

# Develop a Web Application Using Node-Red:

Date	17 <sup>th</sup> November 2022
Team ID	PNT2022TMID15034
Project Name	IOT Based Real-Time River Water Quality Monitoring and Control System
Maximum Marks	4 Mark

The screenshot displays an IDE environment with a Python script and its execution logs.

**Python Script (main.py):**

```
1 #IBM Watson IoT Platform
2 #pip install wiotp-sdk
3 import wiotp.sdk.device
4 import time
5 import random
6 myConfig = {
7     "identity": {
8         "orgId": "93egjp",
9         "typeId": "MyDeviceType",
10        "deviceId": "12345"
11    },
12    "auth": {
13        "token": "12345678"
14    }
15 }
16
17 def myCommandCallback(cmd):
18     print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
19     m=cmd.data['command']
20     if(m=="LIGHT_ON"):
21         print("*****LIGHTS ARE ON")
22     else:
23         print("*****LIGHTS ARE OFF")
24
25 client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
26 client.connect()
27
28 while True:
29     tur=random.randint(0,100)
30     ph=random.randint(1,14)
31     myData={'turbidity':tur, 'Ph_Value':ph}
32     client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
33     print("Published data Successfully: %s", myData)
34     client.commandCallback = myCommandCallback
35     time.sleep(2)
36
37 client.disconnect()
```

**Terminal Output:**

```
Message received from IBM IoT Platform: lightoff
*****LIGHTS ARE OFF
Published data Successfully: %s {'turbidity': 19, 'Ph_Value': 4}
Message received from IBM IoT Platform: lightoff
*****LIGHTS ARE OFF
Published data Successfully: %s {'turbidity': 85, 'Ph_Value': 3}
Published data Successfully: %s {'turbidity': 99, 'Ph_Value': 7}
Published data Successfully: %s {'turbidity': 33, 'Ph_Value': 2}
Published data Successfully: %s {'turbidity': 87, 'Ph_Value': 14}
Published data Successfully: %s {'turbidity': 28, 'Ph_Value': 5}
Published data Successfully: %s {'turbidity': 25, 'Ph_Value': 7}
Published data Successfully: %s {'turbidity': 69, 'Ph_Value': 9}
Published data Successfully: %s {'turbidity': 87, 'Ph_Value': 3}
Published data Successfully: %s {'turbidity': 44, 'Ph_Value': 7}
Published data Successfully: %s {'turbidity': 34, 'Ph_Value': 8}
Published data Successfully: %s {'turbidity': 93, 'Ph_Value': 12}
Published data Successfully: %s {'turbidity': 44, 'Ph_Value': 6}
Published data Successfully: %s {'turbidity': 55, 'Ph_Value': 10}
Published data Successfully: %s {'turbidity': 78, 'Ph_Value': 8}
Published data Successfully: %s {'turbidity': 75, 'Ph_Value': 14}
Message received from IBM IoT Platform: lighton
*****LIGHTS ARE OFF
Published data Successfully: %s {'turbidity': 78, 'Ph_Value': 4}
Message received from IBM IoT Platform: lighton
*****LIGHTS ARE OFF
Message received from IBM IoT Platform: lighton
*****LIGHTS ARE OFF
Published data Successfully: %s {'turbidity': 85, 'Ph_Value': 13}
Published data Successfully: %s {'turbidity': 96, 'Ph_Value': 7}
Published data Successfully: %s {'turbidity': 34, 'Ph_Value': 4}
Published data Successfully: %s {'turbidity': 47, 'Ph_Value': 11}
Message received from IBM IoT Platform: lightoff
*****LIGHTS ARE OFF
Message received from IBM IoT Platform: lightoff
*****LIGHTS ARE OFF
Published data Successfully: %s {'turbidity': 86, 'Ph_Value': 13}
Published data Successfully: %s {'turbidity': 22, 'Ph_Value': 7}
Published data Successfully: %s {'turbidity': 33, 'Ph_Value': 9}
```

**IDE Interface:** The IDE shows a menu bar (File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help), a toolbar, and a sidebar with Project, Run, Learn, and Bookmarks. The bottom status bar indicates "23:45 CRLF UTF-8 4 spaces Python".

93eqjp.internetofthings.ibmcloud.com/dashboard/devices/browse

IBM Watson IoT Platform

Browse

Action

Device Types

Interfaces

+

Add Device

Search by Device ID

Device Simulator

	Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location	Added By	
	12345	Connected	MyDeviceType	Device	19 Nov 2022 15:09		sprateekcs01@gmail.com	→ ...

Identity

Device Information

Recent Events

State

Logs

Device ID

Device Type

Date Added

Added By

Connection Status

12345

MyDeviceType

19 Nov 2022 15:09

sprateekcs01@gmail.com

Connected

Connection Time: 19 Nov 2022 19:14

Client Address: 49.205.83.237 SecureToken

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0 Simulations running

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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
status	{"turbidity":55,"Ph_Value":3}	json	a few seconds ago
status	{"turbidity":47,"Ph_Value":5}	json	a few seconds ago
status	{"turbidity":52,"Ph_Value":1}	json	a few seconds ago
status	{"turbidity":9,"Ph_Value":9}	json	a few seconds ago
status	{"turbidity":73,"Ph_Value":14}	json	a few seconds ago

0 Simulations running

