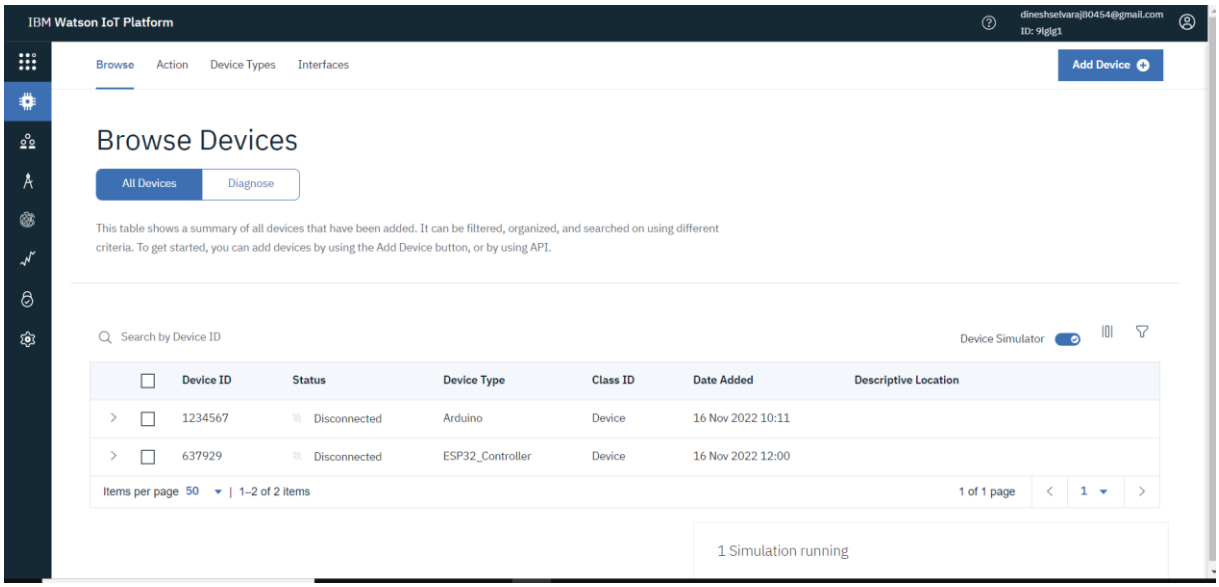
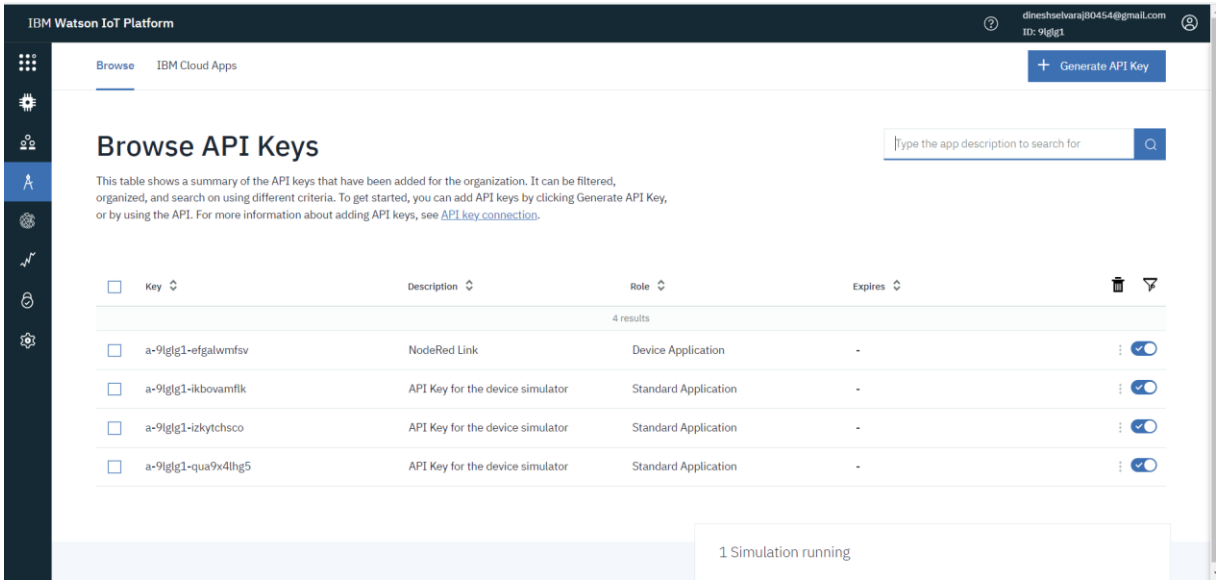
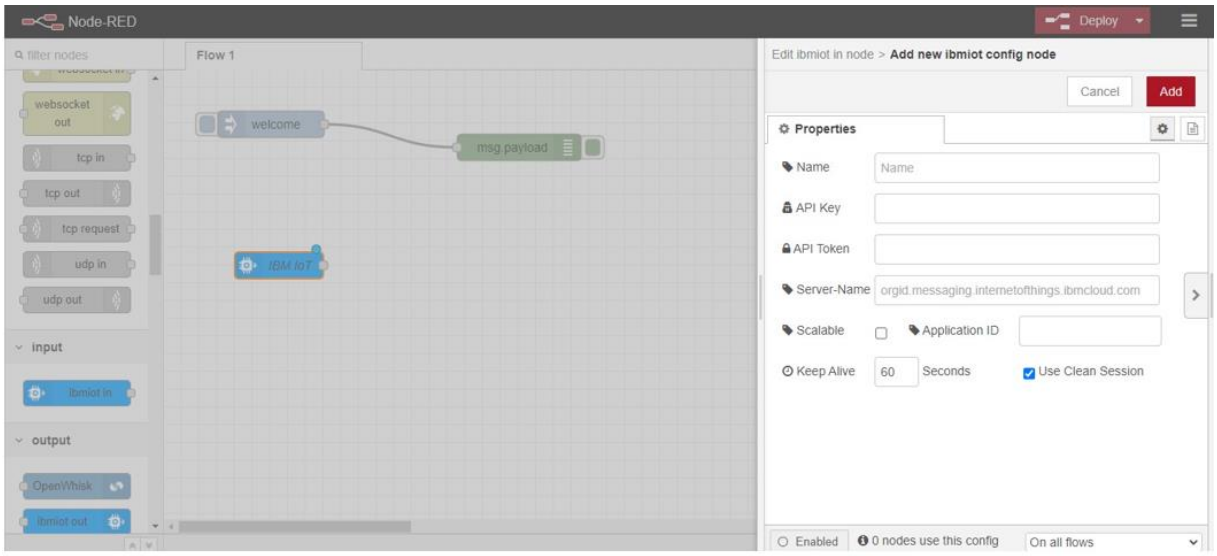
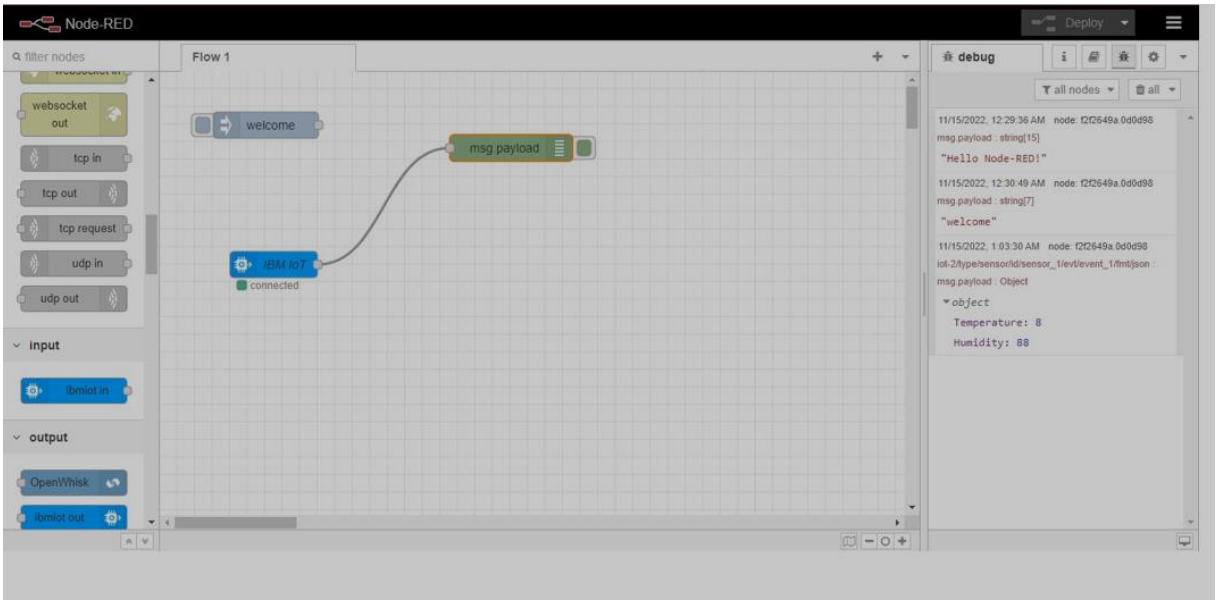
Build A Web Application Using Node-RED

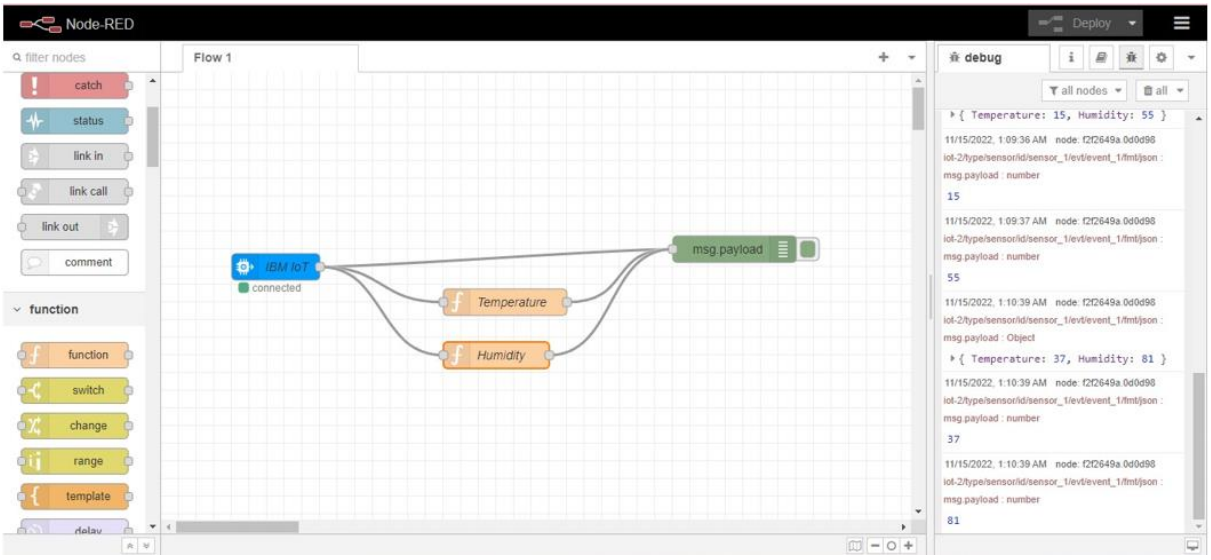
Team ID	PNT2022TMID31754
Project Name	Smart Farmer-IOT Enabled Smart FarmingApplication

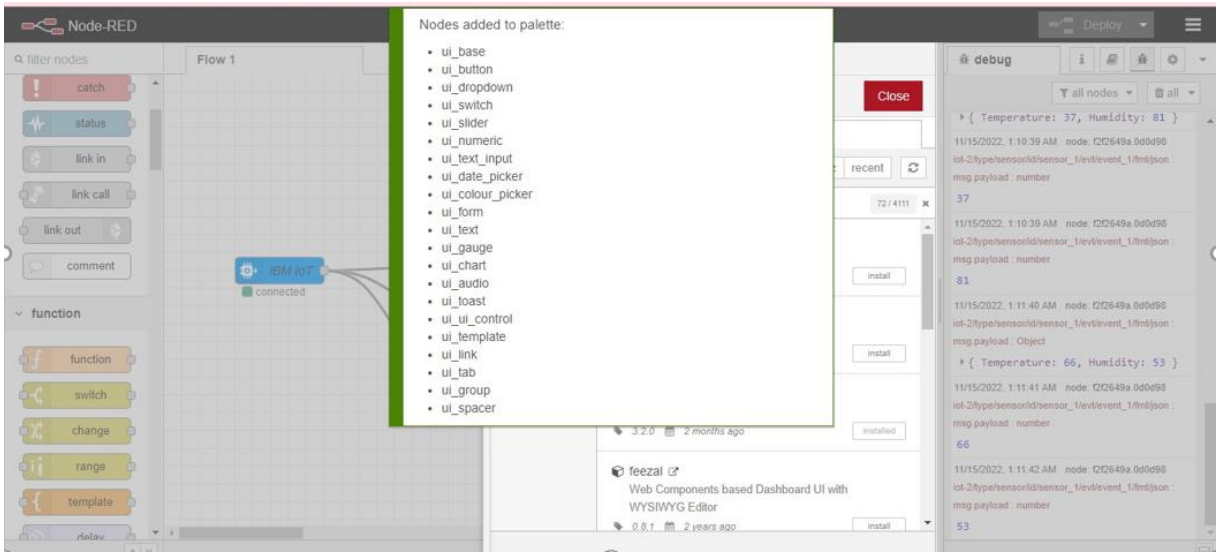


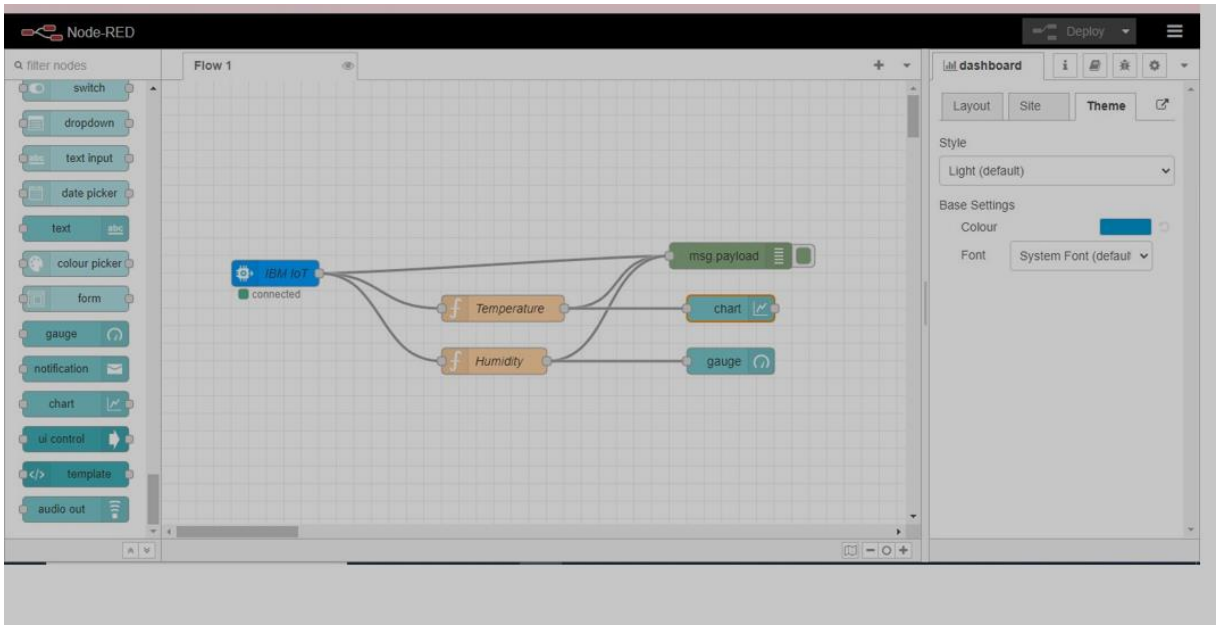


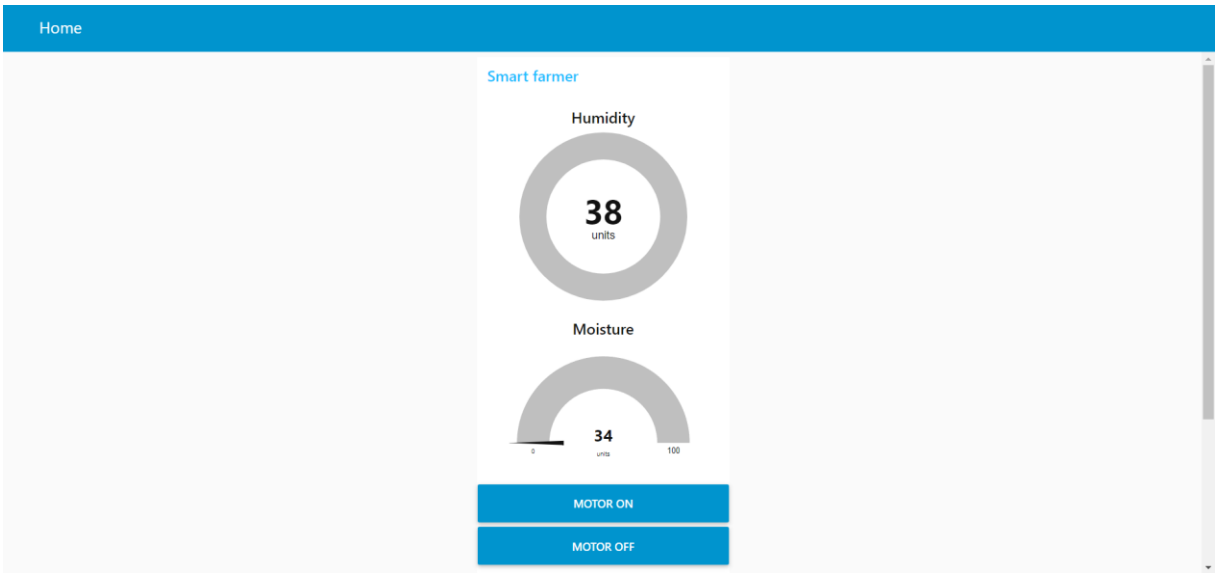

Node-RED
Deploy
filter nodes
Flow 1
websocket out
tcp in
tcp out
tcp request
udp in
udp out
input
ibmiot in
output
OpenWhisk
ibmiot out
welcome
msg.payload
IBM IoT
Edit ibmiot in node > Add new ibmiot config node
Cancel
Add
Properties
Name
API Key
API Token
Server-Name
orgid.messaging.internetofthings.ibmcloud.com
Scalable
Application ID
Keep Alive
60
Seconds
Use Clean Session
Enabled
0 nodes use this config
On all flows

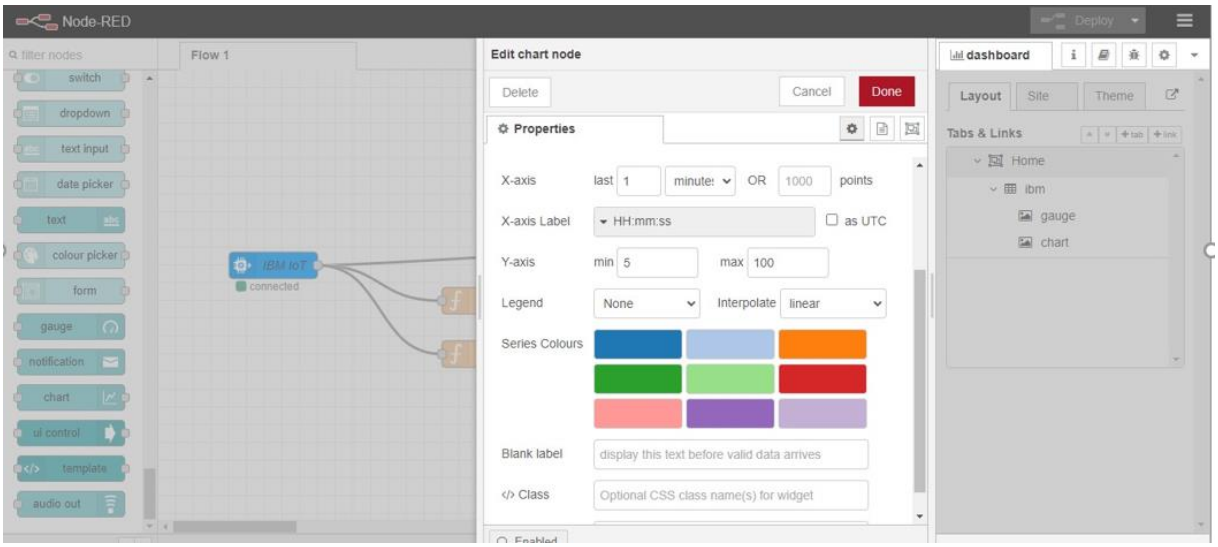

Node-RED
Deploy
filter nodes
Flow 1
debug
all nodes
all
websocket out
tcp in
tcp out
tcp request
udp in
udp out
input
ibmiot in
output
OpenWhisk
ibmiot out
welcome
msg.payload
IBM IoT
connected
11/15/2022, 12:29:36 AM node: f2f2649a.0d0d98
msg.payload : string[15]
"Hello Node-RED!"
11/15/2022, 12:30:49 AM node: f2f2649a.0d0d98
msg.payload : string[7]
"welcome"
11/15/2022, 1:03:30 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
object
Temperature: 8
Humidity: 88

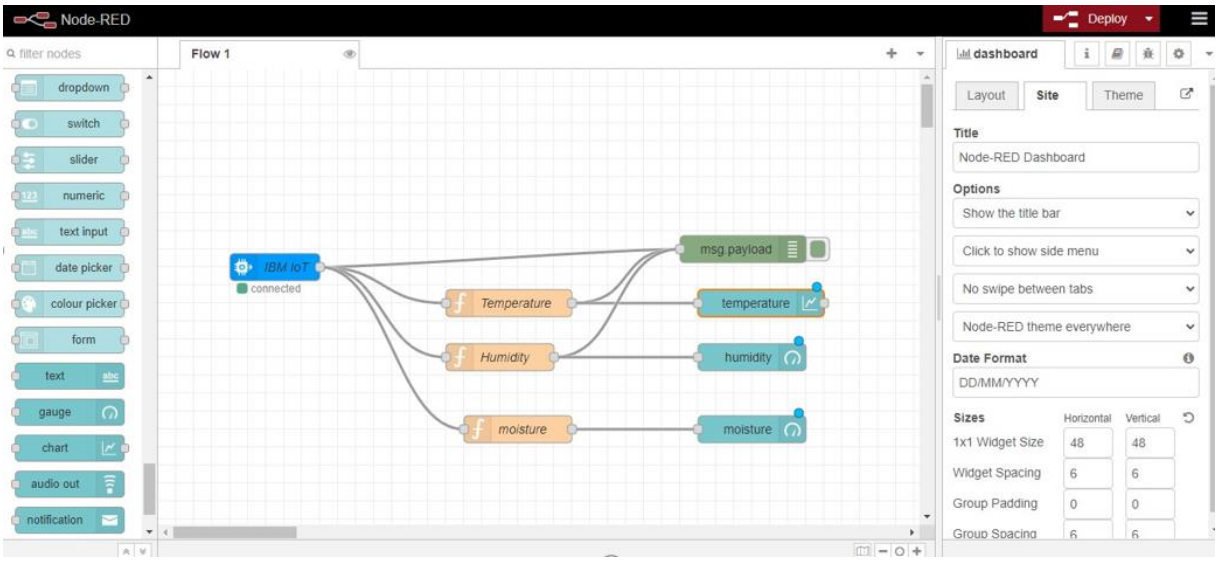

Node-RED
Deploy
filter nodes
Flow 1
debug
all nodes
all
catch
status
link in
link call
link out
comment
function
function
switch
change
range
template
delay
IBM IoT
connected
msg.payload
Temperature
Humidity
{ Temperature: 15, Humidity: 55 }
11/15/2022, 1:09:36 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
15
11/15/2022, 1:09:37 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
55
11/15/2022, 1:10:39 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 37, Humidity: 81 }
11/15/2022, 1:10:39 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
37
11/15/2022, 1:10:39 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
81

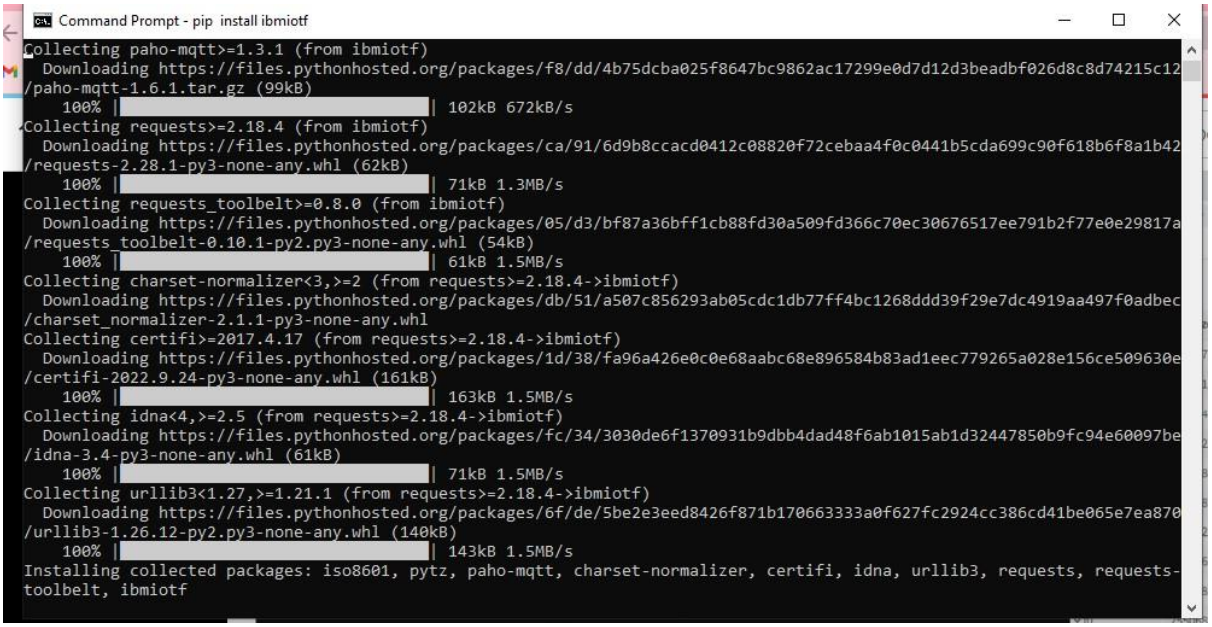

Node-RED
Deploy
Nodes added to palette:
ui_base
ui_button
ui_dropdown
ui_switch
ui_slider
ui_numeric
ui_text_input
ui_date_picker
ui_colour_picker
ui_form
ui_text
ui_gauge
ui_chart
ui_audio
ui_toast
ui_ui_control
ui_template
ui_link
ui_tab
ui_group
ui_spacer
Close
debug
feezal
Web Components based Dashboard UI with WYSIWYG Editor


Node-RED
Deploy
Flow 1
dashboard
Layout
Site
Theme
Style
Light (default)
Base Settings
Colour
Font
IBM IoT
connected
Temperature
Humidity
msg.payload
chart
gauge


Home
Smart farmer
Humidity
38
units
Moisture
34
MOTOR ON
MOTOR OFF


Node-RED
Deploy
filter nodes
Flow 1
switch
dropdown
text input
date picker
text
colour picker
form
gauge
notification
chart
ui control
template
audio out
IBM IoT
connected
Edit chart node
Delete
Cancel
Done
Properties
X-axis
last 1
minute
OR 1000 points
X-axis Label
HH:mm:ss
as UTC
Y-axis
min 5
max 100
Legend
None
Interpolate
linear
Series Colours
Blank label
display this text before valid data arrives
Class
Optional CSS class name(s) for widget
dashboard
Layout
Site
Theme
Tabs & Links
Home
ibm
gauge
chart

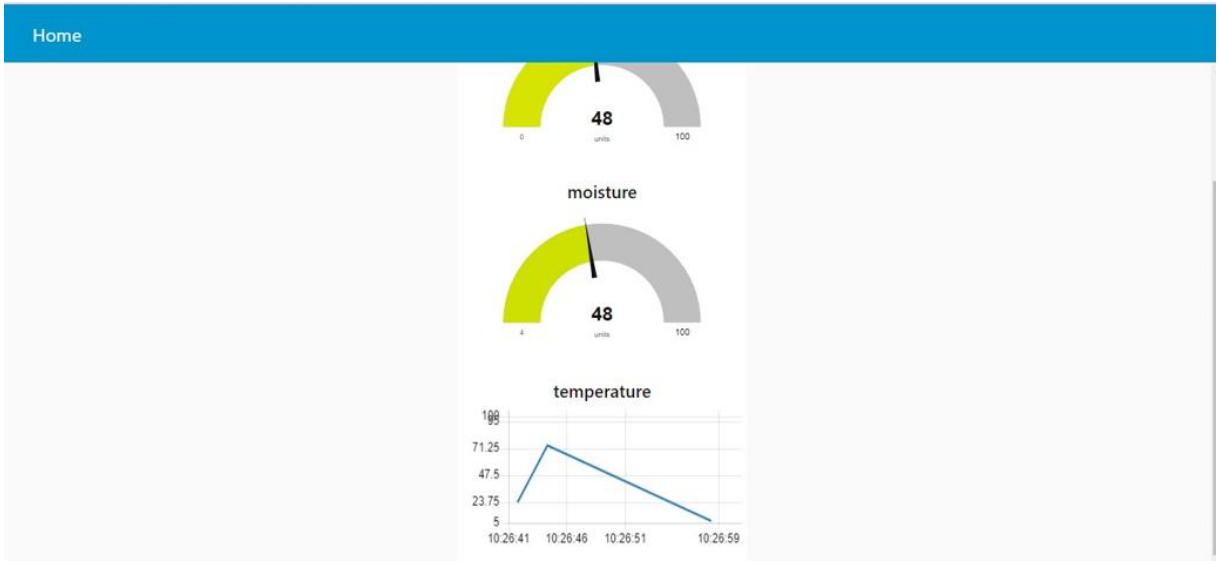

Node-RED
Deploy
filter nodes
Flow 1
dropdown
switch
slider
numeric
text input
date picker
colour picker
form
text
gauge
chart
audio out
notification
IBM IoT
connected
Temperature
Humidity
moisture
msg.payload
temperature
humidity
moisture
dashboard
Layout
Site
Theme
Title
Node-RED Dashboard
Options
Show the title bar
Click to show side menu
No swipe between tabs
Node-RED theme everywhere
Date Format
DD/MM/YYYY
Sizes
Horizontal
Vertical
1x1 Widget Size
48
48
Widget Spacing
6
6
Group Padding
0
0
Group Spacing
6
6

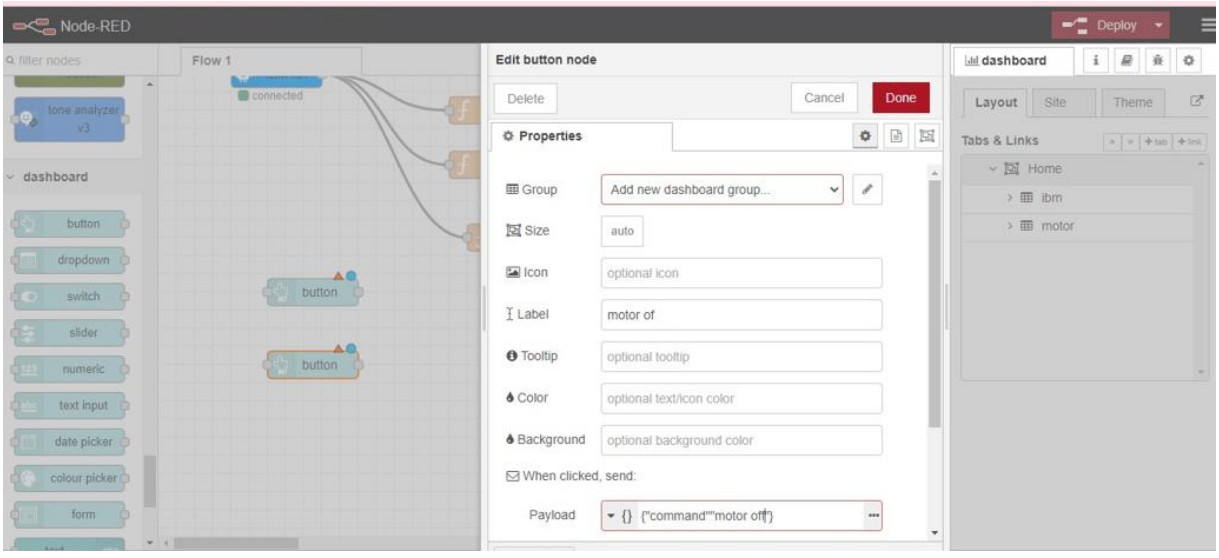

Command Prompt - pip install ibmiotf
Collecting paho-mqtt>=1.3.1 (from ibmiotf)
Downloading https://files.pythonhosted.org/packages/f8/dd/4b75dcba025f8647bc9862ac17299e0d7d12d3beadbf026d8c8d74215c12
/paho-mqtt-1.6.1.tar.gz (99kB)
100% | 102kB 672kB/s
Collecting requests>=2.18.4 (from ibmiotf)
Downloading https://files.pythonhosted.org/packages/ca/91/6d9b8ccacd0412c08820f72cebaa4f0c0441b5cda699c90f618b6f8a1b42
/requests-2.28.1-py3-none-any.whl (62kB)
100% | 71kB 1.3MB/s
Collecting requests_toolbelt>=0.8.0 (from ibmiotf)
Downloading https://files.pythonhosted.org/packages/05/d3/bf87a36bff1cb88fd30a509fd366c70ec30676517ee791b2f77e0e29817a
/requests_toolbelt-0.10.1-py2.py3-none-any.whl (54kB)
100% | 61kB 1.5MB/s
Collecting charset-normalizer<3,>=2 (from requests>=2.18.4->ibmiotf)
Downloading https://files.pythonhosted.org/packages/db/51/a507c856293ab05cdc1db77ff4bc1268ddd39f29e7dc4919aa497f0adbec
/charset_normalizer-2.1.1-py3-none-any.whl
Collecting certifi>=2017.4.17 (from requests>=2.18.4->ibmiotf)
Downloading https://files.pythonhosted.org/packages/1d/38/fa96a426e0c0e68aabc68e896584b83ad1eec779265a028e156ce509630e
/certifi-2022.9.24-py3-none-any.whl (161kB)
100% | 163kB 1.5MB/s
Collecting idna<4,>=2.5 (from requests>=2.18.4->ibmiotf)
Downloading https://files.pythonhosted.org/packages/fc/34/3030de6f1370931b9dbb4dad48f6ab1015ab1d32447850b9fc94e60097be
/idna-3.4-py3-none-any.whl (61kB)
100% | 71kB 1.5MB/s
Collecting urllib3<1.27,>=1.21.1 (from requests>=2.18.4->ibmiotf)
Downloading https://files.pythonhosted.org/packages/6f/de/5be2e3eed8426f871b170663333a0f627fc2924cc386cd41be065e7ea870
/urllib3-1.26.12-py2.py3-none-any.whl (140kB)
100% | 143kB 1.5MB/s
Installing collected packages: iso8601, pytz, paho-mqtt, charset-normalizer, certifi, idna, urllib3, requests, requests-
toolbelt, ibmiotf

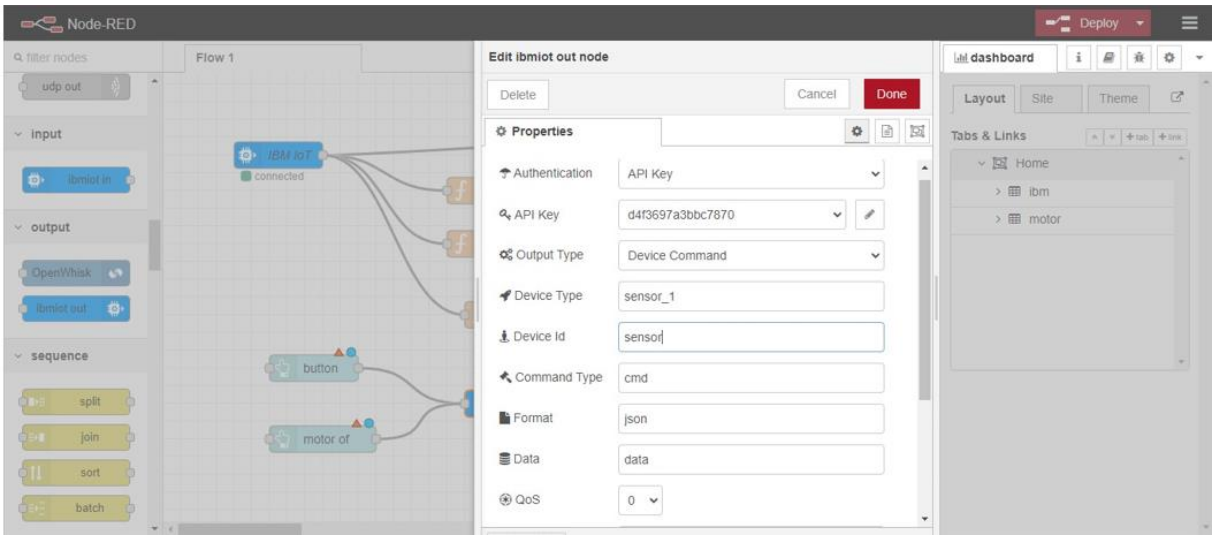
py ibm.py - F:\py ibm.py (3.7.0)

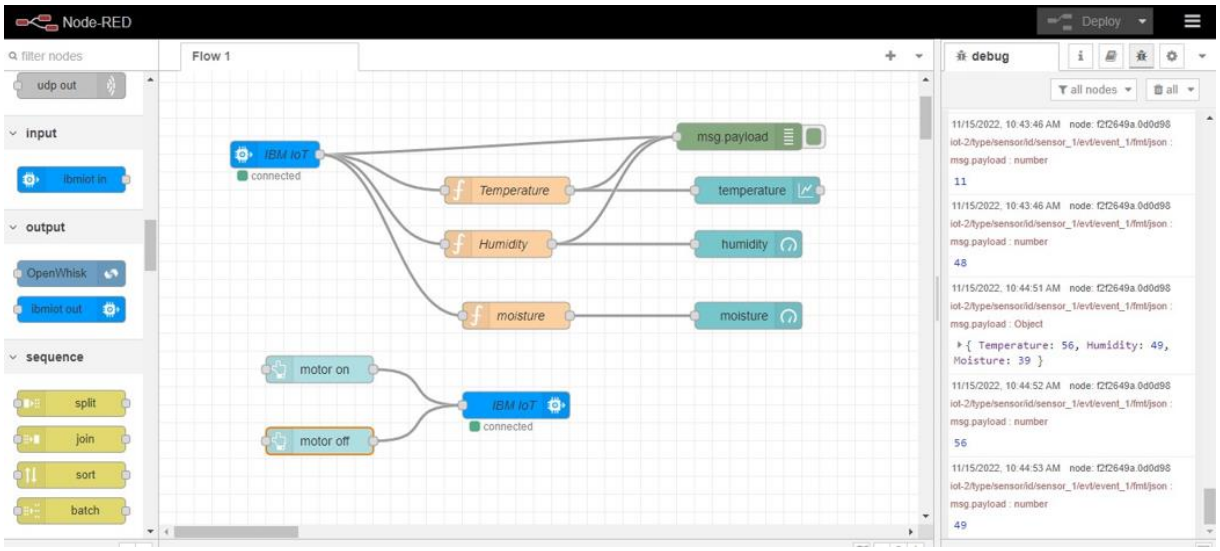
File Edit Format Run Options Window Help

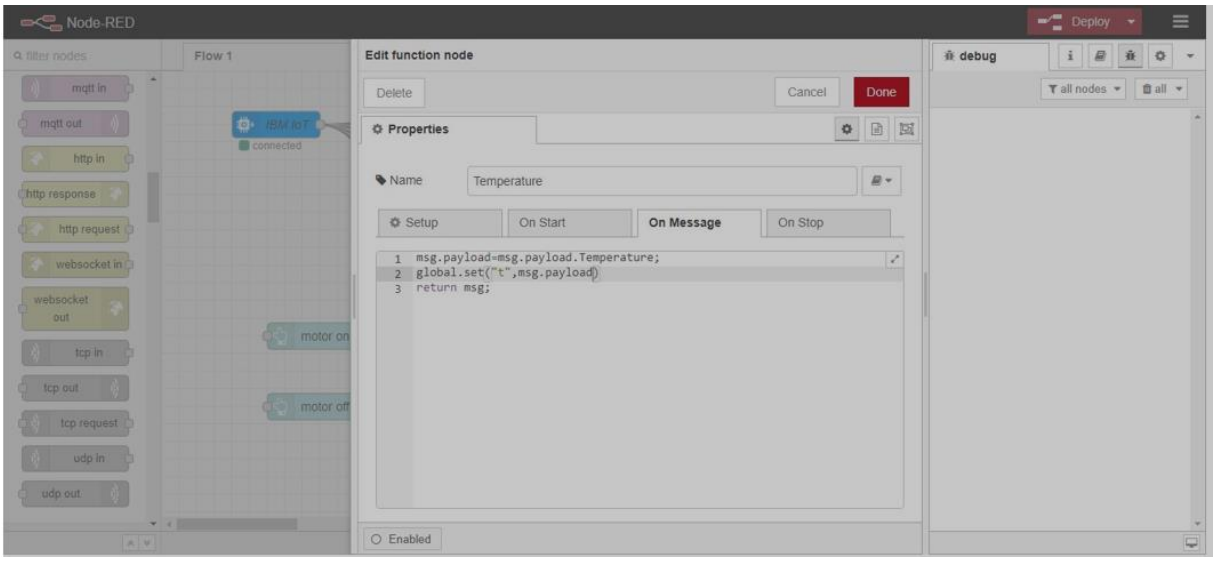
```
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> import time
    import sys
    import ibmiotf.application
   import ibmiotf.device
    import random
                                                    I
#Provide your IBM Watson Device Credentials
organization = "rr454u"
deviceType = "sensor_1"
deviceId = "sensor"
authMethod = "token"
authToken = "12345678"

# Initialize GPIO
def myCommandCallback (cmd):
   print ("Command received: %s" cmd.data['command'])
   status=cmd.data['command']
   if status=="lighton":
       print ("led is on")
   elif status == "lightoff":
       print ("led is off")
   else :
       print ("please send proper command")
try:
       deviceOptions s = ="org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod,"auth-token":authToken
       deviceCli = ibmiotf.device.Client (deviceOptions)
except Exception as e:
```

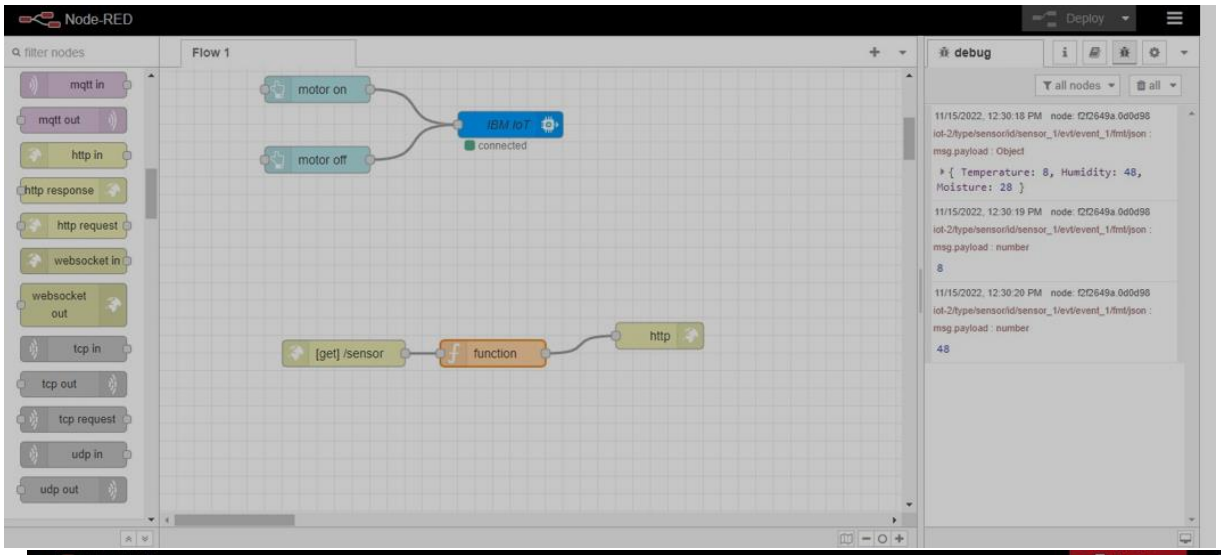


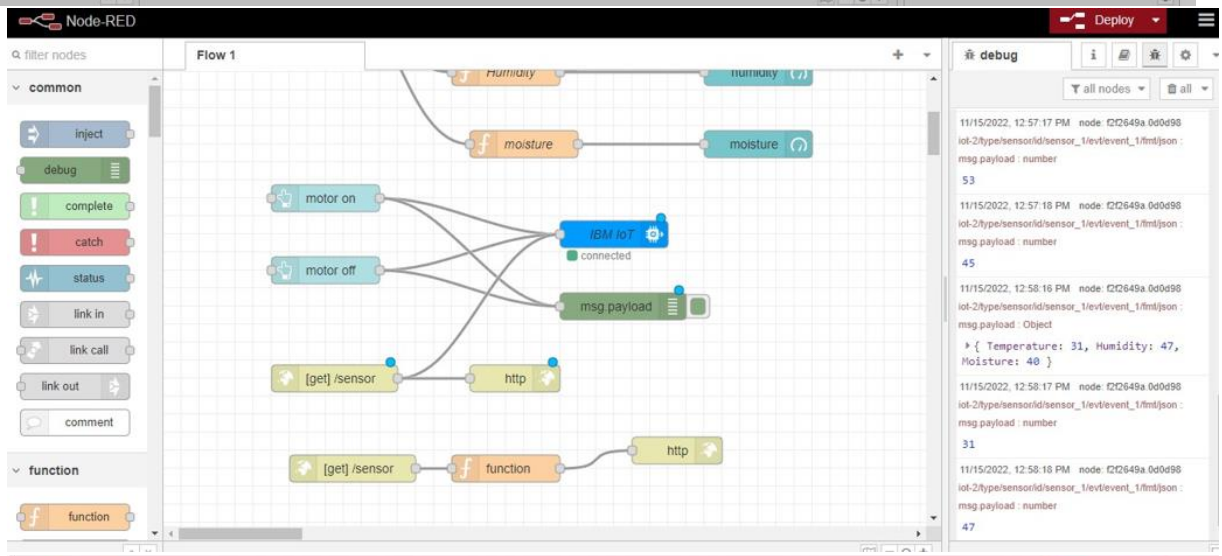


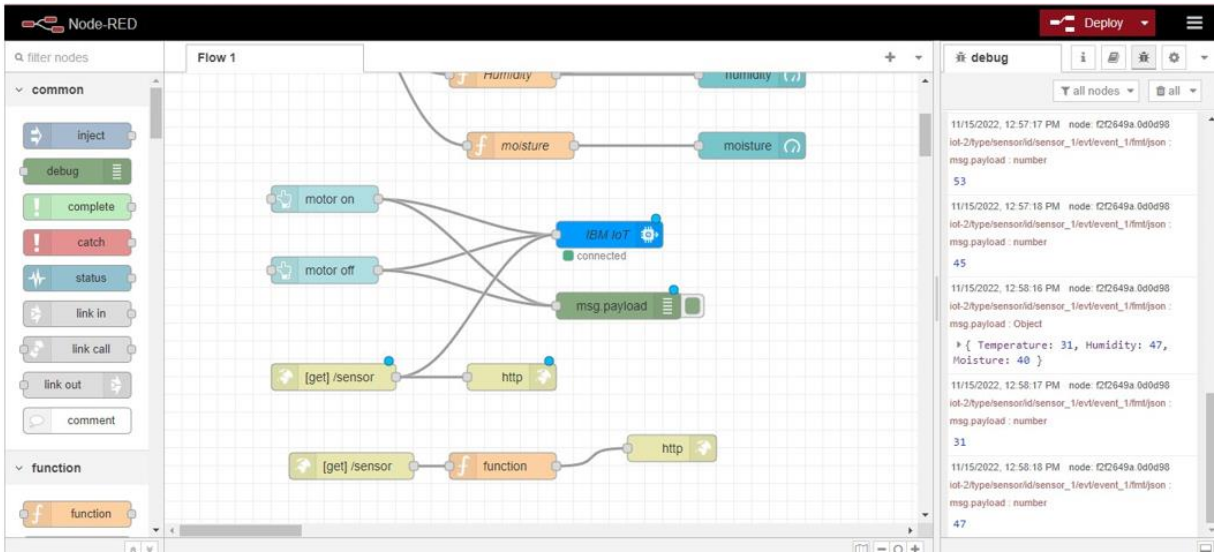

Node-RED
Deploy
Flow 1
Edit ibmiot out node
Delete
Cancel
Done
Properties
Authentication
API Key
API Key
d4f3697a3bbc7870
Output Type
Device Command
Device Type
sensor_1
Device Id
sensor
Command Type
cmd
Format
json
Data
data
QoS
0
dashboard
Layout
Site
Theme
Tabs & Links
Home
ibm
motor
udp out
input
ibmiot in
output
OpenWhisk
ibmiot out
sequence
split
join
sort
batch
IBM IoT
connected
button
motor of

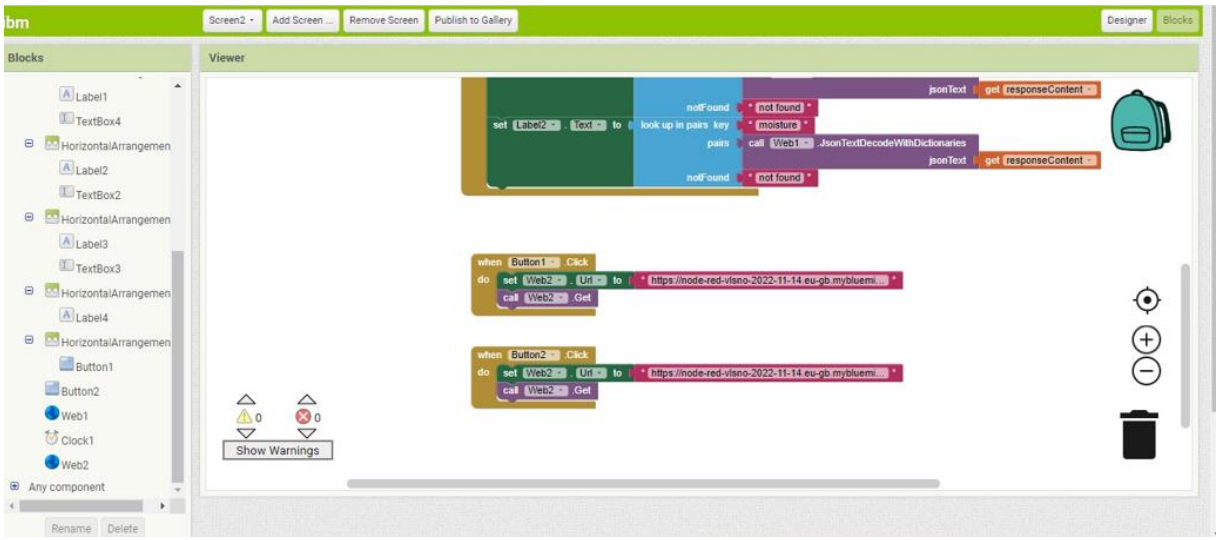

Node-RED
Deploy
Flow 1
debug
all nodes
all
IBM IoT
connected
msg payload
Temperature
temperature
Humidity
humidity
moisture
moisture
motor on
motor off
IBM IoT
connected
11/15/2022, 10:43:46 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
11
11/15/2022, 10:43:46 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
48
11/15/2022, 10:44:51 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 56, Humidity: 49, Moisture: 39 }
11/15/2022, 10:44:52 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
56
11/15/2022, 10:44:53 AM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
49
udp out
input
ibmiot in
output
OpenWhisk
ibmiot out
sequence
split
join
sort
batch

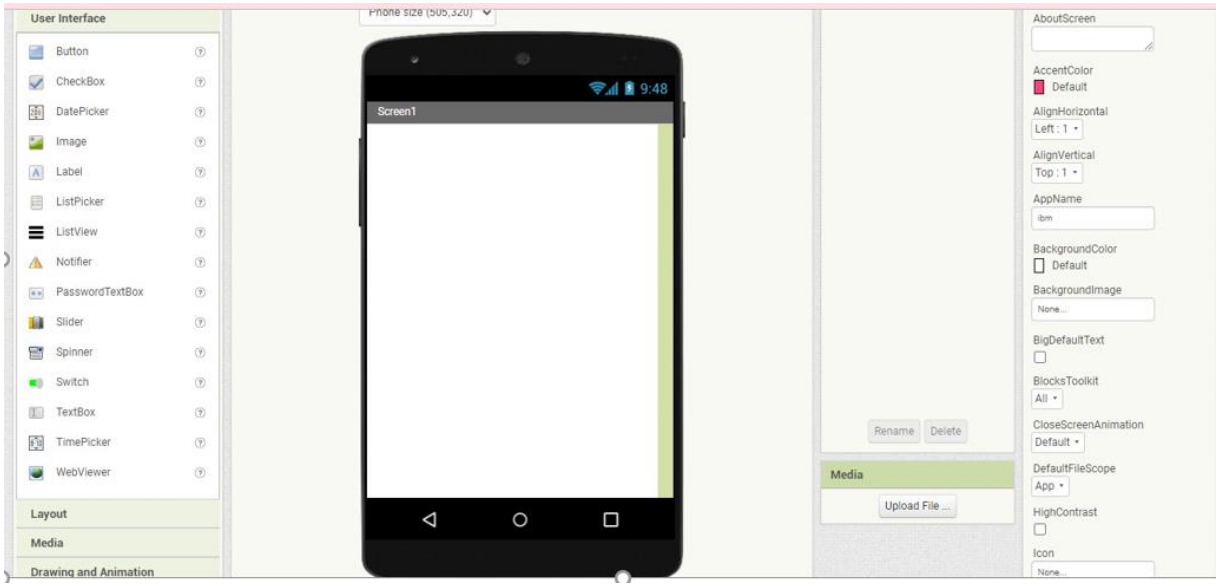

Node-RED
Deploy
Flow 1
Edit function node
Delete
Cancel
Done
Properties
Name
Temperature
Setup
On Start
On Message
On Stop
1 msg.payload=msg.payload.Temperature;
2 global.set("t",msg.payload)
3 return msg;
Enabled
debug
all nodes
all
mqtt in
mqtt out
http in
http response
http request
websocket in
websocket out
tcp in
tcp out
tcp request
udp in
udp out
IBM IoT
connected
motor on
motor off

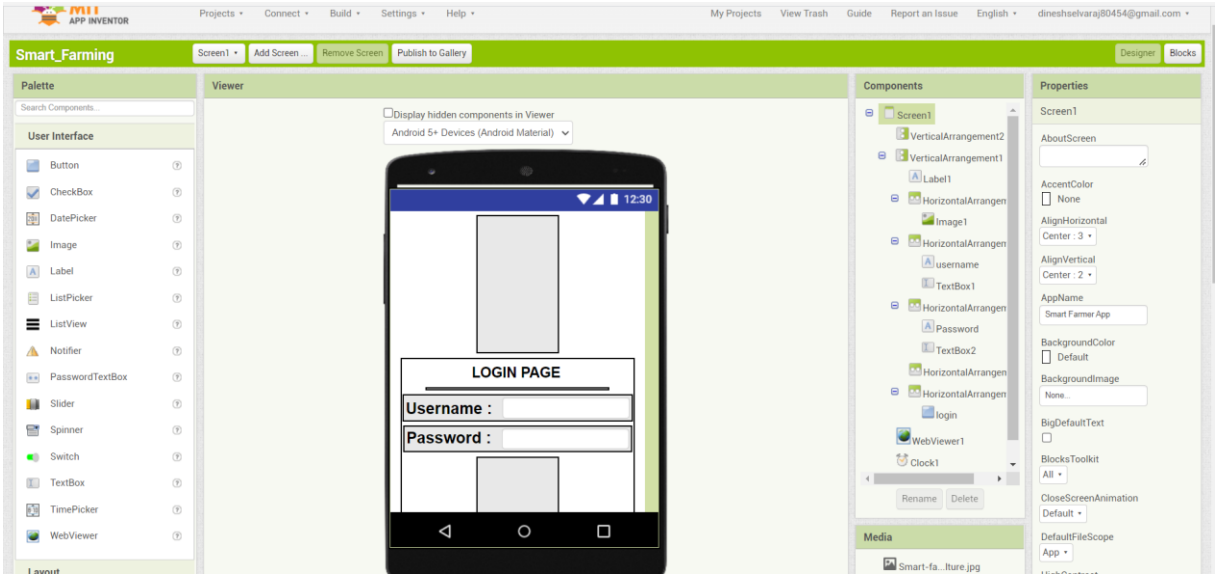

Node-RED
Deploy
filter nodes
Flow 1
debug
mqtt in
mqtt out
http in
http response
http request
websocket in
websocket out
tcp in
tcp out
tcp request
udp in
udp out
motor on
motor off
IBM IoT
connected
[get] /sensor
function
http
all nodes
all
11/15/2022, 12:30:18 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 8, Humidity: 48, Moisture: 28 }
11/15/2022, 12:30:19 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
8
11/15/2022, 12:30:20 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
48

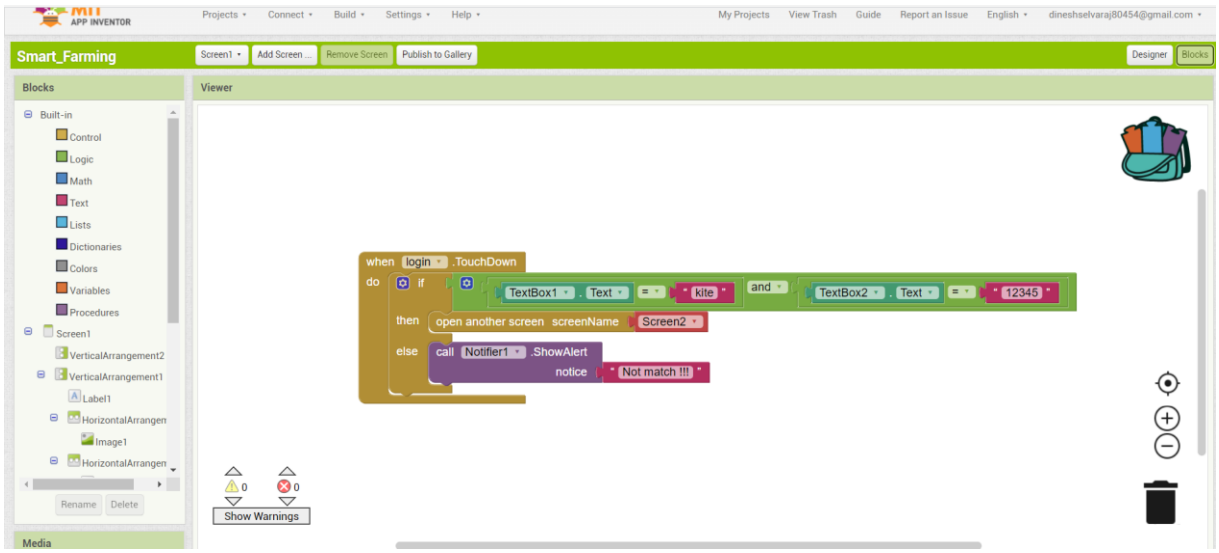

Node-RED
Deploy
filter nodes
Flow 1
debug
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
moisture
moisture
motor on
motor off
IBM IoT
connected
msg.payload
[get] /sensor
function
http
all nodes
all
11/15/2022, 12:57:17 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
53
11/15/2022, 12:57:18 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
45
11/15/2022, 12:58:16 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 31, Humidity: 47, Moisture: 40 }
11/15/2022, 12:58:17 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
31
11/15/2022, 12:58:18 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
47


Node-RED
Deploy
filter nodes
Flow 1
debug
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
moisture
moisture
motor on
motor off
IBM IoT
connected
msg.payload
[get] /sensor
function
http
all nodes
all
11/15/2022, 12:57:17 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
53
11/15/2022, 12:57:18 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
45
11/15/2022, 12:58:16 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 31, Humidity: 47, Moisture: 40 }
11/15/2022, 12:58:17 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
31
11/15/2022, 12:58:18 PM node: f2f2649a.0d0d98
iot-2/type/sensor/id/sensor_1/evt/event_1/fmt/json : msg.payload : number
47


ibm
Screen2
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Viewer
Label1
TextBox4
HorizontalArrangemen
Label2
TextBox2
Label3
TextBox3
Label4
Button1
Button2
Web1
Clock1
Web2
Any component
Rename
Delete
Show Warnings
when Button1 .Click
when Button2 .Click
set Label2 . Text to
look up in pairs key
pairs
call Web1 .JsonTextDecodeWithDictionaries
jsonText
get responseContent
notFound
not found
moisture
set Web2 . Url to
https://node-red-vlsno-2022-11-14.eu-gb.mybluemi...
call Web2 .Get


User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Media
Drawing and Animation
Phone size (505,320)
9:48
Screen1
Rename
Delete
Media
Upload File ...
AboutScreen
AccentColor
Default
AlignHorizontal
Left : 1
AlignVertical
Top : 1
AppName
ibm
BackgroundColor
Default
BackgroundImage
None...
BigDefaultText
BlocksToolkit
All
CloseScreenAnimation
Default
DefaultFileScope
App
HighContrast
Icon
None...


APP INVENTOR
Projects
Connect
Build
Settings
Help
My Projects
View Trash
Guide
Report an Issue
English
dineshselvaraj80454@gmail.com
Smart_Farming
Screen1
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Palette
Search Components...
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Viewer
Display hidden components in Viewer
Android 5+ Devices (Android Material)
12:30
LOGIN PAGE
Username :
Password :
Components
Screen1
VerticalArrangement2
VerticalArrangement1
Label1
HorizontalArrangen
Image1
username
TextBox1
Password
TextBox2
login
WebViewer1
Clock1
Rename
Delete
Media
Smart-fa...lture.jpg
Properties
Screen1
AboutScreen
AccentColor
None
AlignHorizontal
Center : 3
AlignVertical
Center : 2
AppName
Smart Farmer App
BackgroundColor
Default
BackgroundImage
None...
BigDefaultText
BlocksToolkit
All
CloseScreenAnimation
Default
DefaultFileScope
App


APP INVENTOR
Projects
Connect
Build
Settings
Help
My Projects
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Guide
Report an Issue
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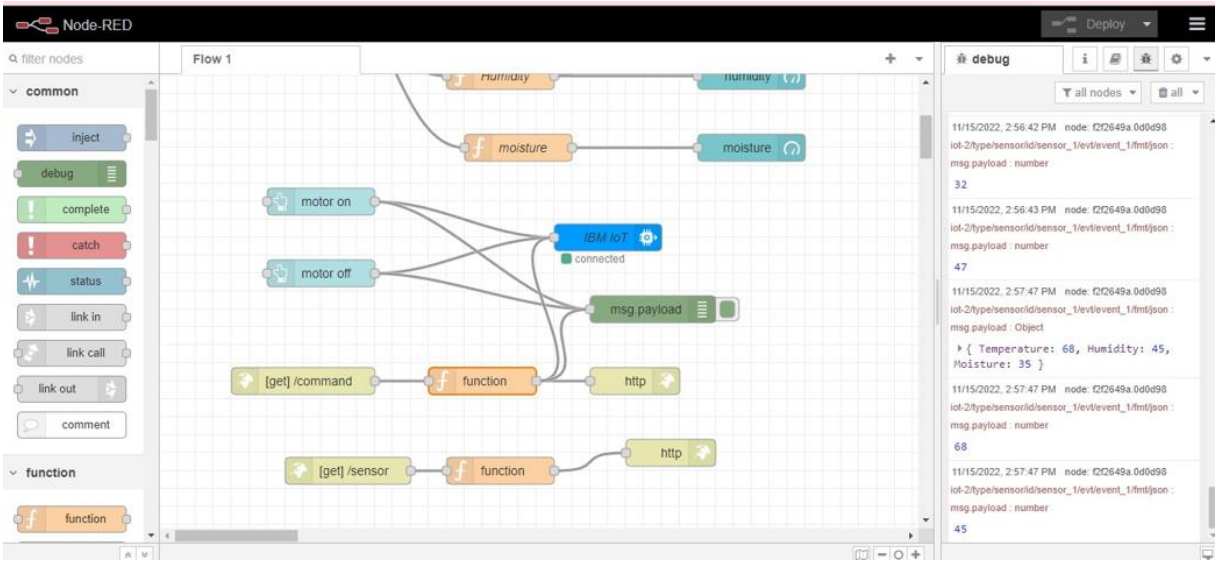
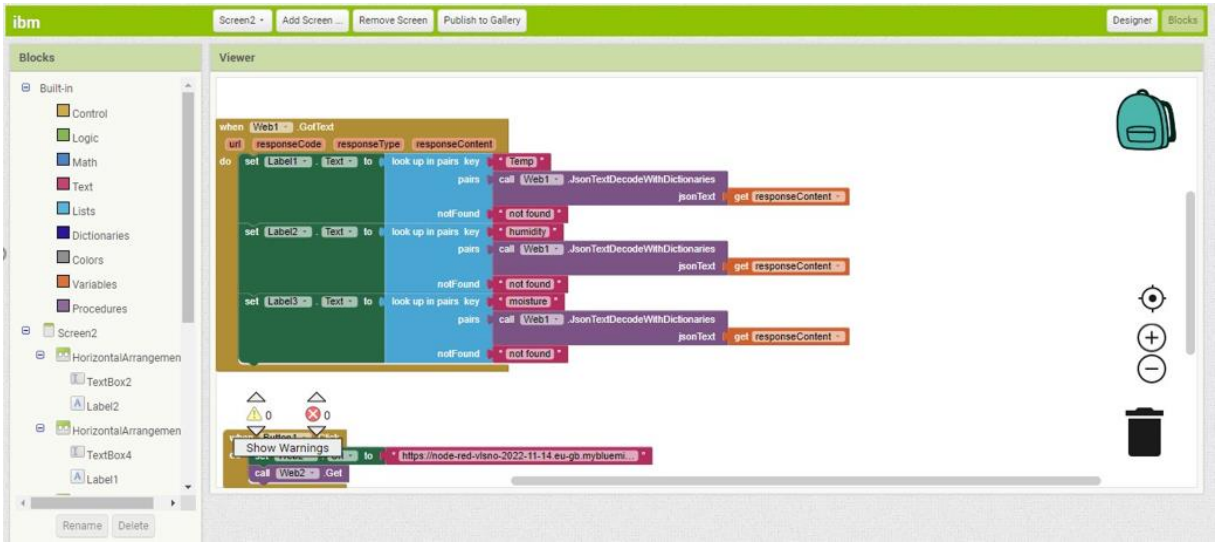
dineshselvaraj80454@gmail.com
Smart_Farming
Screen1
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen1
VerticalArrangement2
VerticalArrangement1
Label1
HorizontalArrangen
Image1
HorizontalArrangen
Rename
Delete
Media
Viewer
when login .TouchDown
do if TextBox1 . Text = " kite " and TextBox2 . Text = " 12345 "
then open another screen screenName Screen2
else call Notifier1 .ShowAlert
notice " Not match !!! "
Show Warnings


Node-RED
Deploy
filter nodes
Flow 1
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
moisture
moisture
motor on
motor off
IBM IoT
connected
msg.payload
[get] /command
function
http
[get] /sensor
function
http
debug
all nodes
all
11/15/2022, 2:56:42 PM node: f2f2649a.0d0d98
iot-2/type/sensorId/sensor_1/evt/event_1/fmt/json : msg.payload : number
32
11/15/2022, 2:56:43 PM node: f2f2649a.0d0d98
iot-2/type/sensorId/sensor_1/evt/event_1/fmt/json : msg.payload : number
47
11/15/2022, 2:57:47 PM node: f2f2649a.0d0d98
iot-2/type/sensorId/sensor_1/evt/event_1/fmt/json : msg.payload : Object
{ Temperature: 68, Humidity: 45, Moisture: 35 }
11/15/2022, 2:57:47 PM node: f2f2649a.0d0d98
iot-2/type/sensorId/sensor_1/evt/event_1/fmt/json : msg.payload : number
68
11/15/2022, 2:57:47 PM node: f2f2649a.0d0d98
iot-2/type/sensorId/sensor_1/evt/event_1/fmt/json : msg.payload : number
45


ibm
Screen2
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen2
HorizontalArrangemen
TextBox2
Label2
HorizontalArrangemen
TextBox4
Label1
Rename
Delete
Viewer
when Web1 .GotText
url responseCode responseType responseContent
do set Label1 . Text to look up in pairs key Temp
pairs call Web1 .JsonTextDecodeWithDictionaries
jsonText get responseContent
notFound not found
set Label2 . Text to look up in pairs key humidity
pairs call Web1 .JsonTextDecodeWithDictionaries
jsonText get responseContent
notFound not found
set Label3 . Text to look up in pairs key moisture
pairs call Web1 .JsonTextDecodeWithDictionaries
jsonText get responseContent
notFound not found
Show Warnings
call Web2 .Get

2:22

14.0 KB/S

24

LOGIN PAGE

Username : Enter User Name

Password : ********

LOGIN

Humidity	51
Temperature	28
Moisture	40

Motor Switch ON/OFF

Coimbatore, Tamilnadu