ARUNAI ENGINEERING COLLEGE

Department of Computer Science and Engineering

Smart Farmer-IOT Enabled Smart Farming Application

IBM NALAIYATHIRAN

SPRINT DELIVERY – 3

TITLE	**Smart Farmer-IOT Enabled Smart Farming Application**
DOMAIN NAME	INTERNET OF THINGS
TEAM ID	PNT2022TMID29459
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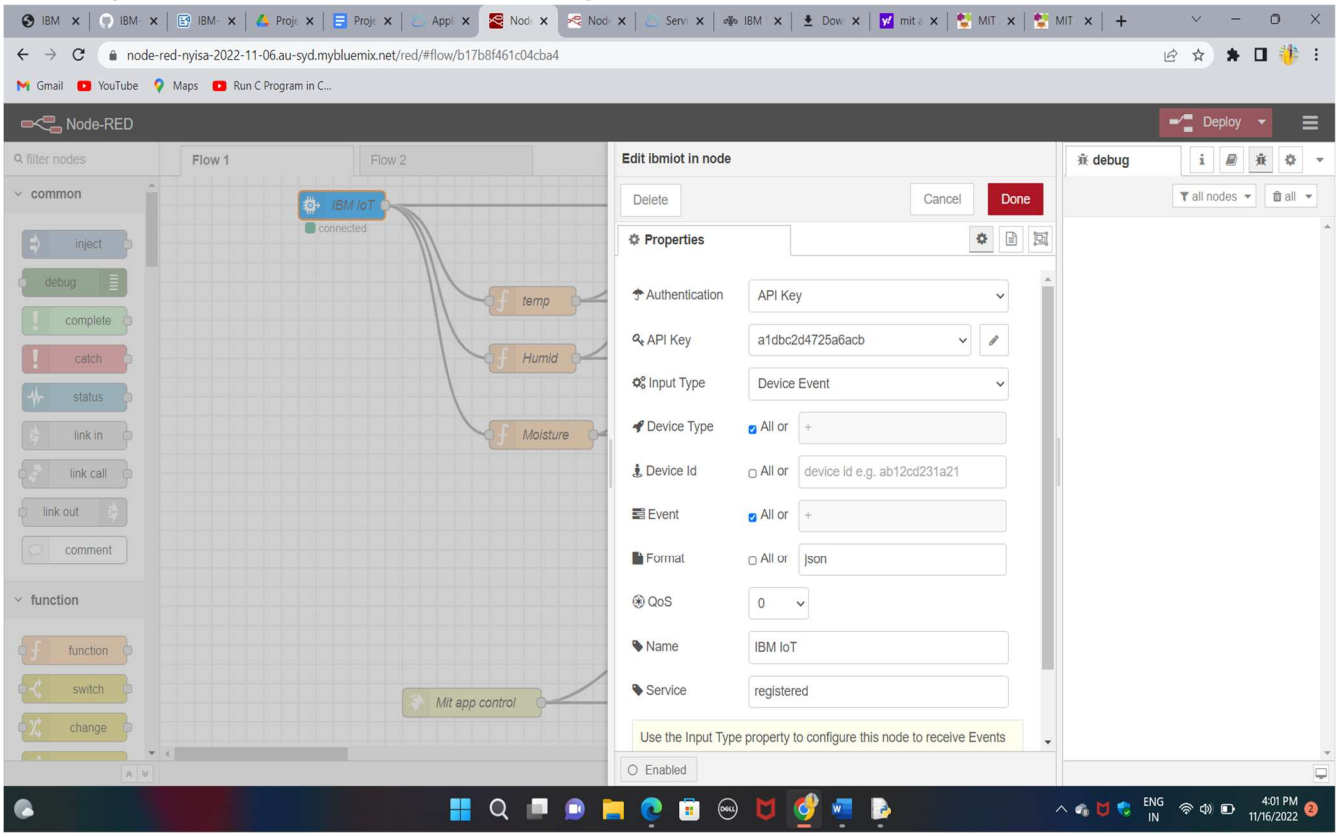
Configuration of Node-Red to send commands to IBM cloud

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 Watson device.



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.

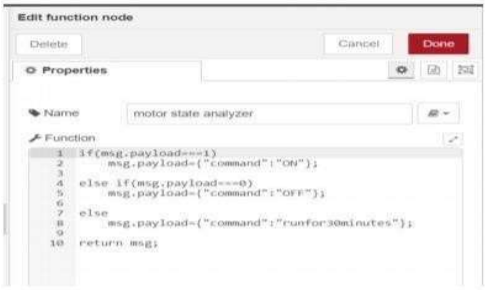
The Java script code for the analyses is:

```
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.

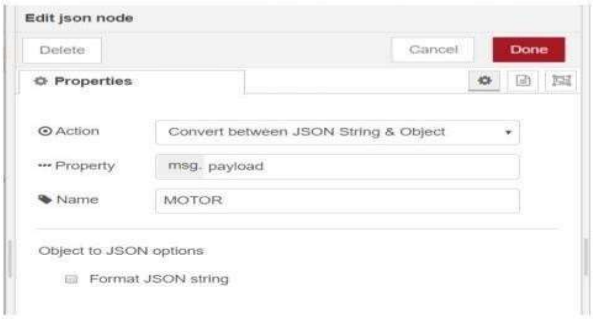
The Java script code for that function node is:

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

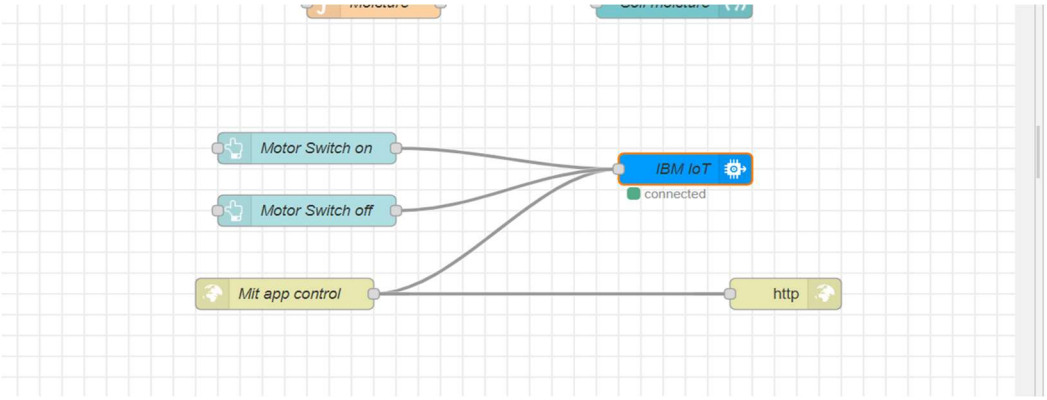


The above images show the java script codes of analyser and state function nodes.

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



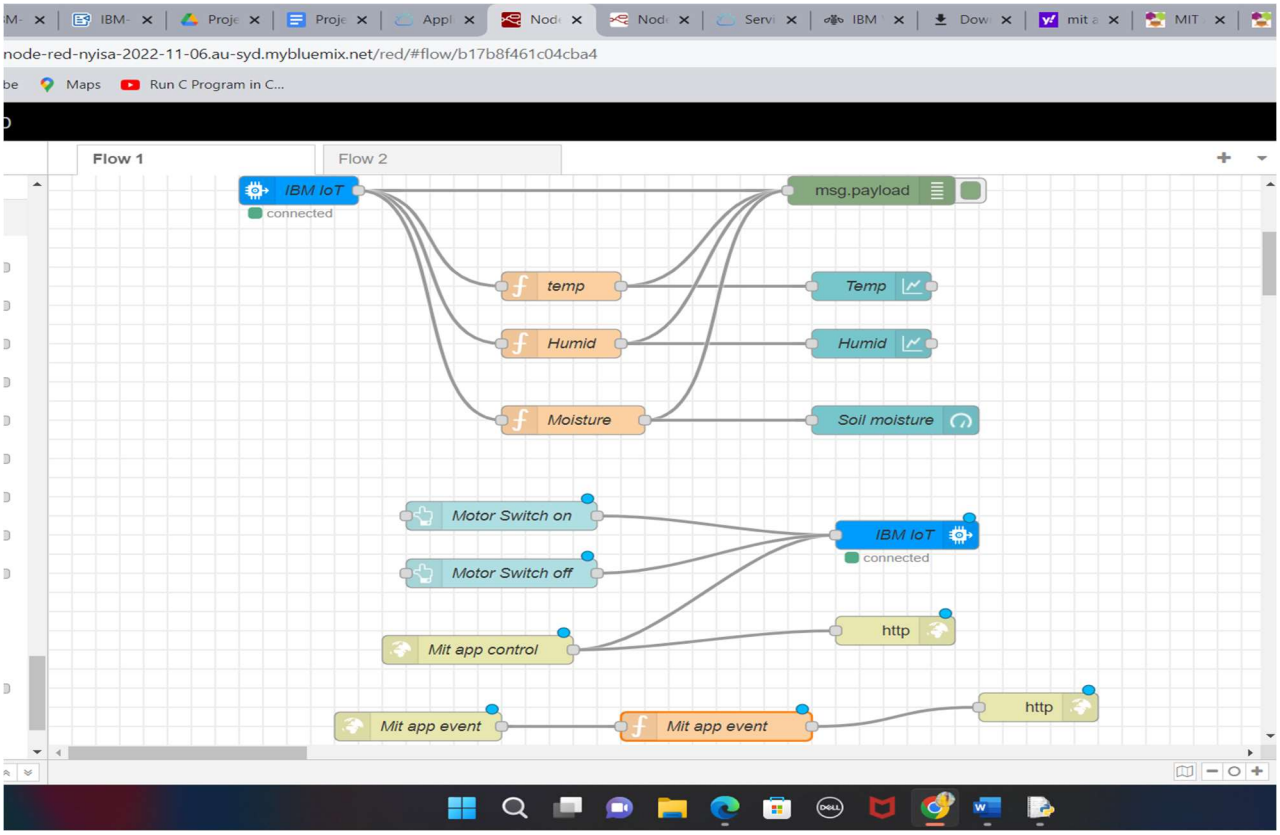
This is the program flow for sending commands to IBM cloud.

Adjusting User Interface

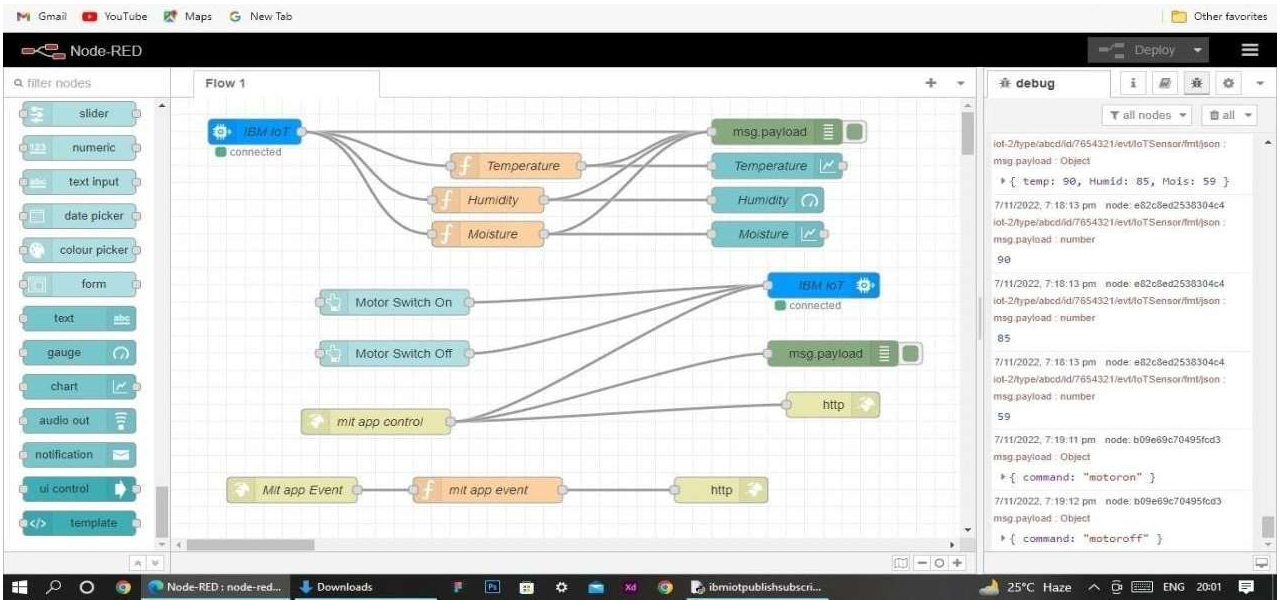
In order to display the parsed JSON data a Node-Red dashboard is created

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 we started to create the flow 1



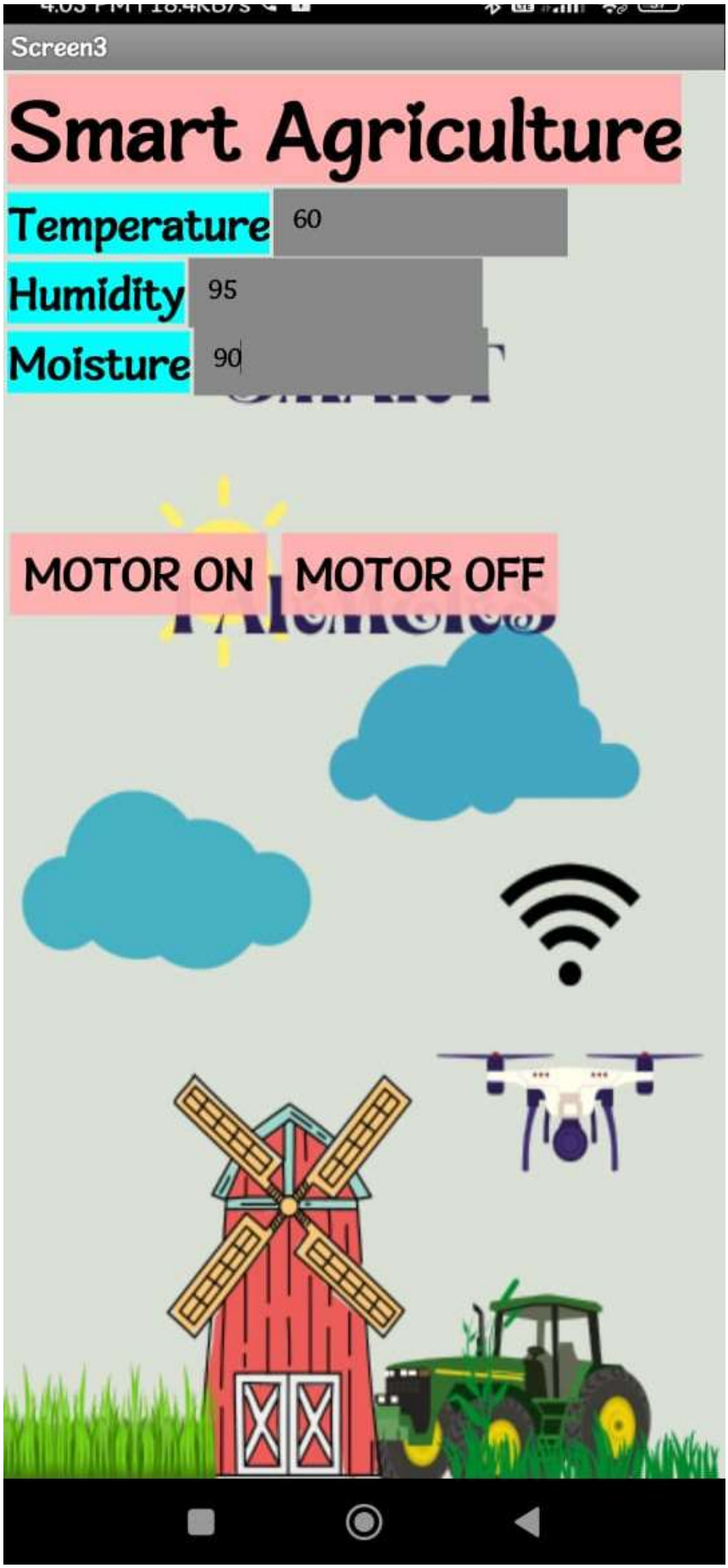
COMPLETE PROGRAM FLOW :

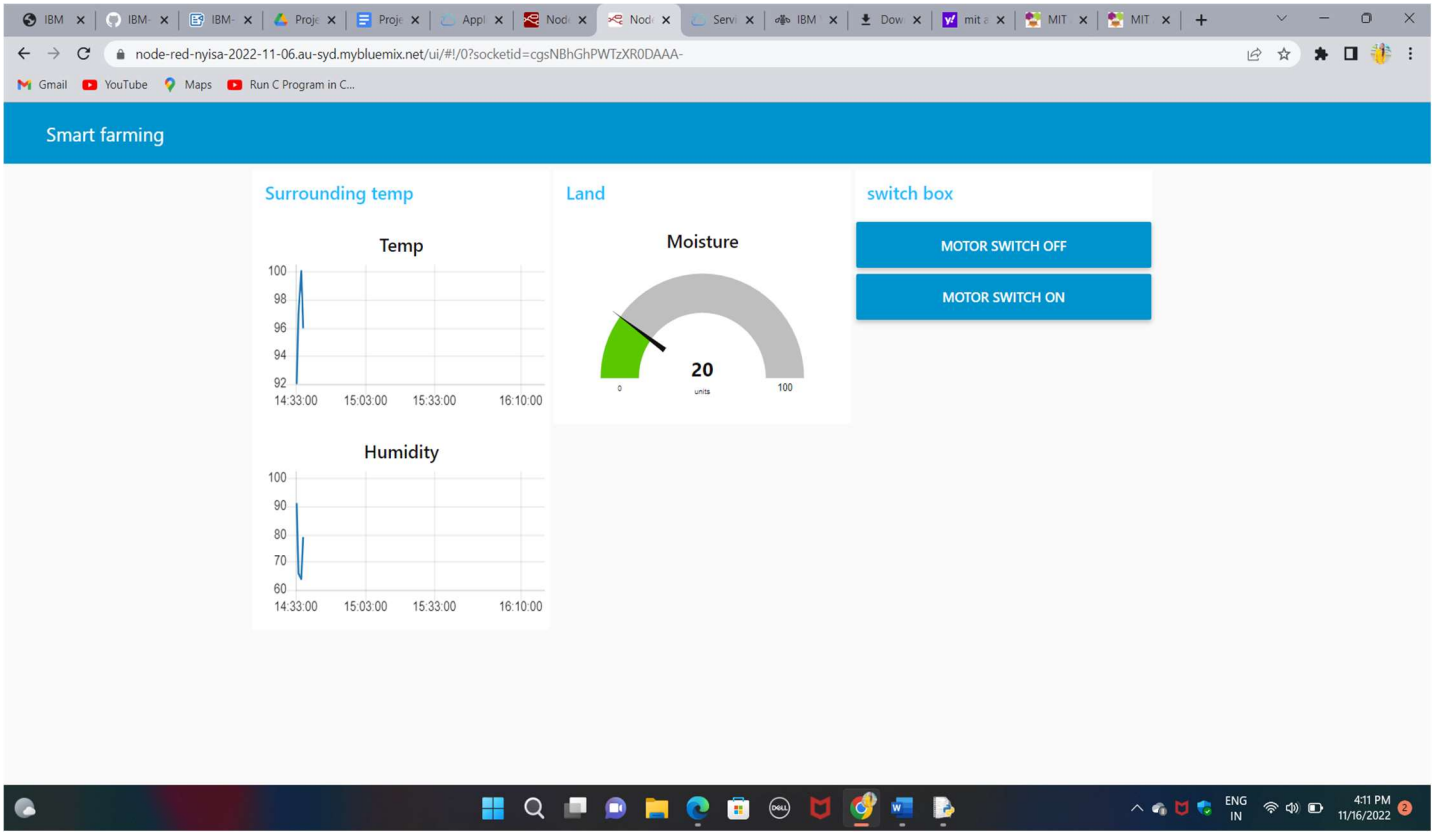


MOBILE APP WEB :
BLOCK DIAGRAM


1:56 PM | 65.1KB/s
Screen1
SMART
FARMERS


1:56 PM | 12.3KB/s
Screen2
SMART
FARMERS
User Name
Password
Submit


Screen3
Smart Agriculture
Temperature
60
Humidity
95
Moisture
90
MOTOR ON
MOTOR OFF


node-red-nyisa-2022-11-06.au-syd.mybluemix.net/ui/#!/0?socketid=cgsNBhGhPWTzXR0DAAA-
Gmail
YouTube
Maps
Run C Program in C...
Smart farming
Surrounding temp
Temp
100
98
96
94
92
14:33:00
15:03:00
15:33:00
16:10:00
Humidity
100
90
80
70
60
14:33:00
15:03:00
15:33:00
16:10:00
Land
Moisture
20
units
0
100
switch box
MOTOR SWITCH OFF
MOTOR SWITCH ON
ENG
IN
4:11 PM
11/16/2022