

Project Development Phase

Delivery of Sprint 3

Date	12 November 2022
Team ID	PNT2022TMID21463
Project Name	Project –Gas leakage monitoring and alerting system for industries
Marks	20 marks

Code:

```
import time
```

```
import sys
```

```
import ibmiotf.application
```

```
import ibmiotf.device
```

```
import random
```

```
#Provide your IBM Watson Device Credentials
```

```
organization = "pi0ywk"
```

```
deviceType = "Gas_Geakage_Detector"
```

```
deviceId = "Udayakpr007"
```

```
authMethod = "token"
```

```
authToken = "8148922991"
```

```
# Initialize GPIO
```

```
def myCommandCallback(cmd):
```

```
    print("Command received: %s" % cmd.data['command'])
```

```
    status=cmd.data['command']
```

```
    if status == "alarmon":
```

```
        print ("Alarm is on please all Evacuate Fans On")
```

```
    elif status == "alarmoff":
```

```
        print ("Alarm is off and Fans Off")
```

```

elif status == "sprinkleron":

    print ("Sprinkler is On Evacuate Faster")

elif status == "sprinkleroff":

    print("Sprinkler is Off")

else:

    print("Please send proper command")

#print(cmd)

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 random function

    temp=random.randint(0,120)

    Humid=random.randint(0,100)

    gas=random.randint(0,1500)

    data={'temp':temp,'Humid':Humid,'gas':gas}

```

#print data

```
def myOnPublishCallback():  
    print (" Published Temperature = %s C" % temp, "Humidity = %s %" % Humid, "Gas_Level =  
%s ppm" %gas, "to IBM Watson")  
  
    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,  
on_publish=myOnPublishCallback)  
    if not success:  
        print("\n Not connected to IoTF")  
    if temp>60 :  
        print("\n Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police \n")  
    elif gas>350:  
        print("\n Gas is Leaking \n")  
  
    time.sleep(10)  
  
    deviceCli.commandCallback = myCommandCallback  
  
# Disconnect the device and application from the cloud  
deviceCli.disconnect()
```

The output is in the next page .

OUTPUT :

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help

Gas is Leaking
Published Temperature = 57 C
Humidity = 50 % Gas_Level = 382 ppm to IBM Watson

RESTART: C:\Users\Udaya Keerthi\AppData\Local\Programs\Python\Python37\gas_leakage.py
2022-11-16 10:39:30,639 ibmiotf.device.Client INFO Connected successfully: d:pi0ywk:Gas_Geakage_Detector:Udayakpr007
Published Temperature = 5 C Humidity = 56 % Gas_Level = 5 ppm to IBM Watson
Published Temperature = 55 C Humidity = 81 % Gas_Level = 318 ppm to IBM Watson

Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police
Published Temperature = 67 C
Humidity = 2 % Gas_Level = 1041 ppm to IBM Watson

Gas is Leaking
Published Temperature = 13 C
Humidity = 66 % Gas_Level = 784 ppm to IBM Watson

Gas is Leaking
Published Temperature = 5 C
Humidity = 88 % Gas_Level = 424 ppm to IBM Watson
Published Temperature = 57 C Humidity = 16 % Gas_Level = 26 ppm to IBM Watson
Published Temperature = 24 C Humidity = 19 % Gas_Level = 32 ppm to IBM Watson

Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police
Published Temperature = 81 C
Humidity = 55 % Gas_Level = 777 ppm to IBM Watson
Published Temperature = 33 C Humidity = 94 % Gas_Level = 166 ppm to IBM Watson

Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police
Published Temperature = 70 C
Humidity = 51 % Gas_Level = 1307 ppm to IBM Watson
Published Temperature = 19 C Humidity = 25 % Gas_Level = 63 ppm to IBM Watson

Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police
Published Temperature = 90 C
Humidity = 32 % Gas_Level = 1448 ppm to IBM Watson

Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire Police
Published Temperature = 65 C
Humidity = 96 % Gas_Level = 254 ppm to IBM Watson

Ln: 184 Col: 0
```