

## 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 with various sensor readings like pH, conductivity, temperature, and oxygen levels.

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 allows creating a new event type named 'event\_1'. The 'Schedule' is set to 'Every Minute'. The 'Payload' is configured with a JSON structure using random values for sensor readings:

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

The window includes a 'Send' button and a 'New event type' button. The bottom of the screen shows a Windows taskbar with the date and time as 3:17 PM on 11/12/2022.

Node-RED interface showing a flow named "Flow 1". The flow consists of an "IBM IoT" node connected to a "msg payload" node. The "debug" console on the right displays a series of JSON messages received from the IoT node, including pH, conductivity, temperature (T), oxygen, and turbidity values. The messages are as follows:

```
12/11/2022, 14:29:30 node:12f2649a.0d0d98
iot-2/type/NodeMCUID/19141/evl/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/evl/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/evl/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/evl/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/evl/event_1/fmt/json :
msg.payload : Object
{
  pH: 80, conductivity: 8, T: 36,
  oxygen: 60, turbidity: 48
}
```

Node-RED interface showing a flow named "Flow 1". The flow consists of an "IBM IoT" node connected to a "msg payload" node. The "msg payload" node is connected to a series of function nodes (f) that process the data. The function nodes are labeled "pH", "conductivity", "T", "oxygen", and "turbidity". Each function node is connected to a corresponding output node (pH, conductivity, T, oxygen, and turbidity). The "dashboard" panel on the right shows a "Layout" tab with a "Site" and "Theme" section. The "Tabs & Links" section shows a "Tab 1" with a "river water quality monitor" link. A message at the bottom of the dashboard states: "There is 1 widget not in a group. Click here to create the missing groups".



