

PROJECT DEVELOPMENT PHASE

PROJECT DEVELOPMENT - DELIVERY OF SPRINT 4

Date:	09 November 2022
Team ID:	PNT2022TMID00966
Name:	Real-Time River Water Quality Monitoring and Control System

SPRINT DESCRIPTION

In this Sprint we are about to describe about the Application we have developed and the Final Testing of the Python Code.

```
*tem.py - C:\Users\barath\Desktop\tem.py (3.7.9)*
File Edit Format Run Options Window Help

import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "xmmpcv",
        "typeId": "Water_quality_monitoring",
        "deviceId": "Temperature_Monitoring"
    },
    "auth": {
        "token": "APTFlwZ4Wtb75ga@5a"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

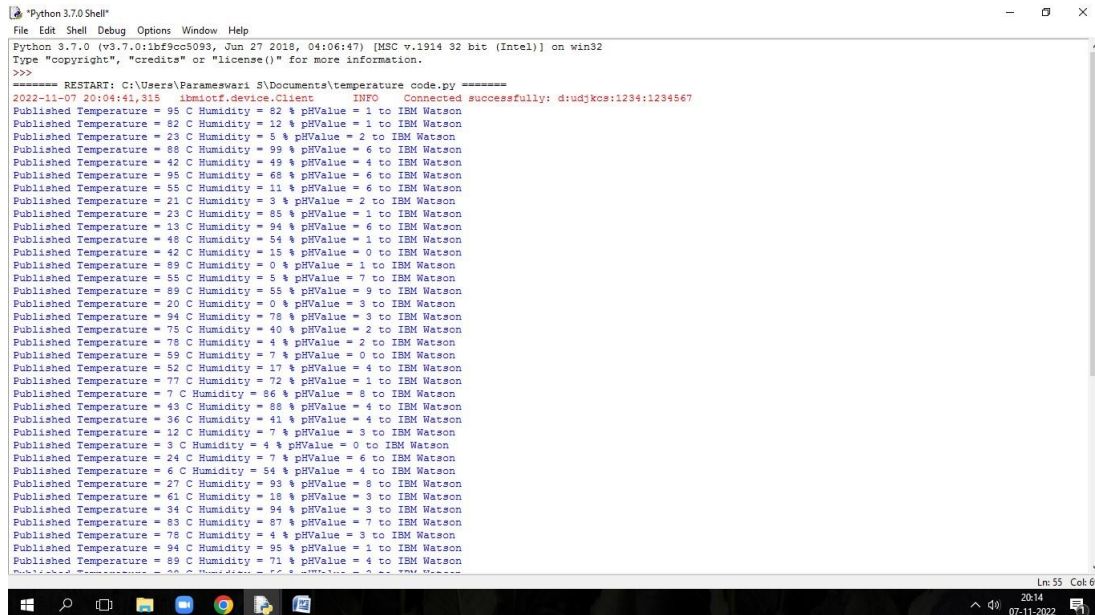
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

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()
```

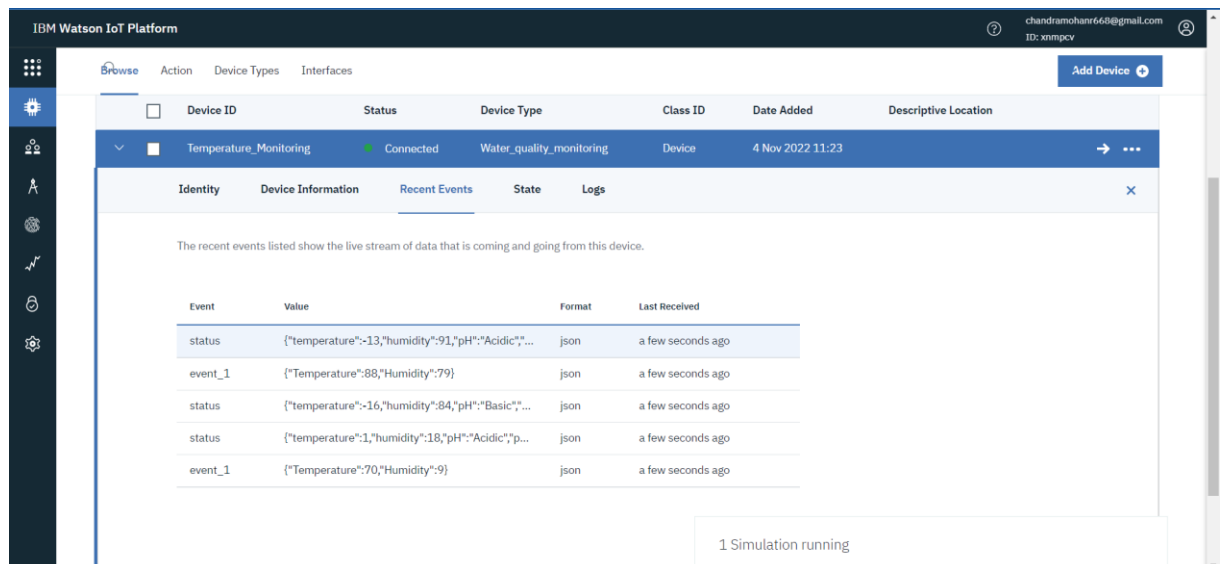
Ln: 38 Col: 19

PYTHON EXECUTED 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\Parameswar1 S\Documents\temperature code.py =====
2022-11-07 20:04:41,315 ibmiotf.device.Client INFO Connected successfully: d:udjks: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 = 65 % 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 = 76 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 = 8 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 = 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
```

We have successfully developed the python code and executed it. The code runs with the Temperature, Humidity and pH Value also displayed in the IBM IoT Platform.



Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
Temperature_Monitoring	Connected	Water_quality_monitoring	Device	4 Nov 2022 11:23	

Event	Value	Format	Last Received
status	{"temperature":-13,"humidity":91,"pH":"Acidic",..."}	json	a few seconds ago
event_1	{"Temperature":88,"Humidity":79}	json	a few seconds ago
status	{"temperature":-16,"humidity":84,"pH":"Basic",..."}	json	a few seconds ago
status	{"temperature":1,"humidity":18,"pH":"Acidic",..."}	json	a few seconds ago
event_1	{"Temperature":70,"Humidity":9}	json	a few seconds ago

1 Simulation running

APPLICATION SCREENS

HERE WE DISPLAYED SCREEN 1 & SCREEN 2 PAGES OF OUR CREATED APPLICATION

**Real Time River Water
Quality and Control System**

GET STARTED

ENTER LOGIN CREDENTIALS

USER ID:

PASSWORD:

LOGIN

[FORGOT PASSWORD](#)

Temperature (c) : 34

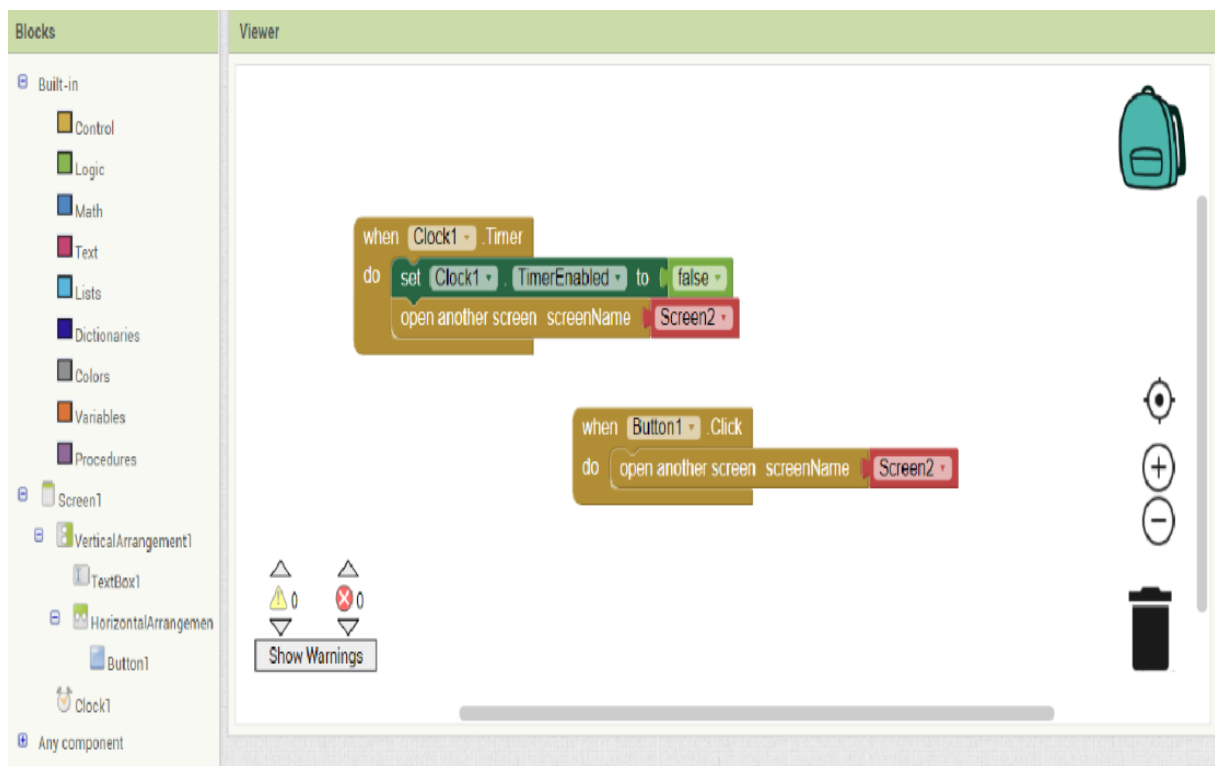
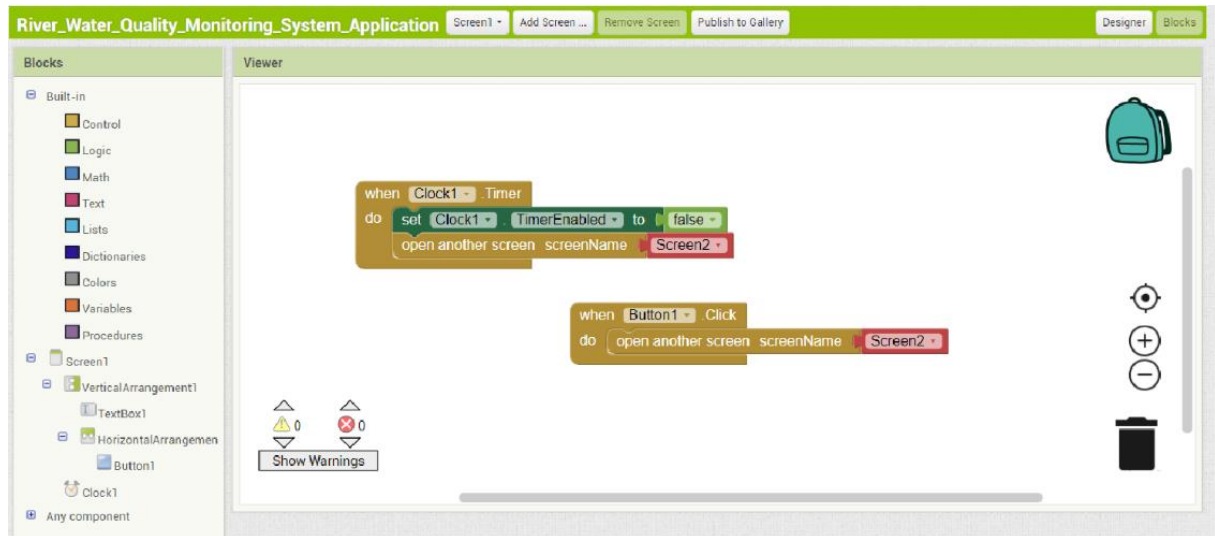
Humidity (%) : 72

pH Value : 7

Temperature (c) : 30

Humidity (%) : 68

pH Value : 6



Smart_Home

Screen1Add Screen...Remove ScreenPublish to Gallery

DesignerBlocks

Blocks

Built-in

Control

Logic

Math

Text

Lists

Dictionaries

Colors

Variables

Procedures

Screen1

CheckBox1

HorizontalArrangemen

Label1

TextBox1

HorizontalArrangemen

Label2

Rename

Delete

Media

Viewer

when Clock1.Timer

do

set Web1.Uri to https://node-red-ogmgr-2022-11-07-eu-de.mybluemix.net

call Web1.Get

when Web1.GetText

do

set TextBox1.Text to look up in pairs key Temperature

call Web1.JsonTextDecode

jsonText get responseContent

Event indicating that a request has finished.

set TextBox1.Text to look up in pairs key Humidity

call Web1.JsonTextDecode

jsonText get responseContent

notFound not found

notFound not found

when Button1.Click

do

set Web1.Uri to https://node-red-ogmgr-2022-11-07-eu-de.mybluemix.net

call Web1.Get

when Button2.Click

do

set Web1.Uri to https://node-red-ogmgr-2022-11-07-eu-de.mybluemix.net

call Web1.Get

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Show Warnings

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