

Smart Farmer- IOT Enabled Smart Farming Application

DESIGN SPRINT – III DELIVERY OF SPRINT 3

TITLE	Smart Farmer-IOT Enabled Smart Farming Application
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DELIVERY OF SPRINT 3:

1. Web application using Node-Red service:

Goal:

- ✚ To build a web application using Node-Red service.

Procedure:

- ✚ Open the Node-Red website which you have created in the previous step.
- ✚ Insert the corresponding IBM IoT nodes and other kind of sensors and motor switches.
- ✚ Finally, click on the deploy option in the right-side panel.
- ✚ Visualize the results in the Node- Red where the URL is followed by /data.
- ✚ Visualize the comments in Node- Red review URL followed by /comment.

✚ On clicking on the IBM IoT, note you have to enter the device credentials of the device you have created in the Watson IBM platform.

✚ On taking the functions of soil moisture humidity and temperature enter the functionality they must perform in the property setup formatting ah one center the function is soil moisture value less than 20 then generate a message and then in the corresponding HTTP request enter the URL of bulk SMS to send the message to the given contact number.

✚ On clicking on the motor on function, give the payload value as json command. Repeat the same for the motor off.

2. IBM IoT Node:

Edit ibmiot in node

Delete Cancel Done

Properties

Authentication API Key

API Key 7dd0c222.d9446c

Input Type Device Event

Device Type ☒ All or +

Device Id ☐ All or 67891

Event ☒ All or +

Format ☐ All or json

QoS 0

Name IBM IoT

☐ Enabled

3. Soil Moisture Function:

Edit function node

Delete Cancel Done

Properties

Name Soil Moisture

Setup On Start On Message On Stop

```
1 global.set('moist',msg.payload.soil_moisture)
2 msg.payload=msg.payload.soil_moisture
3 return msg;
```

Enabled

4. Humidity Function:

Edit function node

Delete Cancel Done

Properties

Name Humidity

Setup On Start On Message On Stop

```
1 global.set('hum',msg.payload.humidity)
2 msg.payload=msg.payload.humidity
3 return msg;
```

5. Temperature Function:

Edit function node

Delete Cancel Done

Properties

Name Temperature

Setup On Start On Message On Stop

```
1 global.set('temp',msg.payload.temperature)
2 msg.payload=msg.payload.temperature
3 return msg;
```

6. Soil Moisture Gauge:

Edit gauge node

Delete Cancel Done

Properties

Group [IBM Watson Sensor Data] IBM Wats

Size auto

Type Gauge

Label Soil Moisture

Value format {{value}}

Units units

Range min 0 max 100

Colour gradient

Sectors 0 optional optional 100

Enabled

7. Humidity Gauge:

Edit chart node

Delete Cancel Done

Properties

Group [IBM Watson Sensor Data] IBM Wats

Size auto

Label Humidity

Type Line chart enlarge points

X-axis last 1 hours OR 1000 points

X-axis Label HH:mm:ss as UTC

Y-axis min max

Legend None Interpolate linear

Series Colours

Enabled

8. Temperature Chart:

Edit chart node

Delete Cancel Done

Properties

Group [IBM Watson Sensor Data] IBM Wats

Size auto

Label Temperature

Type Line chart enlarge points

X-axis last 1 hours OR 1000 points

X-axis Label HH:mm:ss as UTC

Y-axis min max

Legend None Interpolate linear

Series Colours

Enabled

9. Bulk SMS:

Dev API

API Key

Security

For OTP Based SMS use 'OTP SMS API' [READ API DOCS](#)

Method

GET

Route

Quick SMS

Message (NOTE: Per SMS cost ₹ 3.50)

Less soil moisture detected-{{payload}}

Language

GET https://www.fast2sms.com/dev/bulkv2

Query Parameter :

authorization =
8PxDIUwBSN3urOKGdtRi9bJC75ZXfEMqeWvzonkpcAaTY1gmh2HYbRQaduOS
J4MAx8ri7nDyf1hqPNU3

route = q

message = Less soil moisture detected-{{payload}}

language = "english"

numbers = 9361004234

flash = "0"

Overall URL = https://www.fast2sms.com/dev/bulkv2?
authorization=8PxDIUwBSN3urOKGdtRi9bJC75ZXfEMqeWvzonkpcAaTY1gmh
2HYbRQaduOSJ4MAx8ri7nDyf1hqPNU3&route=q&message=Less%20soil%20
moisture%20detected-
%7B%7Bpayload%7D%7D&language=english&flash=0&numbers=9361004234

10.Switch Option:

Edit switch node

Delete Cancel Done

Properties

Name

Name

Property

msg. payload

20

→ 1

+ add

checking all rules

☐ recreate message sequences

11.Motor On:

Edit button node

Delete Cancel Done

Properties

Group [Controls] Motor Control

Size 4 x 2

Icon optional icon

Label MOTOR ON

Tooltip optional tooltip

Color optional text/icon color

Background #008000

When clicked, send:

Payload {"command":"motoron"}

12. Motor Off:

Edit button node

Delete Cancel Done

Properties

Group [Controls] Motor Control

Size 4 x 2

Icon optional icon

Label MOTOR OFF

Tooltip optional tooltip

Color optional text/icon color

Background #FF0000

When clicked, send:

Payload {"Command":"motoroff"}

13.IBM IoT Out node:

Edit ibmiot out node

Delete Cancel Done

Properties

Authentication API Key

API Key 7dd0c222.d9446c

Output Type Device Command

Device Type Device1

Device Id 67891

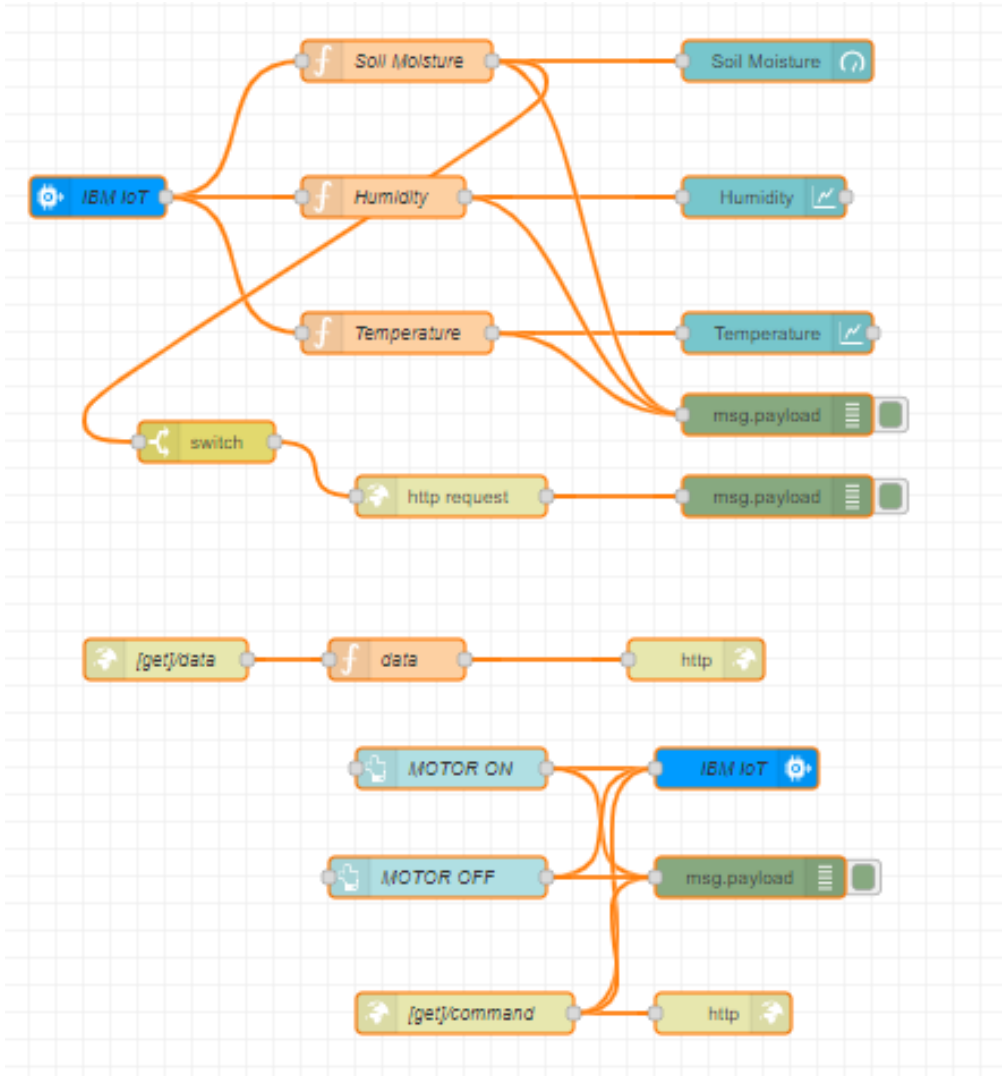
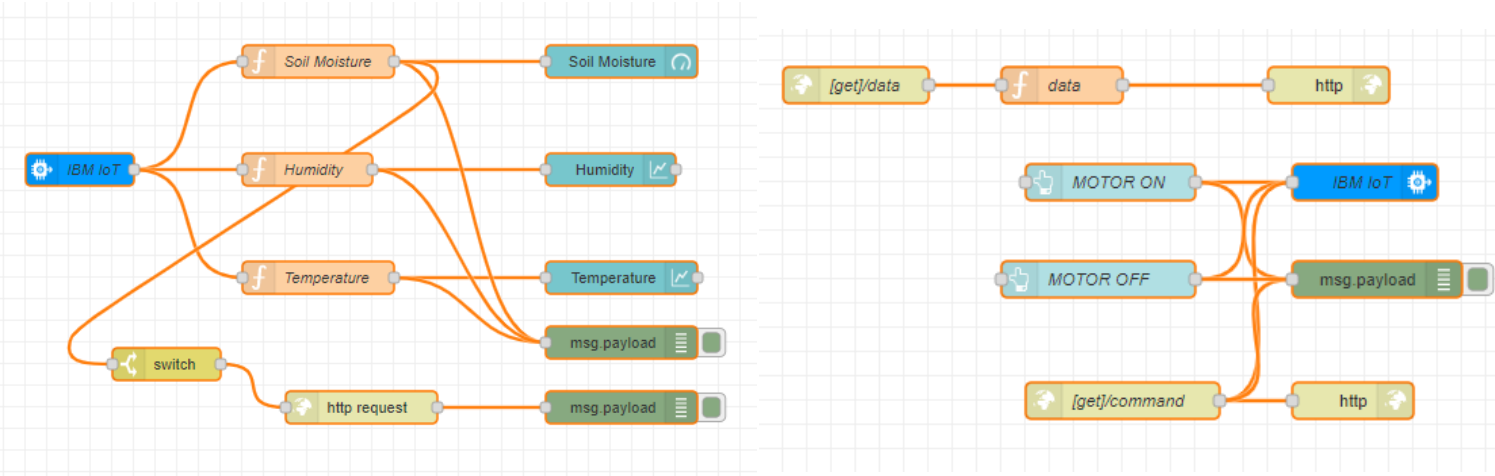
Command Type cmd

Format json

Data Data

QoS 0

14.Node-Red:



15. Outputs:

