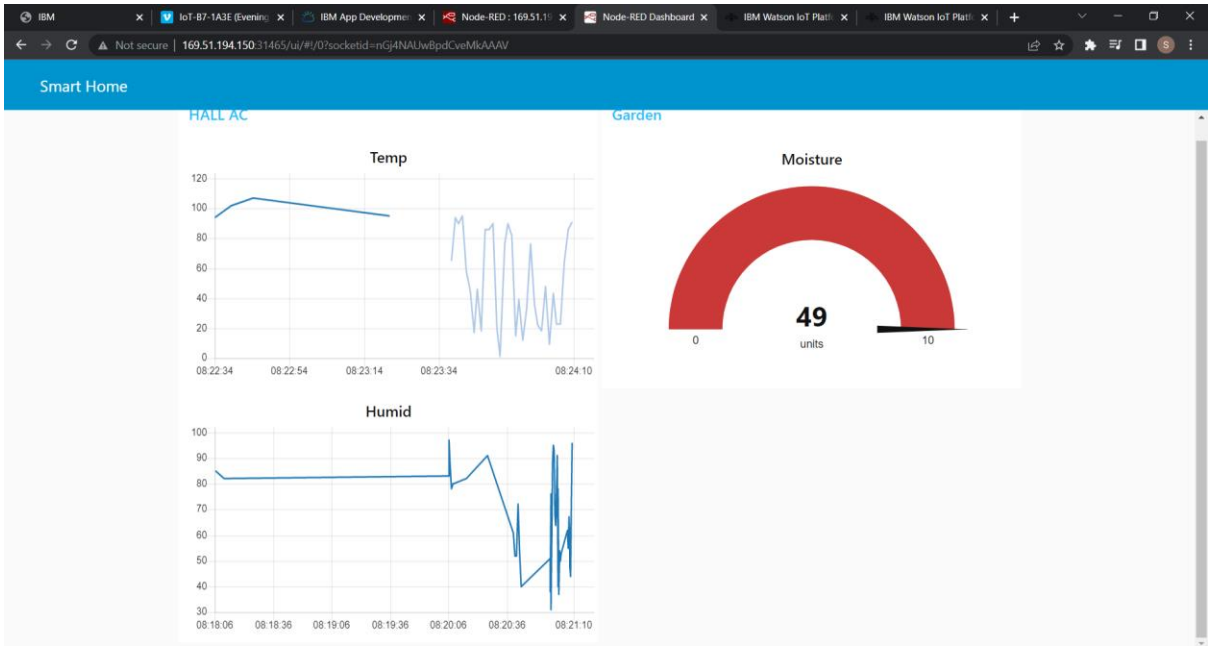
SPRINT 2

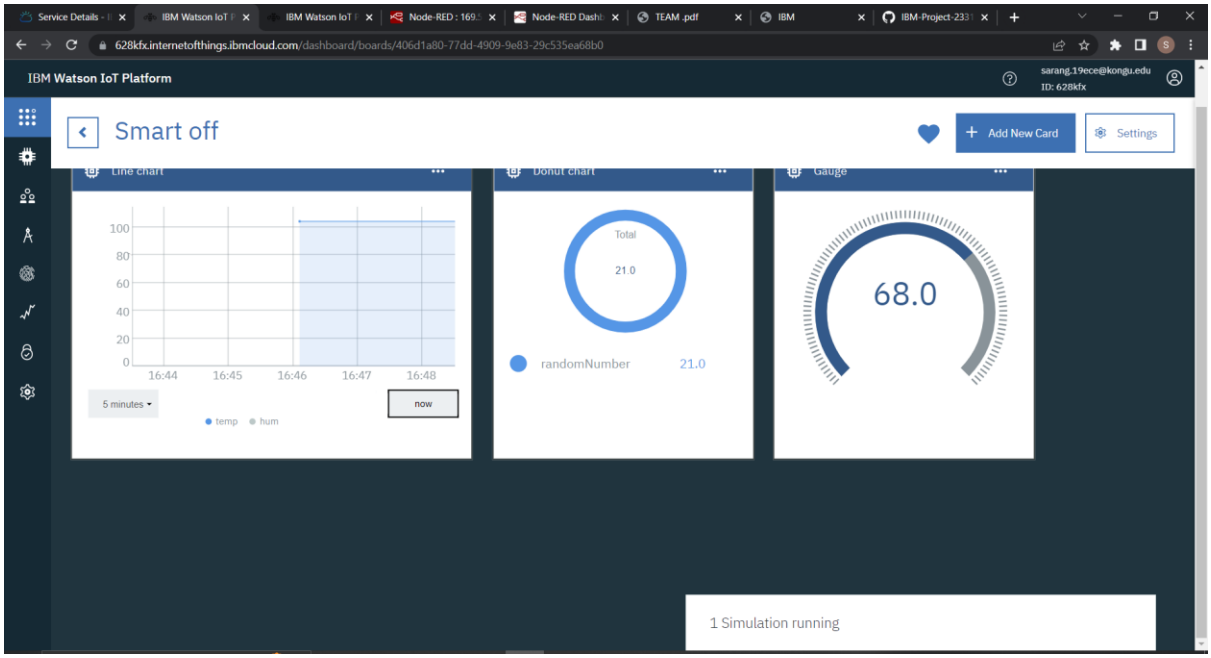
NODE RED:

By using the node red we have created the website and displaying the sensor values.






Smart Home
HALL AC
Temp
120
100
80
60
40
20
0
08:22:34
08:22:54
08:23:14
08:23:34
08:24:10
Humid
100
90
80
70
60
50
40
30
08:18:06
08:18:36
08:19:06
08:19:36
08:20:06
08:20:36
08:21:10
Garden
Moisture
49
units
0
10


IBM Watson IoT Platform
Smart off
Add New Card
Settings
Line chart
100
80
60
40
20
0
16:44
16:45
16:46
16:47
16:48
5 minutes
now
temp
hum
Donut chart
Total
21.0
randomNumber
21.0
Gauge
68.0
1 Simulation running

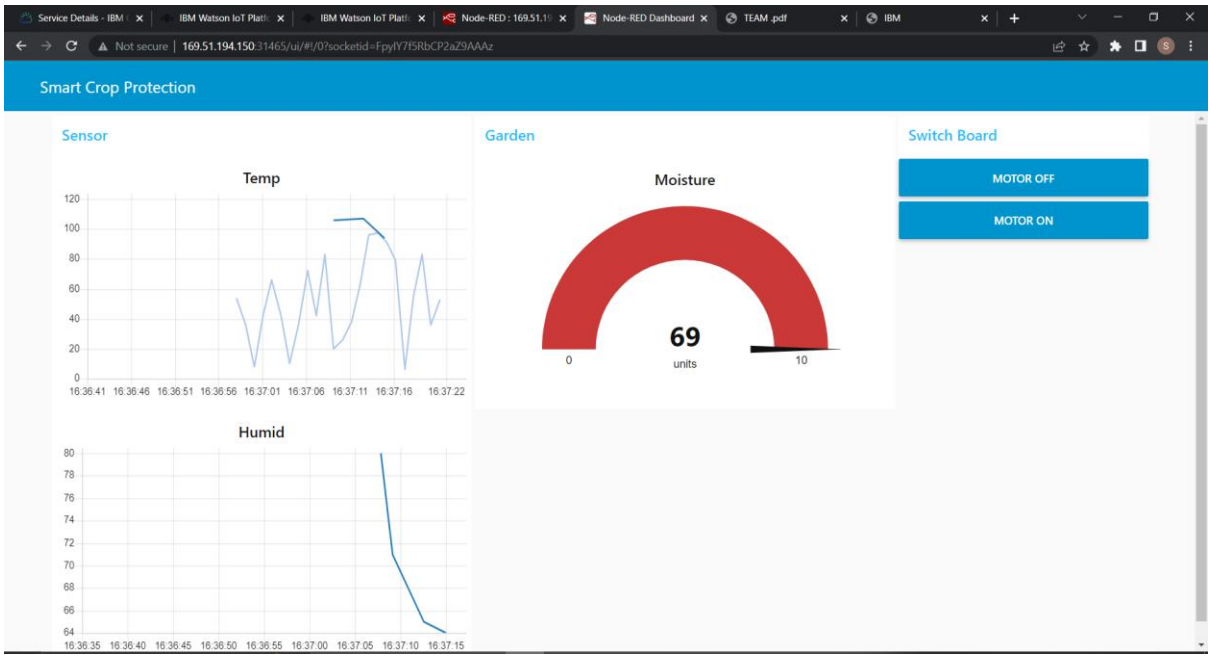
PYTHON CODE:

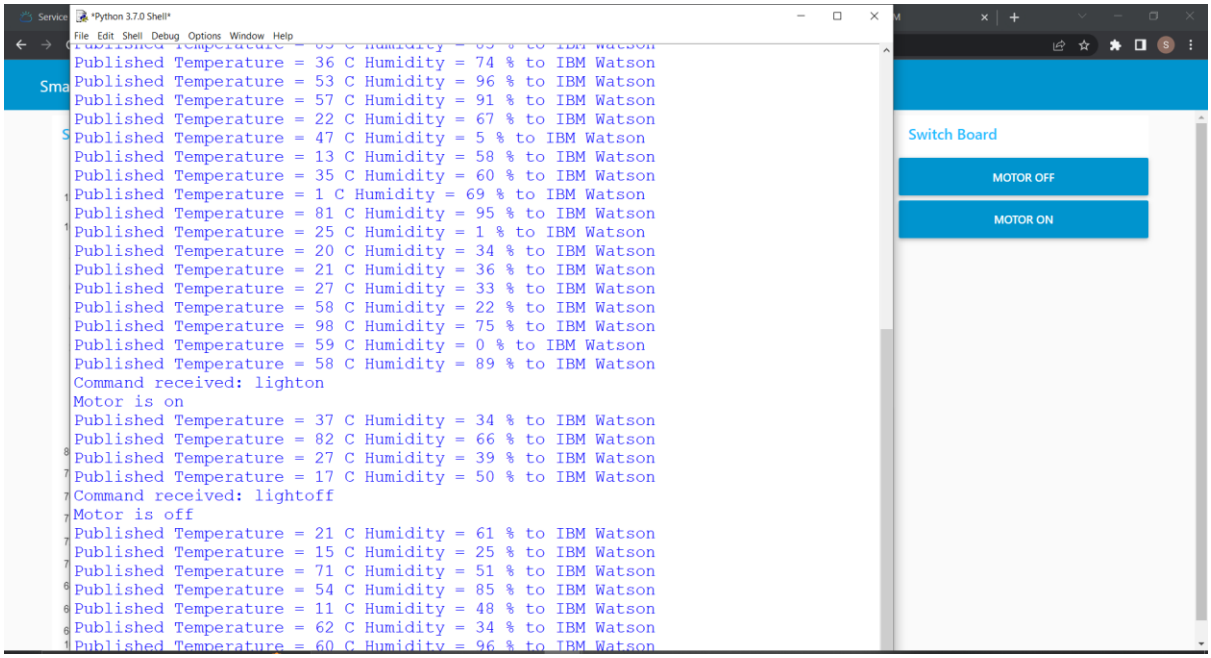
By using this python we have connected web to python and updated in the Web Application

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random



#Provide your IBM Watson Device Credentials
organization = "628kfx"
deviceType = "Abcsaran"
deviceId = "12"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO



def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
        print ("Motor is on")
    else :
        print ("Motor is off")
```

```
    #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:
    #Get Sensor Data from DHT11


    temp=random.randint(0,100)
    Humid=random.randint(0,100)


    data = { 'temp' : temp, 'Humid': Humid }
    #print data
    def myOnPublishCallback():
      print ("Published Temperature = %s C" % temp, "Humidity = %s %%" % Humid, "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()
```





The above output shows that we have switch on the motor and switch it off with the help of the web application