

# SPRINT – 1 DELIVERY

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|--------------|---|
| Team ID      | PNT2022TMID12734  |
| Project Name | Real-Time River Water Quality Monitoring and Control System |

## PYTHON PROGRAM:-

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
```

### #Provide your IBM Watson Device

```
Credentials organization = "7wqirt"
deviceType = "raspberrypi"
deviceId = "12345"
authMethod ="token"
authToken = "123456789"
try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":
authMethod, "auth-token": authToken}
deviceCli = ibmiotf.device.Client(deviceOptions)
```

```
#.....
except Exception as e:
print("Caught exception connecting device: %s" % str(e)) sys.exit()
```

### # Connect and send a datapoint "hello" with value "world" into the cloud as an event of type

```
"greeting" 10 times deviceCli.connect()
```

while True:

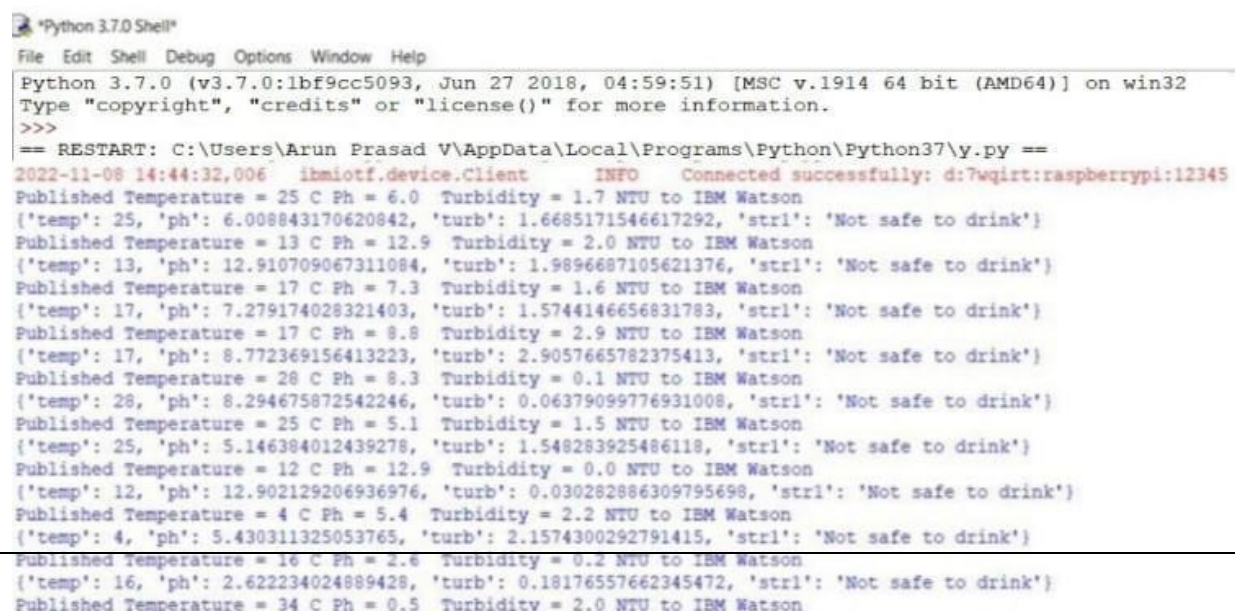
### **#Get Sensor Data from random value function**

```
temp=random.randint(0,50)
ph=random.uniform(0.0,14.0)
turb=random.uniform(0.0,3.0)
data1={'temp':temp,'ph':ph,'turb':turb,'str1':"Not safe to drink"}
data2={'temp':temp,'ph':ph,'turb':turb,'str2':"safe to drink"}
#print data
def myOnPublishCallback():
print ("Published Temperature = %s C" % temp,"Ph = %.1f" % ph,"Turbidity = %.1f NTU" %
turb, "to IBM Watson")
if((temp > 6 and temp < 20) and (ph > 6.5 and ph < 8.5) and turb < 1):
print(data2)
else:
print(data1)
success = deviceCli.publishEvent("IoTSensor", "json", data1 or data2, qos=2,
on_publish=myOnPublishCallback)
if not success:
print("Not connected to IoT")
time.sleep(20)
```

### **# Disconnect the device and application from the cloud**

```
deviceCli.disconnect()
```

## **OUTPUT:**



```
*Python 3.7.0 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:\Users\Arun Prasad V\AppData\Local\Programs\Python\Python37\y.py ==
2022-11-08 14:44:32,006 ibmiotf.device.Client INFO Connected successfully: d:7wqirt:raspberrypi:12345
Published Temperature = 25 C Ph = 6.0 Turbidity = 1.7 NTU to IBM Watson
{'temp': 25, 'ph': 6.008843170620842, 'turb': 1.6685171546617292, 'str1': 'Not safe to drink'}
Published Temperature = 13 C Ph = 12.9 Turbidity = 2.0 NTU to IBM Watson
{'temp': 13, 'ph': 12.910709067311084, 'turb': 1.9896687105621376, 'str1': 'Not safe to drink'}
Published Temperature = 17 C Ph = 7.3 Turbidity = 1.6 NTU to IBM Watson
{'temp': 17, 'ph': 7.279174028321403, 'turb': 1.5744146656831783, 'str1': 'Not safe to drink'}
Published Temperature = 17 C Ph = 8.8 Turbidity = 2.9 NTU to IBM Watson
{'temp': 17, 'ph': 8.772369156413223, 'turb': 2.9057665782375413, 'str1': 'Not safe to drink'}
Published Temperature = 28 C Ph = 8.3 Turbidity = 0.1 NTU to IBM Watson
{'temp': 28, 'ph': 8.294675872542246, 'turb': 0.06379099776931008, 'str1': 'Not safe to drink'}
Published Temperature = 25 C Ph = 5.1 Turbidity = 1.5 NTU to IBM Watson
{'temp': 25, 'ph': 5.146384012439278, 'turb': 1.548283925486118, 'str1': 'Not safe to drink'}
Published Temperature = 12 C Ph = 12.9 Turbidity = 0.0 NTU to IBM Watson
{'temp': 12, 'ph': 12.902129206936976, 'turb': 0.030282886309795698, 'str1': 'Not safe to drink'}
Published Temperature = 4 C Ph = 5.4 Turbidity = 2.2 NTU to IBM Watson
{'temp': 4, 'ph': 5.430311325053765, 'turb': 2.1574300292791415, 'str1': 'Not safe to drink'}
Published Temperature = 16 C Ph = 2.8 Turbidity = 0.2 NTU to IBM Watson
{'temp': 16, 'ph': 2.622234024889428, 'turb': 0.18176557662345472, 'str1': 'Not safe to drink'}
Published Temperature = 34 C Ph = 0.5 Turbidity = 2.0 NTU to IBM Watson
```