

## **SPRINT DELIVERY – 2**

Team ID	PNT2022TMID46489
Project	IoT Enabled Smart  Farming  Application
Date	15 November 2022

### 5. Building Project

Connecting IOT Simulator  
to IBM WatsonIOTPlatform

Open link provided in above  
section 4.3 Give the credentials of  
your device in IBM Watson  
IOTPlatformClick on connect  
My credentials given to simulator are:

OrgID: **4clor3** api: **a-**

**157uf3- f5rg4qxpd3**

Device type: **NodeMCU**

token: **6ogMaaQHNWF**

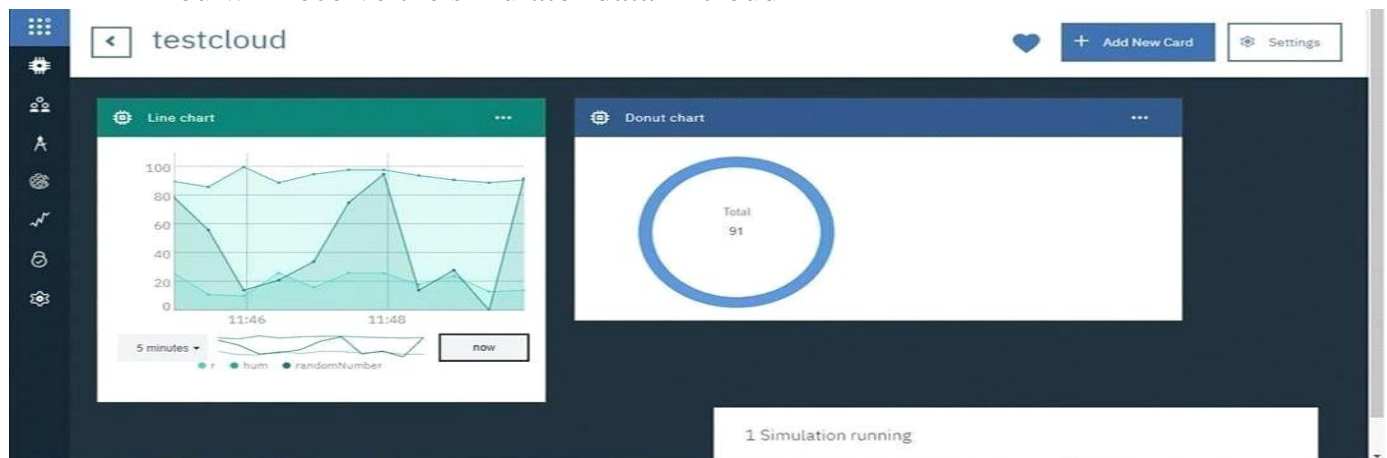
**EgOD8R?**Device ID :

**1234**

Device Token : **87654321**

You can see the received data in graphs by creating cards in Boards tab

- You will receive the simulator data in cloud



- You can see the received data in Recent Events under your device

- Data received in this format(json)

```
{
```

```
  "d": {
```

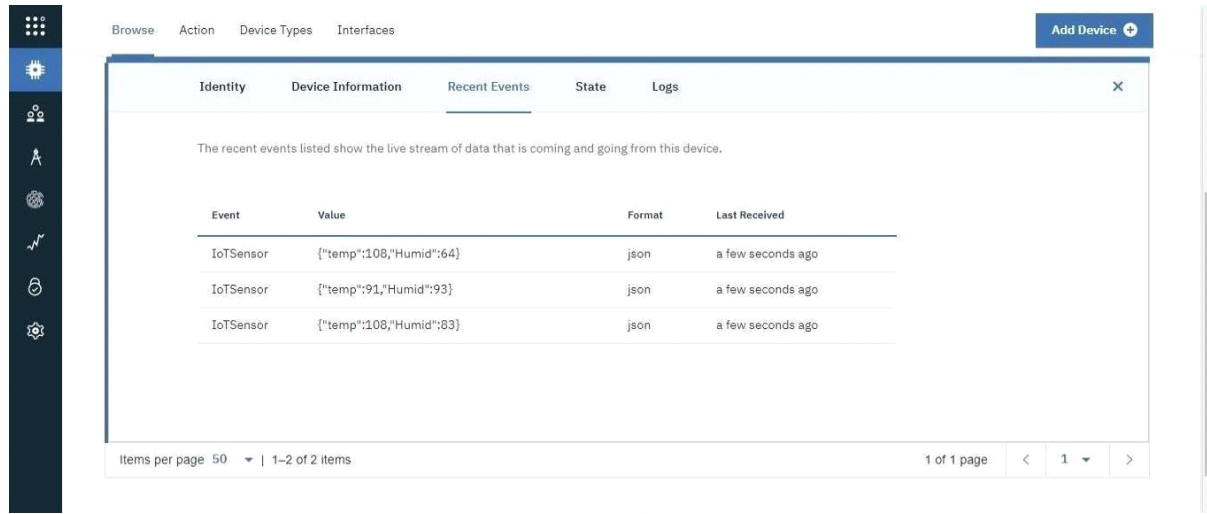
- "name": "NodeMCU",

- "temperature": 17,

- "humidity": 76,

- "Moisture ": 25

```
}  
  
}
```



Identity Device Information Recent Events State Logs

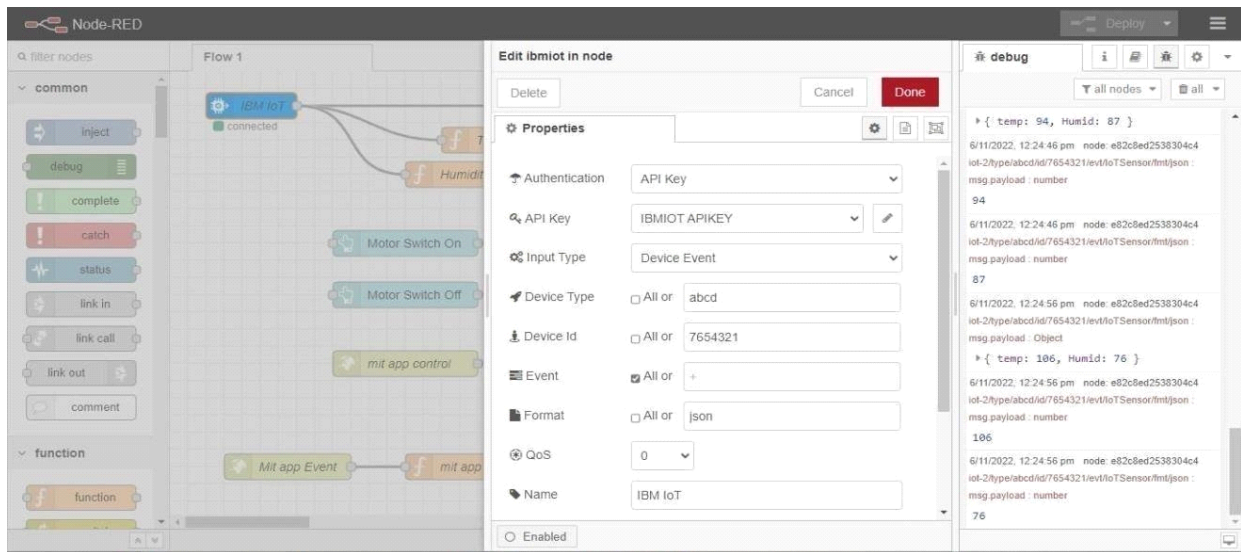
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoT Sensor	{"temp":108,"Humid":64}	json	a few seconds ago
IoT Sensor	{"temp":91,"Humid":93}	json	a few seconds ago
IoT Sensor	{"temp":108,"Humid":83}	json	a few seconds ago

Items per page 50 | 1-2 of 2 items 1 of 1 page < 1 >

## Configuration of Node-Red to collect IBM cloud data

The node IBM IOT App In is added to Node-Red workflow. Then the appropriate device credentials obtained earlier are entered into the node to connect and fetch device telemetry to Node-Red.



Once it is connected Node-Red receives data from the deviceDisplaythe data using debug node for verification

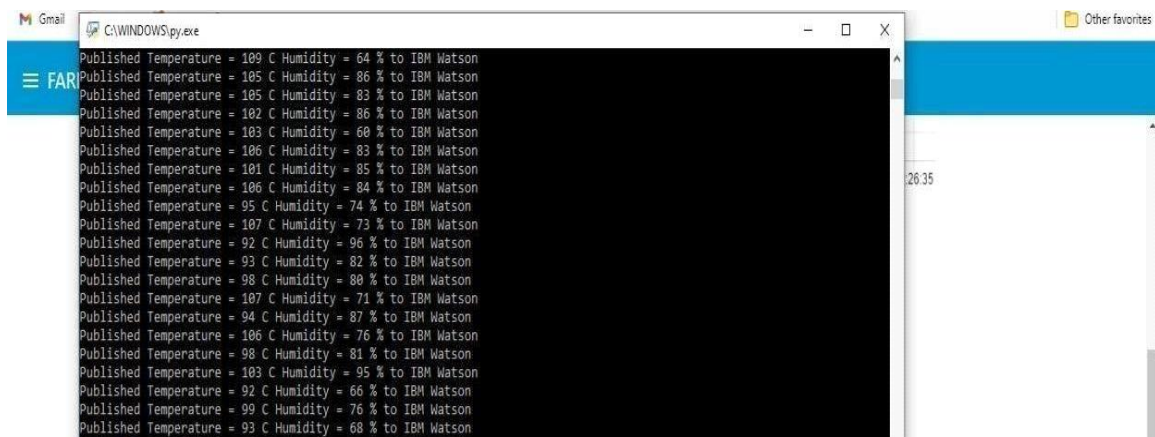
Connect function node and write the Java script code to get each readingseparately.The Java script code for the function node is:

```
msg.payload =
```

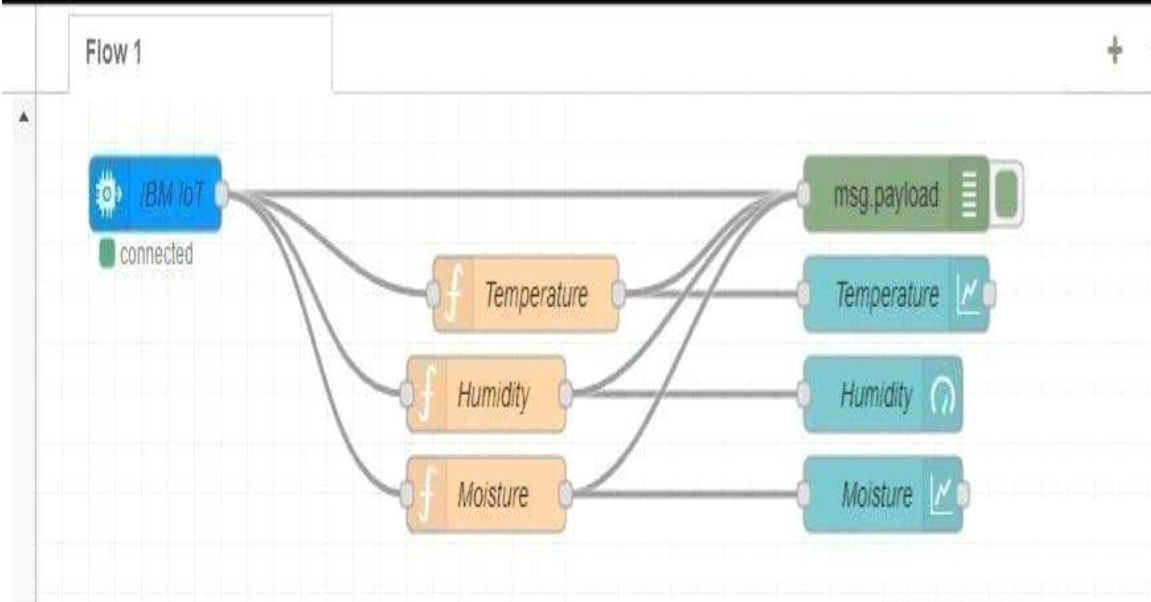
```
msg.payload.d.temperature return
```

```
msg;
```

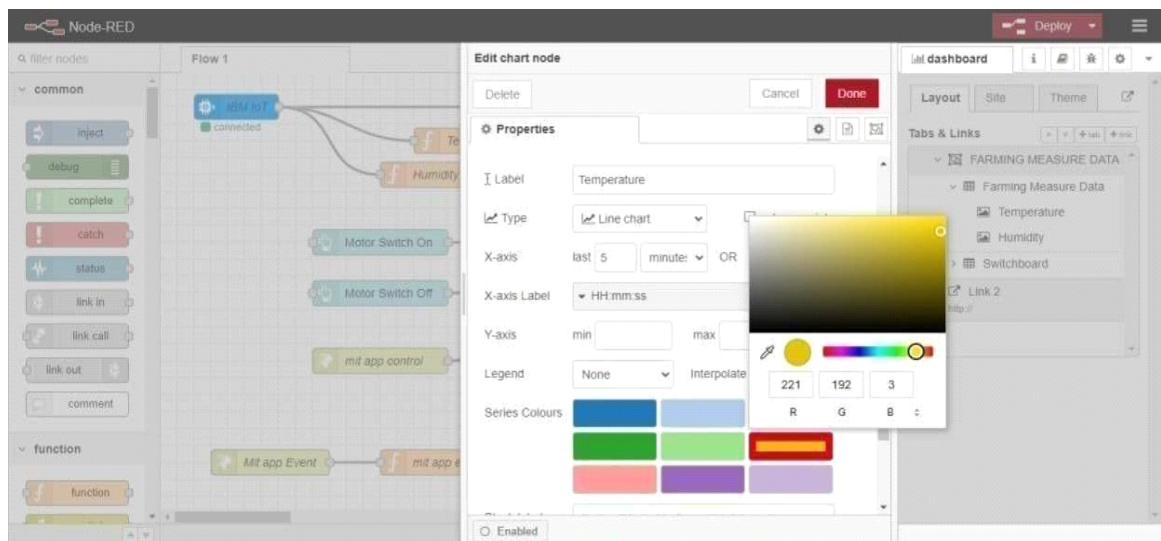
Finally connect Gauge nodes from dashboard to see the data in UI



## Data received from the cloud in Node-Red console



Nodes connected in following manner to get each reading separately



This is the Java script code I written for the function node to get Temperatureseparately.

### Configuration of Node-Red to collect data from Open Weather

The Node-Red also receive data from the Open Weather API by HTTP GET request. An inject trigger is added to perform HTTP request for every certain interval.

HTTP request node is configured with URL we saved before in section 4.4 The data we receive from Open Weather after request is in below JSON

```
format:{ "coord":{"lon":79.85,"lat":14.13},"weather":[{"id":803,"main":"Clouds", "description":"brokenclouds","icon":"04n"}], "base":"stations", "main":{"temp":307.59,"feels_like":305.5,"temp_min":307.59,"temp_max":307.59,"pressure":1002,"humidity":35,"sea_level":1002,"grnd_level":1000}, "wind":{"speed":6.23,"deg":170}, "clouds":{"all":68}, "dt":1589991979, "sys":{"country":"IN", "sunrise":1589933553, "sunset":1589979720}, "timezone":19800, "id":1270791, "name":"Gūdūr", "cod":200}
```

In order to parse the JSON string we use Java script functions and get each parameters

```
var temperature =  
msg.payload.main.temp;  
temperature = temperature -  
273.15; return  
{payload : temperature.toFixed(2)};
```

In the above Java script code we take temperature parameter into a new variable and convert it from kelvin to Celsius

Then we add Gauge and text nodes to represent data visually in UI

