PROJECT DEVELOPMENT PHASE

SPRINT 1

Date	18 November 2022
Team ID	PNT2022TMID53681
Project name	Gas Leakage Monitoring & Alerting System for Industries

ANALYZE THE PREREQUISITES

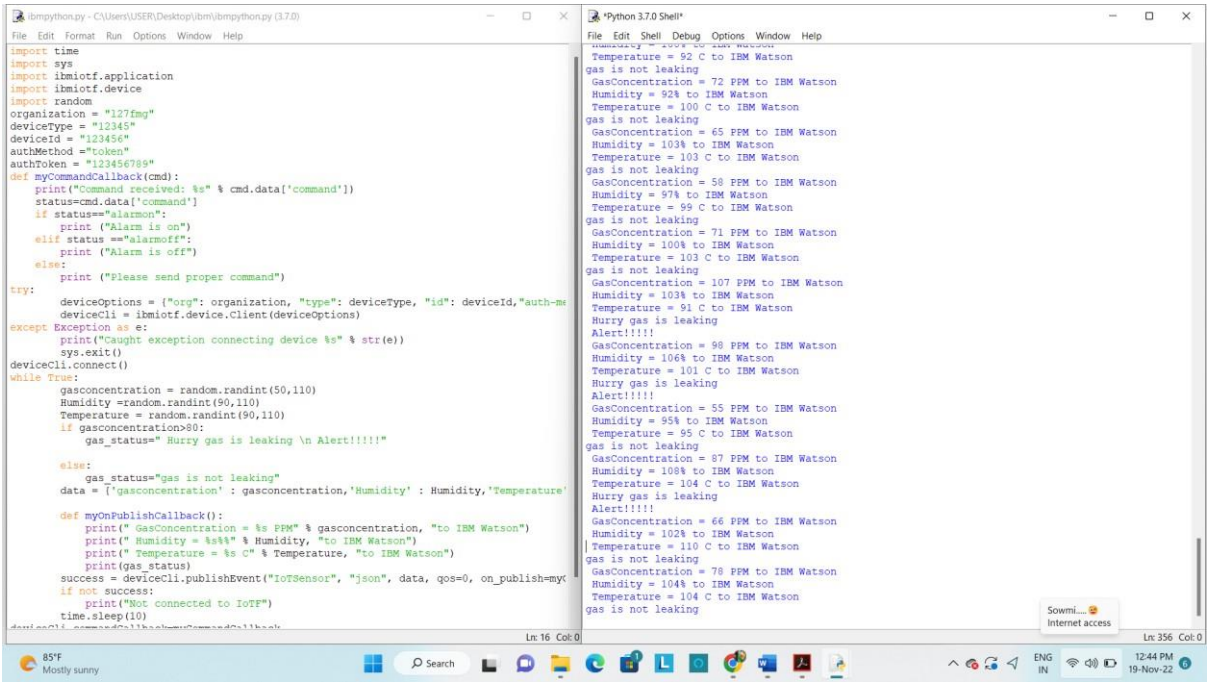
Needed prerequisites for real time river water quality monitoring and control system using Internet Of Things (IoT) were

- IBM Watson IoT Platform
- Node-RED Service
- Cloudant DB

Python code:

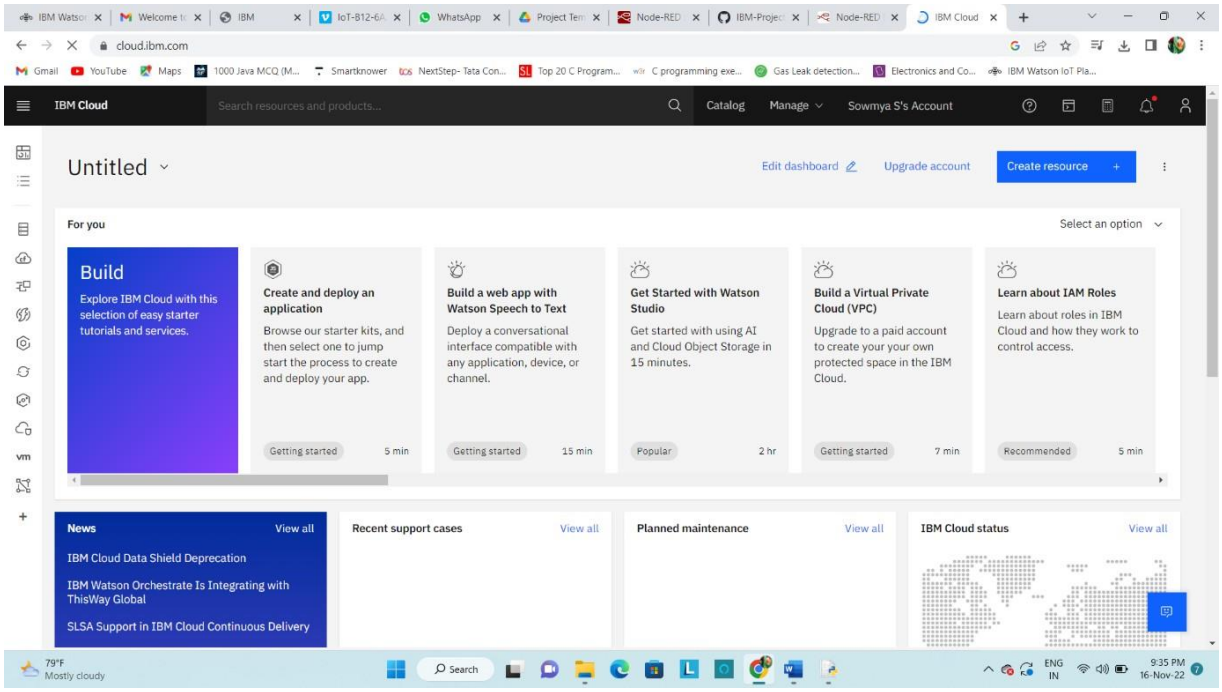
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
organization = "l27fmg"
deviceType = "12345"
deviceId = "123456"
authMethod ="token"
authToken = "123456789"
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="alarmon":
        print ("Alarm is on")
    elif status =="alarmoff":
        print ("Alarm 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()
deviceCli.connect()
while True:
        gasconcentration = random.randint(50,110)
        Humidity =random.randint(90,110)
```

```
        Temperature = random.randint(90,110)
        if gasconcentration>80:
            gas_status=" Hurry gas is leaking \n Alert!!!!!"

        else:
            gas_status="gas is not leaking"
        data = {'gasconcentration' : gasconcentration,'Humidity' :
Humidity,'Temperature' :Temperature,'gas_status':gas_status}

        def myOnPublishCallback():
            print(" GasConcentration = %s PPM" % gasconcentration, "to IBM Watson")
            print(" Humidity = %s%%" % Humidity, "to IBM Watson")
            print(" Temperature = %s C" % Temperature, "to IBM Watson")
            print(gas_status)
        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
deviceCli.disconnect()
```

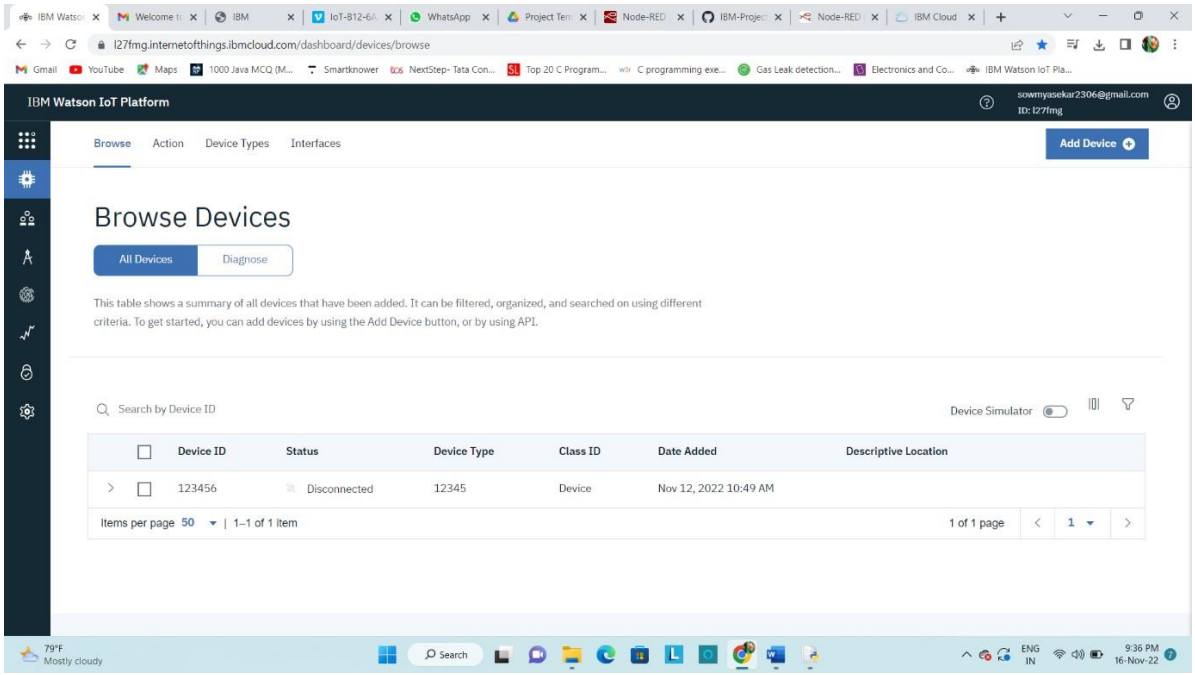


Code runs successfully and random output values are generated

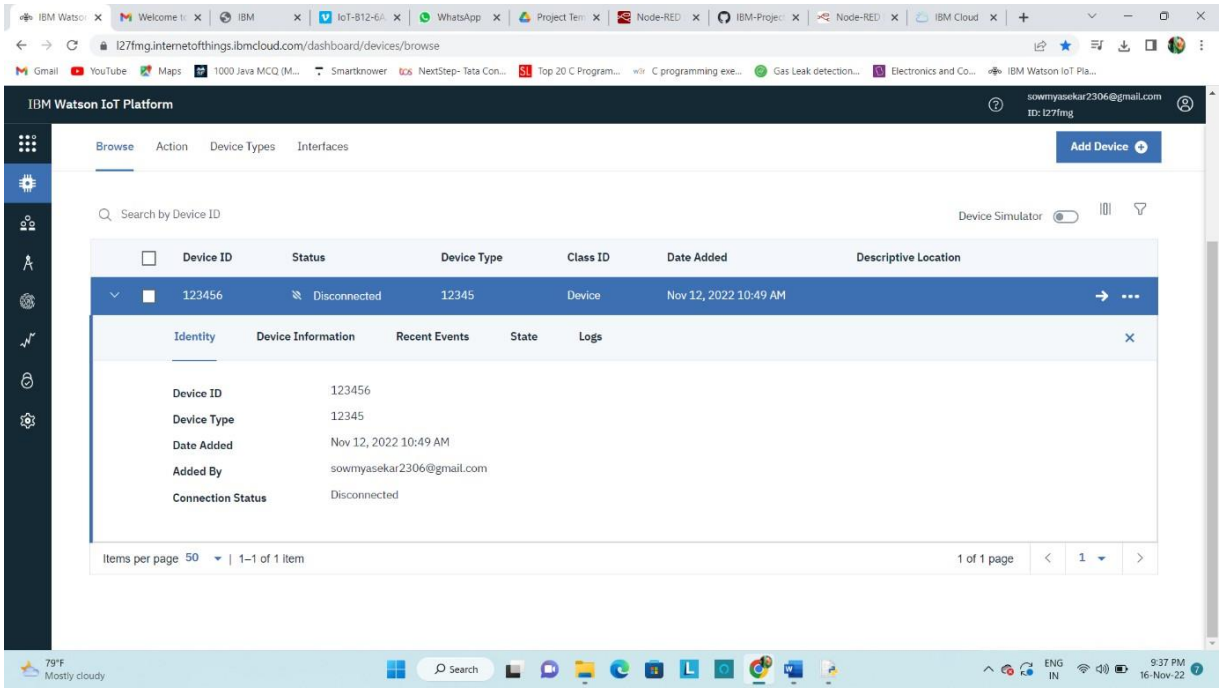
Creation of IBM cloud



Procedure for the creation of IBM IOT watson



Device creation



Generation of random values in IBM Watson