

## **FINAL DELIVERABLES**

### **COMPLETE DEMONSTRATION OF OUR PROJECT**

Date	15-11-2022
Team ID	PNT2022TMID00966
Project Name	Real-Time River Water Quality Monitoring and Control System
Marks	

### **ABOUT OUR PROJECT**

As our Project Titled Real-Time River Water Quality Monitoring and Control System, we have created the respective Code with requirements Temperature, Humidity and pH value. The code runs successfully and the output displays in the IBM Watson IoT Platform.

### **FINAL CODE**

```
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "xnmpev",
        "typeId": "Water_quality_monitoring",
        "deviceId": "Temperature_Monitoring"
    },
    "auth": {
        "token": "APTPlwZ&Wtb75ga@5&"
    }
}

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:
    ph=random.randint(0,14)
    temp=random.randint(-20,125)
    hum=random.randint(0,100)
    if ph<7:
        pH='Acidic'
    elif ph==7:
        pH='Neutral'
    else:
        pH='Basic'

    myData={'temperature':temp, 'humidity':hum, 'pH':pH, 'pH_value':ph}
    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()
```

## CODE OUTPUT

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Users\Parameswari S\Documents\temperature code.py =====
2022-11-07 20:04:41.815 ibmiotf.device.Client INFO Connected successfully: diudjkos:1234:1234567
Published Temperature = 95 C Humidity = 82 % pHValue = 1 to IBM Watson
Published Temperature = 82 C Humidity = 12 % pHValue = 1 to IBM Watson
Published Temperature = 23 C Humidity = 5 % pHValue = 2 to IBM Watson
Published Temperature = 88 C Humidity = 99 % pHValue = 6 to IBM Watson
Published Temperature = 42 C Humidity = 49 % pHValue = 4 to IBM Watson
Published Temperature = 95 C Humidity = 60 % pHValue = 6 to IBM Watson
Published Temperature = 55 C Humidity = 11 % pHValue = 6 to IBM Watson
Published Temperature = 21 C Humidity = 3 % pHValue = 2 to IBM Watson
Published Temperature = 23 C Humidity = 85 % pHValue = 1 to IBM Watson
Published Temperature = 13 C Humidity = 94 % pHValue = 6 to IBM Watson
Published Temperature = 48 C Humidity = 54 % pHValue = 1 to IBM Watson
Published Temperature = 42 C Humidity = 15 % pHValue = 0 to IBM Watson
Published Temperature = 89 C Humidity = 0 % pHValue = 1 to IBM Watson
Published Temperature = 55 C Humidity = 8 % pHValue = 7 to IBM Watson
Published Temperature = 89 C Humidity = 55 % pHValue = 9 to IBM Watson
Published Temperature = 20 C Humidity = 0 % pHValue = 3 to IBM Watson
Published Temperature = 94 C Humidity = 78 % pHValue = 3 to IBM Watson
Published Temperature = 75 C Humidity = 40 % pHValue = 2 to IBM Watson
Published Temperature = 78 C Humidity = 4 % pHValue = 2 to IBM Watson
Published Temperature = 59 C Humidity = 7 % pHValue = 0 to IBM Watson
Published Temperature = 52 C Humidity = 17 % pHValue = 4 to IBM Watson
Published Temperature = 77 C Humidity = 72 % pHValue = 1 to IBM Watson
Published Temperature = 7 C Humidity = 56 % pHValue = 8 to IBM Watson
Published Temperature = 43 C Humidity = 86 % pHValue = 4 to IBM Watson
Published Temperature = 36 C Humidity = 41 % pHValue = 3 to IBM Watson
Published Temperature = 12 C Humidity = 7 % pHValue = 3 to IBM Watson
Published Temperature = 3 C Humidity = 4 % pHValue = 0 to IBM Watson
Published Temperature = 24 C Humidity = 7 % pHValue = 6 to IBM Watson
Published Temperature = 6 C Humidity = 54 % pHValue = 4 to IBM Watson
Published Temperature = 27 C Humidity = 93 % pHValue = 8 to IBM Watson
Published Temperature = 61 C Humidity = 18 % pHValue = 3 to IBM Watson
Published Temperature = 34 C Humidity = 94 % pHValue = 3 to IBM Watson
Published Temperature = 83 C Humidity = 4 % pHValue = 7 to IBM Watson
Published Temperature = 78 C Humidity = 4 % pHValue = 3 to IBM Watson
Published Temperature = 94 C Humidity = 95 % pHValue = 1 to IBM Watson
Published Temperature = 89 C Humidity = 71 % pHValue = 4 to IBM Watson
Published Temperature = 80 C Humidity = 56 % pHValue = 0 to IBM Watson
Ln: 55 Col: 69
```

IBM Watson IoT Platform

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Browse Action Device Types Interfaces

Temperature\_Monitoring Disconnected Water\_quality\_monitoring Device 4 Nov 2022 11:23

Identity Device Information Recent Events State Logs

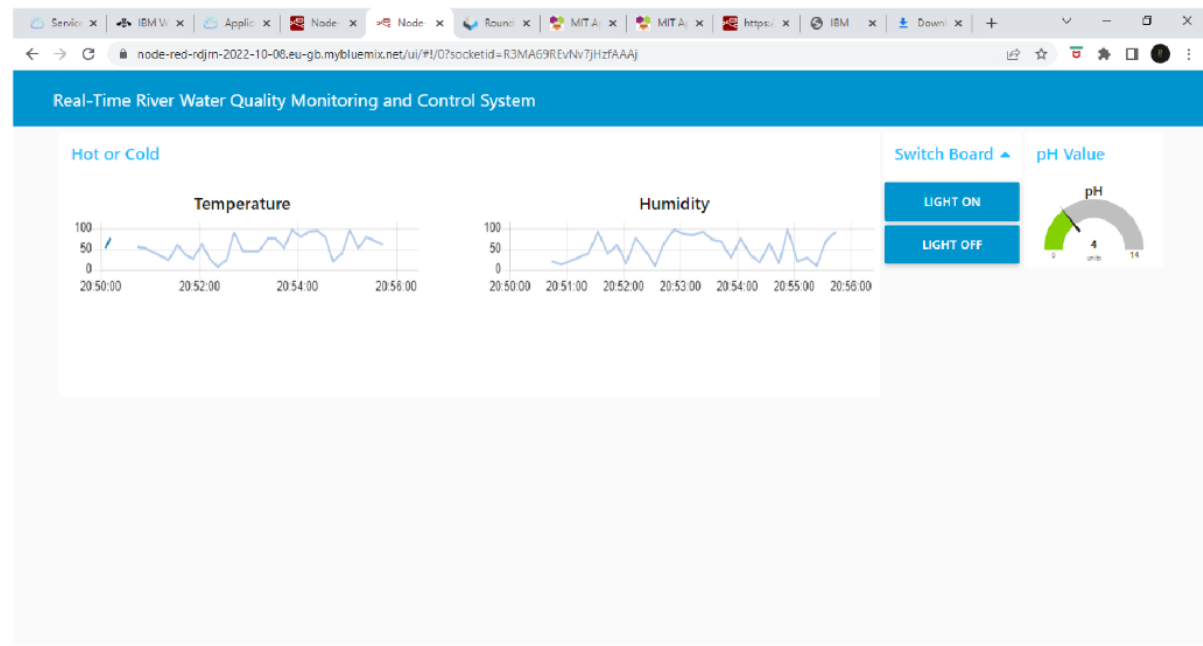
The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
event_1	("Temperature":13,"Humidity":20)	json	a few seconds ago
event_1	("Temperature":98,"Humidity":65)	json	a minute ago
event_1	("Temperature":1,"Humidity":29)	json	a minute ago
event_1	("Temperature":50,"Humidity":52)	json	a minute ago
event_1	("Temperature":90,"Humidity":56)	json	a minute ago

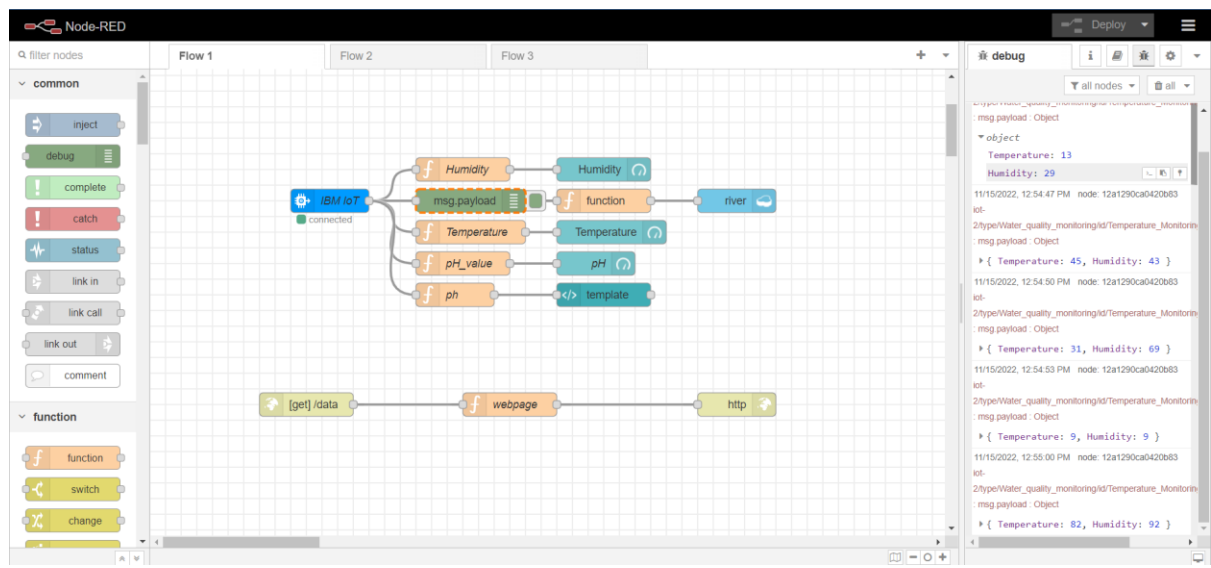
Items per page 50 | 1-1 of 1 item

1 Simulation running

**Fig.** OUTPUT DISPLAYS IN IBM WATSON PLATFORM



**Fig.** OUTPUT DISPLAYS IN NODE-RED PLATFORM



## APPLICATION OUTPUT

**Temperature (c) : 30**

**Humidity (%) : 68**

**pH Value : 6**

## **CONCLUSION**

In this document we have provided all the outputs which we got executed using the Python code.

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