

Internship Title: Smart Agriculture System based on IOT - SB42054

Project ID:SPS_PRO_101

Project Title:Smart Agriculture system based on IoT

Project Mentor: Durgaprasad Sir from SmartBridge

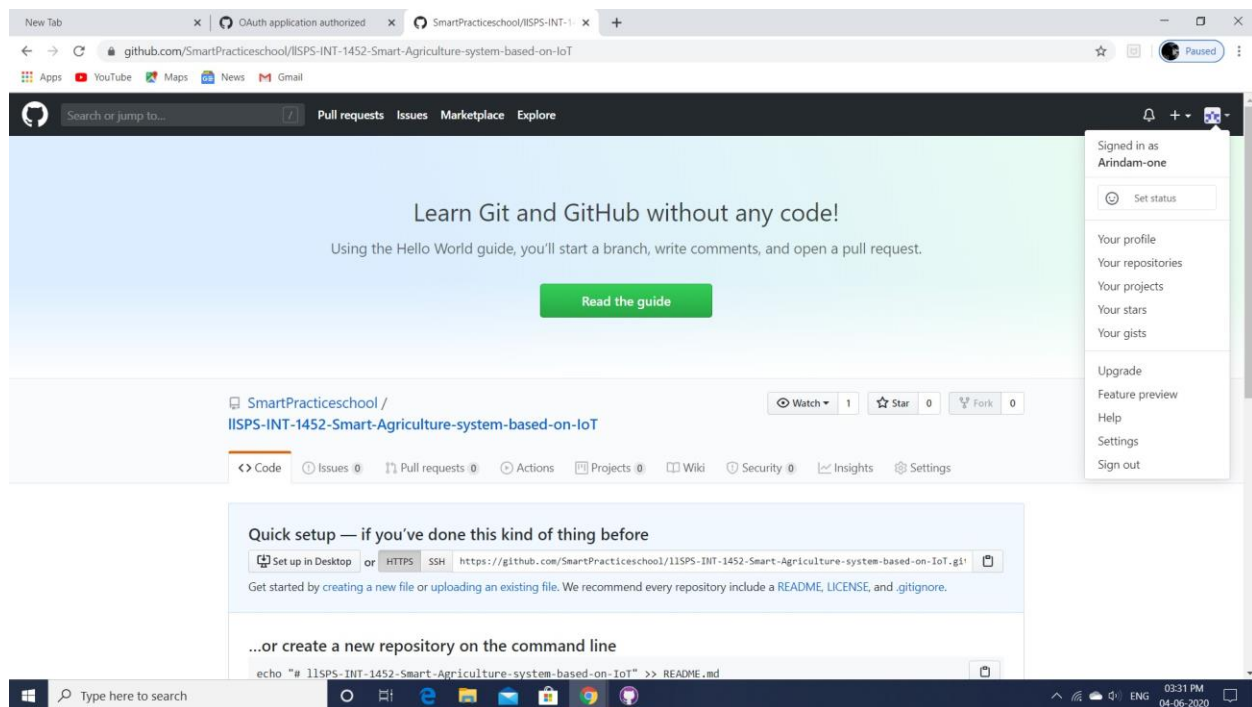
Report

Objective:

- To make a smart APP
- App will give the data from IOT sensor
- App will give the data from open weather api
- These information's will help to make smart agriculture concept possible.

- Setup The Development Environment:

Create GitHub Account: I have created my GitHub Account. Here, I have attached that snapshot.



2. Install Slack and Create Account: I have created that account and I have already asked my problems to do this internship.

3:36 PM

2.6KB/s 4G 59

t

thesmartbridgefreein...



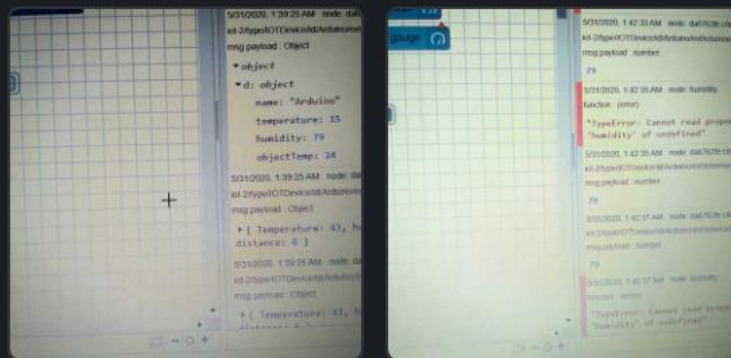
internship

May 31st, 2020



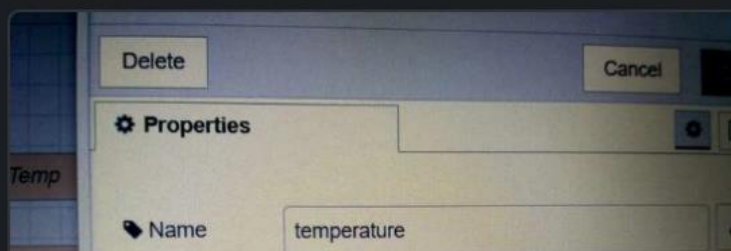
Arindam 2:17 AM

It is showing me "TypeError : cannot read property 'temperature' of undefined"



2 replies

Once it is showing the right value, then next time it is showing error again next time showing right value and again error, it is continuing....

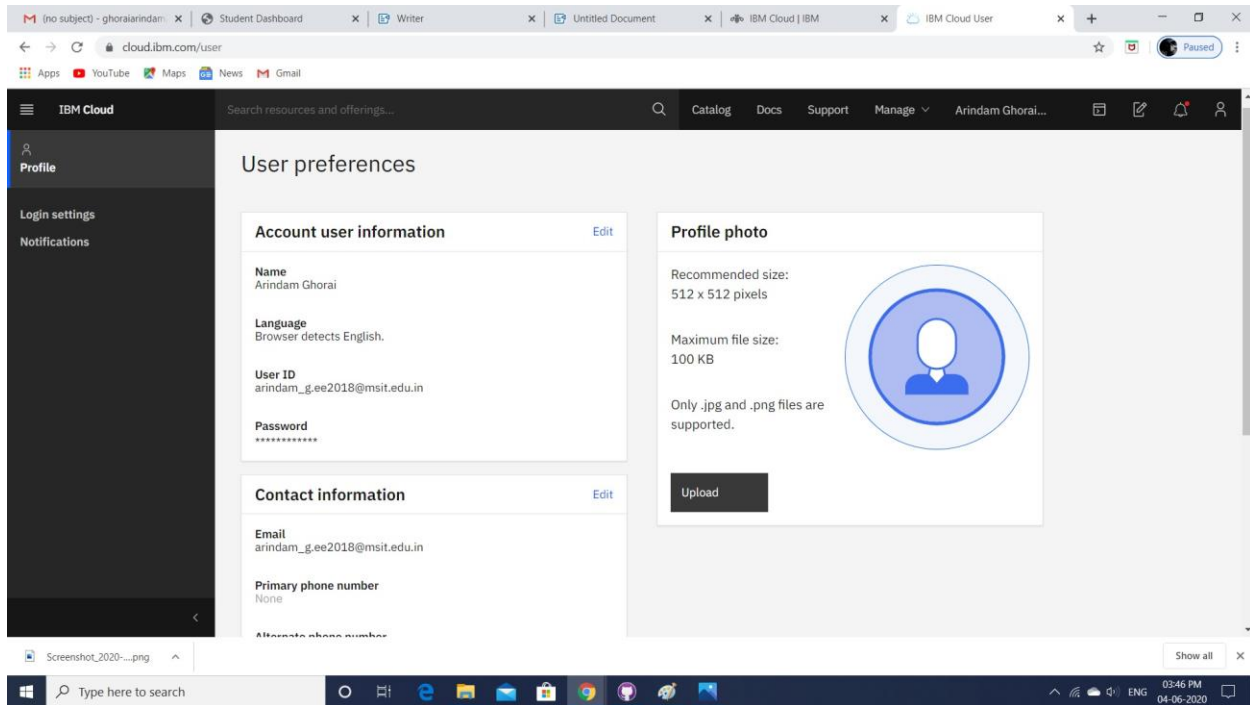


Message #internship



- Explore IBM Cloud Platform:

1. Create IBM Cloud Account: I have created my IBM cloud account. I am doing this project by using this. I have created it with my institutional mail id.



2. Install the Node-Red locally: I have installed it and ran it.

```
node-red
-----
4 Jun 15:52:21 - [info] Node-RED version: v1.0.6
4 Jun 15:52:21 - [info] Node.js version: v12.17.0
4 Jun 15:52:21 - [info] Windows_NT 10.0.18363 x64 IE
4 Jun 15:52:26 - [info] Loading palette nodes
4 Jun 15:52:49 - [info] Dashboard version 2.22.1 started at /ui
4 Jun 15:52:49 - [info] Settings file : \Users\arind\one-red\settings.js
4 Jun 15:52:49 - [info] Context store : 'default' [module=memory]
4 Jun 15:52:49 - [info] User directory : \Users\arind\one-red
4 Jun 15:52:49 - [warn] Projects disabled : editorTheme.projects.enabled=false
4 Jun 15:52:49 - [info] Flows file : \Users\arind\one-red\flows_DESKTOP-1A1ULNC.json
4 Jun 15:52:49 - [warn]

-----
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
-----

4 Jun 15:52:49 - [info] Starting flows
4 Jun 15:52:49 - [info] Started flows
4 Jun 15:52:49 - [info] Server now running at http://127.0.0.1:1880/
```

3. IBM Watson IoT Platform: I have created my account and working with it.

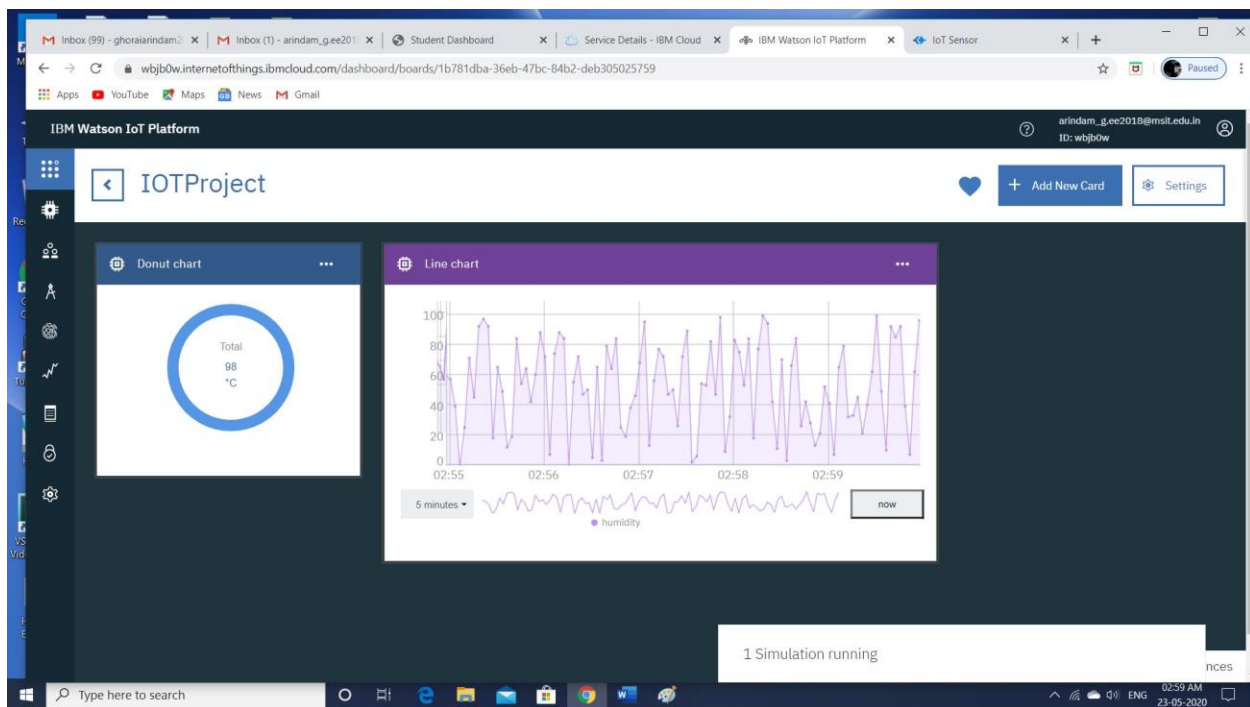
The screenshot displays the IBM Watson IoT Platform web interface. The main page is titled 'Browse Devices' and includes a search bar and a table of devices. A modal window is open for configuring a new device of type 'IOTDevice'.

Device Type: IOTDevice Configuration Modal:

- Events:** 1 event type named 'event_1'.
- Schedule:** 20 seconds, Every Minute.
- Payload:** A JSON object with three fields: 'Temperature', 'humidity', and 'distance', each set to a random value between 0 and 100.
- Buttons:** 'Send', 'Upload a CSV file', 'Cancel', and 'Save'.

Background Dashboard:

- Search:** Search by Device ID.
- Table:** A table with columns: Device ID, Status, Device Type, Class ID, and Date. One device is listed: 'Arduino' with status 'Disconnected' and type 'IOTDevice'.
- Footer:** Items per page 50 | 1-1 of 1 item.



4. Install Python: I have a python software. So, till now I have not installed Python Idle as mentioned in work space which has been given by smartinternz.

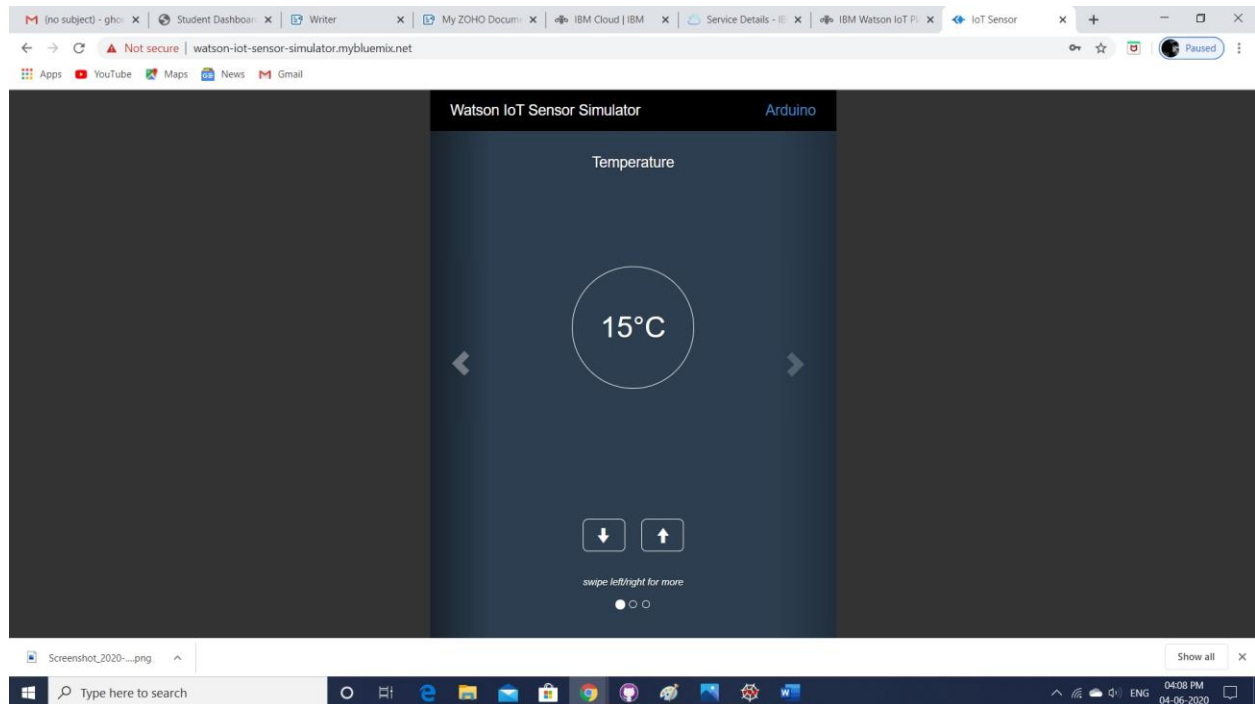
```

1  # -*- coding: utf-8 -*-
2  """
3  Spyder Editor
4  This is a temporary script file.
5  """
6
7  import time
8  import sys
9  import ibmiotf.application # to install pip install ibmiotf
10 import ibmiotf.device
11
12 #Provide your IBM Watson Device Credentials
13 organization = "wbjbdw" #replace the ORG ID
14 deviceType = "IOTDevice" #replace the Device type wi
15 deviceId = "Arduino" #replace Device ID
16 authMethod = "token"
17 authToken = "123456789" #Replace the authtoken
18
19 def myCommandCallback(cmd): # function for Callback
20     print("Command received: %s" % cmd.data)
21     if cmd.data['command'] == 'lighton':
22         print("LIGHT ON IS RECEIVED")
23
24     elif cmd.data['command'] == 'lightoff':
25         print("LIGHT OFF IS RECEIVED")
26
27     if cmd.command == "setInterval":
28
29         if 'interval' not in cmd.data:
30             print("Error - command is missing required information: 'interval'")
31         else:
32             interval = cmd.data['interval']
33
34     elif cmd.command == "print":
35         if 'message' not in cmd.data:
36             print("Error - command is missing required information: 'message'")
37         else:
38             output = cmd.data['message']
39             print(output)

```

The screenshot shows the Spyder Python IDE interface. The left pane displays a script file named 'temp.py' with Python code for interacting with the IBM Watson IoT Platform. The right pane shows the 'Console' output, which includes the Python version (3.7.6) and the IPython version (7.12.0). A 'Usage' dialog box is also visible, providing information on how to get help for objects.

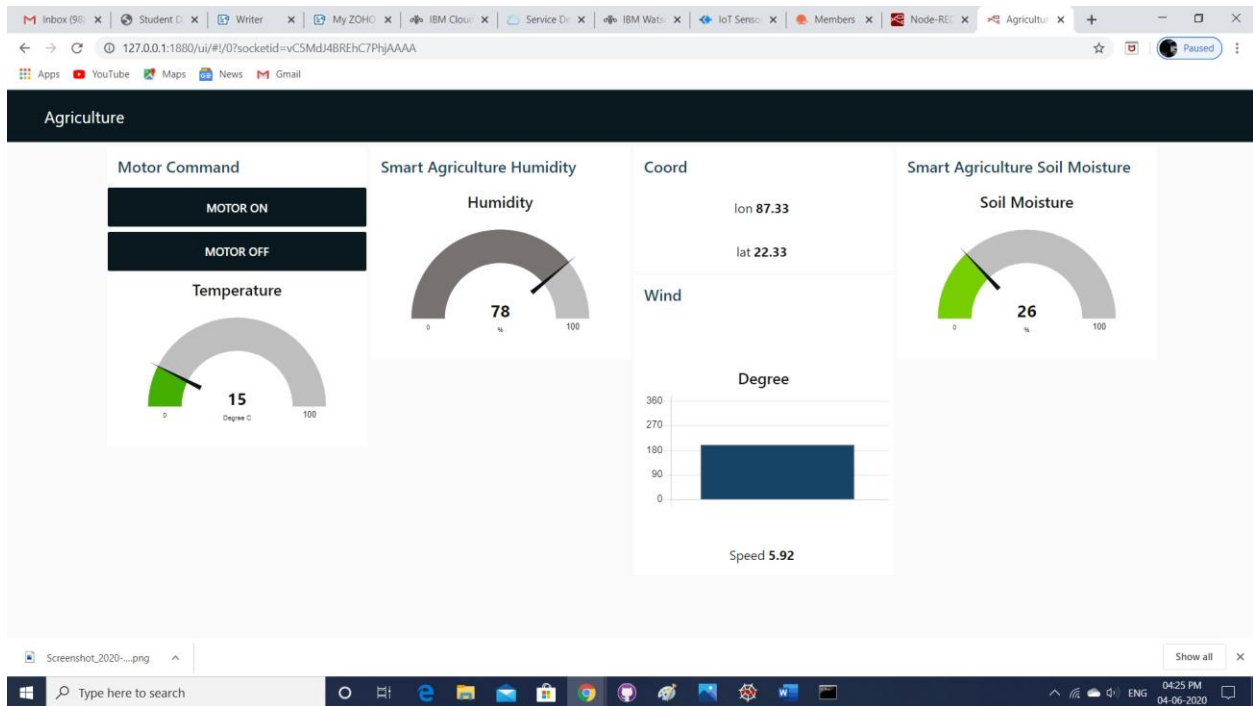
- **Connect The IOT Simulator To Watson IOT Platform:** Then, I have connected it with watson IOT Platform.



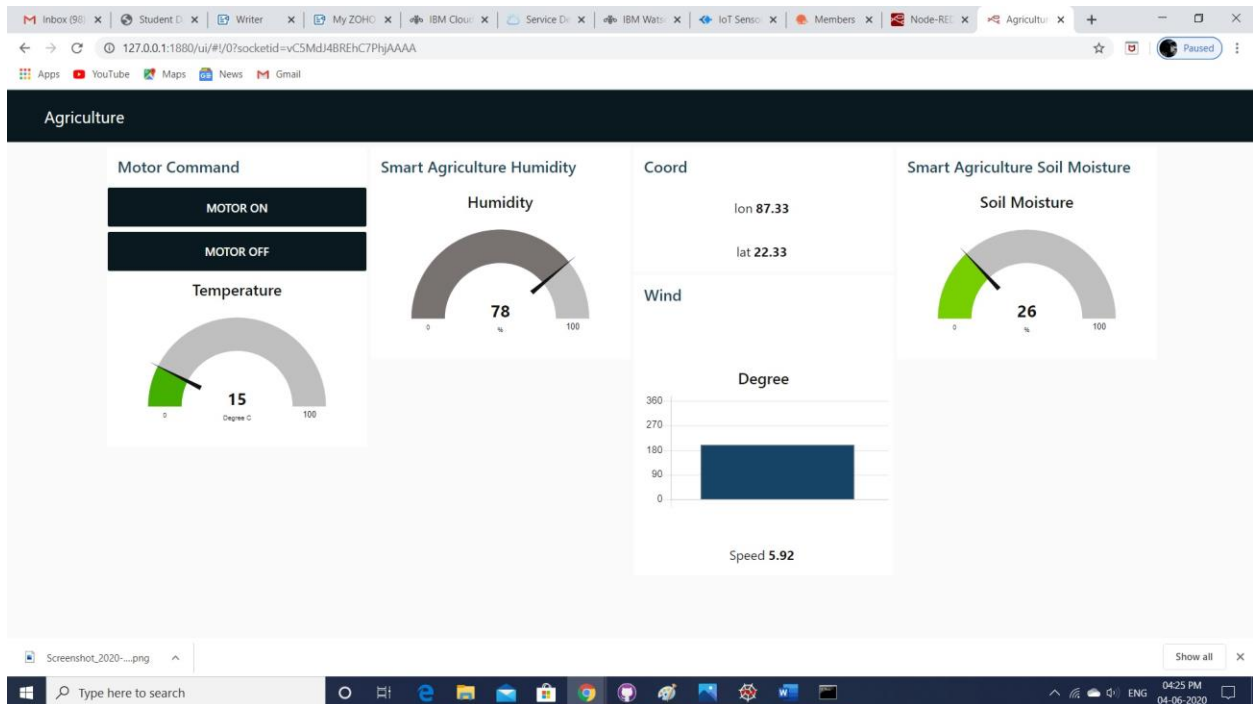
- **Configure The Nodered To Get The Data From IBM IOT Platform And Open Weather API:**

I have created my account on open weather api platform.

I am getting the weather data from http request. In the UI, You will see that value.

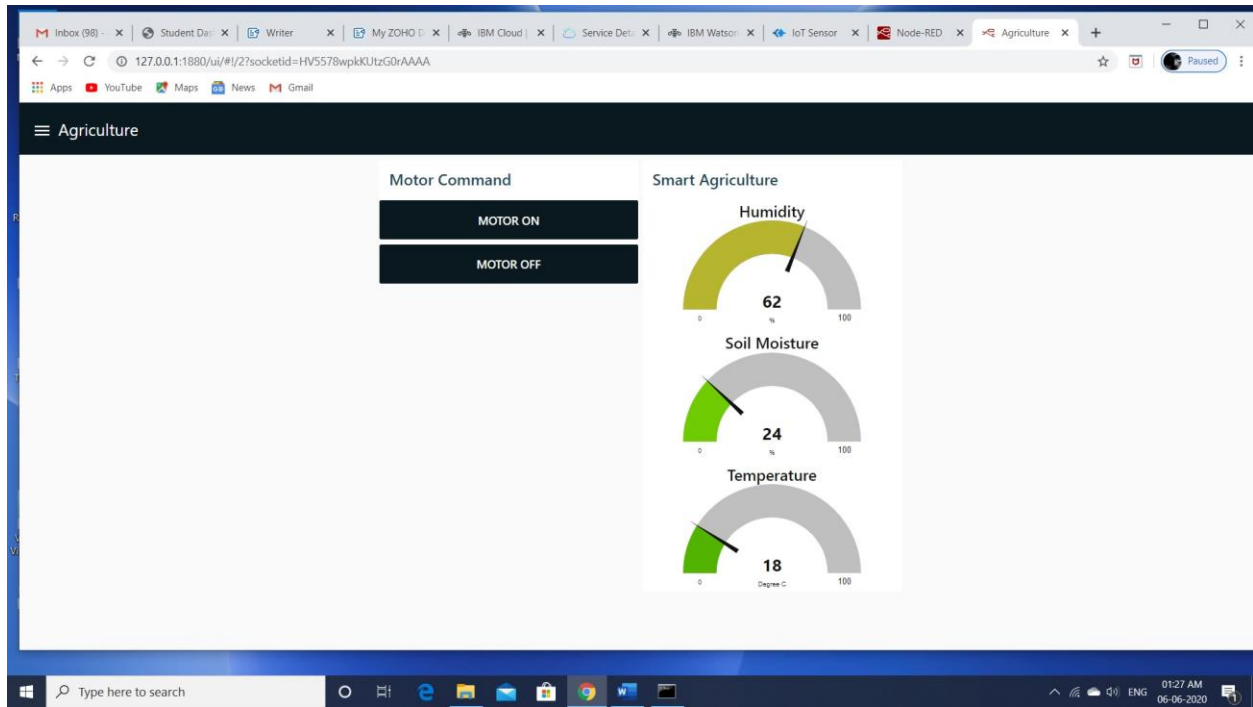


- **Building A Web App:** Web App building process is running. Trying to make a better UI. For that reason only, process is still going on.

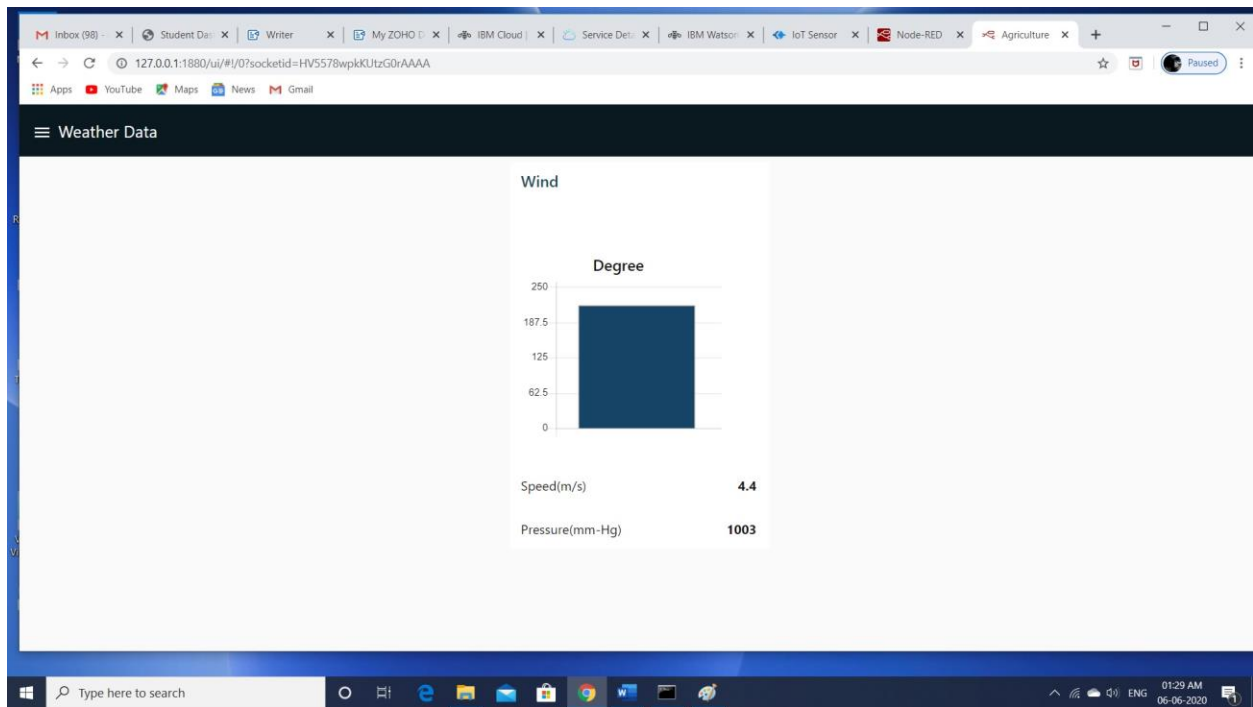


Final Outlook of MY APP

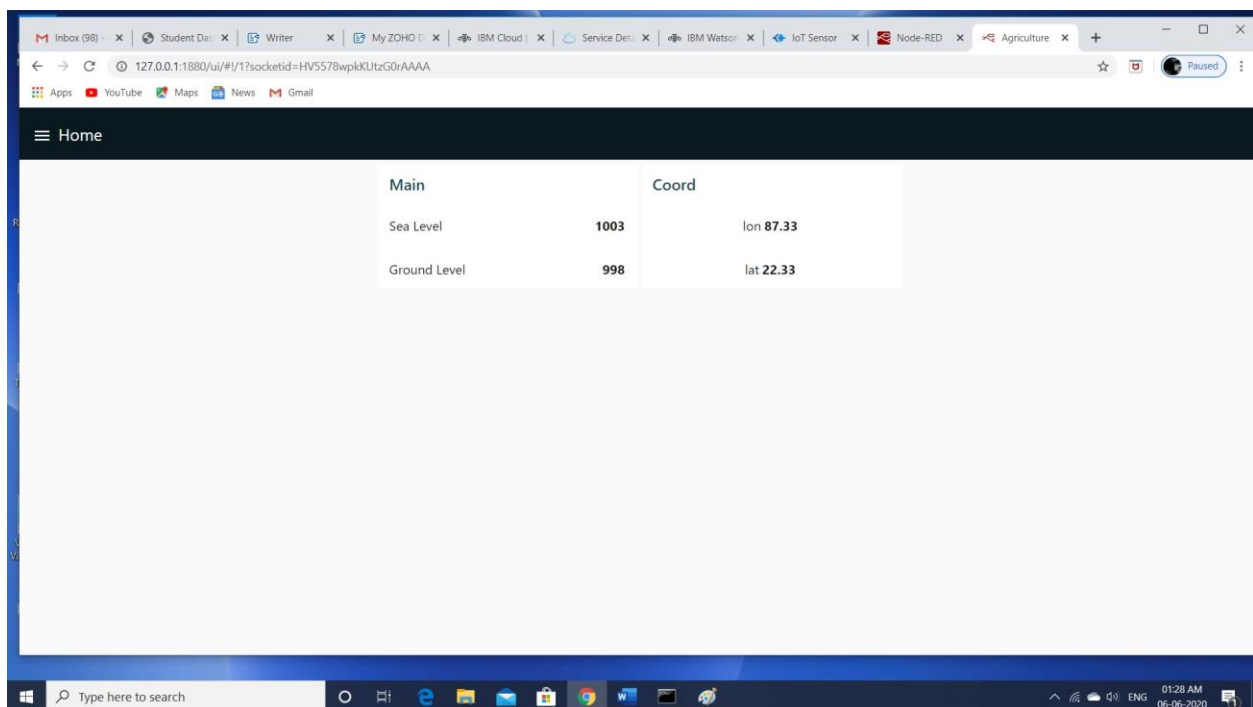
FINAL OUTLOOK OF AGRICULTURE SECTOR:
(DATA FROM IOT SENSOR):



Final LOOK of weather page but It will modify:

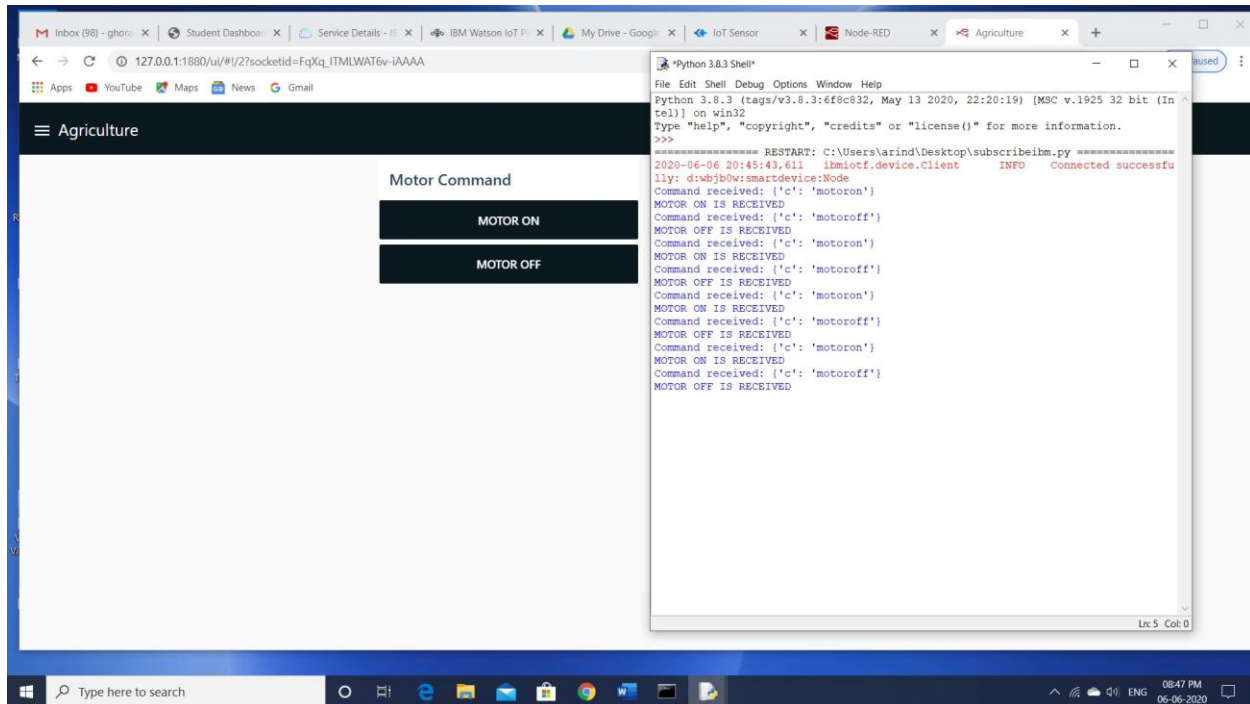


Final LOOK of home page(It will modify later):



- Configure Your Device To Receive The Data From The Web Application And Control Your Motors:

From UI, You can control motor on/off. I have successfully completed it. If you press motor on, on python platform you will see as a output it receives the signal "motor on" and in the same process you will see "motor off". I have attached my document.



In this process, I have completed my project.

Thank You!