SPRINT DELIVERY – 3

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID30465
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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 Watsondevice.
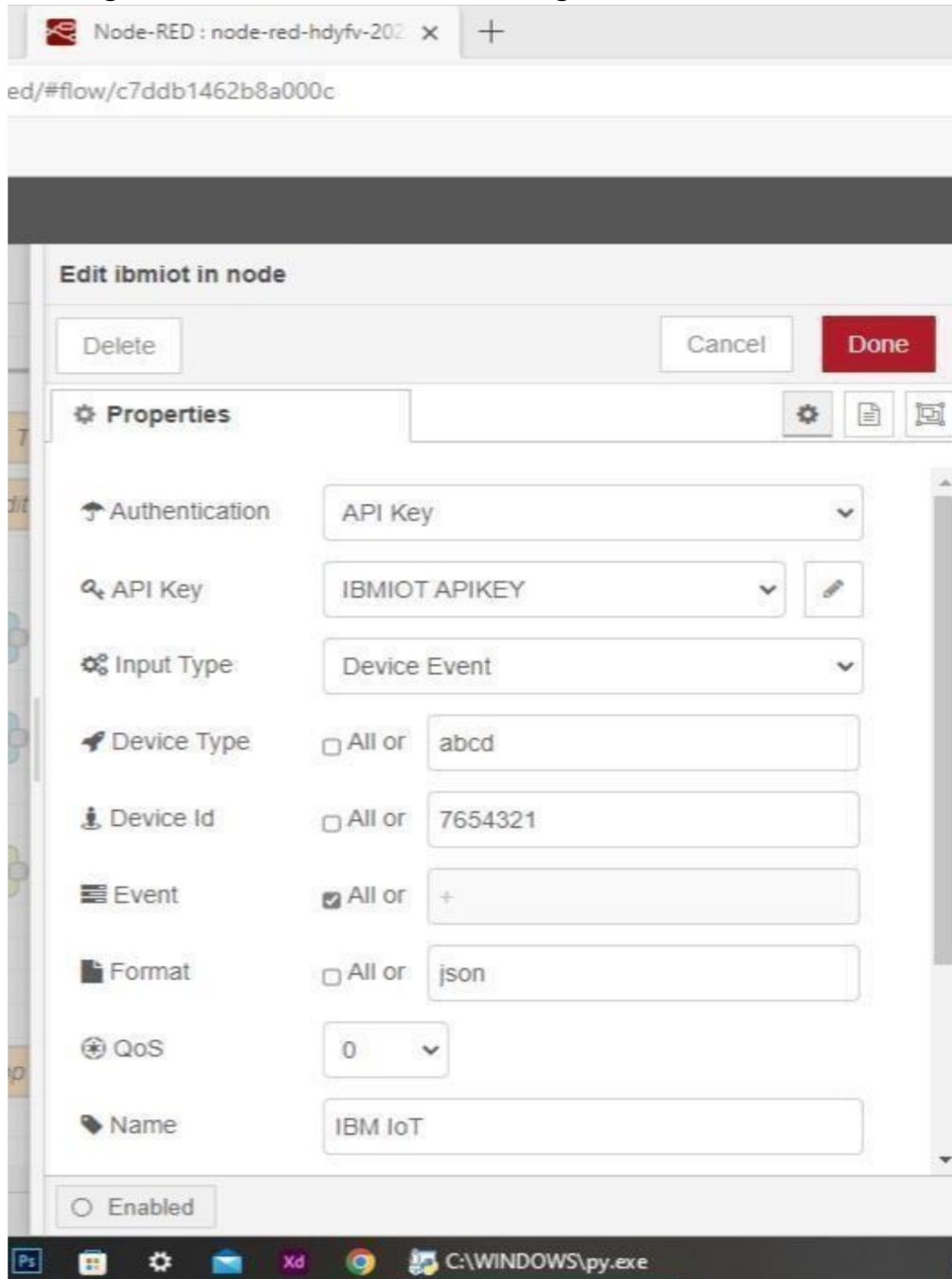
Here we add two buttons in UI

1 -> for motor on

2 -> for motor off

We used a function node to analyses 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"};

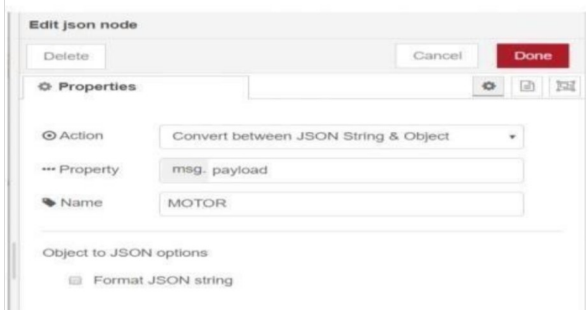Then we use another function node to parse the data and get the command and represent it visually with text node.

The Java script code for that function node is:

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

Edit function node

Delete   Cancel   Done

⚙ Properties   ○ ▣ ▣

🏷 Name   motor state analyzer   ▣▾

🔧 Function

```
1  if(msg.payload===1)
2      msg.payload={"command":"ON"};
3
4  else if(msg.payload===0)
5      msg.payload={"command":"OFF"};
6
7  else
8      msg.payload={"command":"runfor30minutes"};
9
10 return msg;
```

Edit function node

Delete   Cancel   Done

⚙ Properties   ○ ▣ ▣

🏷 Name   state   ▣▾

🔧 Function

```
1  var state=msg.payload;
2  msg.payload = state.command;
3  return msg;
```
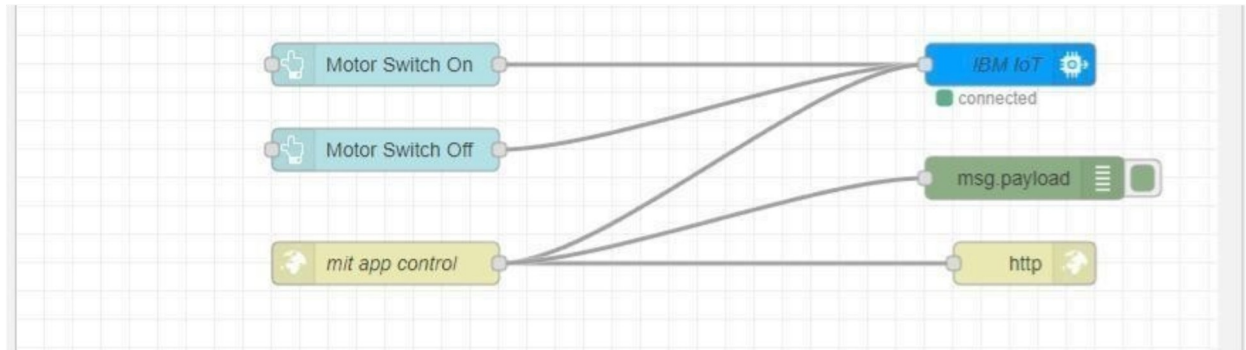
The above images show the java script codes of analyser and state function nodes.

Then we add edit Json node to the conversion between JSON string & object and finally connect it to IBM IoT Out.

Edit json node

Delete   Cancel   Done

⚙ Properties   ○ ▣ ▣

⊕ Action   Convert between JSON String & Object   ▾

⋯ Property   msg. payload

🏷 Name   MOTOR

Object to JSON options

☐ Format JSON string

Edit JSON node needs to be configured like this

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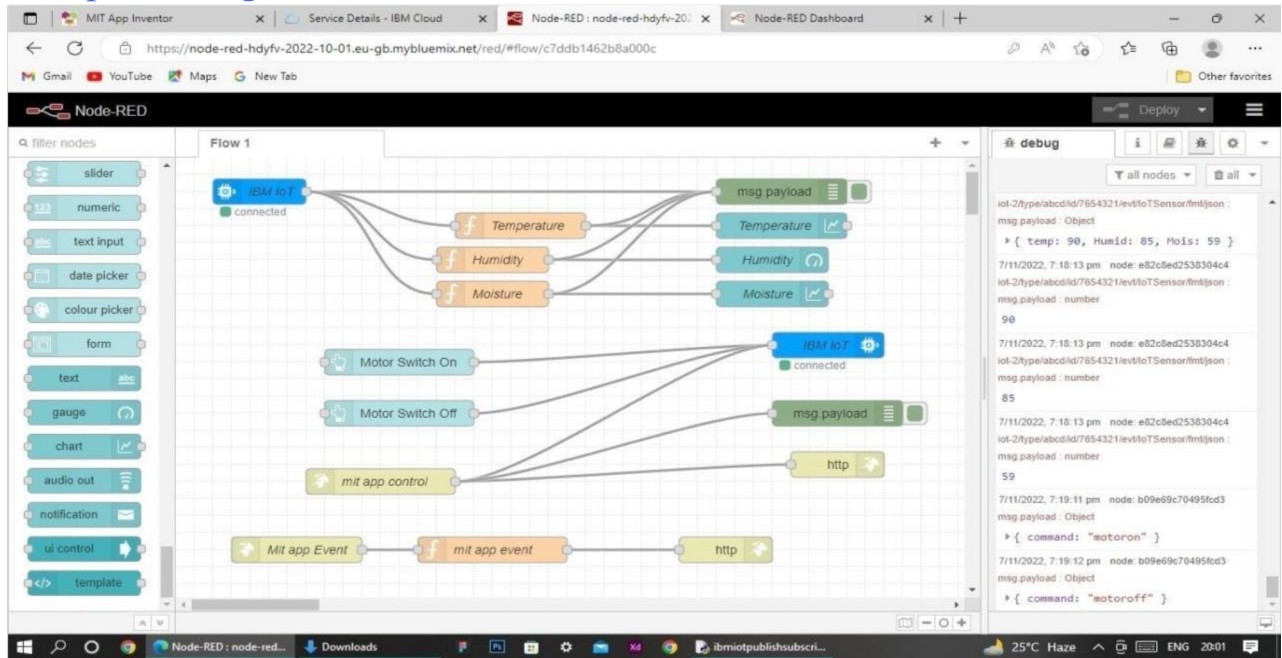
Adjusting User Interface

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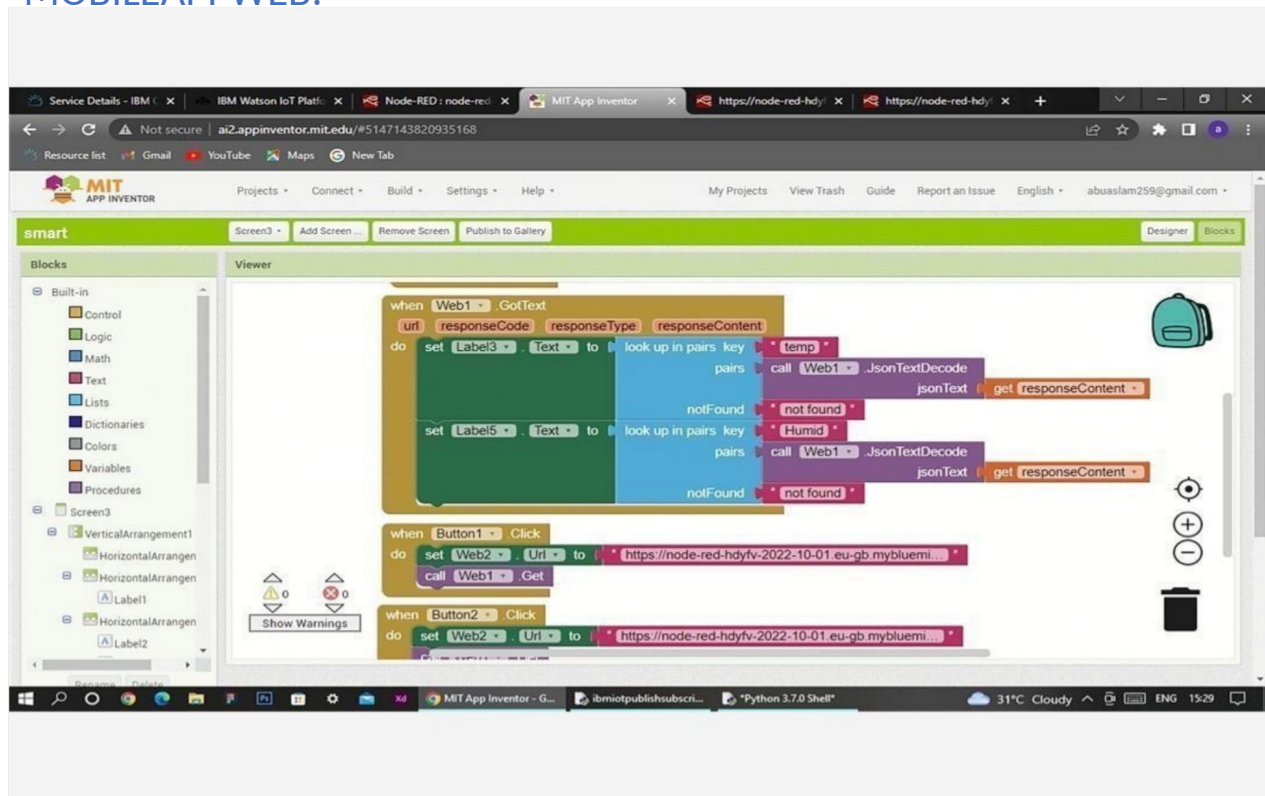
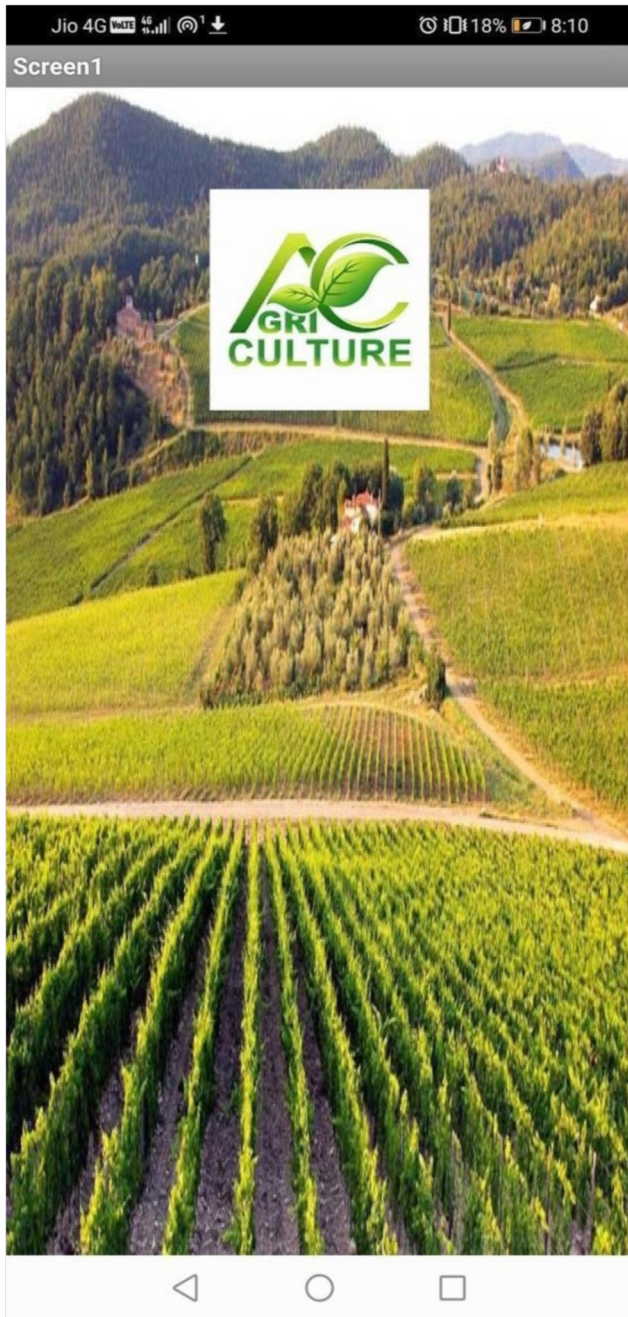Below images are the Gauge, text and button node configurations.
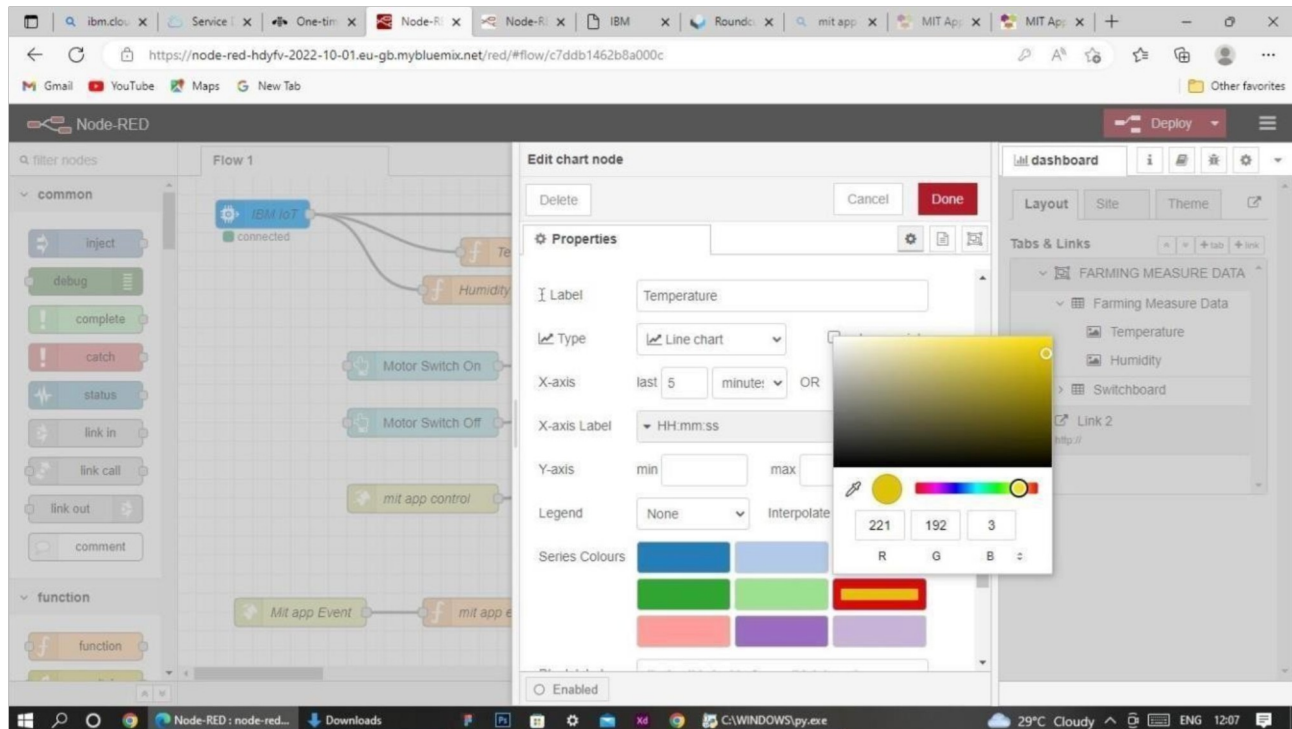
Complete Program Flow

MOBILEAPPWEB:

BLOCKDIAGRAM

SCREEN – 1

SCREEN - 2

Measured Data

Moisture : 59

Temperature(c): 90

Humidity(%): 85

Switchboard

Motor on　　　Motor off

SCREEN - 3 Web APP UI Home Tab