SPRINT DELIVERY – 3

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Project Name	Smart Farmer-IOT Enabled Smart Farming Application
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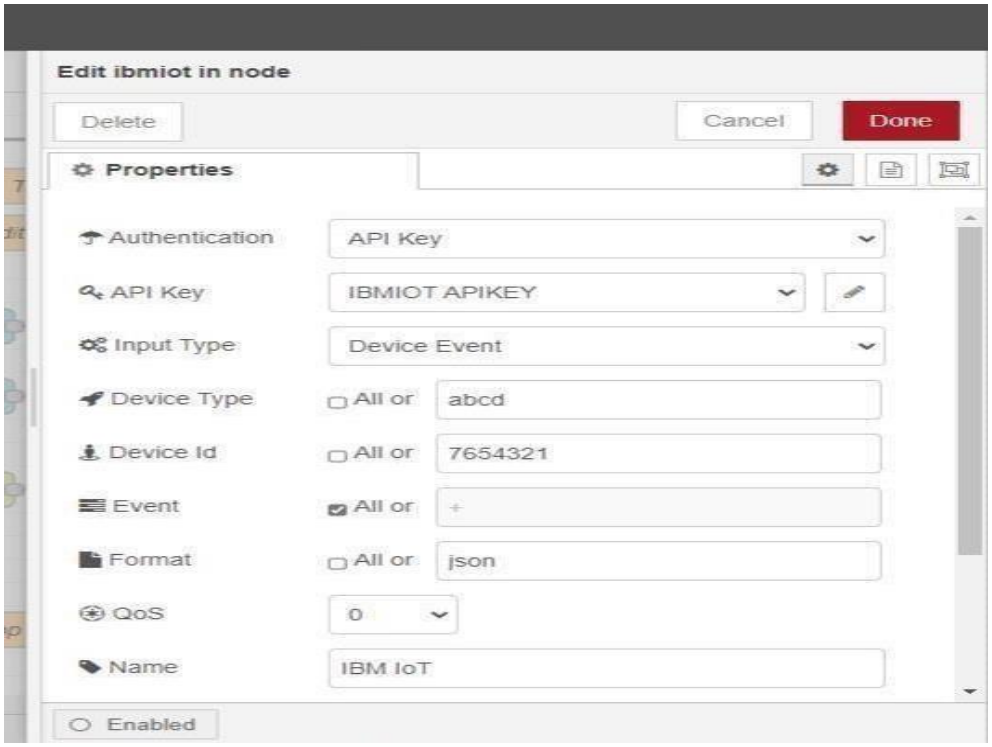
Configuration of Node-Red to send commands to the IBM cloud

IBM IoT out node I used to send data from Node-Red to the IBM Watson device. So, after adding it to the flow we need to configure it with the 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 analyze the data received and assign commands to each number.

The Javascript code

for the analyses is:

if(msg.payload===1)

msg.payload={"comm

and": "ON"}; else

if(msg.payload===0)

msg.

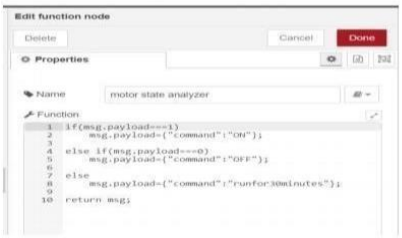
payload={"command"

: "OFF"};

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

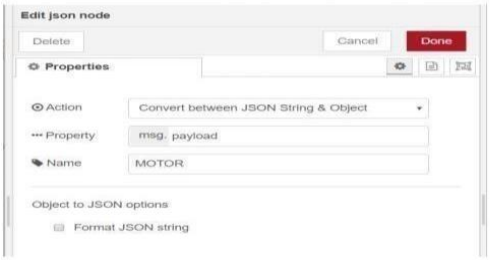
The Java script code for that function node is:

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

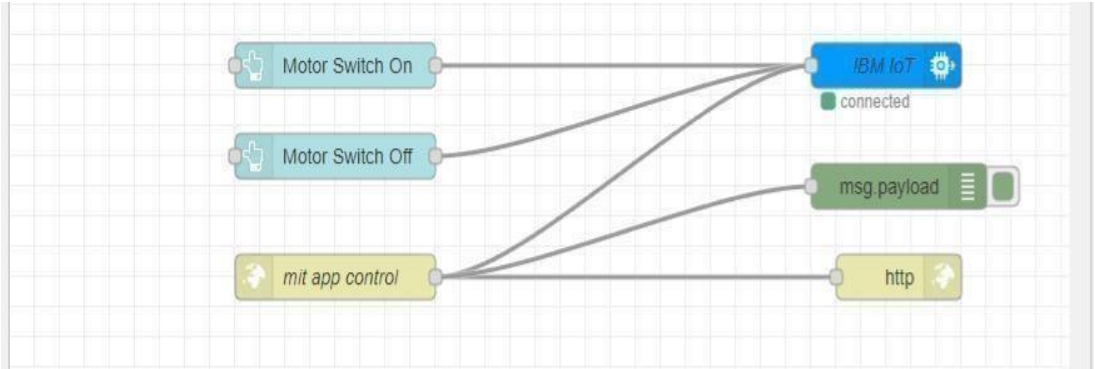


The above images show the java script codes of analyser and state function nodes.

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

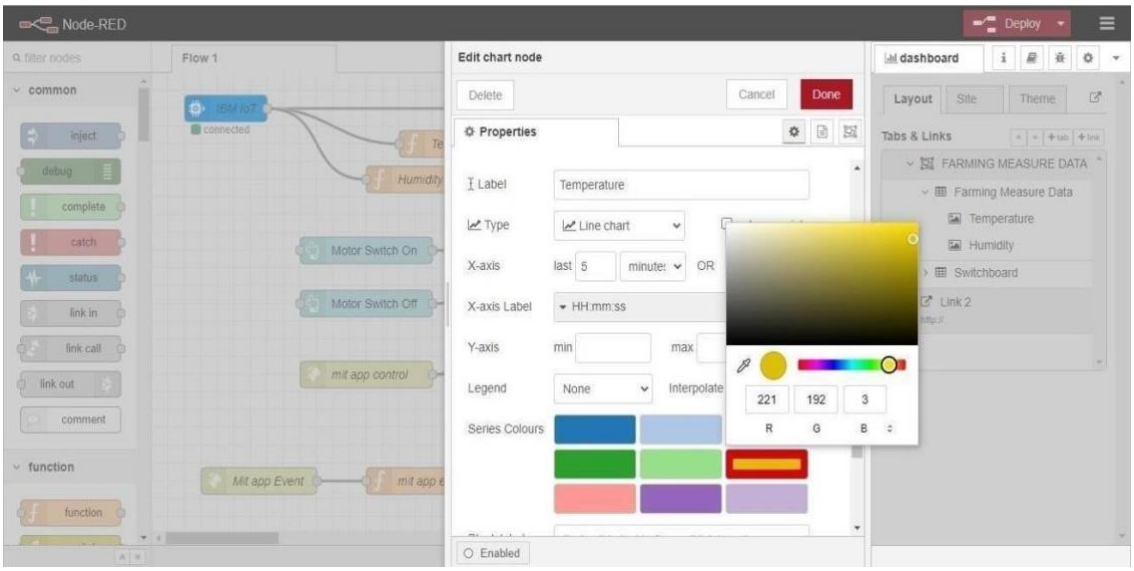


This is the program flow for sending commands to the IBM cloud.

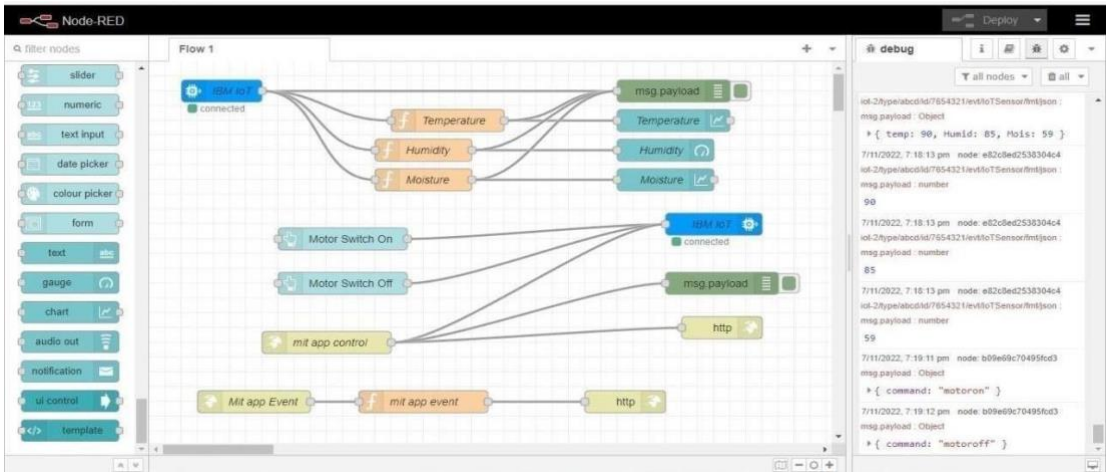
Adjusting User Interface

In order to display the parsed JSON data a Node-Red dashboard iscreated.

Here we are using Gauges, text, and button nodes to display in the UI and help to monitor the parameters and control the farm equipment. Below the images are the Gauge, text, and button node configurations.

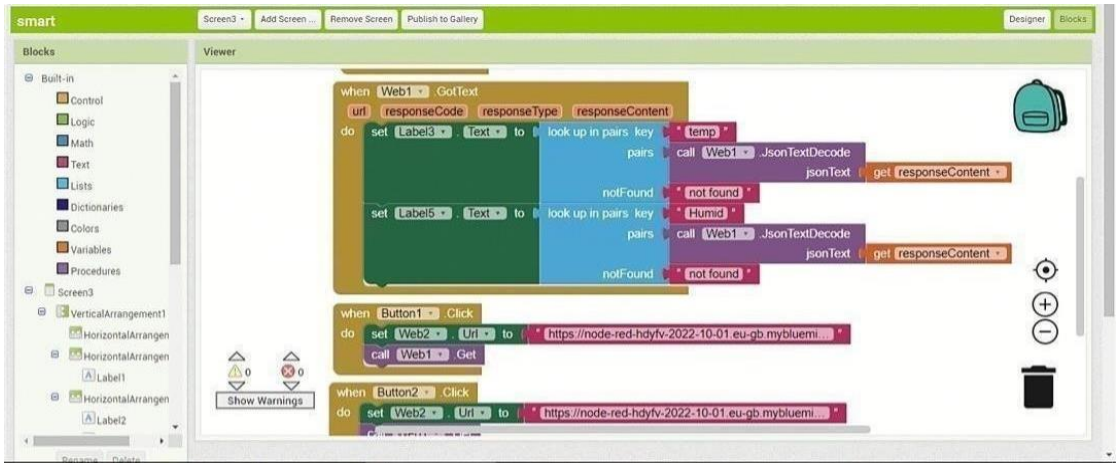


Complete Program Flow



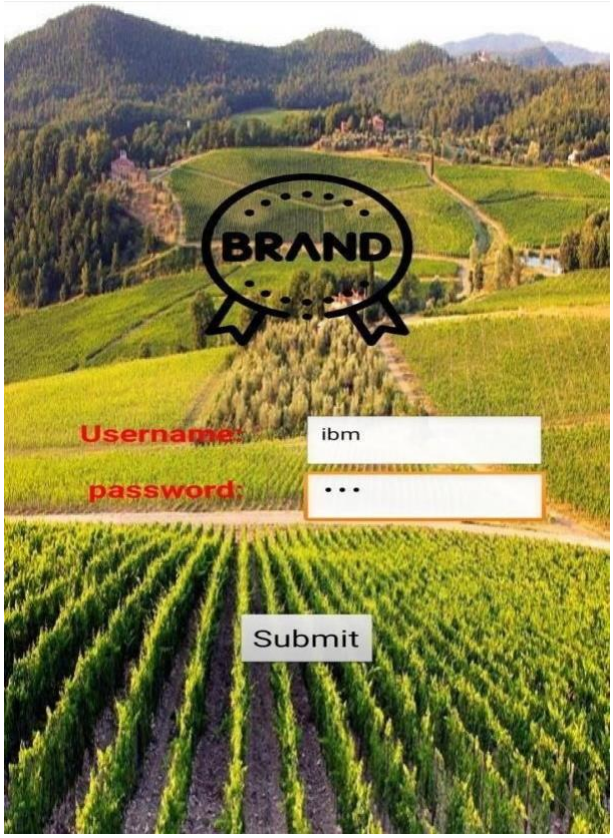
MOBILE APP WEB:

BLOCK DIAGRAM



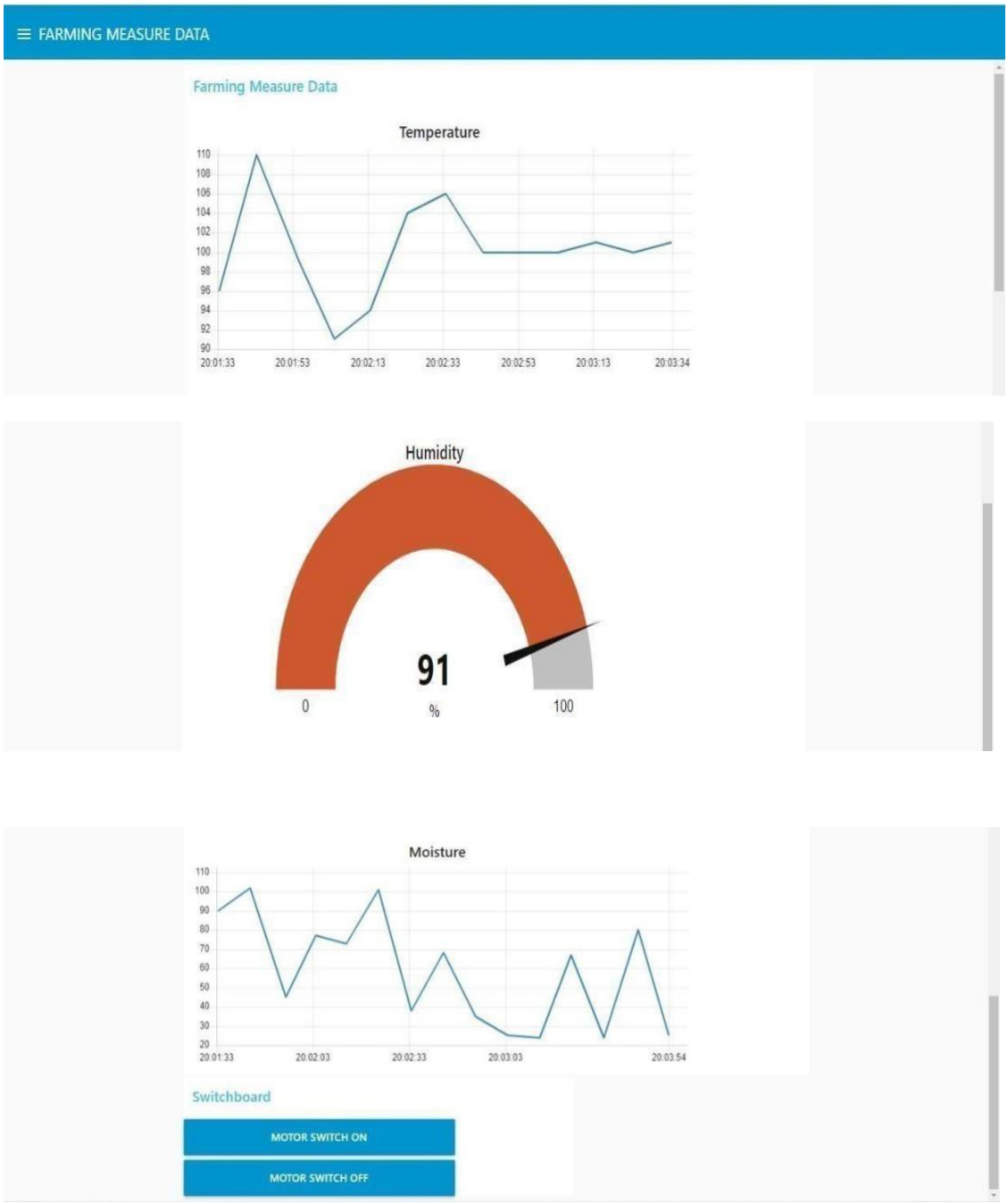
SCREEN 1

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