

## SPRINT 2

### REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM

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The screenshot displays the IBM Watson IoT Platform interface. The main view shows a list of events under the 'Browse' tab. The events are listed in a table with columns 'Event' and 'Value'. The events are all named 'event\_1' and contain JSON payloads representing water quality data (pH, conductivity, temperature, oxygen, and turbidity).

Event	Value
event_1	{"pH":80,"conductivity":54,"T":3,"oxygen":39,"tu..."}
event_1	{"pH":83,"conductivity":26,"T":72,"oxygen":1,"tu..."}
event_1	{"pH":19,"conductivity":70,"T":73,"oxygen":83,"t..."}
event_1	{"pH":8,"conductivity":84,"T":12,"oxygen":56,"tu..."}
event_1	{"pH":28,"conductivity":11,"T":74,"oxygen":49,"t..."}

Below the table, it indicates 'Items per page 50' and '1-1 of 1 item'.

A configuration window for a 'NodeMCU' device is open, showing the 'Events' tab. It includes a 'New event type' button, a 'Send' button, and a 'Schedule' dropdown set to 'Every Minute'. The 'Payload' section shows a JSON payload with random values for pH, conductivity, temperature, oxygen, and turbidity.

```
{
  "pH": random(0, 100),
  "conductivity": random(0, 100),
  "T": random(0, 100),
  "oxygen": random(0, 100),
  "turbidity": random(0, 100)
}
```

Node-RED interface showing a flow named "Flow 1". The flow consists of an "IBM IoT" node connected to a "msg payload" node. The "IBM IoT" node is marked as "connected".

The left sidebar shows the "filter nodes" panel with categories: common, function, network, input, output, sequence, parser, storage, IBM Watson, and dashboard. The "input" category is selected, showing "Watson IoT" and "ibmiot in" nodes.

The right sidebar shows the "debug" console with a log of messages received from the "IBM IoT" node. The messages are JSON objects containing sensor data:

```
12/11/2022, 14:29:30 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/ev/1/event_1/fmt/json :
msg.payload : Object
{
  pH: 42, conductivity: 37, T: 42,
  oxygen: 11, turbidity: 28
}
12/11/2022, 14:29:53 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/ev/1/event_1/fmt/json :
msg.payload : Object
{
  pH: 70, conductivity: 26, T: 18,
  oxygen: 21, turbidity: 19
}
12/11/2022, 14:30:55 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/ev/1/event_1/fmt/json :
msg.payload : Object
{
  pH: 48, conductivity: 4, T: 38,
  oxygen: 63, turbidity: 49
}
12/11/2022, 14:31:55 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/ev/1/event_1/fmt/json :
msg.payload : Object
{
  pH: 88, conductivity: 60, T: 44,
  oxygen: 8, turbidity: 48
}
12/11/2022, 14:32:55 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/ev/1/event_1/fmt/json :
msg.payload : Object
{
  pH: 80, conductivity: 4, T: 38,
  oxygen: 63, turbidity: 49
}
```

Node-RED interface showing a flow named "Flow 1". The flow consists of an "IBM IoT" node connected to a "msg payload" node. The "IBM IoT" node is marked as "connected".

The left sidebar shows the "filter nodes" panel with categories: dropdown, switch, slider, numeric, text input, date picker, colour picker, form, text, gauge, chart, audio out, notification, and ui control. The "numeric" category is selected, showing various numeric input widgets.

The right sidebar shows the "dashboard" panel with a "Layout" tab selected. The "Layout" tab shows a "Tab 1" group containing a "river water quality monitor" group and a "Group 2" group. A message at the bottom states: "There is 1 widget not in a group. Click here to create the missing groups".

Shared with x Baradwaj ses x Session 10,11 x Application E x Node-RED: r x Node-RED D x IBM Watson x Python Refs x

node-red-kzuut-2022-10-10-us-east.mybluemix.net/red/#flow/96c0ea422e46ed53

Apps Most Popular Music... Current weather an... MQTT Websocket C... evaluator mentor

Node-RED

Flow 1

filter nodes

udp in

udp out

input

ibmiot.in

output

OpenWhisk

ibmiot.out

sequence

split

join

sort

batch

Light on

Light off

Edit ibmiot out node

Delete Cancel Done

Properties

Authentication API Key

API Key api key

Output Type Device Command

Device Type abcd

Device Id 1234

Command Type cmd

Format json

Data data

QoS 0

Enabled

dashboard

Layout Site Theme

Tabs & Links

Smart Home

Garden moisture

Hall AC

Smart switch Board

30°C Cloudy 3:10 PM

Shared with x Baradwaj ses x Session 10,11 x Application E x Node-RED: r x Node-RED D x IBM Watson x Python Refs x

node-red-kzuut-2022-10-10-us-east.mybluemix.net/red/#flow/96c0ea422e46ed53

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Node-RED

Flow 1

filter nodes

ibmiot.in

ibmiot.out

dashboard

button

dropdown

switch

slider

numeric

text input

date picker

colour picker

form

Light ON

optional tooltip

optional text/icon color

optional background color

When clicked, send:

Payload { } {command:"lighton"}

Topic msg.topic

If msg arrives on input, emulate a button click: ☐

Class Optional CSS class name(s) for widget

Enabled

dashboard

Layout Site Theme

Tabs & Links

Smart Home

Garden moisture

Hall AC

Smart switch Board

30°C Cloudy 3:08 PM

