Smart Farmer-IOT Enabled Smart Farming Application

SPRINT DELIVERY – 4

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID38150

5.5 Receiving commands from IBM cloud using Python program

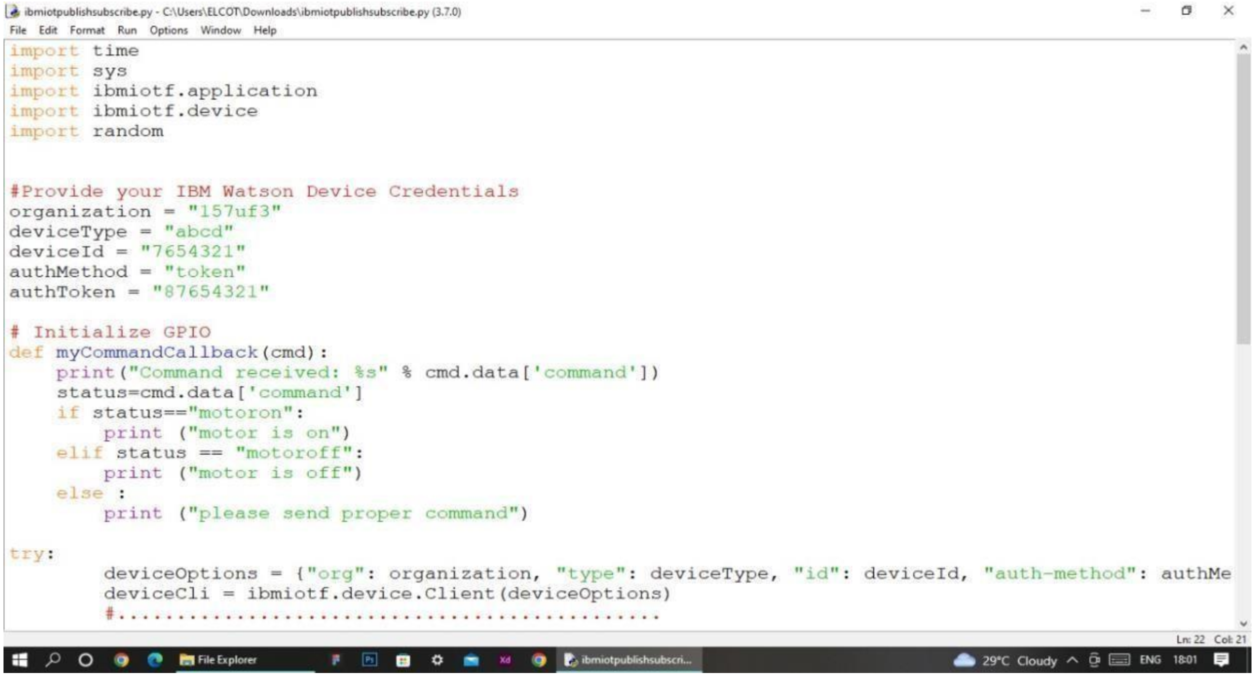
```
 import time import sys
import ibmiotf.application  import
ibmiotf.device import random

#Provide your IBM Watson Device Credentials
organization = "157uf3" deviceType = "abcd"
deviceId = "7654321" authMethod = "token"
authToken = "87654321"

# Initialize GPIO   def myCommandCallback(cmd):
print("Command received: %s" % cmd.data['command'])
status=cmd.data['command']     if status=="motoron":
```

```
print ("motor is on")     elif status == "motoroff":
print ("motor 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)
Mois=random. Randint(20,120)     data =
{ 'temp' : temp, 'Humid': Humid , ‘Mois’:
Mois}
    #print data         def
myOnPublishCallback():
      print ("Published Temperature = %s C" % temp, "Humidity =
%s %%" % Humid, “Moisture =%s deg c” % Mois “to IBM Watson")
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()


ibmiotpublishsubscribe.py - C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py (3.7.0)
File Edit Format Run Options Window Help
Ln: 22 Col: 21
File Explorer
ibmiotpublishsubscri...
29°C Cloudy
ENG 18:01

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


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try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMe
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #..............................................
```
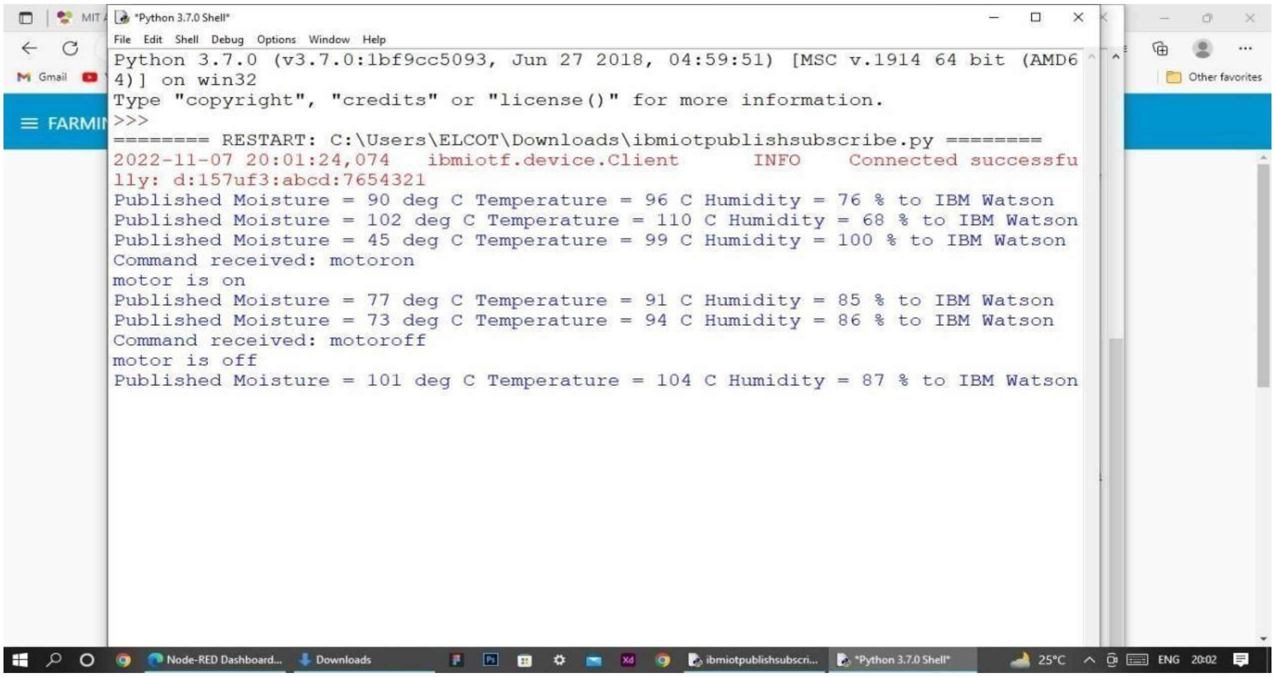
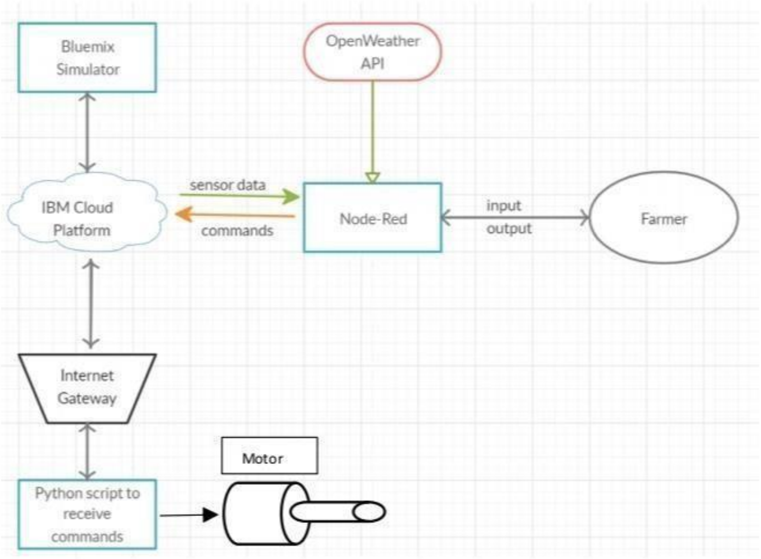
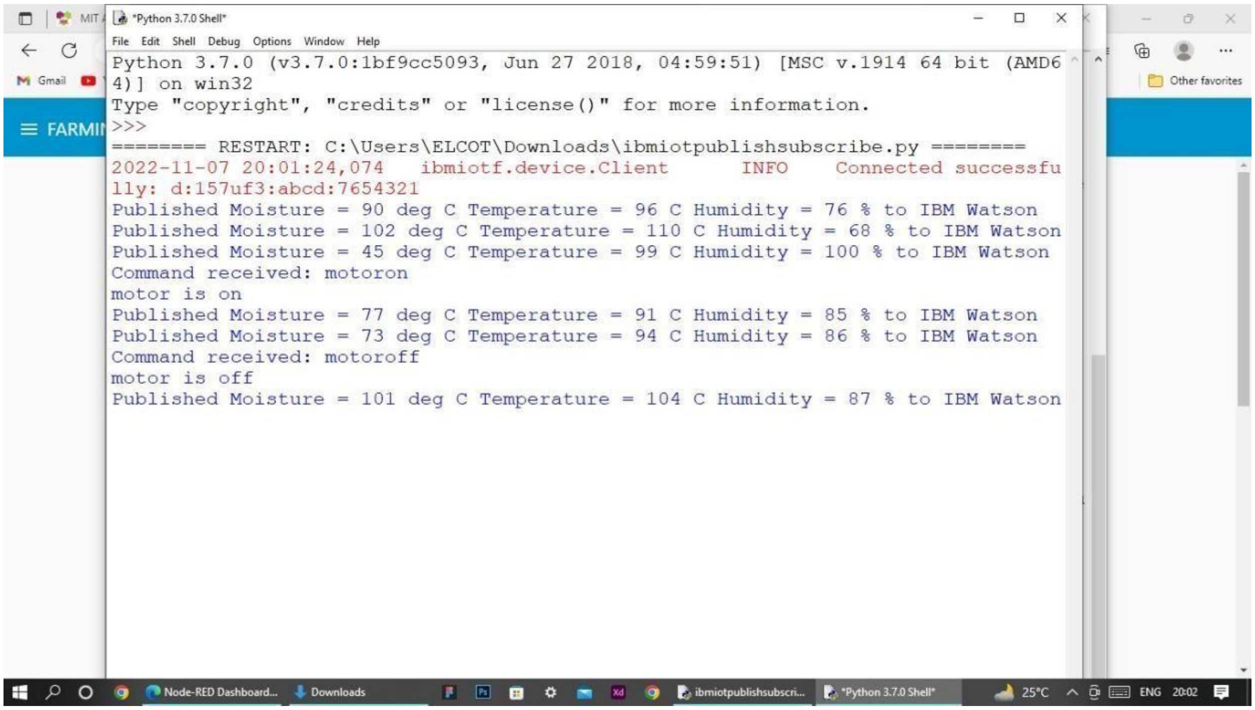



```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD6
4)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:\Users\ELCOT\Downloads\ibmiotpublishsubscribe.py ========
2022-11-07 20:01:24,074   ibmiotf.device.Client      INFO    Connected successfu
lly: d:157uf3:abcd:7654321
Published Moisture = 90 deg C Temperature = 96 C Humidity = 76 % to IBM Watson
Published Moisture = 102 deg C Temperature = 110 C Humidity = 68 % to IBM Watson
Published Moisture = 45 deg C Temperature = 99 C Humidity = 100 % to IBM Watson
Command received: motoron
motor is on
Published Moisture = 77 deg C Temperature = 91 C Humidity = 85 % to IBM Watson
Published Moisture = 73 deg C Temperature = 94 C Humidity = 86 % to IBM Watson
Command received: motoroff
motor is off
Published Moisture = 101 deg C Temperature = 104 C Humidity = 87 % to IBM Watson
```

6.Flow Chart



7.Observations & Results



```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD6
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Type "copyright", "credits" or "license()" for more information.
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Published Moisture = 73 deg C Temperature = 94 C Humidity = 86 % to IBM Watson
Command received: motoroff
motor is off
Published Moisture = 101 deg C Temperature = 104 C Humidity = 87 % to IBM Watson
```
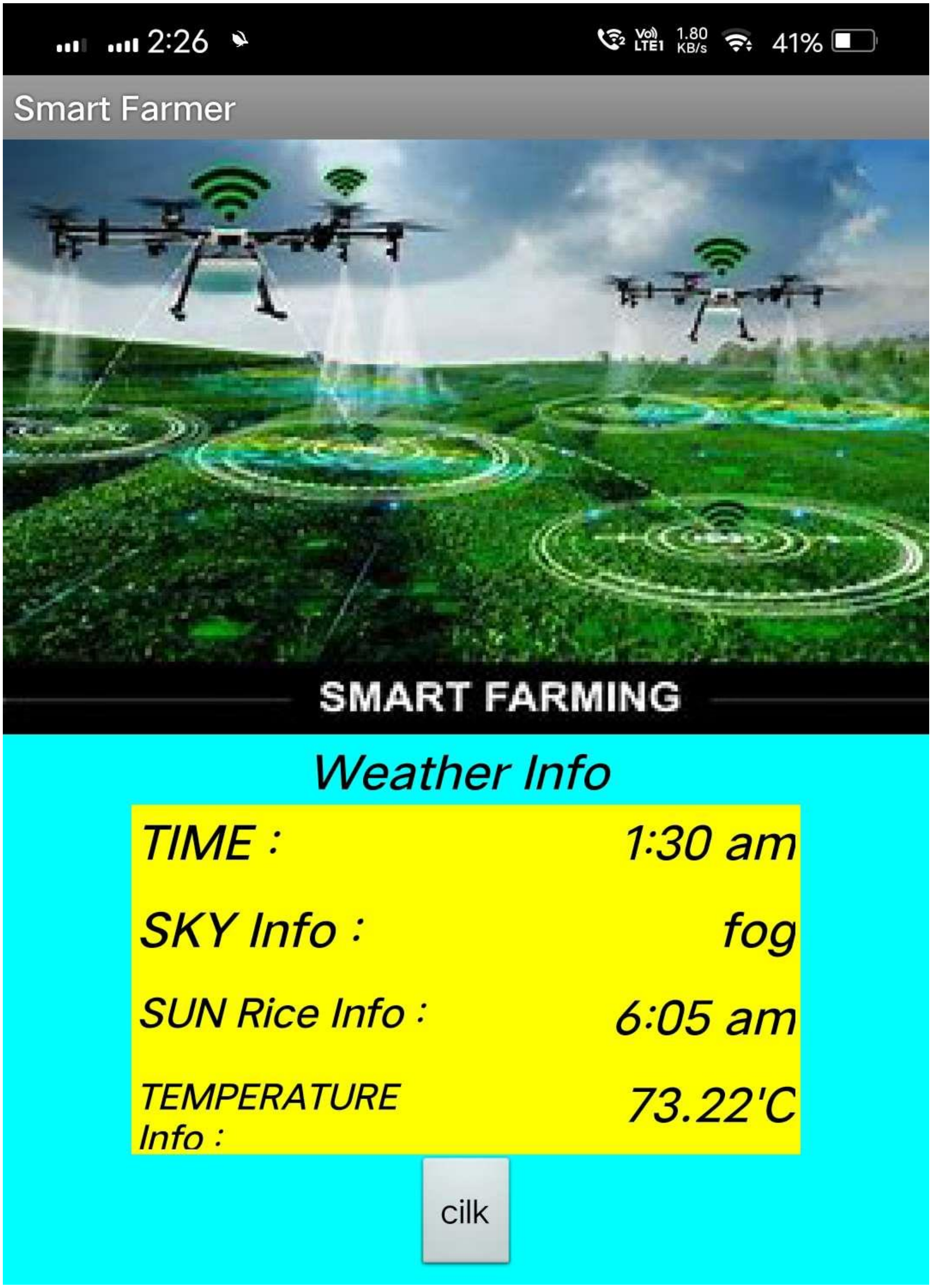
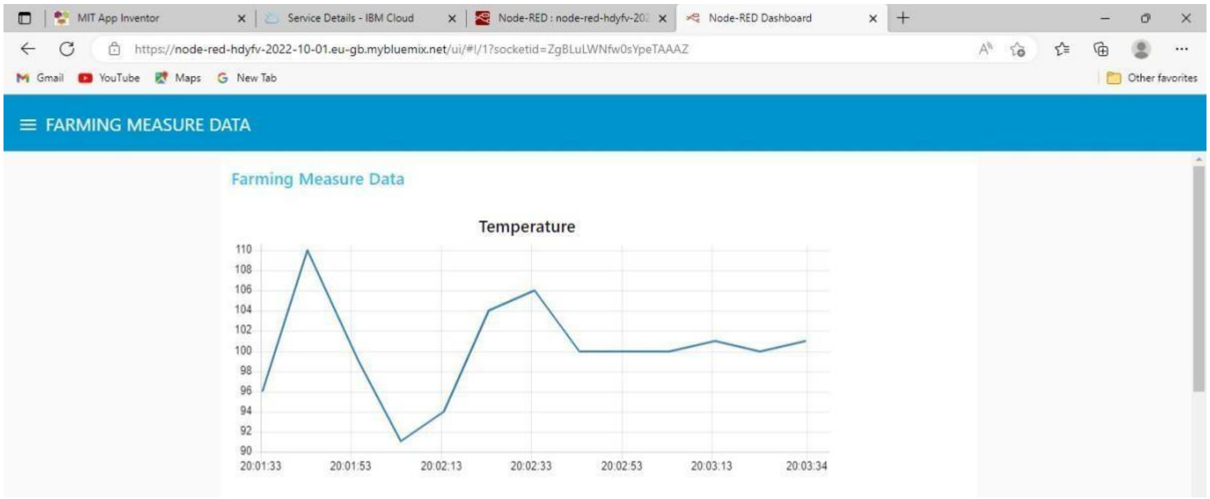
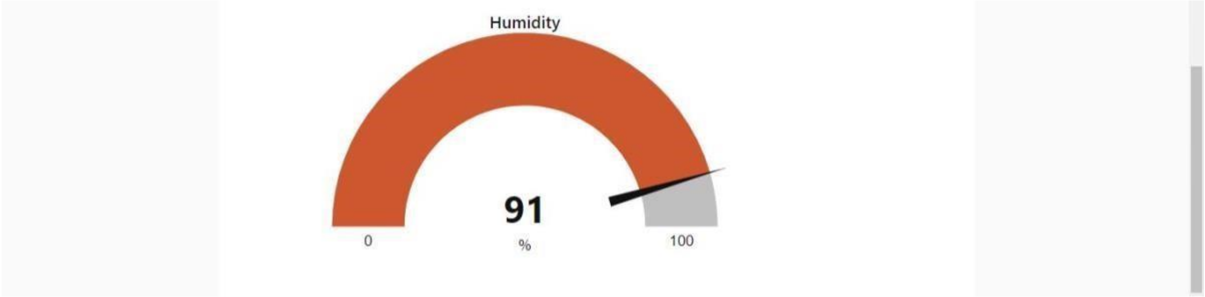
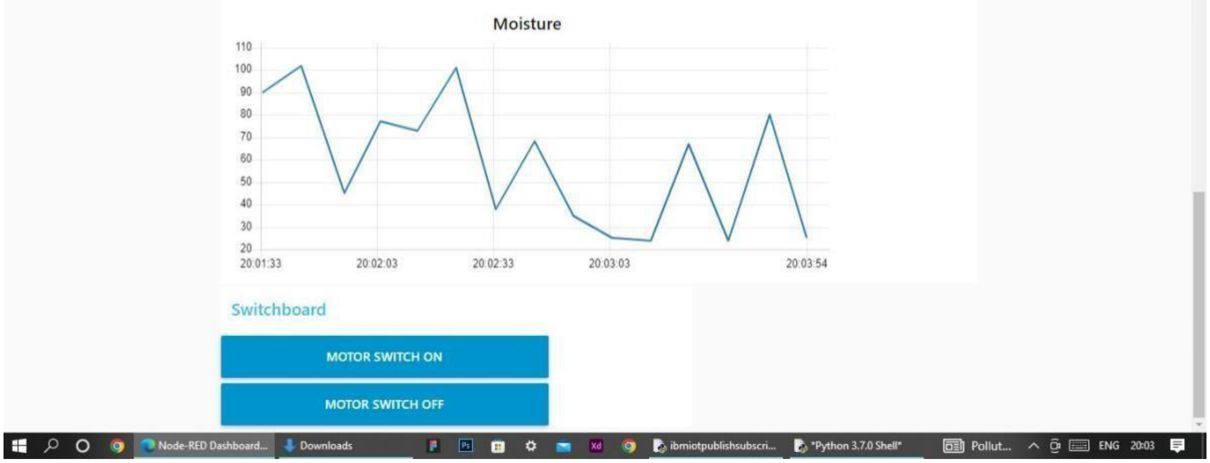



Weather Info

TIME :	1:30 am
SKY Info :	fog
SUN Rice Info :	6:05 am
TEMPERATURE Info :	73.22'C


MIT App Inventor
Service Details - IBM Cloud
Node-RED : node-red-hdyfv-202
Node-RED Dashboard
https://node-red-hdyfv-2022-10-01.eu-gb.mybluemix.net/ui/#!/1?socketid=ZgBLuLWNfw0sYpeTAAAZ
Gmail
YouTube
Maps
New Tab
Other favorites
FARMING MEASURE DATA
Farming Measure Data
Temperature
110
108
106
104
102
100
98
96
94
92
90
20:01:33
20:01:53
20:02:13
20:02:33
20:02:53
20:03:13
20:03:34


Humidity
91
%
0
100


Moisture
110
100
90
80
70
60
50
40
30
20
20:01:33
20:02:03
20:02:33
20:03:03
20:03:54
Switchboard
MOTOR SWITCH ON
MOTOR SWITCH OFF
Node-RED Dashboard...
Downloads
ibmiotpublishsubscri...
Python 3.7.0 Shell
Pollut...
ENG
20:03