

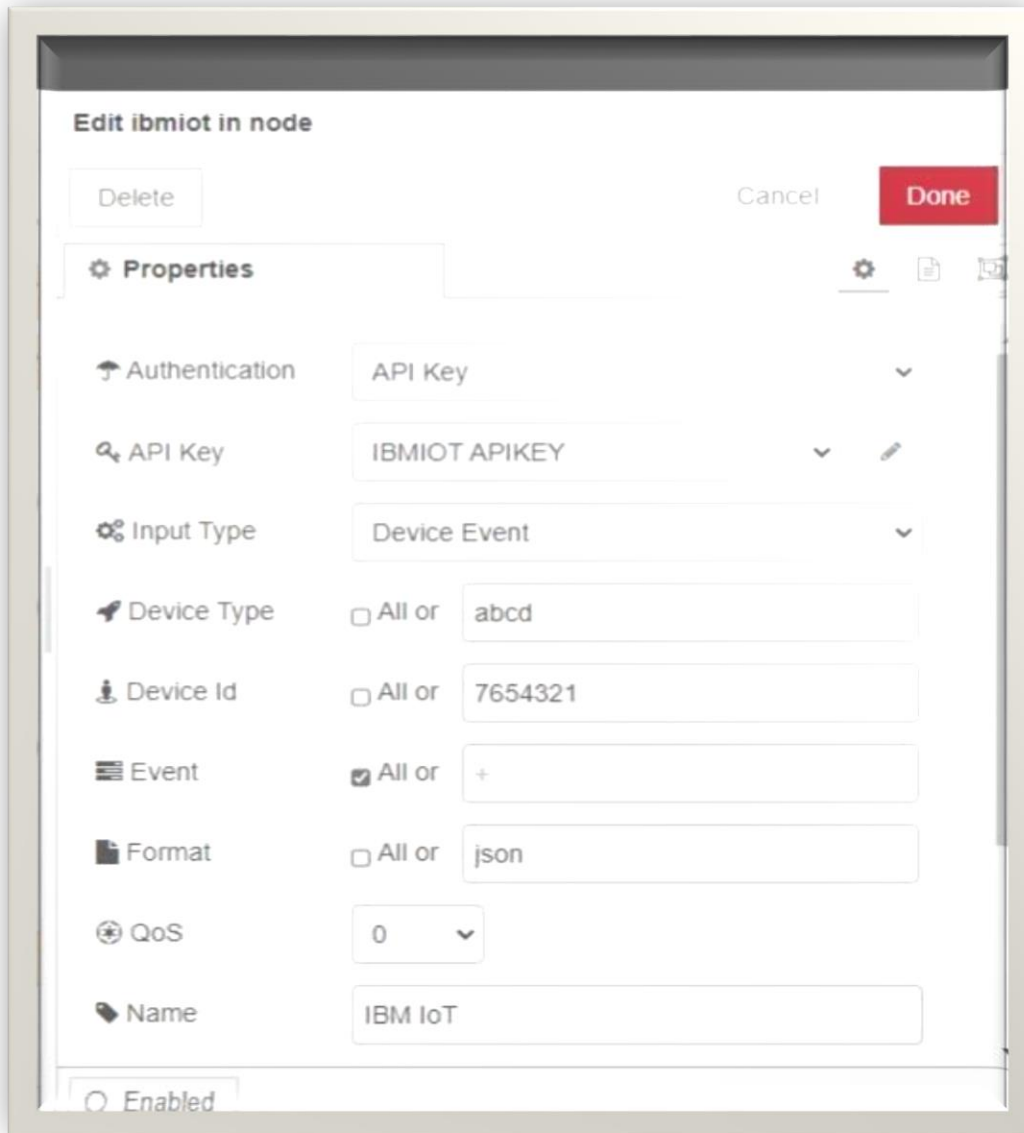
**IOT ENABLED SMART FARMING
APPLICATION**

SPRINT DELIVERY – 3

TEAME ID:PNT2022TMID34190

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 the credentials of our Watson device.



The screenshot shows the 'Edit ibmiot in node' configuration window in Node-Red. The window has a title bar and three buttons at the top: 'Delete', 'Cancel', and 'Done'. Below the title bar is a 'Properties' tab. The configuration is organized into several sections, each with an icon and a label. The 'Authentication' section has a dropdown menu set to 'API Key'. The 'API Key' section has a text input field containing 'IBMIOT APIKEY'. The 'Input Type' section has a dropdown menu set to 'Device Event'. The 'Device Type' section has a checkbox labeled 'All or' and a text input field containing 'abcd'. The 'Device Id' section has a checkbox labeled 'All or' and a text input field containing '7654321'. The 'Event' section has a checkbox labeled 'All or' which is checked, and a text input field containing '+'. The 'Format' section has a checkbox labeled 'All or' and a text input field containing 'json'. The 'QoS' section has a dropdown menu set to '0'. The 'Name' section has a text input field containing 'IBM IoT'. At the bottom left, there is a checkbox labeled 'Enabled' which is checked.

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
Enabled	<input checked="" type="checkbox"/>

Here we add two buttons in UI

1 -> for motor on

2 -> for motor off

We used a function node to analyse the data received and assign commands to each number.

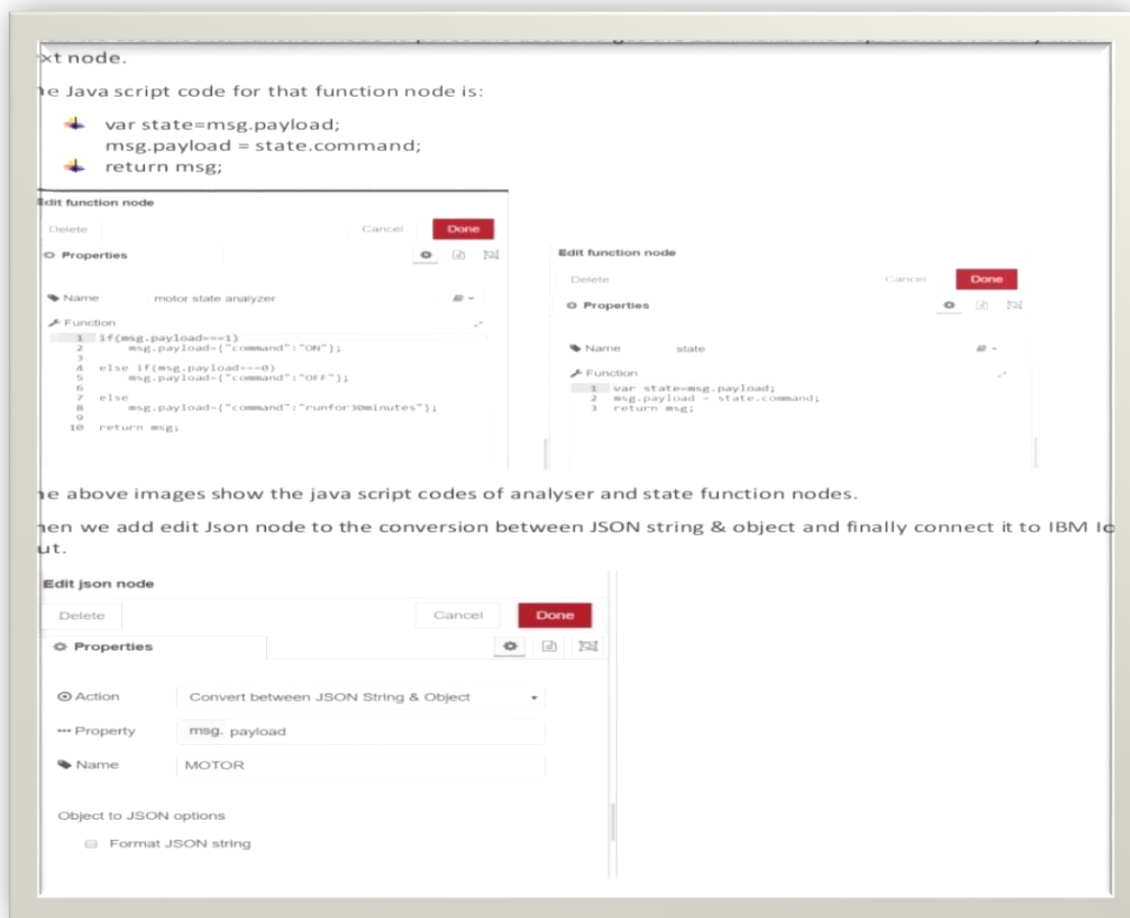
The Javascript code for the analyses is:

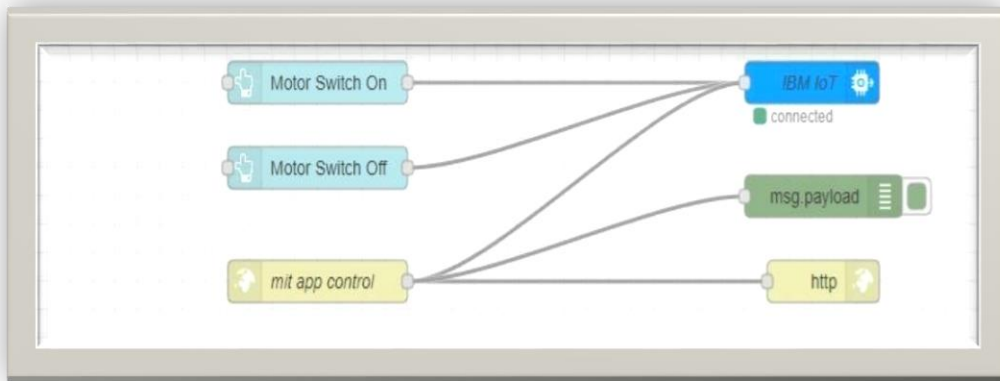
```
if(msg.payload===1)
```

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

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

```
msg.payload={"command": "OFF"};
```



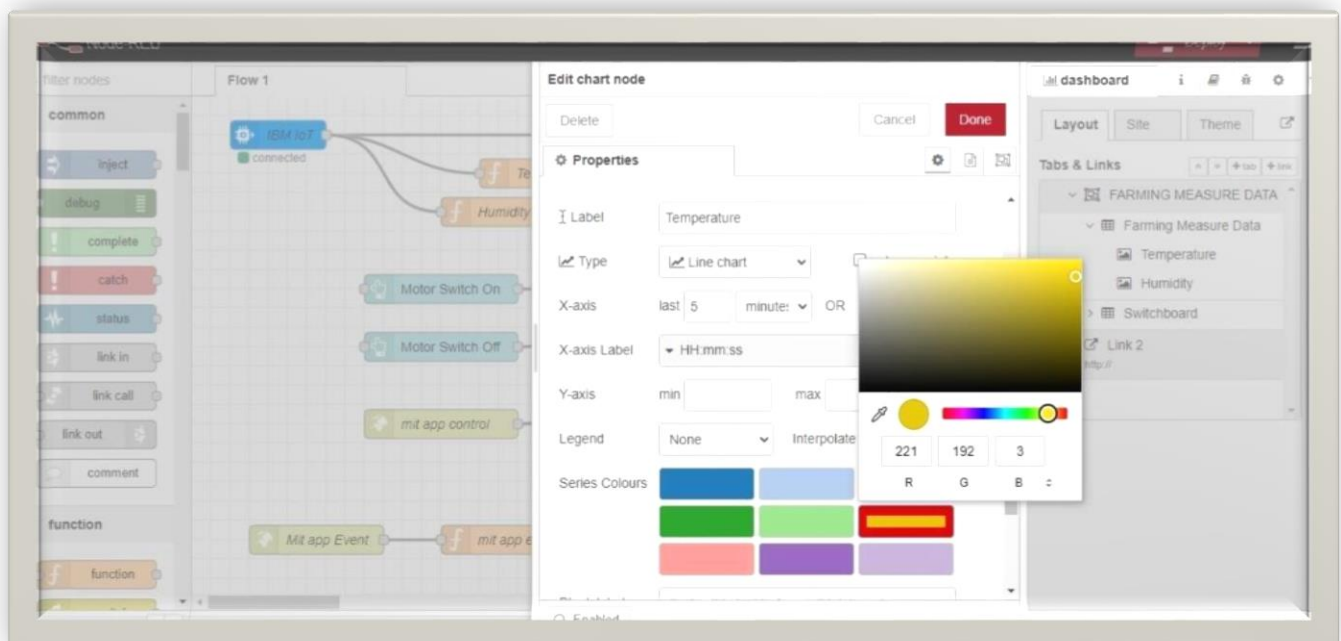


This is the program flow for sending commands to IBM the cloud.

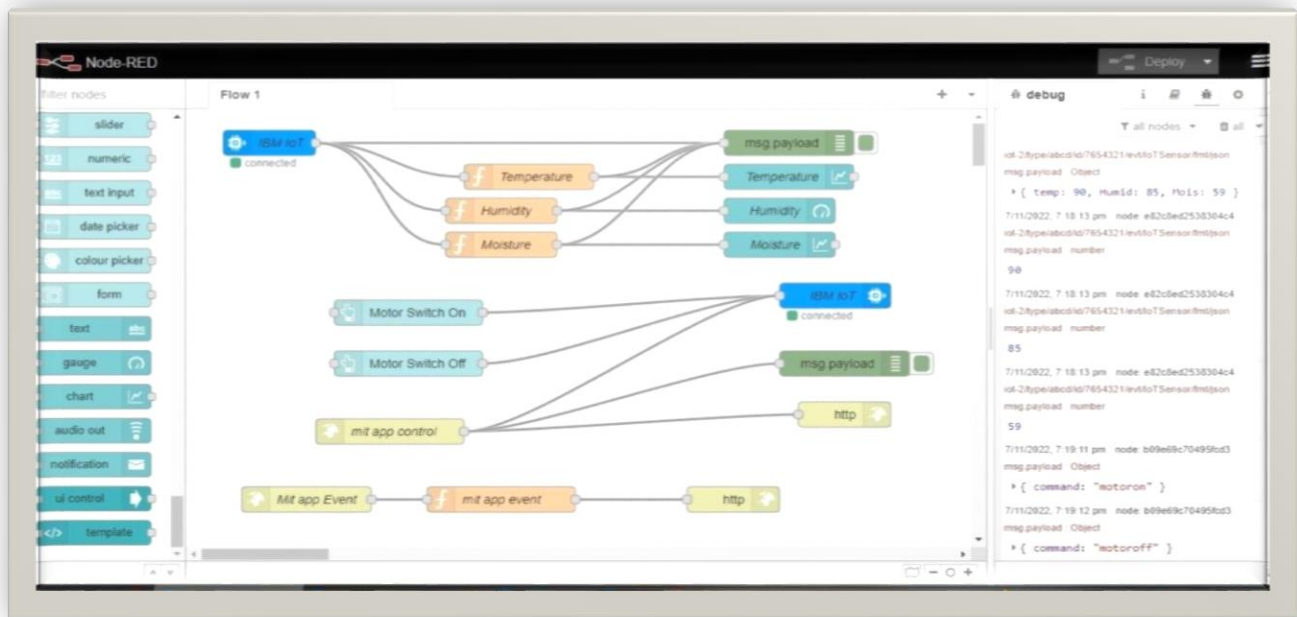
Adjusting User Interface

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 help to monitor the parameters and control the farm equipment.

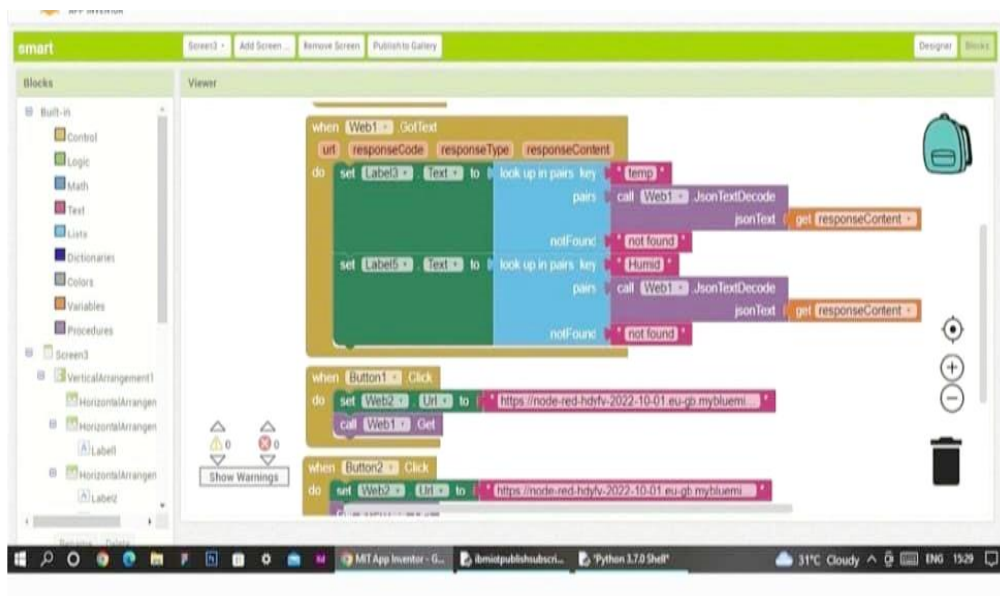
Below images are the Gauge, text and button node configurations.



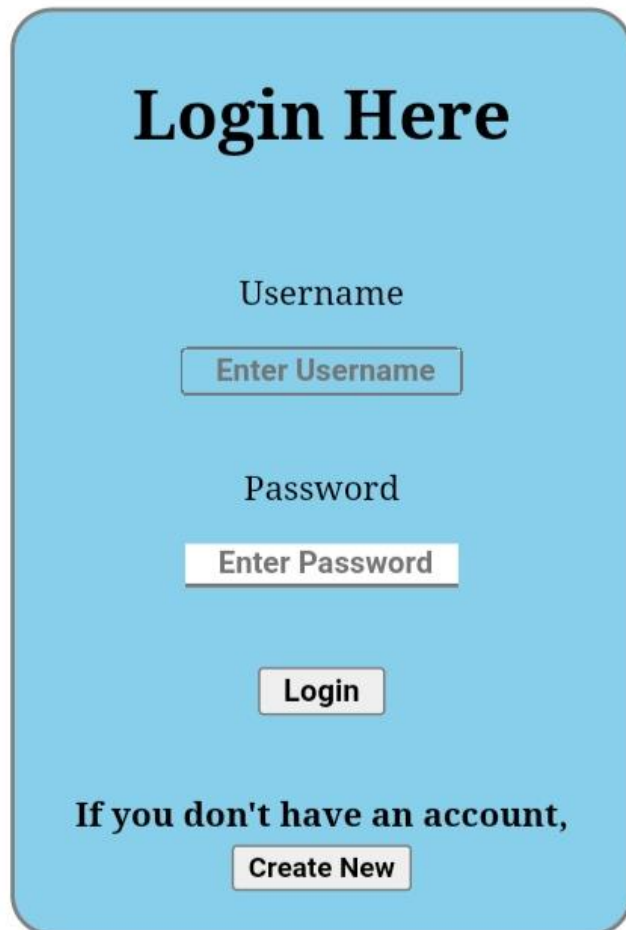
COMPLETE PROGRAM FLOW



MOBILE APP WEB :



BLOCK DIAGRAM



A login form block diagram with a light blue background and rounded corners. It contains the following elements from top to bottom: a title 'Login Here', a 'Username' label followed by an 'Enter Username' input field, a 'Password' label followed by an 'Enter Password' input field, a 'Login' button, and a link 'If you don't have an account,' followed by a 'Create New' button.

Login Here

Username

Enter Username

Password

Enter Password

Login

If you don't have an account,

Create New

Measured Data

Moisture : 59

Temperature(c): 90

Humidity(%): 85

Switchboard

Motor on

Motor off



Web APP UI Home Tab

