Smart Farmer-IOT Enabled Smart Farming Application

SPRINT DELIVERY – 3

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
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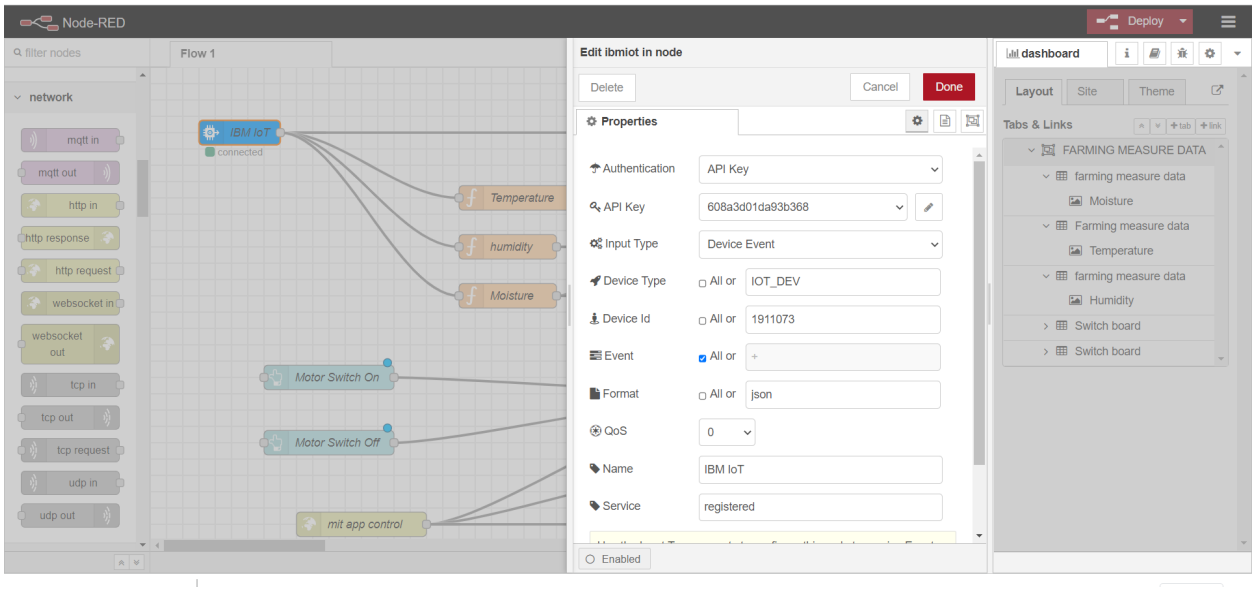
Configuration of Node-Red to send commands to IBM cloud

Ibm iot out node I used to send data from Node-Red to IBM Watson device. So, after adding it to the flow we need to configure it with credentials of our Watson Device.



Here we add two buttons in UI

1 -> for motor on 2 -> for motor off

We used a function node to analyses the data received and assign command to each number.

The Java script code for the

analyses is:

if(msg.payload===1)

msg.payload={"command”:

“ON"}; else

if(msg.payload===0)

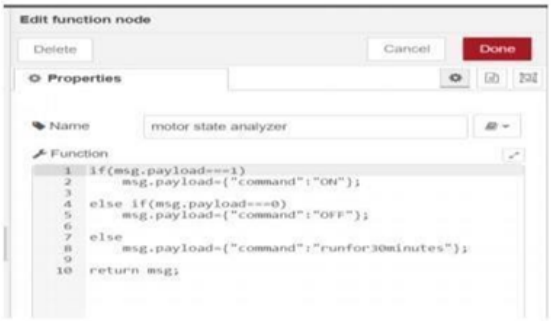
msg.payload={"command”:“

OFF"};

Then we use another function node to parse the data and get the command and represent it visually with text node.

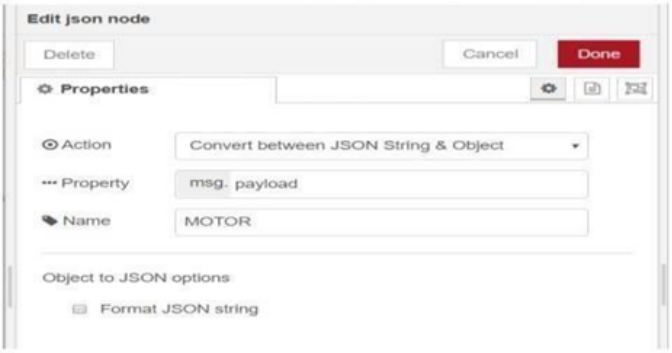
The Java script code for that function node is:

```
var state=msg.payload;
msg.payload = state.command;
return msg;
```

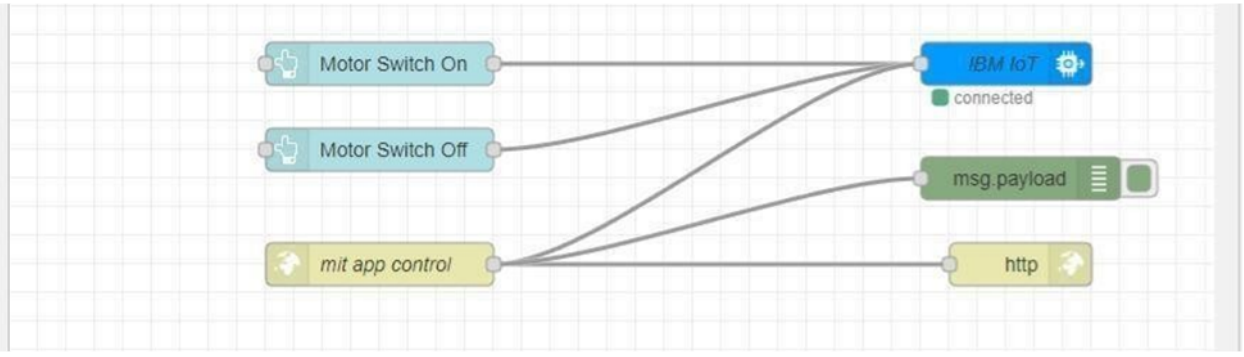


The above images show the java script codes of analyser and state function nodes.

Then we add edit Json node to the conversion between JSON string & object and finally connect it to IBM IoT Out.



Edit JSON node needs to be configured like this

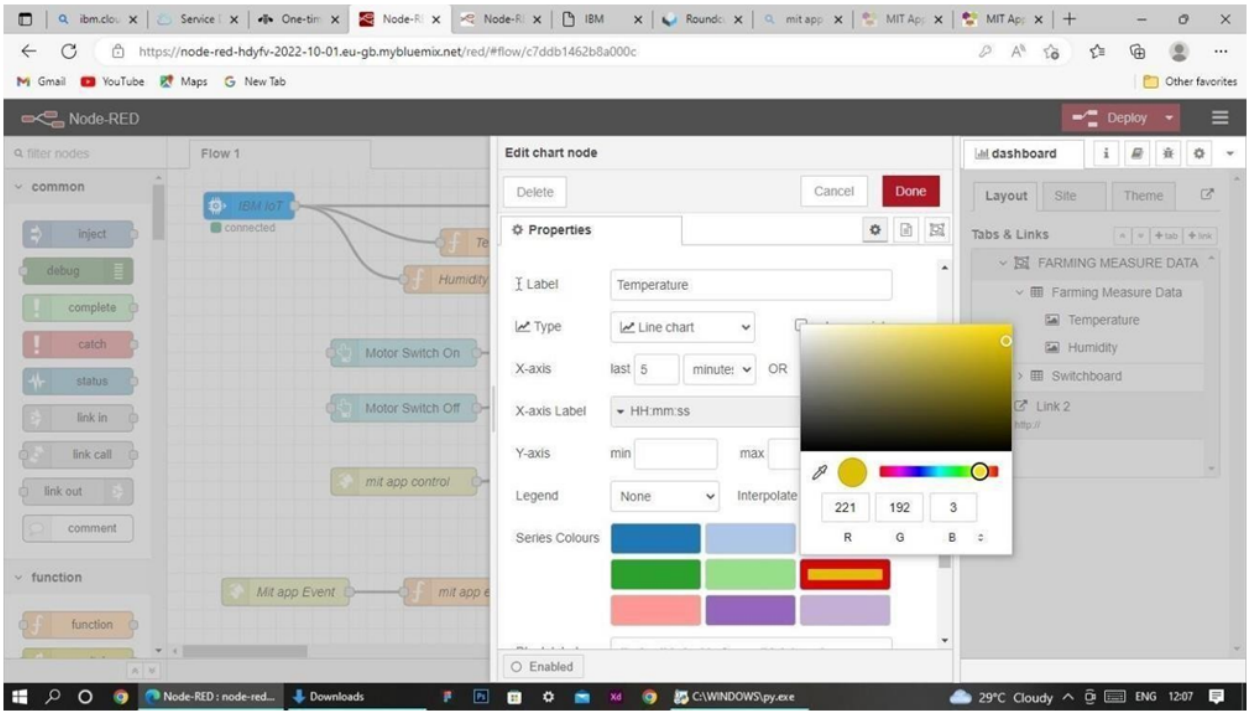


Adjusting User Interface

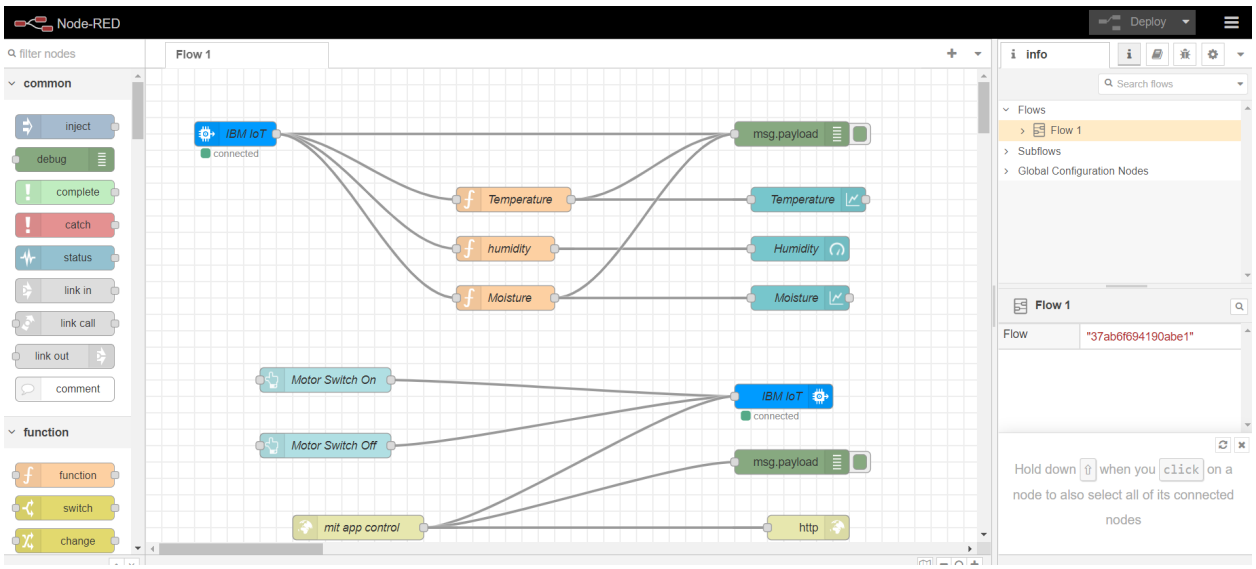
In order to display the parsed JSON data a Node-Red dashboard is created

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.

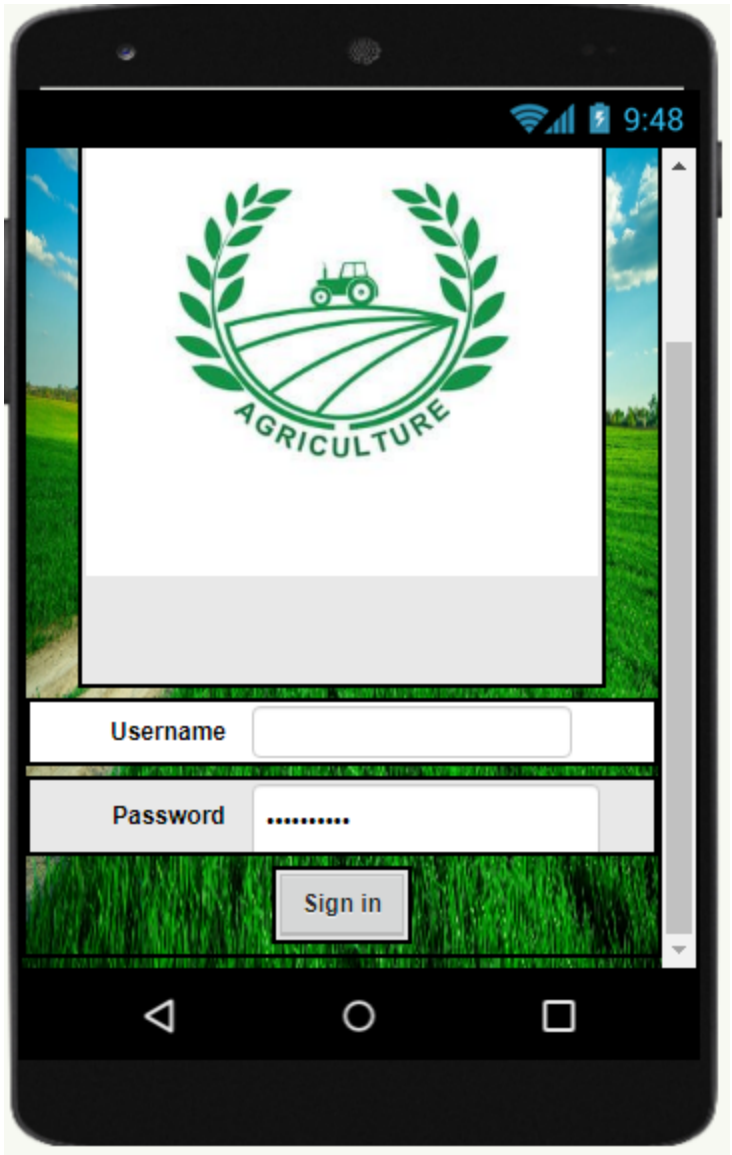
Below images are the Gauge, text and button node configurations

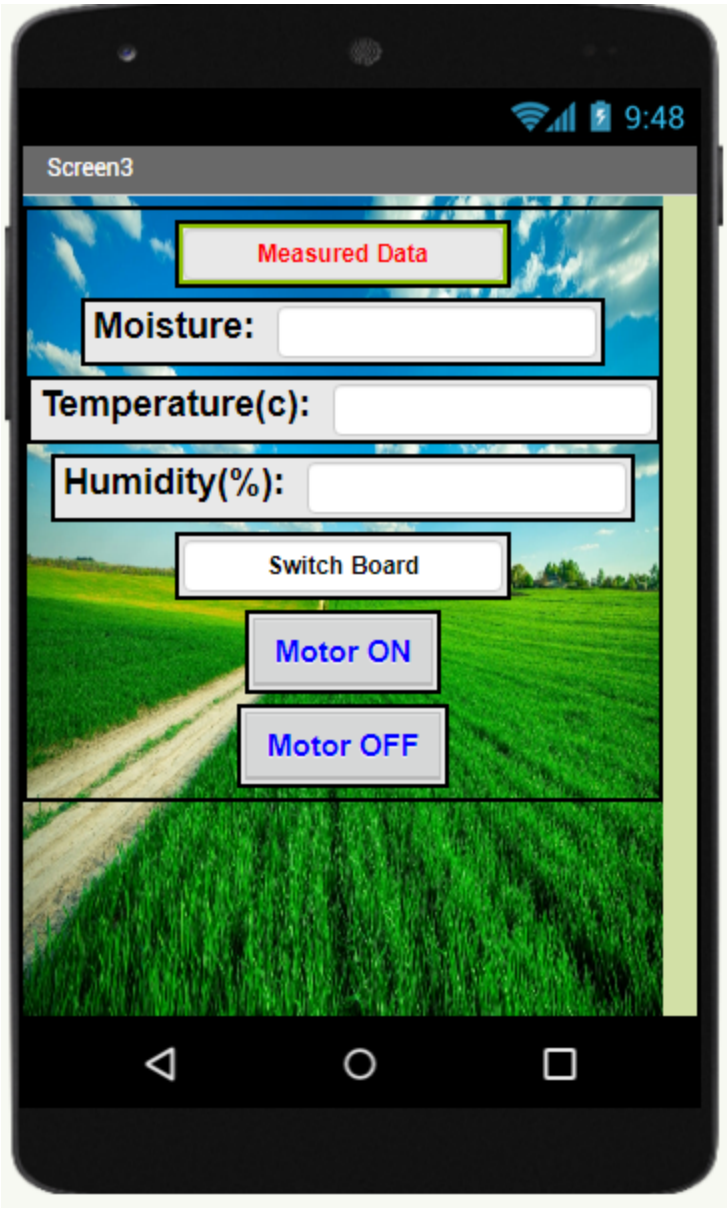


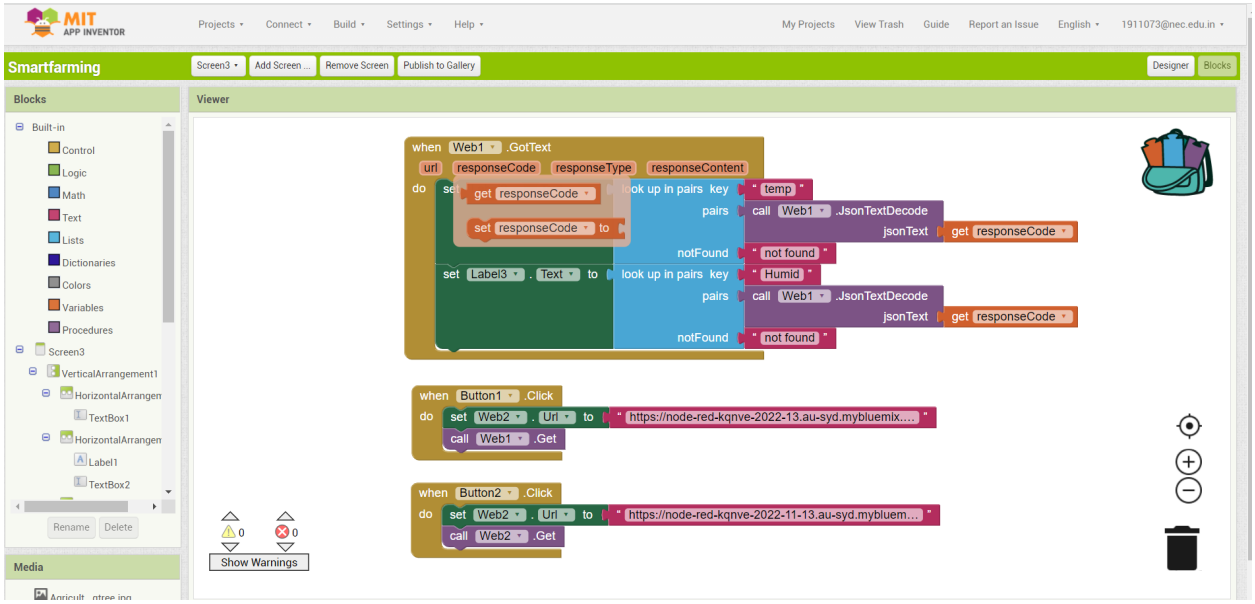
COMPLETE PROGRAM FLOW:



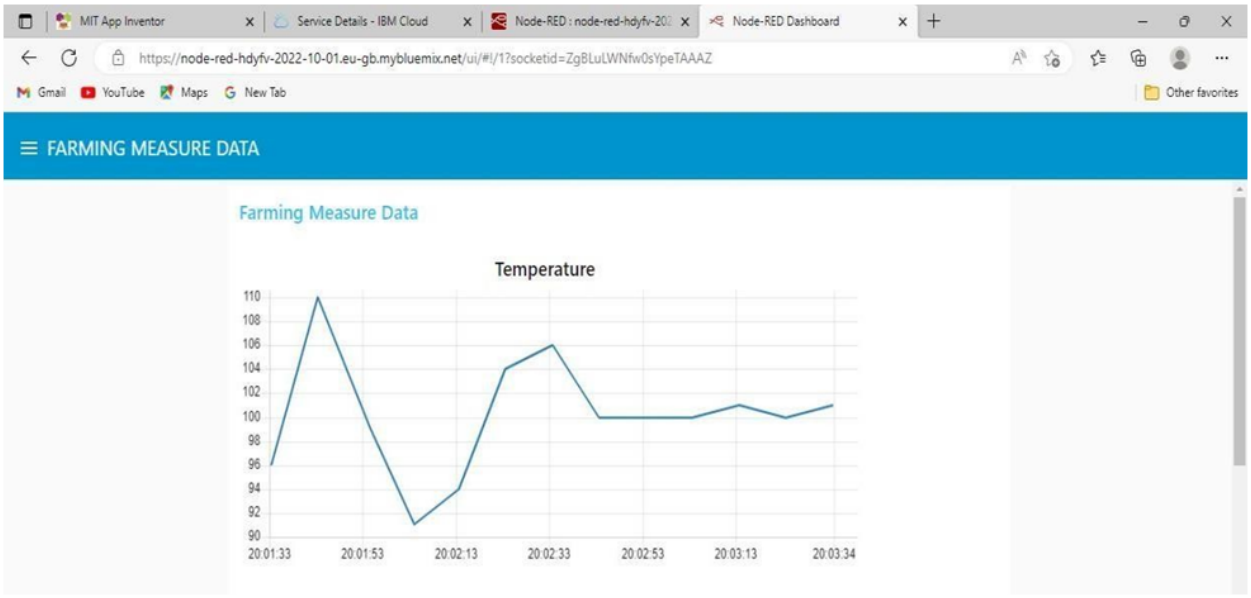
MOBILE APP:

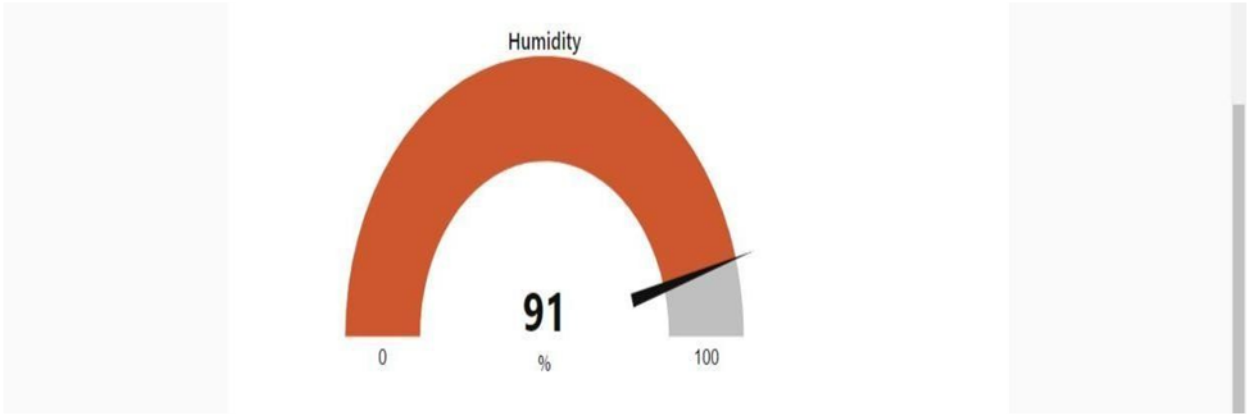

9:48
AGRICULTURE
Username
Password
Sign in

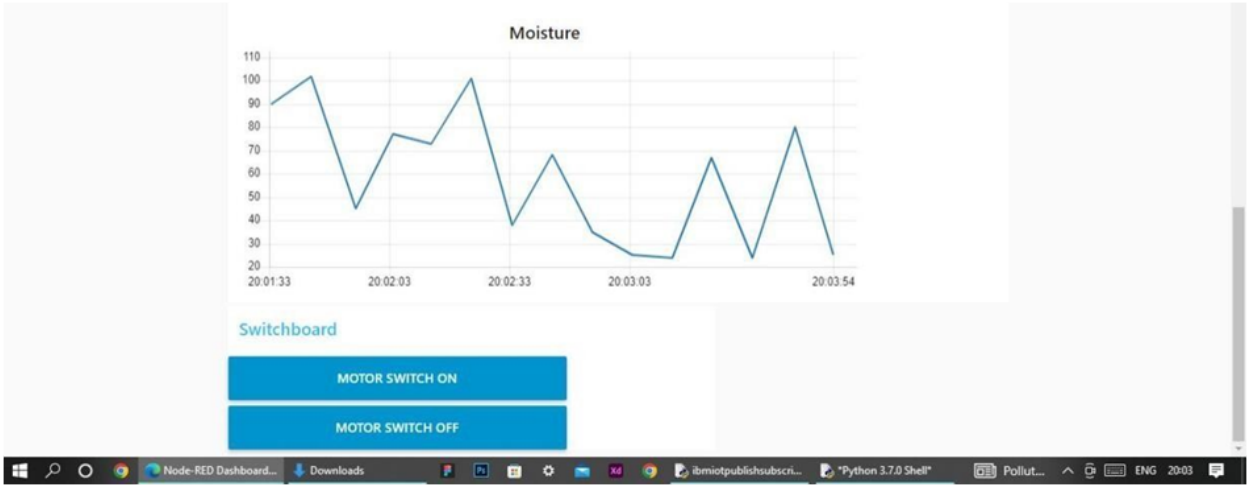

9:48
Screen3
Measured Data
Moisture:
Temperature(c):
Humidity(%):
Switch Board
Motor ON
Motor OFF


MIT APP INVENTOR
Smartfarming
Blocks
Viewer
when Web1 .GotText
url responseCode responseType responseContent
get responseCode
set responseCode to
look up in pairs key " temp "
pairs call Web1 .JsonTextDecode
jsonText get responseCode
notFound " not found "
set Label3 . Text to
look up in pairs key " Humid "
when Button1 .Click
set Web2 . Url to " https://node-red-kqnve-2022-13.au-syd.mybluemix.... "
call Web1 .Get
when Button2 .Click
set Web2 . Url to " https://node-red-kqnve-2022-11-13.au-syd.mybluem... "
call Web2 .Get
Show Warnings
Media

WEB APP UI:


MIT App Inventor
Service Details - IBM Cloud
Node-RED Dashboard
https://node-red-hdyfv-2022-10-01.eu-gb.mybluemix.net/ui/#!/1?socketid=ZgBLuLWNfw0sYpeTAAAZ
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