SPRINT DELIVERY – 3

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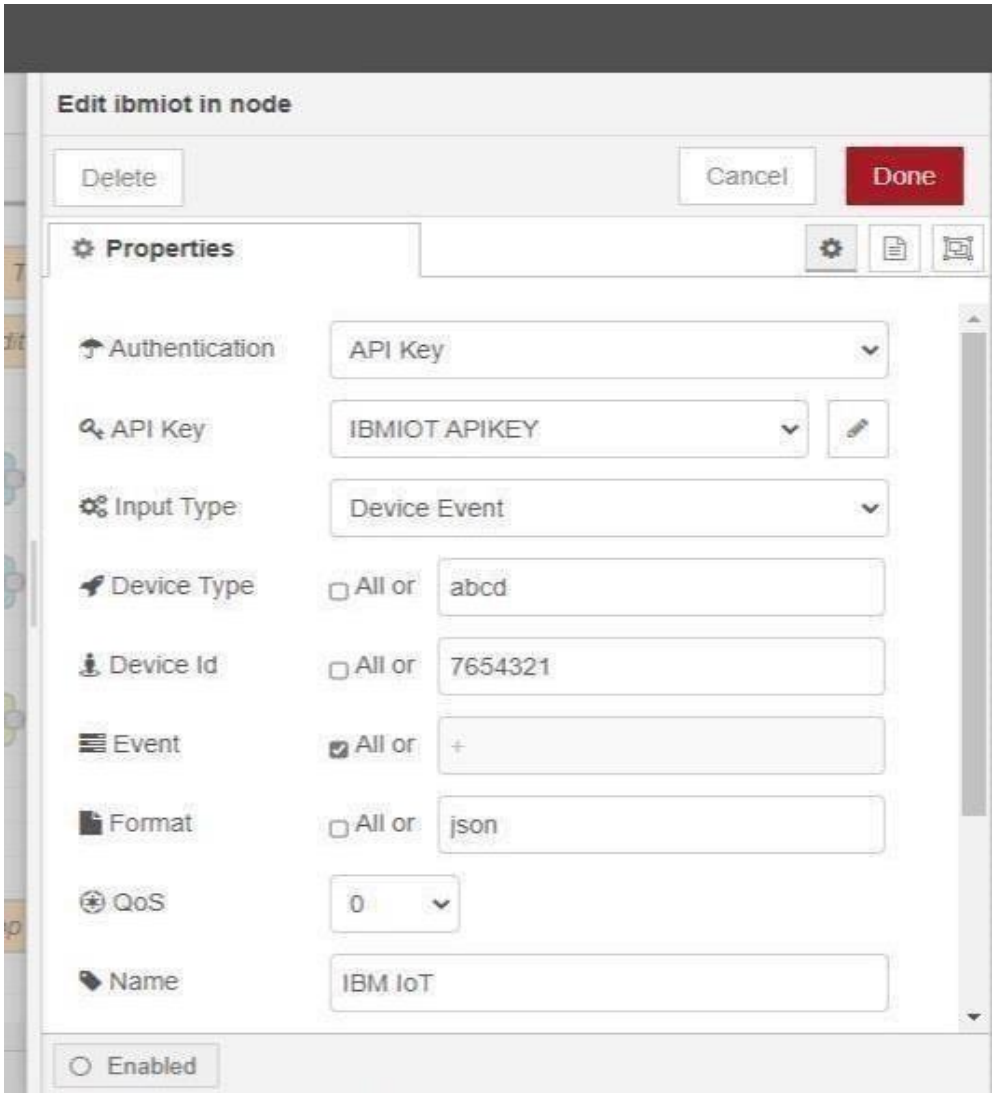
Project Name	Smartfarming -IoT Enabled Smart Farming Application
Date	12 November 2022

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 tothe 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 toanalyses thedata received and assign command toeach number.

The Java script code for the analyses

is: if(msg.payload===1)

msg.payload={"command": "ON"};

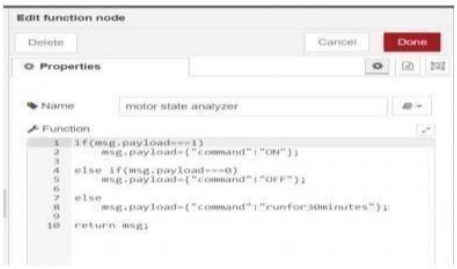
else if(msg.payload===0)

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.

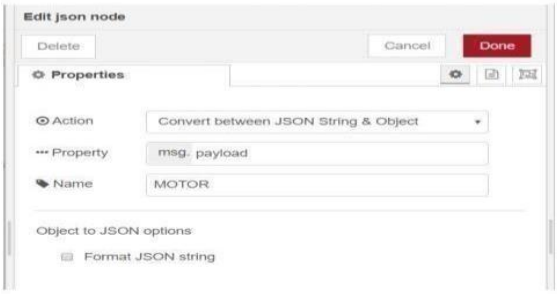
The Java script code for that function node is:

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

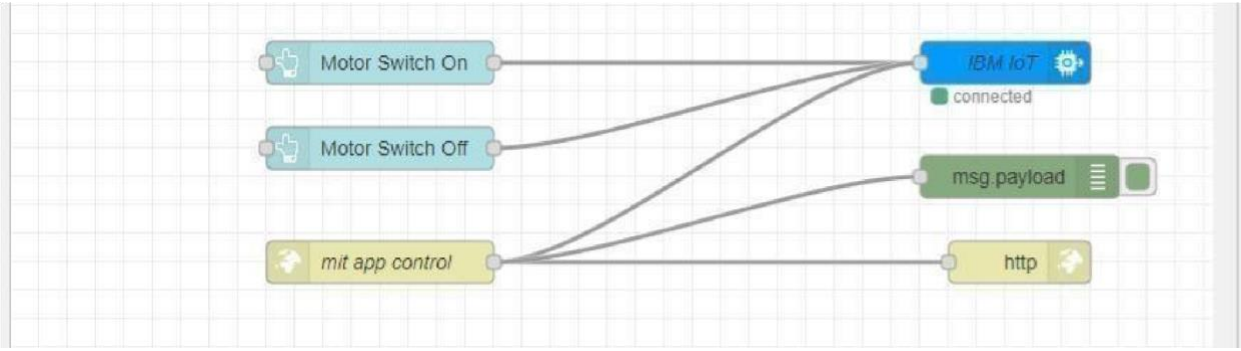


The above images show the java script codes of analyser and state function nodes.

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



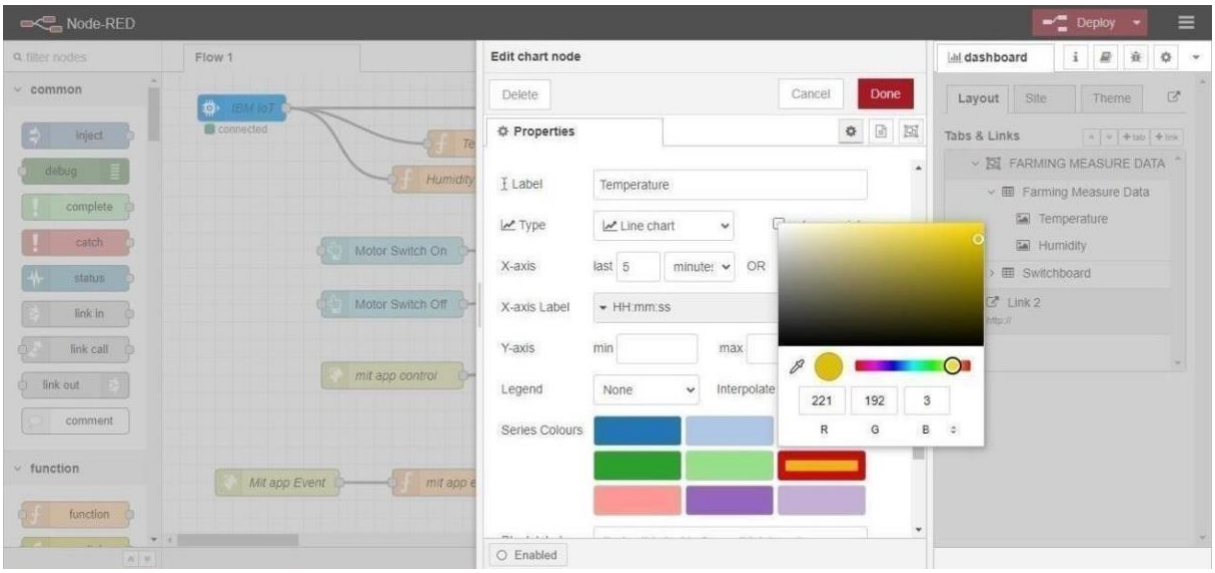
This is the program flow for sending commands to IBM cloud.

Adjusting User Interface

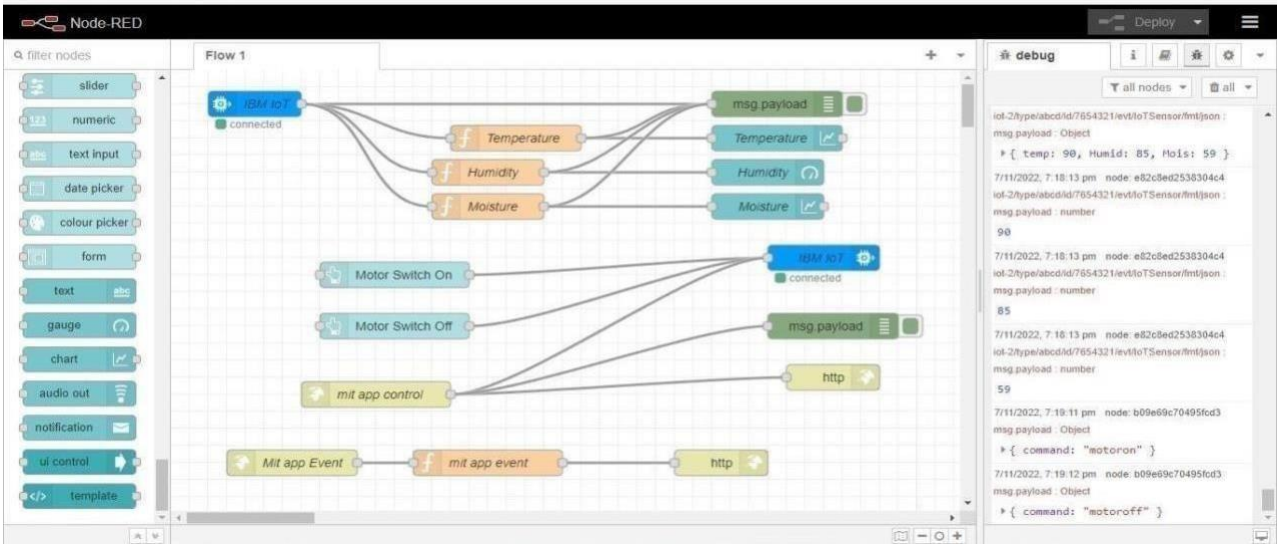
In order to display the parsed JSON data a Node-Red dashboard is created

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

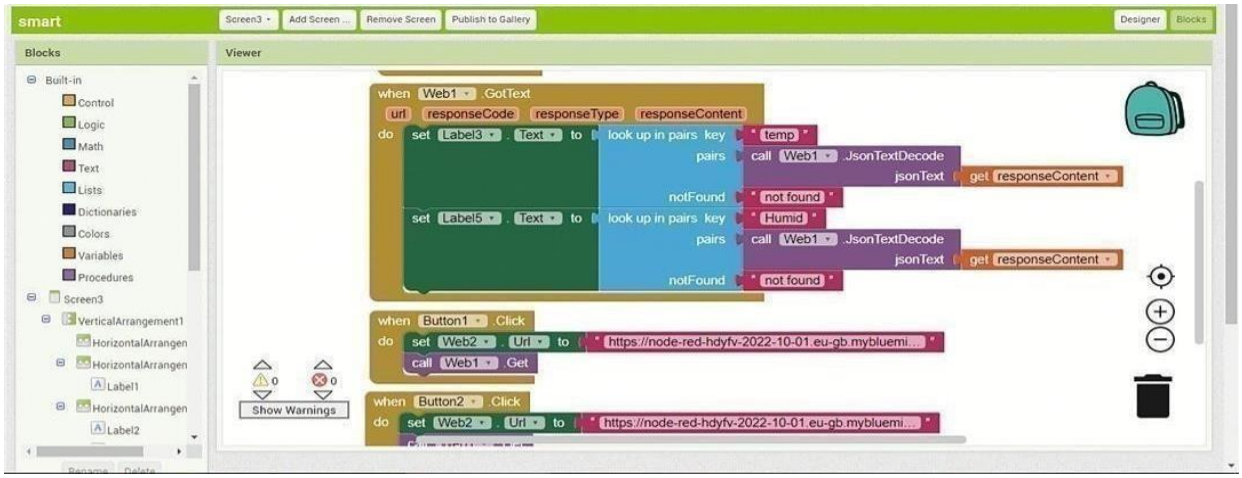
Below images are the Gauge, text and button node configurations.

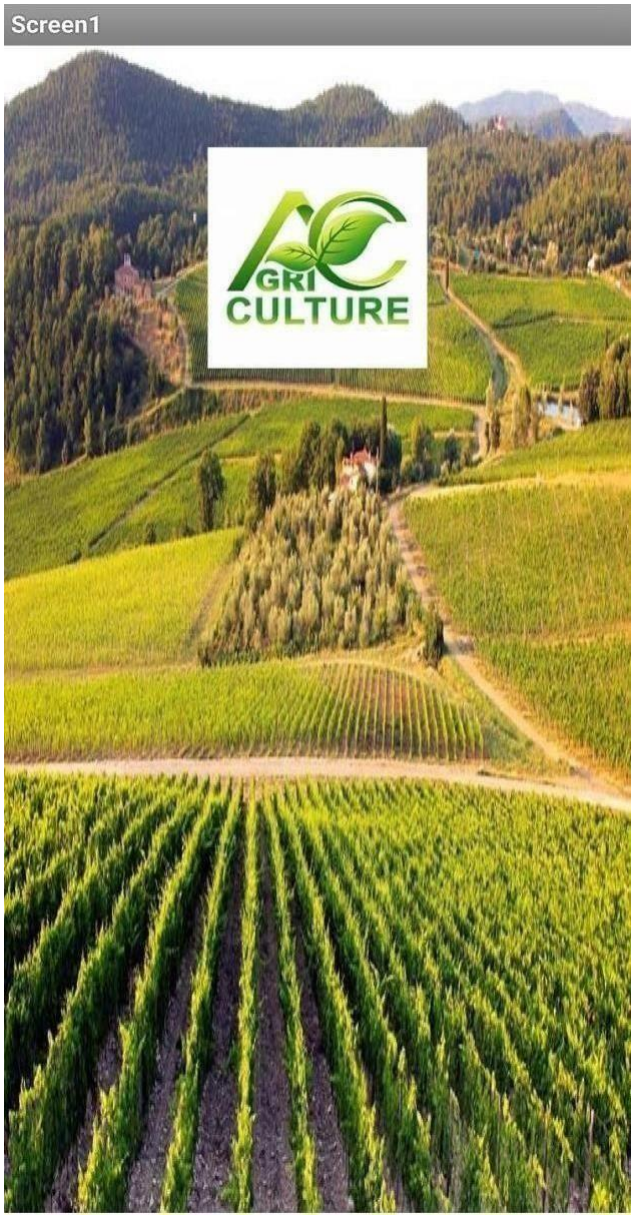


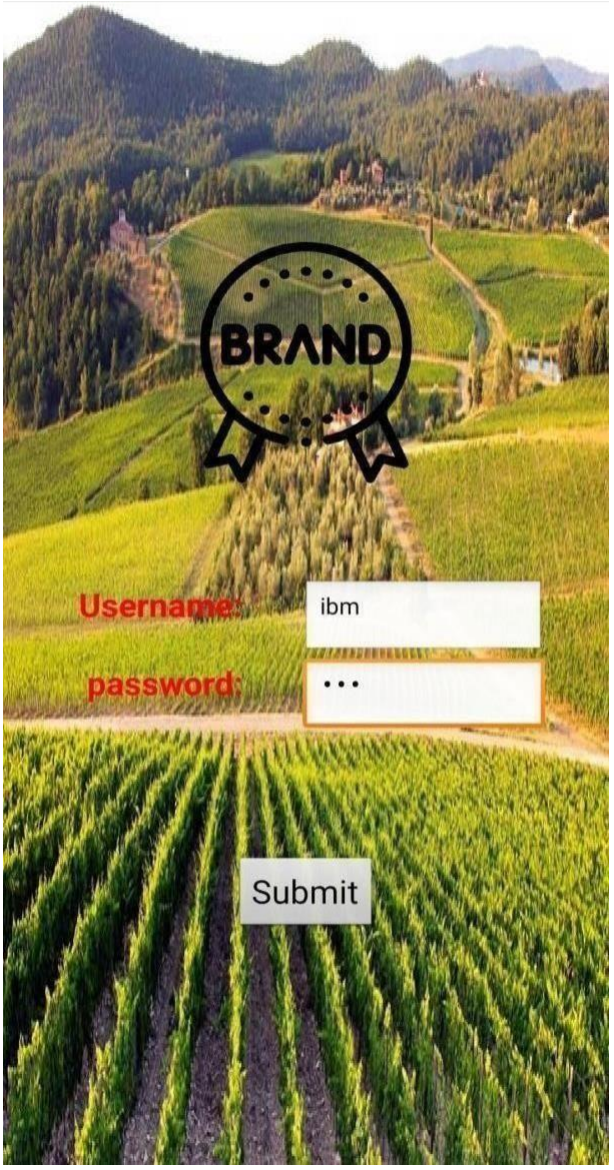
Complete Program Flow



MOBILE APP WEB : **BLOCK DIAGRAM**

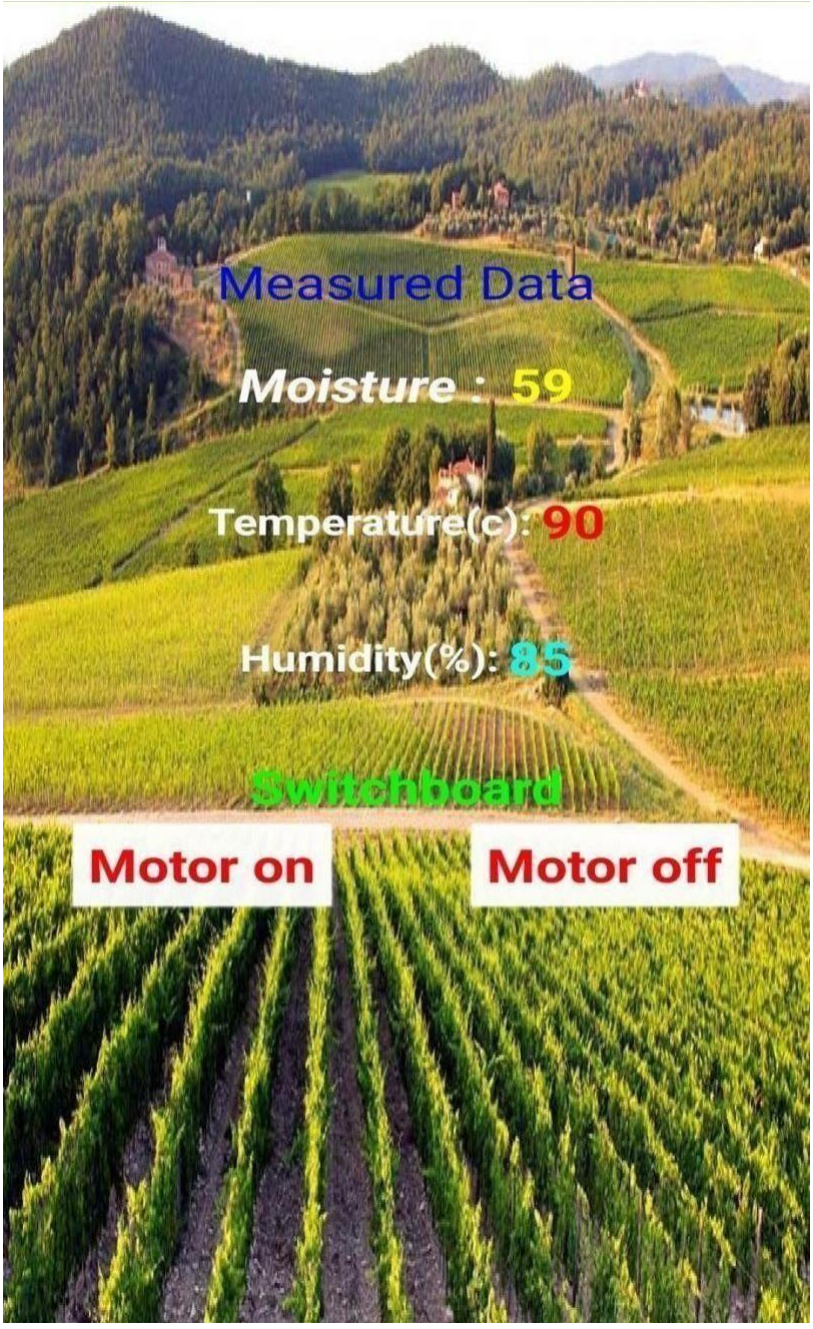

smart
Screen3
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Viewer
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen3
VerticalArrangement1
HorizontalArrangen
HorizontalArrangen
Label1
HorizontalArrangen
Label2
Show Warnings
when Web1 .GotText
url responseCode responseType responseContent
do set Label3 . Text to look up in pairs key " temp "
pairs call Web1 .JsonTextDecode
jsonText get responseContent
notFound " not found "
set Label5 . Text to look up in pairs key " Humid "
pairs call Web1 .JsonTextDecode
jsonText get responseContent
notFound " not found "
when Button1 .Click
do set Web2 . Url to " https://node-red-hdyfv-2022-10-01.eu-gb.mybluemi... "
call Web1 .Get
when Button2 .Click
do set Web2 . Url to " https://node-red-hdyfv-2022-10-01.eu-gb.mybluemi... "





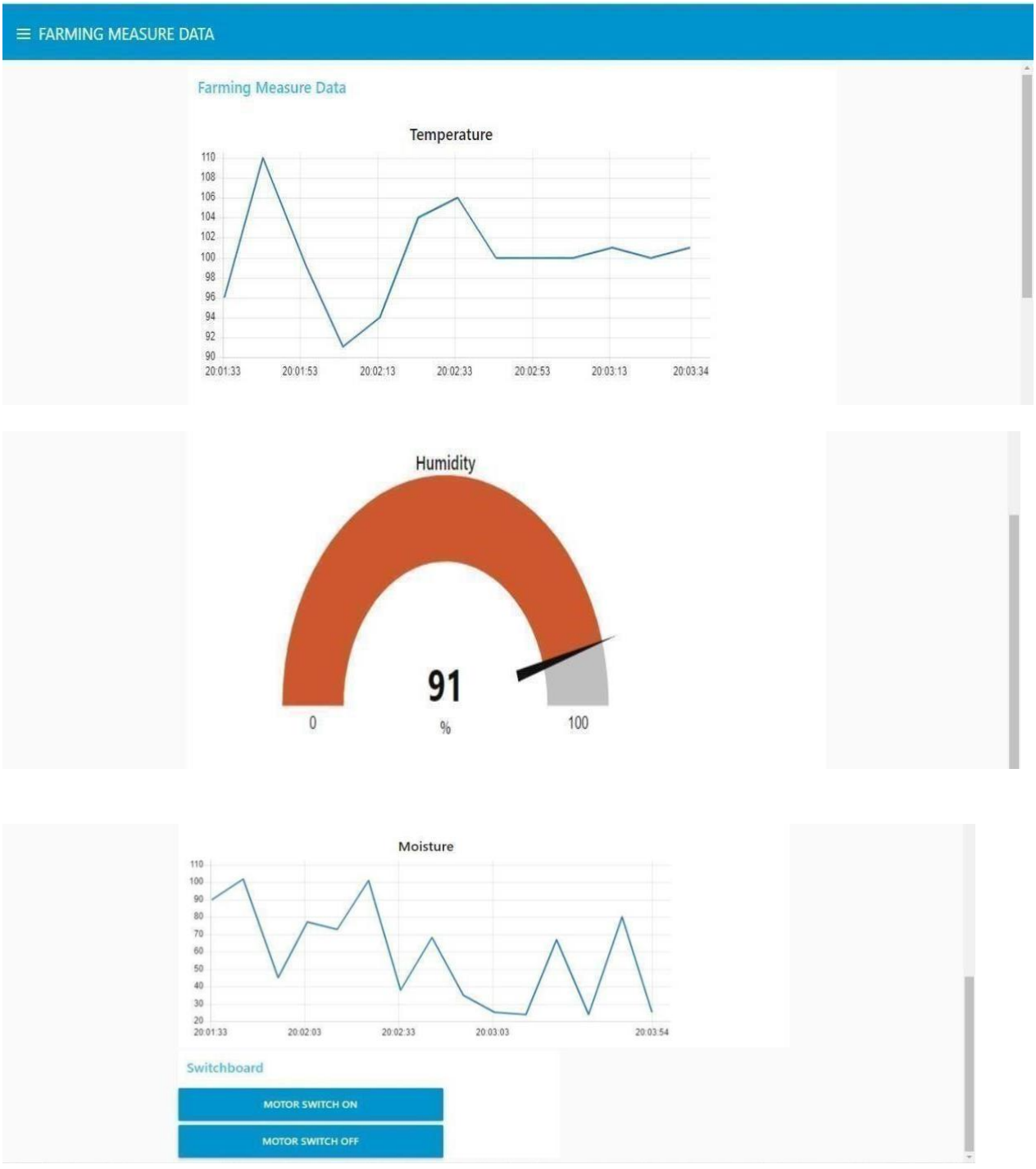
SCREEN – 1

SCREEN - 2



SCREEN - 3

Web APP UI Home Tab


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