SPRINT -1

Date	29 October 2022
Team id	PNT2022TMID01284
Project name	Real Time River Water Quality Monitoring And Control System
Maximum marks	20 marks

In Sprint – 1, we have done simulation creation. We connected the sensor Arduino with python code

PYTHON CODE :

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

#Provide your IBM Watson Device Credentials
organization = "ofq2bm" deviceType =
"water_monitoring" deviceId =
"water_quality" authMethod = "token"
authToken = "YC9348Ol6xz(Pqb7pL"

# Initialize GPIO
def myCommandCallback(cmd):    print("Command
received: %s" % cmd.data['command'])
status=cmd.data['command']    if status=="lighton":
print ("led is on")    elif status == "lightoff":
    print ("led is off")
else :
    print ("please send proper command") try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId,
"authmethod": 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 DHT11

    turbidity=random.randint(0,110)
pHLevel=random.randint(0,10)        temperature
= random.randint(0,110)

    data = { 'turbidity' : turbidity, 'pHLevel': pHLevel ,'temperature':temperature }
    #print data        def
myOnPublishCallback():
        print ("Published Turbidity = %s  NTU" % turbidity,"," "pH Level = %s  " % pHLevel,","
"Temperature = %s °C"% temperature, "to IBM Watson")

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)        if not success:
print("Not connected to IoTF")        time.sleep(10)

    deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud deviceCli.disconnect()
```
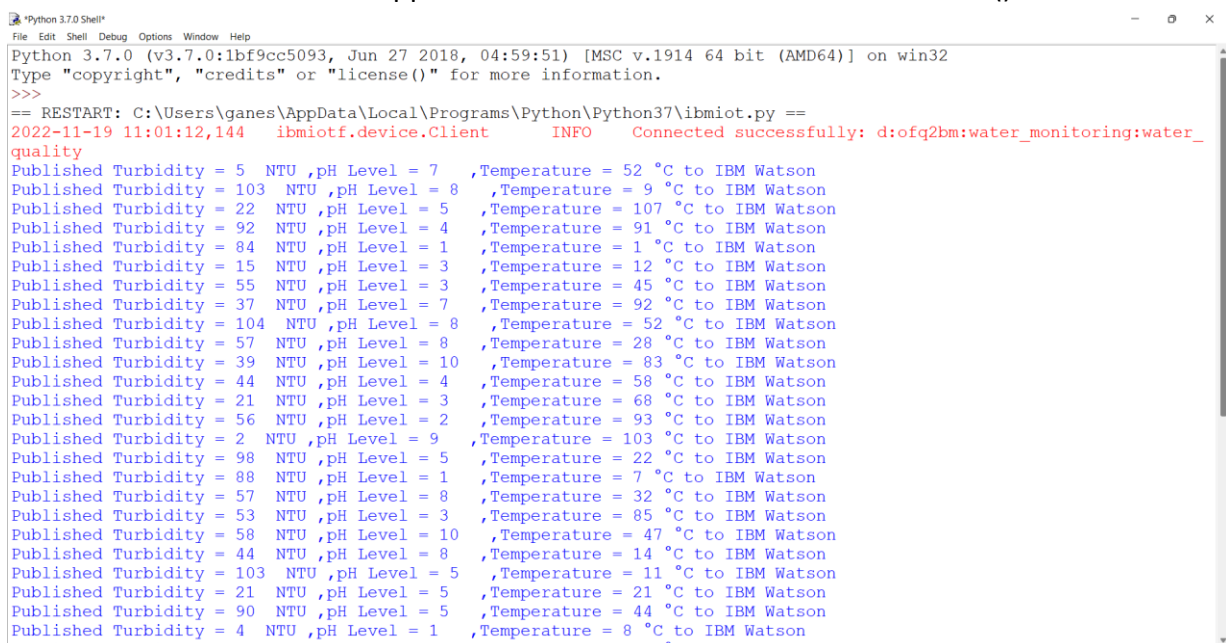


```
*Python 3.7.0 Shell*
File  Edit  Shell  Debug  Options  Window  Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:\Users\ganes\AppData\Local\Programs\Python\Python37\ibmiot.py ==
2022-11-19 11:01:12,144   ibmiotf.device.Client      INFO    Connected successfully: d:ofq2bm:water_monitoring:water_
quality
Published Turbidity = 5    NTU ,pH Level = 7    ,Temperature = 52 °C to IBM Watson
Published Turbidity = 103  NTU ,pH Level = 8    ,Temperature = 9 °C to IBM Watson
Published Turbidity = 22   NTU ,pH Level = 5    ,Temperature = 107 °C to IBM Watson
Published Turbidity = 92   NTU ,pH Level = 4    ,Temperature = 91 °C to IBM Watson
Published Turbidity = 84   NTU ,pH Level = 1    ,Temperature = 1 °C to IBM Watson
Published Turbidity = 15   NTU ,pH Level = 3    ,Temperature = 12 °C to IBM Watson
Published Turbidity = 55   NTU ,pH Level = 3    ,Temperature = 45 °C to IBM Watson
Published Turbidity = 37   NTU ,pH Level = 7    ,Temperature = 92 °C to IBM Watson
Published Turbidity = 104  NTU ,pH Level = 8    ,Temperature = 52 °C to IBM Watson
Published Turbidity = 57   NTU ,pH Level = 8    ,Temperature = 28 °C to IBM Watson
Published Turbidity = 39   NTU ,pH Level = 10   ,Temperature = 83 °C to IBM Watson
Published Turbidity = 44   NTU ,pH Level = 4    ,Temperature = 58 °C to IBM Watson
Published Turbidity = 21   NTU ,pH Level = 3    ,Temperature = 68 °C to IBM Watson
Published Turbidity = 56   NTU ,pH Level = 2    ,Temperature = 93 °C to IBM Watson
Published Turbidity = 2    NTU ,pH Level = 9    ,Temperature = 103 °C to IBM Watson
Published Turbidity = 98   NTU ,pH Level = 5    ,Temperature = 22 °C to IBM Watson
Published Turbidity = 88   NTU ,pH Level = 1    ,Temperature = 7 °C to IBM Watson
Published Turbidity = 57   NTU ,pH Level = 8    ,Temperature = 32 °C to IBM Watson
Published Turbidity = 53   NTU ,pH Level = 3    ,Temperature = 85 °C to IBM Watson
Published Turbidity = 58   NTU ,pH Level = 10   ,Temperature = 47 °C to IBM Watson
Published Turbidity = 44   NTU ,pH Level = 8    ,Temperature = 14 °C to IBM Watson
Published Turbidity = 103  NTU ,pH Level = 5    ,Temperature = 11 °C to IBM Watson
Published Turbidity = 21   NTU ,pH Level = 5    ,Temperature = 21 °C to IBM Watson
Published Turbidity = 90   NTU ,pH Level = 5    ,Temperature = 44 °C to IBM Watson
Published Turbidity = 4    NTU ,pH Level = 1    ,Temperature = 8 °C to IBM Watson
```

Iot Sensor is connected and data is published.