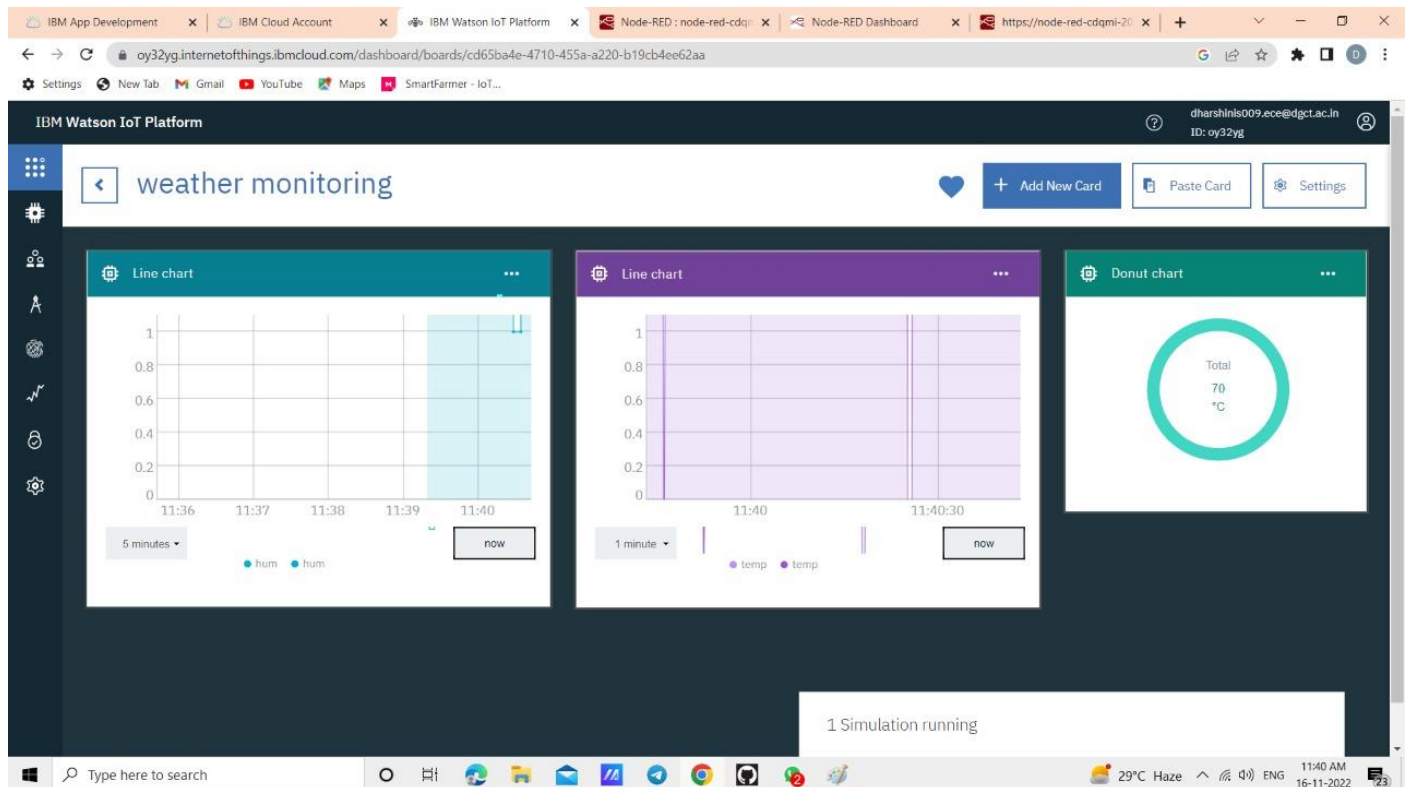


## Sprint delivery 2

Title	Smart Farmer-IOT Enabled Smart Farming Application
Domain name	INTERNET OF THINGS
Team ID	PNT2022TMID29878

### Building Project

#### Connecting IoT Simulator to IBM Watson IoT Platform



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": "abcd",  
    "temperature": 17,  
    "humidity": 76,  
    "Moisture": 25  
  }  
}
```

The screenshot shows the IBM Watson IoT Platform interface. On the left, a sidebar contains navigation icons. The main area displays a table of devices. A modal window titled 'Device Type: Dharshini' is open on the right, showing event configuration.

Device ID	Status	Device Type	Class ID	Date
2002	Disconnected	Dharshini	Device	Nov 15, 2022 6:22 PM

Below the table, a detailed view for device ID 2002 is shown:

- Device ID: 2002
- Device Type: Dharshini
- Date Added: Nov 15, 2022 6:22 PM
- Added By: dharshinis009.ece@dgct.ac.in
- Connection Status: Disconnected

The 'Device Type: Dharshini' modal shows the following configuration:

- Event type name: event\_1
- Schedule: 20 Every Minute
- Payload:
 

```

{
  "soil": random(0, 100),
  "hum": random(0, 100),
  "temp": random(-20, 125)
}
```
- Buttons: Upload a CSV file, Cancel, Save

The screenshot shows the Node-RED interface with a workflow titled 'Flow 1'. The workflow includes an 'IBM IoT App In' node connected to three function nodes for 'soil moisture', 'humidity', and 'temperature'. These function nodes are connected to 'msg.payload' and then to 'moisture', 'Humidity', and 'Temperature' gauge nodes. A 'Motor on' and 'Motor off' node is also connected to the 'IBM IoT App In' node. A 'debug' node is used for verification. The right sidebar shows the debug console with logs for the 'msg.payload' node.

```

graph LR
    IoT[IBM IoT App In] --> Soil[soil moisture]
    IoT --> Hum[humidity]
    IoT --> Temp[temperature]
    IoT --> MotorOn[Motor on]
    IoT --> MotorOff[Motor off]
    Soil --> Moisture[msg.payload]
    Hum --> Humidity[msg.payload]
    Temp --> Temperature[msg.payload]
    Moisture --> GaugeMoisture[moisture]
    Humidity --> GaugeHumidity[Humidity]
    Temperature --> GaugeTemperature[Temperature]
    MotorOn --> IoT
    MotorOff --> IoT
    IoT --> Debug[debug]
  
```

- 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 device Display the data using debug node for verification
- Connect function node and write the Java script code to get each reading separately.
- 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

IBM App Development | IBM Cloud Account | IBM Watson IoT Platform | Node-RED Dashboard | Node-RED : node-red-cdq | Node-RED Dashboard

node-red-cdqmi-2022-11-15.eu-gb.mybluemix.net/red/#flow/da1bafa2e25950fc

Settings | New Tab | Gmail | YouTube | Maps | SmartFarmer - IoT...

Node-RED

Flow 1

common

function

inject

debug

complete

catch

status

link in

link call

link out

comment

function

switch

change

range

IBM IoT

connected

soil

hum

tem

Motor on

Motor off

[get] /data

data

Edit function node

Delete | Cancel | Done

Properties

Name: soil moisture

Setup | On Start | On Message | On Stop

```
1 global.set('soil',msg.payload.soil_moisture)
2 msg.payload=msg.payload.soil
3 return msg;
```

Enabled

debug

all nodes | all

71

11/16/2022, 10:18:02 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
53

11/16/2022, 10:18:02 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
97

11/16/2022, 10:18:02 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
32

11/16/2022, 10:18:05 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
94

11/16/2022, 10:18:05 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
69

11/16/2022, 10:18:05 AM node: f2f2649a.0d0d98  
iot-2/type/DharshiniId/2002/evt/event\_1fmt/json :  
msg.payload : number  
3

Type here to search

24°C Cloudy | 10:18 AM 16-11-2022