

Develop the Web Application using NODE-RED

Team ID	PNT2022TMID48312
Project Name	Real-time river water quality monitoring and control system

IBM Watson IOT Platform:

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes the platform name, a user profile, and a search bar. The main content area shows a list of devices with columns for Device ID, Status, Device Type, Class ID, and Date Added. A device with ID 1234 is highlighted, showing it is 'Connected' and of type 'Sensor_River_UP'. Below the list, the 'Recent Events' tab is selected, displaying a table of events with columns for Event, Value, Format, and Last Received. The events show status updates with JSON payloads for Turbidity, PHvalue, and temperature.

Device ID	Status	Device Type	Class ID	Date Added
1234	Disconnected	ESP32	Device	18 Nov 2022 11:40
1234	Connected	Sensor_River_UP	Device	14 Nov 2022 20:05

Event	Value	Format	Last Received
status	{"Turbidity":40,"PHvalue":10,"temperature":108}	json	a few seconds ago
status	{"Turbidity":23,"PHvalue":5,"temperature":18}	json	a few seconds ago

NODE RED:

The screenshot shows the Node-RED web interface in a browser. The top bar includes tabs for 'IBM-Project-30582-16', 'Inbox (11) - rameshkv', 'Service Details - IBM', 'IBM Watson IoT Platform', 'Product overview of N', and 'Node-RED : node-red'. The address bar shows the URL: `node-red-kdpl-2022-11-10.eu-gb.mybluemix.net/red/#flow/cf8c8c7056d9f474`.

The main workspace displays a flow with two parts. The first part, labeled 'Flow 1', has two input nodes: 'motor on' and 'motor off'. Both connect to an 'IBM IoT' node, which then connects to a 'msg payload' node. The second part, labeled 'Flow 2', has three input nodes: 'Turbidity', 'PH', and 'Temperature'. Each connects to a corresponding output node: 'turb', 'ph', and 'temp'. These output nodes connect to a 'msg payload' node. Below these flows, there are two 'http' nodes connected to 'web page' nodes, with one labeled '[get] /command' and the other '[get] /data'.

The right sidebar shows a 'debug' console with four log entries. Each entry shows a timestamp, a node ID, and a message. The messages are: 'node: b1177649bd5bd45a', 'iot- 2/type/Sensor_River_UPId/1234/ev/status/fmt/json : msg.payload : number 98', 'node: b1177649bd5bd45a', 'iot- 2/type/Sensor_River_UPId/1234/ev/status/fmt/json : msg.payload : number 8', 'node: b1177649bd5bd45a', 'iot- 2/type/Sensor_River_UPId/1234/ev/status/fmt/json : msg.payload : number 64', and 'node: b1177649bd5bd45a', 'iot- 2/type/Sensor_River_UPId/1234/ev/status/fmt/json : msg.payload : Object { Turbidity: 52, PHvalue: 7, temperature: 8 }'.

The screenshot shows the MIT App Inventor web interface in a browser. The top bar includes tabs for 'IBM-Project-30582-16', 'Inbox (10) - rameshkv', 'Service Details - IBM', 'IBM Watson IoT Platform', 'Product overview of N', 'Node-RED : node-red', and 'MIT App Inventor'. The address bar shows the URL: `ai2.appinventor.mit.edu/#4854052828348416`.

The main workspace displays a project named 'Water_Monitor2'. The left sidebar shows a 'Blocks' panel with categories: 'Built-in' (Control, Logic, Math, Text, Lists, Dictionaries, Colors, Variables, Procedures), 'Screen1' (VerticalArrangement1, HorizontalArrangement1, Label1, HorizontalArrangement2, Image1, HorizontalArrangement3), and 'Media'. The right sidebar shows a 'Viewer' panel with a 'Designer' tab and a 'Blocks' tab. The 'Designer' tab shows a visual representation of the app with a green header bar, a 'Screen1' container, and a 'Water_Monitor2' label. The 'Blocks' tab shows a visual representation of the app with a green header bar, a 'Screen1' container, and a 'Water_Monitor2' label.

The main workspace shows a flowchart with three main sections. The first section is a 'when Click1 - Timer' event, which triggers a 'set Web1 - Uri' block to 'https://node-red-kdpl-2022-11-10.eu-gb.mybluemix.net/' and a 'call Web1 - Get' block. The second section is a 'when Web1 - GetText' event, which triggers a 'set Label3 - Text' block to 'look up in pairs key Turbidity', a 'call Web1 - JsonTextDecode' block, and a 'get responseContent' block. The third section is a 'when Button1 - Click' event, which triggers a 'set Web2 - Uri' block to 'https://node-red-kdpl-2022-11-10.eu-gb.mybluemix.net/' and a 'call Web2 - Get' block. The fourth section is a 'when Button2 - Click' event, which triggers a 'set Web3 - Uri' block to 'https://node-red-kdpl-2022-11-10.eu-gb.mybluemix.net/' and a 'call Web3 - Get' block.