19BAI10017

SHANZEH BATOOL

ASSIGNMENT 3

Q. 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.

Python Code –

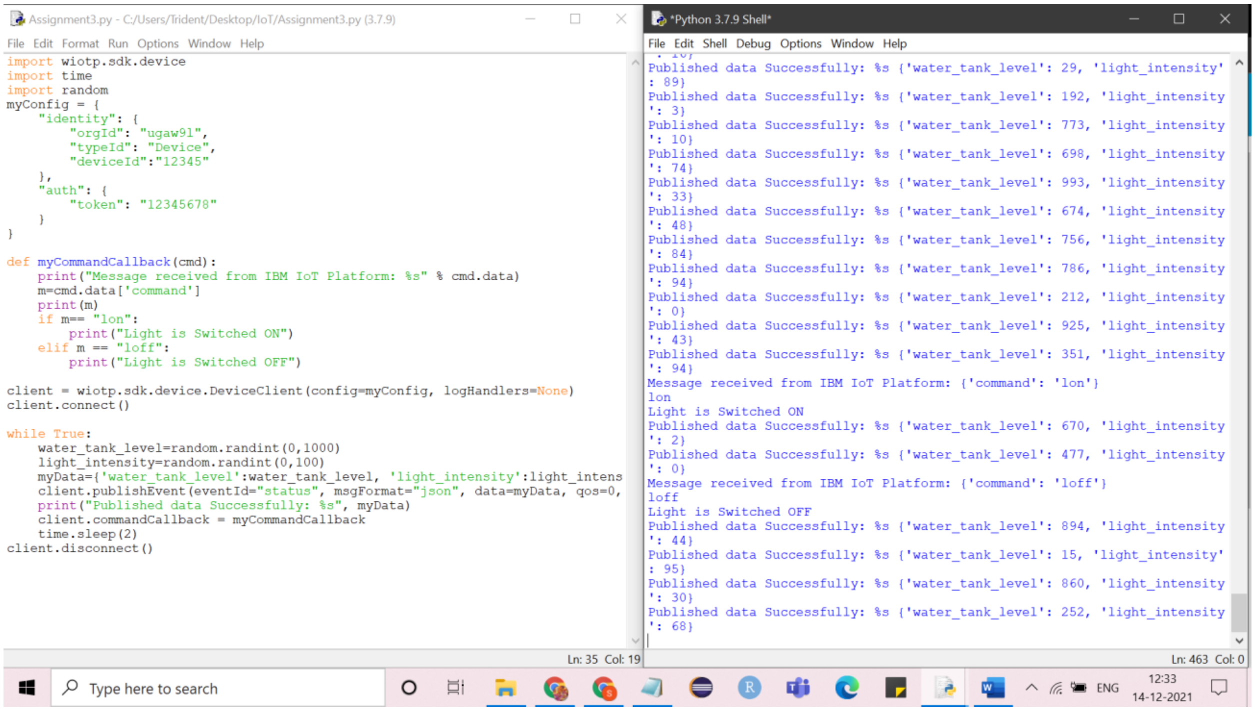
```
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "ugaw9l",
        "typeId": "Device",
        "deviceId":"12345"
    },
    "auth": {
        "token": "12345678"
    }
}
```

```
def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data)
    m=cmd.data['command']
    print(m)
    if m== "lon":
        print("Light is Switched ON")
    elif m == "loff":
        print("Light is Switched OFF")

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

while True:
    water_tank_level=random.randint(0,1000)
    light_intensity=random.randint(0,100)
    myData={'water_tank_level':water_tank_level, 'light_intensity':light_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()
```

Python Code & Output in Python Shell


Assignment3.py - C:/Users/Trident/Desktop/IoT/Assignment3.py (3.7.9)
File Edit Format Run Options Window Help
Ln: 35 Col: 19
Python 3.7.9 Shell
File Edit Shell Debug Options Window Help
Ln: 463 Col: 0
Type here to search
ENG
12:33
14-12-2021

```python
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "ugaw91",
        "typeId": "Device",
        "deviceId":"12345"
    },
    "auth": {
        "token": "12345678"
    }
}

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    print("Published data Successfully: %s", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```
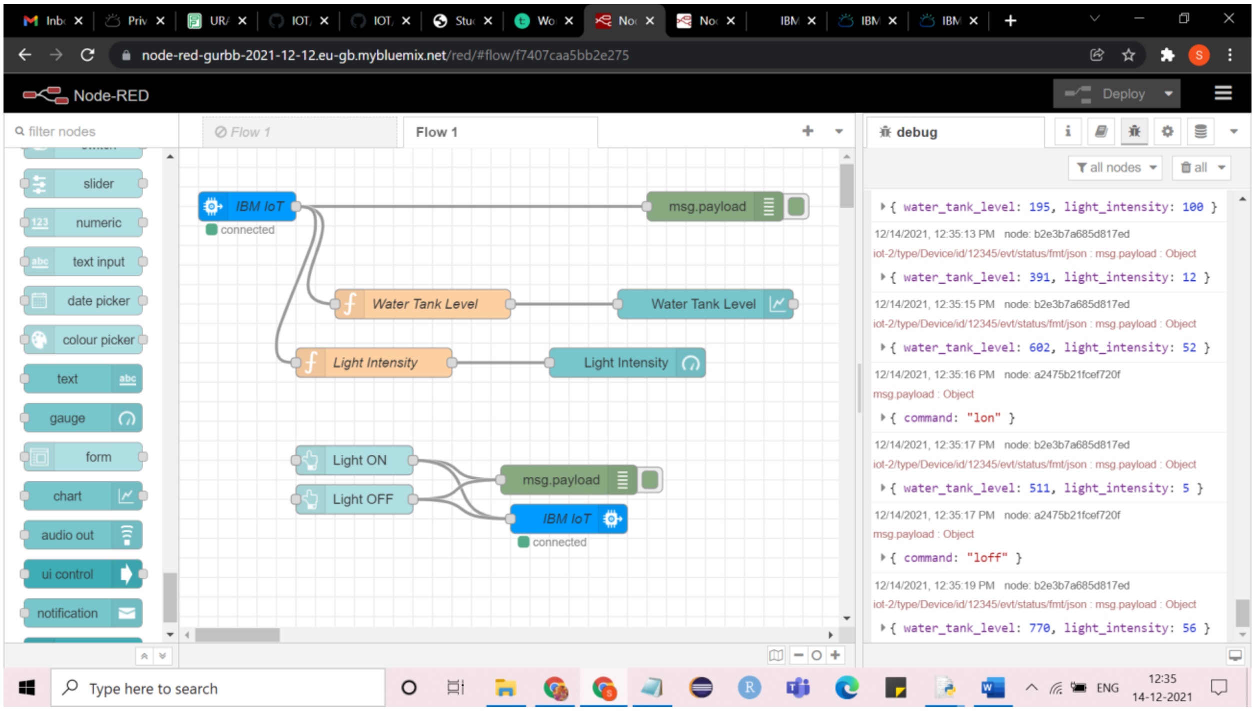
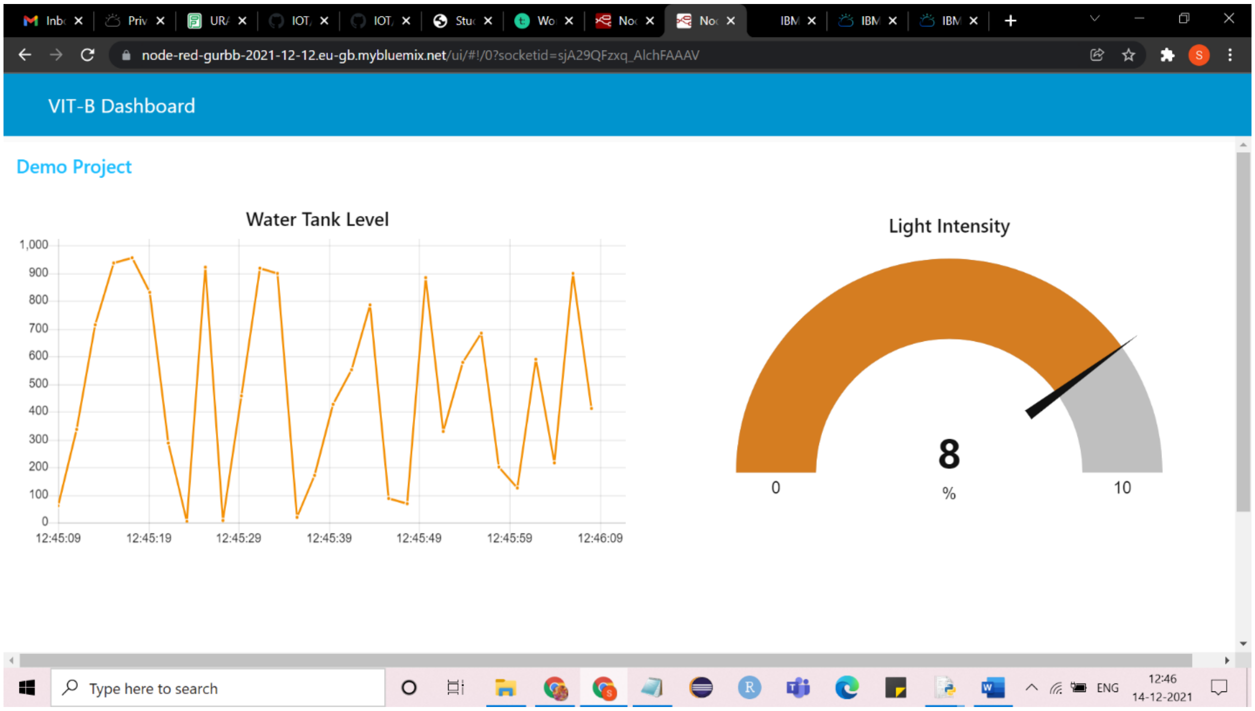

```
Published data Successfully: %s {'water_tank_level': 29, 'light_intensity'
: 89}
Published data Successfully: %s {'water_tank_level': 192, 'light_intensity
': 3}
Published data Successfully: %s {'water_tank_level': 773, 'light_intensity
': 10}
Published data Successfully: %s {'water_tank_level': 698, 'light_intensity
': 74}
Published data Successfully: %s {'water_tank_level': 993, 'light_intensity
': 33}
Published data Successfully: %s {'water_tank_level': 674, 'light_intensity
': 48}
Published data Successfully: %s {'water_tank_level': 756, 'light_intensity
': 84}
Published data Successfully: %s {'water_tank_level': 786, 'light_intensity
': 94}
Published data Successfully: %s {'water_tank_level': 212, 'light_intensity
': 0}
Published data Successfully: %s {'water_tank_level': 925, 'light_intensity
': 43}
Published data Successfully: %s {'water_tank_level': 351, 'light_intensity
': 94}
Message received from IBM IoT Platform: {'command': 'lon'}
lon
Light is Switched ON
Published data Successfully: %s {'water_tank_level': 670, 'light_intensity
': 2}
Published data Successfully: %s {'water_tank_level': 477, 'light_intensity
': 0}
Message received from IBM IoT Platform: {'command': 'loff'}
loff
Light is Switched OFF
Published data Successfully: %s {'water_tank_level': 894, 'light_intensity
': 44}
Published data Successfully: %s {'water_tank_level': 15, 'light_intensity'
: 95}
Published data Successfully: %s {'water_tank_level': 860, 'light_intensity
': 30}
Published data Successfully: %s {'water_tank_level': 252, 'light_intensity
': 68}
```

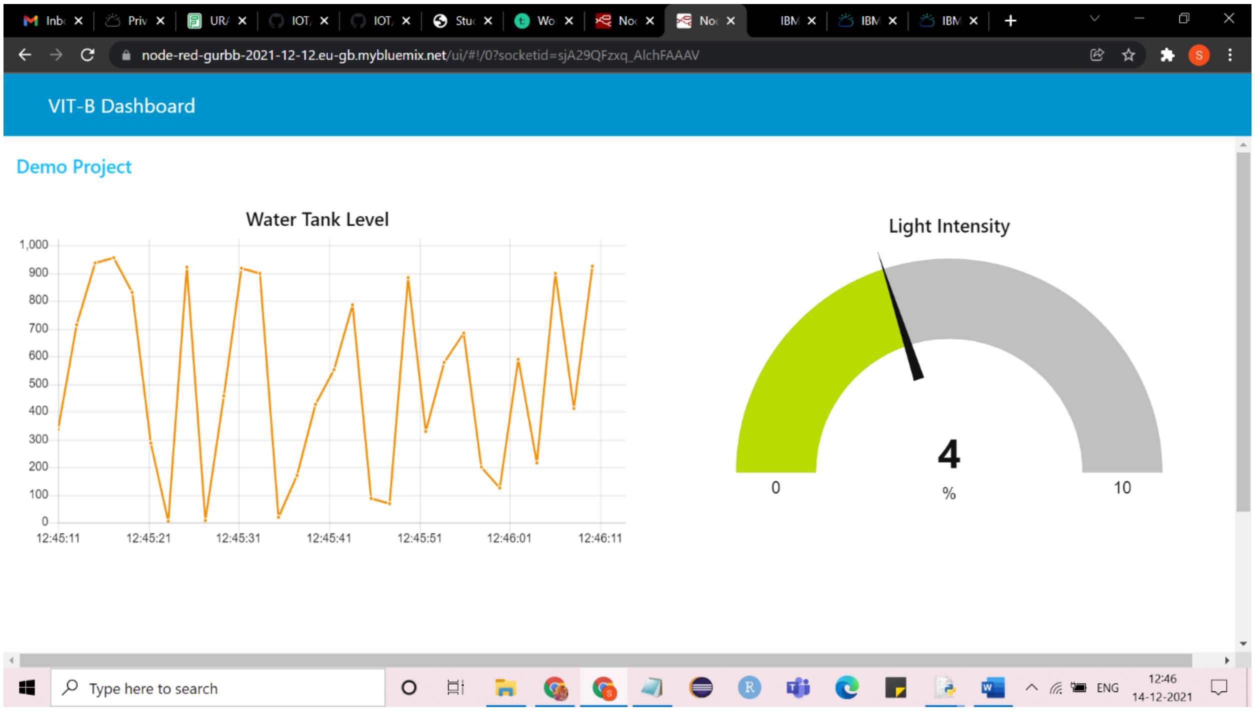
Node RED

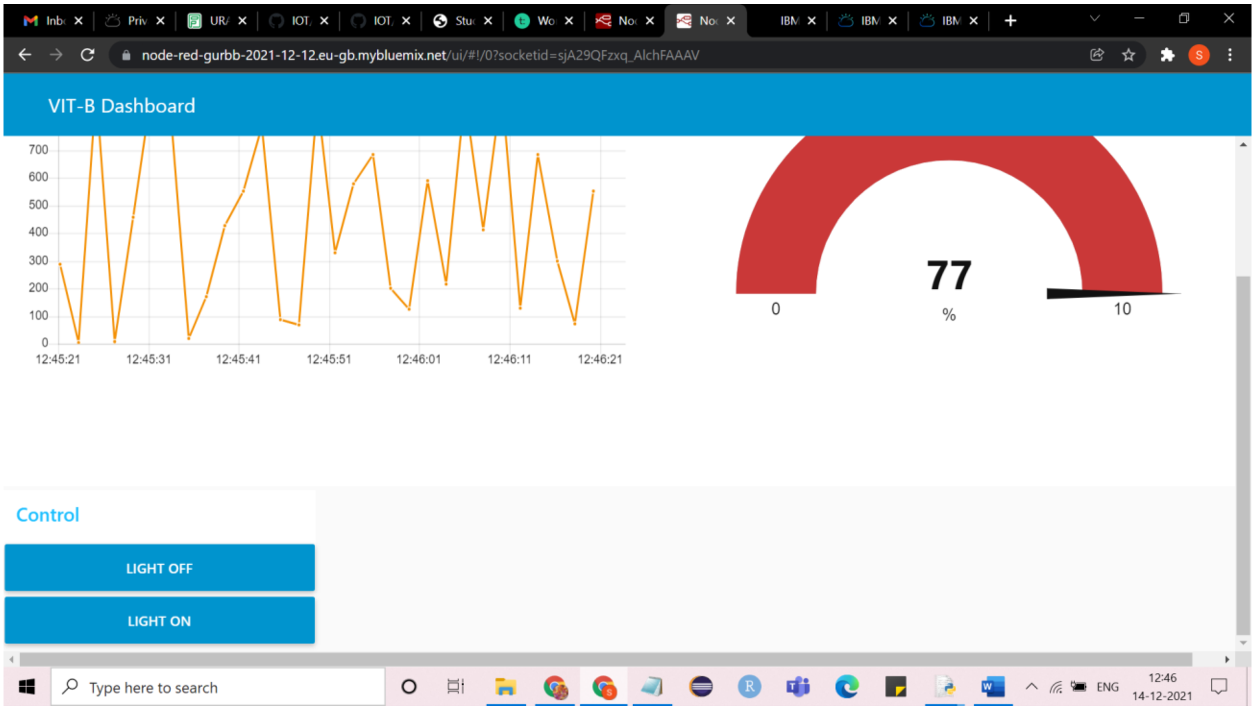


```
{ water_tank_level: 195, light_intensity: 100 }
12/14/2021, 12:35:13 PM  node: b2e3b7a685d817ed
iot-2/type/Device/id/12345/evt/status/fmt/json : msg.payload : Object
{ water_tank_level: 391, light_intensity: 12 }
12/14/2021, 12:35:15 PM  node: b2e3b7a685d817ed
iot-2/type/Device/id/12345/evt/status/fmt/json : msg.payload : Object
{ water_tank_level: 602, light_intensity: 52 }
12/14/2021, 12:35:16 PM  node: a2475b21fcef720f
msg.payload : Object
{ command: "lon" }
12/14/2021, 12:35:17 PM  node: b2e3b7a685d817ed
iot-2/type/Device/id/12345/evt/status/fmt/json : msg.payload : Object
{ water_tank_level: 511, light_intensity: 5 }
12/14/2021, 12:35:17 PM  node: a2475b21fcef720f
msg.payload : Object
{ command: "loff" }
12/14/2021, 12:35:19 PM  node: b2e3b7a685d817ed
iot-2/type/Device/id/12345/evt/status/fmt/json : msg.payload : Object
{ water_tank_level: 770, light_intensity: 56 }
```

Visualization in Web Application






node-red-gurbb-2021-12-12.eu-gb.mybluemix.net/ui/#!/0?socketid=sjA29QFzxq_AlchFAAAV
VIT-B Dashboard
700
600
500
400
300
200
100
0
12:45:21
12:45:31
12:45:41
12:45:51
12:46:01
12:46:11
12:46:21
77
0
%
10
Control
LIGHT OFF
LIGHT ON
Type here to search
ENG
12:46
14-12-2021