

SPRINT 2

IBM Watson to IoT Platform, workflow for IoT scenarios using Node-red

Team ID	PNT2022TMID46724
Project Title	SmartFarmer - IoT Enabled Smart Farming Application

Python Output:

```
File Edit Shell Debug 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.
>>>
RESTART: C:\Users\kabilan\AppData\Local\Programs\Python\Python37\farmining.py
2022-11-17 13:28:27,085 ibmiotf.device.Client INFO Connected successfully: d:q9u3me:abimaneu:1234
Published, Soil_moisture = 19 % Temperature = -9 C Humidity = 14 % pH = 46 % o2 = 5 % to IBM Watson
Published, Soil_moisture = 25 % Temperature = 11 C Humidity = 8 % pH = 24 % o2 = 37 % to IBM Watson
Published, Soil_moisture = 4 % Temperature = 35 C Humidity = 7 % pH = 118 % o2 = 3 % to IBM Watson
```

IBM IoT connection information:

My credentials given to simulator are:

OrgID: **q9u3me**

API: **a-q9u3me-wjxzx829v5**

Device type: **abimaneu**

Device ID : **1234**

Device Token : **1234567890**

Connection Information	Connection Information
Recent Events	Basic connection information about this device.
State	Device ID 1234
Device Information	Device Type abimaneu
Metadata	Date Added Nov 16, 2022 4:00 PM
Diagnostics	Added By abimansakthi@gmail.com
Connection Logs	Connection Status Connected
Device Actions	Connection Time: Nov 17, 2022 1:28 PM
	Client Address: 106.195.41.136 SecureToken

IBM Watson IoT Platform Output:

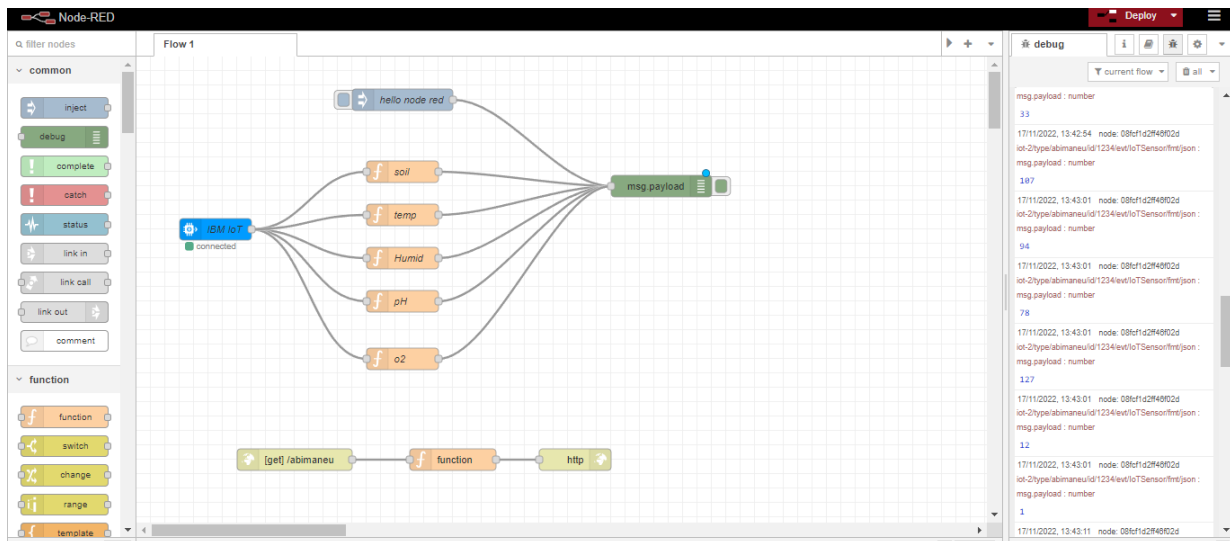
	Property	Value	Type	Event	Last Received
Connection Information	soil	84	Number	IoTSensor	a few seconds ago
Recent Events	temp	122	Number	IoTSensor	a few seconds ago
State	Humid	50	Number	IoTSensor	a few seconds ago
Device Information	pH	58	Number	IoTSensor	a few seconds ago
Metadata	o2	37	Number	IoTSensor	a few seconds ago
Diagnostics					
Connection Logs					
Device Actions					

Configuration of Node-Red to send commands to IBM cloud

IBM IoT 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 screenshot displays the Node-RED web interface. On the left, the 'common' node palette is visible, showing various nodes like 'inject', 'debug', 'complete', 'catch', 'status', 'link in', 'link call', 'link out', and 'comment'. The central workspace shows a flow named 'Flow 1' with an 'IBM IoT' node connected to several function nodes. The right sidebar is open to the 'Edit ibmiot node' configuration panel. The 'Properties' tab is active, showing the following settings: Name (IBMIotapi), API Key (a-q9u3me-wjloxz829v5), API Token (masked with dots), Server-Name (orgid.messaging.internetofthings.ibmcloud.com), Scalable (unchecked), Application ID (empty), Keep Alive (60 Seconds), and Use Clean Session (checked). At the bottom, it indicates '2 nodes use this config' and 'On all flows'. On the far right, a 'debug' console shows a series of log messages from the IBM IoT node, including timestamps, node IDs, and payloads.

Connection of the Nodes to Analyse the Environmental Parameters.

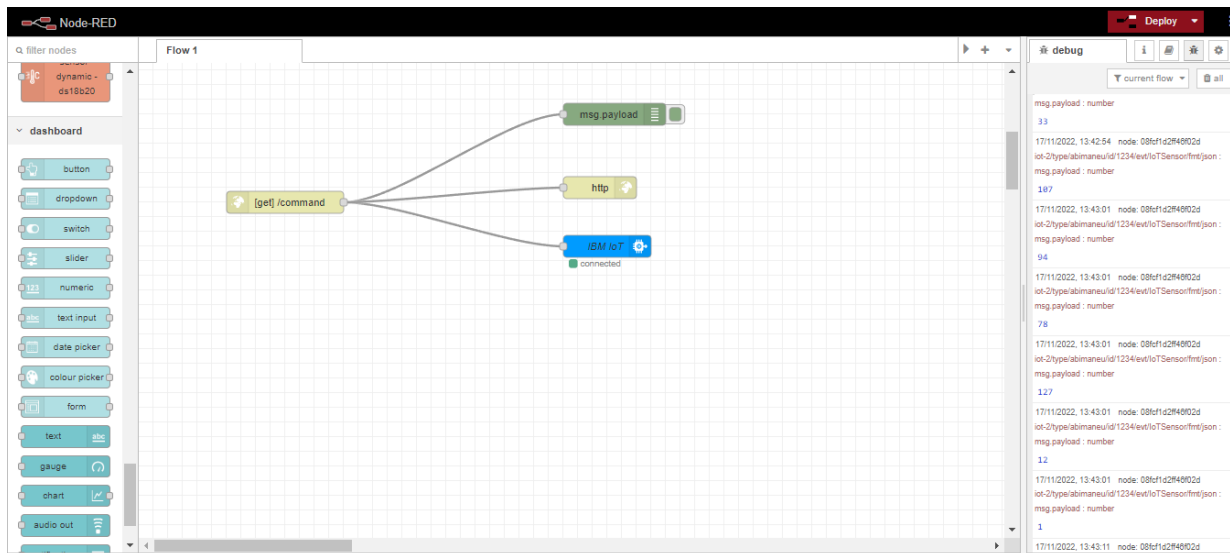


We used a function node to analyse the data received and assign command to the each number.

The Java script code for the analyses is:

```
msg.payload = msg.payload.temp
global.set("t",msg.payload)
return msg;
```

Connection of the Nodes to Control the motor:



We used a function node to analyse the data received and assign command to turn ON or OFF the each number of buttons.

The Java script code for the analyses is:

```
if(msg.payload===1)
msg.payload={"command":
```

```
"ON"}; else  
if(msg.payload===0)  
msg.payload={"command":  
"OFF"};
```