SPRINT – 03

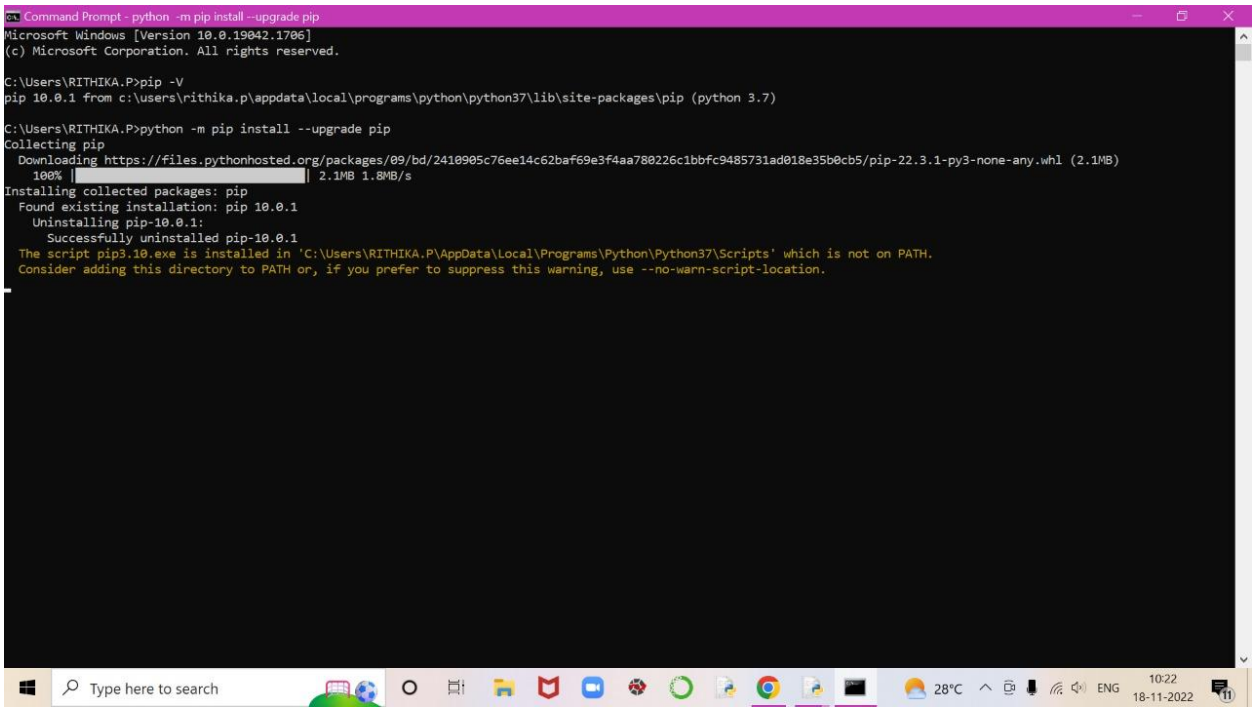
Date	19 November 2022
Team ID	PNT2022TMID4963
Project Name	Project - Gas Leakage monitoring & Alerting system for Industries

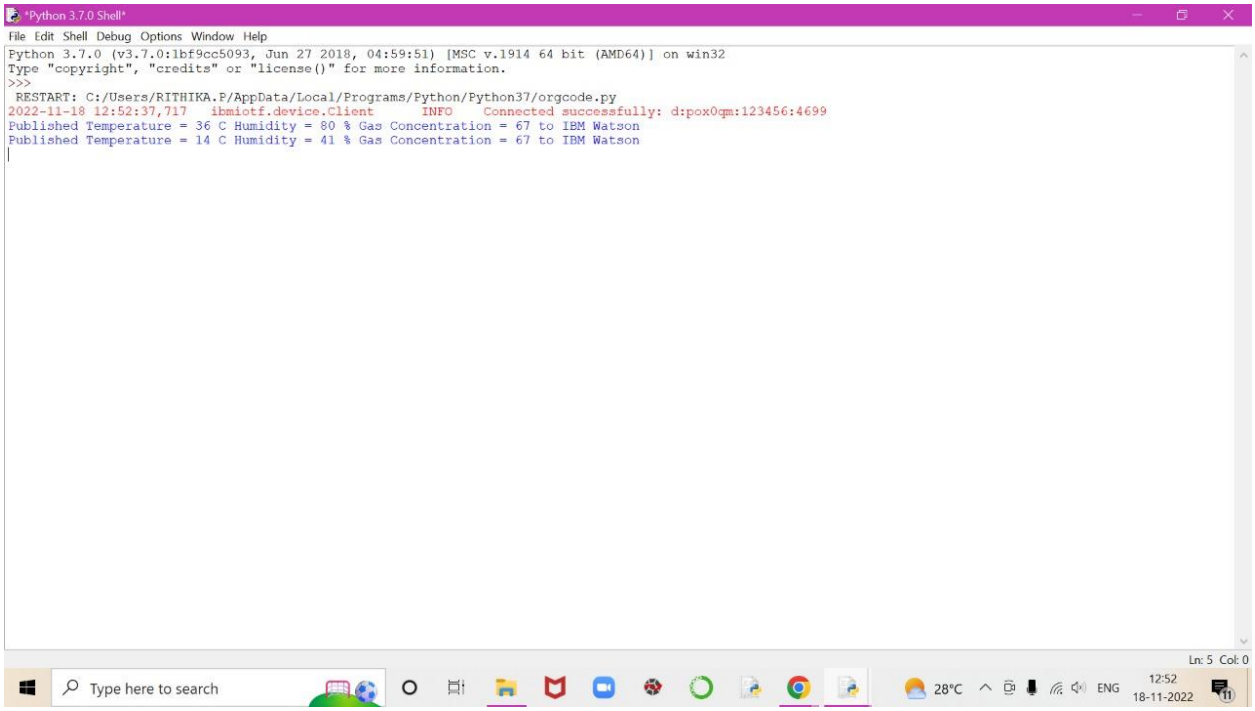
This is the python code we have used to detect the gas value from the sensor and measures the value whether it exceeds or not. Through this code we have achieved our application.

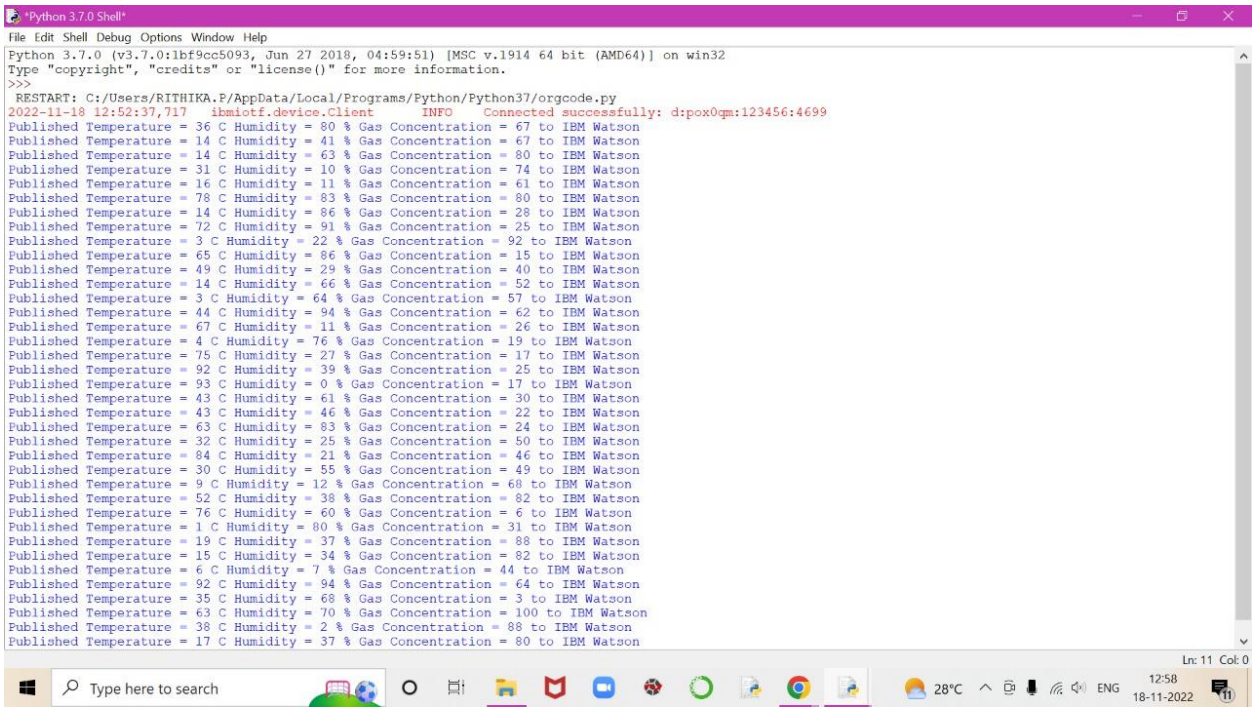
```
#TEAM ID=PNT2022TMID4963
#pip install wiotp-sdk
import ibmiotf.application
import ibmiotf.device
import time
import sys
import random


#Provide your IBM Watson Device Credentials
organization = "pox0qm"
deviceType = "123456"
deviceId = "4699"
authMethod = "token"
authToken = "12345678"

# 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

        temperature=random.randint(0,100)
        Humidity=random.randint(0,100)
        gas=random.randint(0,100)

        data = { 'temperature' : temperature, 'Humid': Humidity, 'Gas':gas }

        #print data
        def myOnPublishCallback():
            print ("Published Temperature = %s C" % temperature, "Humidity = %s
%%" % Humidity, "Gas Concentration = %s" % gas," 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()
```

To make this code to run successfully we have installed pip and following library packages.


Command Prompt - python -m pip install --upgrade pip
Microsoft Windows [Version 10.0.19042.1706]
(c) Microsoft Corporation. All rights reserved.
C:\Users\RITHIKA.P>pip -V
pip 10.0.1 from c:\users\rithika.p\appdata\local\programs\python\python37\lib\site-packages\pip (python 3.7)
C:\Users\RITHIKA.P>python -m pip install --upgrade pip
Collecting pip
Downloading https://files.pythonhosted.org/packages/09/bd/2410905c76ee14c62baf69e3f4aa780226c1bbfc9485731ad018e35b0cb5/pip-22.3.1-py3-none-any.whl (2.1MB)
100% | 2.1MB 1.8MB/s
Installing collected packages: pip
Found existing installation: pip 10.0.1
Uninstalling pip-10.0.1:
Successfully uninstalled pip-10.0.1
The script pip3.10.exe is installed in 'C:\Users\RITHIKA.P\AppData\Local\Programs\Python\Python37\Scripts' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Type here to search
28°C
ENG
10:22
18-11-2022


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/RITHIKA.P/AppData/Local/Programs/Python/Python37/orgcode.py
2022-11-18 12:52:37,717 ibmiotf.device.Client INFO Connected successfully: d:pox0qm:123456:4699
Published Temperature = 36 C Humidity = 80 % Gas Concentration = 67 to IBM Watson
Published Temperature = 14 C Humidity = 41 % Gas Concentration = 67 to IBM Watson
Ln: 5 Col: 0
Type here to search
28°C
ENG
12:52
18-11-2022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Published Temperature = 14 C Humidity = 63 % Gas Concentration = 80 to IBM Watson
Published Temperature = 31 C Humidity = 10 % Gas Concentration = 74 to IBM Watson
Published Temperature = 16 C Humidity = 11 % Gas Concentration = 61 to IBM Watson
Published Temperature = 78 C Humidity = 83 % Gas Concentration = 80 to IBM Watson
Published Temperature = 14 C Humidity = 86 % Gas Concentration = 28 to IBM Watson
Published Temperature = 72 C Humidity = 91 % Gas Concentration = 25 to IBM Watson
Published Temperature = 3 C Humidity = 22 % Gas Concentration = 92 to IBM Watson
Published Temperature = 65 C Humidity = 86 % Gas Concentration = 15 to IBM Watson
Published Temperature = 49 C Humidity = 29 % Gas Concentration = 40 to IBM Watson
Published Temperature = 14 C Humidity = 66 % Gas Concentration = 52 to IBM Watson
Published Temperature = 3 C Humidity = 64 % Gas Concentration = 57 to IBM Watson
Published Temperature = 44 C Humidity = 94 % Gas Concentration = 62 to IBM Watson
Published Temperature = 67 C Humidity = 11 % Gas Concentration = 26 to IBM Watson
Published Temperature = 4 C Humidity = 76 % Gas Concentration = 19 to IBM Watson
Published Temperature = 75 C Humidity = 27 % Gas Concentration = 17 to IBM Watson
Published Temperature = 92 C Humidity = 39 % Gas Concentration = 25 to IBM Watson
Published Temperature = 93 C Humidity = 0 % Gas Concentration = 17 to IBM Watson
Published Temperature = 43 C Humidity = 61 % Gas Concentration = 30 to IBM Watson
Published Temperature = 43 C Humidity = 46 % Gas Concentration = 22 to IBM Watson
Published Temperature = 63 C Humidity = 83 % Gas Concentration = 24 to IBM Watson
Published Temperature = 32 C Humidity = 25 % Gas Concentration = 50 to IBM Watson
Published Temperature = 84 C Humidity = 21 % Gas Concentration = 46 to IBM Watson
Published Temperature = 30 C Humidity = 55 % Gas Concentration = 49 to IBM Watson
Published Temperature = 9 C Humidity = 12 % Gas Concentration = 68 to IBM Watson
Published Temperature = 52 C Humidity = 38 % Gas Concentration = 82 to IBM Watson
Published Temperature = 76 C Humidity = 60 % Gas Concentration = 6 to IBM Watson
Published Temperature = 1 C Humidity = 80 % Gas Concentration = 31 to IBM Watson
Published Temperature = 19 C Humidity = 37 % Gas Concentration = 88 to IBM Watson
Published Temperature = 15 C Humidity = 34 % Gas Concentration = 82 to IBM Watson
Published Temperature = 6 C Humidity = 7 % Gas Concentration = 44 to IBM Watson
Published Temperature = 92 C Humidity = 94 % Gas Concentration = 64 to IBM Watson
Published Temperature = 35 C Humidity = 68 % Gas Concentration = 3 to IBM Watson
Published Temperature = 63 C Humidity = 70 % Gas Concentration = 100 to IBM Watson
Published Temperature = 38 C Humidity = 2 % Gas Concentration = 88 to IBM Watson
Published Temperature = 17 C Humidity = 37 % Gas Concentration = 80 to IBM Watson
Ln: 11 Col: 0
Type here to search
28°C
ENG
12:58
18-11-2022