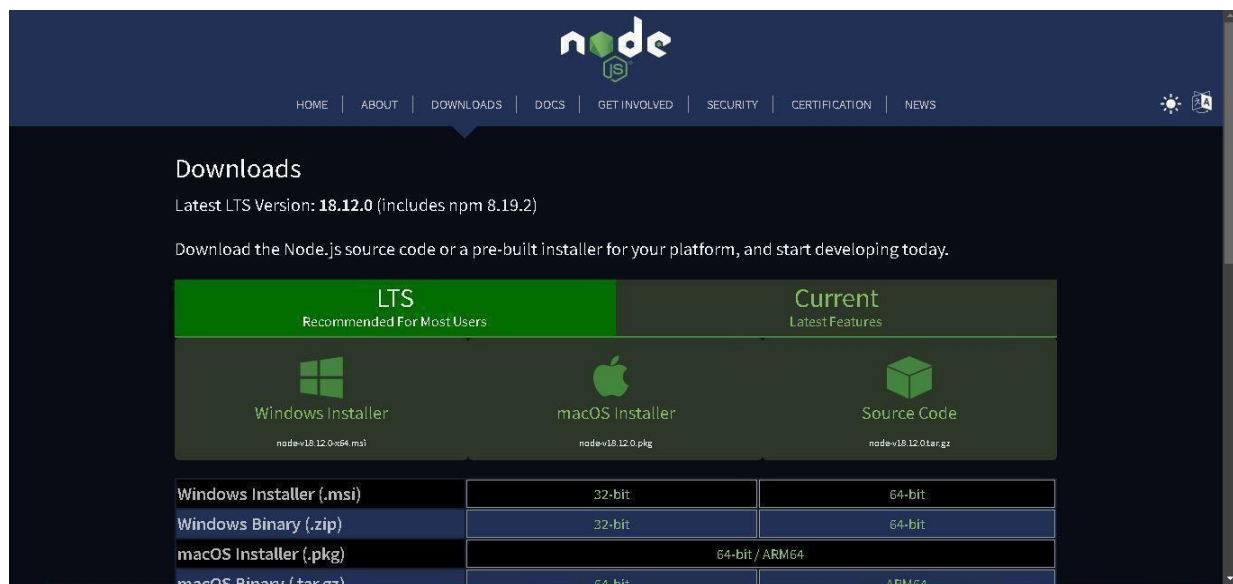


SPRINT 2

Team ID	PNT2022TMID47191
Project Name	Real-Time River Water Quality Monitoring and Control System

The following steps are involved:

STEP 1: Download and Install node.js.



STEP 2: Setup node.js and configure command prompt for error check. Open node-red from the generated link.

```
npm
C:\Users\Ajay>npm install -g --unsafe-perm node-red
npm WARN deprecated @types/keyv@4.2.0: This is a stub types definition. keyv provides its own type definitions, so you do not need this installed.

added 292 packages, and audited 293 packages in 5m

39 packages are looking for funding
  run `npm fund` for details

5 vulnerabilities (4 low, 1 moderate)

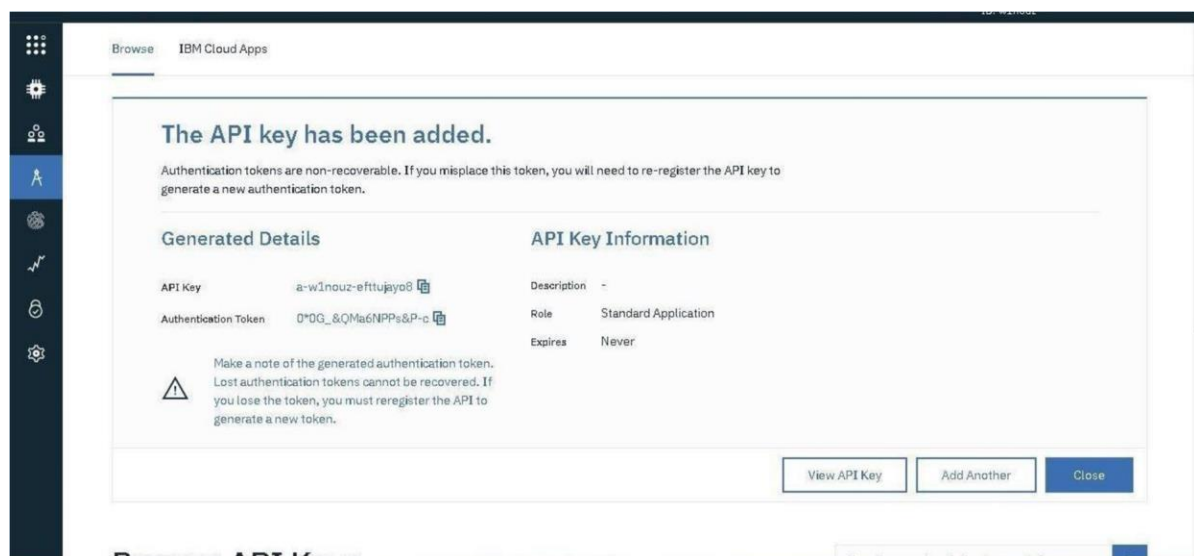
To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

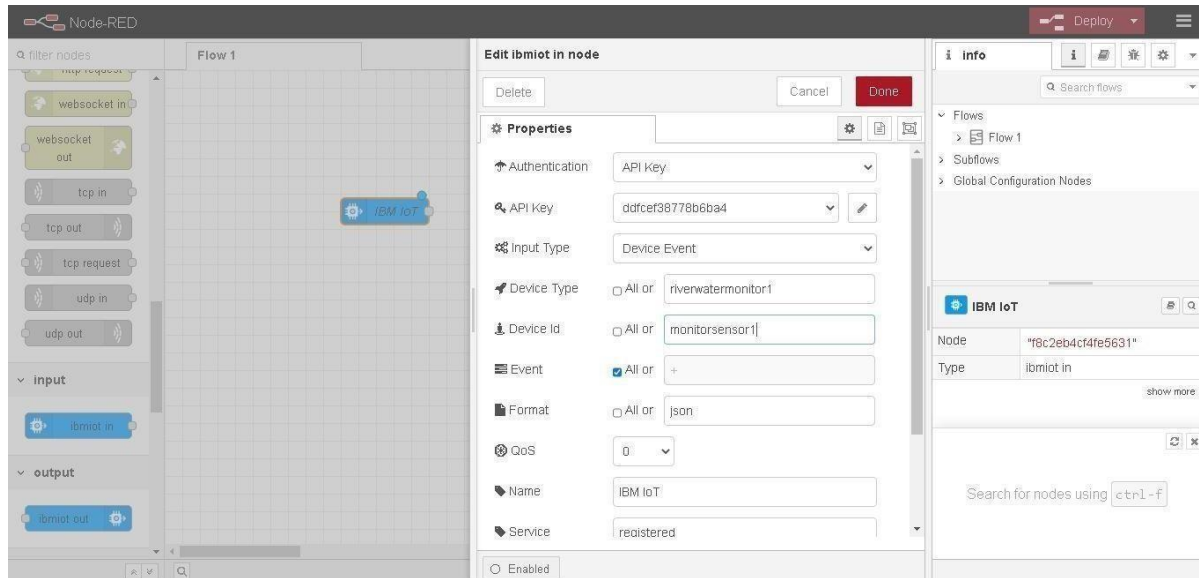
Run `npm audit` for details.

C:\Users\Ajay>node-red
B Nov 14:35:28 - [info]
Welcome to Node-RED
=====
B Nov 14:35:29 - [info] Node-RED version: v3.0.2
B Nov 14:35:29 - [info] Node.js version: v18.12.0
B Nov 14:35:29 - [info] Windows_NT 10.0.19043 x64 LE
B Nov 14:35:44 - [info] Loading palette nodes
```

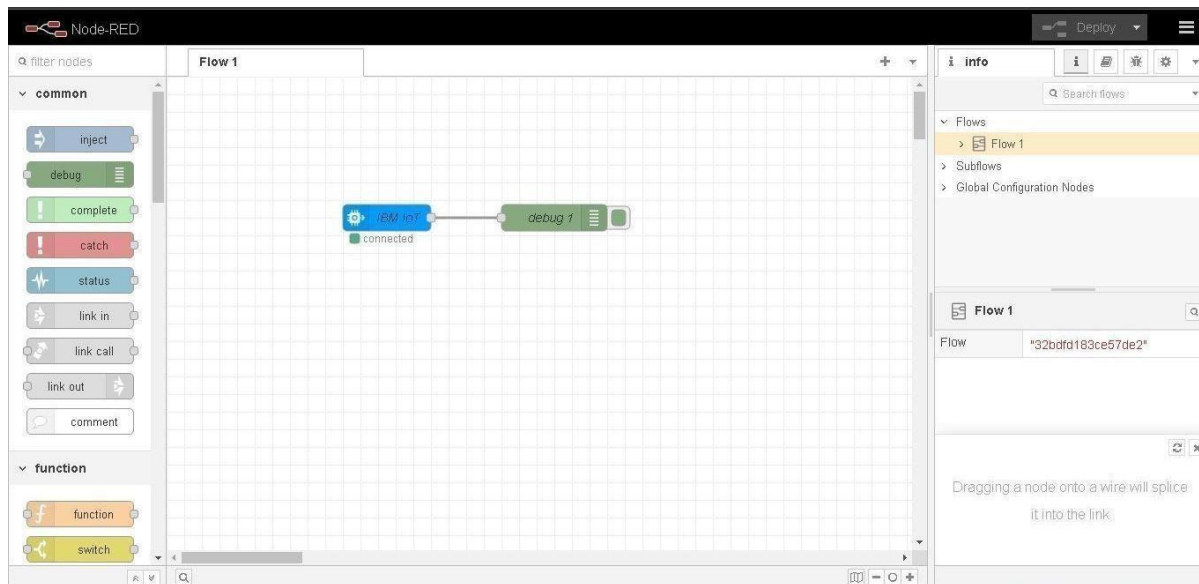
STEP 3: Generating API key and Authentication token.



STEP 4: Edit Ibmiot in node.



STEP 5: Connect Ibmiot in and debug 1 and deploy.



STEP 6: Edit gauge node (here the gauge nodes are named as Temperature, pH and Turbidity).

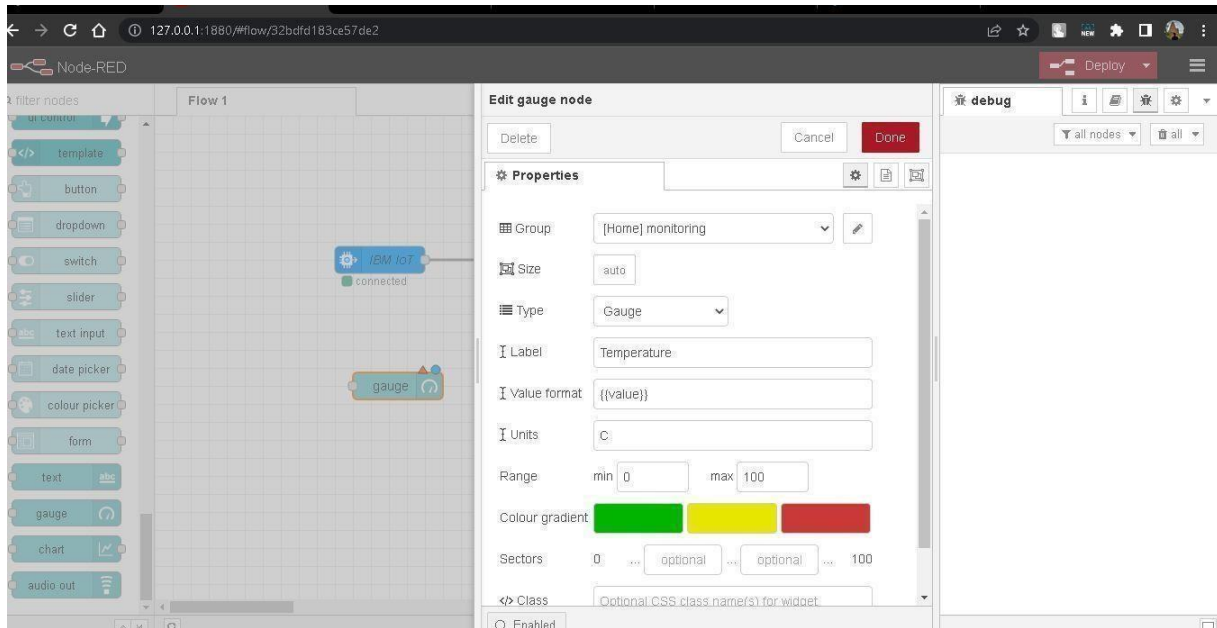
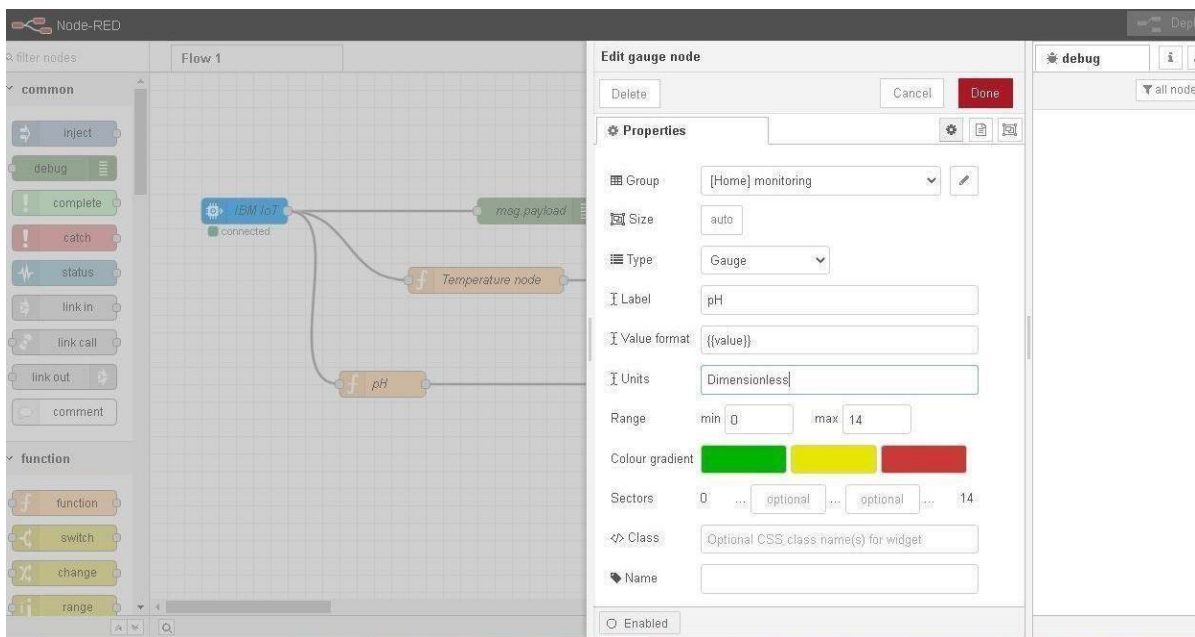
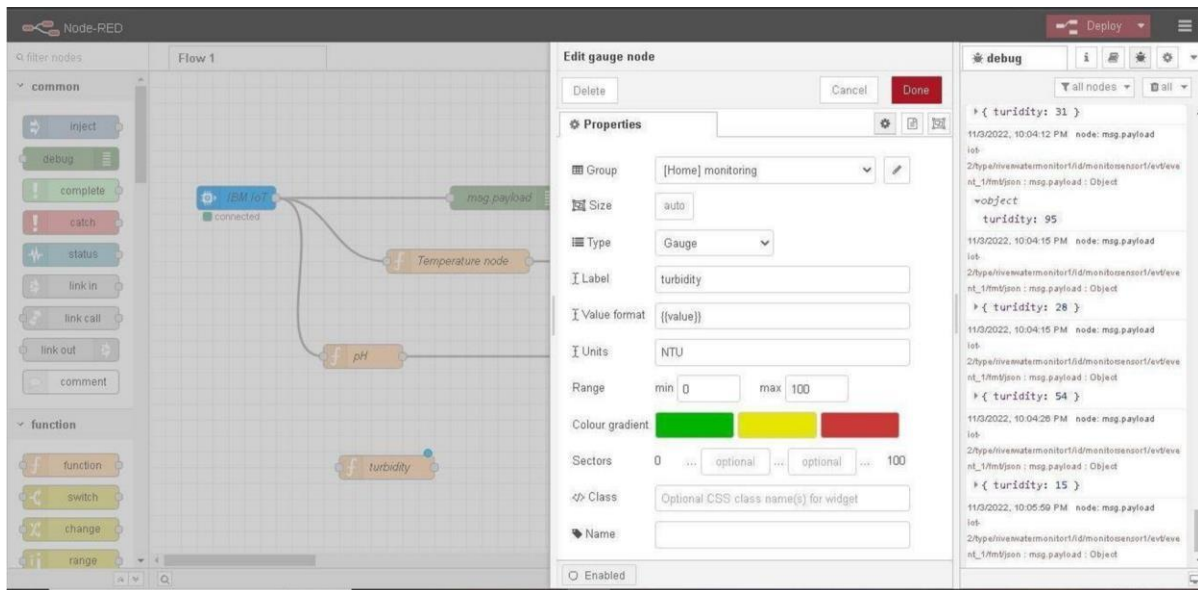
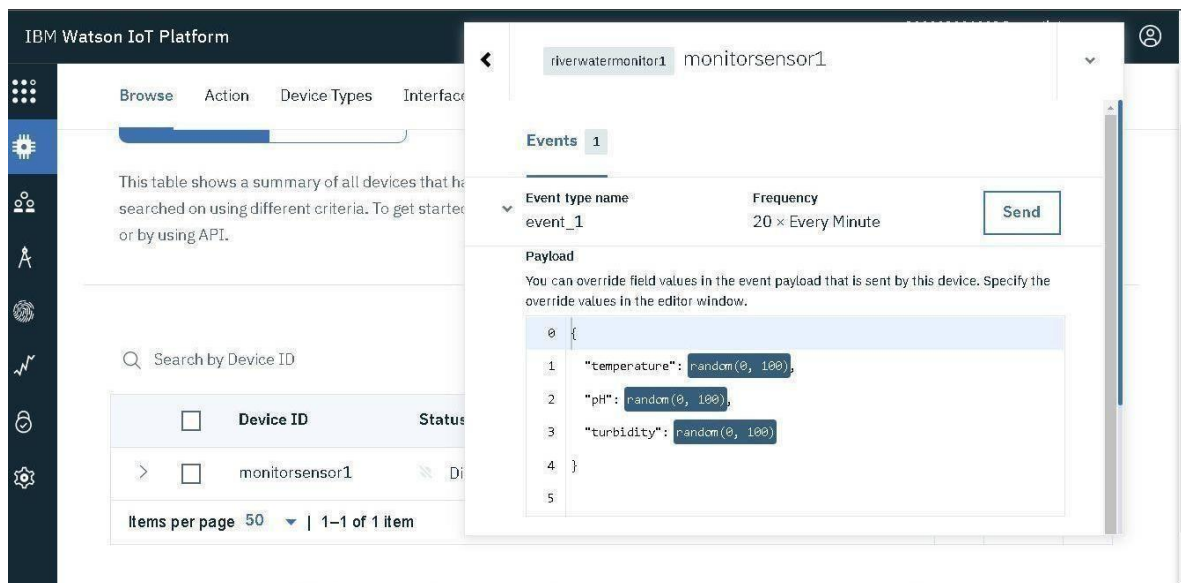


Fig 1

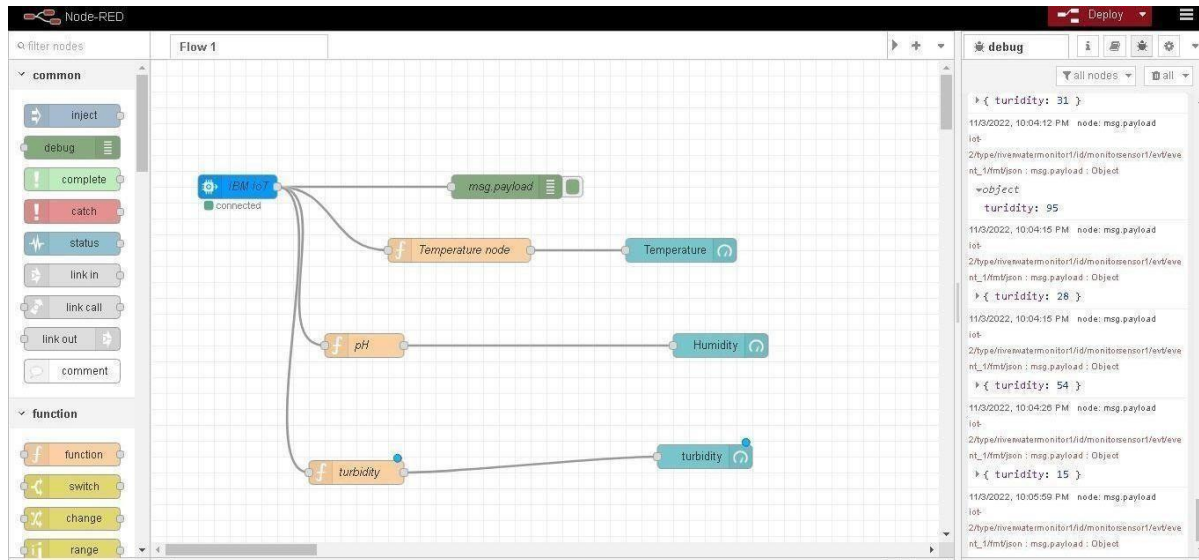




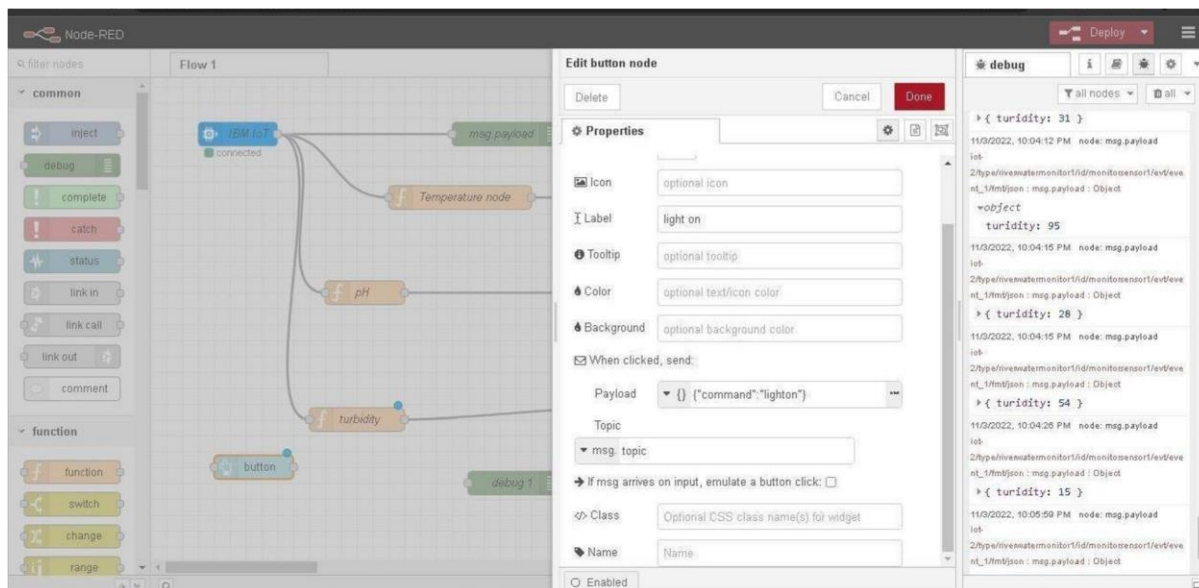
STEP 7: Simulated program to get the random values.



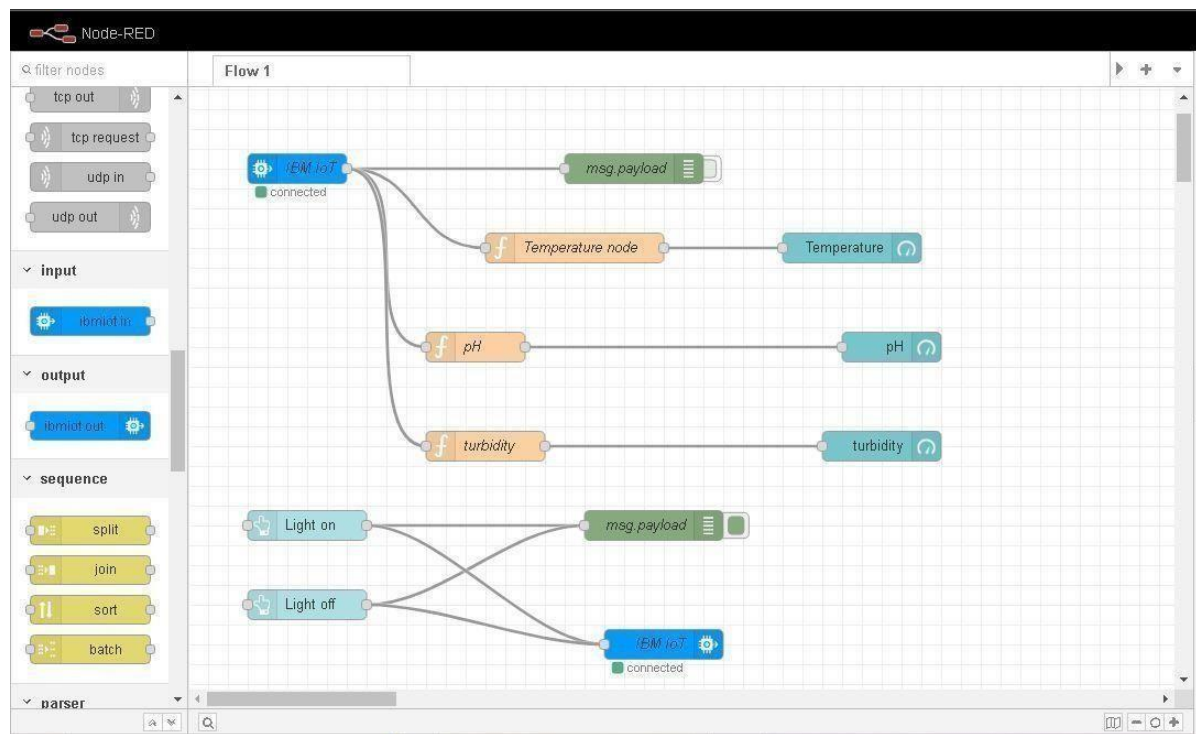
STEP 8: Generate debug message from IBM Watson IoT Platform and connect the nodes.



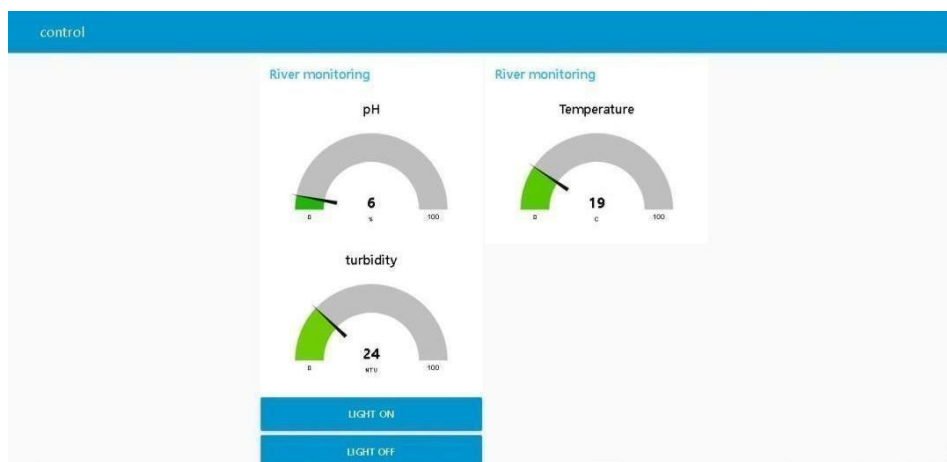
STEP 9: Edit button mode [light ON and light OFF].

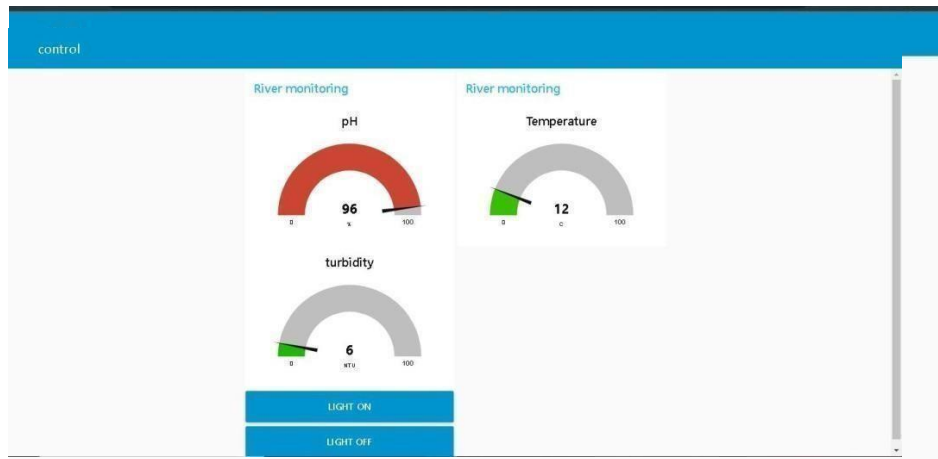


STEP 10: Entire flow diagram in Node-RED.

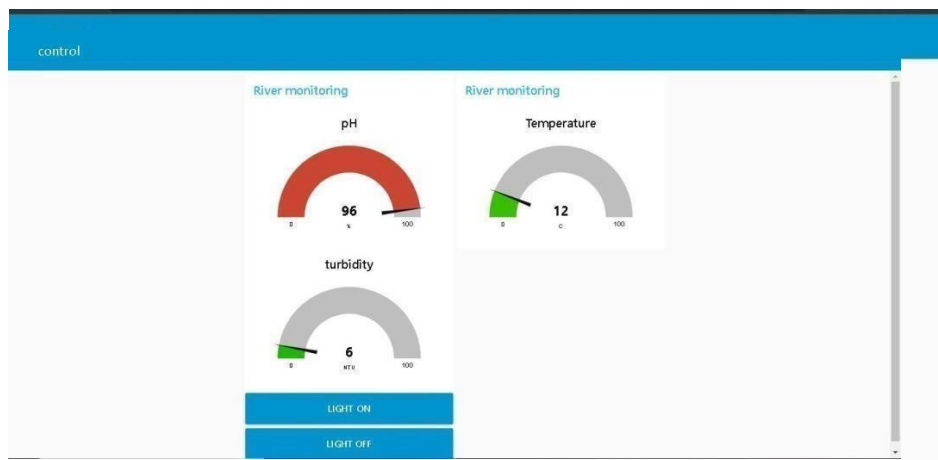


STEP 11: Generate the output from recent events.





STEP 12: Implementing url in the function node to generate output.



```
{ "temp": 88, "pH": 99, "turbidity": 25 }
```


Step 13: MIT app inverter to design the app.

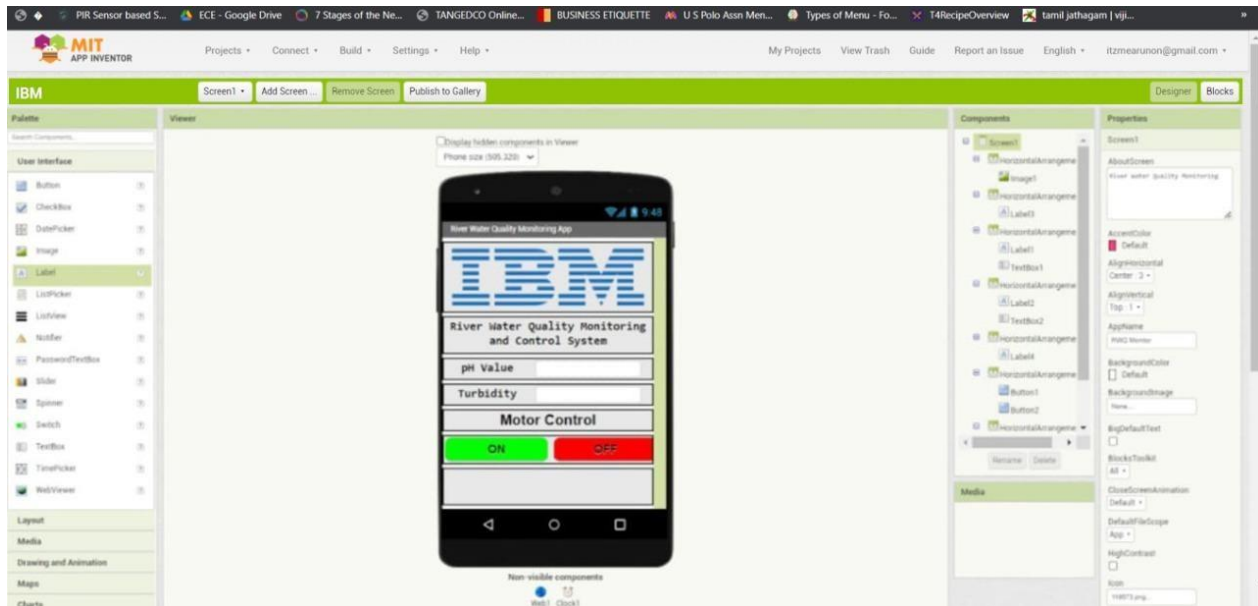


Fig 1

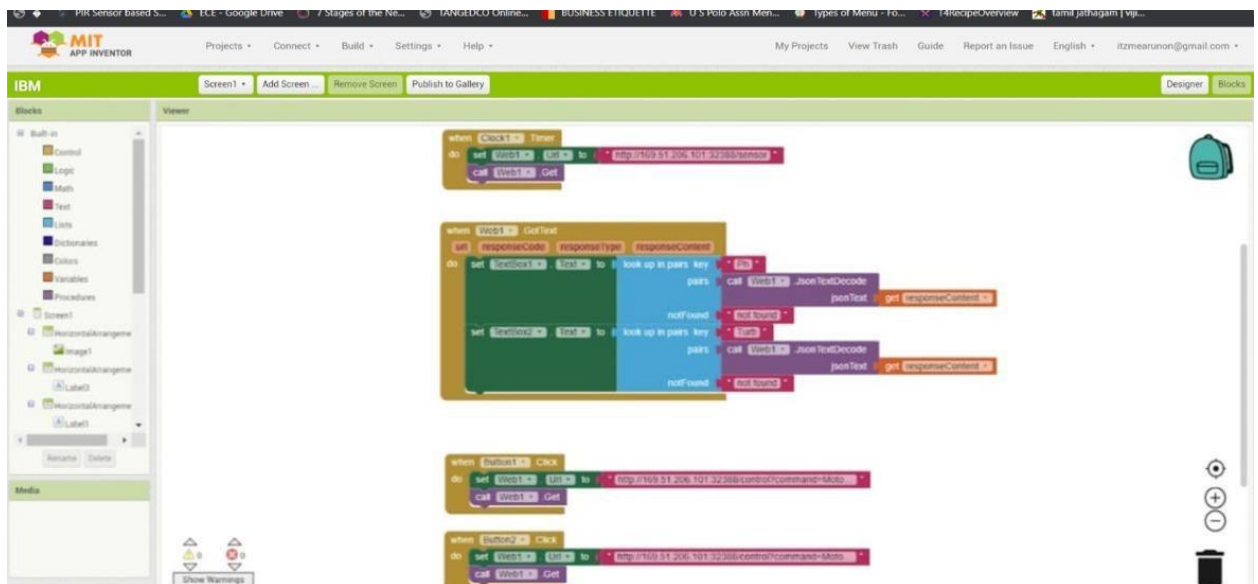
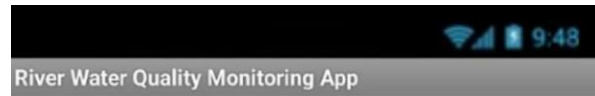


Fig 2



River Water Quality Monitoring and Control System

pH Value

Turbidity

Motor Control



Fig 3