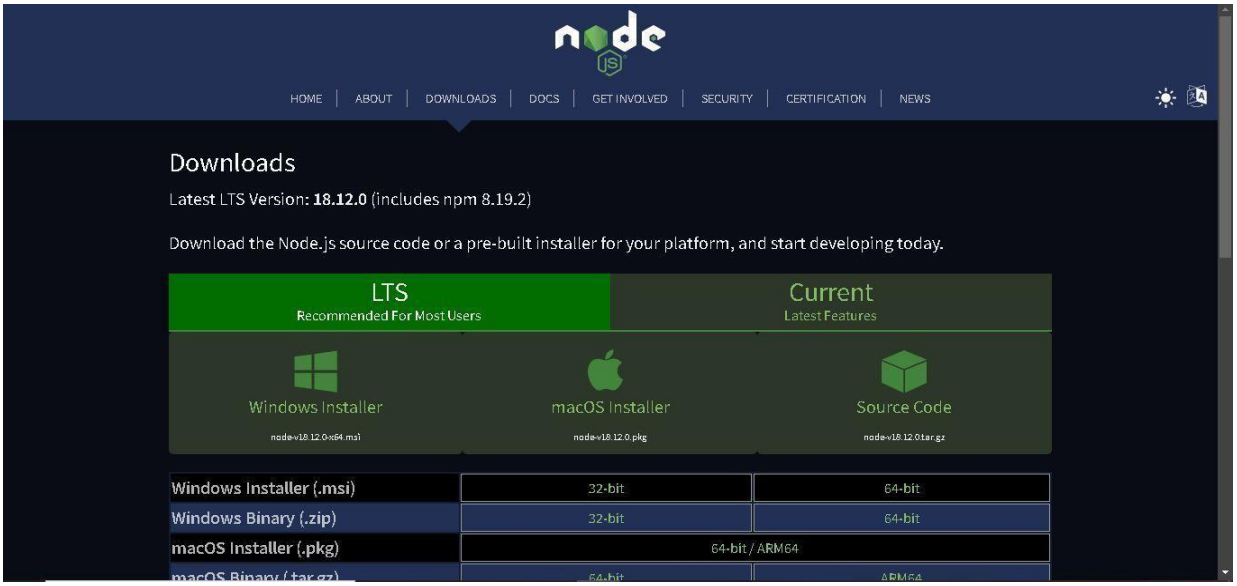
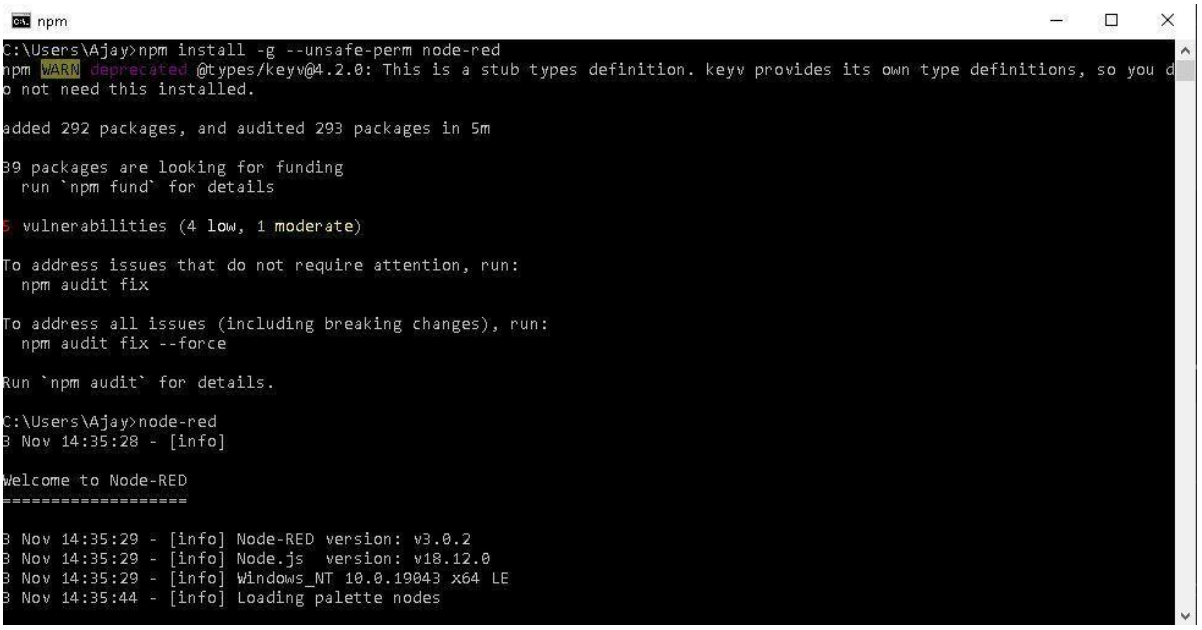
Team ID	PNT2022TMID07710
Project Name	Real Time River Water Quality Monitoring And Control System

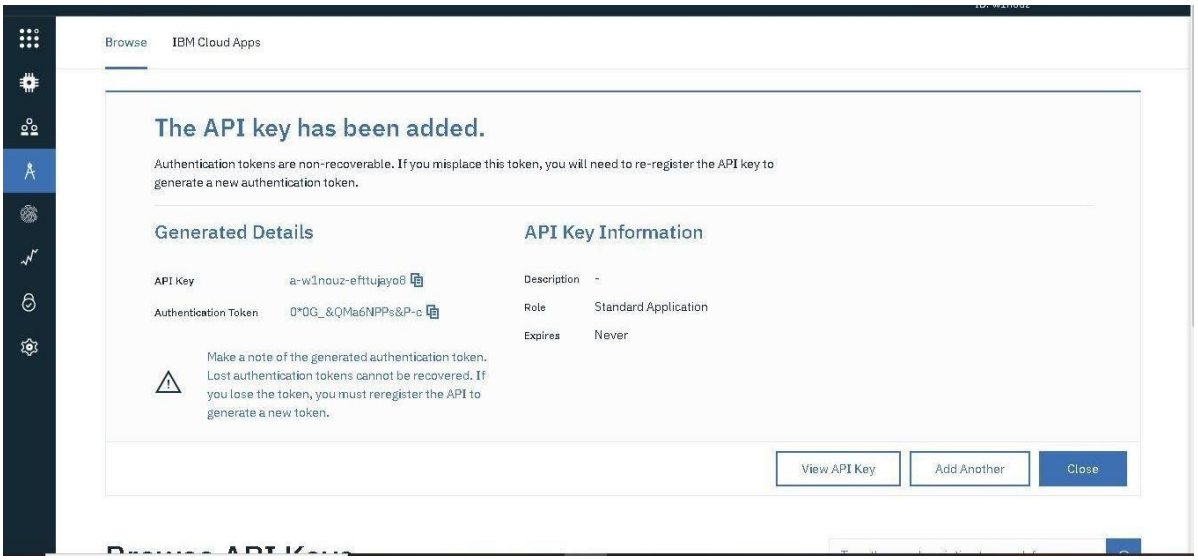
STEP 1: Download and Install node.js.



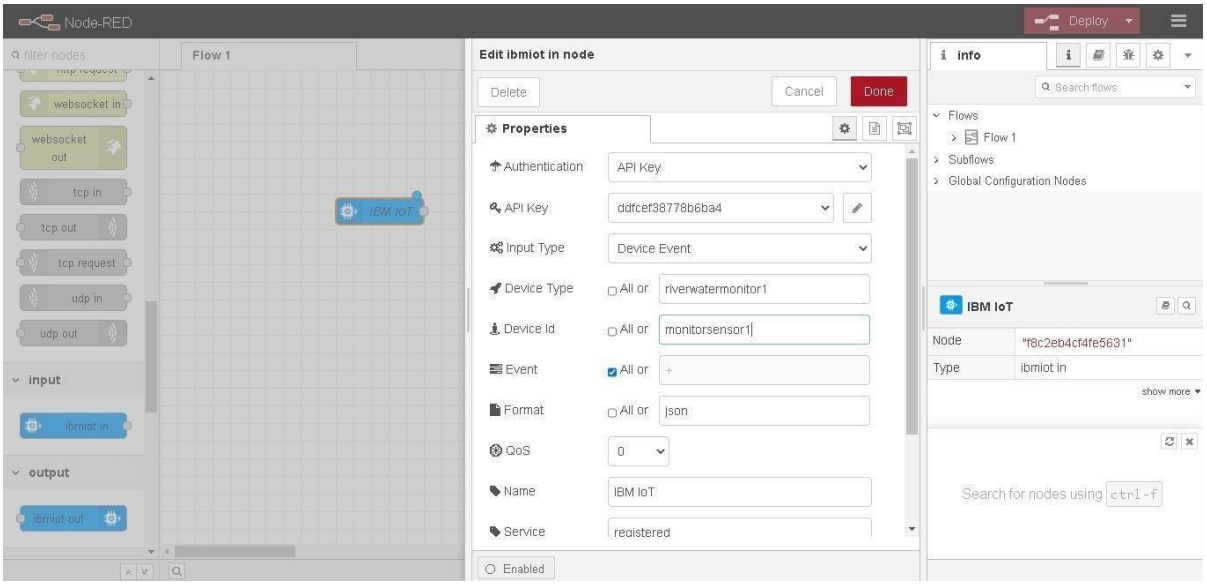
STEP 2: Setup node.js and configure command prompt for error check. Open node-red from the generated link.



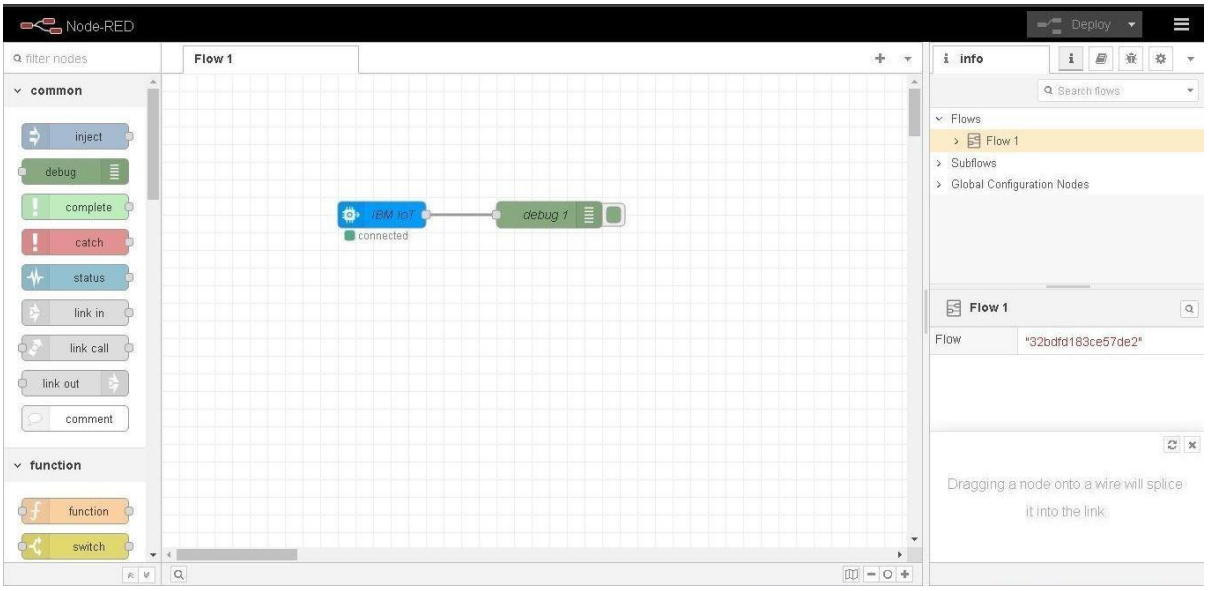
STEP 3: Generating API key and Authentication token.



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).

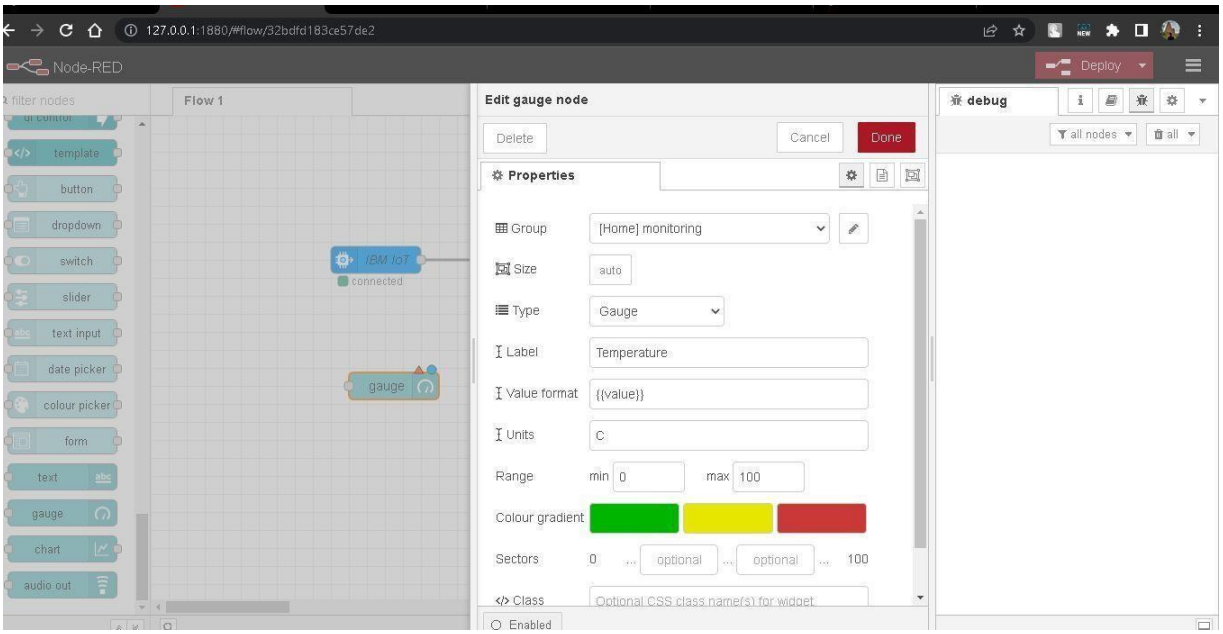


Fig 1

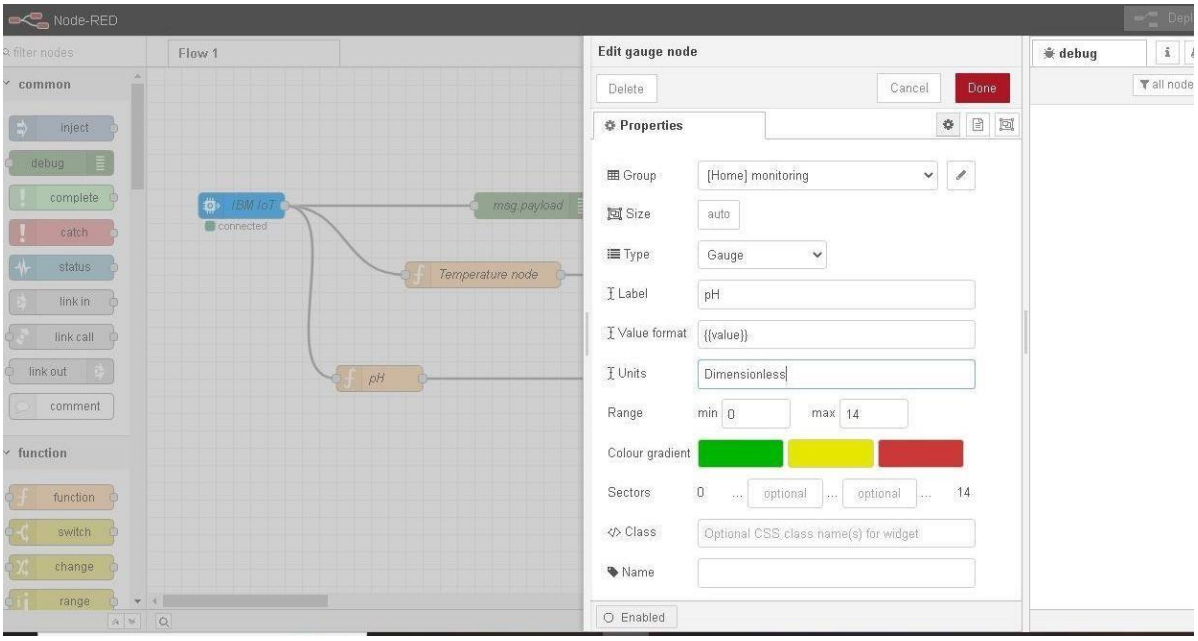

Node-RED
Flow 1
Edit gauge node
Delete
Cancel
Done
Properties
Group
[Home] monitoring
Size
auto
Type
Gauge
Label
pH
Value format
{{value}}
Units
Dimensionless
Range
min 0
max 14
Colour gradient
Sectors
0
optional
optional
14
Class
Optional CSS class name(s) for widget
Name
Enabled
debug
IBM IoT
connected
msg.payload
Temperature node
pH
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
switch
change
range

Fig 2

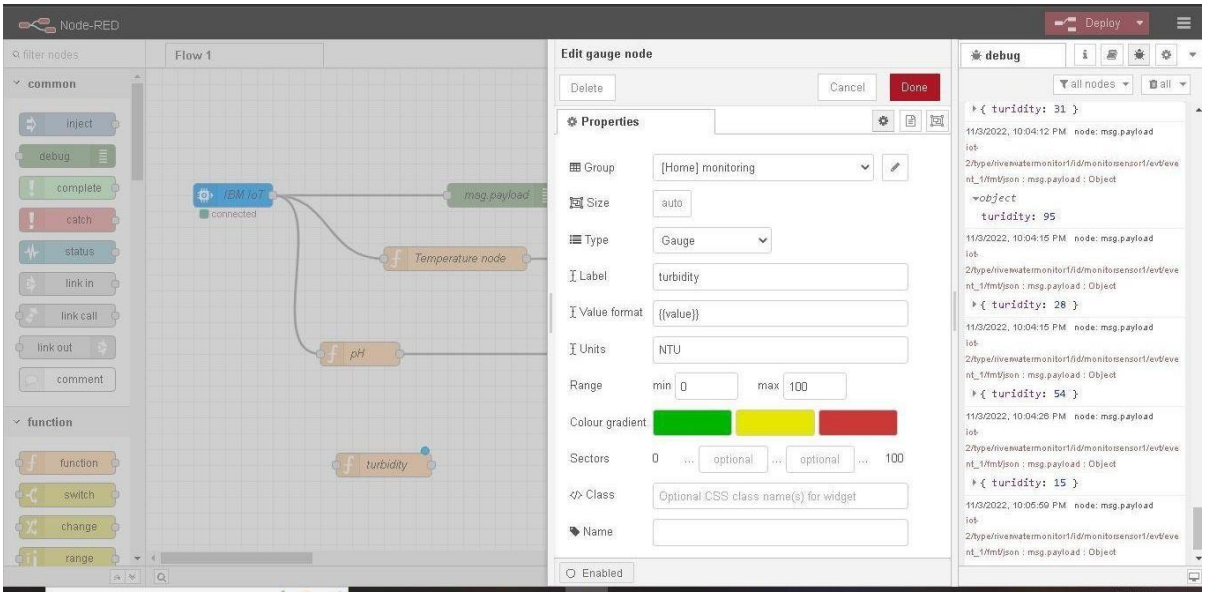
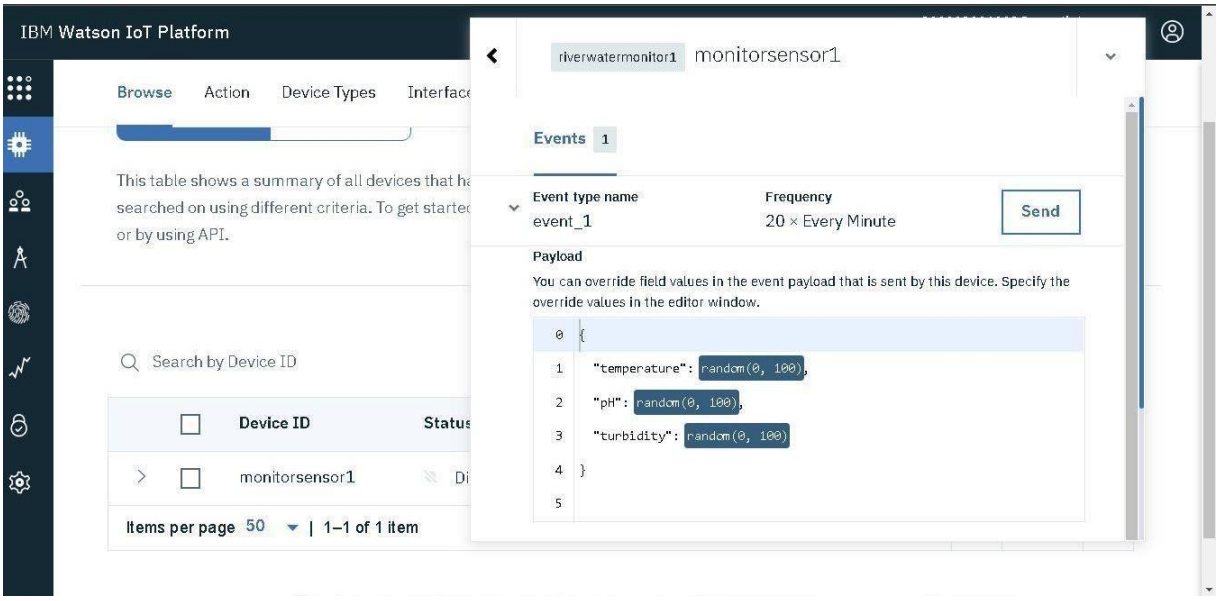
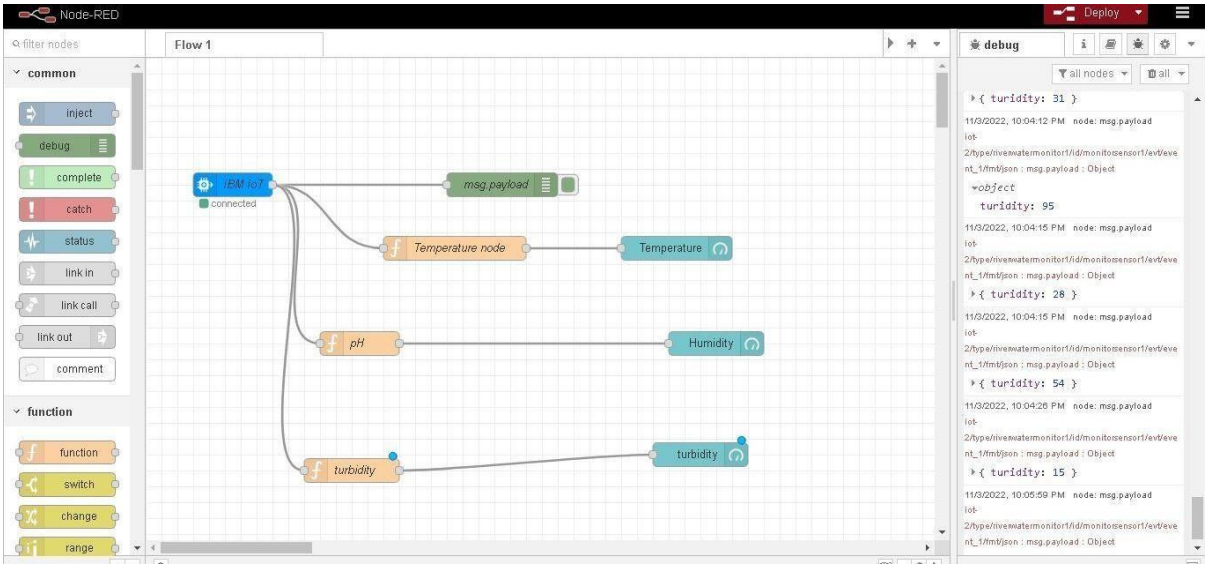

Node-RED
Deploy
Flow 1
Edit gauge node
Delete
Cancel
Done
Properties
Group
[Home] monitoring
Size
auto
Type
Gauge
Label
turbidity
Value format
{{value}}
Units
NTU
Range
min 0
max 100
Colour gradient
Sectors
0
optional
optional
100
Class
Optional CSS class name(s) for widget
Name
Enabled
debug
{ turidity: 31 }
{ turidity: 95
{ turidity: 28 }
{ turidity: 54 }
{ turidity: 15 }
IBM IoT
connected
msg.payload
Temperature node
pH
turbidity
common
function
function
switch
change
range

Fig 3

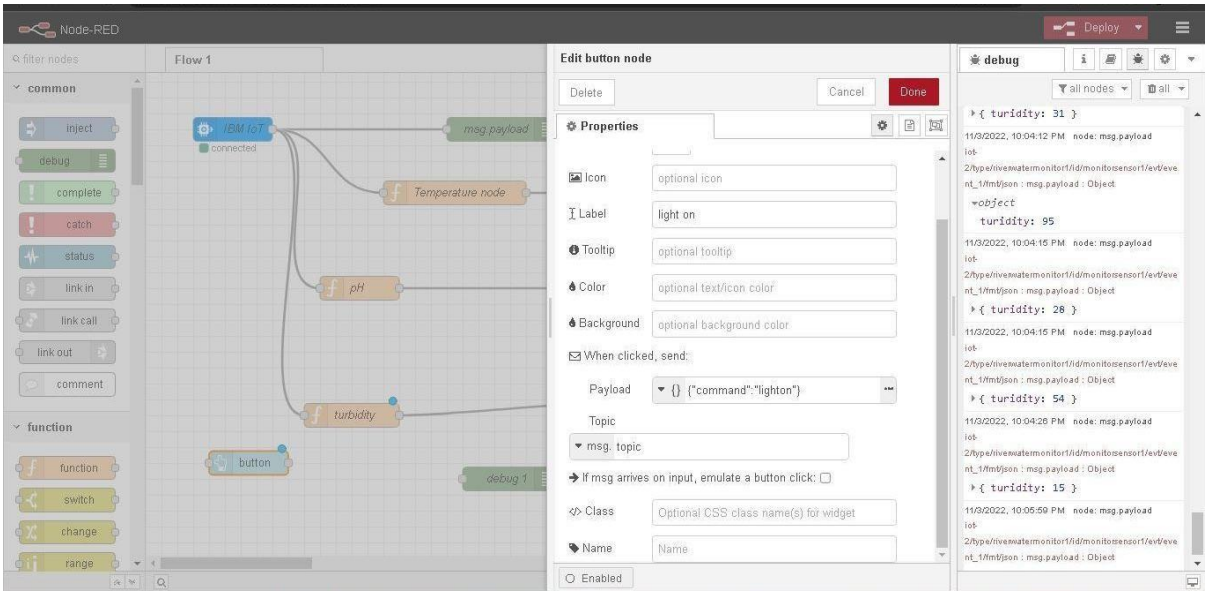
STEP 7: Simulated program to get the random values.



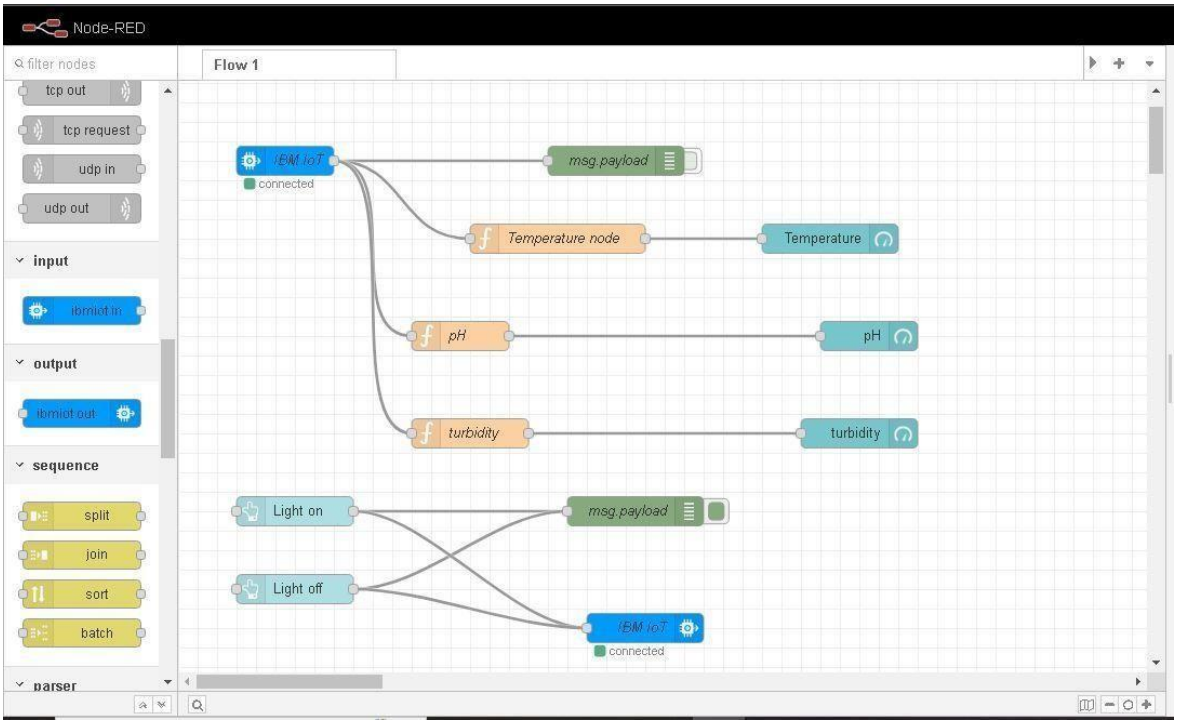
STEP 8: Generate debug message from IBM Watson IoT Platform and connect the nodes.



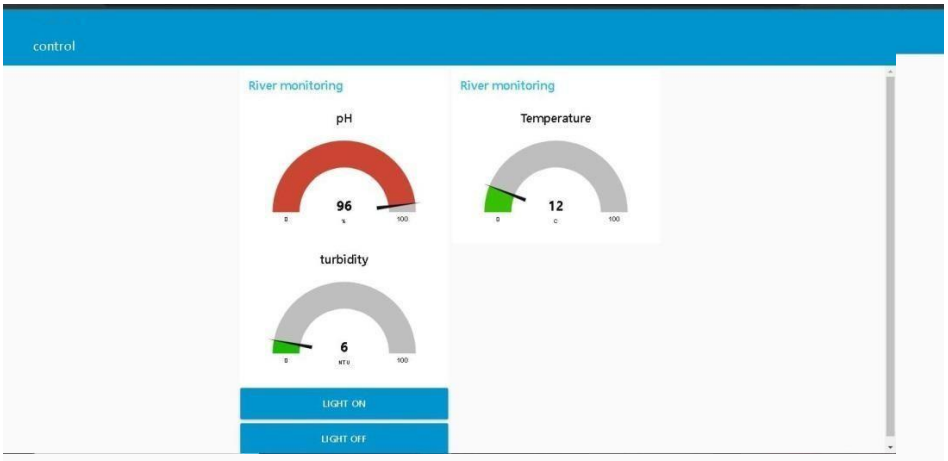
STEP 9: Edit button mode [light ON and light OFF].



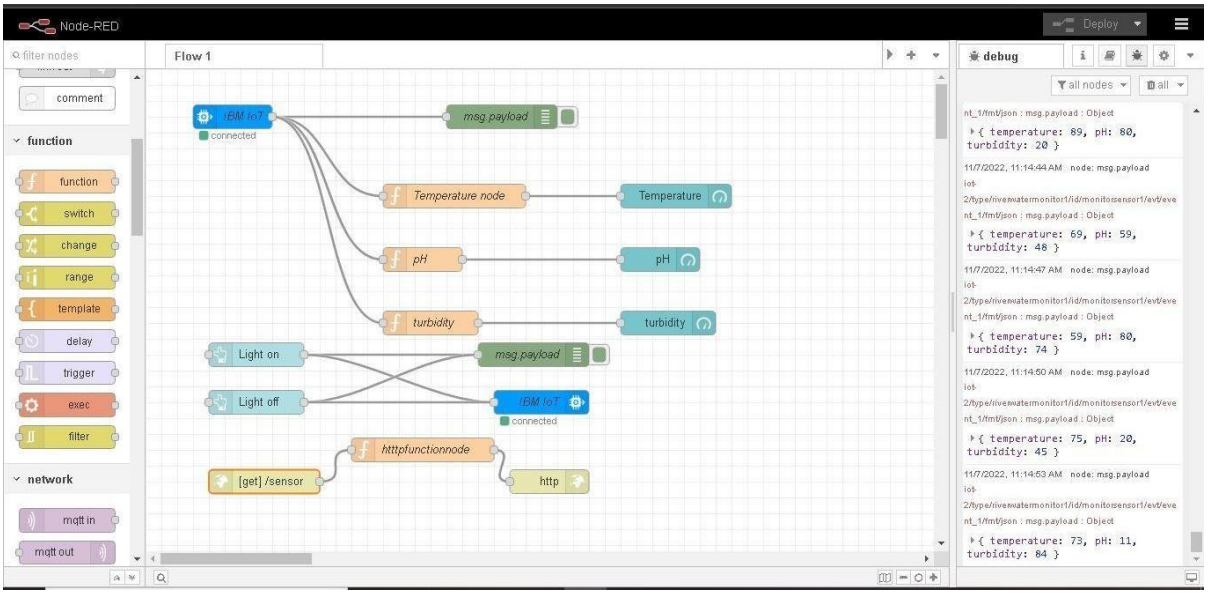
STEP 10: Entire flow diagram in Node-RED.

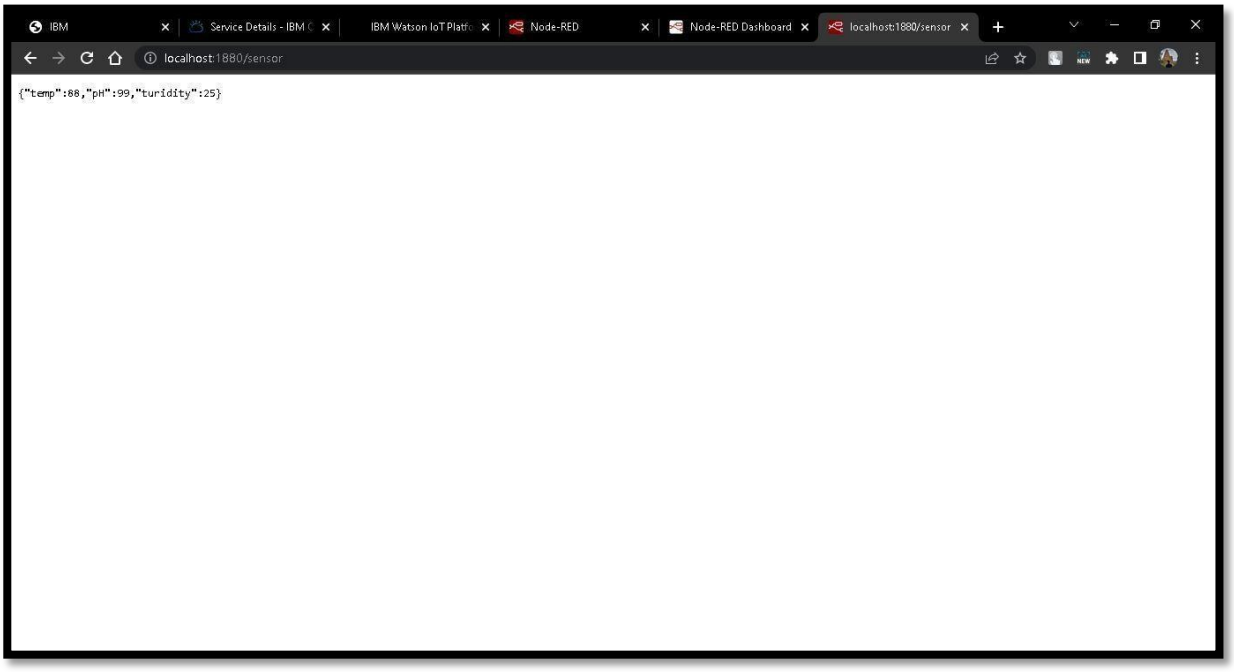


STEP 11: Generate the output from recent events.



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





URL are:

localhost:1880/ui

localhost:1880/sensor

STEP 13: MIT app inverter to design the app.