

SPRINT-4

Date	17 November 2022
Team ID	PNT2022TMID47485
Project Name	Signs With Smart Connectivity For better Road Safety
Maximum marks	20 Marks

The screenshot shows the IBM Cloud dashboard interface. At the top, there's a navigation bar with links for 'Catalog', 'Manage', and 'Sneha S's Account'. On the right side, a user profile dropdown for 'Sneha S' is open, displaying options like 'Profile', 'Log in to CLI and API', 'Privacy', 'Change theme', and 'Logout'. The main dashboard area has sections for 'For you' and 'Build'. The 'Build' section features four cards: 'Set up your IBM Cloud account', 'Build a web app with Watson Speech to Text', 'Explore tutorials', and another card partially visible. At the bottom, there are tabs for 'User access', 'Manage users', 'News' (which is selected), 'View all', 'Planned maintenance', and 'View'.

IBM Watson IoT Platform x +

internetofthings.ibmcloud.com

IBM Watson IoT Platform

910019106040@student... ID: (select org)

The diagram illustrates the data flow process. It starts with a cloud icon on the left, connected by lines to a series of icons representing different data sources: a file folder, a smartphone, a car, and a gear. These lines converge into a single path labeled "Collect data from". This path leads to a central icon of a factory or industrial building labeled "Equipment". From the "Equipment" icon, lines branch out to a lightbulb and a smartphone, with the text "and make value from it" positioned between them. The entire diagram is set against a dark background with white lines and icons.

Collect data from

Equipment

and make value from it

Learn More

Cookie Preferences

Type here to search

20:55 07-11-2022

Service Details - IBM Cloud X IBM Watson IoT Platform X +

bmwoyw.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

910019106040@student.autmdu.in
ID: bmwoyw

Browse Action Device Types Interfaces Add Device +

Browse Devices

All Devices Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

<input type="checkbox"/>	Device ID	Status	Device Type	Class ID	Date Added
> <input type="checkbox"/>	PNT2022TMID47485	Disconnected	PNT2022TMID47485	Device	Nov 2, 2022 12:06 AM
> <input type="checkbox"/>	PNT2022TMID47485-1	Disconnected	PNT2022TMID47485-1	Device	Nov 2, 2022 12:37 AM

Items per page 50 | 1–2 of 2 items

1 Simulation running

Search by Device ID Device Simulator  

Type here to search      16:42 ENG 07-11-2022

Resource list - IBM Cloud IBM Watson IoT Platform Node-RED

bmwoyw.internetofthings.ibmcloud.com/dashboard/apps/browse/add

IBM Watson IoT Platform 910019106040@student.autmdu.in
ID: bmwoyw

Browse IBM Cloud Apps

The API key has been added.

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the API key to generate a new authentication token.

Generated Details		API Key Information	
API Key	a-bmwoyw-zmz8axzche	Description	-
Authentication Token	h4JInR*Hb*RHehQmLh	Role	Standard Application
		Expires	Never

⚠ Make a note of the generated authentication token.
Lost authentication tokens cannot be recovered. If you lose the token, you must reregister the API to generate a new token.

[View API Key](#) [Add Another](#) [Close](#)

1 Simulation running

Type here to search

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bmwoyy.internetofthings.ibmcloud.com/dashboard/devices/drilldown/PNT2022TMID47485:PNT2022TMID47485?returnTo=/devices/browse

IBM Watson IoT Platform

Device Drilldown - PNT2022TMID47485

Recent Events

The recent events listed show the live stream of data

Event	Value
event_1	{"temperature":18,"humidity":5}
event_1	{"temperature":18,"humidity":2}
event_1	{"temperature":100,"humidity":7}
event_1	{"temperature":53,"humidity":7}
event_1	{"temperature":60,"humidity":5}

Simulations

1/50 Simulations Running

+ New Simulation

Device Type
PNT2022TMID47485

1 Device

PNT2022TMID47485

1 x Create Simulated Device Use Registered Device

Type here to search

20:56 07-11-2022

IBM Watson IoT Platform

bmwoyy.internetofthings.ibmcloud.com/dashboard/devices/drilldown/PNT2022TMID47485:PNT2022TMID47485?returnTo=/devices/browse

Device Drilldown - PNT2022TMID47485

Recent Events

The recent events listed show the live stream of data

Event	Value
event_1	{"temperature":8,"humidity":92}
event_1	{"temperature":20,"humidity":55}
event_1	{"temperature":66,"humidity":45}
event_1	{"temperature":47,"humidity":55}
event_1	{"temperature":45,"humidity":25}

Device Type: PNT2022TMID47485

Events 1

New event type +

Event type name: event_1

Schedule: 20 Every Minute

Payload:

```
0 {
1   "temperature": random(0, 100),
2   "humidity": random(0,100),
3   "rain":random(0,100)
4 }
5
```

Upload a CSV file

Cancel Save

Type here to search

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bmwoyw.internetofthings.ibmcloud.com/dashboard/devices/drilldown/PNT2022TMID47485:PNT2022TMID47485?returnTo=/devices/browse

IBM Watson IoT Platform

910019106040@student.autmdu.in
ID: bmwoyw

Device Drilldown - PNT2022TMID47485

Connection Information

- Recent Events
- State
- Device Information
- Metadata
- Diagnostics
- Connection Logs
- Device Actions

Recent Events

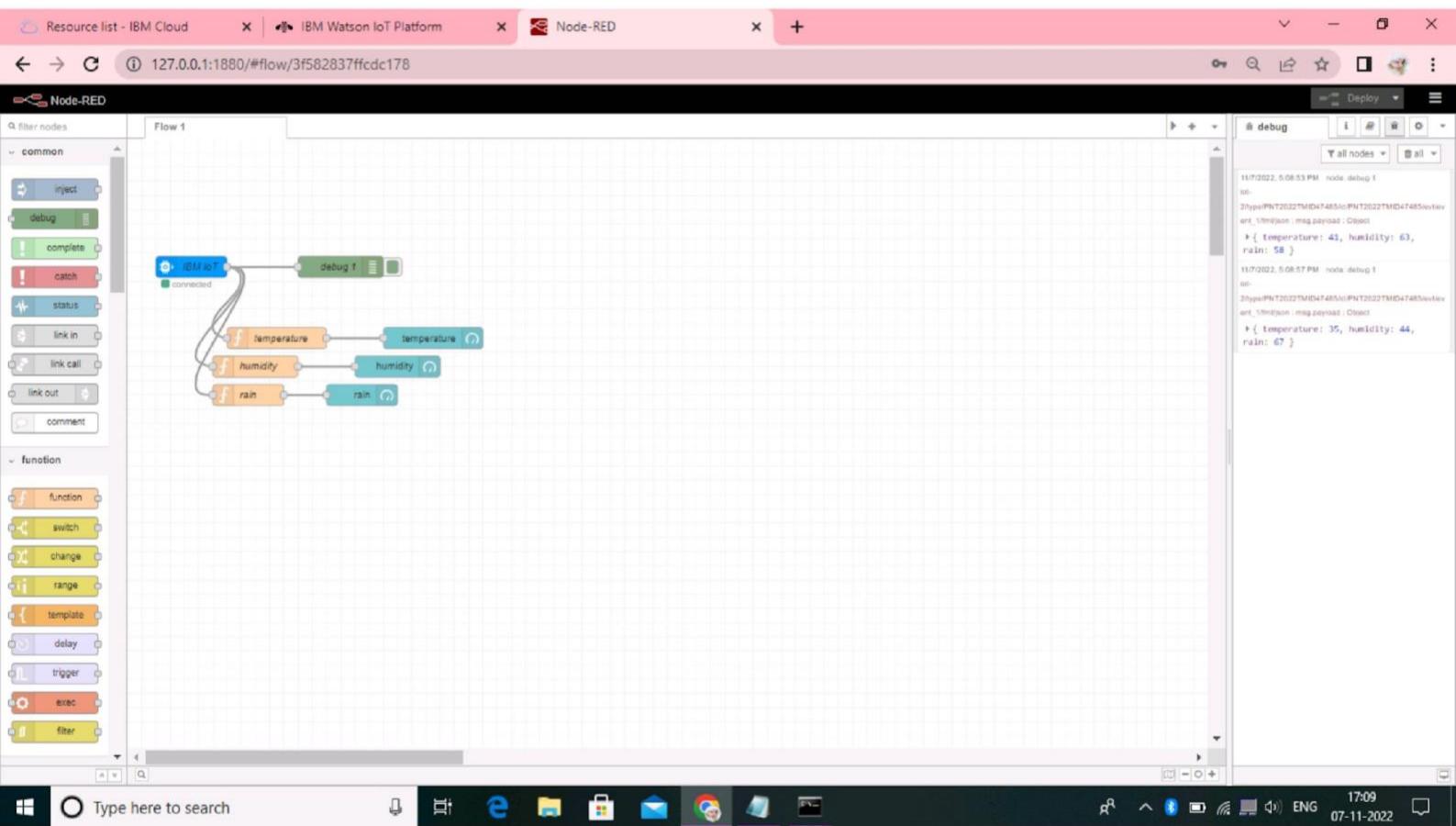
The recent events listed show the live stream of data that is coming and going from this device.

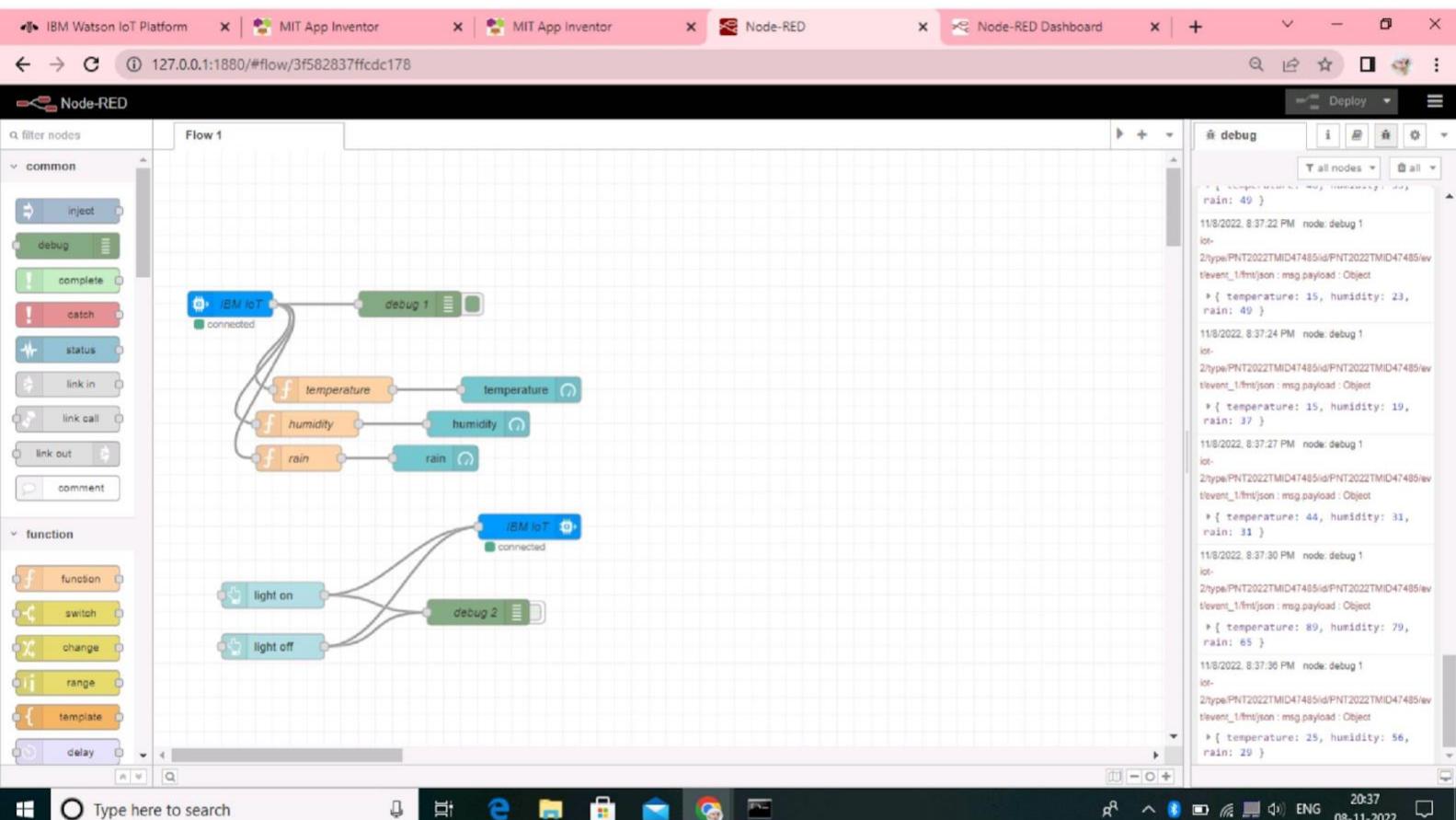
Event	Value	Format	Last Received
event_1	{"temperature":12,"humidity":63,"rain":69}	json	a few seconds ago
event_1	{"temperature":68,"humidity":30,"rain":44}	json	a few seconds ago
event_1	{"temperature":97,"humidity":28,"rain":0}	json	a few seconds ago
event_1	{"temperature":47,"humidity":12,"rain":70}	json	a few seconds ago
event_1	{"temperature":16,"humidity":3,"rain":4}	json	a few seconds ago

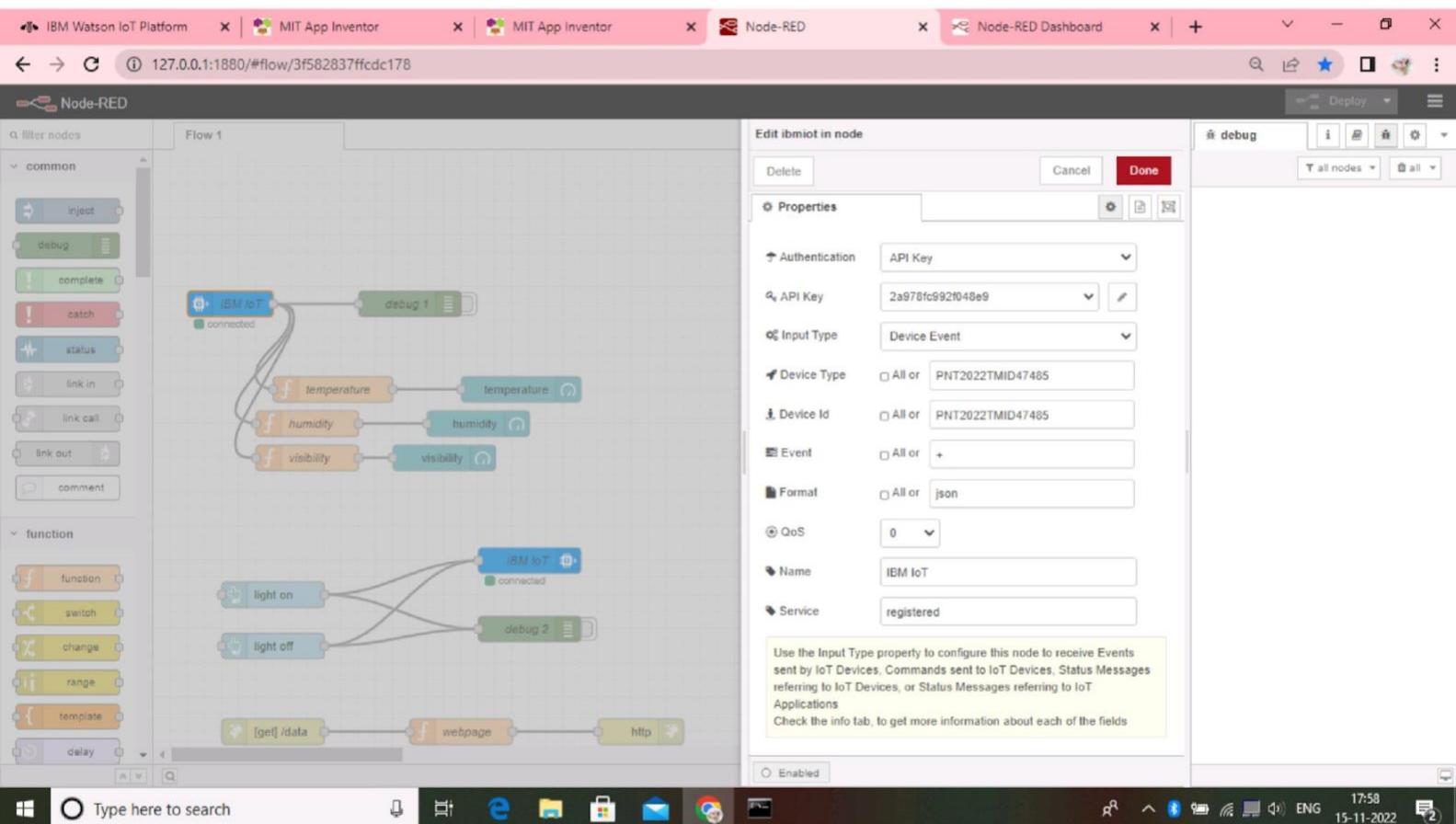
1 Simulation running

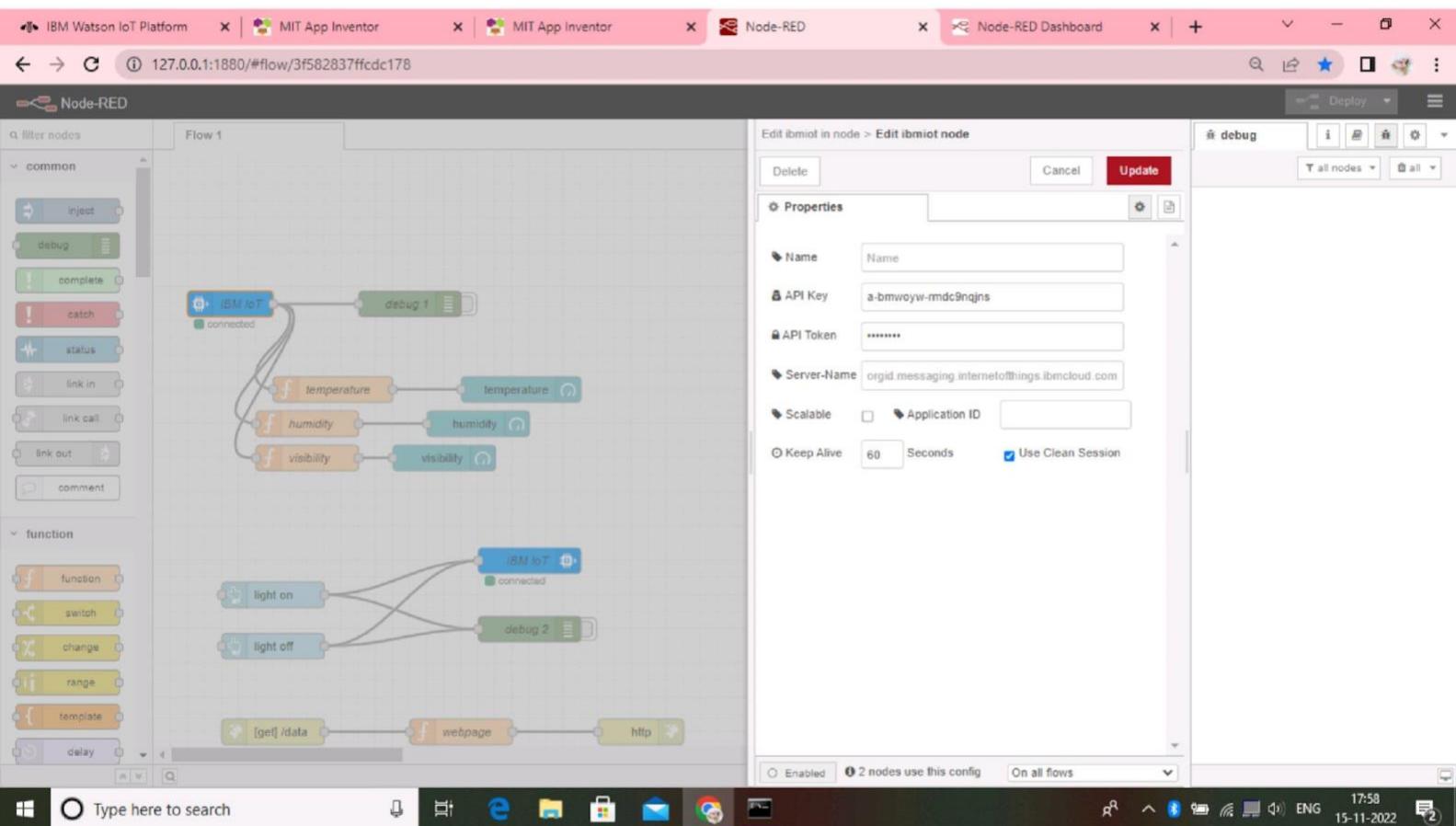
Type here to search

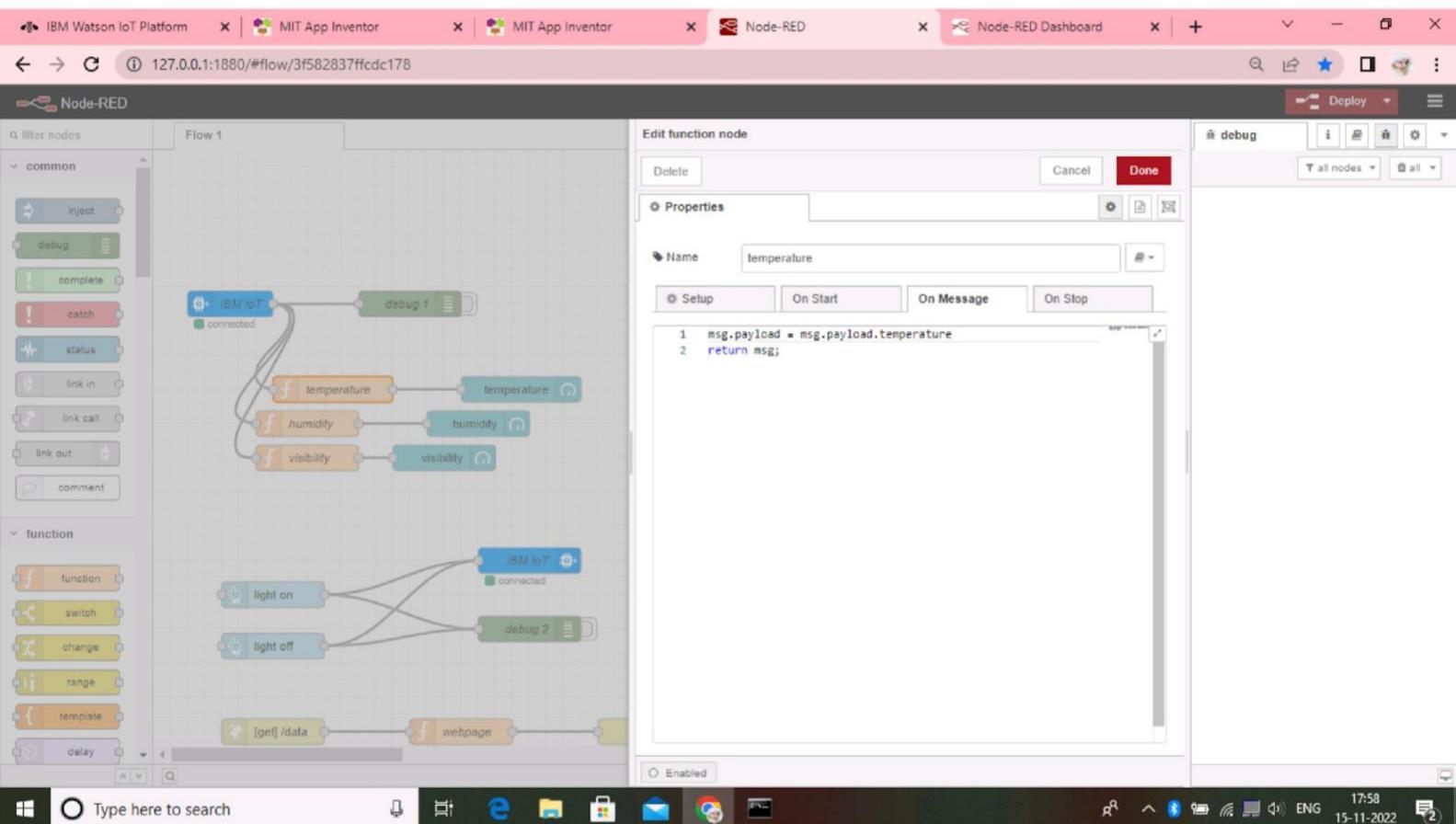
21:07 07-11-2022

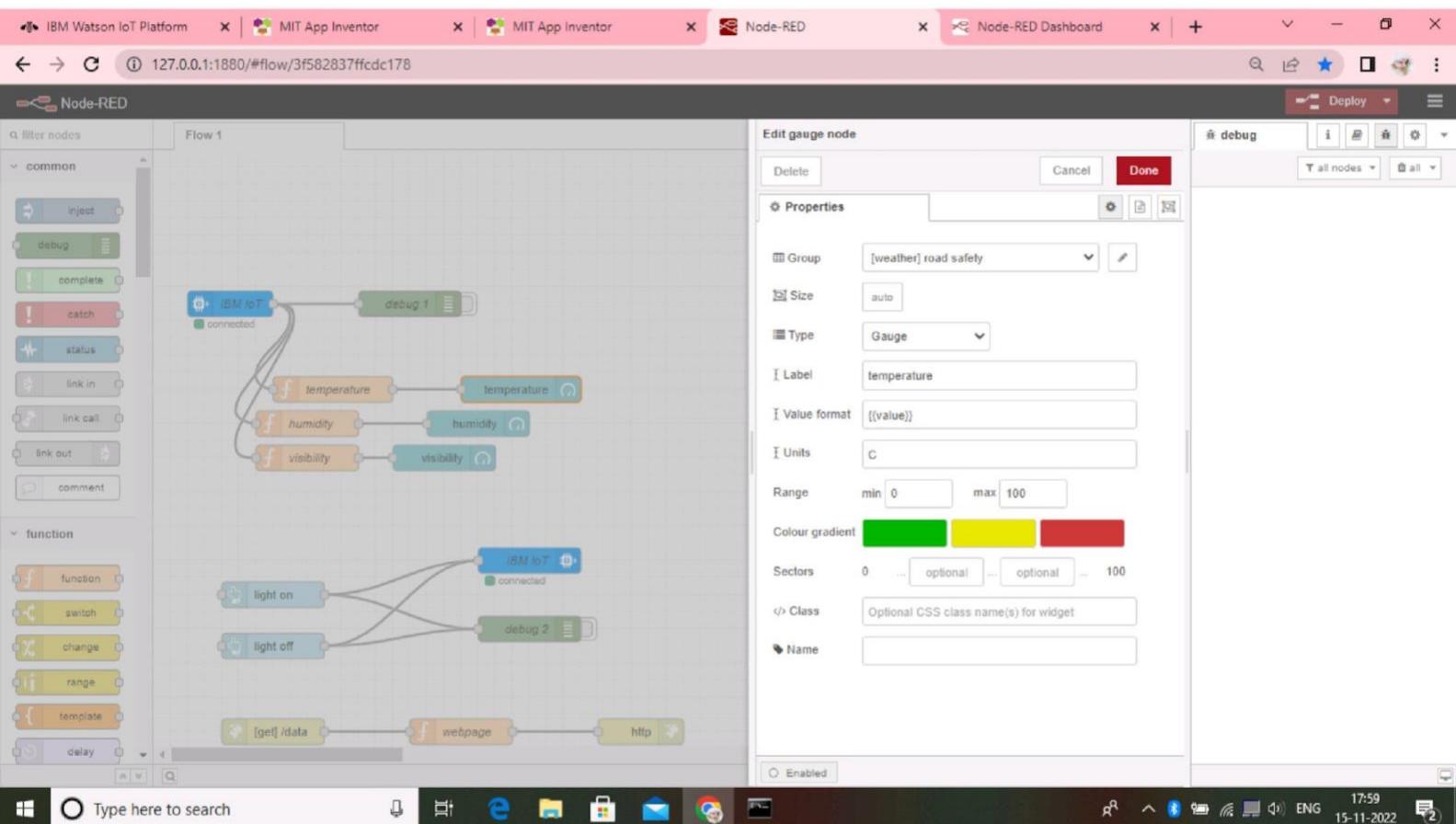


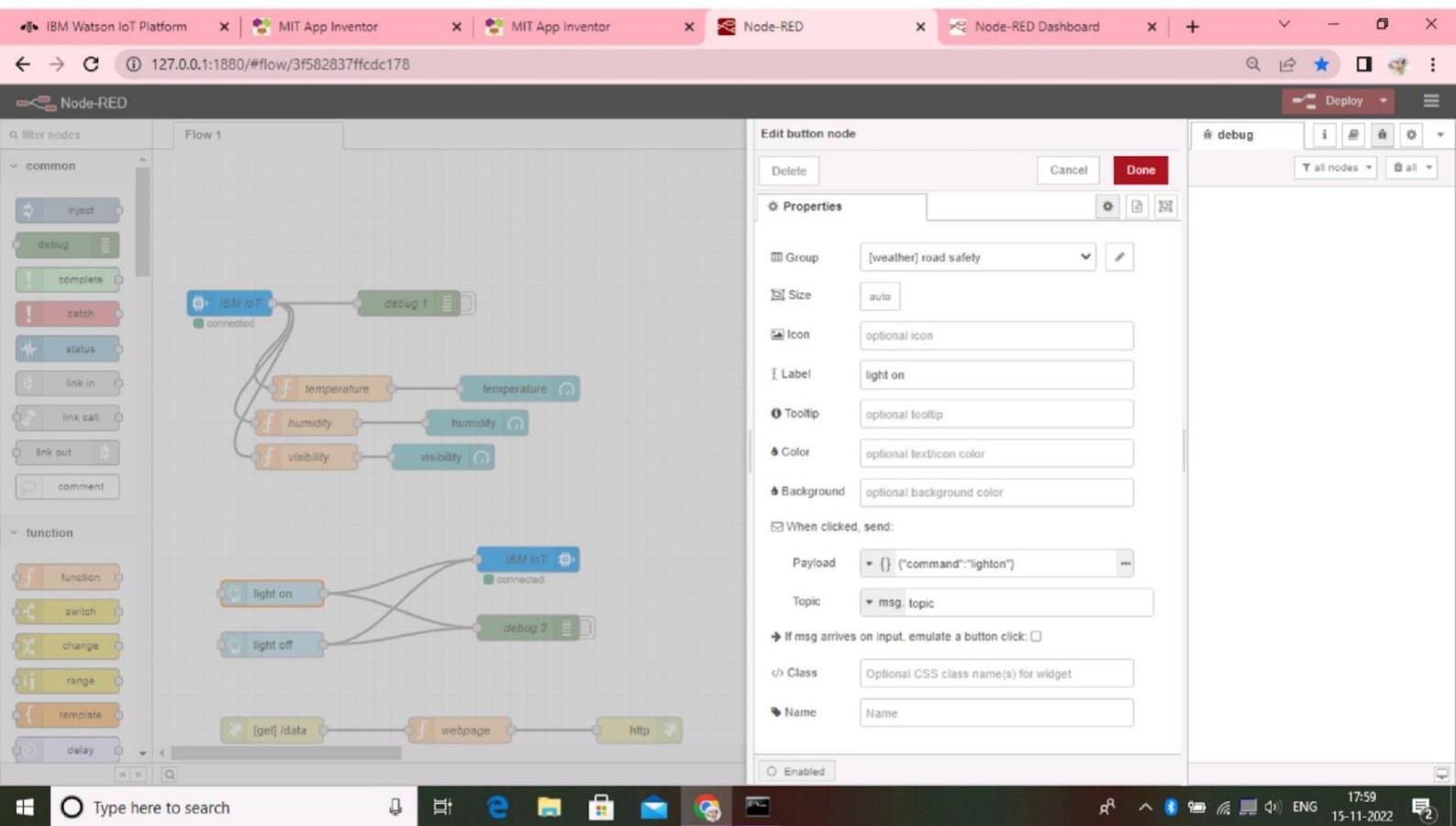


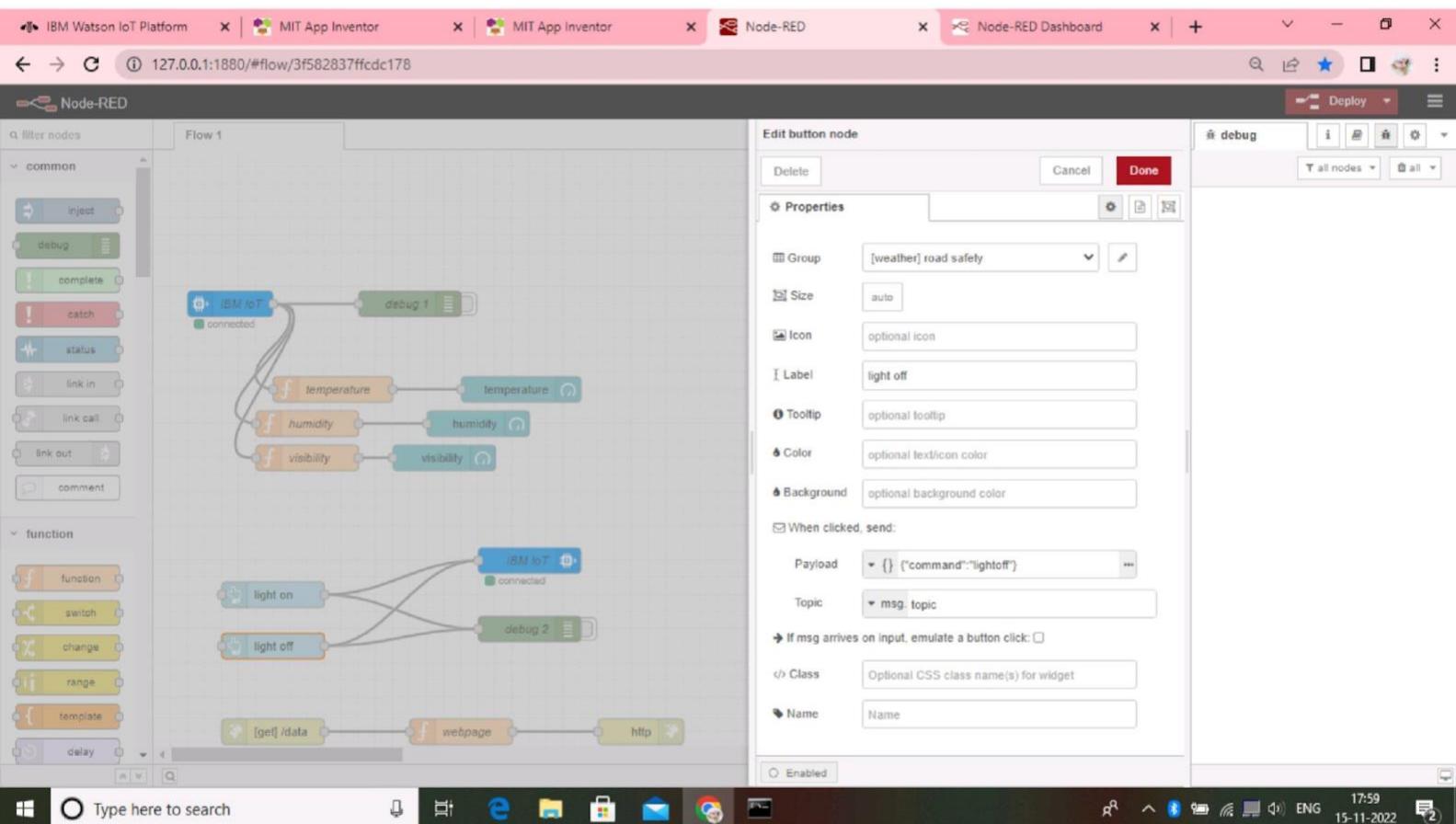


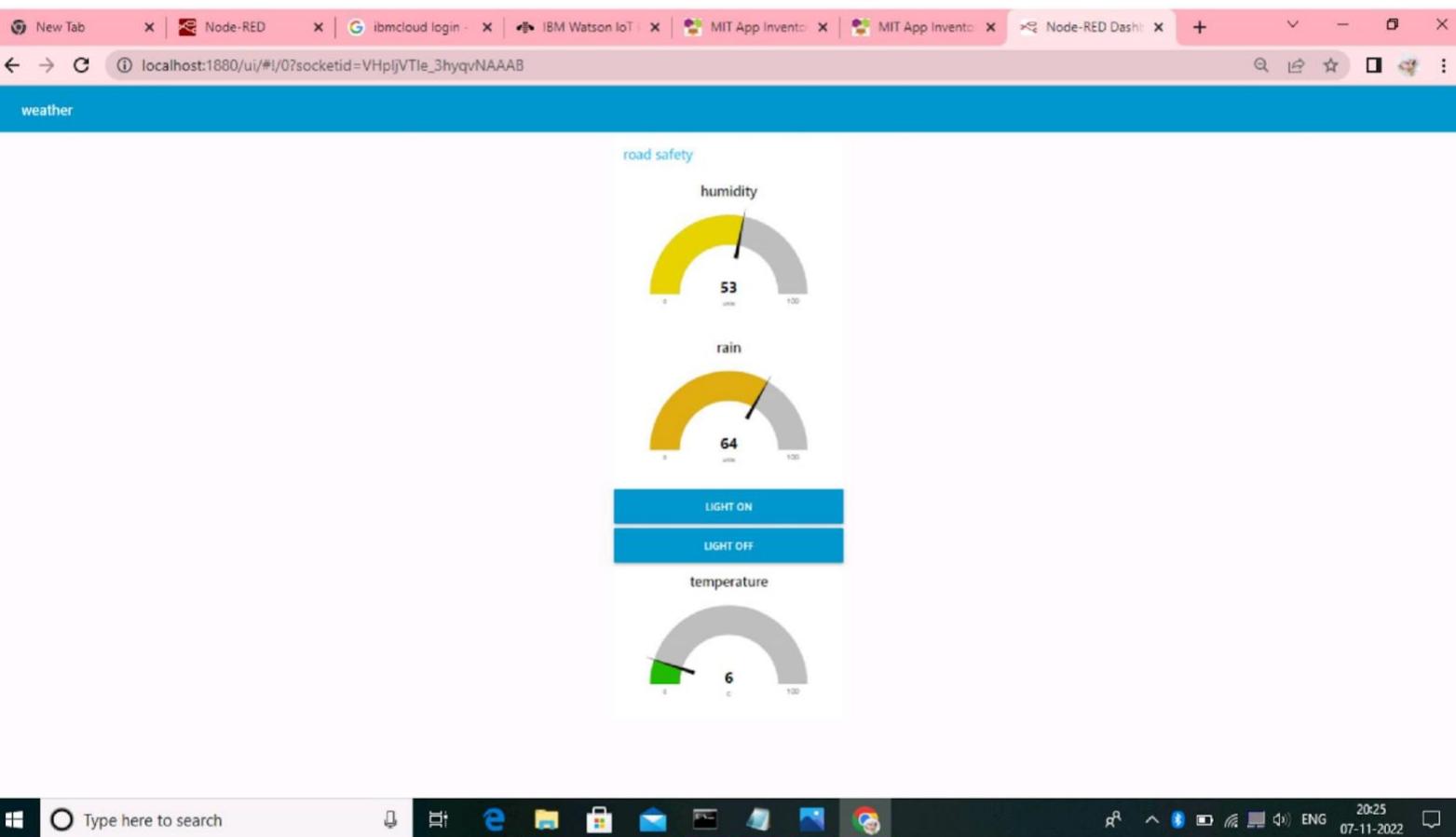


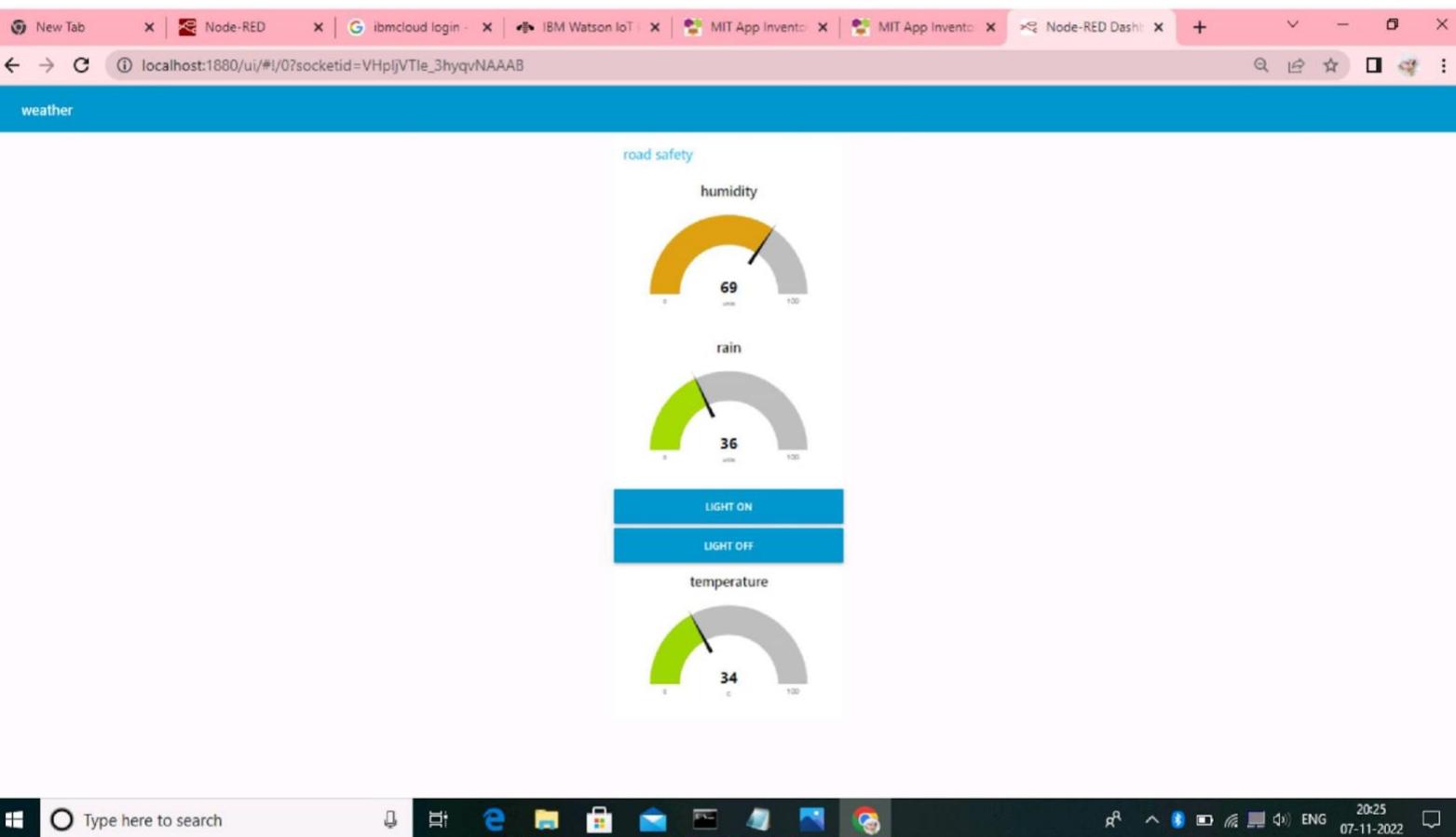












IBM Watson IoT Platform | Node-RED | mit app inventor - Google Search | +

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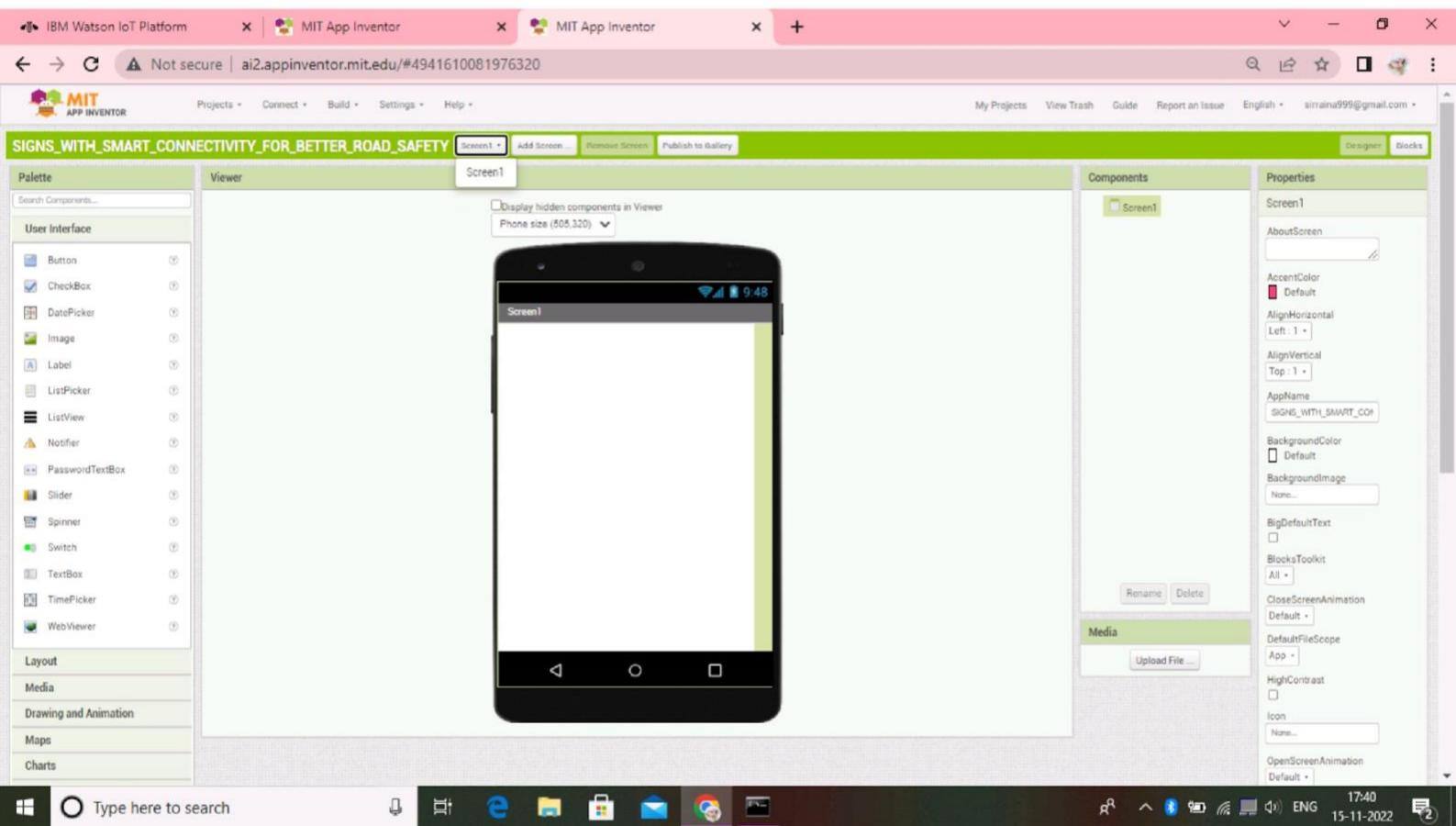

App Inventor for Android
Computer program

MIT App Inventor is a web application integrated development environment originally provided by Google, and now maintained by the Massachusetts Institute of Technology. [Wikipedia](#)

Initial release date: 15 December 2010
Operating system: [Android](#)

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17:31 15-11-2022 ENG



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SIGNS_WITH_SMART_CONNECTIVITY_FOR_BETTER_ROAD_SAFETY Screen1 Add Screen Remove Screen Publish to Gallery

Designer Blocks

Palette

User Interface

Layout

Media

Drawing and Animation

Maps

Charts

Sensors

AccelerometerSensor

BarcodeScanner

Barometer

Clock

GyroscopeSensor

Hygrometer

LightSensor

LocationSensor

MagneticFieldSensor

NearField

OrientationSensor

Pedometer

ProximitySensor

Thermometer

Viewer

Display hidden components in Viewer
Phone size (505,320)

Screen

Non-visible components

Web1 Web2 Clock1

Components

Screen1

Web1

Web2

Clock1

Properties

Clock1

TimerAlwaysFires

TimerEnabled

TimerInterval

1000

Rename Delete

Media

Upload File ...

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SIGNS_WITH_SMART_CONNECTIVITY_FOR_BETTER_ROAD_SAFETY Screen1 Add Screen Remove Screen Publish to Gallery

Designer Blocks

Palette

User interface

- Button
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebView

Layout

Media

Drawing and Animation

Maps

Charts

Viewer

Display hidden components in Viewer
Phone size (505,320)

Screen

9:48

Non-visible components

Web1 Web2 Clock1

Components

- Screen
- HorizontalArrangement1
- HorizontalArrangement2
- HorizontalArrangement3
- HorizontalArrangement4
- Web1
- Web2
- Clock1

Properties

TextBox1

BackgroundColor Default

Enabled

FontBold

FontItalic

FontSize 14.0

FontTypeface default

Height Automatic

Width Automatic

Hint Hint for TextBox1

MultiLine

NumbersOnly

ReadOnly

Text

TextAlignment left: 0

Type here to search

17:44 15-11-2022

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SIGNS_WITH_SMART_CONNECTIVITY_FOR_BETTER_ROAD_SAFETY Screen1 Add Screen Remove Screen Publish to Gallery

Designs Blocks

Palette

User Interface

- Button
- CheckBox
- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox
- TimePicker
- WebView

Layout

Media

Drawing and Animation

Maps

Charts

Viewer

Display hidden components in Viewer
Phone size (508,320)

Screen

Text for Button2

Text for Button3

Text for Button1

Text for Button4 Text for Button5

Non-visible components

Web1 Web2 Clock1

Components

- Screen
- HorizontalArrangement1
- HorizontalArrangement2
- HorizontalArrangement3
- HorizontalArrangement4
- HorizontalArrangement5
- HorizontalArrangement6
- Button1
- Button2
- Button3
- Button4
- Button5
- Web1
- Web2
- Clock1

Properties

HorizontalArrangement1

- AlignHorizontal Center : 3 +
- AlignVertical Top : 1 +
- BackgroundColor Default
- Height Automatic...
- Width Fill parent...
- Image None...
- Visible

Designs Blocks

Type here to search

17:47 15-11-2022

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The screenshot shows the MIT App Inventor interface with a project titled "SMART ROAD SAFETY". The main workspace displays a smartphone screen with several UI components: a title bar "SMART ROAD SAFETY", a button labeled "TEMPERATURE", a button labeled "HUMIDITY" (which is highlighted in green), a text input field "Text for Button1", and two empty text input fields below it. A sidebar on the left lists various component types like DatePicker, Image, Label, etc., with "TextBox" selected. Another sidebar on the right shows the current properties for the "HUMIDITY" button, including its text ("HUMIDITY"), font size (14.0), and visibility (Visible checked). At the bottom, there's a search bar, a taskbar with icons for file operations, and a system tray showing the date and time.

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The screenshot shows the MIT App Inventor interface with a project titled "SMART ROAD SAFETY". The main workspace displays a smartphone screen with four horizontal panels: "TEMPERATURE", "HUMIDITY", "RAIN", and "CONTROL". The "CONTROL" panel contains two buttons: "LIGHT ON" and "LIGHT OFF". The "CONTROL" panel has a pink background and white text. Below the phone screen, there is a section labeled "Non-visible components" with icons for "Web1", "Web2", and "Clock1".

Left sidebar (Components):

- DatePicker
- Image
- Label
- ListPicker
- ListView
- Notifier
- PasswordTextBox
- Slider
- Spinner
- Switch
- TextBox **(selected)**
- TimePicker
- WebViewer

Bottom sidebar (Properties):

- FontBold
- FontItalic
- FontSize 14.0
- FontTypeface default
- Height Automatic...
- Width Automatic...
- Hint Hint for TextBox
- MultiLine
- NumbersOnly
- ReadOnly
- Text CONTROL
- TextAlignment left: 0
- TextColor Pink
- Visible

Bottom navigation bar:

- Type here to search
- Windows Start button
- File
- Home
- Recent
- Task View
- Search
- Start
- Edge browser icon
- File Explorer icon
- Mail icon
- Google Chrome icon
- Power icon
- Network icon
- System icon
- Volume icon
- Bluetooth icon
- Signal strength icon
- ENG
- 17:51
- 15-11-2022
- Feedback icon

MIT APP INVENTOR

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Signs_with_Smart_Connectivity_for_Better_Road_Safety | Screen1 | Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Blocks

- Built-in
 - Control
 - Logic
 - Math
 - Text
 - Lists
 - Dictionaries
 - Colors
 - Variables
 - Procedures
- Screen1
 - HorizontalArrangement1
 - Label1
 - HorizontalArrangement2
 - Label2
 - TextBox1
 - HorizontalArrangement3
 - Label3

Rename Delete

Media

Upload File ...

Show Warnings

when Clock1 .Timer
do set Web1 . Url to []

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IoT-B1-1M3E (Evening) | IBM Watson IoT Platfo | Node-RED : 169.51.206.102:30859/red/#flow/f9f308d8a3dd88b | IBM Cloud | Node-RED Dashboard | MIT App Inventor | MIT App Inventor | Update

Flow 1

Node-RED

filter nodes

delay

trigger

filter

OpenWhisk

network

mqtt in

mqtt out

http in

http response

http request

websocket in

websocket out

tcp in

tcp out

tcp request

udp in

udp out

IBM IoT

msg.payload

Temperature node

Humidity node

Visibility node

http

Light ON

Light OFF

Edit http in node

Properties

Delete Cancel Done

Method: GET

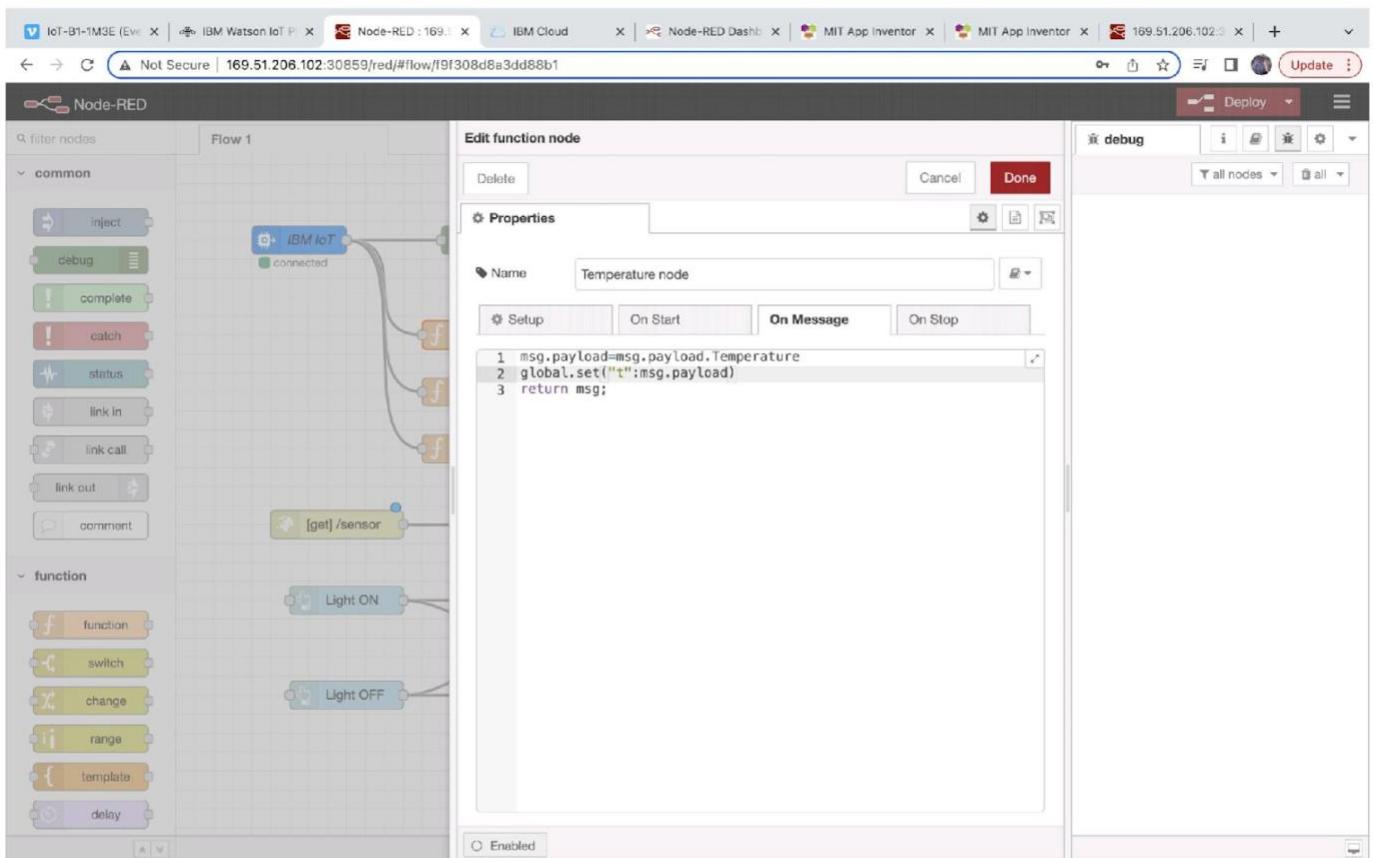
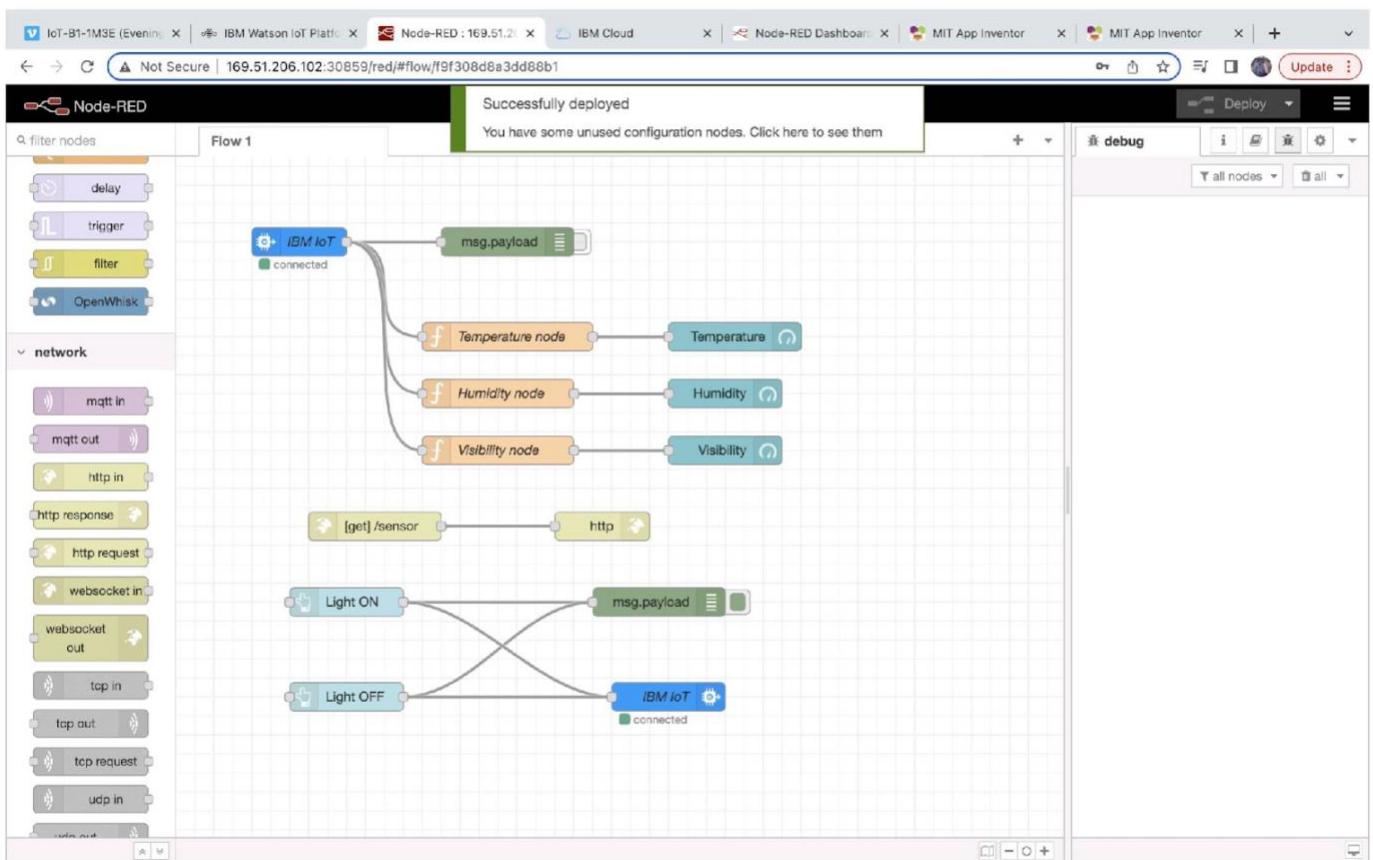
URL: /sensor

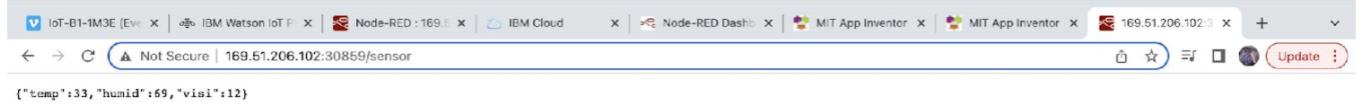
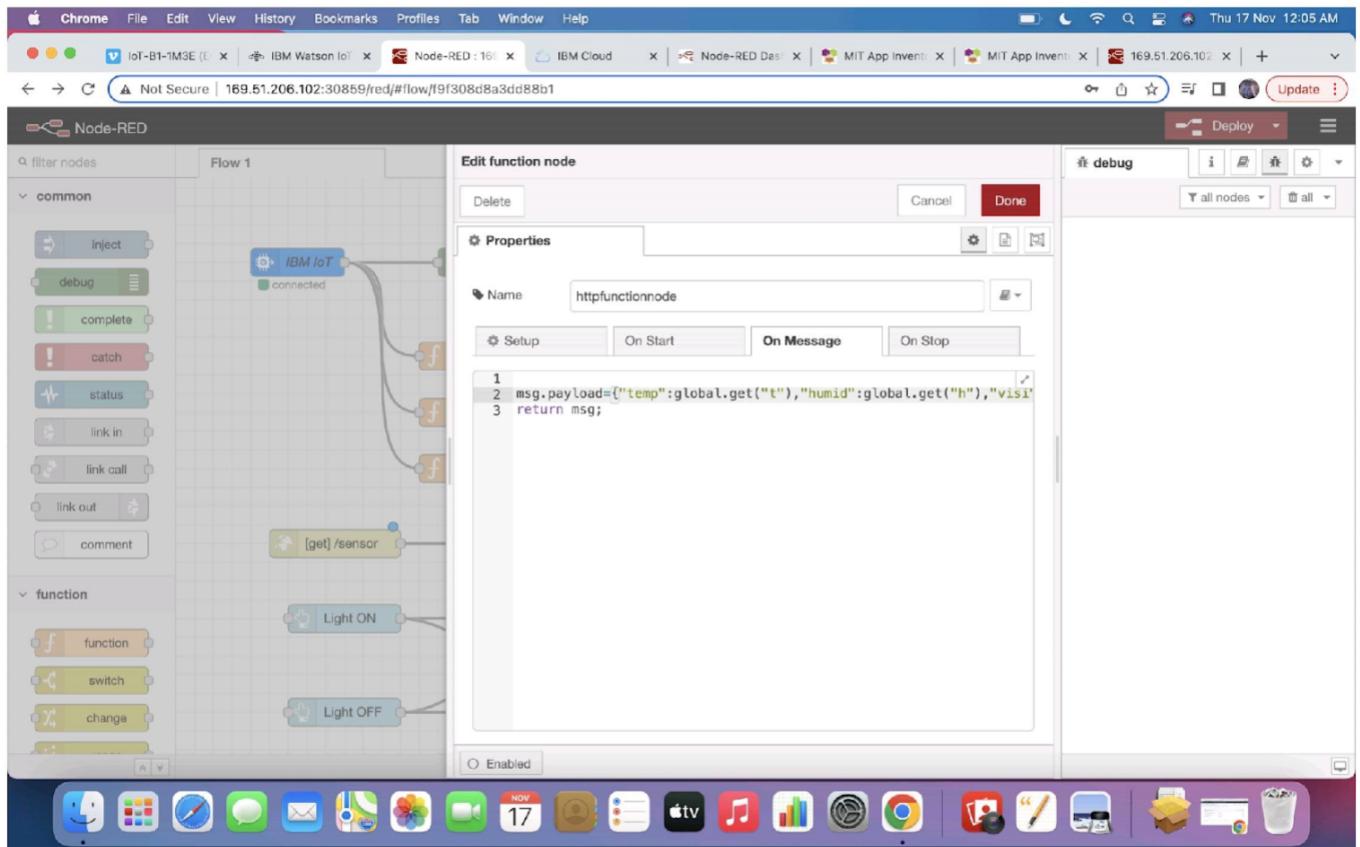
Name: Name

Enabled

debug

all nodes all





IoT-B1-1M3E (Mo) | IBM Watson IoT P | Node-RED : 169. | IBM Cloud | Node-RED Dashb | MIT App Inventor | MIT App Inventor | 169.51.206.102: | +

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Signs_with_Smart_Connectivity_for_Better_Road_Safety

Screen1 Add Screen... Remove Screen Publish to Gallery Designer Blocks

Blocks

- HorizontalArrangement2
 - Label2
 - TextBox1
- HorizontalArrangement3
 - Label3
 - TextBox2
- HorizontalArrangement4
 - Label4
 - TextBox3
- HorizontalArrangement5
 - Label5
- HorizontalArrangement6
 - Button1
 - Button2
- Web1
- Web2
- Clock1
- Any component

Rename Delete

Media

Upload File ...

0 Show Warnings

when Clock1 .Timer
do set Web1 . Url to "http://169.51.206.102:30859/sensor"
call Web1 . Get

when Web1 . GotText
url responseCode responseType responseContent
do set TextBox1 . Text to lock up pairs key temp
pairs notFound "not found"
call Web1 . JsonTextDecode jsonText get responseContent
set TextBox2 . Text to lock up pairs key humid
pairs notFound "not found"
call Web1 . JsonTextDecode jsonText get responseContent
set TextBox3 . Text to lock up pairs key visi
pairs notFound "not found"
call Web1 . JsonTextDecode jsonText get responseContent

IoT-B1-1M3E (Mo) | IBM Watson IoT P | Node-RED : 169. | IBM Cloud | Node-RED Dashb | MIT App Inventor | MIT App Inventor | 169.51.206.102: | +

Not Secure | 169.51.206.102:30859/red/#flow/f9f30Bd8a3cd86b1

Node-RED Deploy

Signs

filter nodes

Blocks

- switch
- change
- range
- template
- delay
- trigger
- filter
- OpenWhisk
- network
 - mqtt in
 - mqtt out
 - http in
 - http response
 - http request
 - websocket in
 - websocket out
 - tcp in
- Any

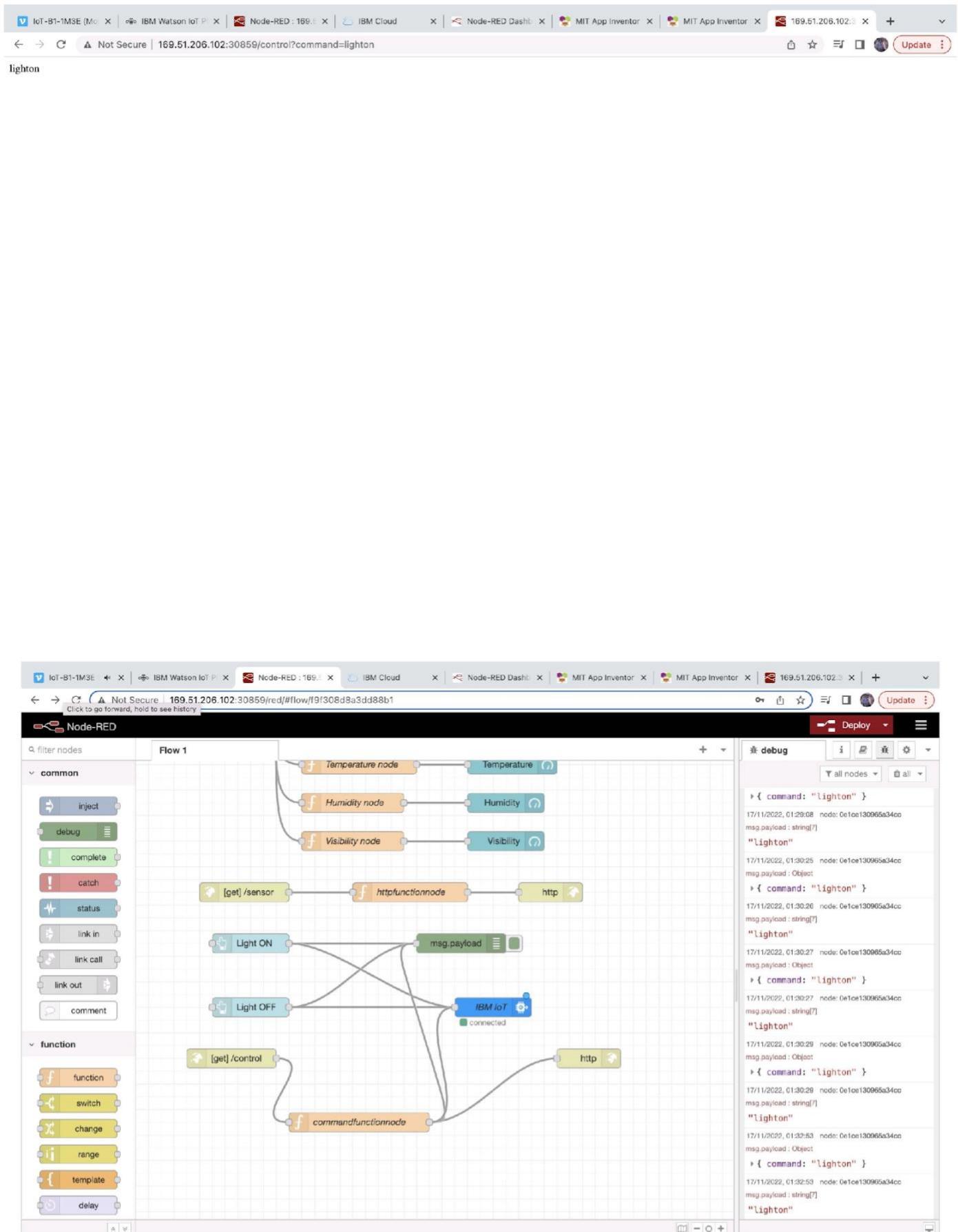
Flow 1

```

graph TD
    IBMIoT[IBM IoT connected] --> msgPayload1[msg.payload]
    msgPayload1 --> TemperatureNode[Temperature node]
    msgPayload1 --> HumidityNode[Humidity node]
    msgPayload1 --> VisibilityNode[Visibility node]
    TemperatureNode --> Temperature[Temperature]
    HumidityNode --> Humidity[Humidity]
    VisibilityNode --> Visibility[Visibility]
    
    [get]/sensor --> httpFunctionNode[httpfunctionnode]
    httpFunctionNode --> http[http]
    
    LightON[Light ON] --> msgPayload2[msg.payload]
    LightON --> IBMIoT2[IBM IoT connected]
    LightOFF[Light OFF] --> IBMIoT2
    
    [get]/control --> http2[http]
  
```

debug

all nodes all



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Signs_with_Smart_Connectivity_for_Better_Road_Safety Screen1 Add Screen ... Remove Screen Publish to Gallery Designer Blocks

Blocks

- HorizontalArrangement2
 - Label2
 - TextBox1
- HorizontalArrangement3
 - Label3
 - TextBox2
- HorizontalArrangement4
 - Label4
 - TextBox3
- HorizontalArrangement5
 - Label5
- HorizontalArrangement6
 - Button1
 - Button2
- Web1
- Web2
- Clock1
- Any component

Rename Delete

Media

Upload File ... Show Warnings

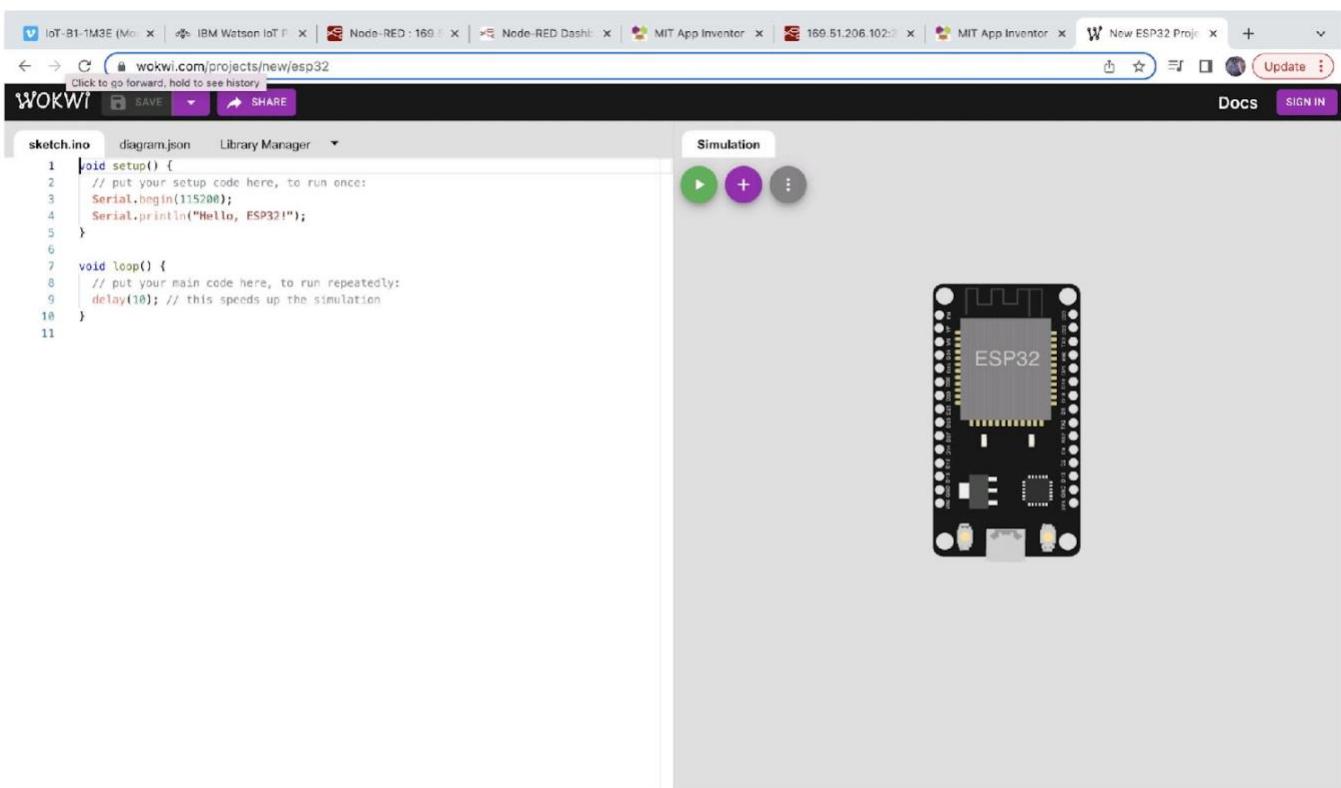
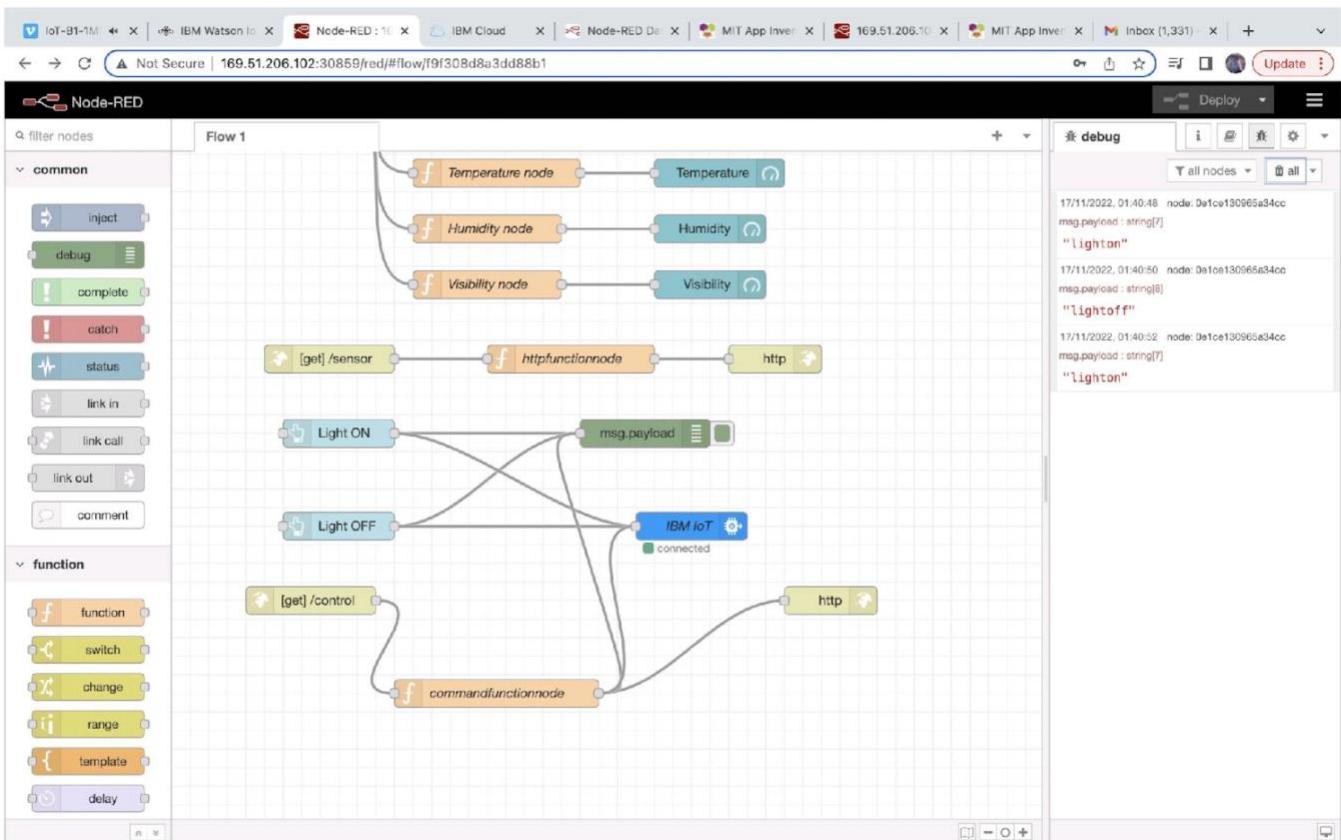
Viewer

```

set TextBox2 . Text to look up in pairs key
  pairs notFound "not found"
  pairs "humid"
  pairs call Web1 .JsonTextDecode jsonText get responseContent
set TextBox3 . Text to look up in pairs key
  pairs notFound "not found"
  pairs "visi"
  pairs call Web1 .JsonTextDecode jsonText get responseContent
when Button1 .Click
do set Web2 . Url to "http://169.51.206.102:30859/control?command=light"
call Web2 .Get
when Button2 .Click
do set Web2 . Url to "http://169.51.206.102:30859/control?command=light"
call Web2 .Get
  
```

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WOKWI

sketch.ino

```

1 void setup() {
2     // put your setup code here, to run once:
3     Serial.begin(115200);
4     Serial.println("Hello, ESP32!");
5 }
6
7 void loop() {
8     // put your main code here, to run repeatedly:
9     delay(10); // this speeds up the simulation
10 }
11

```

Simulation

WOKWI

sketch.ino

```

1 #include <WiFi.h> // Library for wifi
2 #include <PubSubClient.h> // Library for MQTT
3 #include "DHT.h" // Library for dht12
4 #define DHTPIN 4      // what pin we're connected to
5 #define DHTTYPE DHT11 // define type of sensor DHT 11
6 #define LED 5
7 DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of dht connect
8
9 void callback(char* subscibetopic, byte* payload, unsigned int payloadLength);
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "0jjs12" // IBM ORGANIZATION ID
14 #define DEVICE_TYPE "b1m3deviceType" // Device type mentioned in IBM Watson IoT Platform
15 #define DEVICE_ID "b1m3deviceid" // Device ID mentioned in IBM Watson IoT Platform
16 #define TOKEN "_zIY3G70s50?M5pul0" // Token
17 String data3;
18 float h, t;
19
20
21 //----- Customise the above values -----
22 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
23 char publishTopic[] = "iot-2/evt/data/fmt/json"; // topic name and type of event perform a
24 char subscribeTopic[] = "iot-2/cmd/test/fmt/String"; // cmd REPRESENT command type AND CO
25 char authMethod[] = "use-token-auth"; // authentication method
26 char token[] = TOKEN;
27 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; // client id
28
29
30 //-----
31 WiFiClient wifiClient; // creating the instance for WiFi Client
32 PubSubClient client(server, 1883, callback, wifiClient); // calling the predefined client
33 void setup() // configuring the ESP32
34 {
35     Serial.begin(115200);
36     dht.begin();
37     pinMode(LED, OUTPUT);
38     delay(10);

```

Simulation

WOKWI

sketch.ino • diagram.json • libraries.txt • Library Manager

```

1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #include "DHT.h" // Library for dht11
4 #define DHTPIN 15 // what pin we're connected to
5 #define DHTTYPE DHT22 // define type of sensor DHT 11
6 #define LED 2
7 DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type of dht connect
8
9 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
10
11 //-----credentials of IBM Accounts-----
12
13 #define ORG "33lnun"//IBM ORGANITION ID
14 #define DEVICE_TYPE "PNT2022TMID47485"//Device type mentioned in ibm watson IOT Platform
15 #define DEVICE_ID "PNT2022TMID47485"//Device ID mentioned in ibm watson IOT Platform
16 #define TOKEN "4EChe(J)Sq6*!-rwUF" //Token
17 String data3;
18 float h, t;
19
20
21 //----- Customise the above values -----
22 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
23 char publishTopic[] = "iot-2/evt>Data/fmt/json"; // topic name and type of event perform a
24 char subscribeTopic[] = "iot-2/cmd/test/fmt/String"; // cmd REPRESENT command type AND
25 char authMethod[] = "use-token-auth"; // authentication method
26 char token[] = TOKEN;
27 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
28
29
30 //-----
31 WiFiClient wifiClient; // creating the instance for wifiClient
32 PubSubClient client(server, 1883, callback ,wifiClient); //calling the predefined client
33 void setup()// configuring the ESP32
34 {
35   Serial.begin(115200);
36   dht.begin();
37   pinMode(LED,OUTPUT);
38   delay(10);
39   Serial.println();
40   wifiConnect();

```

Simulation

WOKWI

sketch.ino • diagram.json • libraries.txt • Library Manager

```

1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #include "DHT.h" // Library for dht11
4 #define DHTPIN 15 // What pin we're connected to
5 #define DHTTYPE DHT22 // Define type of sensor DHT 11
6 #define LED 2
7 DHT dht (DHTPIN, DHTTYPE); // Creating the instance by passing pin and type of dht connect
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```

Simulation

00:31.033 66%

Connecting to ...
WiFi connected
IP address:
10.10.0.2
Reconnecting client to 33lnun.messaging.internetofthings.ibmcloud.com
.....