

SPRINT-2 DELIVERY

DATE	5 NOVEMBER,2022
TEAM ID	PNT2022MID08171
PROJECT NAME	REAL-TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
MAXIMUM MARKS	

NODE RED SETUP AND CONNECTIONS :

IBM IOT device is connected to functions (Such as Temperature, Turbidity, pH value). The output from the python code is displayed as output(msg.payload) .

The screenshot displays the Node-RED web interface in a browser. The top navigation bar includes tabs for 'Application Details - IBM Cloud', 'Node-RED : node-red-ylmva-2022', and 'IBM Watson IoT Platform'. The address bar shows the URL: `node-red-ylmva-2022-11-05.au-syd.mybluemix.net/red/#flow/5b2b6f5f28c684ec`. A notification banner at the top center states 'Successfully deployed' and 'You have some unused configuration nodes. Click here to see them'.

The main workspace shows a flow titled 'Flow 1'. On the left sidebar, the 'common' nodes section is expanded, showing nodes like inject, debug, complete, catch, status, link in, link call, link out, and comment. The 'function' section is also visible.

The flow diagram consists of the following components and connections:

- An **IBM IoT** node (blue) with a 'connected' status icon.
- Three function nodes (orange) labeled **Temperature**, **Turbidity**, and **PH value**.
- Three output nodes (blue) labeled **Temp graph**, **Turbidity meter**, and **PH meter**.
- A **msg.payload** node (green) at the top right.
- A **[get] /sensor** node (green) at the bottom.
- A **function** node (orange) at the bottom.
- An **http** node (green) at the bottom right.

Connections: The **IBM IoT** node is connected to the **Temperature**, **Turbidity**, and **PH value** function nodes. Each function node is connected to its corresponding output node (e.g., **Temperature** to **Temp graph**). The **msg.payload** node is connected to the **Temp graph**, **Turbidity meter**, and **PH meter** nodes. The **[get] /sensor** node is connected to the **function** node, which is then connected to the **http** node.

The right sidebar shows the 'debug' console with a list of messages. The messages are JSON objects containing sensor data and a status string. For example, one message is:

```
{ temp: 4, ph: 11.667882368271683, turb: 2.3393578838693477, str1: "Not safe to drink" }
```

The bottom status bar shows the system clock as 16:44 on 08-11-2022, along with weather information (30°C Cloudy) and various system icons.

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IOT DEVICE CONNECTION:

The IOT DEVICE IS CONNECTED WITH PYTHON CODE AND NODE RED

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes tabs for 'Application Details - IBM Cloud', 'Node-RED : node-red-ymva-202', 'Node-RED Dashboard', and 'IBM Watson IoT Platform'. The main header shows the user 'yogeswarimani07@gmail.com' with ID '7wjirt'. The left sidebar contains icons for various platform features. The main content area is titled 'Browse Devices' and includes a table of connected devices.

Browse Devices

All Devices | Diagnose

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Search by Device ID

Device Simulator: ☒ | ☐ | ☐

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Connected	raspberrypi	Device	Oct 19, 2022 6:52 PM	

Items per page: 50 | 1-1 of 1 item

1 of 1 page

1 Simulation running

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The python code random values are published in IBM CLOUD IOT Device

The screenshot shows the IBM Watson IoT Platform dashboard. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar for 'Device ID' is present. The main table lists devices, with one device (ID 12345) shown as 'Connected' with a 'raspberrypi' device type. Below the table, the 'Recent Events' tab is selected, showing a table of events. The event table has columns for 'Event', 'Value', 'Format', and 'Last Received'. One event is listed: 'IoTSensor' with a JSON value, 'json' format, and 'a few seconds ago' received time. The bottom status bar indicates '1 Simulation running'.

Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
12345	Connected	raspberrypi	Device	Oct 19, 2022 6:52 PM	

Event	Value	Format	Last Received
IoTSensor	{"temp":7,"ph":4.756331352914019,"turb":1.0...	json	a few seconds ago

This screenshot shows the same IBM Watson IoT Platform dashboard as the first image, but with an 'Event Payload' modal window open. The modal displays the event name 'IoTSensor' and the time received 'Nov 8, 2022 4:47 PM'. It also shows the raw JSON payload of the event, which includes temperature, pH, turbidity, and a string value.

```
1 * {
2   "temp": 7,
3   "ph": 4.756331352914019,
4   "turb": 1.0128775979573463,
5   "str1": "Not safe to drink"
6 }
```

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NODE RED DASHBOARD OUTPUT:

