

SPRINT DELIVERY – 3

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|---------------------|--|
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| Project Name | IoT Enabled Smart Farming Application |
| Date | 9 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 to the flow we need to configure it with credentials of our Watson device.

Here we add two buttons in UI

The screenshot shows the 'Edit ibmiot in node' configuration window. At the top, there are three buttons: 'Delete', 'Cancel', and 'Done'. Below these is a 'Properties' section with a gear icon and a search icon. 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 |

At the bottom, there is a checkbox labeled 'Enabled' which is currently unchecked.

1 -> for motor on

2 -> for motor off

We used a function node to analyse 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"};
```

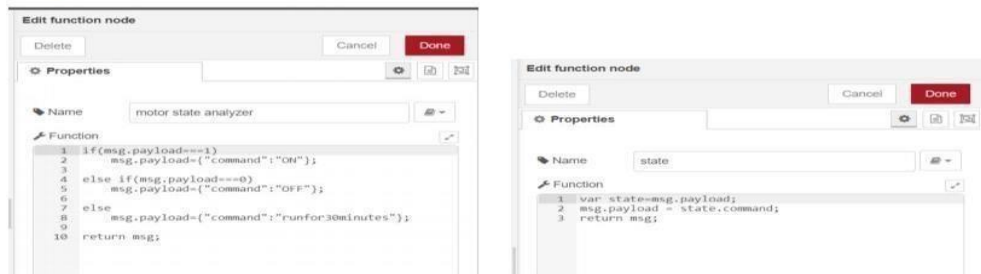
```
else if(msg.payload===0)
```

```
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.

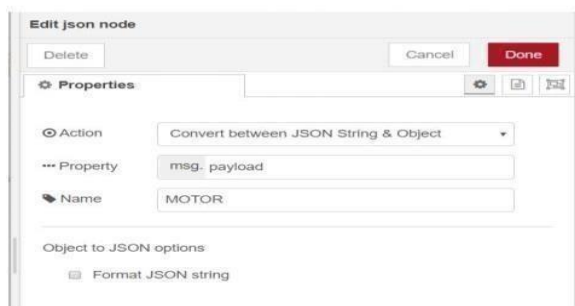
The Java script code for that function node is:

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

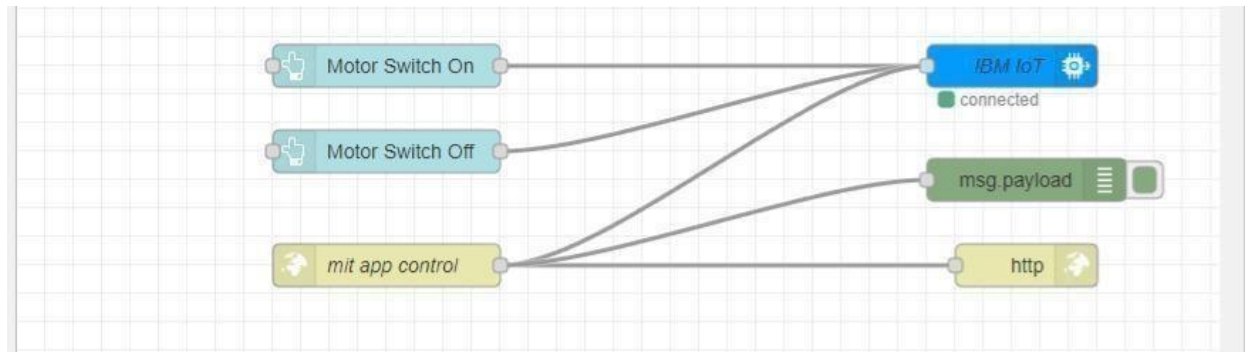


The above images show the java script codes of analyser and state function nodes.

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



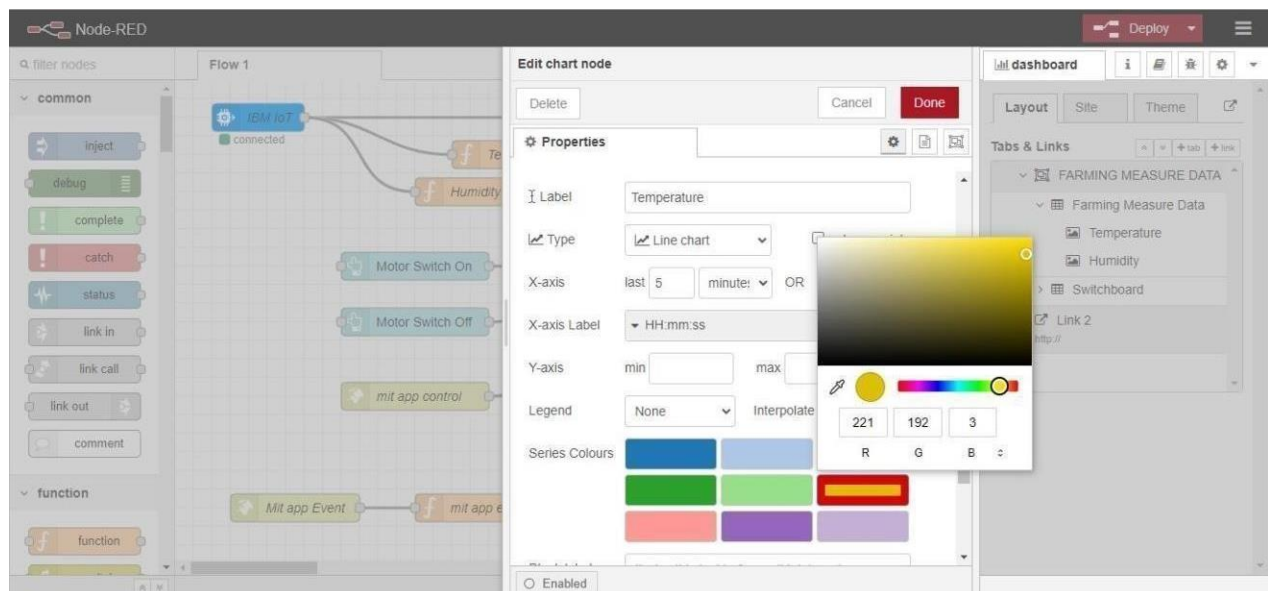
This is the program flow for sending commands to IBM cloud.

Adjusting User Interface

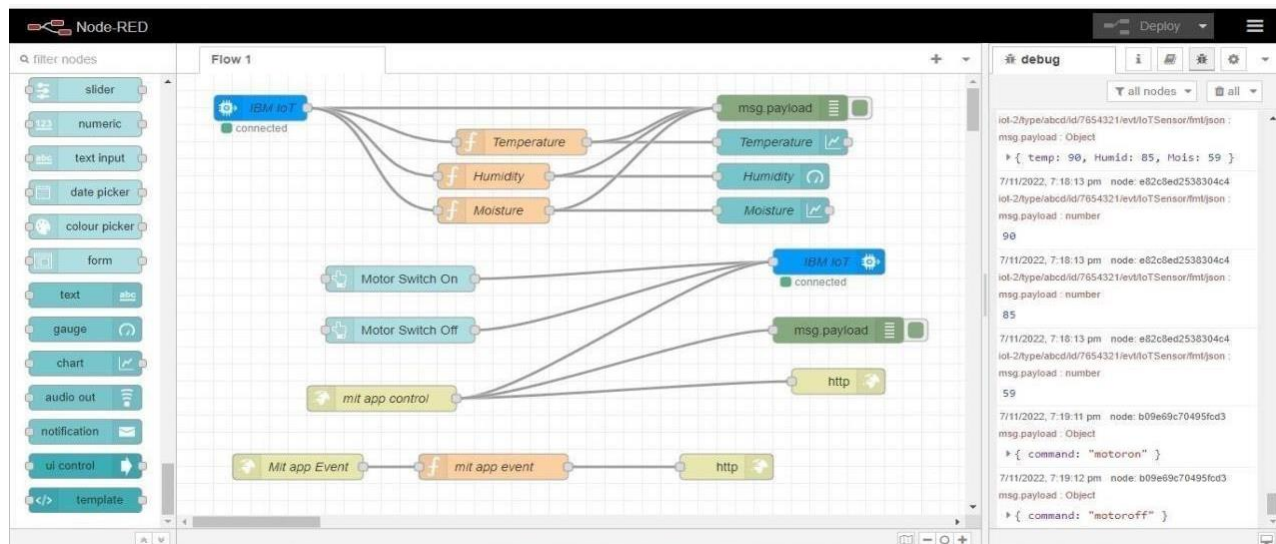
In order to display the parsed JSON data a Node-Red dashboard is created

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

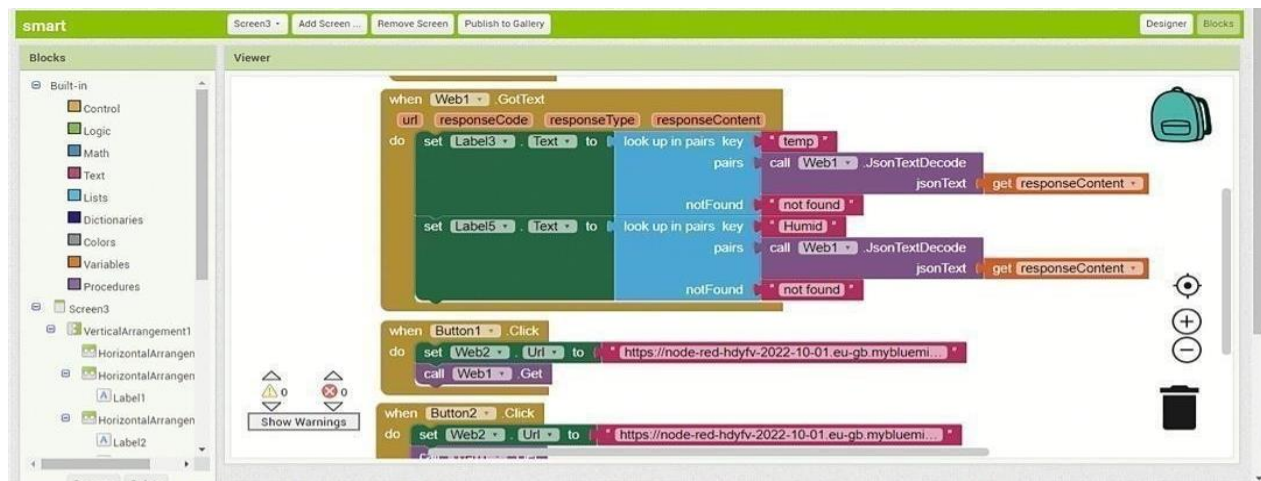
Below images are the Gauge, text and button node configurations.



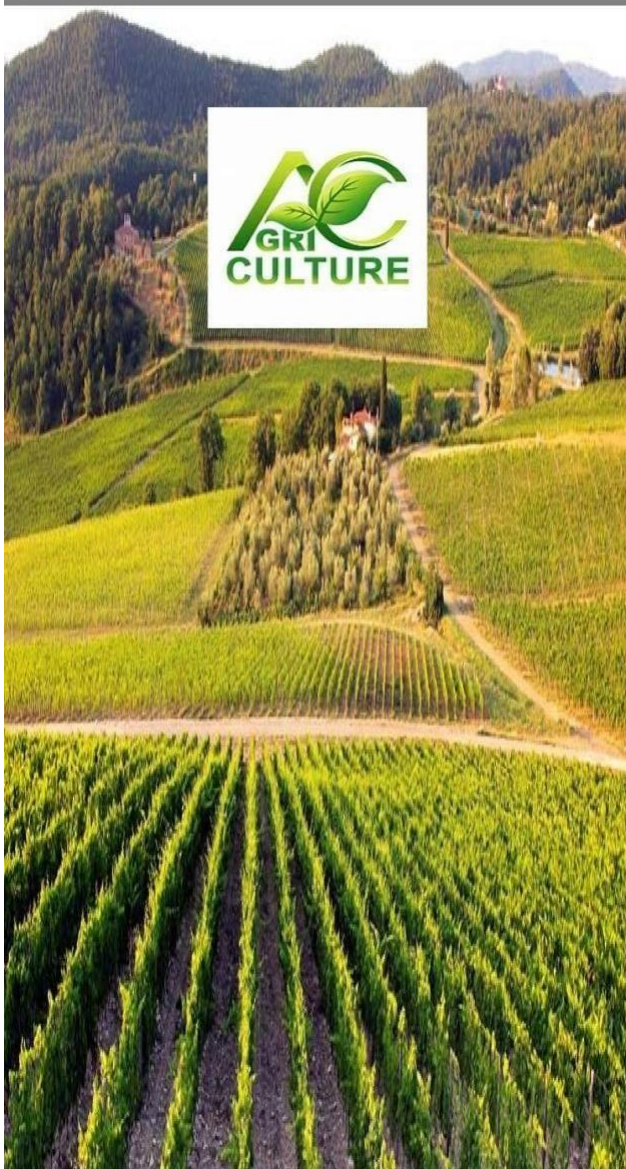
Complete Program Flow



MOBILE APP WEB : BLOCK DIAGRAM



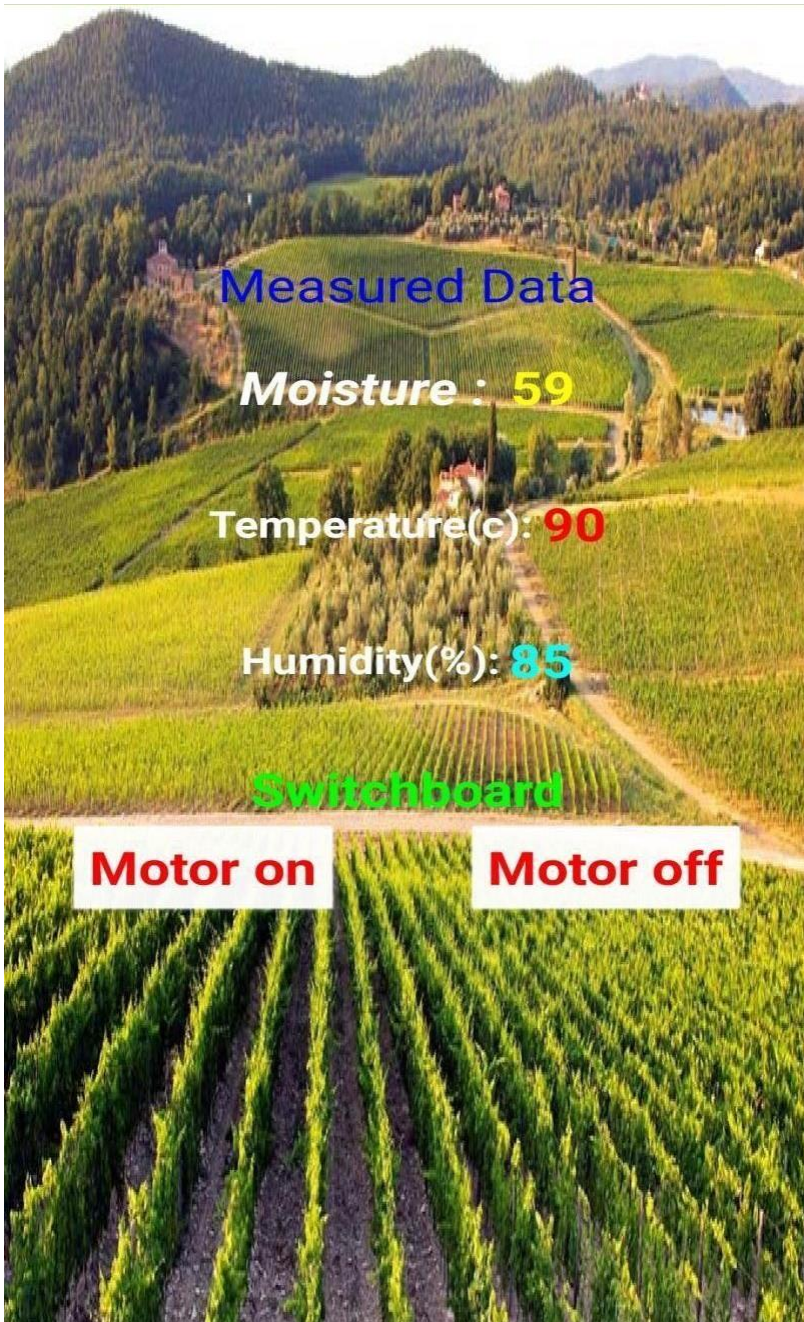
Screen1



SCREEN – 1



SCREEN - 2



SCREEN - 3

Web APP UI Home Tab

