SPRINT-2

TEAM ID: PNT2022TMID04616

PROJECT TITLE: GAS LEAKAGE MONITORING AND ALERTING SYSTEM

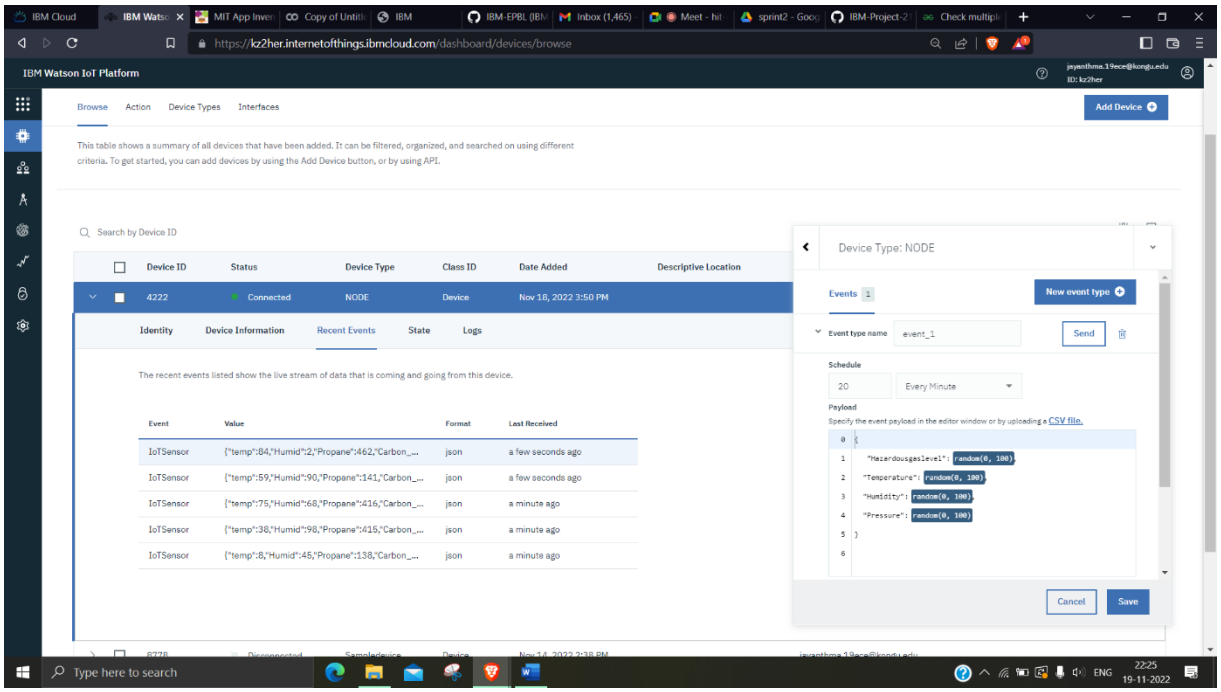
Source code to deployed on IBM Watson Iot platform to generate the sensor data.

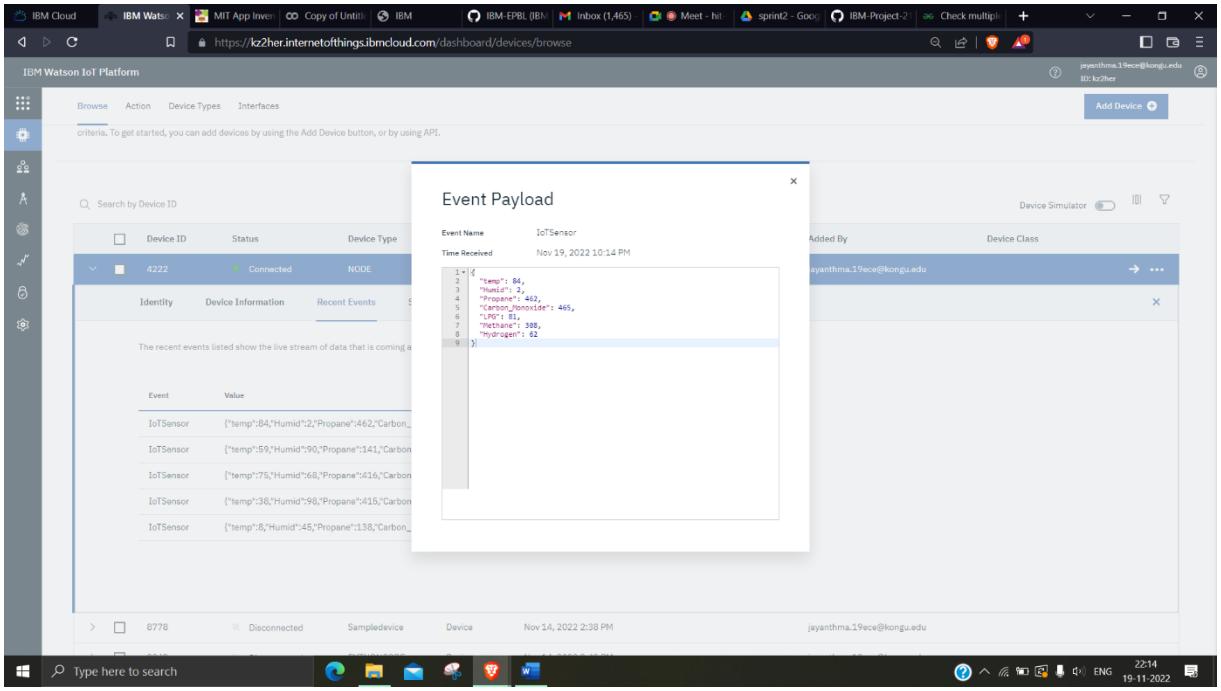
SOURCE CODE:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "kz2her"
deviceType = "NODE"
deviceId = "4222"
authMethod = "token"
authToken = " j5RIM+NYy8Uv6+!s4q"
# Initialize GPIO
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
 asan event of type "greeting" 10 times

deviceCli.connect()
while True:
 #Get Sensor Data from DHT11

  Propane = random.randint(0, 500);
  Carbon_Monoxide = random.randint(0, 500);
  LPG= random.randint(0, 1000);
  Methane = random.randint(0, 500);
```

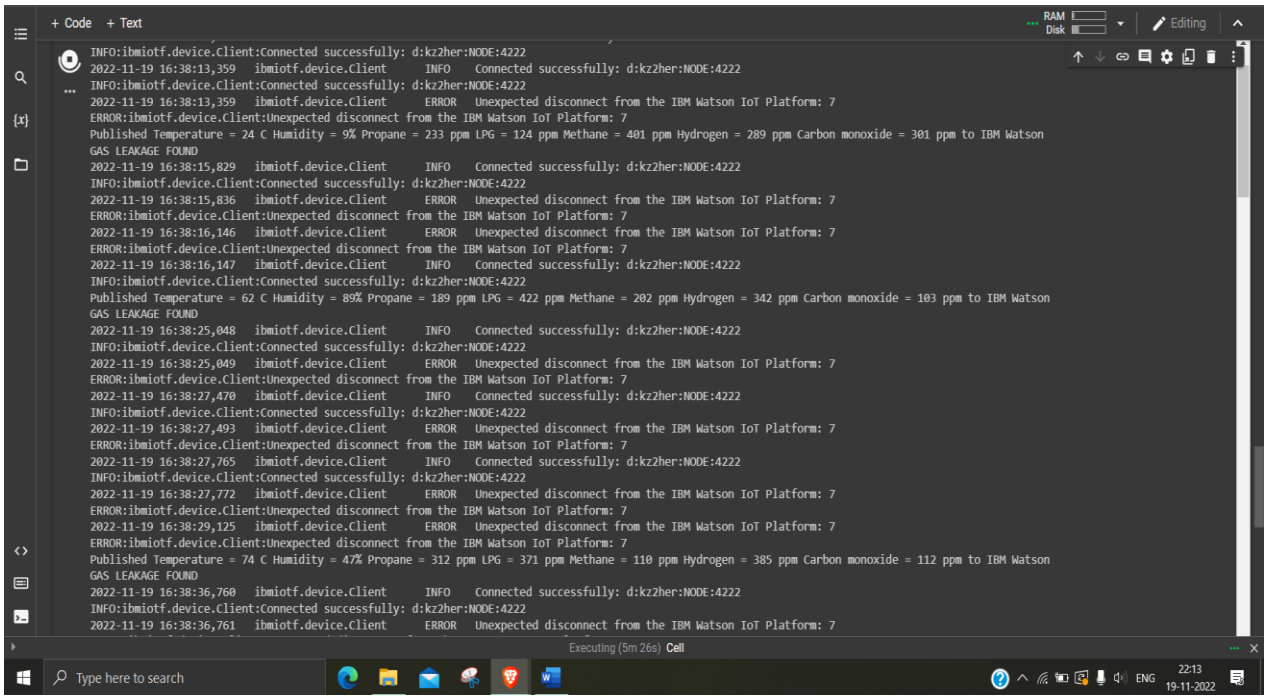
```
  Hydrogen= random.randint(0, 500);
  Temperature=random.randint(0,100 );
  Humidity=random.randint(0,100 );


  data = { "temp" : Temperature, "Humid": Humidity,"Propane": Propane,
 "Carbon_Monoxide": Carbon_Monoxide,
 "LPG": LPG,
 "Methane": Methane,
 "Hydrogen":Hydrogen  }
 #print data
  def myOnPublishCallback():
    print ("Published Temperature = %s C" % Temperature, "Humidity = %s%
%" % Humidity,"Propane = %s ppm" % Propane, "LPG = %s ppm" % LPG,"Methan
e = %s ppm" % Methane,"Hydrogen = %s ppm" % Hydrogen,"Carbon monoxide =
%s ppm" % Carbon_Monoxide , "to IBM Watson")
    if (Propane or Carbon_Monoxide or LPG or Methane or Hydrogen)>150:
     print("GAS LEAKAGE FOUND")
    else:
     print("NO LEAKAGE")


  success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,on_p
ublish=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()
```

SENSOR DATA:


IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
4222
Connected
NODE
Device
Nov 18, 2022 3:50 PM
Identity
Device Information
Recent Events
State
Logs
Device Type: NODE
Events
New event type
Event type name
event_1
Send
Schedule
Every Minute
Payload
Cancel
Save
Type here to search


IBM Watson IoT Platform
Add Device
Event Payload
Event Name
IoTSensor
Time Received
Nov 19, 2022 10:14 PM
"temp": 84,
"Humid": 2,
"Propane": 462,
"Carbon_Monoxide": 465,
"LPG": 81,
"Methane": 308,
"Hydrogen": 62
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
4222
Connected
NODE
Device
Nov 18, 2022 3:50 PM
8778
Disconnected
Sampledevice
Device
Nov 14, 2022 2:38 PM
Type here to search

OUTPUT:


+ Code + Text
RAM
Disk
Editing
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:13,359 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:13,359 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
Published Temperature = 24 C Humidity = 9% Propane = 233 ppm LPG = 124 ppm Methane = 401 ppm Hydrogen = 289 ppm Carbon monoxide = 301 ppm to IBM Watson
GAS LEAKAGE FOUND
2022-11-19 16:38:15,829 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:15,836 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
2022-11-19 16:38:16,146 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
2022-11-19 16:38:16,147 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
Published Temperature = 62 C Humidity = 89% Propane = 189 ppm LPG = 422 ppm Methane = 202 ppm Hydrogen = 342 ppm Carbon monoxide = 103 ppm to IBM Watson
GAS LEAKAGE FOUND
2022-11-19 16:38:25,048 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:25,049 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
2022-11-19 16:38:27,470 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:27,493 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
2022-11-19 16:38:27,765 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:27,772 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
2022-11-19 16:38:29,125 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
ERROR:ibmiotf.device.Client:Unexpected disconnect from the IBM Watson IoT Platform: 7
Published Temperature = 74 C Humidity = 47% Propane = 312 ppm LPG = 371 ppm Methane = 110 ppm Hydrogen = 385 ppm Carbon monoxide = 112 ppm to IBM Watson
GAS LEAKAGE FOUND
2022-11-19 16:38:36,760 ibmiotf.device.Client INFO Connected successfully: d:kz2her:NODE:4222
INFO:ibmiotf.device.Client:Connected successfully: d:kz2her:NODE:4222
2022-11-19 16:38:36,761 ibmiotf.device.Client ERROR Unexpected disconnect from the IBM Watson IoT Platform: 7
Executing (5m 26s) Cell
Type here to search
ENG
22:13
19-11-2022