

PROJECT DEVELOPMENT PHASE

SPRINT 3

Team ID	PNT2022TMID21445
Project Name	Gas Leakage monitoring & Alerting system for Industries
Project TEAM members	917719D114 – ARIKARASHRI. K 917719D127 – NITHISH KUMAR. M 917719D129 – RANJITH KUMAR. P 917719D130 – RUTHRAM. M 917719D135 – UDHAYAKUMAR. U

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 IoT") if temp>60 :
```

```
print("\n Fire Detected due to gas Leak ! Alarm ON! Sprinkler ON! Call The Fire  
Police \n") elif gas>350:
```

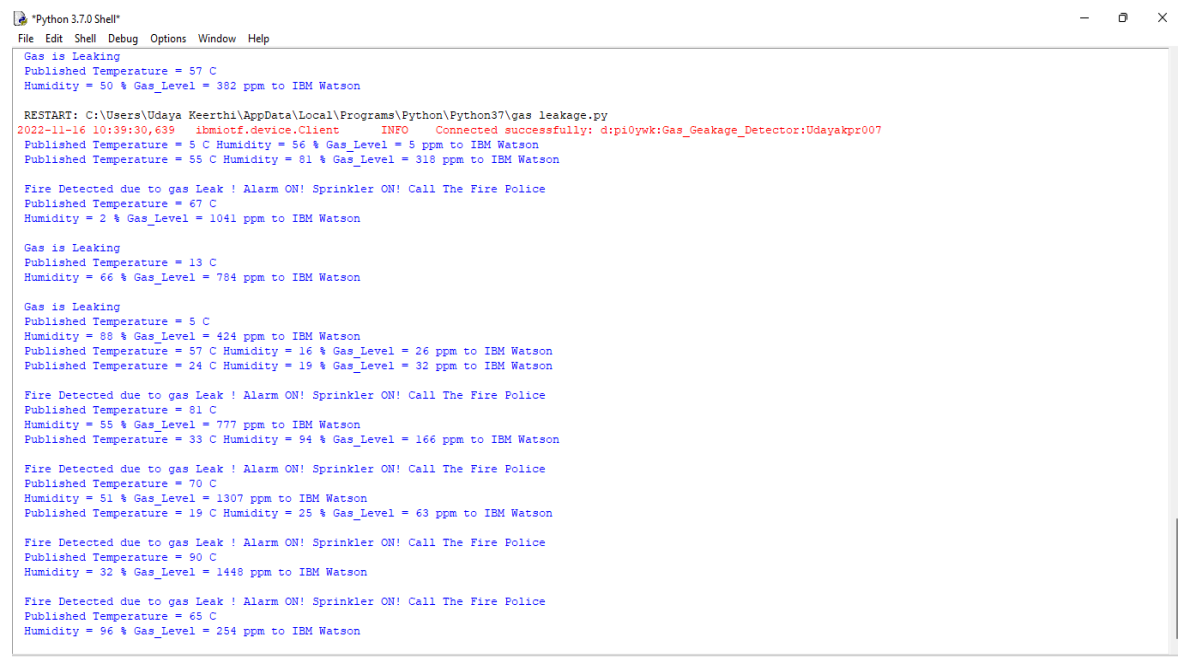
```
print("\n Gas is Leaking \n")
```

```
time.sleep(10)
```

```
deviceCli.commandCallback = myCommandCallback
```

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

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 = 98 % 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
```