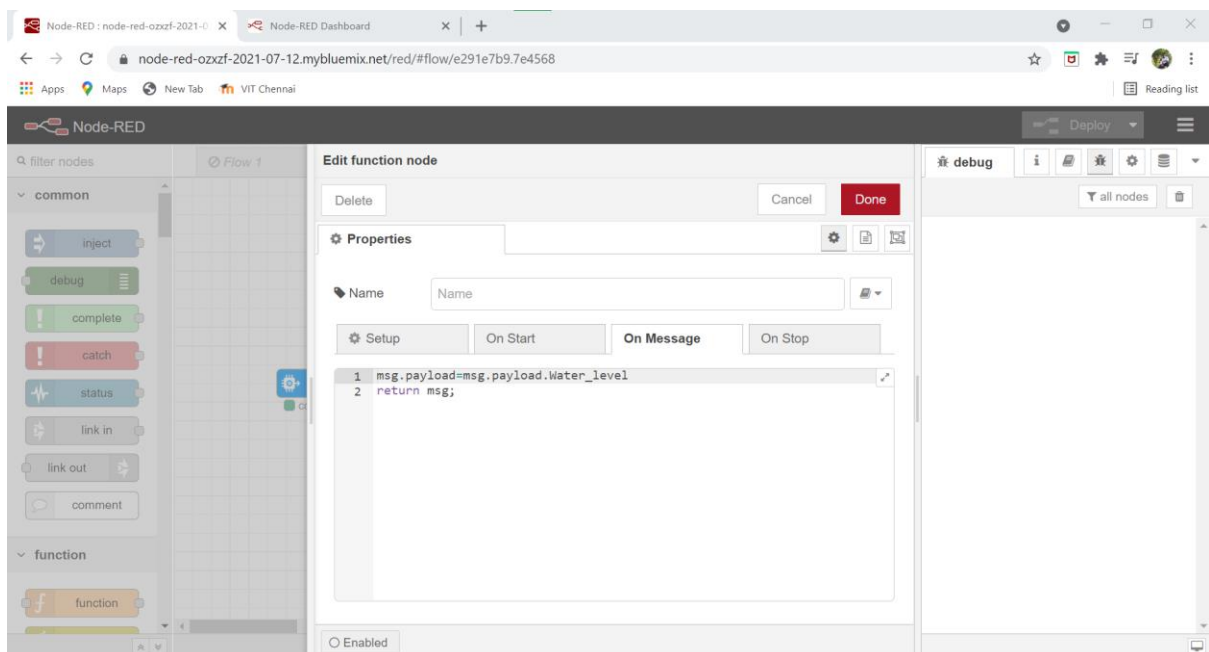
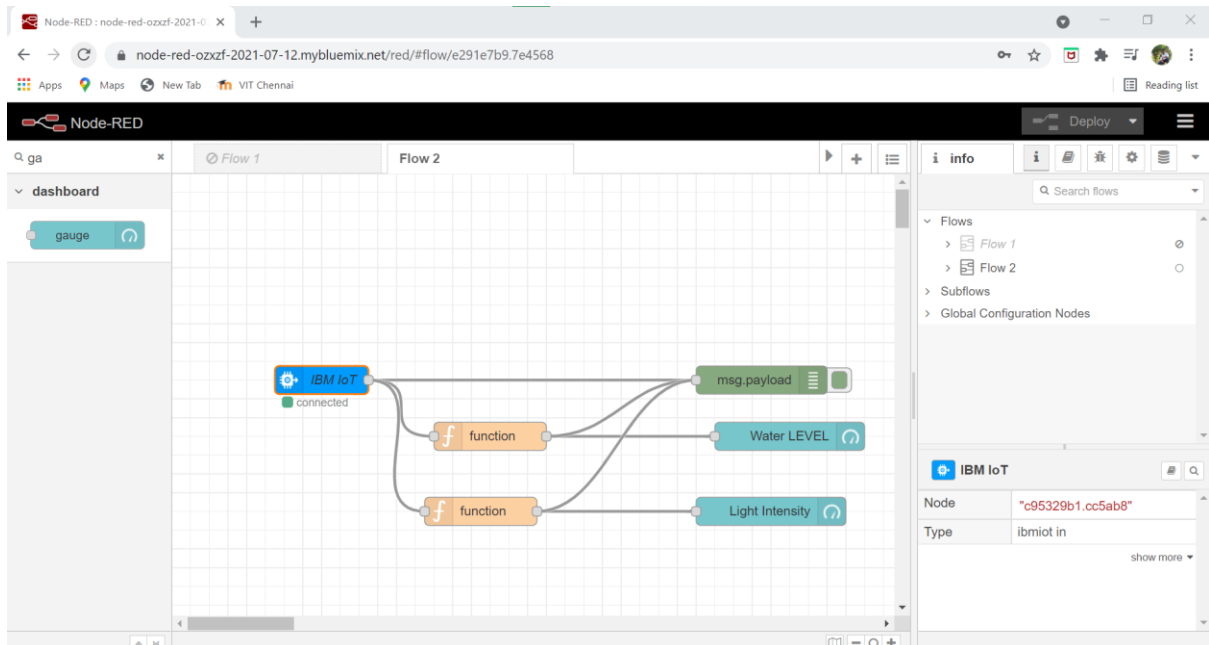


ASSIGNMENT_3:

Develop a code to upload the water tank level and light intensity values to the IBM IoT platform and visualize them in the web application.



Node-RED : node-red-ozxf-2021-07-12.mybluemix.net/red/#flow/e291e7b9.7e4568

Node-RED

filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function

Flow 1

Edit function node

Delete Cancel Done

Properties

Name

Setup On Start On Message On Stop

```
1 msg.payload=msg.payload.Light_intensity
2 return msg;
```

Enabled

debug

all nodes

Node-RED : node-red-ozxf-2021-07-12.mybluemix.net/red/#flow/e291e7b9.7e4568

Node-RED

filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function

Flow 1

Flow 2

IBM IoT

connected

Edit ibmiot in node > Edit ibmiot node

Delete Cancel Update

Properties

Name DATA

API Key a-1bjhlu-dvaxi8je6j

API Token

Server-Name orgid.messaging.internetofthings.ibmcloud.com

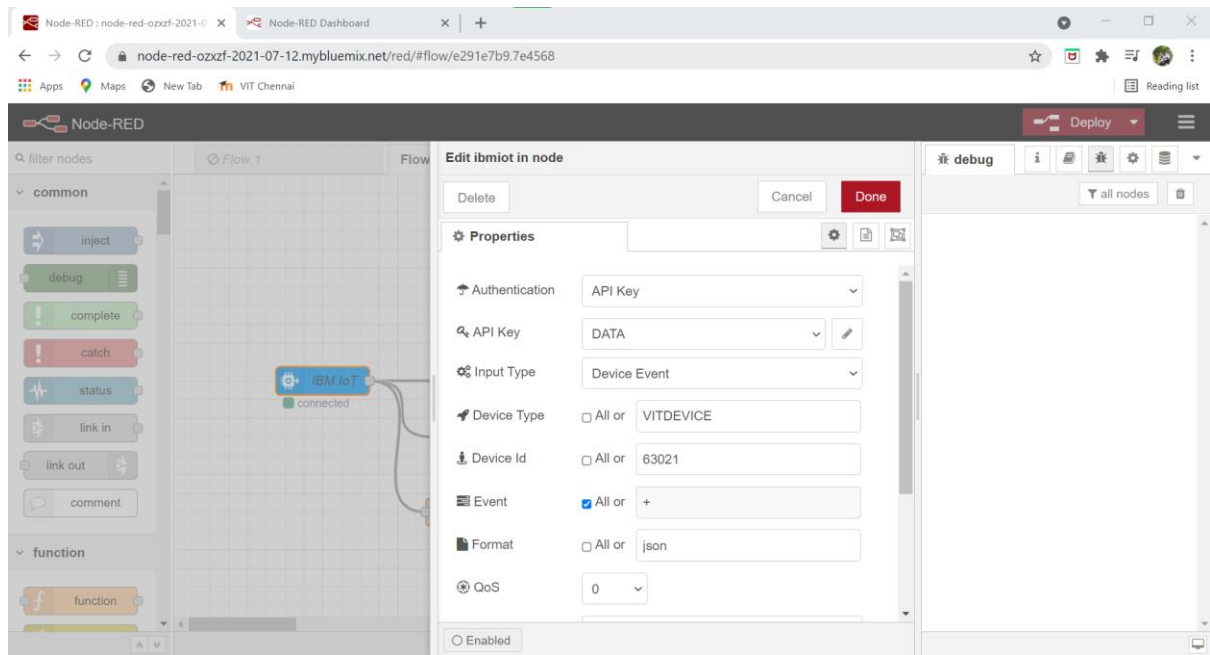
Scalable ☐ Application ID

Keep Alive 60 Seconds ☒ Use Clean Session

Enabled 3 nodes use this config On all flows

debug

all nodes



CODE:

```
import wiotp.sdk.device
```

```
import time
```

```
import random
```

```
myConfig = {
```

```
    "identity": {
```

```
        "orgId": "1bjhlu",
```

```
        "typeId": "VITDEVICE",
```

```
        "deviceId": "63021"
```

```
    },
```

```
    "auth": {
```

```
        "token": "9876543210"
```

```
    }
```

```
}
```

```
def myCommandCallback(cmd):
```

```
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
```

```
    m=cmd.data['command']
```

```
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
```

```
client.connect()
```

```
while True:
```

```
    level=random.randint(0,10)
```

```
    intensity=random.randint(100,1500)
```

```
    myData={'level':level, 'intensity':intensity}
```

```
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
```

```
    print("Published data Successfully: %s", myData)
```

```
    client.commandCallback = myCommandCallback
```

```
    time.sleep(2)
```

```
client.disconnect()
```

AFTER STIMULATION:



```
*IDLE Shell 3.9.6*
File Edit Shell Debug Options Window Help
Published data Successfully: %s ('Water_level': 1, 'Light_intensity': 933)
Published data Successfully: %s ('Water_level': 95, 'Light_intensity': 940)
Published data Successfully: %s ('Water_level': 44, 'Light_intensity': 1239)
Published data Successfully: %s ('Water_level': 19, 'Light_intensity': 978)
Published data Successfully: %s ('Water_level': 21, 'Light_intensity': 794)
Published data Successfully: %s ('Water_level': 49, 'Light_intensity': 269)
Published data Successfully: %s ('Water_level': 70, 'Light_intensity': 319)
Published data Successfully: %s ('Water_level': 41, 'Light_intensity': 680)
Published data Successfully: %s ('Water_level': 7, 'Light_intensity': 1390)
Published data Successfully: %s ('Water_level': 92, 'Light_intensity': 1312)
Published data Successfully: %s ('Water_level': 34, 'Light_intensity': 609)
Published data Successfully: %s ('Water_level': 4, 'Light_intensity': 576)
Published data Successfully: %s ('Water_level': 34, 'Light_intensity': 687)
Published data Successfully: %s ('Water_level': 41, 'Light_intensity': 225)
Published data Successfully: %s ('Water_level': 55, 'Light_intensity': 740)
Published data Successfully: %s ('Water_level': 26, 'Light_intensity': 905)
Published data Successfully: %s ('Water_level': 19, 'Light_intensity': 469)
Published data Successfully: %s ('Water_level': 30, 'Light_intensity': 611)
Published data Successfully: %s ('Water_level': 81, 'Light_intensity': 741)
Published data Successfully: %s ('Water_level': 54, 'Light_intensity': 1331)
Published data Successfully: %s ('Water_level': 93, 'Light_intensity': 1297)
Published data Successfully: %s ('Water_level': 46, 'Light_intensity': 996)
Published data Successfully: %s ('Water_level': 68, 'Light_intensity': 670)
Published data Successfully: %s ('Water_level': 80, 'Light_intensity': 656)
Published data Successfully: %s ('Water_level': 25, 'Light_intensity': 277)
Published data Successfully: %s ('Water_level': 13, 'Light_intensity': 733)
Published data Successfully: %s ('Water_level': 76, 'Light_intensity': 1001)
Published data Successfully: %s ('Water_level': 91, 'Light_intensity': 944)
Published data Successfully: %s ('Water_level': 79, 'Light_intensity': 385)
Published data Successfully: %s ('Water_level': 28, 'Light_intensity': 598)
Published data Successfully: %s ('Water_level': 71, 'Light_intensity': 447)
Published data Successfully: %s ('Water_level': 73, 'Light_intensity': 609)
Published data Successfully: %s ('Water_level': 38, 'Light_intensity': 890)
Published data Successfully: %s ('Water_level': 76, 'Light_intensity': 1153)
Published data Successfully: %s ('Water_level': 17, 'Light_intensity': 1255)
Published data Successfully: %s ('Water_level': 56, 'Light_intensity': 1300)
Published data Successfully: %s ('Water_level': 24, 'Light_intensity': 151)
Published data Successfully: %s ('Water_level': 69, 'Light_intensity': 1068)
Published data Successfully: %s ('Water_level': 73, 'Light_intensity': 1098)
Published data Successfully: %s ('Water_level': 32, 'Light_intensity': 1389)
Published data Successfully: %s ('Water_level': 31, 'Light_intensity': 733)
Published data Successfully: %s ('Water_level': 52, 'Light_intensity': 1249)
Published data Successfully: %s ('Water_level': 22, 'Light_intensity': 605)
Published data Successfully: %s ('Water_level': 62, 'Light_intensity': 861)
Published data Successfully: %s ('Water_level': 39, 'Light_intensity': 1325)
Published data Successfully: %s ('Water_level': 40, 'Light_intensity': 552)
```

Node-RED: node-red-ozxf-2021-07-12.mybluemix.net/red/#flow/e291e7b9.7e4568

Node-RED

Flow 1 Flow 2

filter nodes

common

- inject
- debug
- complete
- catch
- status
- link in
- link out
- comment

function

- function

debug

all nodes

iot-2?type=VITDEVICE/id/63021/evt/status/fmt/json :
msg payload : number
25
7/18/2021, 9:13:54 AM node-6822169c-69e0c8
iot-2?type=VITDEVICE/id/63021/evt/status/fmt/json :
msg payload : number
517
7/18/2021, 9:13:56 AM node-6822169c-69e0c8
msg payload : Object
{ Water_Level: 63, Light_intensity:
1029 }
7/18/2021, 9:13:56 AM node-6822169c-69e0c8
iot-2?type=VITDEVICE/id/63021/evt/status/fmt/json :
msg payload : number
63
7/18/2021, 9:13:56 AM node-6822169c-69e0c8
iot-2?type=VITDEVICE/id/63021/evt/status/fmt/json :
msg payload : number
1029

```
graph LR; IoT[IBM IoT] --> F1[function]; IoT --> F2[function]; F1 --> WL[Water Level]; F2 --> LI[Light Intensity];
```

Node-RED: node-red-ozxf-2021-07-12.mybluemix.net/ui/#/0?socketid=Y5pRZWIUCDF0LCAIAAAU

Water TankLevel

WATER LEVEL

0 units 100

Light Intensity

intensity

100 units 1400