

Develop A Mobile Application

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Project Name	SmartFarmer – IoT Enabled Smart Farming Application

Configuration of Node-Red to send commands to IBM cloud

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

- Authentication:** API Key (dropdown)
- API Key:** IBMIOT APIKEY (dropdown with edit icon)
- Input Type:** Device Event (dropdown)
- Device Type:** ☐ All or abcd (text input)
- Device Id:** ☐ All or 7654321 (text input)
- Event:** ☒ All or + (text input)
- Format:** ☐ All or json (text input)
- QoS:** 0 (dropdown)
- Name:** IBM IoT (text input)

At the bottom, there is an 'Enabled' checkbox 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.

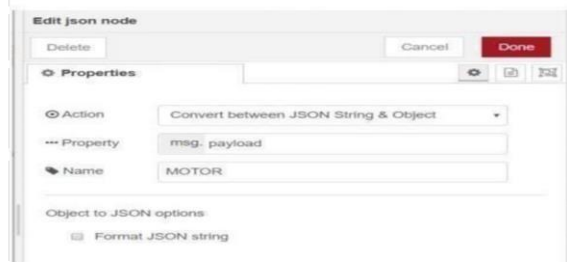
The Java script code for that function node is:

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

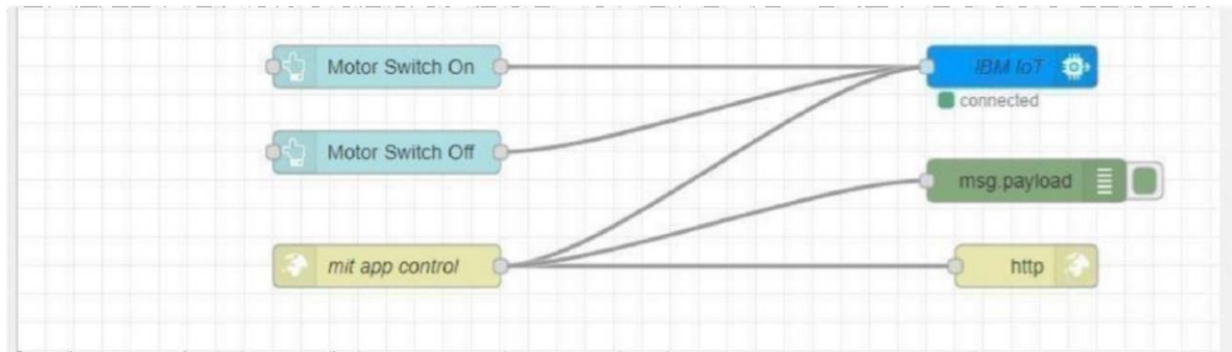


The above images show the java script codes of analyser and state function nodes.

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



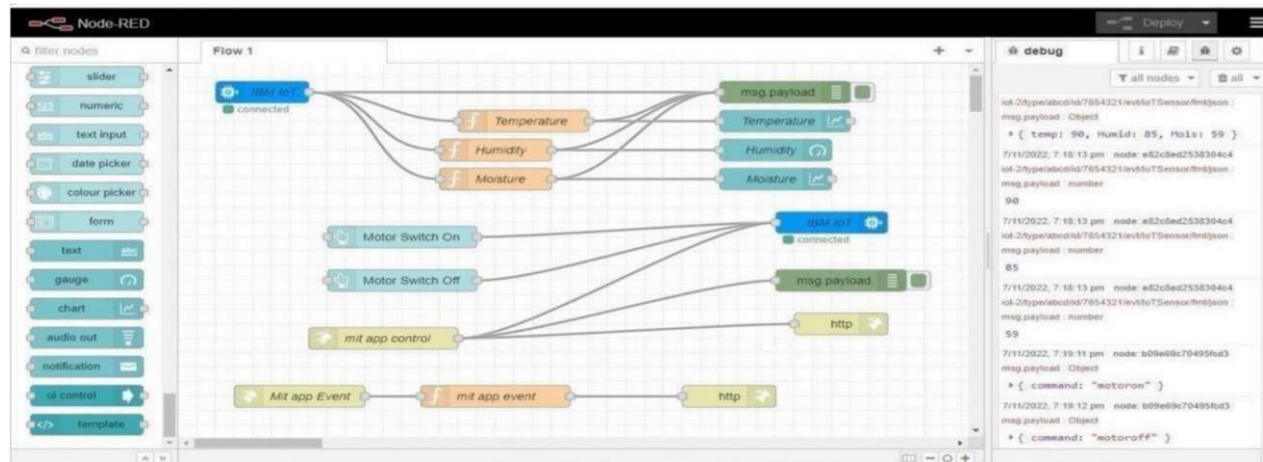
ADJUSTING USER INTERFACE

The screenshot shows the Node-RED web interface with the 'Edit chart node' panel open. The panel displays the following settings:

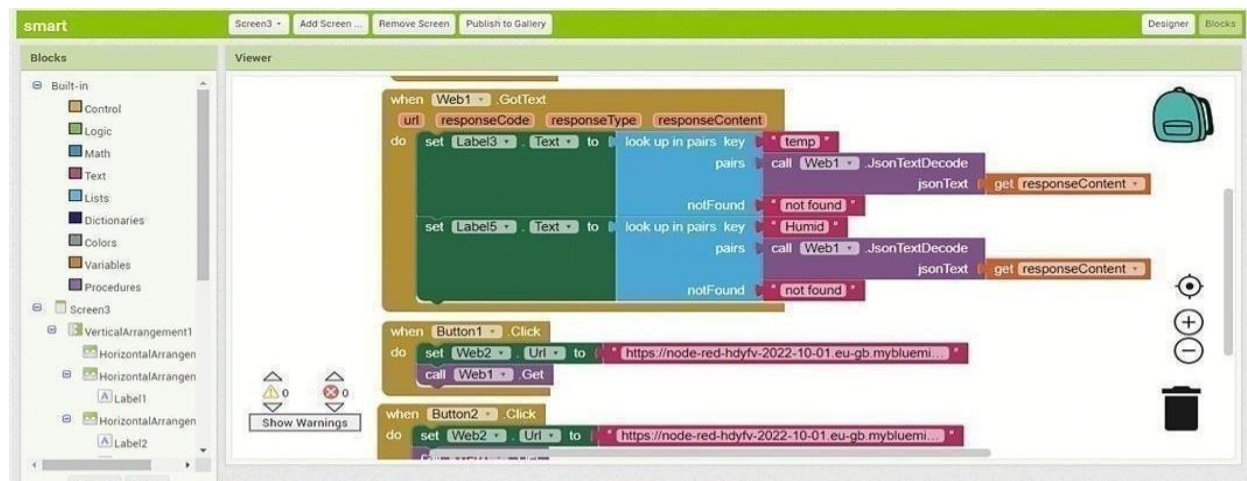
- Label:** Temperature
- Type:** Line chart
- X-axis:** last 5 minute
- X-axis Label:** HH:mm:ss
- Y-axis:** min max
- Legend:** None
- Interpolate:** (checked)
- Series Colours:** (A color picker is open, showing a yellow color selected with RGB values 221, 192, 3.)

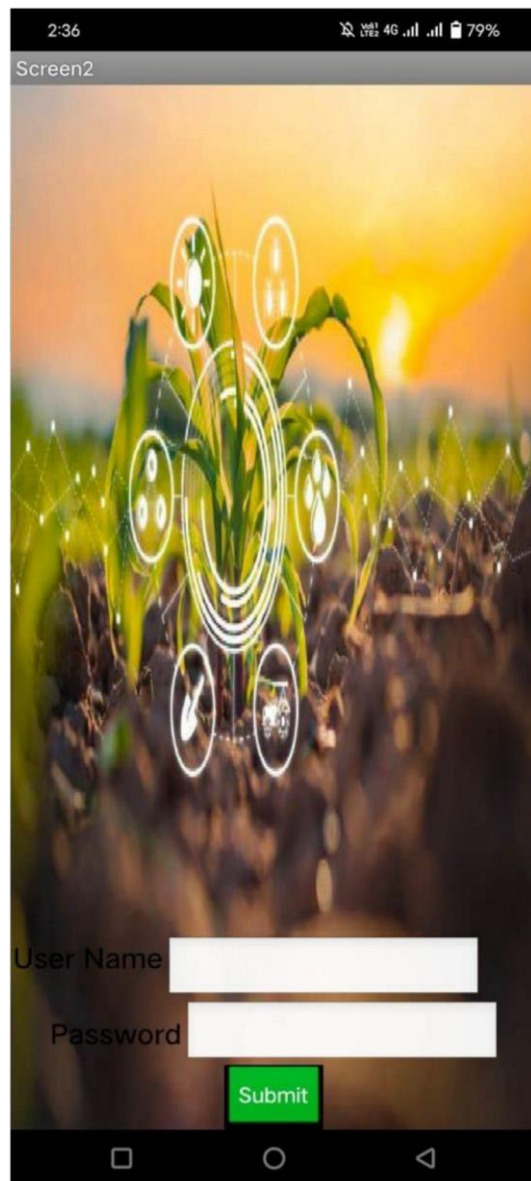
The right sidebar shows a 'dashboard' with 'FARMING MEASURE DATA' and 'Switchboard' tabs. The top bar includes a 'Deploy' button and a menu icon.

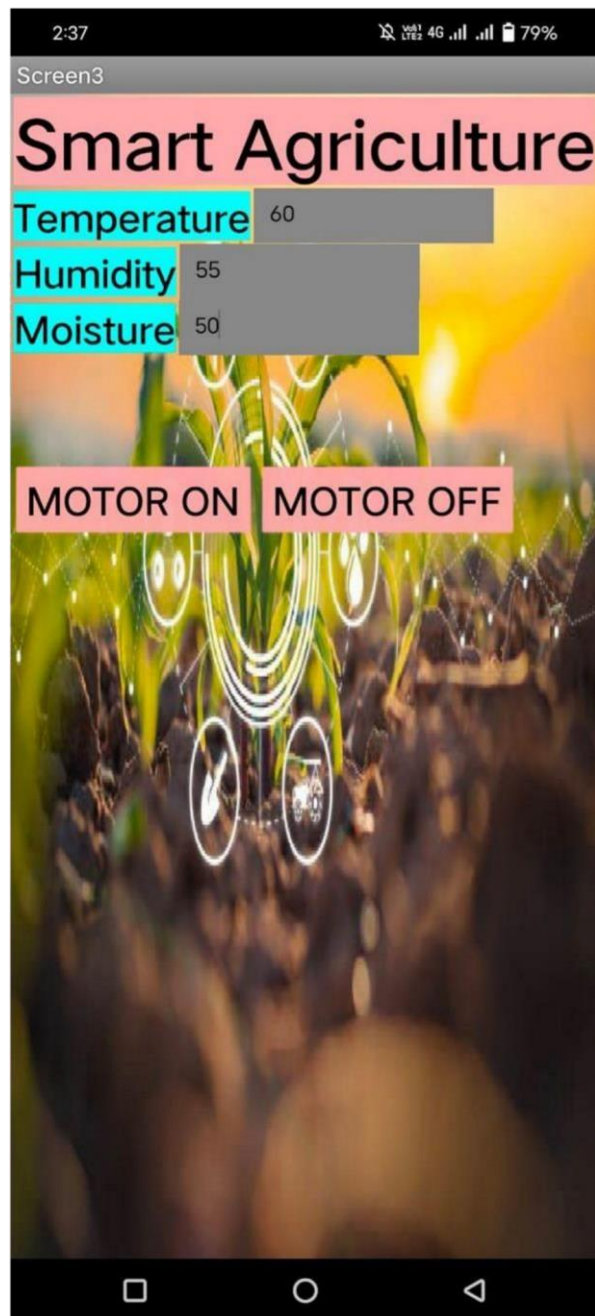
COMPLETE PROGRAM FLOW



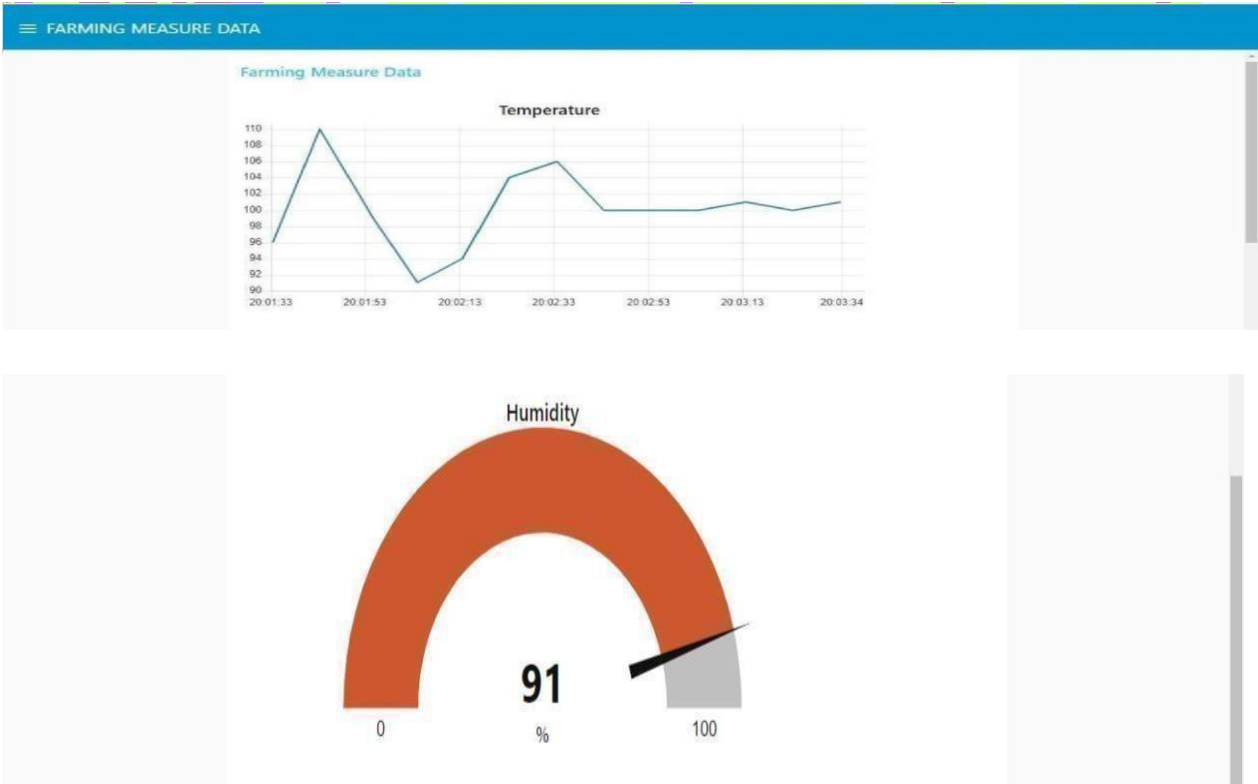
MOBILE APP

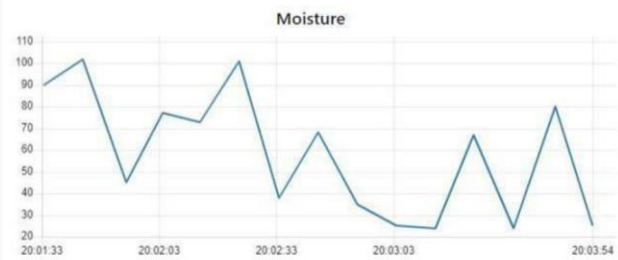






WEB APP UI





Switchboard

MOTOR SWITCH ON

MOTOR SWITCH OFF