

# **IOT ENABLED SMART FARMING APPLICATION**

**SPRINT DELIVERY – 3**

## 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.

The screenshot shows the 'Edit ibmiot in node' configuration window in Node-Red. The window has a title bar 'Edit ibmiot in node' and three buttons: 'Delete', 'Cancel', and 'Done'. Below the buttons is a 'Properties' tab. The configuration fields are as follows:

Property	Value
Authentication	API Key
API Key	IBMIOT APIKEY
Input Type	Device Event
Device Type	<input type="checkbox"/> All or abcd
Device Id	<input type="checkbox"/> All or 7654321
Event	<input checked="" type="checkbox"/> All or +
Format	<input type="checkbox"/> All or json
QoS	0
Name	IBM IoT

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;
```

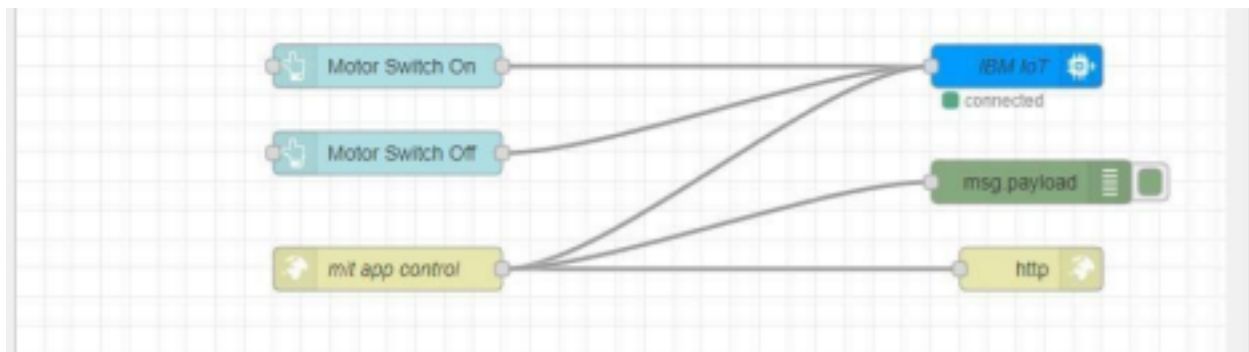


The above images show the java script codes of analyser and state function nodes.

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

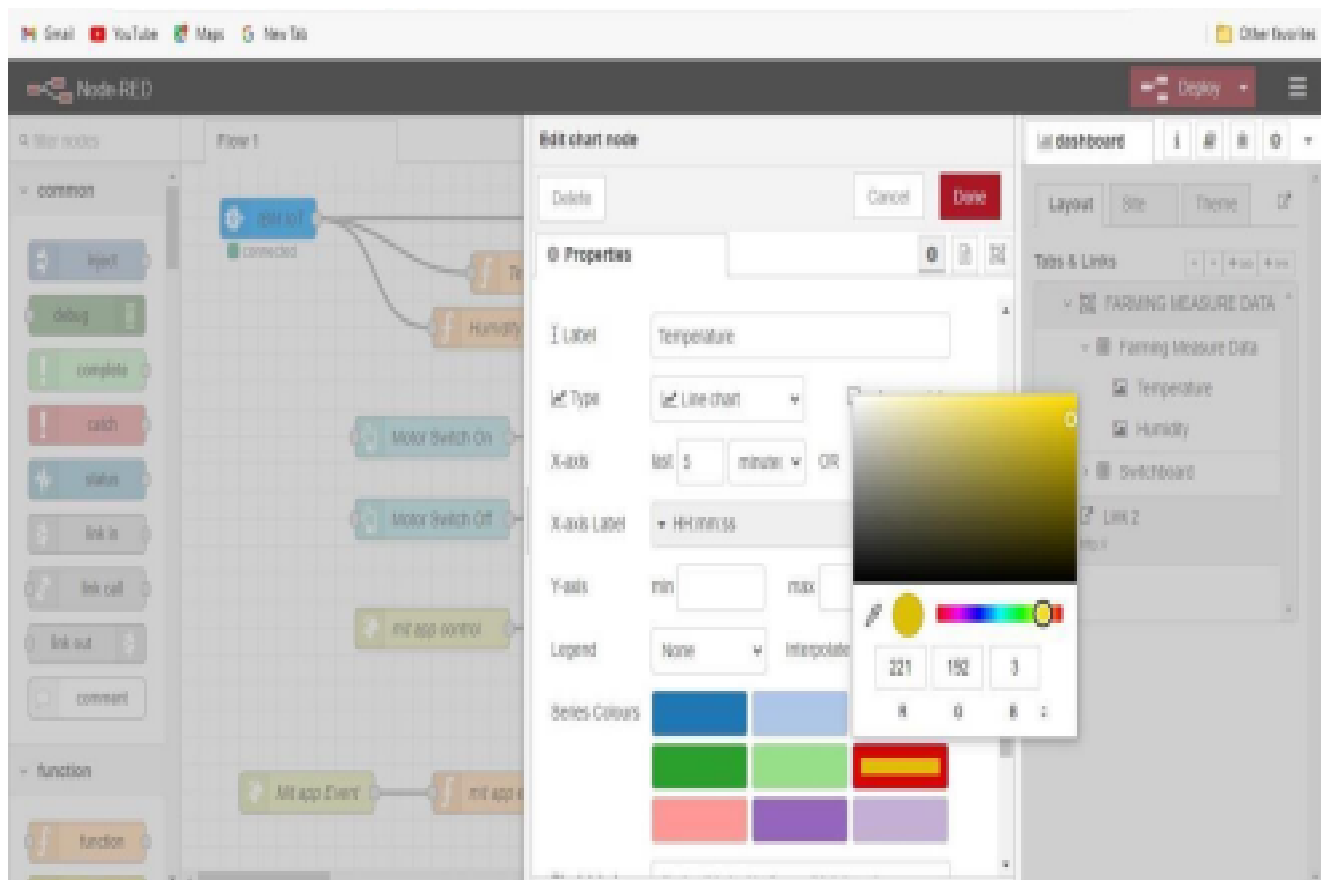


## Adjusting User Interface :

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.

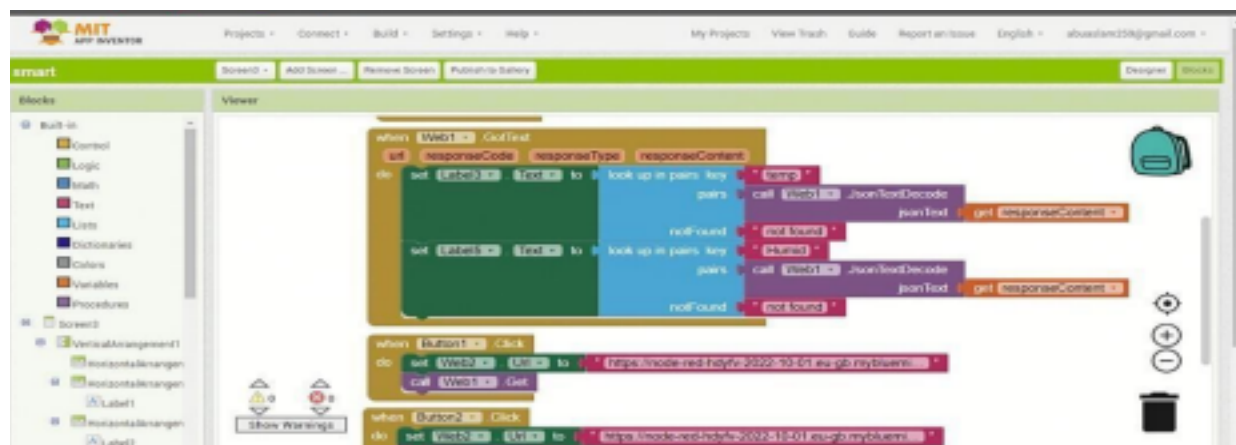
Below images are the Gauge, text and button node configurations.



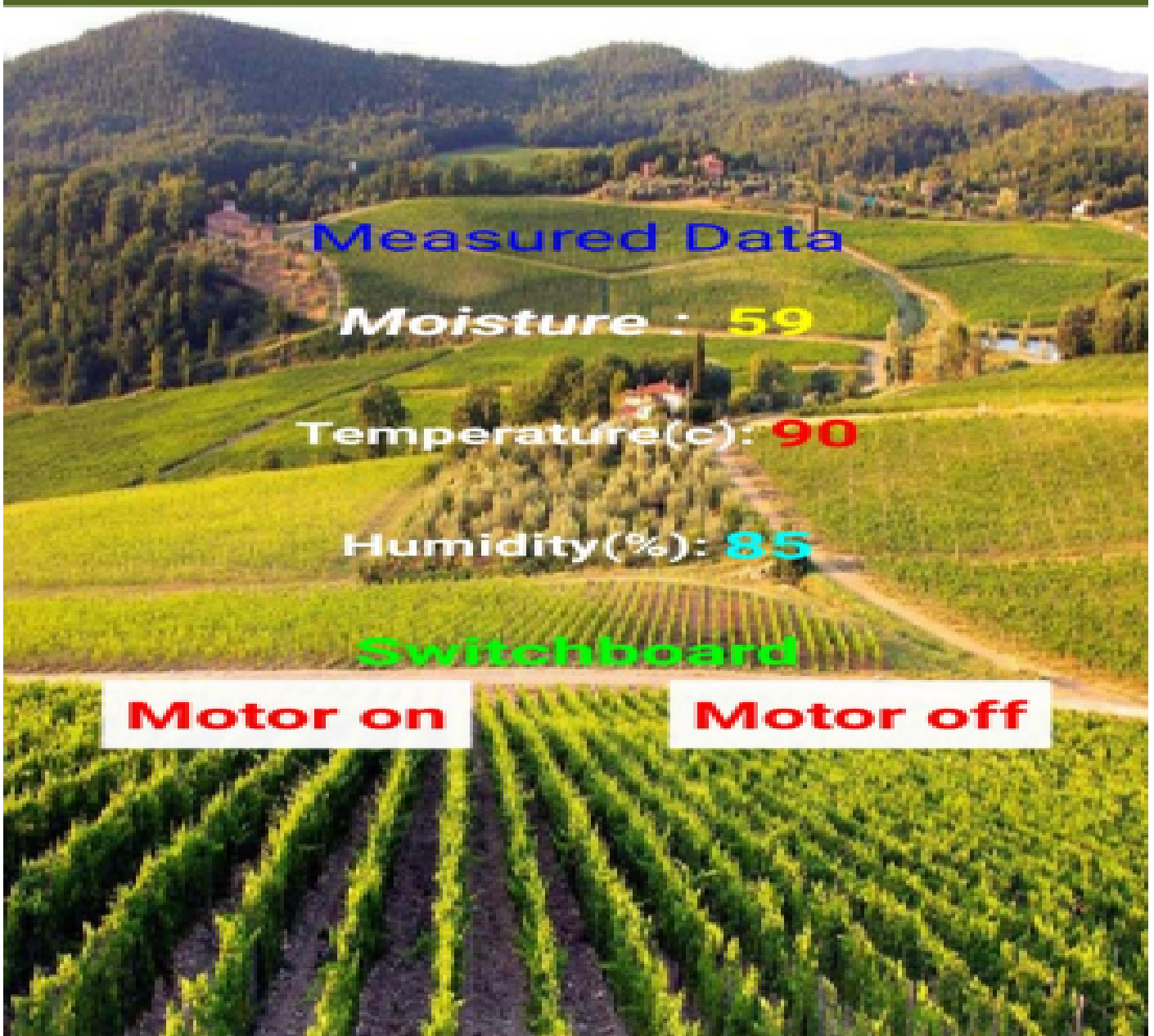
## Complete Program Flow :



## MOBILE APP WEB :







**Measured Data**

**Moisture : 59**

**Temperature(c): 90**

**Humidity(%): 85**

**Switchboard**

**Motor on**

**Motor off**

## WEB App UI Home Tab:

