Project Development Phase
Delivery of Sprint 3

Date	12 November 2022
Team ID	PNT2022TMID04619
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  =  "nazeer007" 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")
```

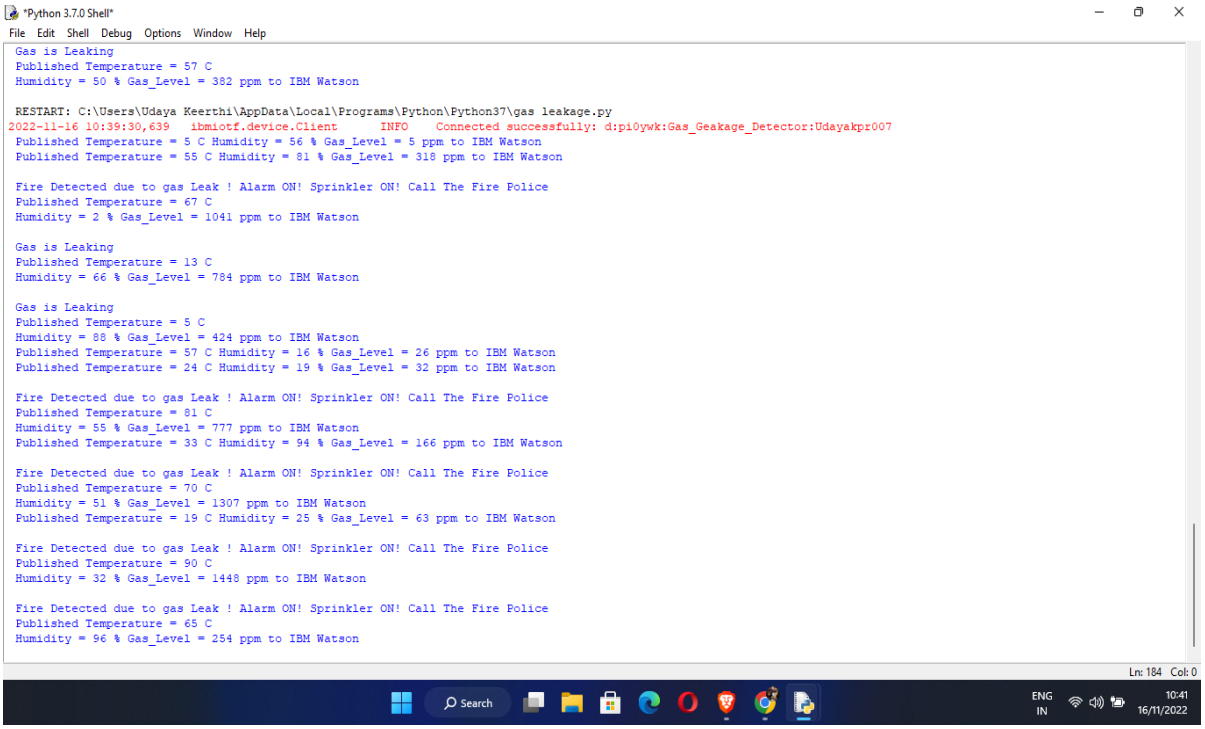
```
    elif status == "sprinkleron":
        print ("Sprinkler is On Evacuate Faster")
    elif status == "sprinkleroff":
        print("Sprinkler is Off")
    else:
        print("Please send proper command")
    #print(cmd)
```

```
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
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