

SMART FARMER-IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 3

Date	19-11-2022
Team ID	PNT2022TMID34083
Project name	Smart farmer-IOT Enabled Smart Farming Application

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.

The screenshot displays the Node-RED web interface in a browser. The main workspace shows a flow with an 'IBM IoT' node (labeled 'connected') connected to three function nodes for 'Temperature', 'Humidity', and 'Moisture'. Below these, there are 'Motor on' and 'Motor off' buttons, and a '[get] /control' node. The left sidebar contains various nodes under 'common' and 'function' categories. The right sidebar shows the 'Edit ibmiot in node' configuration panel. The 'Properties' tab is active, showing fields for 'Authentication' (API Key), 'API Key' (10e8ad3187aa8402), 'Input Type' (Device Event), 'Device Type' (All or PNT2022TMID34083), 'Device Id' (All or PNTID34083), 'Event' (All or +), 'Format' (All or json), 'QoS' (0), 'Name' (IBM IoT), and 'Service' (registered). The 'Enabled' checkbox is checked. A 'debug' console on the far right shows a log of messages with temperature, humidity, and moisture data.

Here we add two buttons in UI

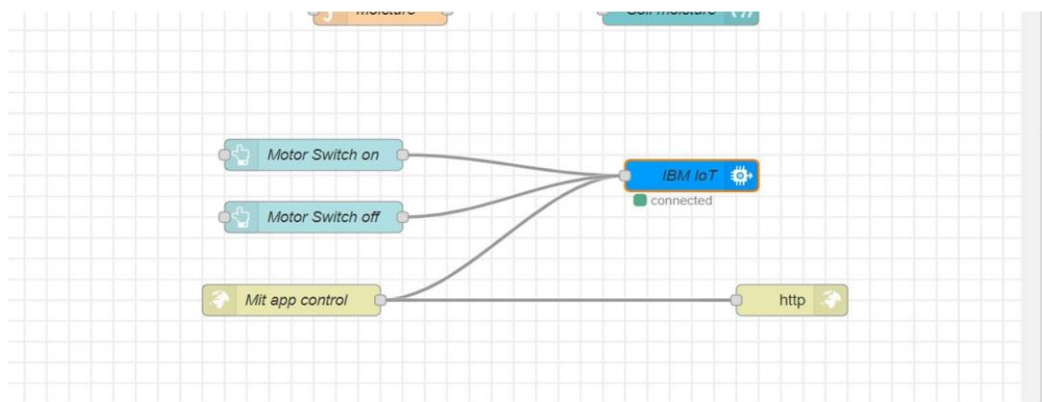
1 -> for motor on

2 -> for motor off

We used a function node to analyse the data received and assign 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"};
```



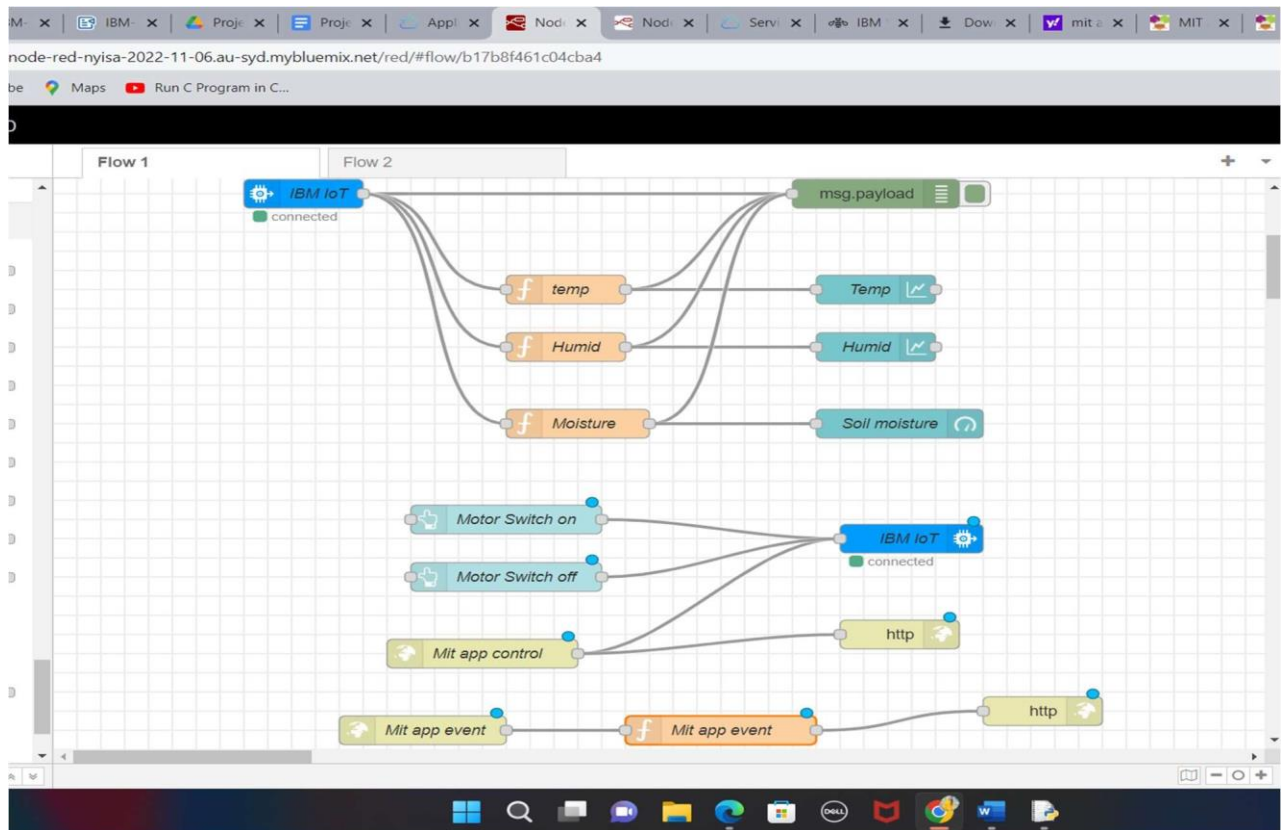
This is the program flow for sending commands to IBM cloud.

Adjusting User Interface :

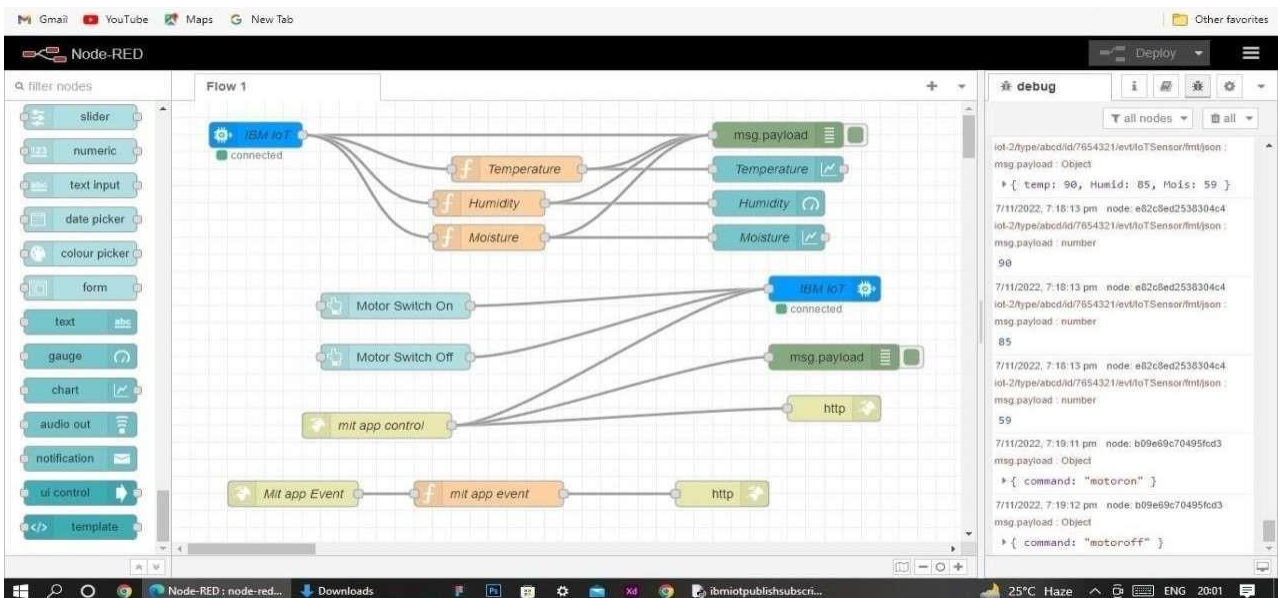
In order to display the parsed JSON data a Node-Red dashboard is created

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 we started to create the flow 1



COMPLETE PROGRAM FLOW :



MOBILE APP WEB :
BLOCK DIAGRAM



SMART

FARMERS



SMART

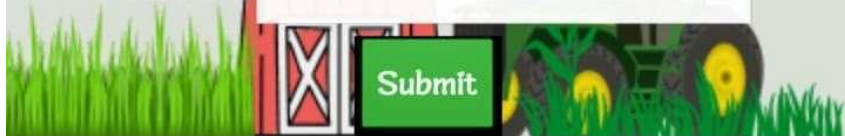
FARMERS



User Name

Password

Submit



Smart Agriculture

Temperature 60

Humidity 95

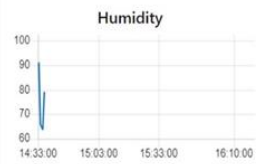
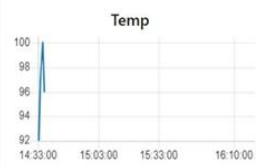
Moisture 90

MOTOR ON MOTOR OFF

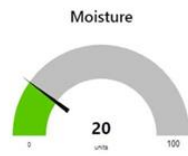


Smart farming

Surrounding temp



Land



switch box

MOTOR SWITCH OFF

MOTOR SWITCH ON