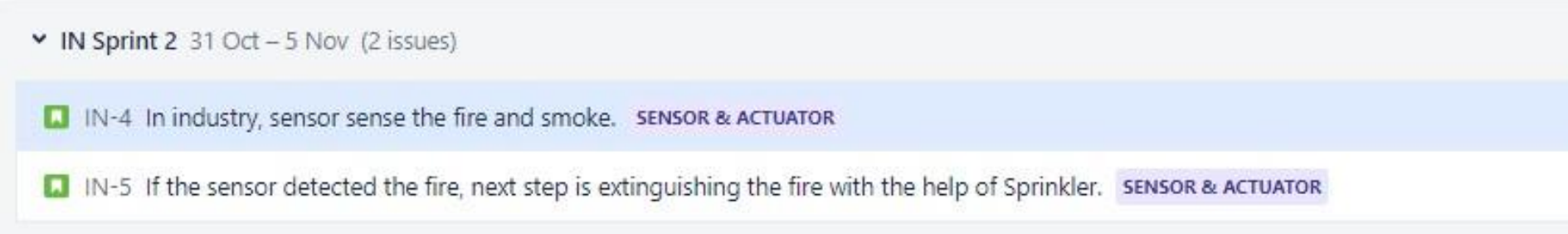
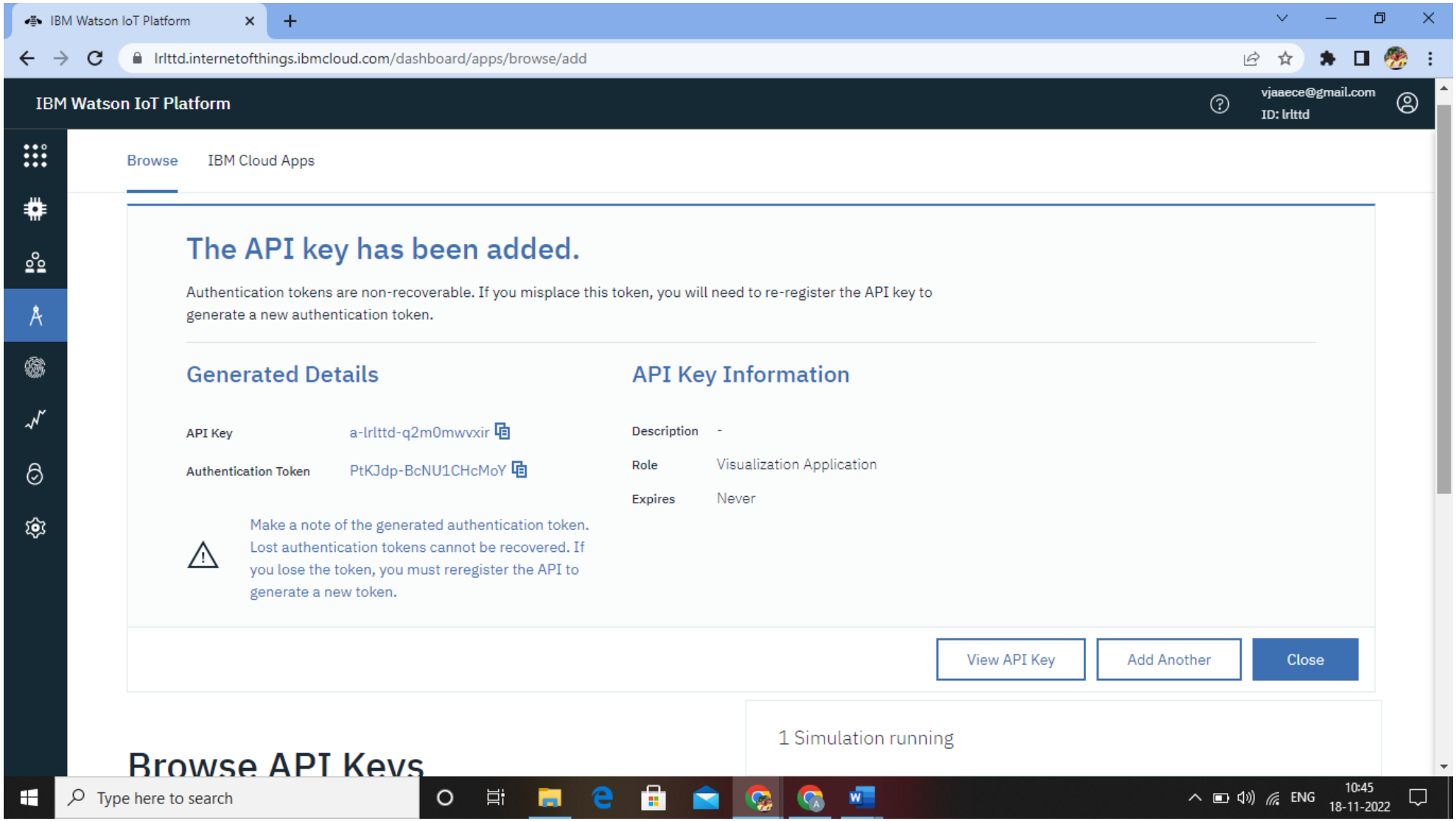
Project development phase

Sprint - 2

Date	04 November 2022
Team ID	PNT2022TMID30849
Project Name	Project - Industry-specific intelligent fire management system
Maximum Marks	20 marks



⇨ Configure the connection security and create API keys that are used in the Node-RED service for accessing the IBM IoT Platform.



US-2 Create a Node-RED service

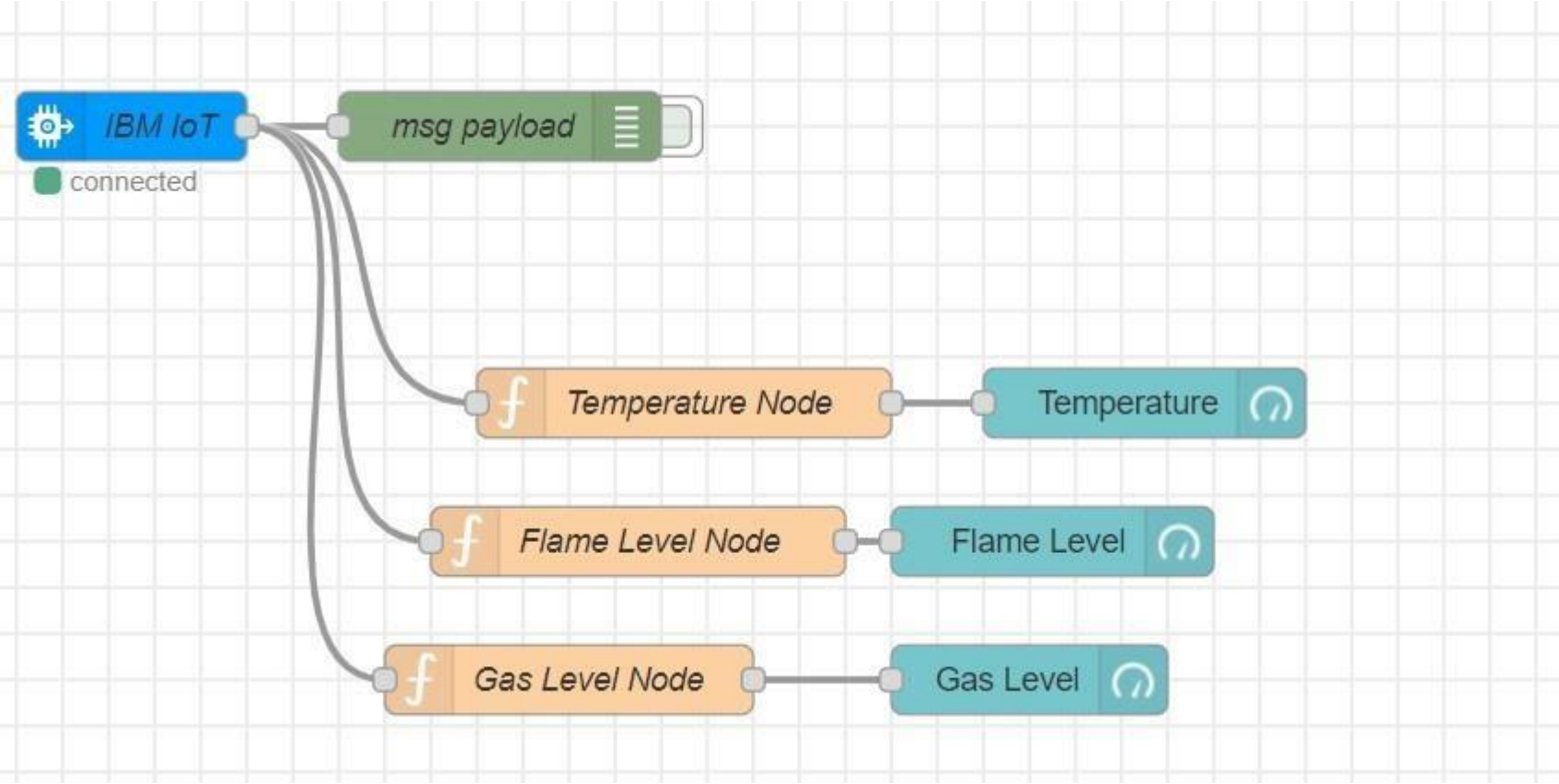


Fig1 - Monitoring the sensor values - Temperature, Flame Level, Gas Level. These values are randomly generated by IBM WATSON IOT PLATFORM.

Fig 2 - Temperature, Flame Level, Gas Level values displayed in deploy tab in node-red

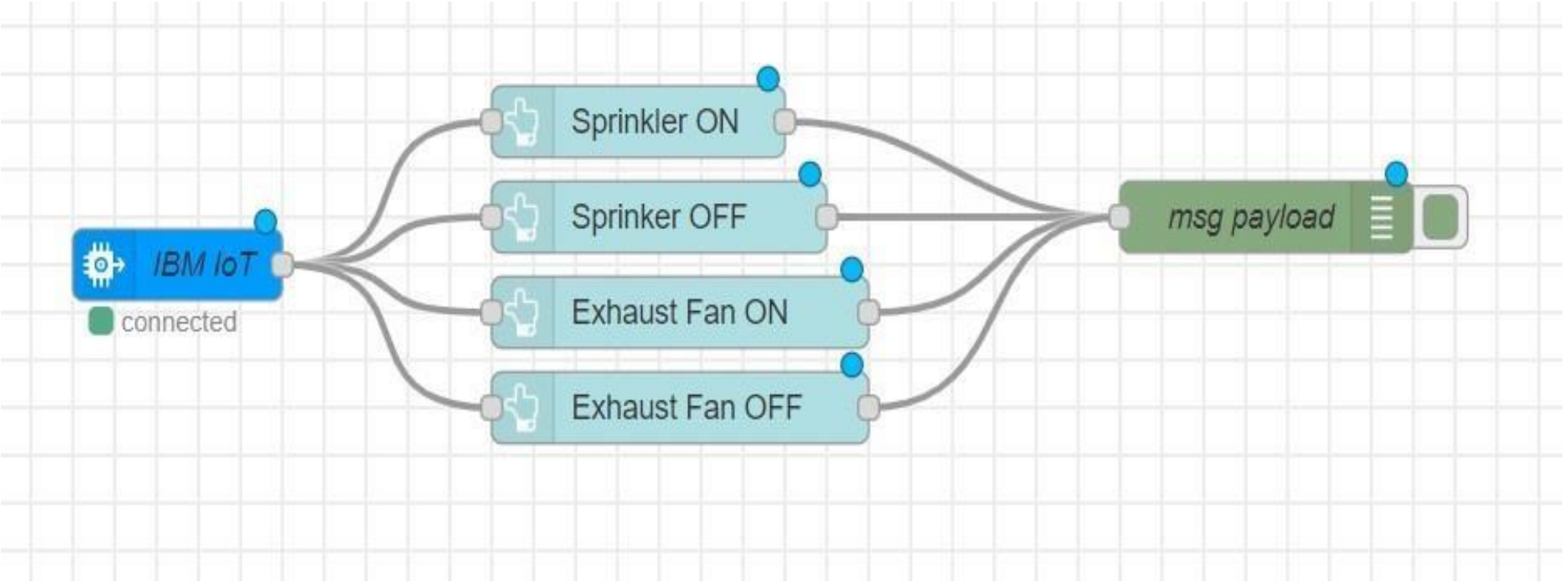


Fig 3 - Control buttons (Sprinkler ON, Sprinkler OFF, Exhaust Fan ON, Exhaust Fan OFF)

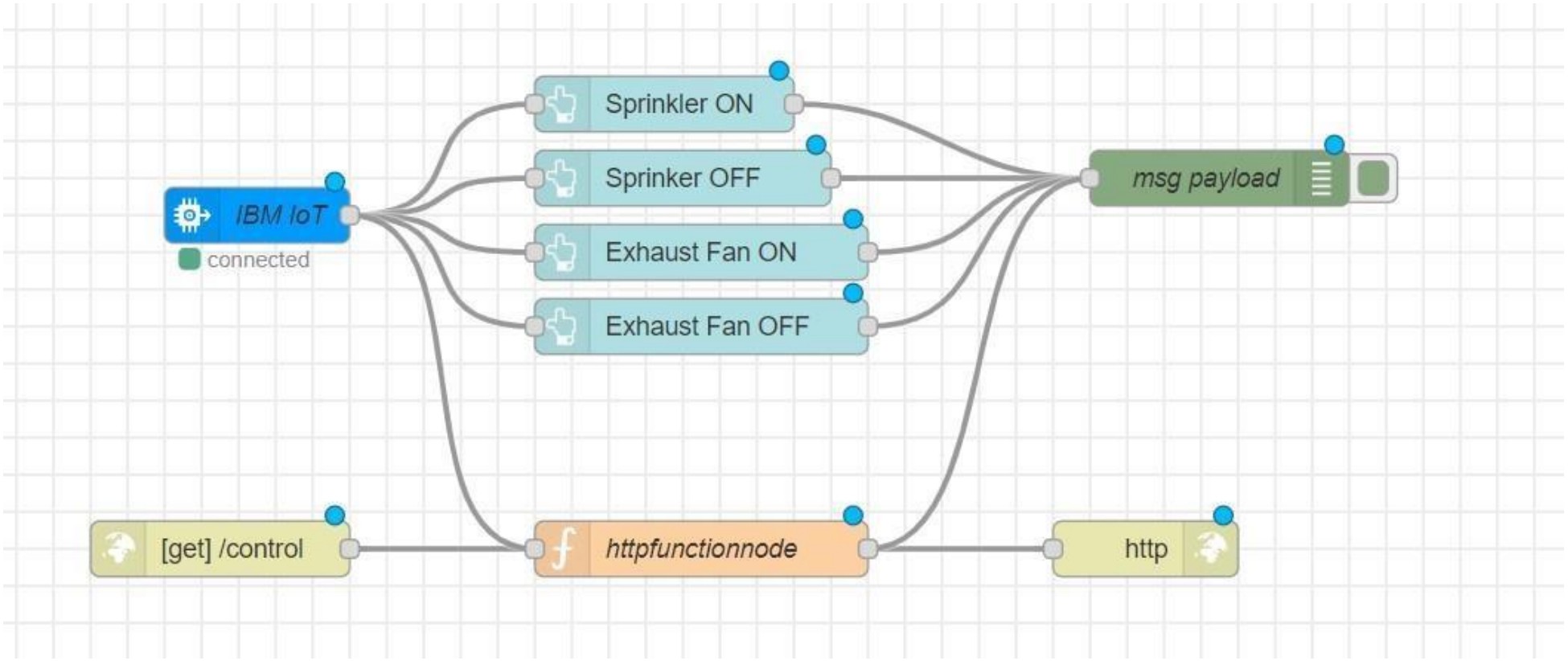


Fig 4 - Using HTTP in and HTTP response in network option, http://127.0.0.1:1880/#flow/f74f1b96473dc208/control will display the control options

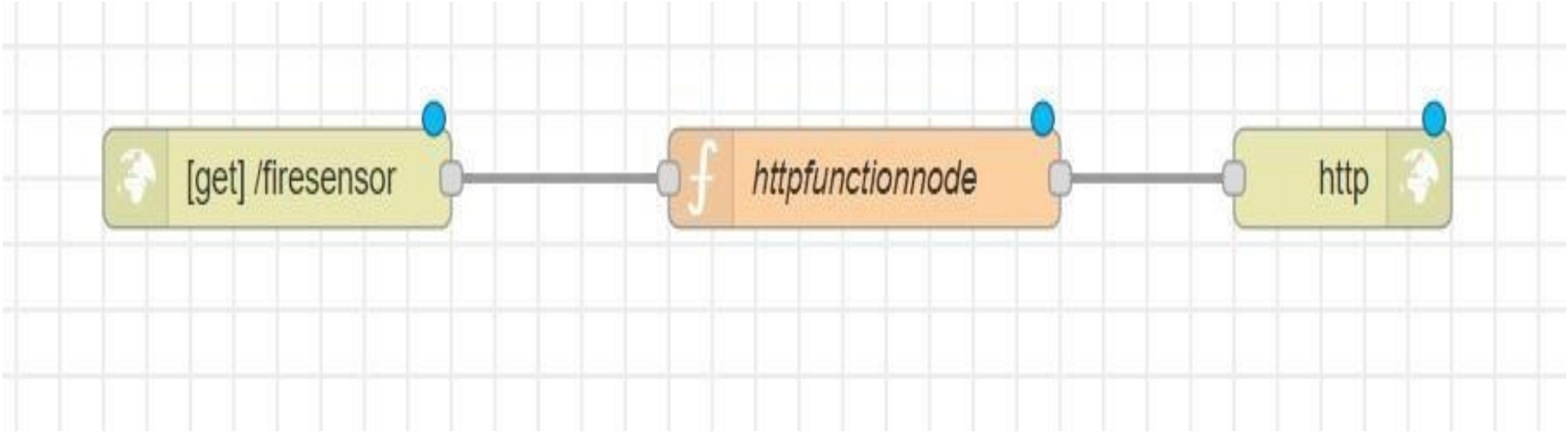
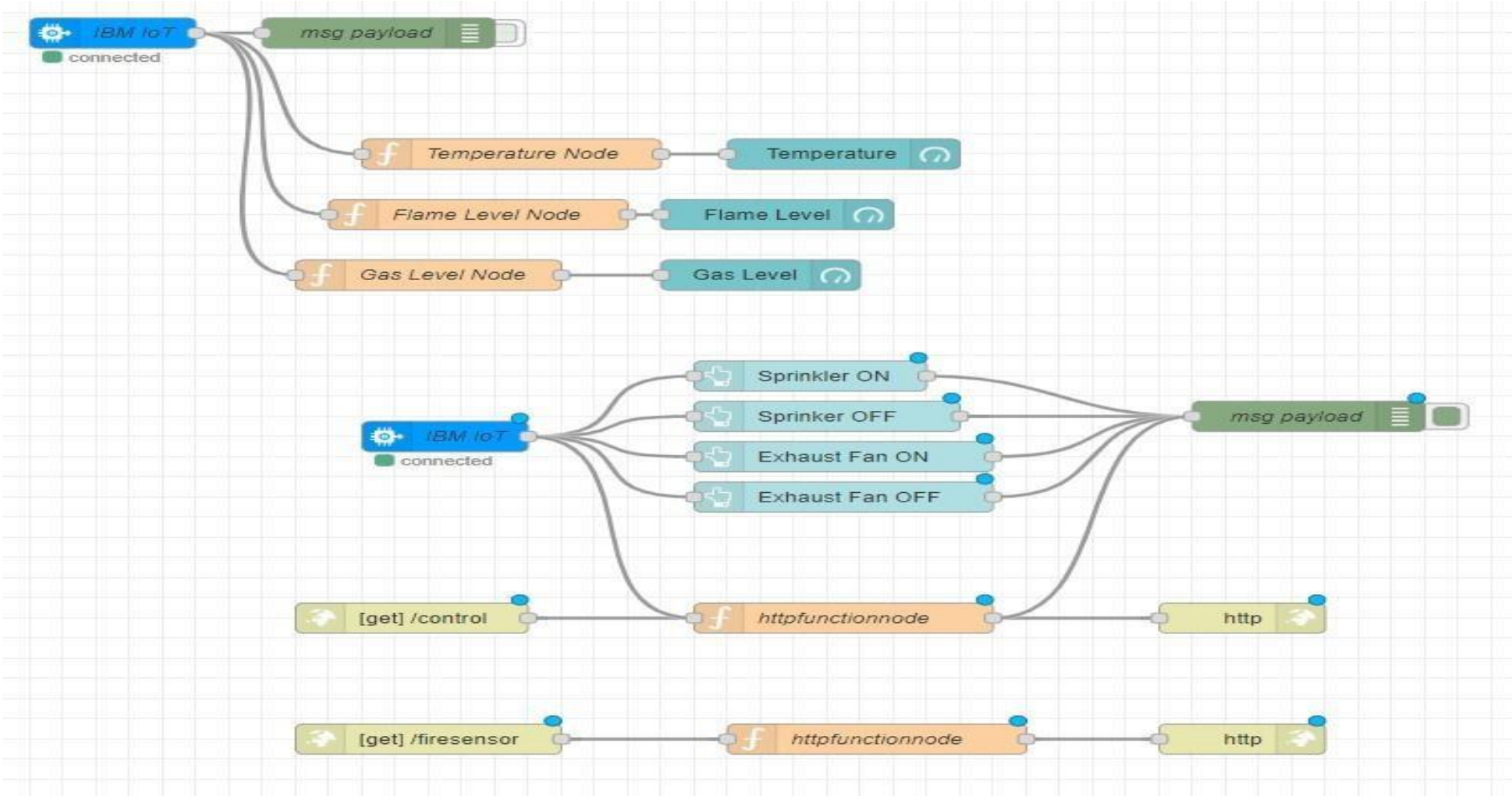

[get] /firesensor
httpfunctionnode
http

Fig 5 -

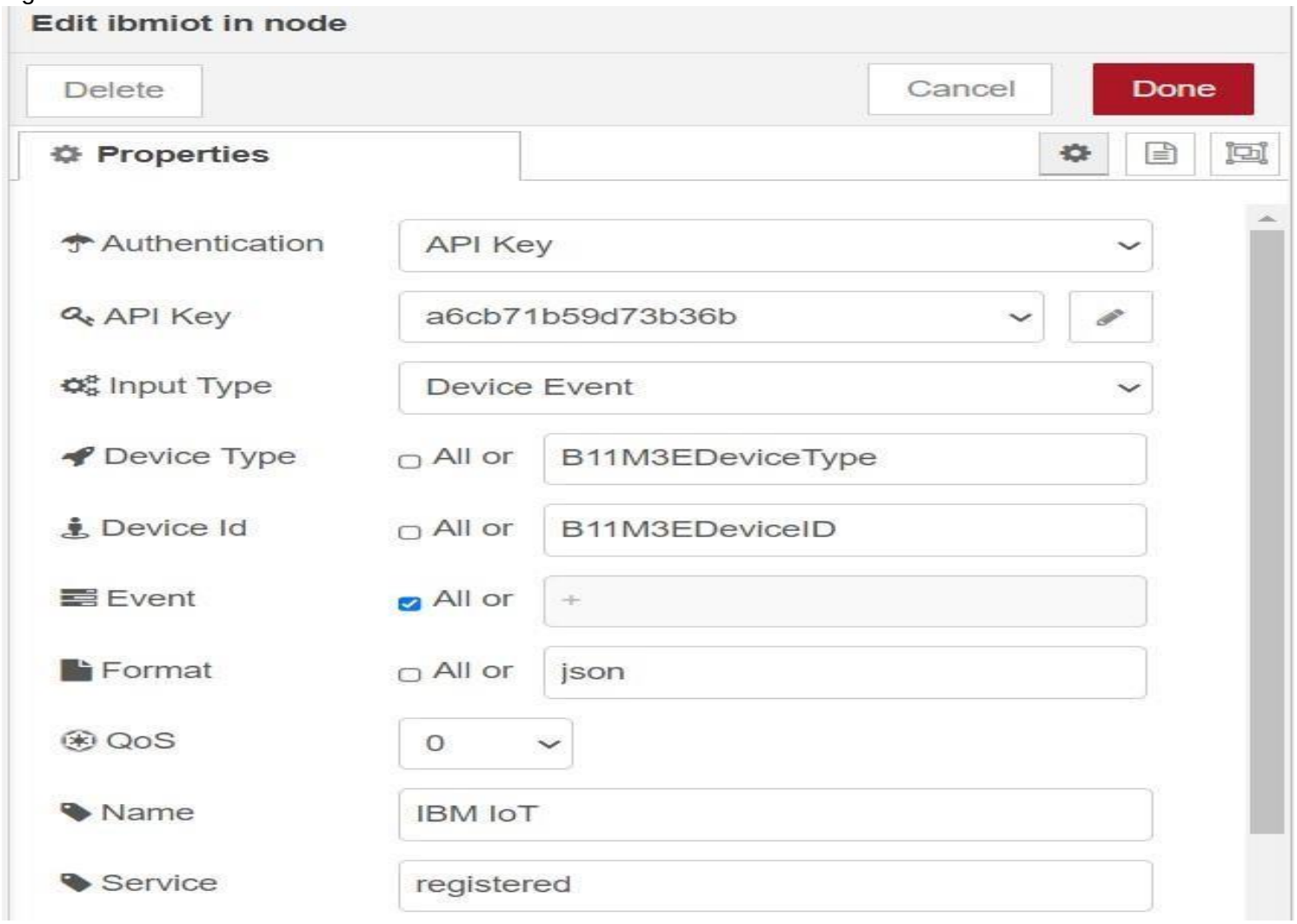
Using HTTP in and HTTP response in network option, http://127.0.0.1:1880/#flow/f74f1b96473dc208/firesensor will display the sensor values like Temperature, Gas Level and Flame Level from the IBM WATSON IOT PLATFORM.

Fig 6



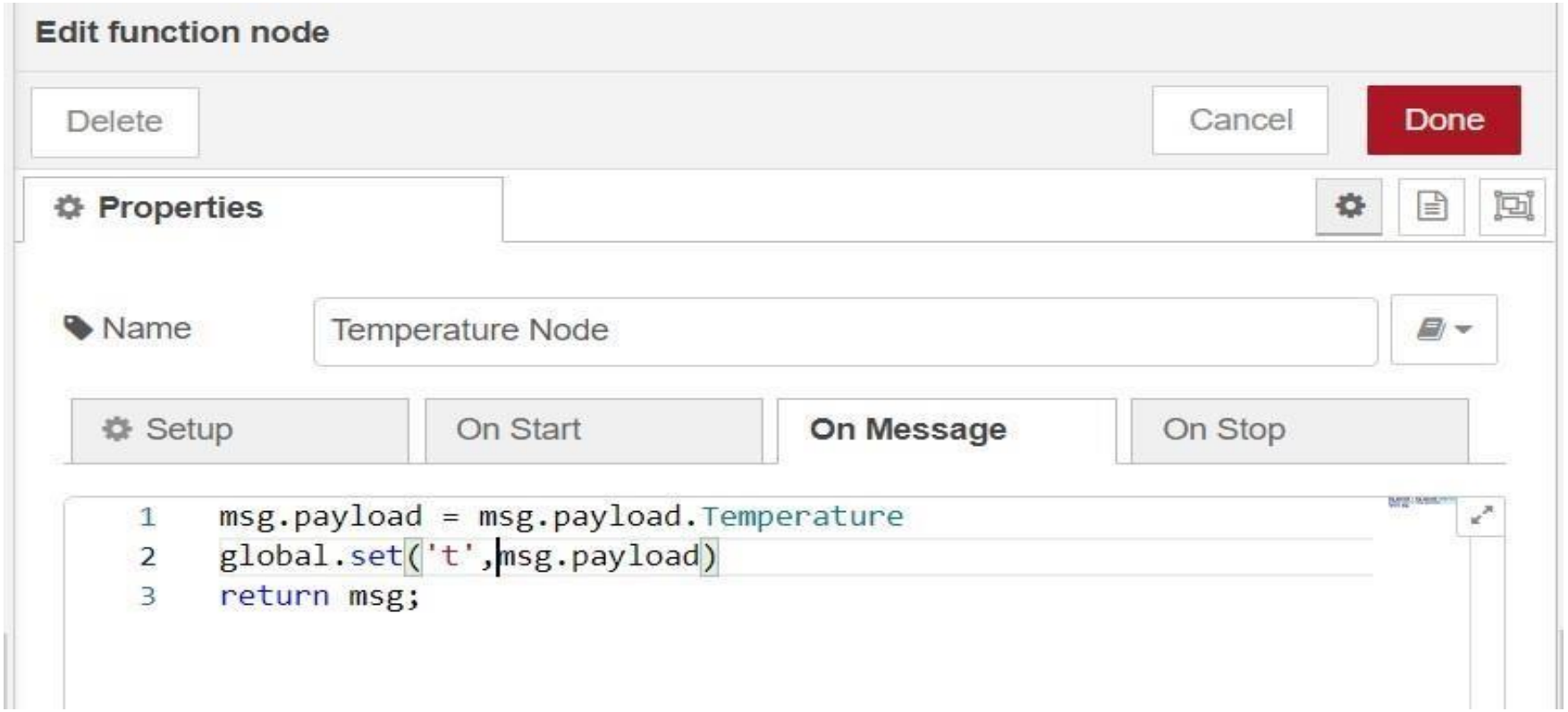
- Entire Node-Red connection for our project

Fig 7 -



Properties of IBM IOT are shown. The API key, Device Type, Device ID are taken from IBM IOT WATSON PLATFORM.

Fig 8


Edit function node
Delete
Cancel
Done
Properties
Name
Temperature Node
Setup
On Start
On Message
On Stop
1 msg.payload = msg.payload.Temperature
2 global.set('t',msg.payload)
3 return msg;


Edit function node
Delete
Cancel
Done
Properties
Name
Flame Level Node
Setup
On Start
On Message
On Stop
1 msg.payload = msg.payload.Flame_Level
2 global.set("f",msg.payload)
3 return msg;

Fig 9 -

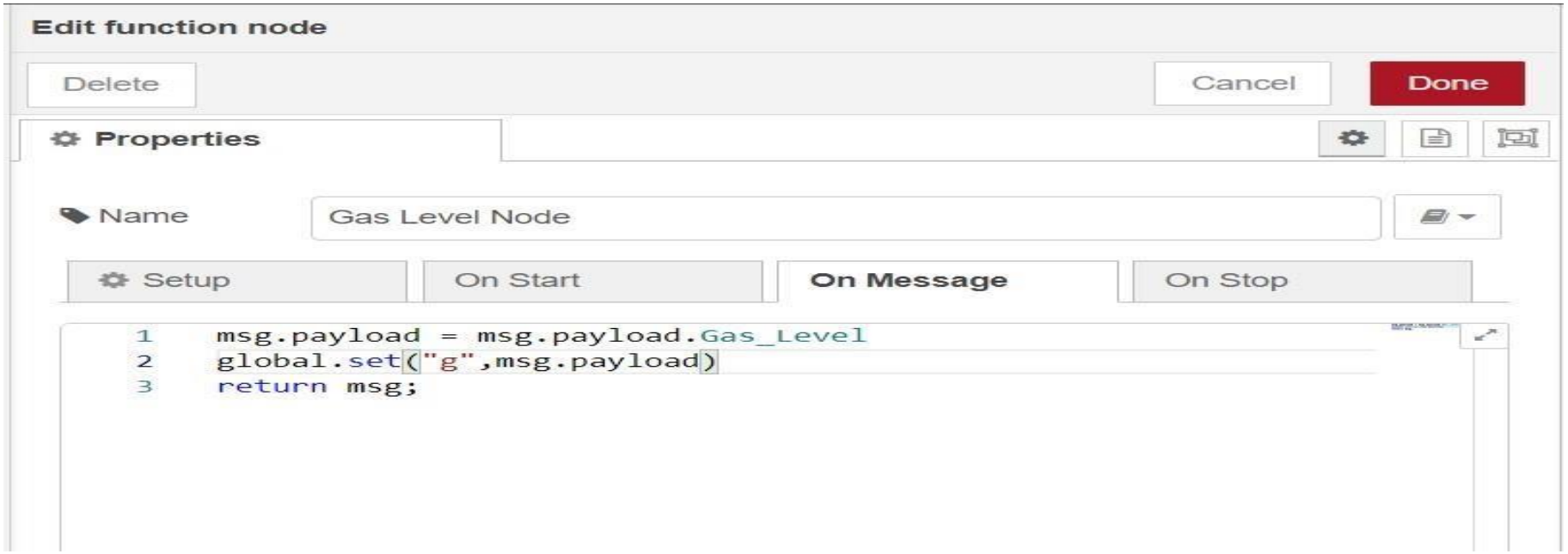


Fig 8 Properties of Function Node -Temperature Node, Flame Level Node, Gas Level Node.

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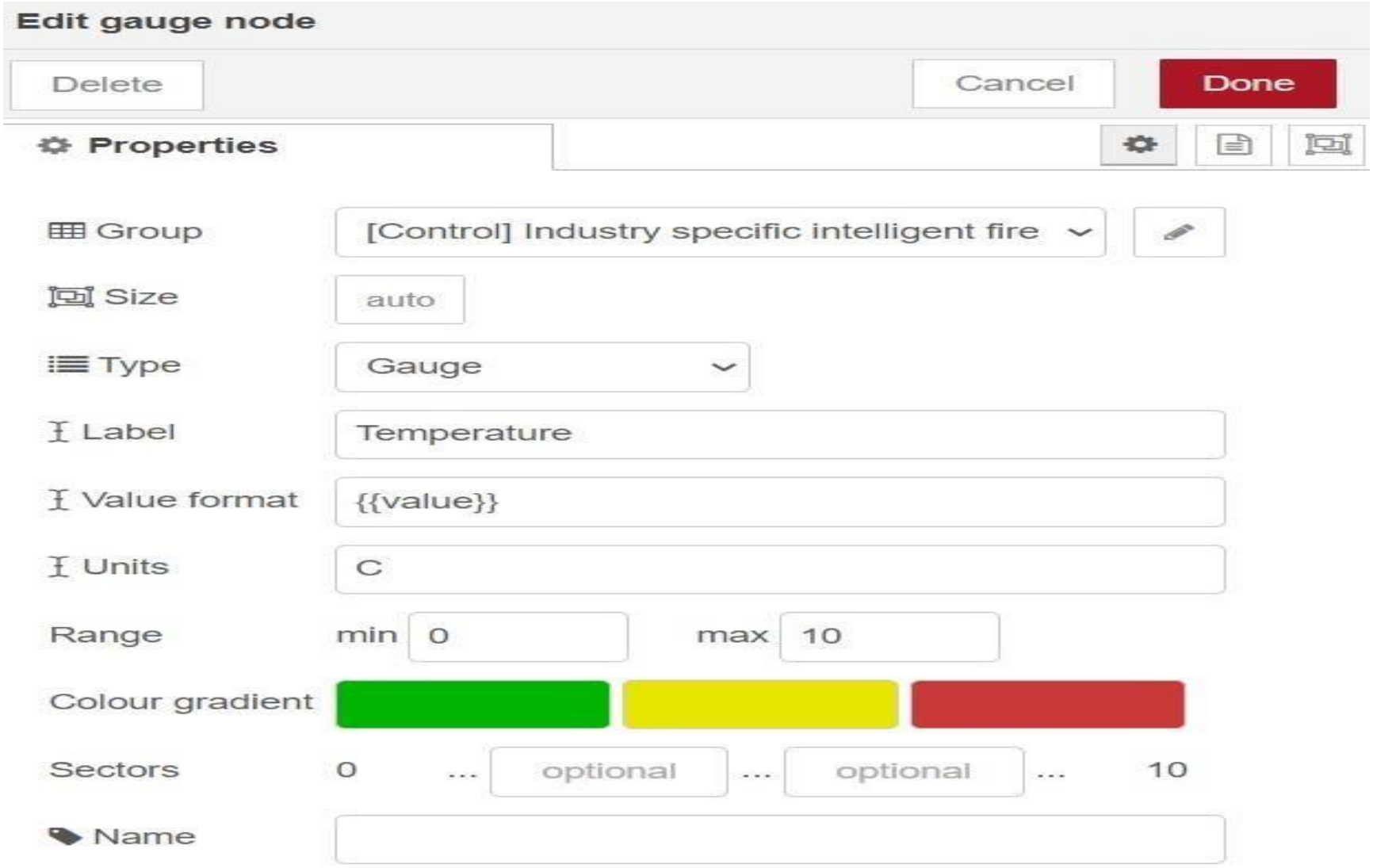


Properties of Temperature Gauge.

Fig 9 -

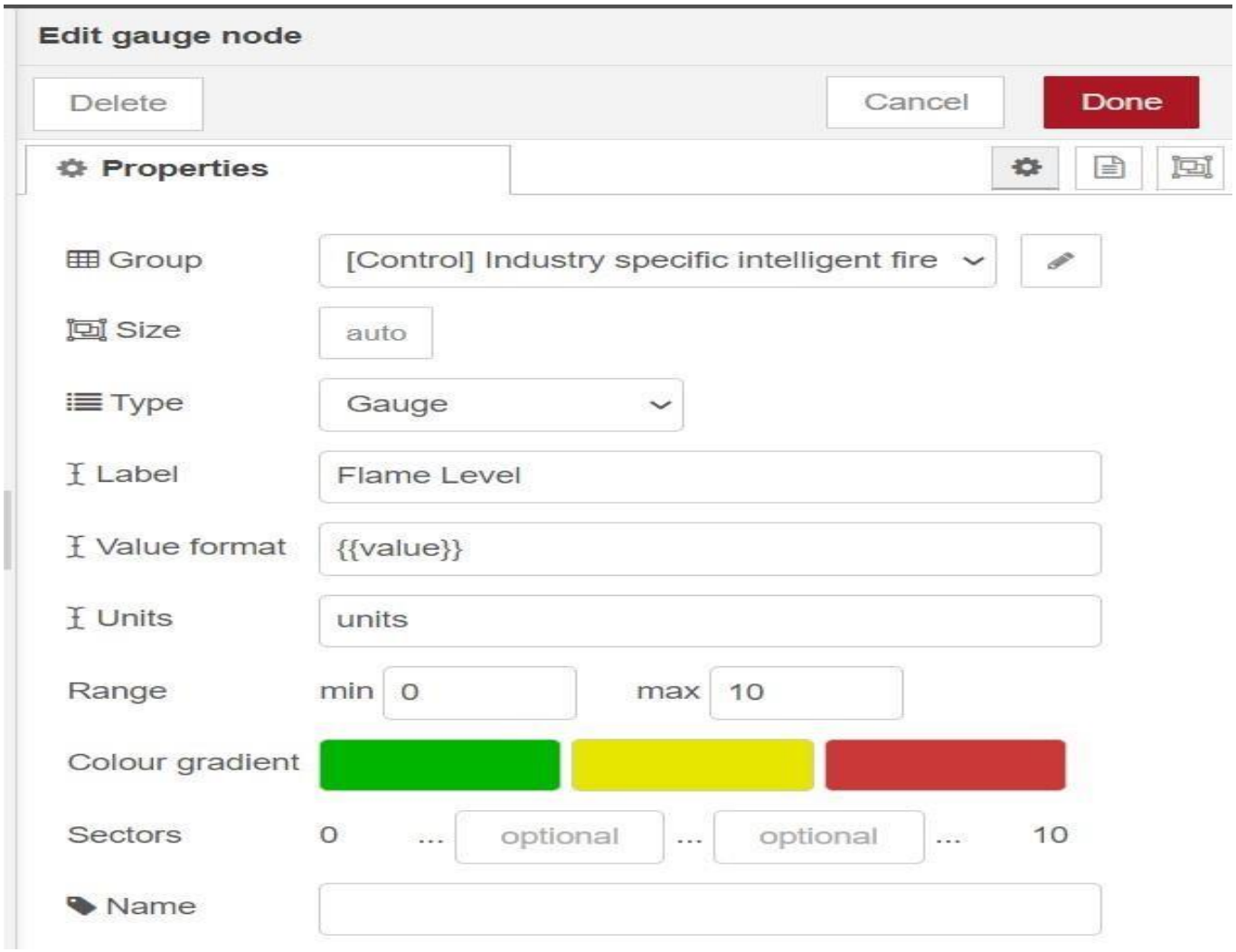
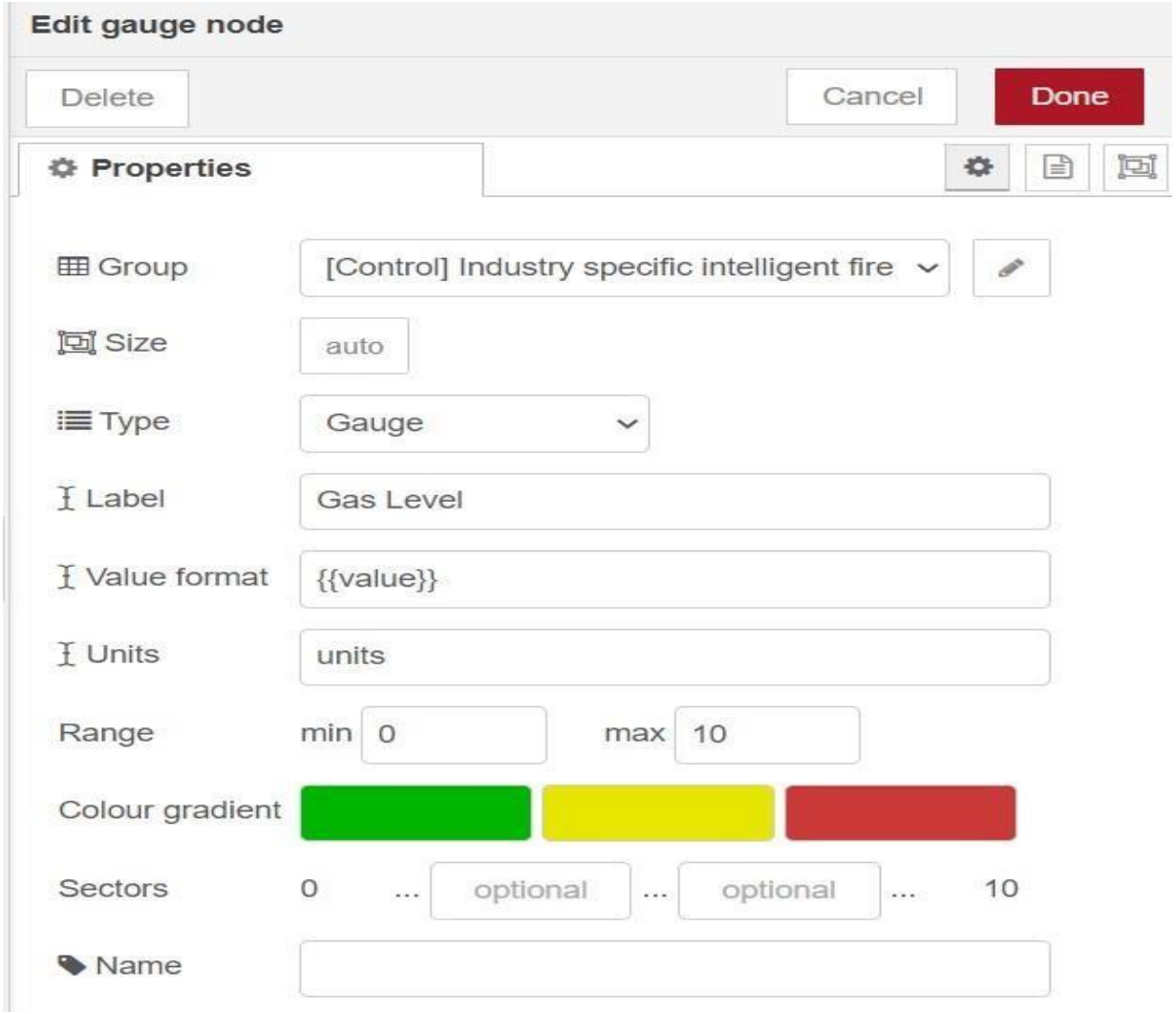

Edit gauge node
Delete
Cancel
Done
Properties
Group
[Control] Industry specific intelligent fire
Size
auto
Type
Gauge
Label
Flame Level
Value format
{{value}}
Units
units
Range
min
0
max
10
Colour gradient
Sectors
0
...
optional
...
optional
...
10
Name

Fig 9 -

Properties of Flame Level Gauge.

Fig 9 -



Properties of Gas Level Gauge.

Fig 9 -

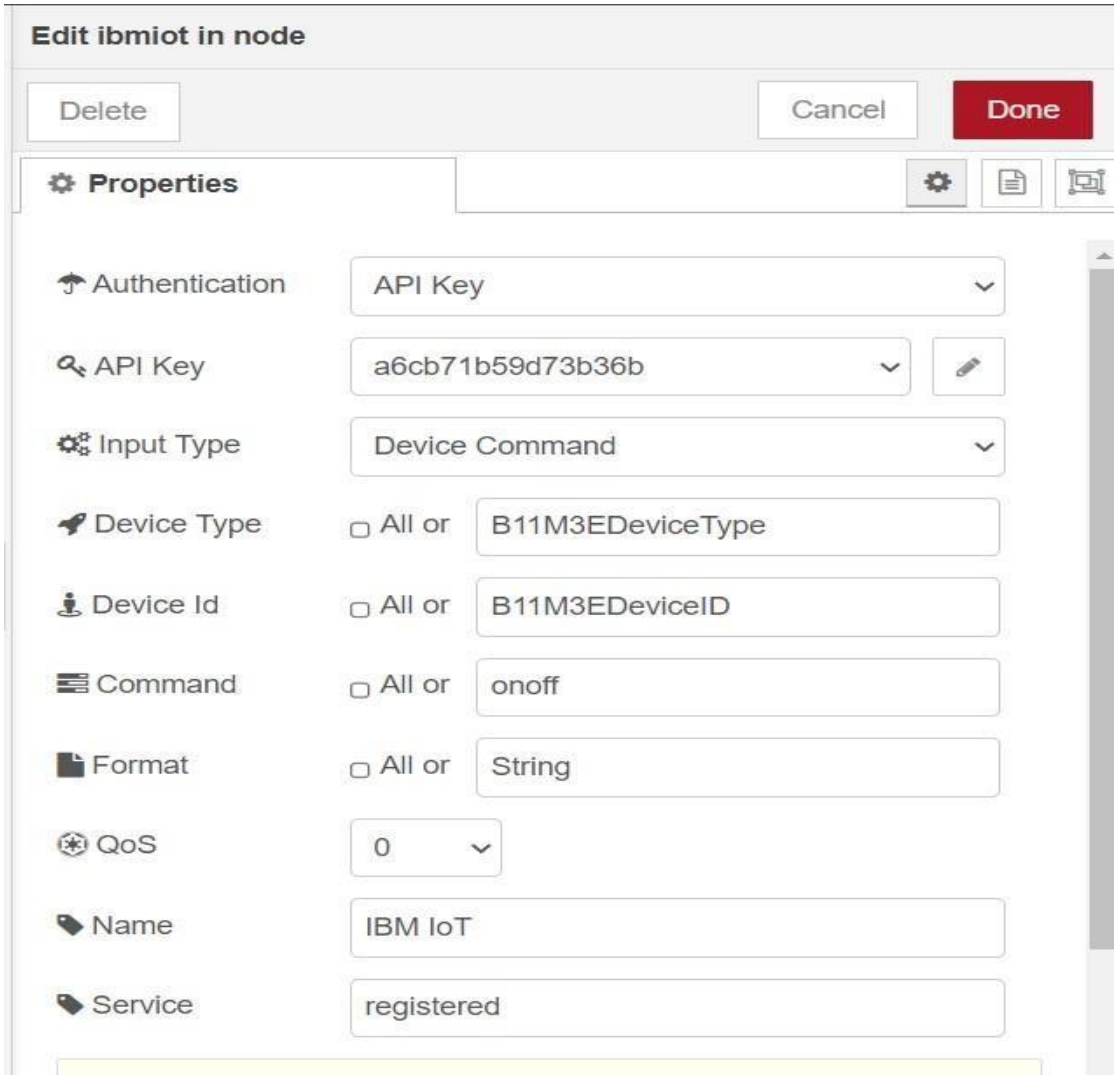

Edit ibmiot in node
Delete
Cancel
Done
Properties
Authentication
API Key
API Key
a6cb71b59d73b36b
Input Type
Device Command
Device Type
All or
B11M3EDeviceType
Device Id
All or
B11M3EDeviceID
Command
All or
onoff
Format
All or
String
QoS
0
Name
IBM IoT
Service
registered

Fig 9 -

Properties of IBM IOT Node.

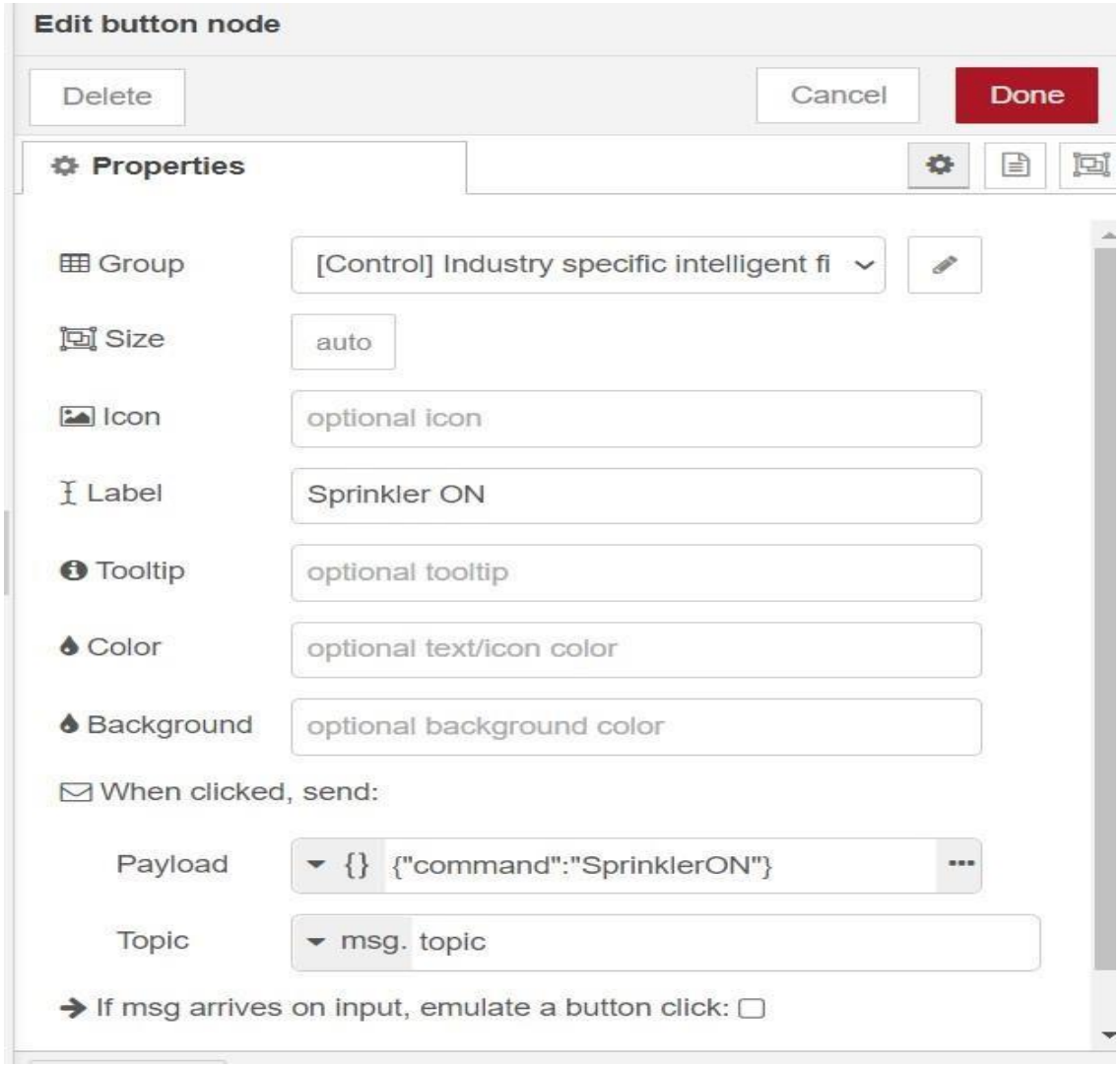


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Fig 10 Properties of Sprinkler ON button node.

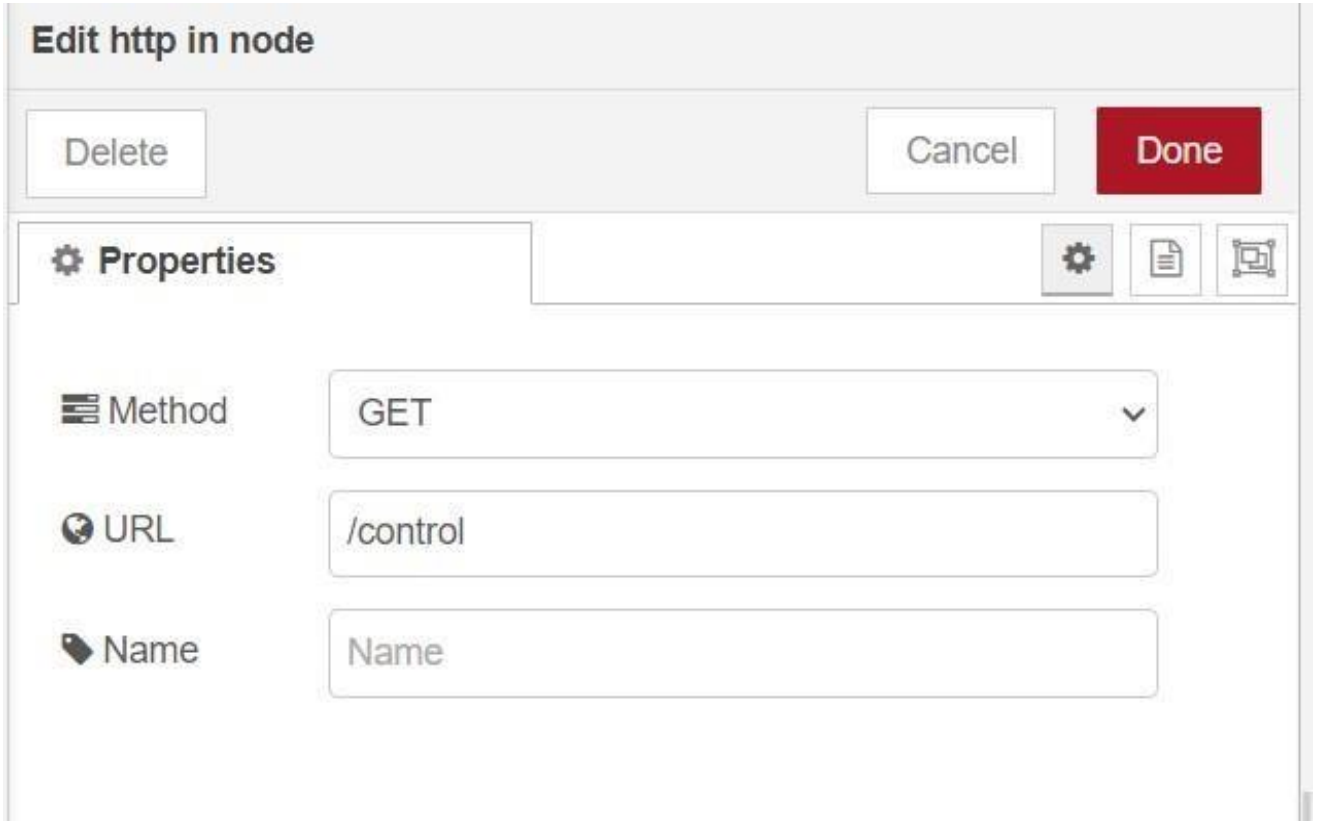

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Fig 10 Properties of HTTP Node with method GET and URL /control,

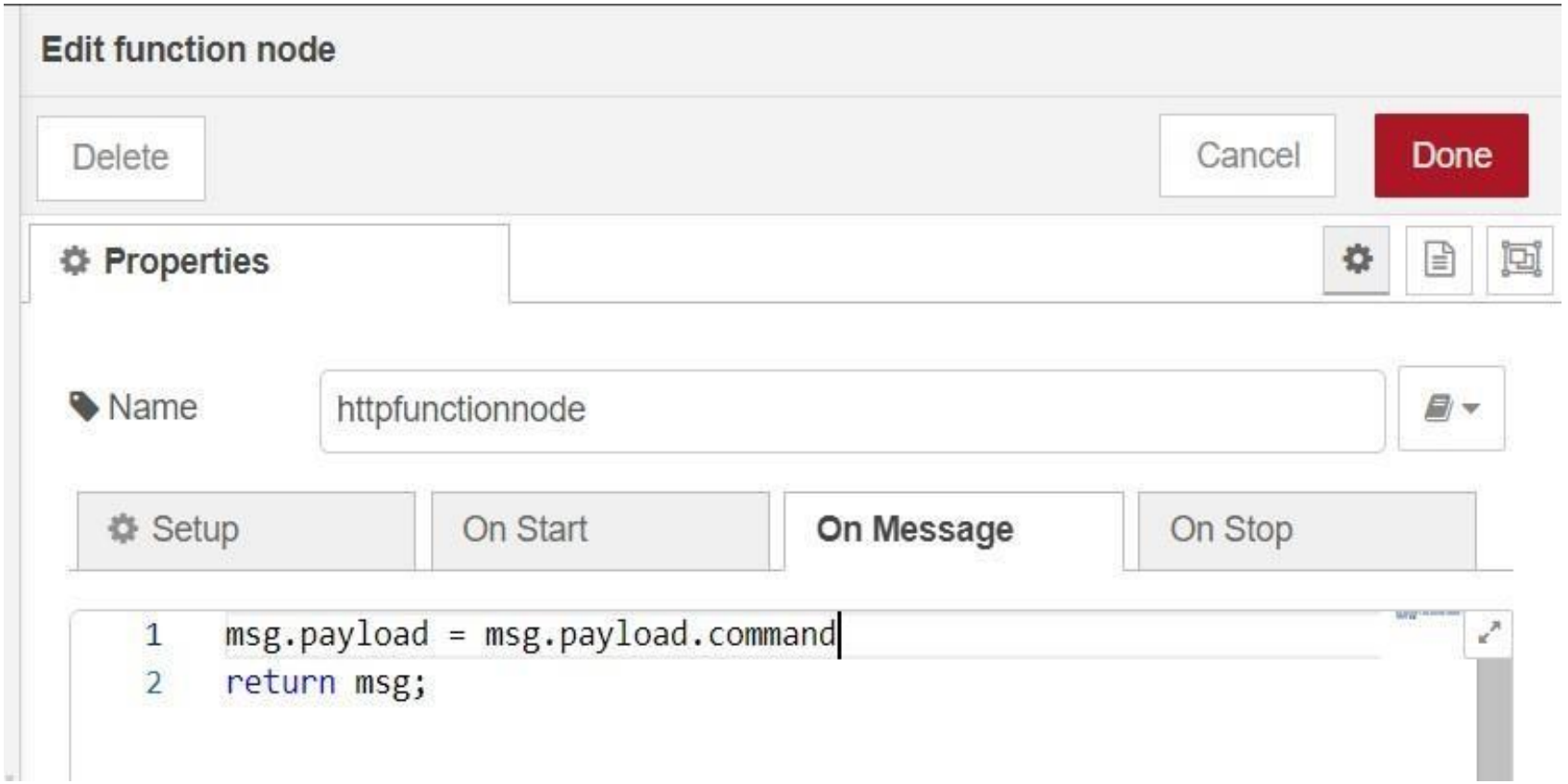

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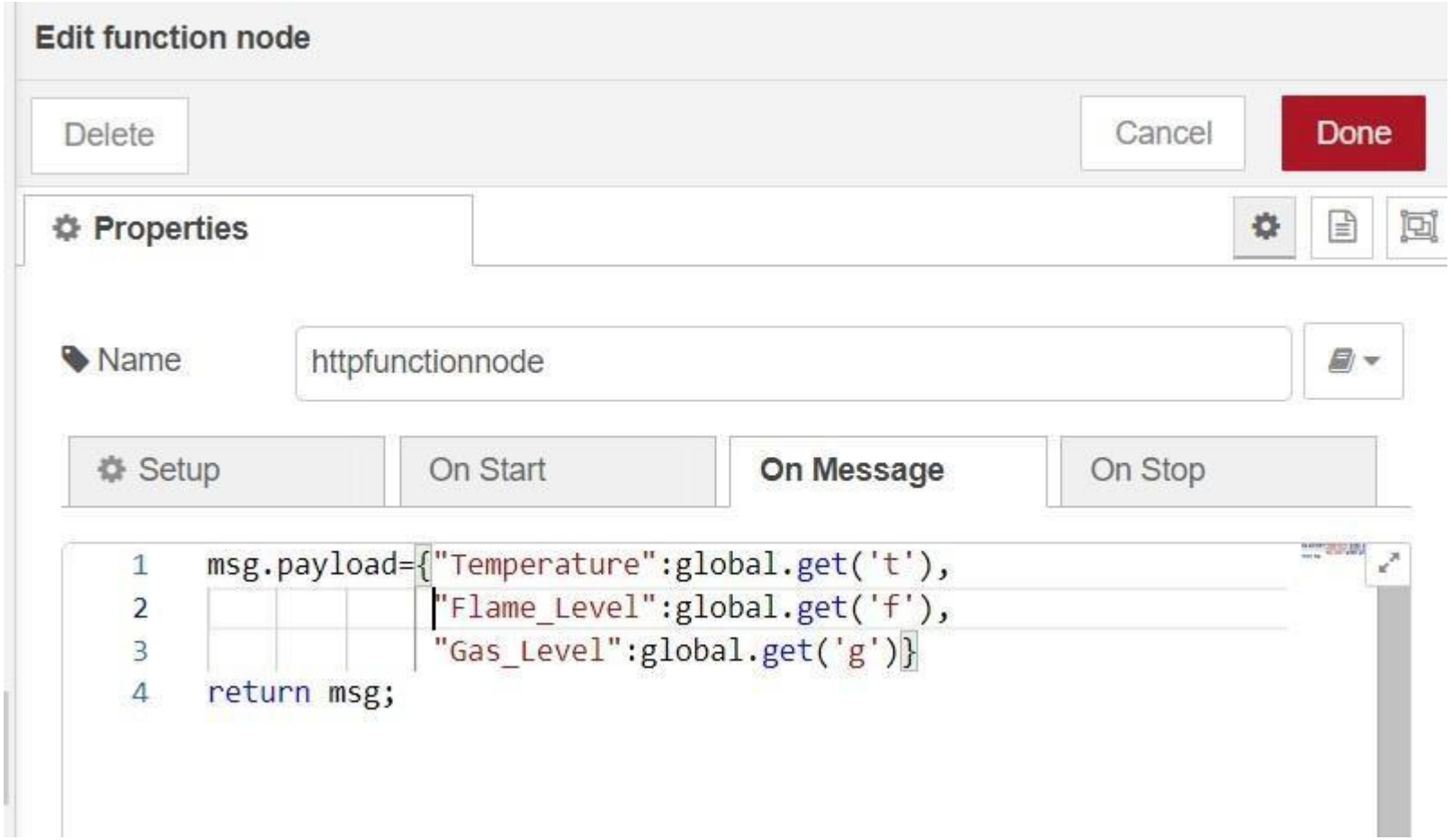
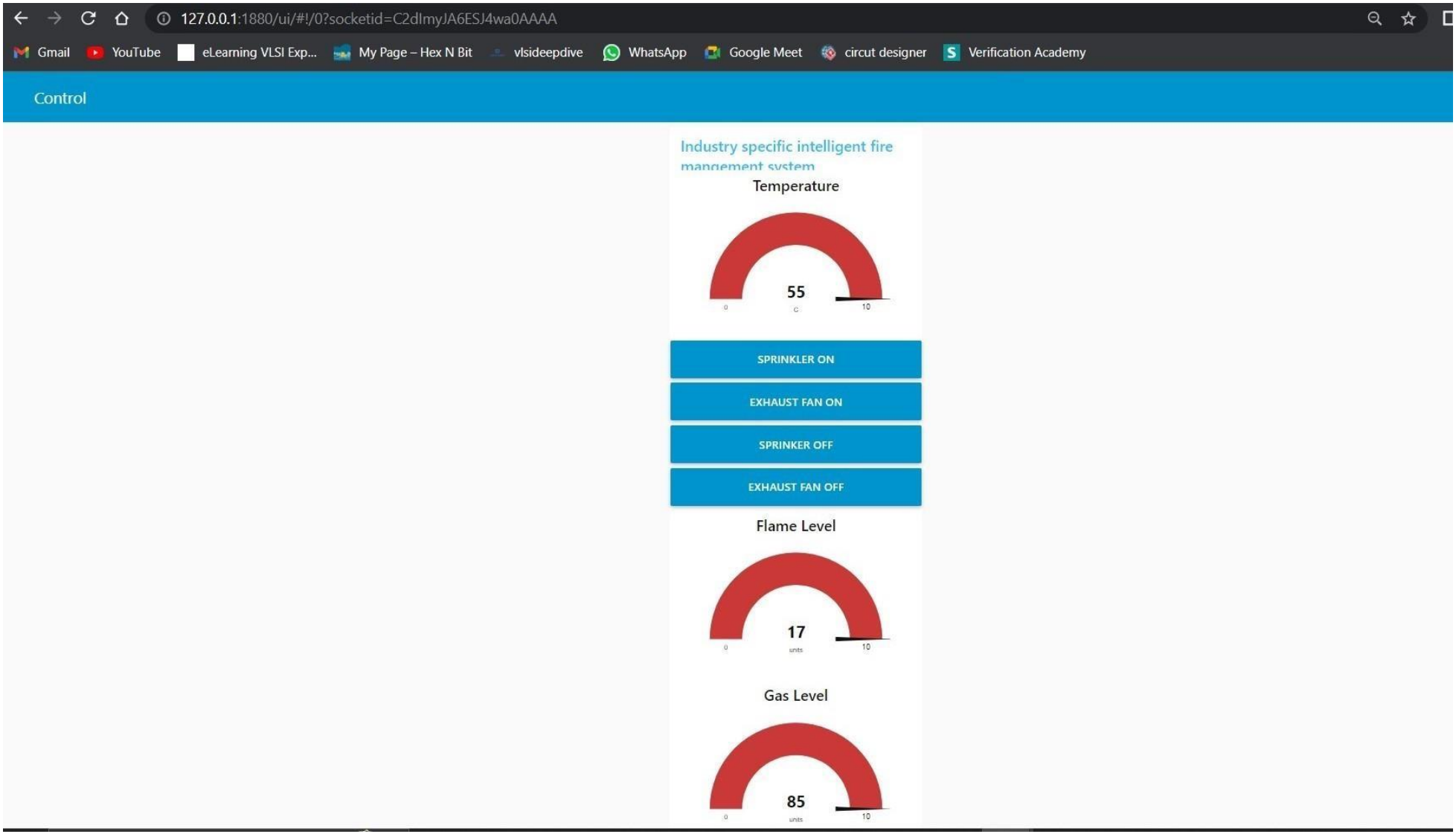
Fig 11 Properties of Control HTTP Function Node.




127.0.0.1:1880/ui/#!/0?socketid=C2dImyJA6ESJ4wa0AAAA
Gmail
YouTube
eLearning VLSI Exp...
My Page – Hex N Bit
vlsideepdive
WhatsApp
Google Meet
circut designer
Verification Academy
Control
Industry specific intelligent fire
Temperature
55
0
C
10
SPRINKLER ON
EXHAUST FAN ON
SPRINKER OFF
EXHAUST FAN OFF
Flame Level
17
0
units
10
Gas Level
85
0
units
10

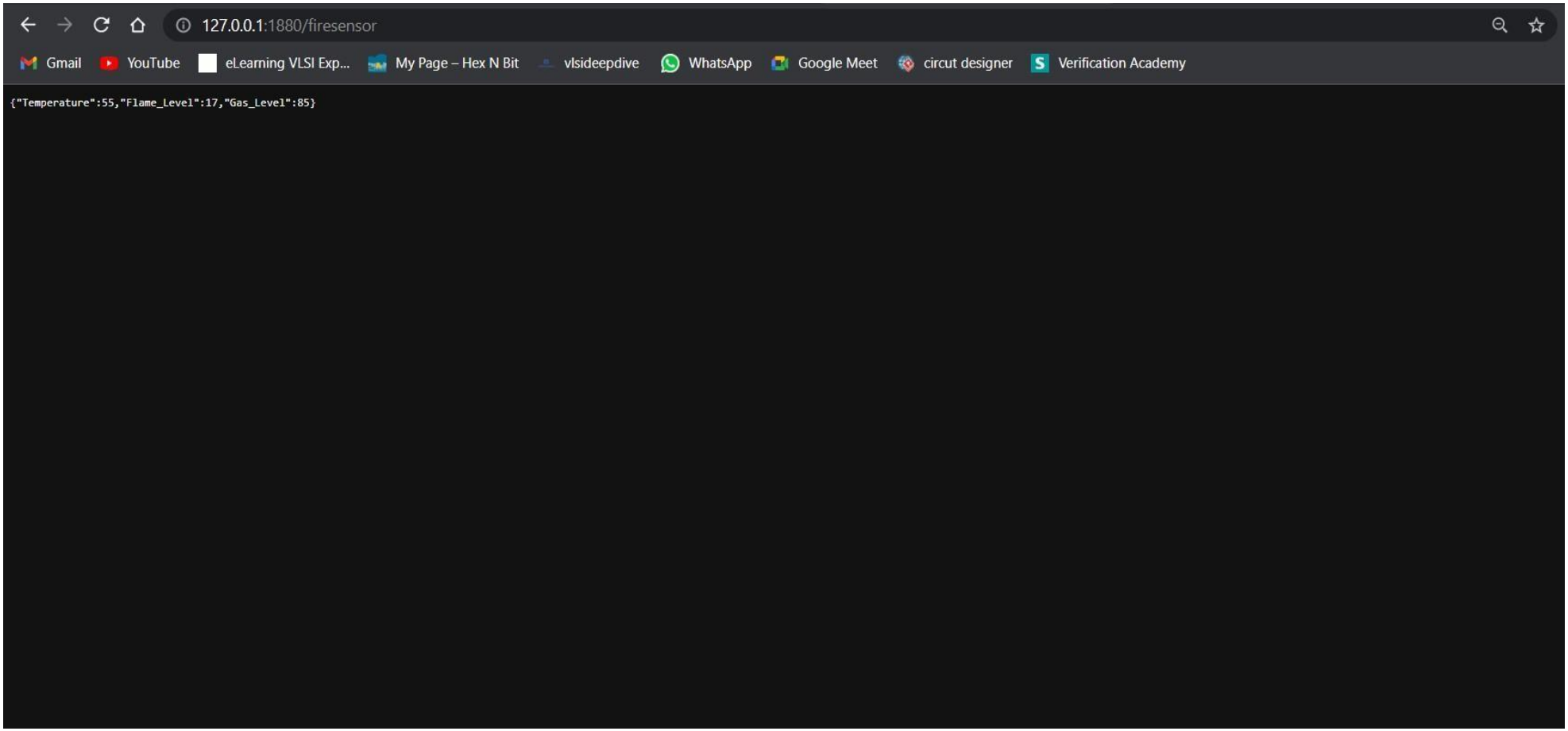

127.0.0.1:1880/firesensor
Gmail
YouTube
eLearning VLSI Exp...
My Page – Hex N Bit
vlsideepdive
WhatsApp
Google Meet
circut designer
Verification Academy
{"Temperature":55,"Flame_Level":17,"Gas_Level":85}

Fig 12 - Properties of Monitor HTTP Function Node

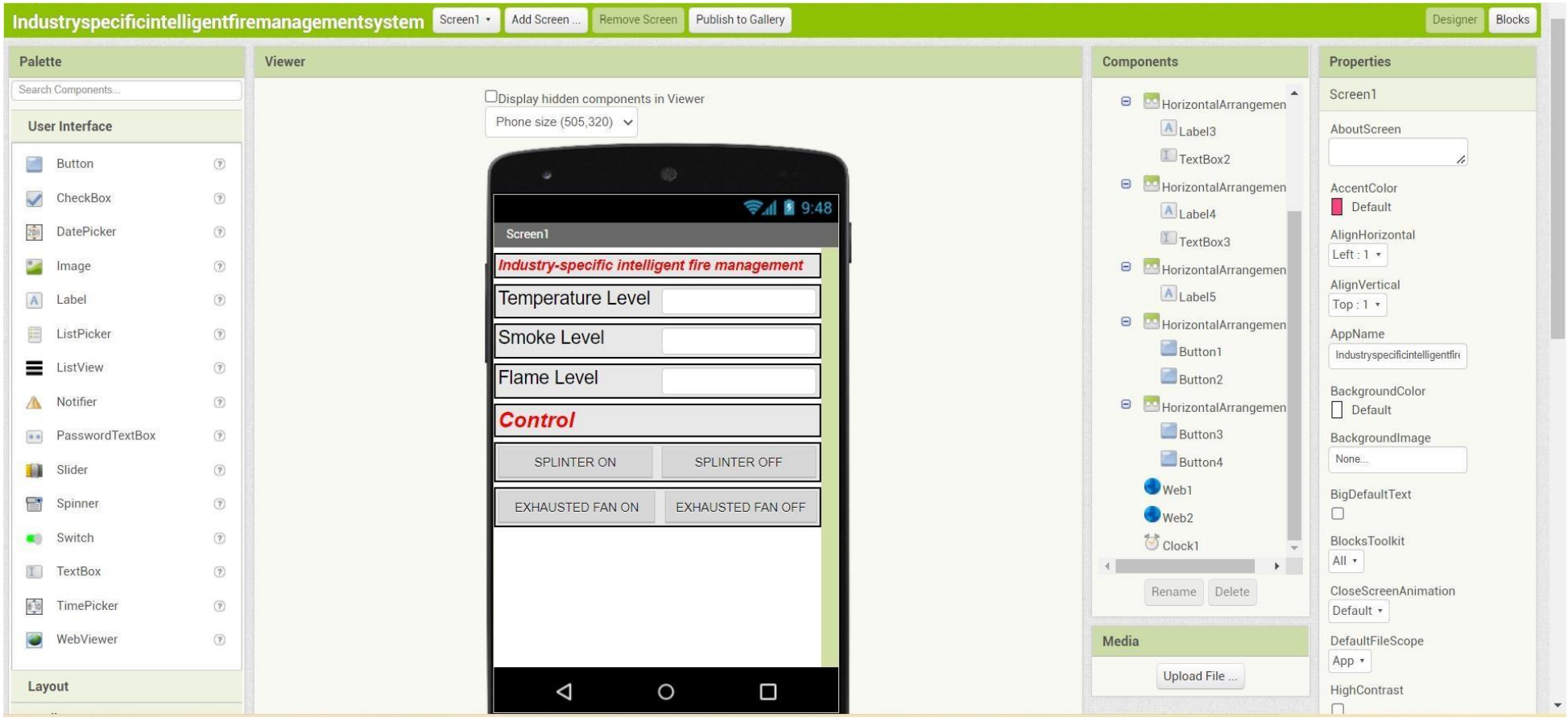


Fig 13 - Front-end APP for our project, to display the Temperature Level, Smoke Level and Flame Level with control buttons like Sprinkler ON and OFF and Exhaust Fan ON and OFF