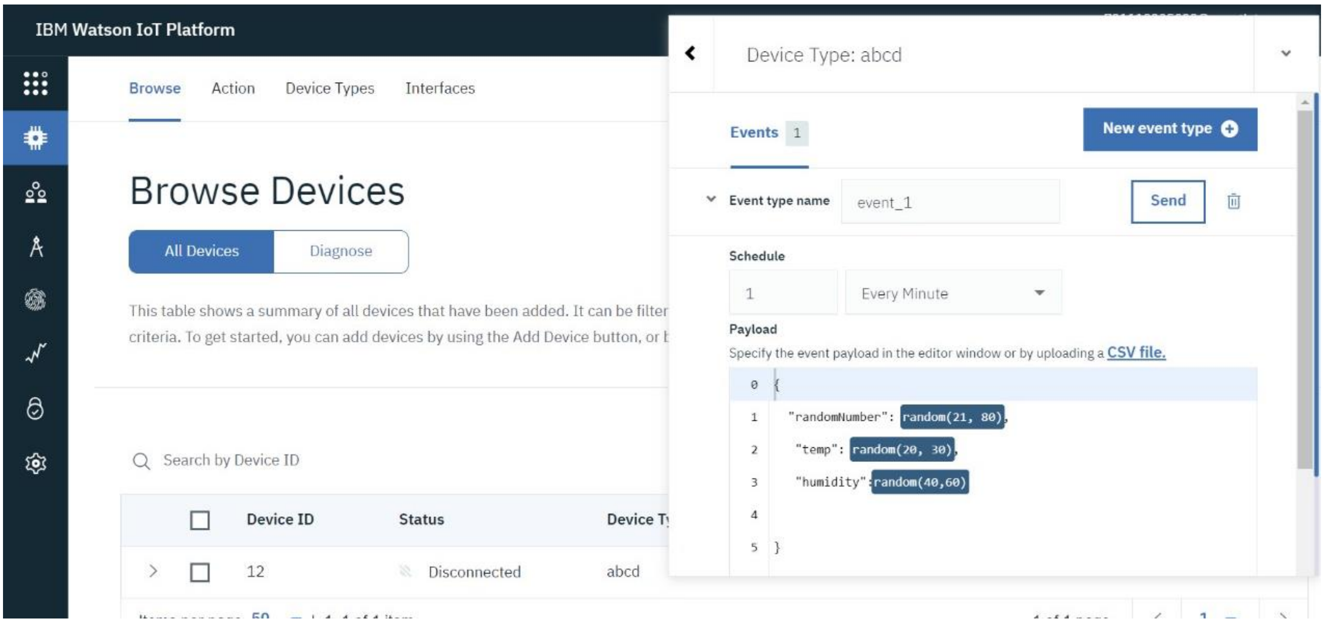
SPRINT – 3

Date	17 November 2022
Team ID	PNT2022TMID02102
Project Name	Smart farmer- IOT enabled smart farming application

WEB APPLICATION

Step 1: Generate random values of Humidity, Temperature, Soil Moisture are generated from events in the Watson IOT platform.



Device Type: abcd

Events 1

Event type name: event_1

Schedule: 1 Every Minute

Payload

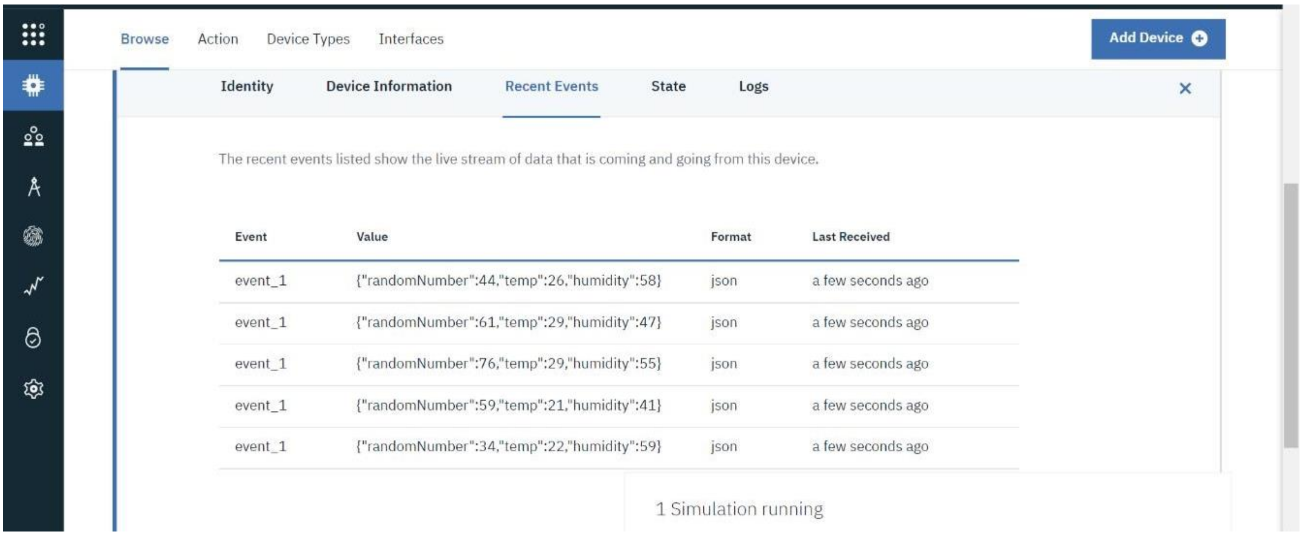
Specify the event payload in the editor window or by uploading a CSV file.

```
{
  "randomNumber": random(21, 80),
   "temp": random(20, 30),
   "humidity":random(40,60)

}
```

This table shows a summary of all devices that have been added. It can be filter criteria. To get started, you can add devices by using the Add Device button, or b

	Device ID	Status	Device Ty
☐	12	Disconnected	abcd

Step 2: The values are generated for every minute as payload from events in the form of **json** format.

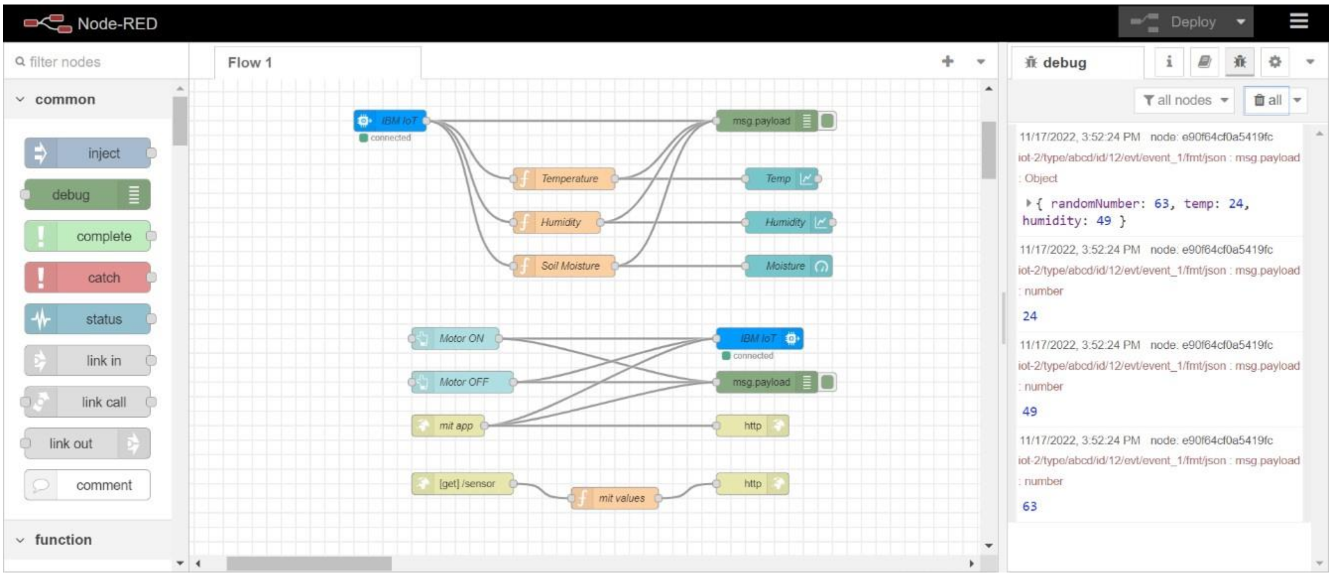


The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	{"randomNumber":44,"temp":26,"humidity":58}	json	a few seconds ago
event_1	{"randomNumber":61,"temp":29,"humidity":47}	json	a few seconds ago
event_1	{"randomNumber":76,"temp":29,"humidity":55}	json	a few seconds ago
event_1	{"randomNumber":59,"temp":21,"humidity":41}	json	a few seconds ago
event_1	{"randomNumber":34,"temp":22,"humidity":59}	json	a few seconds ago

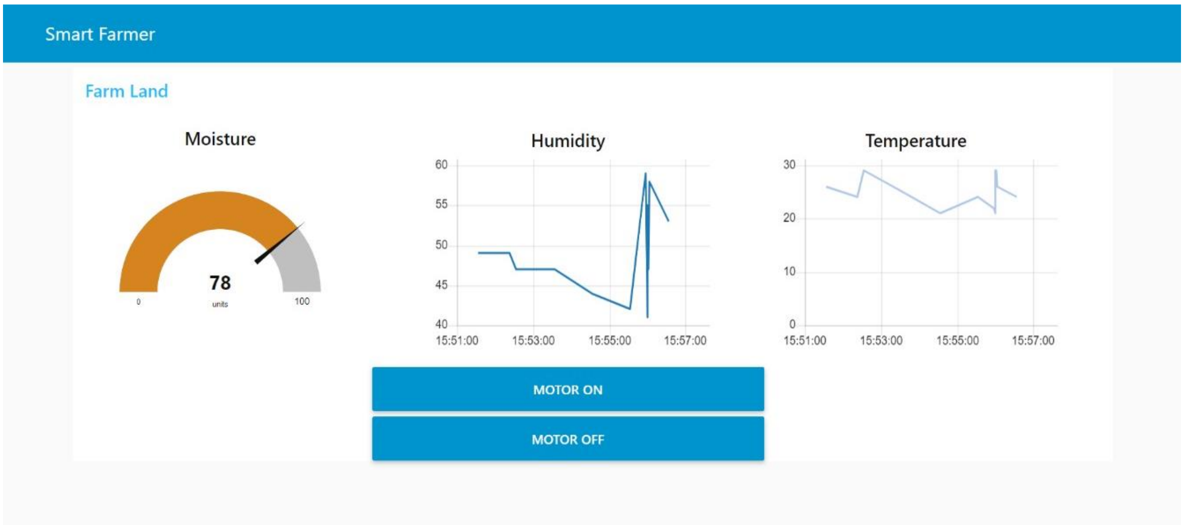
1 Simulation running

Step 3: Node-RED is an editor used to create the flow between the nodes and has to be deployed once the flow has been made. Once deployment is done the editor displays the details of temperature, soil moisture, humidity in the debug section.

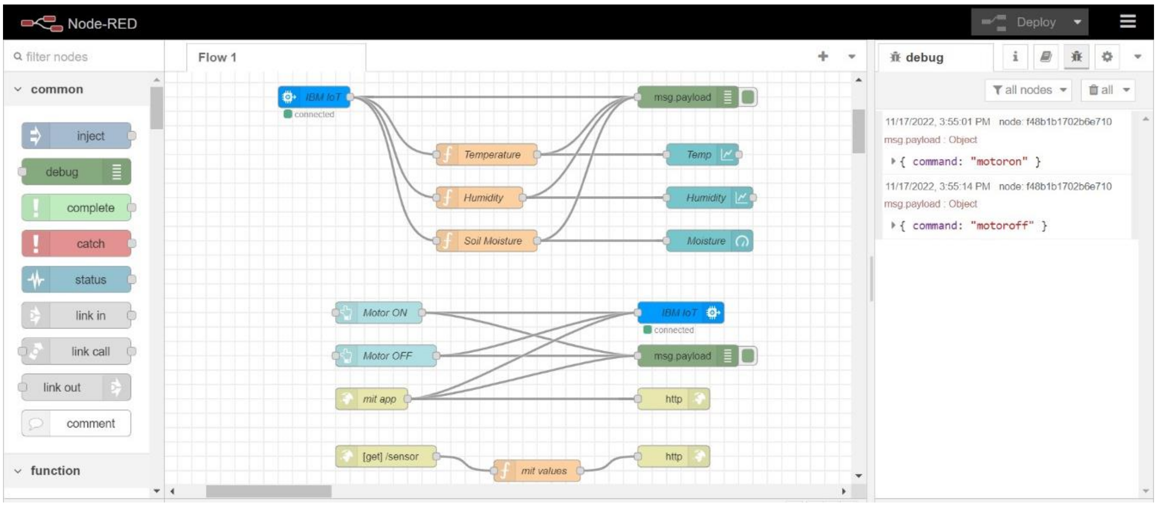


```
11/17/2022, 3:52:24 PM   node: e90f64cf0a5419fc
iot-2/type/abcd/id/12/evt/event_1/fmt/json : msg.payload
: Object
▸{ randomNumber: 63, temp: 24,
humidity: 49 }

11/17/2022, 3:52:24 PM   node: e90f64cf0a5419fc
iot-2/type/abcd/id/12/evt/event_1/fmt/json : msg.payload
: number
24

11/17/2022, 3:52:24 PM   node: e90f64cf0a5419fc
iot-2/type/abcd/id/12/evt/event_1/fmt/json : msg.payload
: number
49

11/17/2022, 3:52:24 PM   node: e90f64cf0a5419fc
iot-2/type/abcd/id/12/evt/event_1/fmt/json : msg.payload
: number
63
```

Step 4: The **Smart Farmer** dashboard is viewed once the deployment is completed where we can able to view the graphs of Humidity and Temperature. Gauge is used to view the moisture.

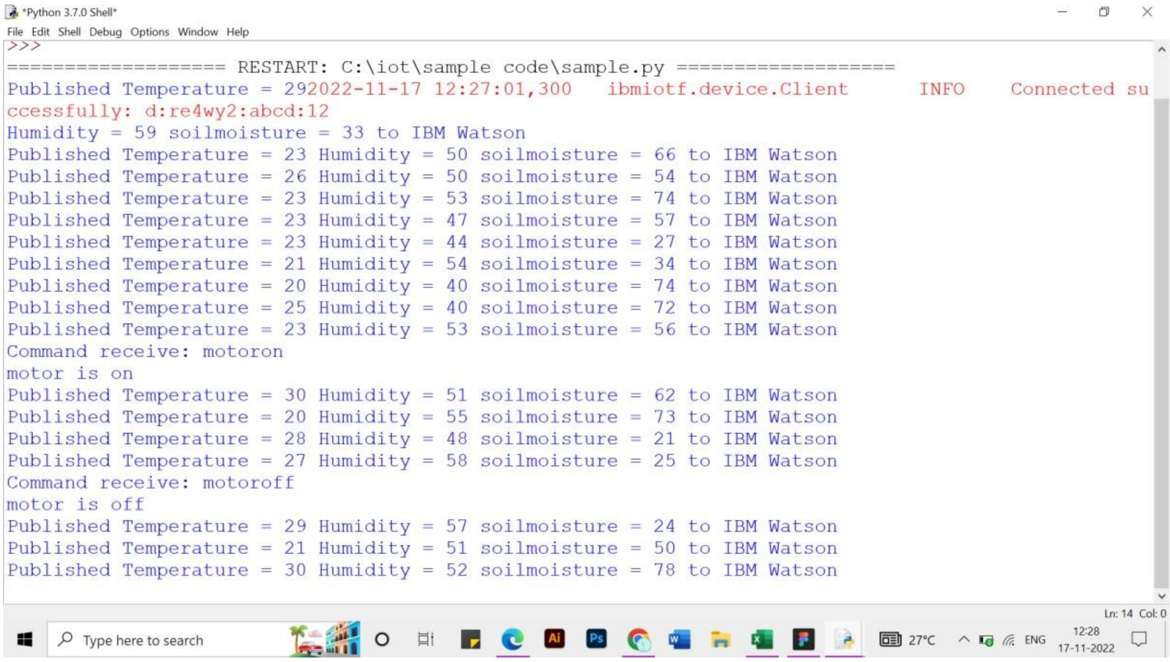


Step 5: When the **Motor ON** button is clicked the we receive the output as **“motoron”** and **Motor OFF** button is clicked we receive the output as **“motoroff”**. And these output are received in the debug section of the editor.



```
11/17/2022, 3:55:01 PM   node: f48b1b1702b6e710
msg.payload : Object
▸{ command: "motoron" }
11/17/2022, 3:55:14 PM   node: f48b1b1702b6e710
msg.payload : Object
▸{ command: "motoroff" }
```

Step 6: The output is also received in the **python code editor** when the buttons are clicked in the dashboard and random values are also generated.



```
>>>
=================== RESTART: C:\iot\sample code\sample.py ===================
Published Temperature = 292022-11-17 12:27:01,300   ibmiotf.device.Client      INFO    Connected su
ccessfully: d:re4wy2:abcd:12
Humidity = 59 soilmoisture = 33 to IBM Watson
Published Temperature = 23 Humidity = 50 soilmoisture = 66 to IBM Watson
Published Temperature = 26 Humidity = 50 soilmoisture = 54 to IBM Watson
Published Temperature = 23 Humidity = 53 soilmoisture = 74 to IBM Watson
Published Temperature = 23 Humidity = 47 soilmoisture = 57 to IBM Watson
Published Temperature = 23 Humidity = 44 soilmoisture = 27 to IBM Watson
Published Temperature = 21 Humidity = 54 soilmoisture = 34 to IBM Watson
Published Temperature = 20 Humidity = 40 soilmoisture = 74 to IBM Watson
Published Temperature = 25 Humidity = 40 soilmoisture = 72 to IBM Watson
Published Temperature = 23 Humidity = 53 soilmoisture = 56 to IBM Watson
Command receive: motoron
motor is on
Published Temperature = 30 Humidity = 51 soilmoisture = 62 to IBM Watson
Published Temperature = 20 Humidity = 55 soilmoisture = 73 to IBM Watson
Published Temperature = 28 Humidity = 48 soilmoisture = 21 to IBM Watson
Published Temperature = 27 Humidity = 58 soilmoisture = 25 to IBM Watson
Command receive: motoroff
motor is off
Published Temperature = 29 Humidity = 57 soilmoisture = 24 to IBM Watson
Published Temperature = 21 Humidity = 51 soilmoisture = 50 to IBM Watson
Published Temperature = 30 Humidity = 52 soilmoisture = 78 to IBM Watson
```