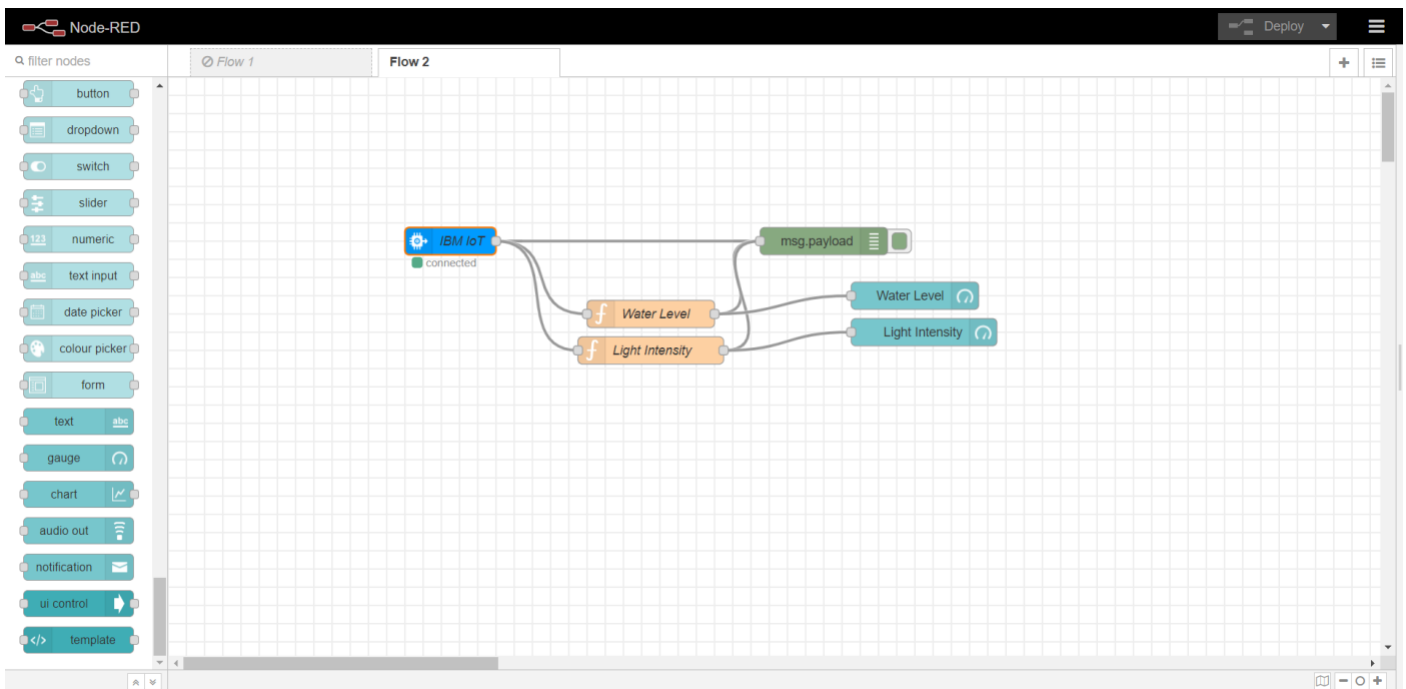**NAME:** Maram Tejaswanth Reddy

MAIL ID: tejaswanthmaram@gmail.com

ASSIGNMENT-3

AIM: To 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 Flow:

PROGRAM:

(The water level and light intensity is given as percentages with a value random integer between 0 and 100)

```python
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "udbkdj",
        "typeId": "sec_device",
        "deviceId":"Ziggy"
    },
    "auth": {
        "token": "9848559539"
    }
}


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


while True:
    wlevel=random.randint(0,100)
    lintens=random.randint(0,100)
    myData={'water_level':wlevel, 'light_intensity':lintens}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,
onPublish=None)
    print("Published data Successfully: %s", myData)
    time.sleep(2)
client.disconnect()
```

SIMULATION:

Pyhton(jupyter notebook):

```python
In [*]: import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "udbkdj",
        "typeId": "sec_device",
        "deviceId":"Ziggy"
    },
    "auth": {
        "token": "9848559539"
    }
}

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

while True:
    wlevel=random.randint(0,100)
    lintens=random.randint(0,100)
    myData={'water_level':wlevel, 'light_intensity':lintens}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Published data Successfully: %s", myData)
    time.sleep(2)
client.disconnect()
```

```
2021-07-14 22:58:20,760   wiotp.sdk.device.client.DeviceClient   INFO     Connected successfully: d:udbkdj:sec_device:Ziggy

Published data Successfully: %s {'water_level': 22, 'light_intensity': 65}
Published data Successfully: %s {'water_level': 9, 'light_intensity': 72}
Published data Successfully: %s {'water_level': 83, 'light_intensity': 99}
Published data Successfully: %s {'water_level': 51, 'light_intensity': 83}
Published data Successfully: %s {'water_level': 85, 'light_intensity': 3}
Published data Successfully: %s {'water_level': 20, 'light_intensity': 54}
Published data Successfully: %s {'water_level': 64, 'light_intensity': 64}
Published data Successfully: %s {'water_level': 62, 'light_intensity': 19}
```

Node-RED debug:

```
debug                    i  📖 🐞 ⚙ 🗄 📊 ▾

                              ▼ all nodes   🗑

7/14/2021, 11:00:33 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : Object
▸ { water_level: 23, light_intensity: 83 }

7/14/2021, 11:00:33 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
23

7/14/2021, 11:00:33 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
83

7/14/2021, 11:00:35 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : Object
▸ { water_level: 74, light_intensity: 38 }

7/14/2021, 11:00:35 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
74

7/14/2021, 11:00:35 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
38

7/14/2021, 11:00:37 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : Object
▸ { water_level: 15, light_intensity: 100 }

7/14/2021, 11:00:38 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
15

7/14/2021, 11:00:39 PM  node: c18bf940.20e3d8
iot-2/type/sec_device/id/Ziggy/evt/status/fmt/json : msg.payload : number
```

Web-ui:
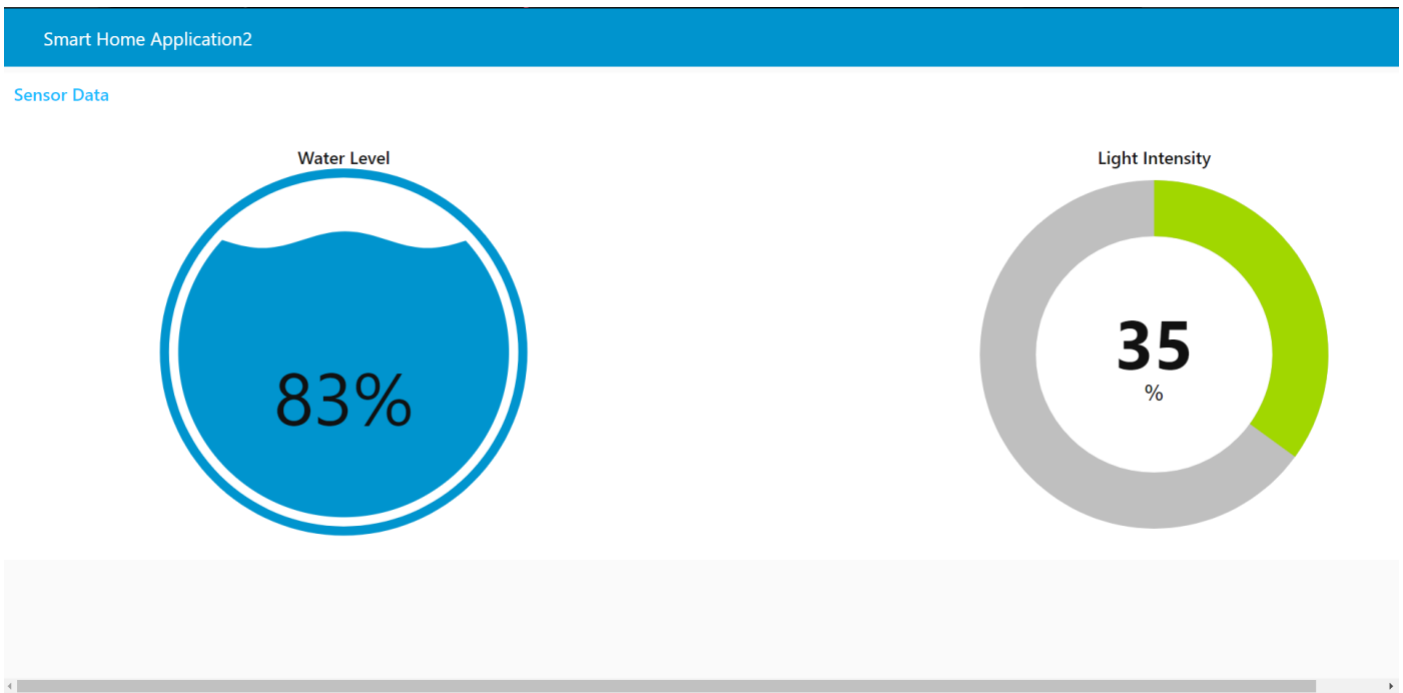
The above shown data is

Left: The water tank level in %

Right: The light intensity in %

RESULT: Hence, a Python code and Node-RED flow is developed to upload the water tank level and light intensity values to the IBM IoT platform and visualize them in the web application.