Project Development Phase

Date	14 November 2022
Team ID	PNT2022TMID51098
Project Name	Real Time River Water Quality Monitoring and Control System

SPRINT 1

Code:

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


# Provide your IBM Watson Device Credentials

organization = "nqat1y"  # repalce it with organization ID
deviceType = "NodeMCU"  # replace it with device type
deviceId = "501238"  # repalce with device id
authMethod = "token"
authToken = "10571213"  # repalce with token


def myCommandCallback(cmd):
   print("Command received: %s" % cmd.data['command'])
   status=cmd.data['command']
   if status == 'lighton':
      print("LIGHT ON")
   elif status == 'lightoff':
      print("LIGHT OFF")
   else:
      print ("please send proper command")


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()

deviceCli.connect()

while True:
    pH = random.randint(0,100)
    conductivity = random.randint(0,100)
    T = random.randint(0,100)
    oxygen = random.randint(0,100)
    turbidity = random.randint(0,100)
    # Send Temperature & Humidity to IBM Watson
    data = {'T': T,'pH':pH,'conductivity':conductivity,'oxygen':oxygen,"turbidity":turbidity}


    # print data
    def myOnPublishCallback():
        print("Published data",data, "to IBM Watson")


    success = deviceCli.publishEvent("event", "json", data, 0, myOnPublishCallback)
    if not success:
        print("Not connected to IoTF")
    time.sleep(5)

    deviceCli.commandCallback = myCommandCallback

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

Output:

```
Published data {'T': 23, 'pH': 85, 'conductivity': 37, 'oxygen': 41, 'turbidity'
: 2} to IBM Watson
Published data {'T': 39, 'pH': 87, 'conductivity': 1, 'oxygen': 32, 'turbidity':
 84} to IBM Watson
Published data {'T': 90, 'pH': 89, 'conductivity': 29, 'oxygen': 65, 'turbidity'
: 93} to IBM Watson
Published data {'T': 91, 'pH': 15, 'conductivity': 0, 'oxygen': 27, 'turbidity':
 60} to IBM Watson
Published data {'T': 52, 'pH': 65, 'conductivity': 59, 'oxygen': 78, 'turbidity'
: 23} to IBM Watson
Published data {'T': 96, 'pH': 96, 'conductivity': 20, 'oxygen': 47, 'turbidity'
: 90} to IBM Watson
Published data {'T': 87, 'pH': 73, 'conductivity': 92, 'oxygen': 41, 'turbidity'
: 85} to IBM Watson
Published data {'T': 90, 'pH': 21, 'conductivity': 81, 'oxygen': 83, 'turbidity'
: 61} to IBM Watson
```