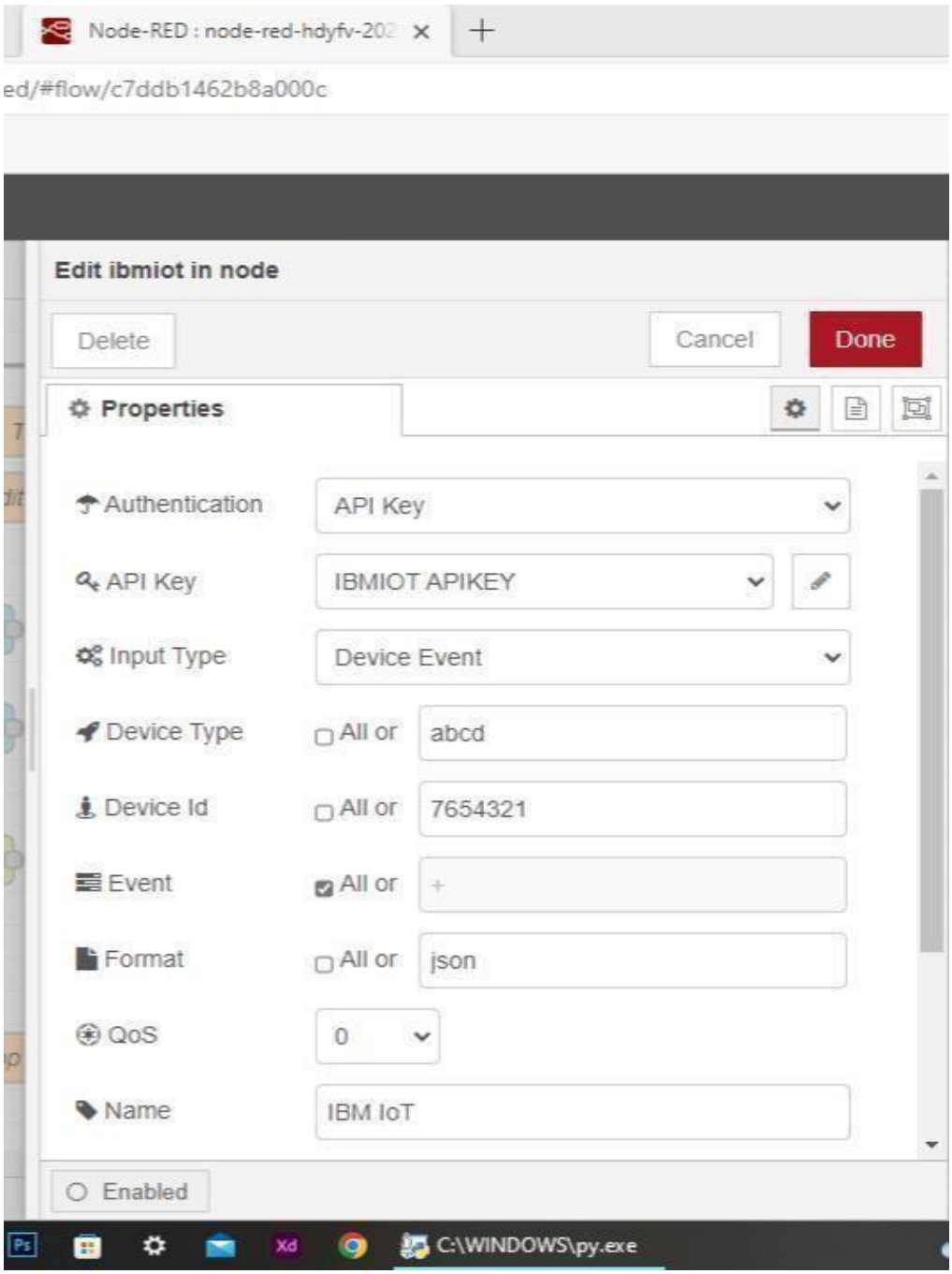
IOT ENABLED SMART FARMING APPLICATION

SPRINT DELIVERY – 3

TEAM ID : PNT2022TMID08320

5.4 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.

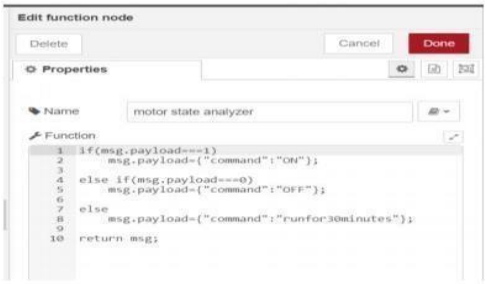
The Java script code for the analyses is:

```
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.

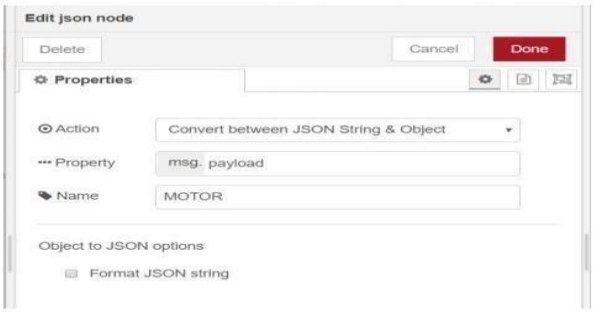
The Java script code for that function node is:

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

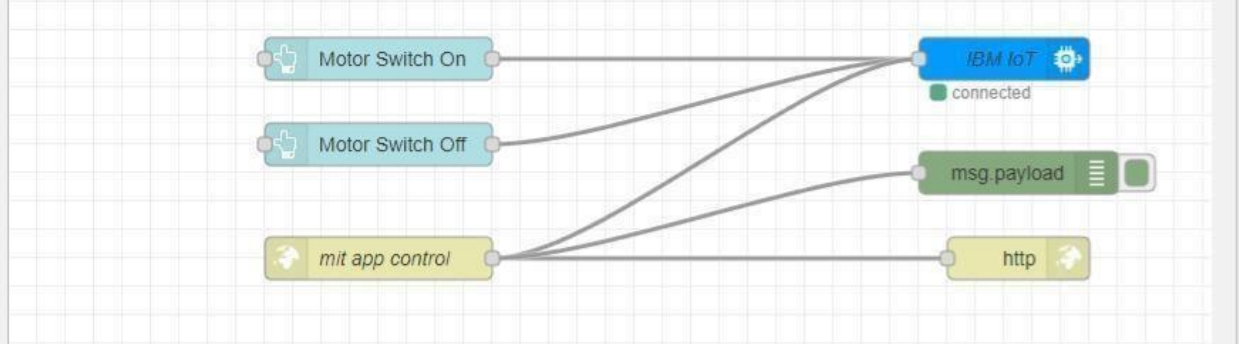


The above images show the java script codes of analyser and state function nodes.

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



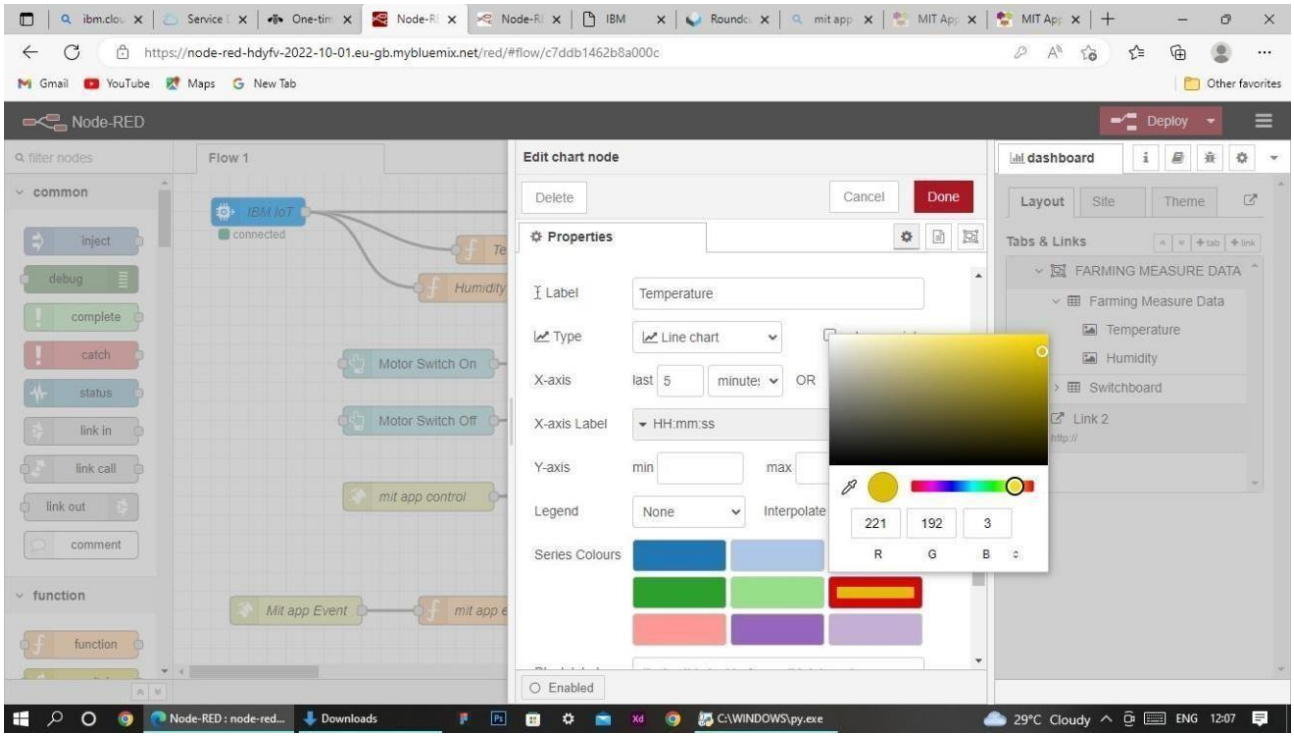
This is the program flow for sending commands to IBM cloud.

5.5 Adjusting User Interface

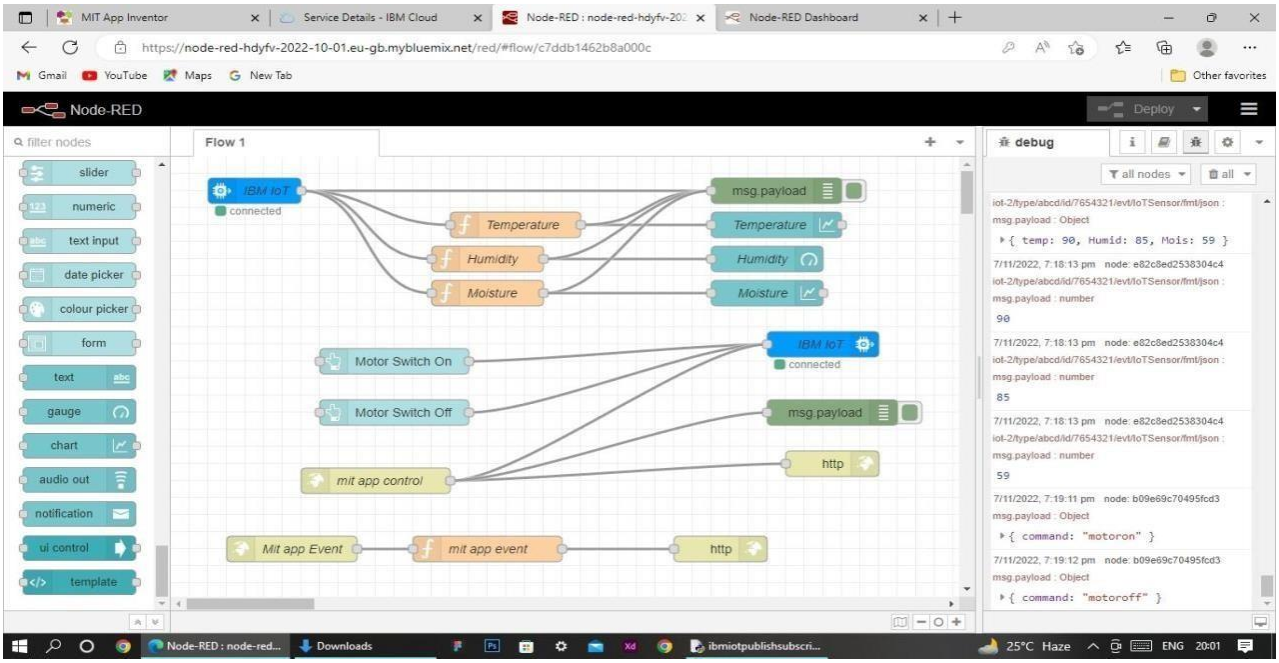
In order to display the parsed JSON data a Node-Red dashboard is created

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.

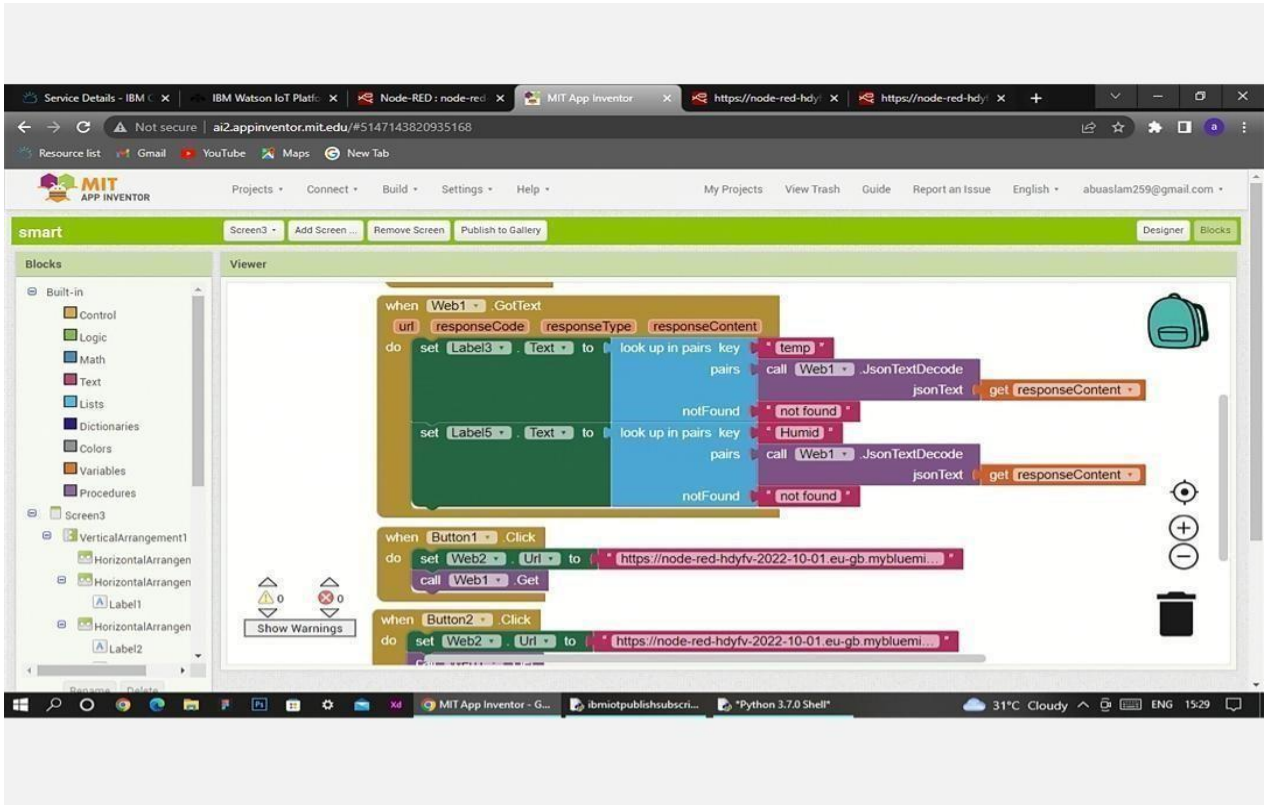
Below images are the Gauge, text and button node configurations.



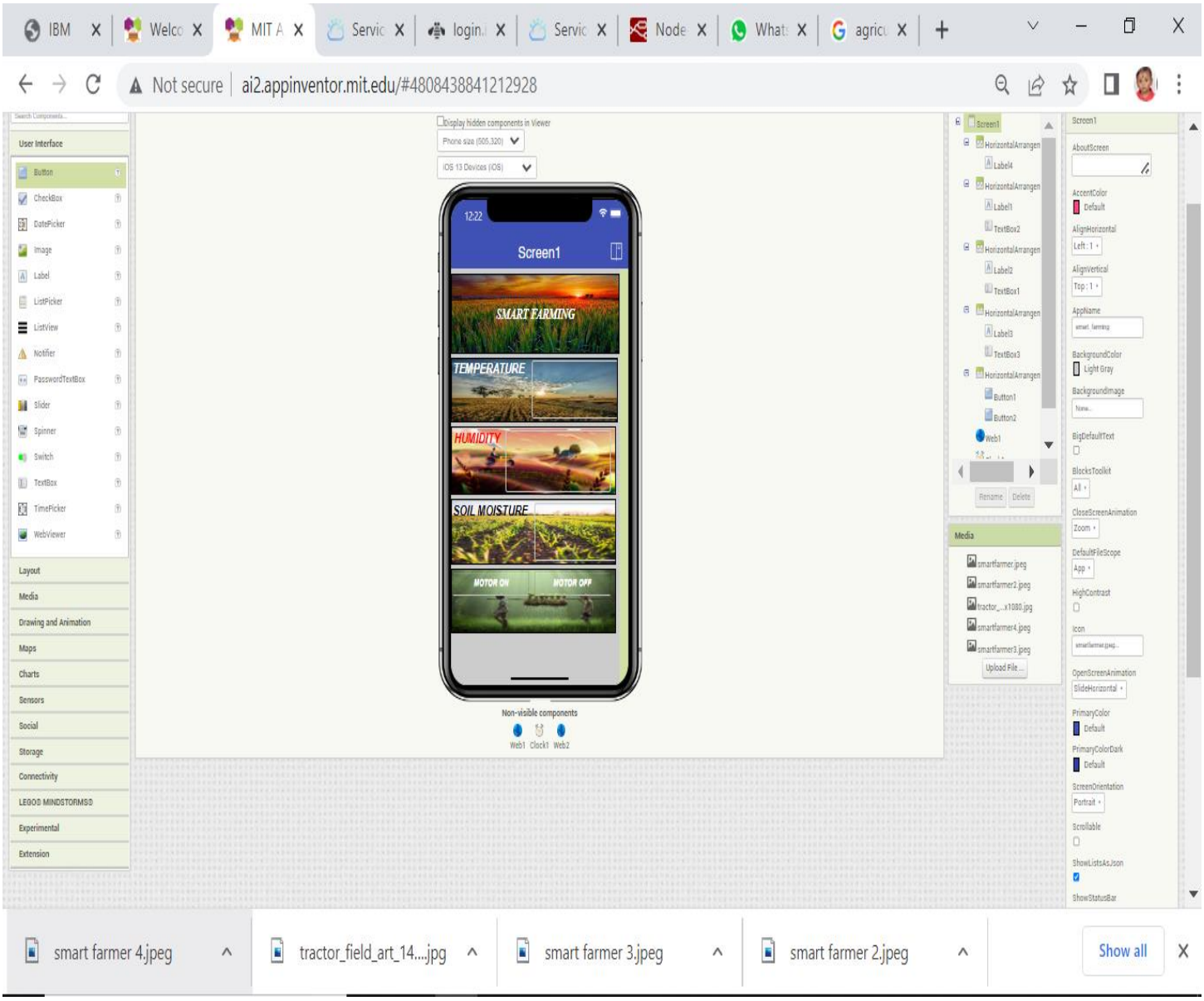
Complete Program Flow



MOBILE APP WEB :



BLOCK DIAGRAM


IBM
Welco
MIT A
Servic
login
Servic
Node
What
agric
Not secure
ai2.appinventor.mit.edu/#4808438841212928
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Media
Drawing and Animation
Maps
Charts
Sensors
Social
Storage
Connectivity
LEGO® MINDSTORMS®
Experimental
Extension
Display hidden components in Viewer
Phone size (505,320)
iOS 13 Devices (iOS)
12:22
Screen1
SMART FARMING
TEMPERATURE
HUMIDITY
SOIL MOISTURE
MOTOR ON
MOTOR OFF
Non-visible components
Web1
Clock1
Web2
Media
smartfarmer.jpeg
smartfarmer2.jpeg
smartfarmer4.jpeg
smartfarmer3.jpeg
Upload File...
AboutScreen
AccentColor
Default
AlignHorizontal
Left : 1
AlignVertical
Top : 1
AppName
BackgroundColor
Light Gray
BackgroundImage
BigDefaultText
BlocksToolkit
All
CloseScreenAnimation
Zoom
DefaultFileScope
App
HighContrast
Icon
OpenScreenAnimation
SlideHorizontal
PrimaryColor
Default
PrimaryColorDark
Default
ScreenOrientation
Portrait
Scrollable
ShowListsAsJson
ShowStatusBar
smart farmer 4.jpeg
tractor_field_art_14....jpg
smart farmer 3.jpeg
smart farmer 2.jpeg
Show all

Web APP UI Home Tab