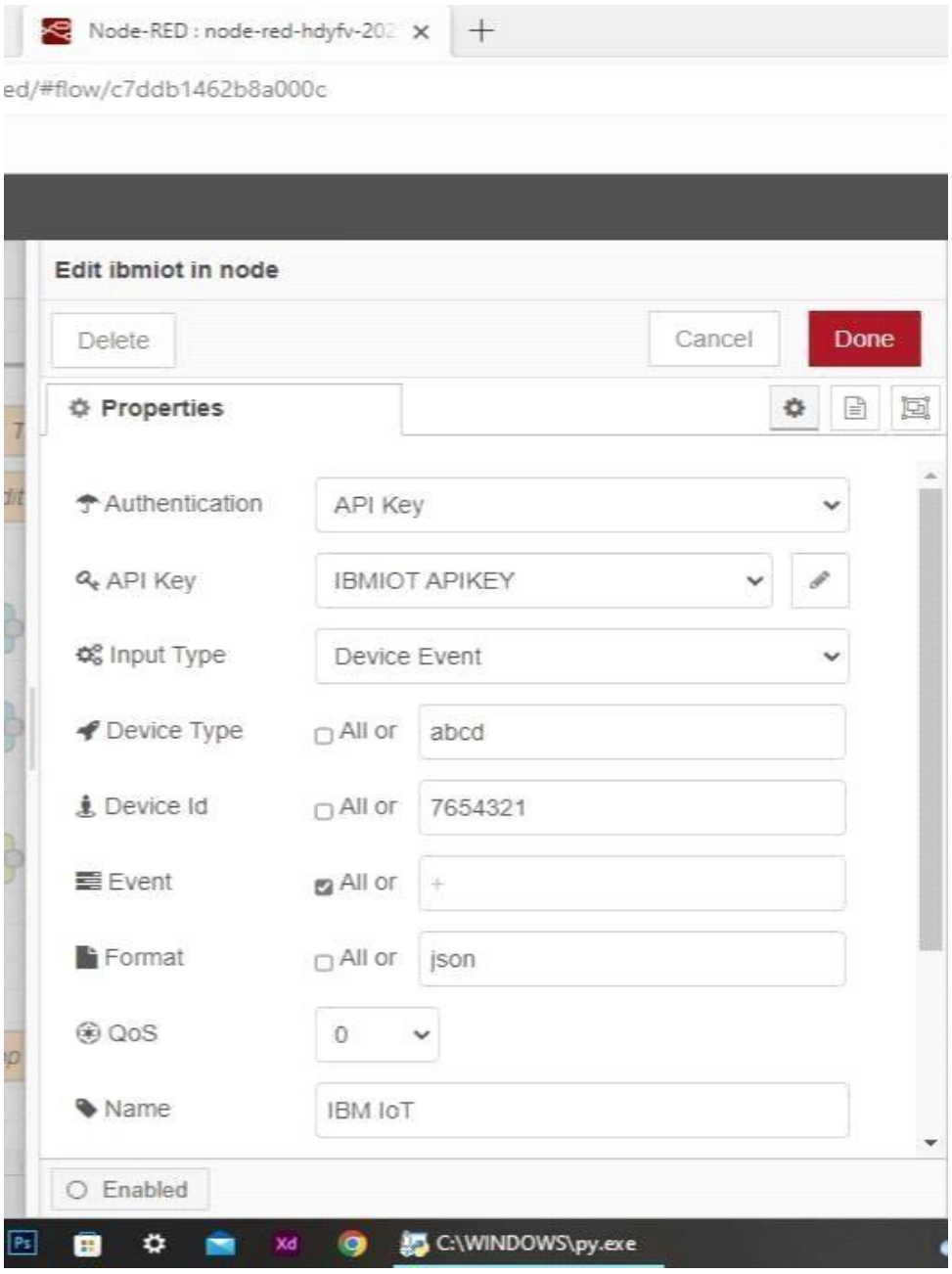
IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 3

TEAME ID:PNT2022TMID44727

- **Configuration of Node-Red to send commands to IBM cloud**

ibmiot 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 Watsondevice.



Here we add two buttons in UI

1

-

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f

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2

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o

f

f

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

The Java script code

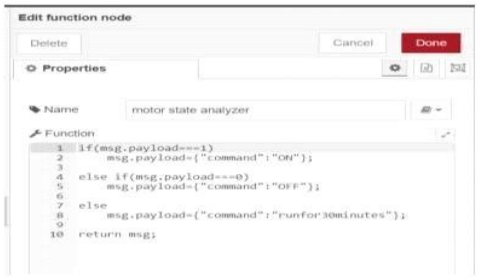
for the analyses is:

```
if(msg.payload===1)

msg.payload={"comm

and”: “ON"};

else

if(msg.payload===

0)

msg.payload={"co

mmand”: “OFF"};
```

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

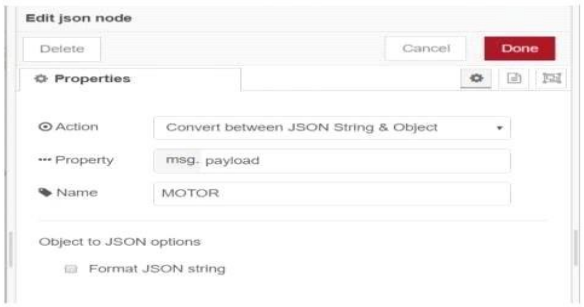
The Java script code for that function node is:

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

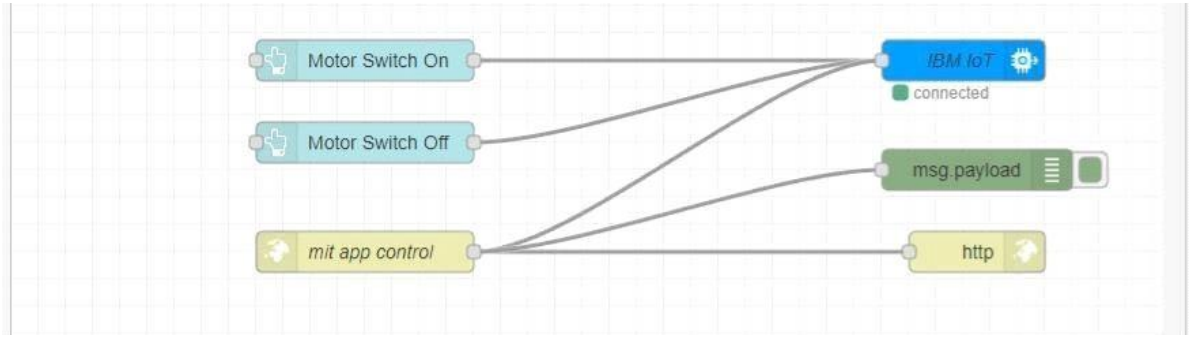


The above images show the java script codes of analyser and state function nodes.

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



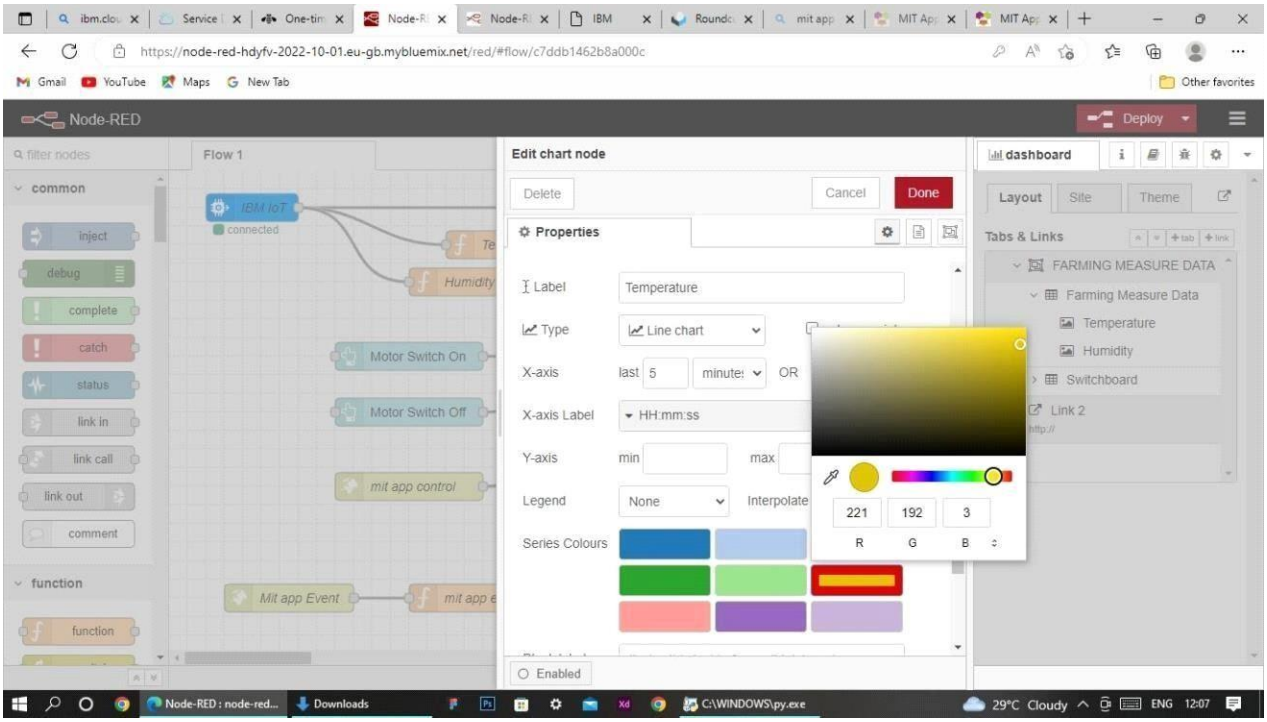
This is the program flow for sending commands to IBM cloud.

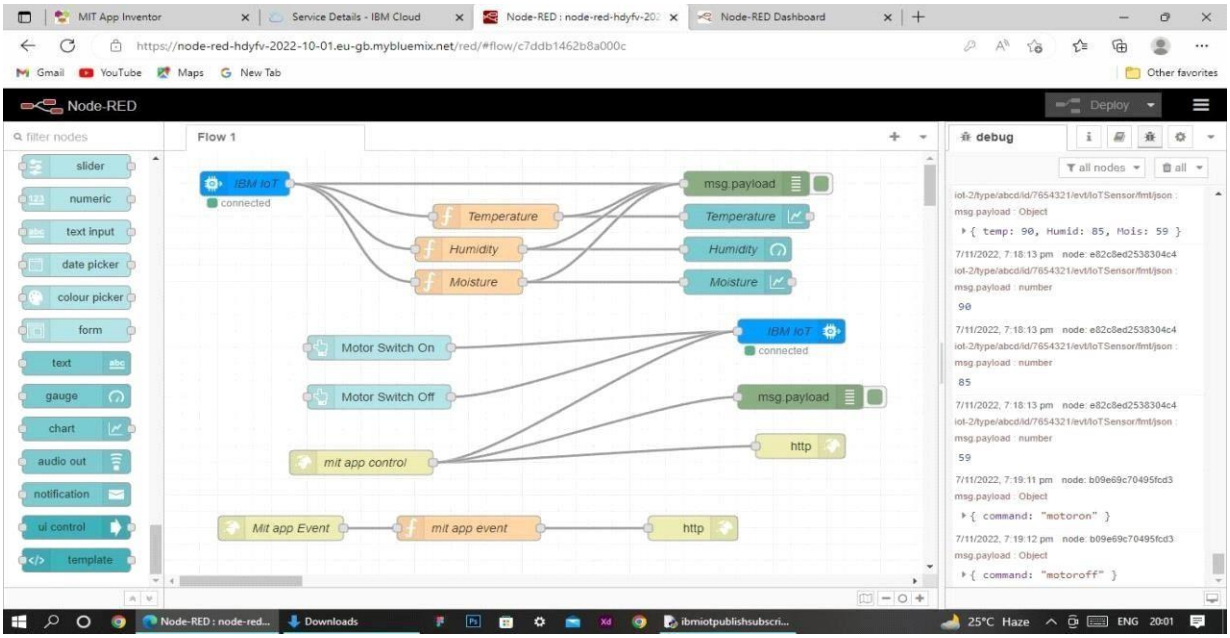
- ## Adjusting User Interface

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

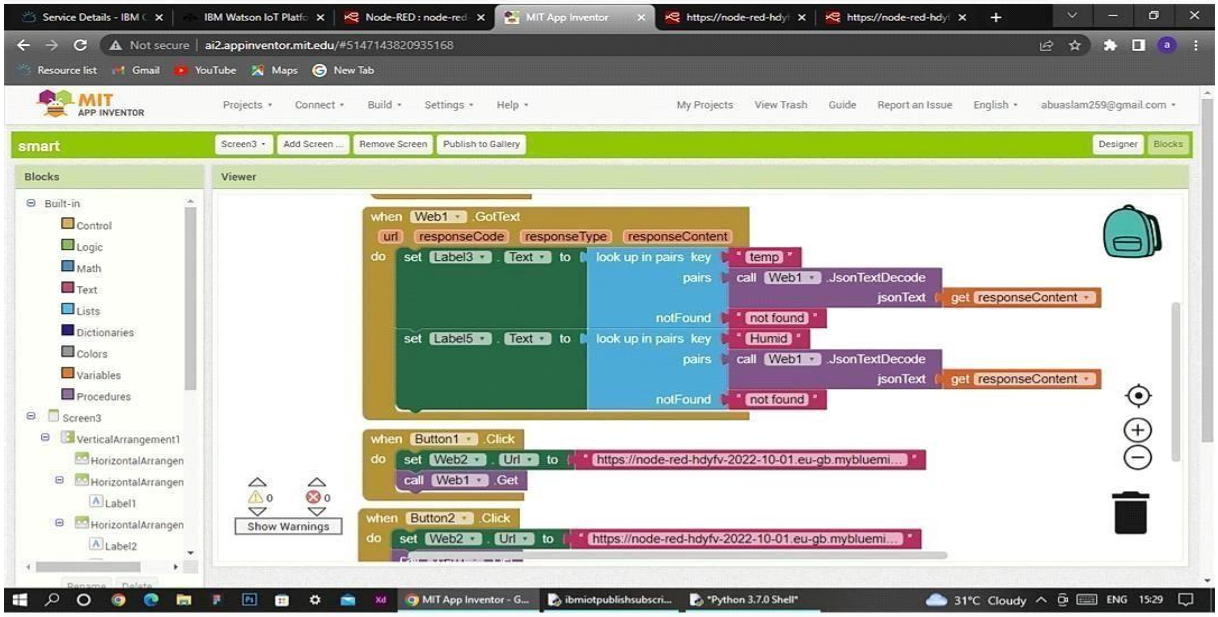
Here we are using Gauges, text and button nodes to display in the UI and helps tomonitor the parameters and control the farm equipment.

Below images are the Gauge, text and button node configurations.



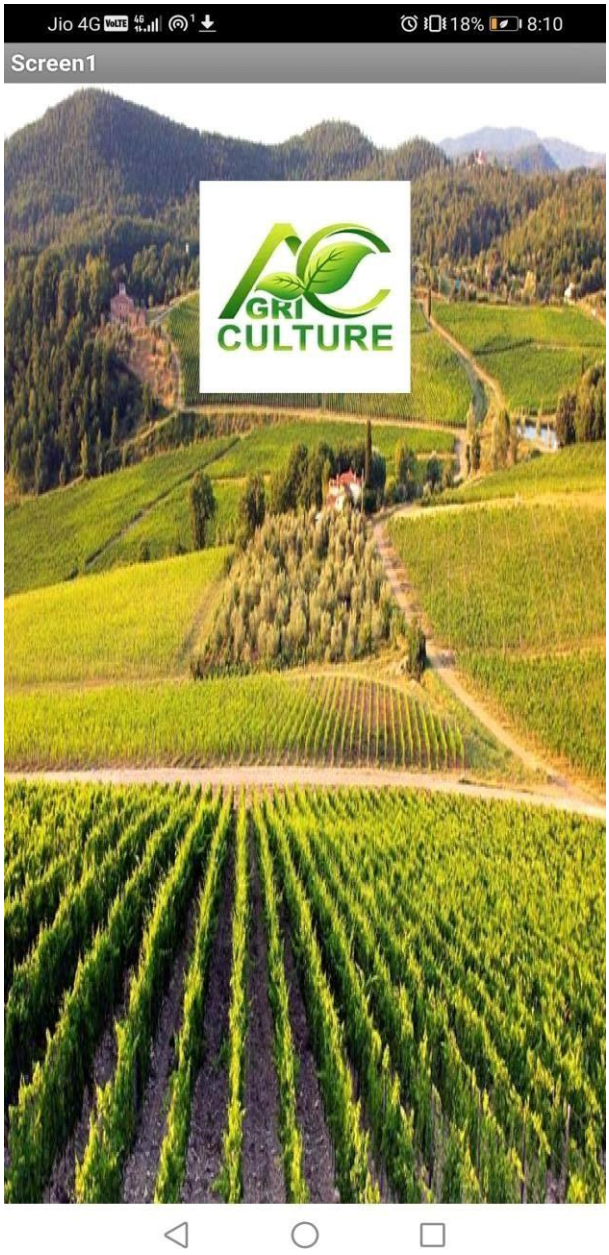


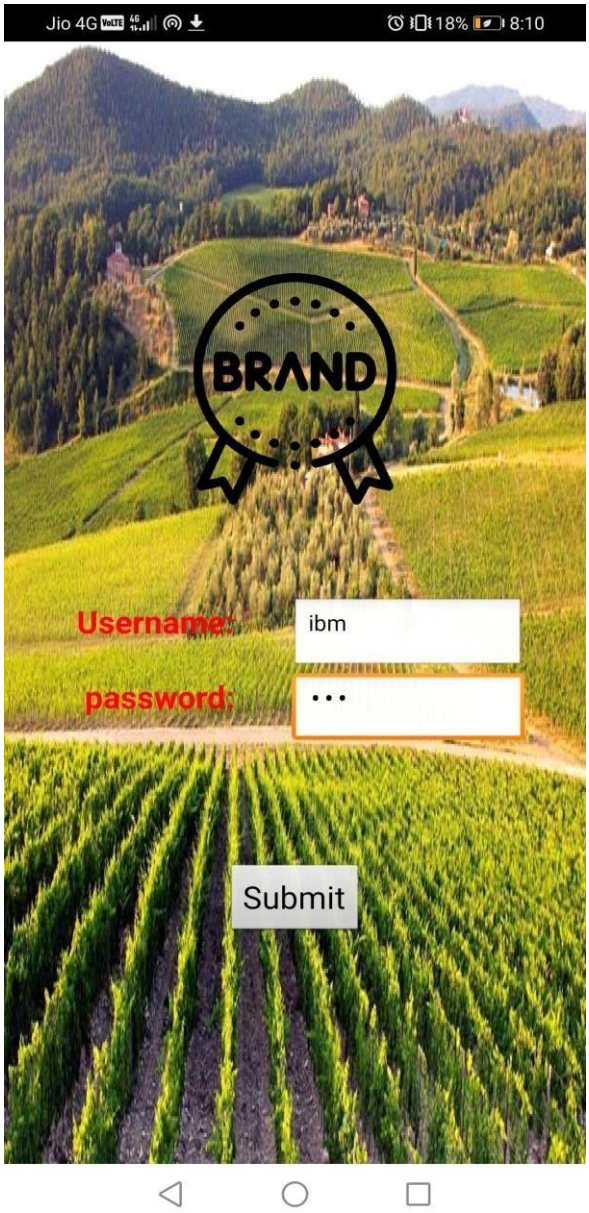
Complete Program Flow



MOBILE APP WEB :

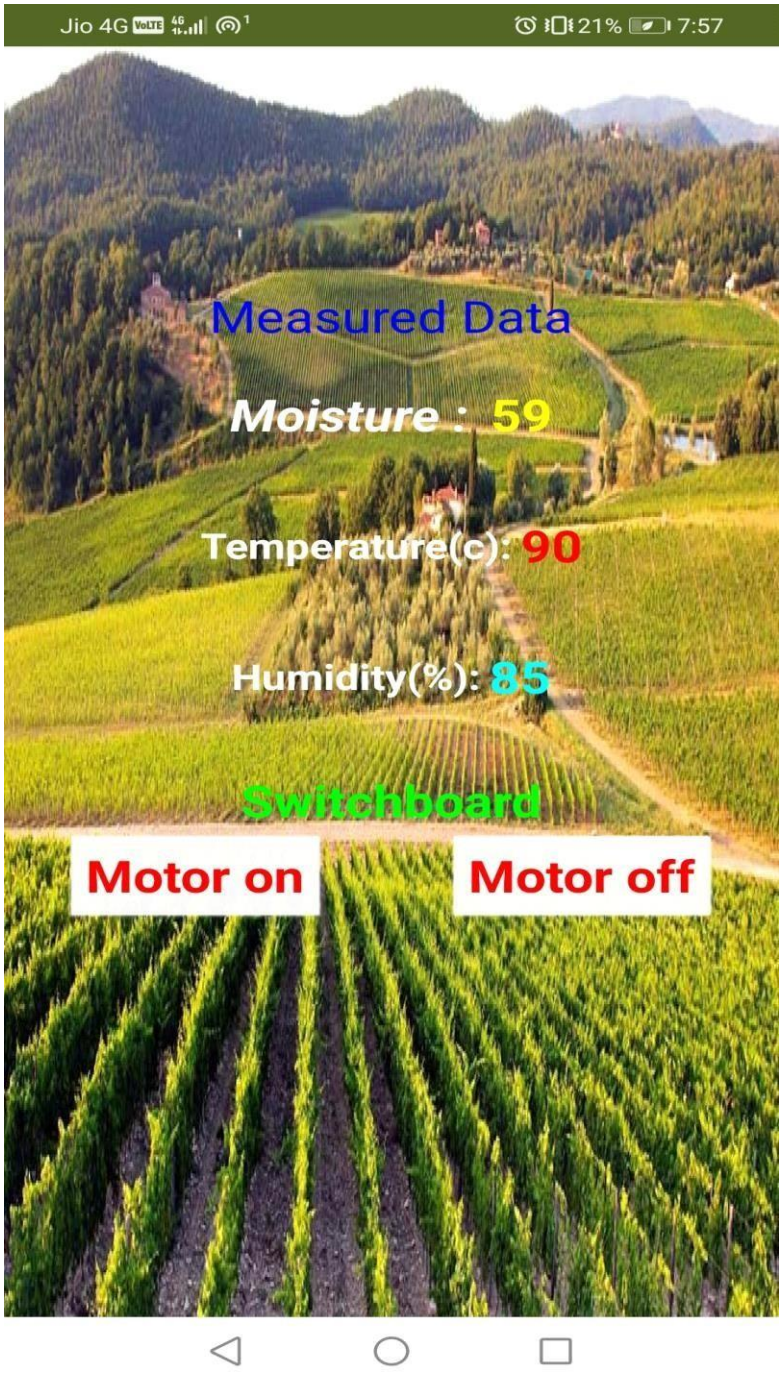
BLOCK DIAGRAM


Jio 4G
18%
8:10
Screen1
AG
GRI
CULTURE



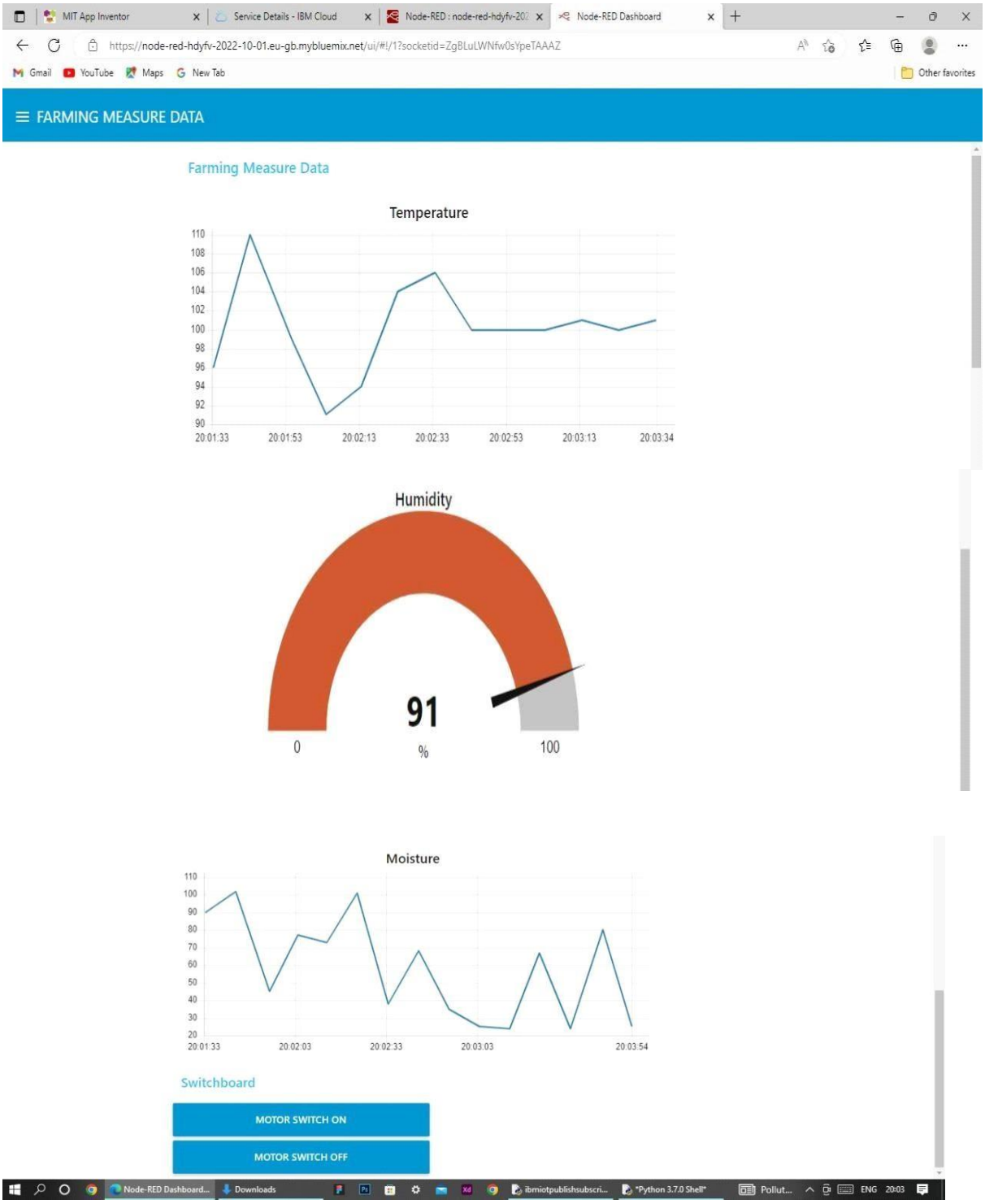
SCREEN – 1

SCREEN - 2



SCREEN - 3

Web APP UI Home Tab


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
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...
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Pollut...
ENG
20:03