

FINAL DELIVERABLES

COMPLETE DEMONSTRATION OF OUR PROJECT

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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 (tags/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: diudjks: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 = 68 % 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 = 5 % 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 = 86 % pHValue = 8 to IBM Watson
Published Temperature = 43 C Humidity = 88 % pHValue = 4 to IBM Watson
Published Temperature = 36 C Humidity = 41 % pHValue = 4 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 = 87 % pHValue = 7 to IBM Watson
Published Temperature = 72 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 = 22 C Humidity = 56 % pHValue = 0 to IBM Watson
```

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area displays details for a device named 'Temperature_Monitoring', which is 'Disconnected'. Below this, there is a tabbed interface with 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, showing a list of events. A message states: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this is a table with the following data:

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

At the bottom, it indicates 'Items per page 50' and '1-1 of 1 item'. A status bar at the very bottom shows '1 Simulation running'.

Fig. OUTPUT DISPLAYS IN IBM WATSON PLATFORM

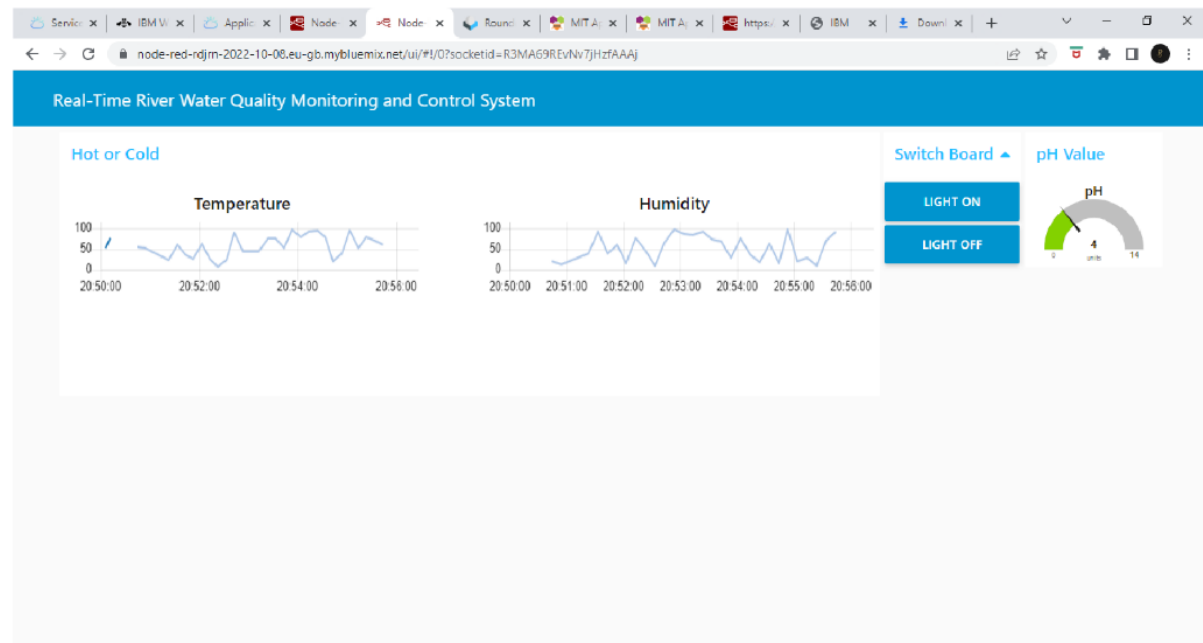


Fig. OUTPUT DISPLAYS IN NODE-RED PLATFORM

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.
