

PROJECT DEVELOPMENT PHASE

SPRINT DELIVERY – 3

TEAM ID	PNT2022TMID07016
PROJECT NAME	Smart Farmer - IoT Enabled Smart Farming Monitoring Application

Configuration of Node-Red to send commands to IBM cloud

IBMIoT IN and 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 image displays two screenshots of the Node-RED web interface, illustrating the configuration of IBM IoT nodes for sending commands to the IBM cloud.

Top Screenshot: Edit ibmiot in node

The top screenshot shows the configuration for an "IBM IoT" node. The node is connected to a "Sensor" node. The configuration panel on the right is titled "Edit ibmiot in node" and includes the following settings:

- Authentication: API Key
- API Key: f647b610cfa97f58
- Input Type: Device Event
- Device Type: All or NalalyaThiran
- Device Id: All or NalalyaThiran
- Event: All or +
- Format: All or json
- QoS: 0
- Name: IBM IoT
- Service: registered

A note at the bottom of the configuration panel states: "Use the Input Type property to configure this node to receive Events sent by IoT Devices, Commands sent to IoT Devices, Status Messages referring to IoT Devices, or Status Messages referring to".

Bottom Screenshot: Edit ibmiot out node

The bottom screenshot shows the configuration for an "IBM IoT" node. The node is connected to a "Sensor Values" node. The configuration panel on the right is titled "Edit ibmiot out node" and includes the following settings:

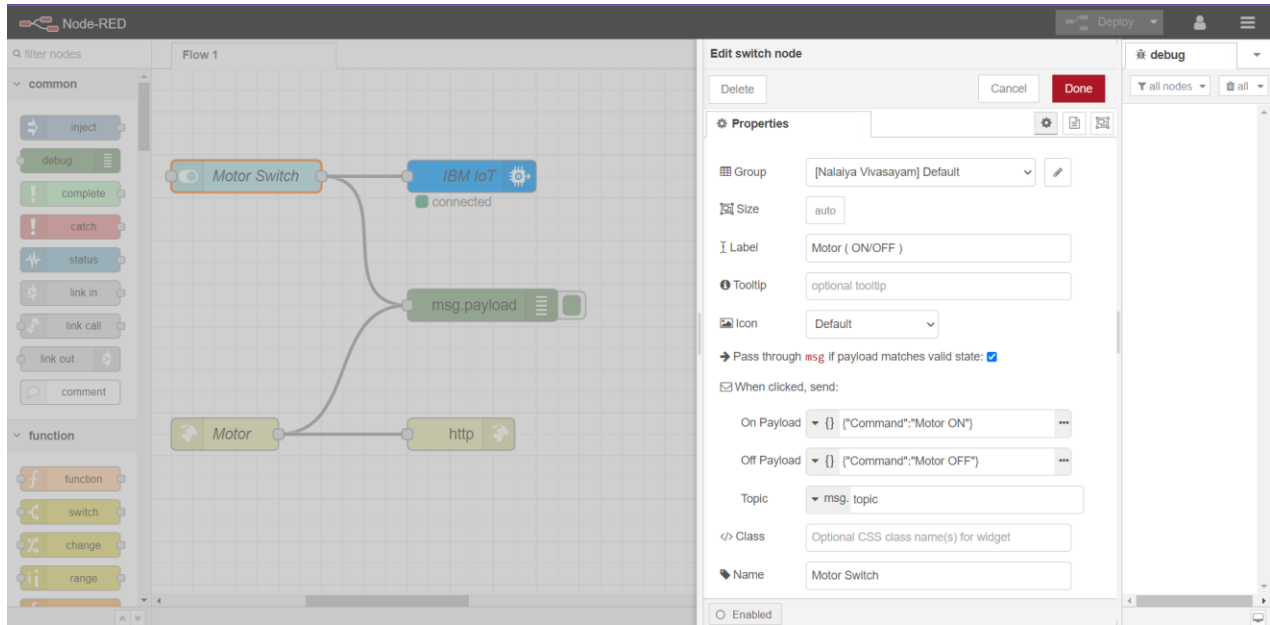
- Authentication: API Key
- API Key: f647b610cfa97f58
- Output Type: Device Command
- Device Type: NalalyaThiran
- Device Id: NalalyaThiran
- Command Type: Command
- Format: json
- Data: Data
- QoS: 0
- Name: IBM IoT
- Service: registered

A note at the bottom of the configuration panel states: "Note: If there is a property in the message that corresponds to any of".

Switch button added in UI to control the motor

- Motor ON
- Motor OFF

We used a function node to analyse the data received and assign command to each state.



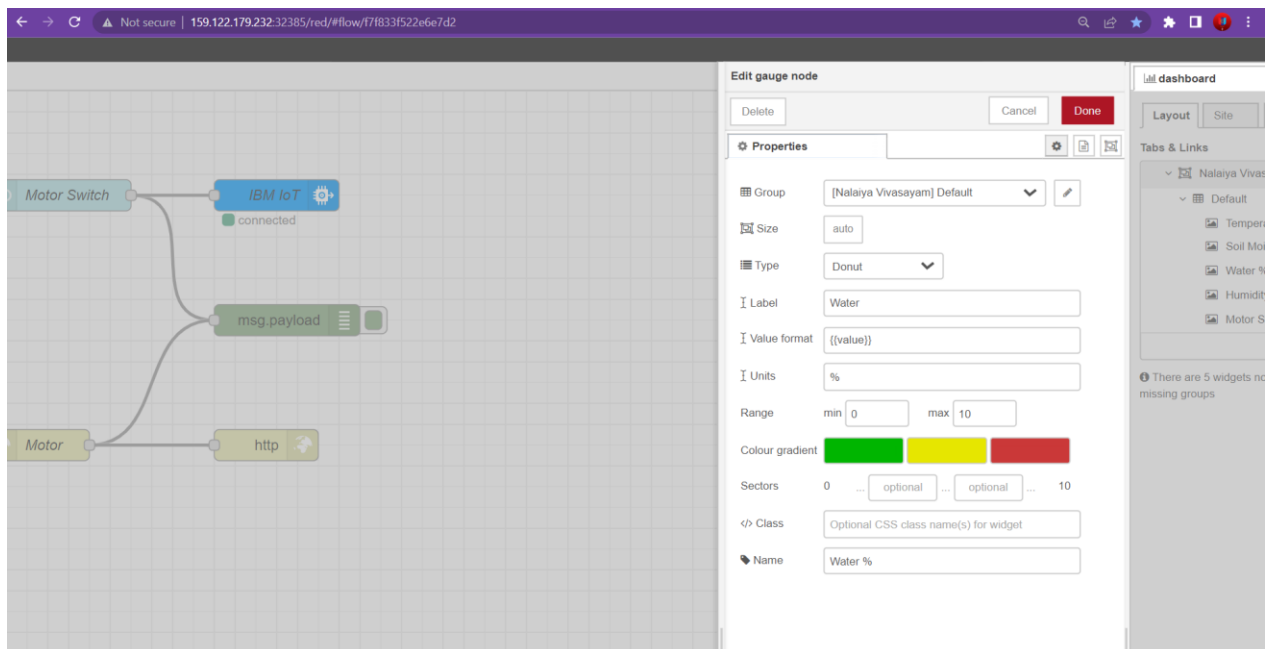
This is the program flow for sending commands to IBM cloud.

Adjusting User Interface

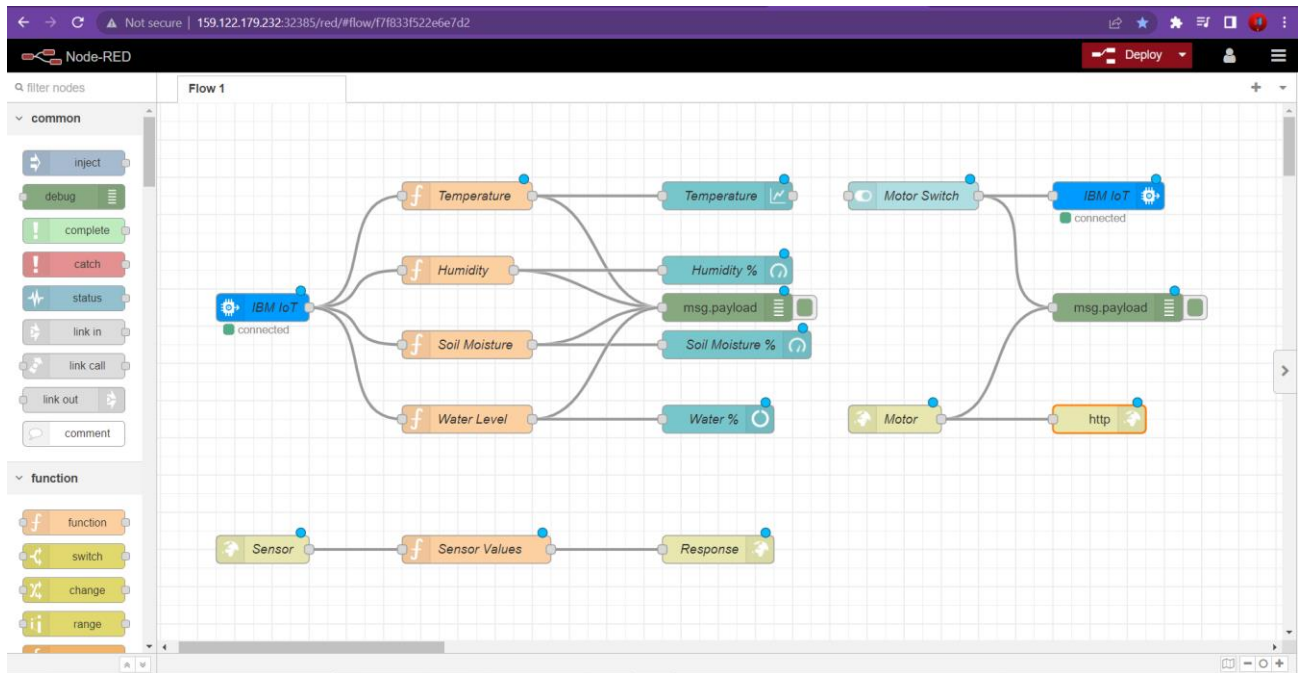
In order to display the parsed JSON data a Node-Red dashboard is created

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.

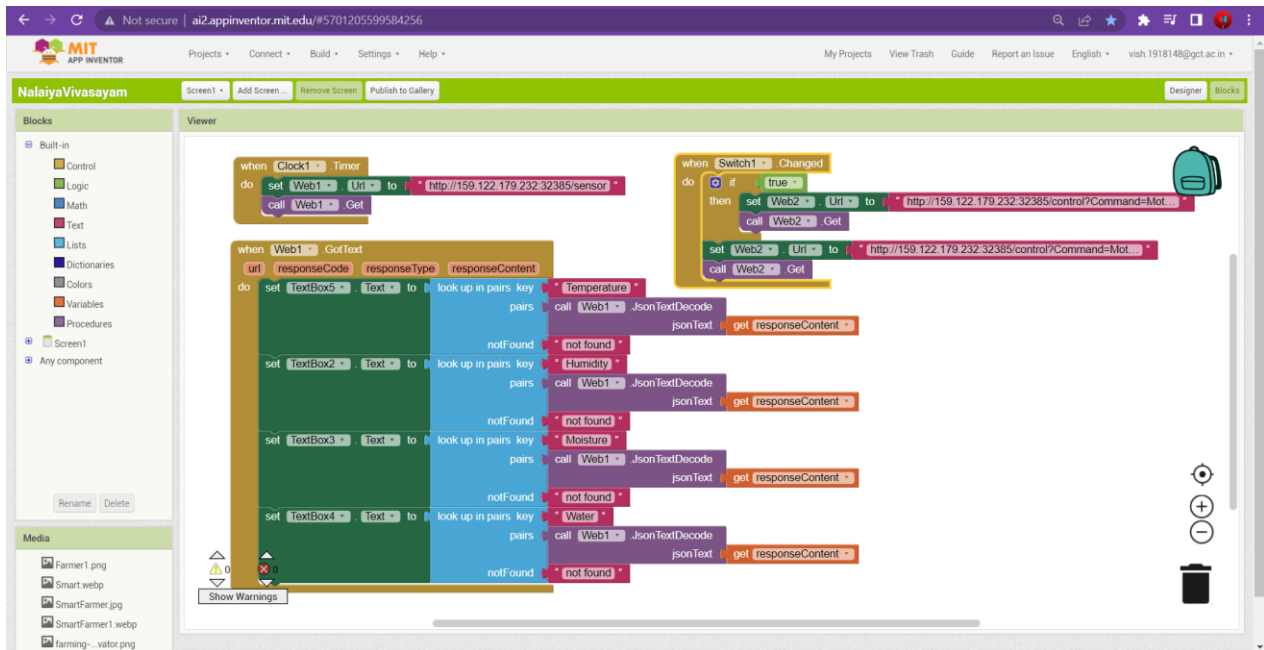
Below images are the Gauge, charts and button node configurations.

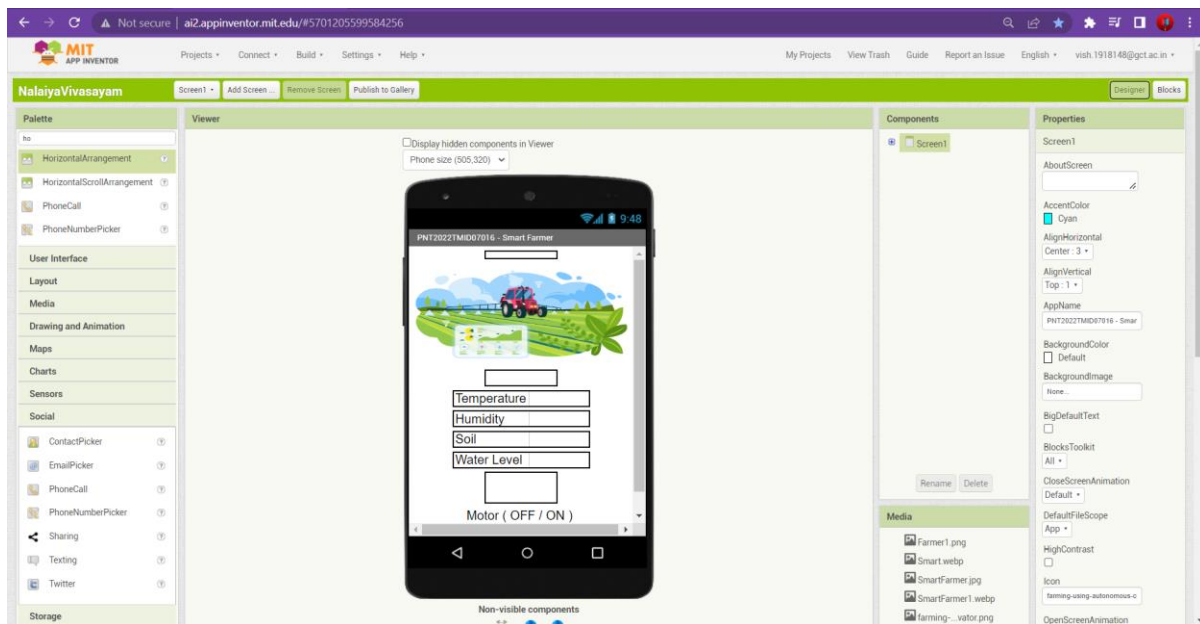


COMPLETE PROGRAM FLOW



MOBILE APP DEVELOPMENT AND DESIGN:





MOBILE APPLICATION:



Temperature	33
Humidity	36
Soil Moisture	62
Water Level	60

Motor (OFF / ON)



