SPRINT 3

Framework (Local system deployment)

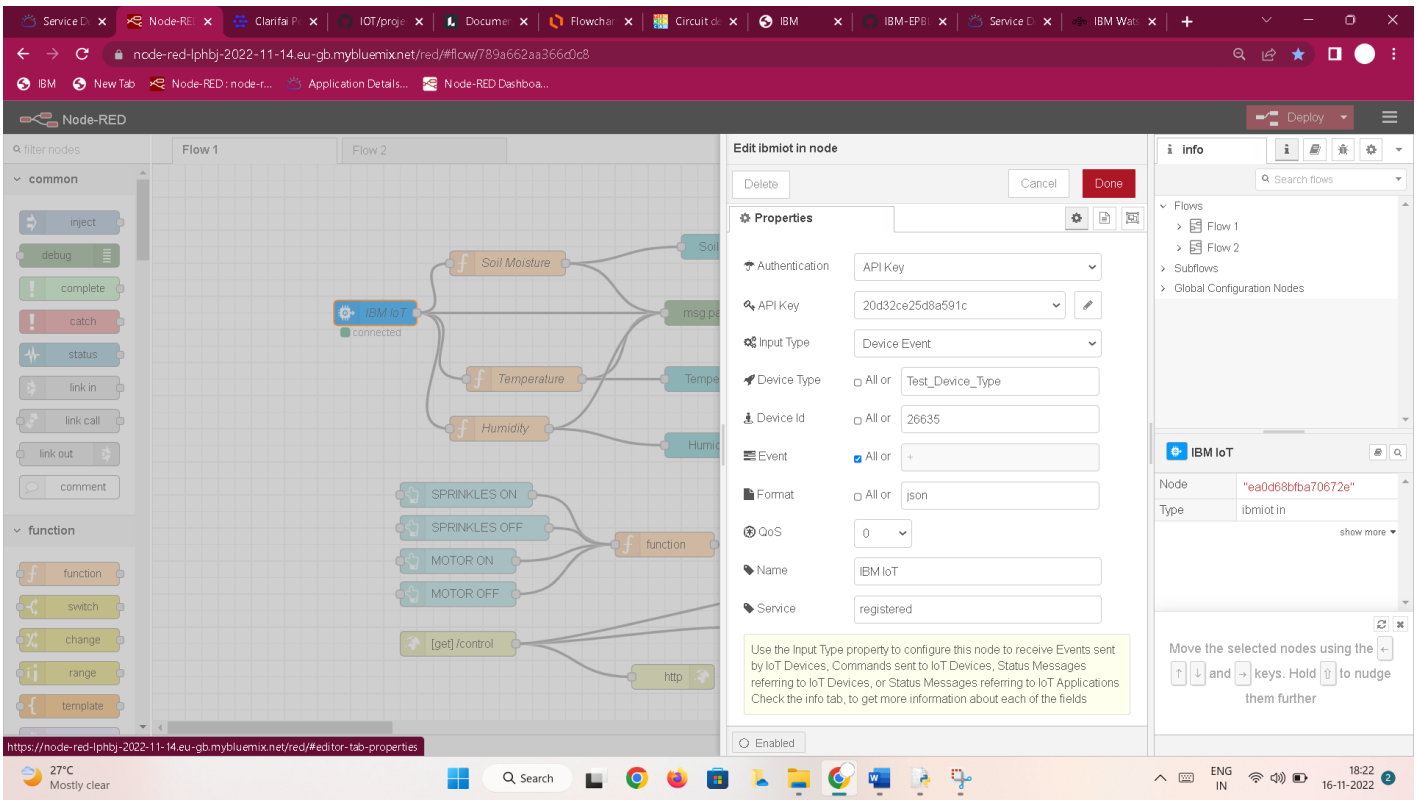
Team ID	PNT2022TMID27071
Project Name	Project – IoT based Smart Crop Protection for Agriculture

Local deployment:

➢ In this case, the entire application is contained within a virtual directory and all the contents and assemblies are contained within it and available to the application.

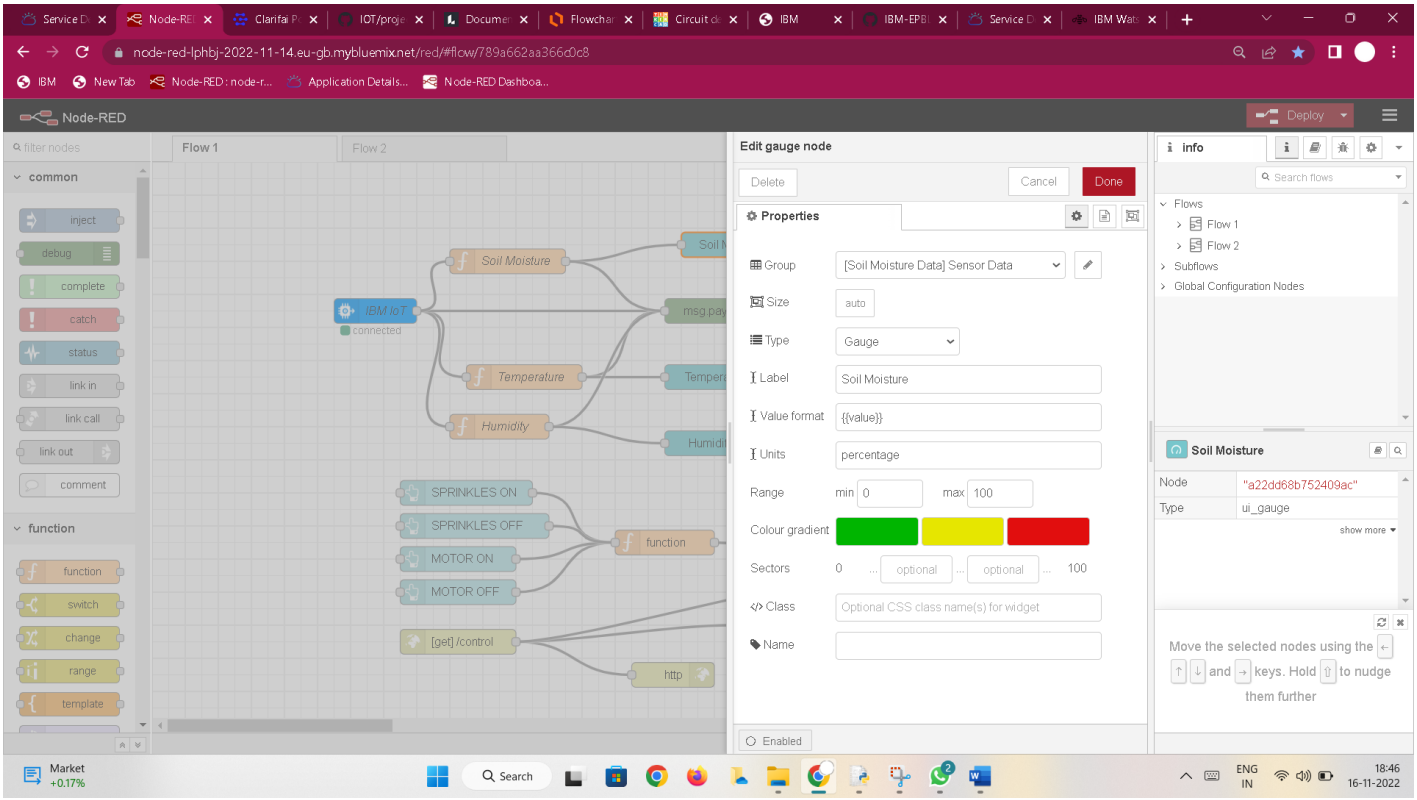
5.3 Configuration of Node-Red to send commands to IBM cloud:

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.

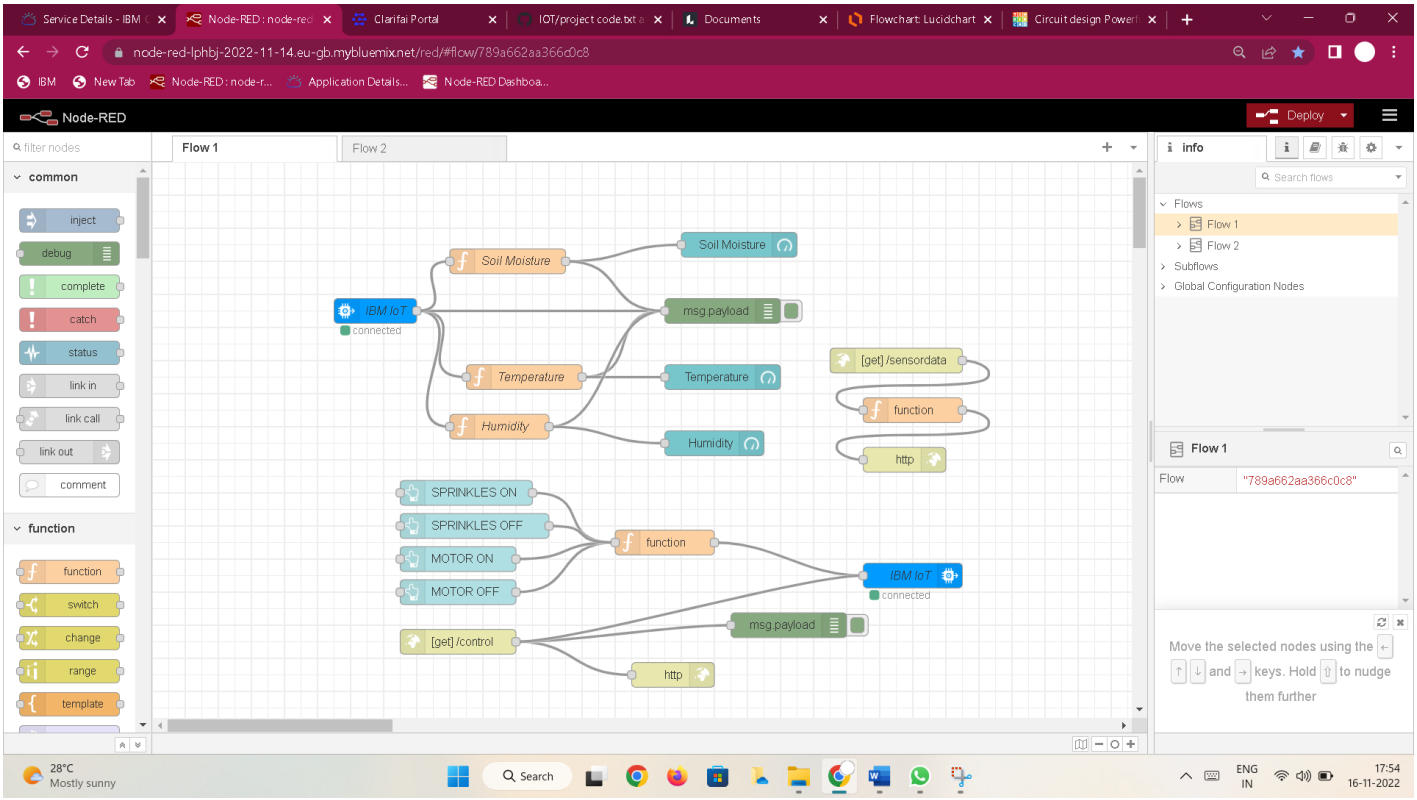


5.4 Adjusting User Interface:

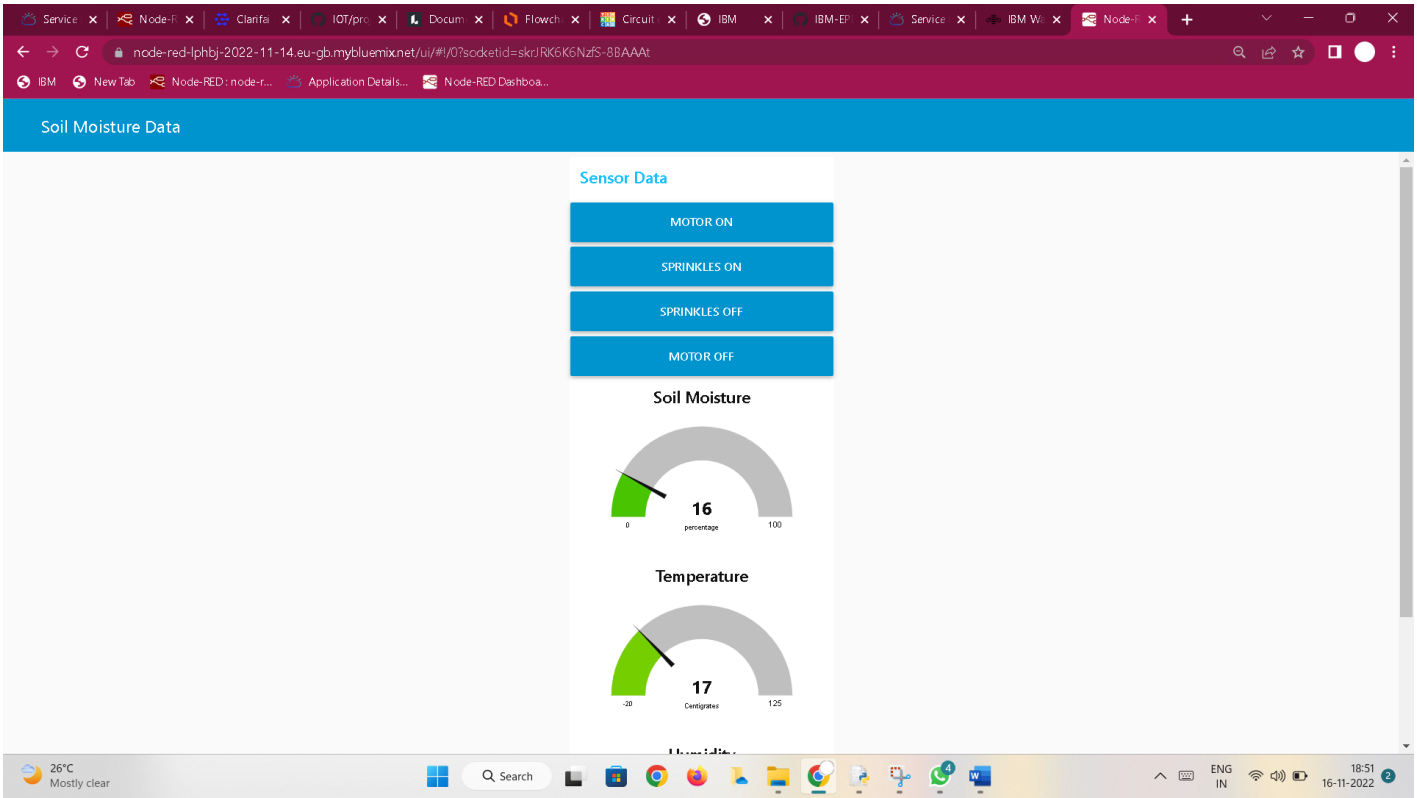
In order to display the parsed JSON data a Node-Red dashboard is created Here we are using Gauges, text and button nodes to display in the UI and helps to monitor the parameters. Below images are the Gauge, text and button node configurations.

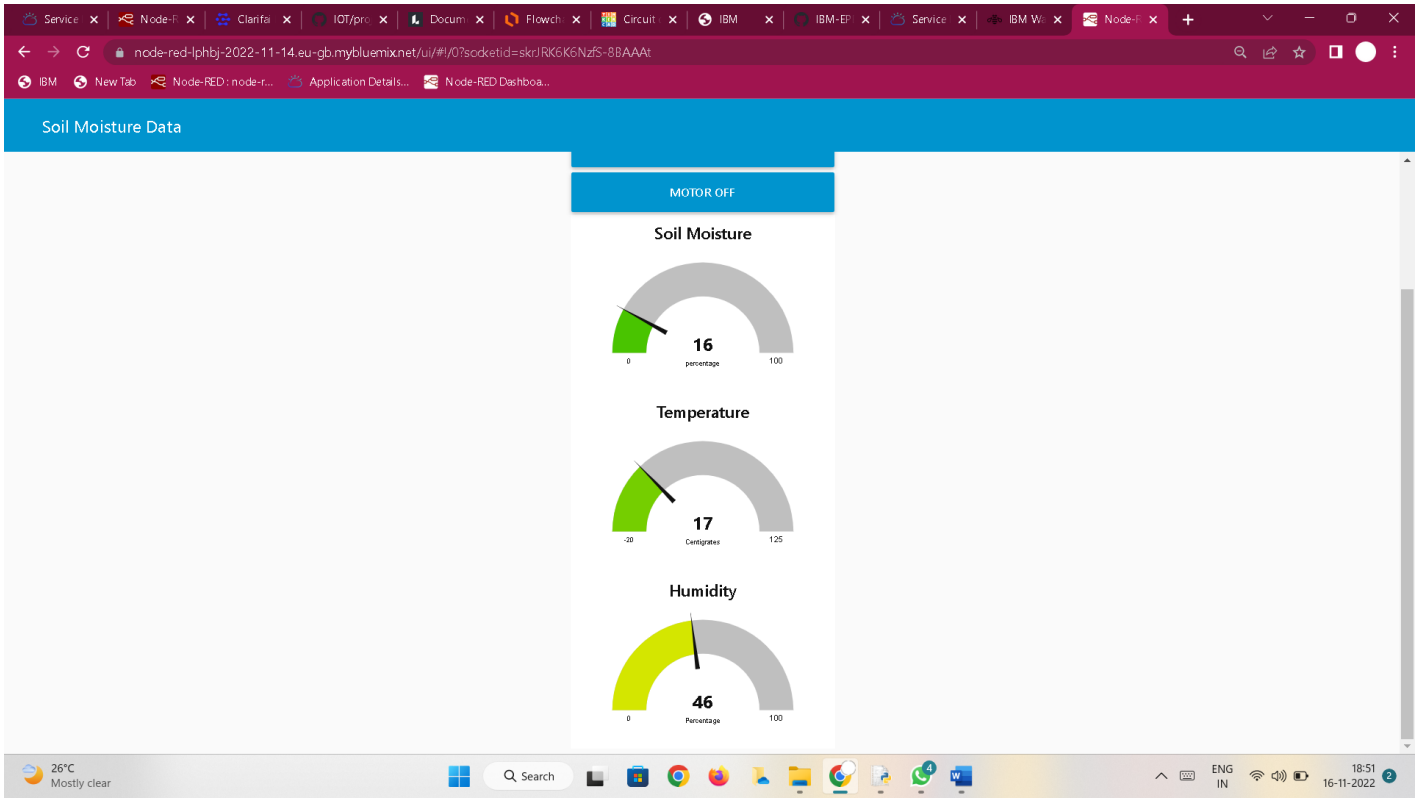


Complete Program Flow:

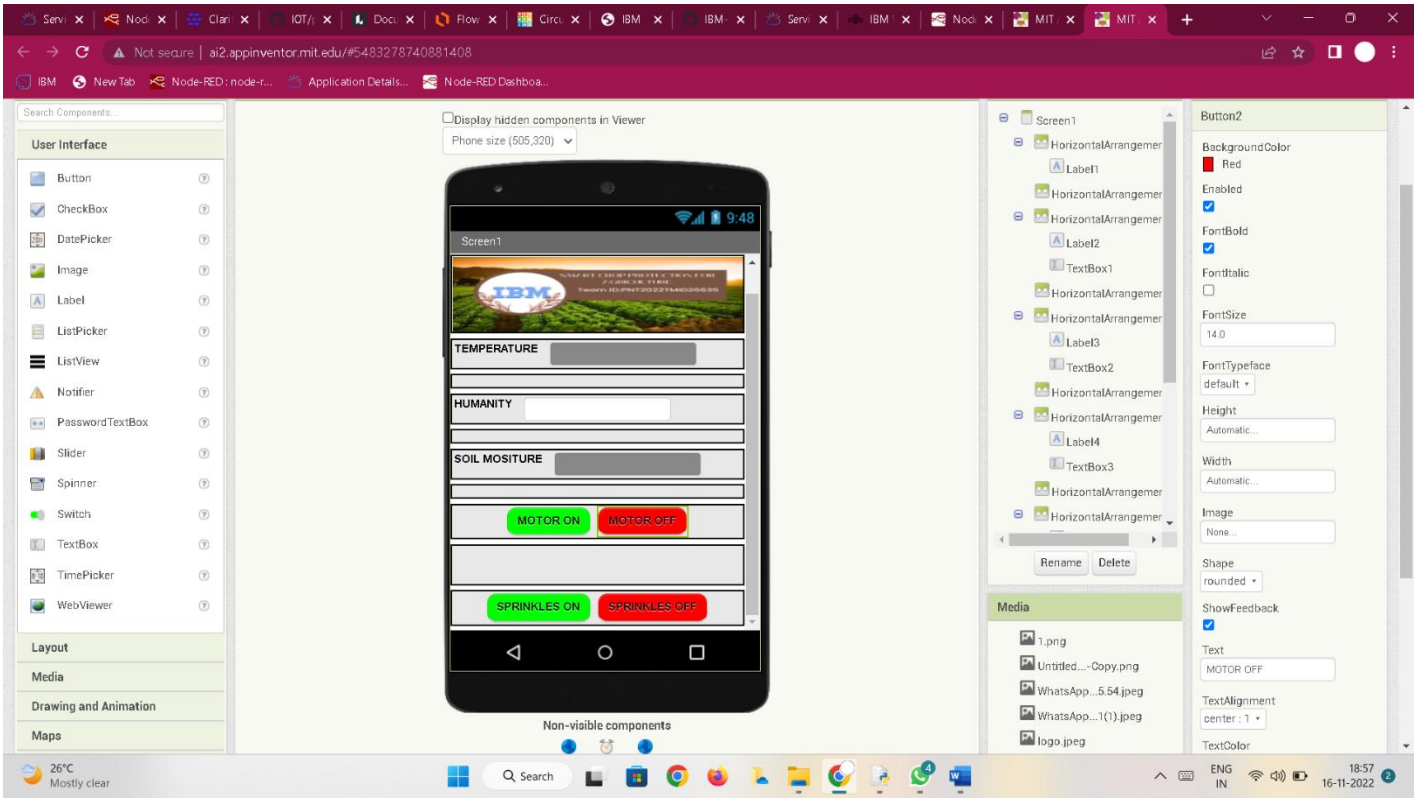


Web APP UI Home Tab:

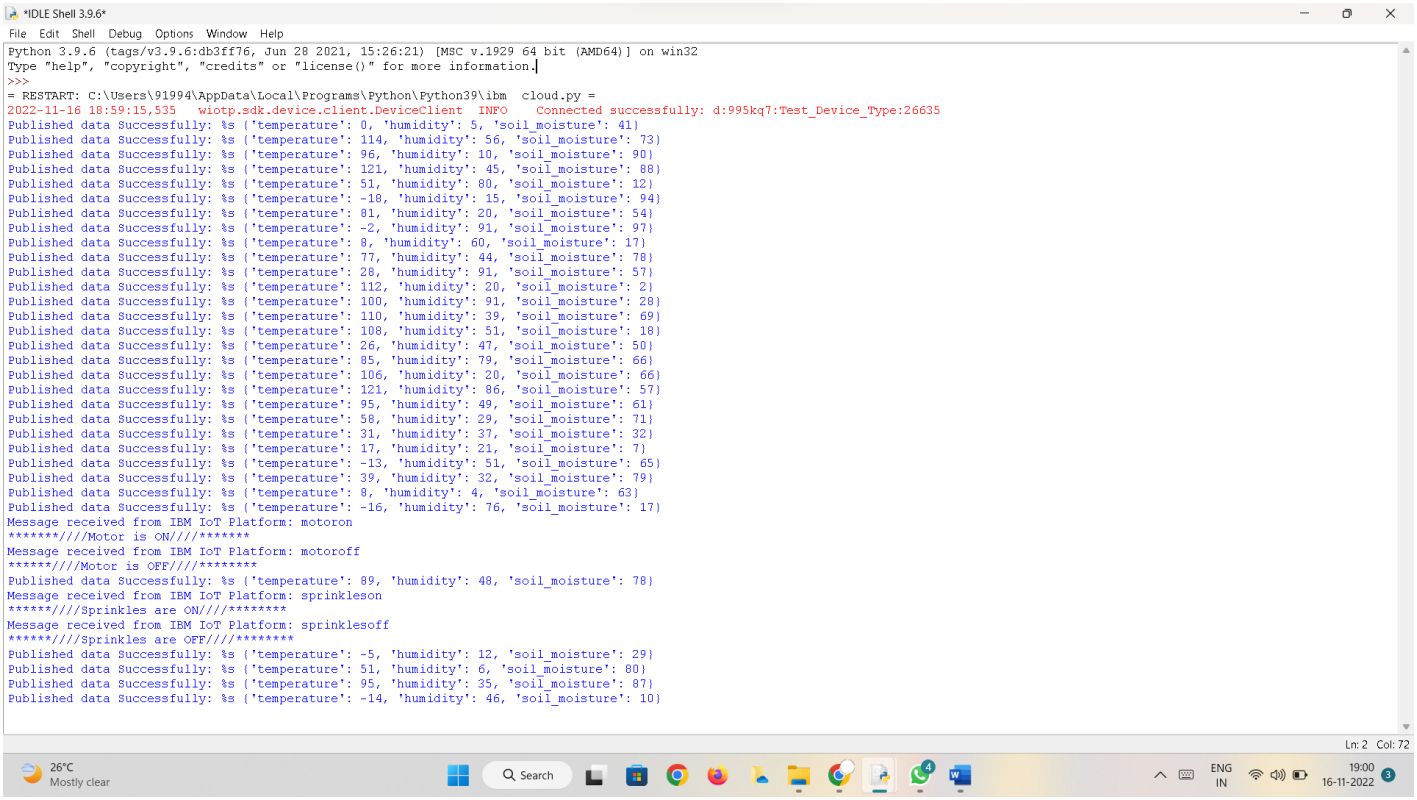



Soil Moisture Data
MOTOR OFF
Soil Moisture
16
0
percentage
100
Temperature
17
-20
Centigrates
125
Humidity
46
0
Percentage
100

MIT APPS:


Not secure | ai2.appinventor.mit.edu/#5483278740881408
IBM
New Tab
Node-RED : node-r...
Application Details...
Node-RED Dashboa...
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Layout
Media
Drawing and Animation
Maps
Display hidden components in Viewer
Phone size (505,320)
9:48
Screen1
TEMPERATURE
HUMANITY
SOIL MOSITURE
MOTOR ON
MOTOR OFF
SPRINKLES ON
SPRINKLES OFF
Non-visible components
Screen1
HorizontalArrangemer
Label1
Label2
TextBox1
Label3
TextBox2
Label4
TextBox3
Rename
Delete
Media
1.png
Untitled...-Copy.png
WhatsApp...5.54.jpeg
WhatsApp...1(1).jpeg
logo.jpeg
Button2
BackgroundColor
Red
Enabled
FontBold
FontItalic
FontSize
14.0
FontTypeface
default
Height
Automatic...
Width
Automatic...
Image
None...
Shape
rounded
ShowFeedback
Text
MOTOR OFF
TextAlignment
center : 1
TextColor
26°C
Mostly clear
Search
ENG
IN
18:57
16-11-2022

Final Output:


IDLE Shell 3.9.6
File Edit Shell Debug Options Window Help
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\91994\AppData\Local\Programs\Python\Python39\ibm cloud.py =
2022-11-16 18:59:15,535 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:995kq7:Test_Device_Type:26635
Published data Successfully: %s {'temperature': 0, 'humidity': 5, 'soil_moisture': 41}
Published data Successfully: %s {'temperature': 114, 'humidity': 56, 'soil_moisture': 73}
Published data Successfully: %s {'temperature': 96, 'humidity': 10, 'soil_moisture': 90}
Published data Successfully: %s {'temperature': 121, 'humidity': 45, 'soil_moisture': 88}
Published data Successfully: %s {'temperature': 51, 'humidity': 80, 'soil_moisture': 12}
Published data Successfully: %s {'temperature': -18, 'humidity': 15, 'soil_moisture': 94}
Published data Successfully: %s {'temperature': 81, 'humidity': 20, 'soil_moisture': 54}
Published data Successfully: %s {'temperature': -2, 'humidity': 91, 'soil_moisture': 97}
Published data Successfully: %s {'temperature': 8, 'humidity': 60, 'soil_moisture': 17}
Published data Successfully: %s {'temperature': 77, 'humidity': 44, 'soil_moisture': 78}
Published data Successfully: %s {'temperature': 28, 'humidity': 91, 'soil_moisture': 57}
Published data Successfully: %s {'temperature': 112, 'humidity': 20, 'soil_moisture': 2}
Published data Successfully: %s {'temperature': 100, 'humidity': 91, 'soil_moisture': 28}
Published data Successfully: %s {'temperature': 110, 'humidity': 39, 'soil_moisture': 69}
Published data Successfully: %s {'temperature': 108, 'humidity': 51, 'soil_moisture': 18}
Published data Successfully: %s {'temperature': 26, 'humidity': 47, 'soil_moisture': 50}
Published data Successfully: %s {'temperature': 85, 'humidity': 79, 'soil_moisture': 66}
Published data Successfully: %s {'temperature': 106, 'humidity': 20, 'soil_moisture': 66}
Published data Successfully: %s {'temperature': 121, 'humidity': 86, 'soil_moisture': 57}
Published data Successfully: %s {'temperature': 95, 'humidity': 49, 'soil_moisture': 61}
Published data Successfully: %s {'temperature': 58, 'humidity': 29, 'soil_moisture': 71}
Published data Successfully: %s {'temperature': 31, 'humidity': 37, 'soil_moisture': 32}
Published data Successfully: %s {'temperature': 17, 'humidity': 21, 'soil_moisture': 7}
Published data Successfully: %s {'temperature': -13, 'humidity': 51, 'soil_moisture': 65}
Published data Successfully: %s {'temperature': 39, 'humidity': 32, 'soil_moisture': 79}
Published data Successfully: %s {'temperature': 8, 'humidity': 4, 'soil_moisture': 63}
Published data Successfully: %s {'temperature': -16, 'humidity': 76, 'soil_moisture': 17}
Message received from IBM IoT Platform: motoron
*******////Motor is ON////********
Message received from IBM IoT Platform: motoroff
******////Motor is OFF////********
Published data Successfully: %s {'temperature': 89, 'humidity': 48, 'soil_moisture': 78}
Message received from IBM IoT Platform: sprinkleson
******////Sprinkles are ON////********
Message received from IBM IoT Platform: sprinklesoff
******////Sprinkles are OFF////********
Published data Successfully: %s {'temperature': -5, 'humidity': 12, 'soil_moisture': 29}
Published data Successfully: %s {'temperature': 51, 'humidity': 6, 'soil_moisture': 80}
Published data Successfully: %s {'temperature': 95, 'humidity': 35, 'soil_moisture': 87}
Published data Successfully: %s {'temperature': -14, 'humidity': 46, 'soil_moisture': 10}
Ln: 2 Col: 72
26°C
Mostly clear
Search
ENG
IN
19:00
16-11-2022