SPRINT -1

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

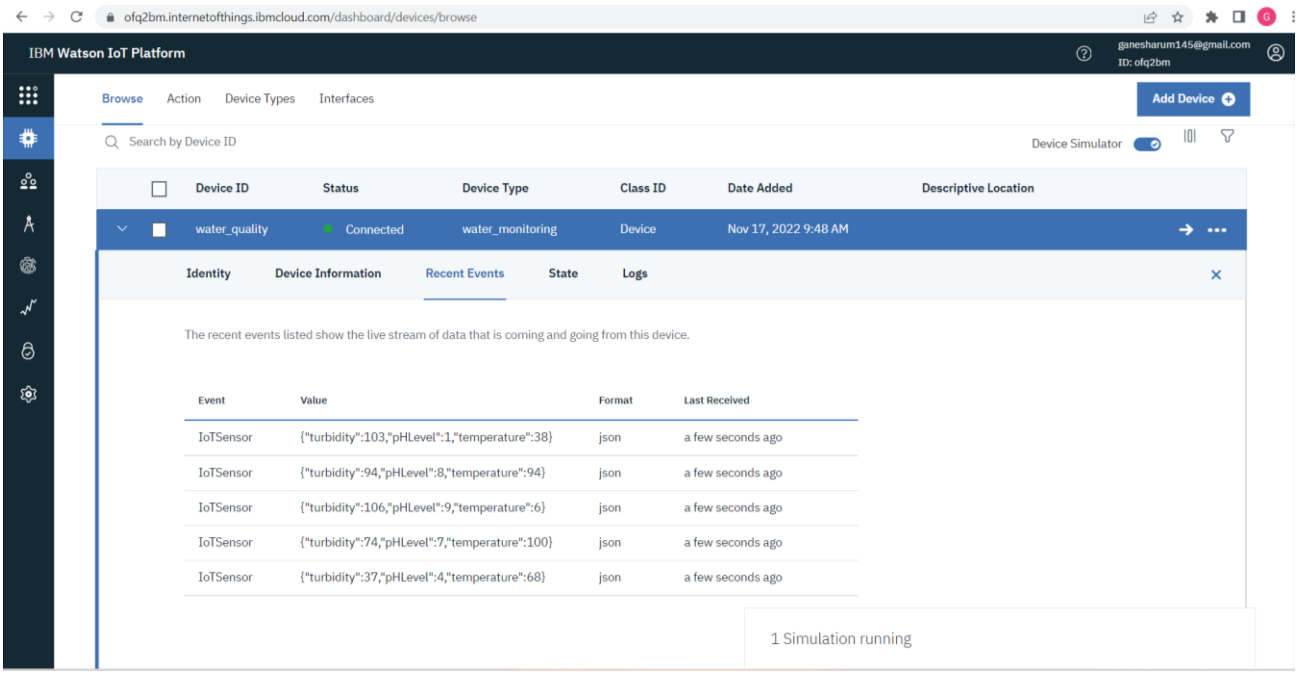
In Sprint – 1, we have done simulation creation. We connected the sensor Arduino with python code

PYTHON CODE :

```
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, "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 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()
```

Iot Sensor is connected and data is published.



Device ID	Status	Device Type	Class ID	Date Added	Descriptive Location
water_quality	● Connected	water_monitoring	Device	Nov 17, 2022 9:48 AM	

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoTSensor	{"turbidity":103,"pHLevel":1,"temperature":38}	json	a few seconds ago
IoTSensor	{"turbidity":94,"pHLevel":8,"temperature":94}	json	a few seconds ago
IoTSensor	{"turbidity":106,"pHLevel":9,"temperature":6}	json	a few seconds ago
IoTSensor	{"turbidity":74,"pHLevel":7,"temperature":100}	json	a few seconds ago
IoTSensor	{"turbidity":37,"pHLevel":4,"temperature":68}	json	a few seconds ago

1 Simulation running