PROJECT DEVELOPMENT PHASE

SPRINT 1

Date	16 November 2022
Team ID	PNT2022TMID13542
Project name	Hazardous area monitoring for industrial power plants by IoT
Maximum marks	2 marks

ANALYZE THE PREREQUISITES

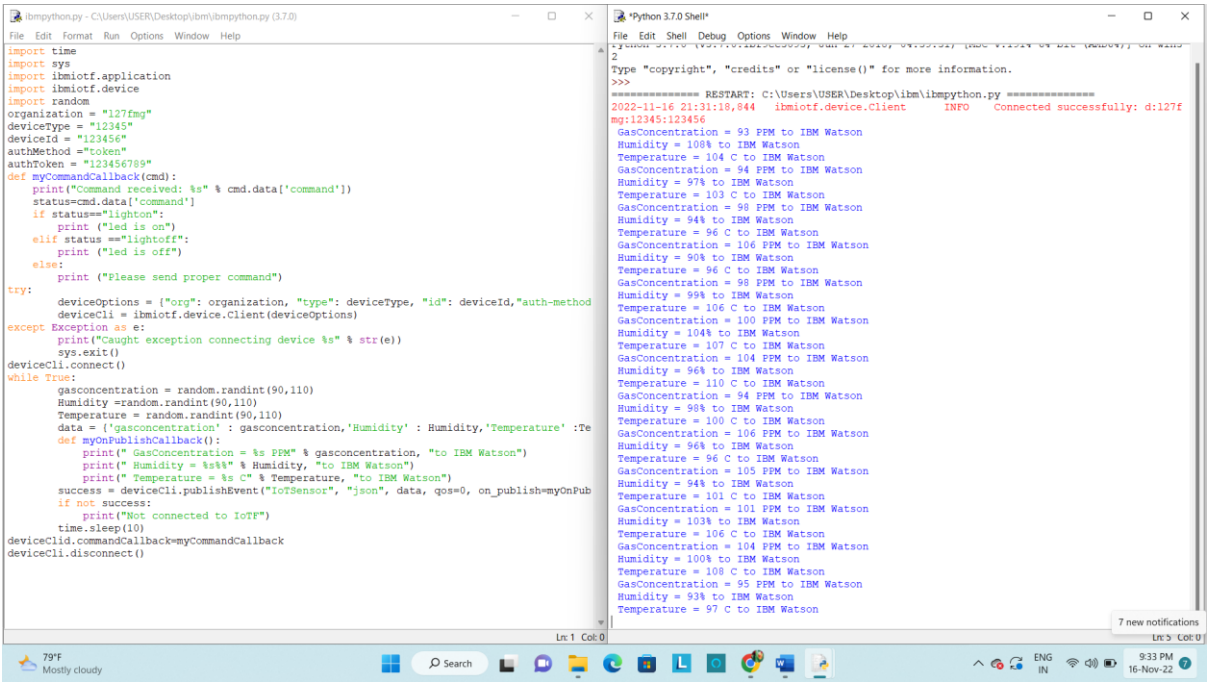
Needed prerequisites for real time river water quality monitoring and control system using Internet Of Things (IoT) were

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

Python code:

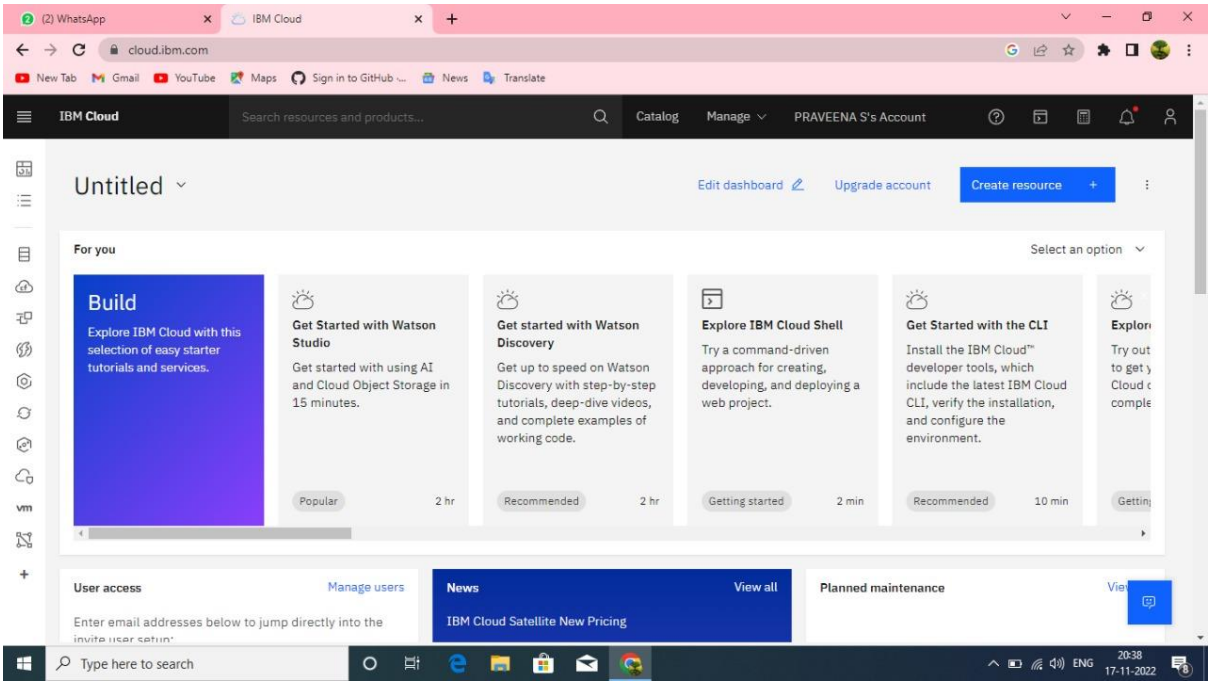
```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

organization = "67yqBw"

deviceType = "Nodemcu"

deviceId = "123"

authMethod ="token"

authToken = "12345678"

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()
deviceCli.connect()
while True:
gasconcentration = random.randint(90,110)
        Humidity =random.randint(90,110)
        Temperature = random.randint(90,110)
        data = {'gasconcentration' :gasconcentration,'Humidity' : Humidity,'Temperature' :Temperature}
        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")
        success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
        if not success:
print("Not connected to IoTF")
time.sleep(10)
deviceClid.commandCallback=myCommandCallback
deviceCli.disconnect()
```

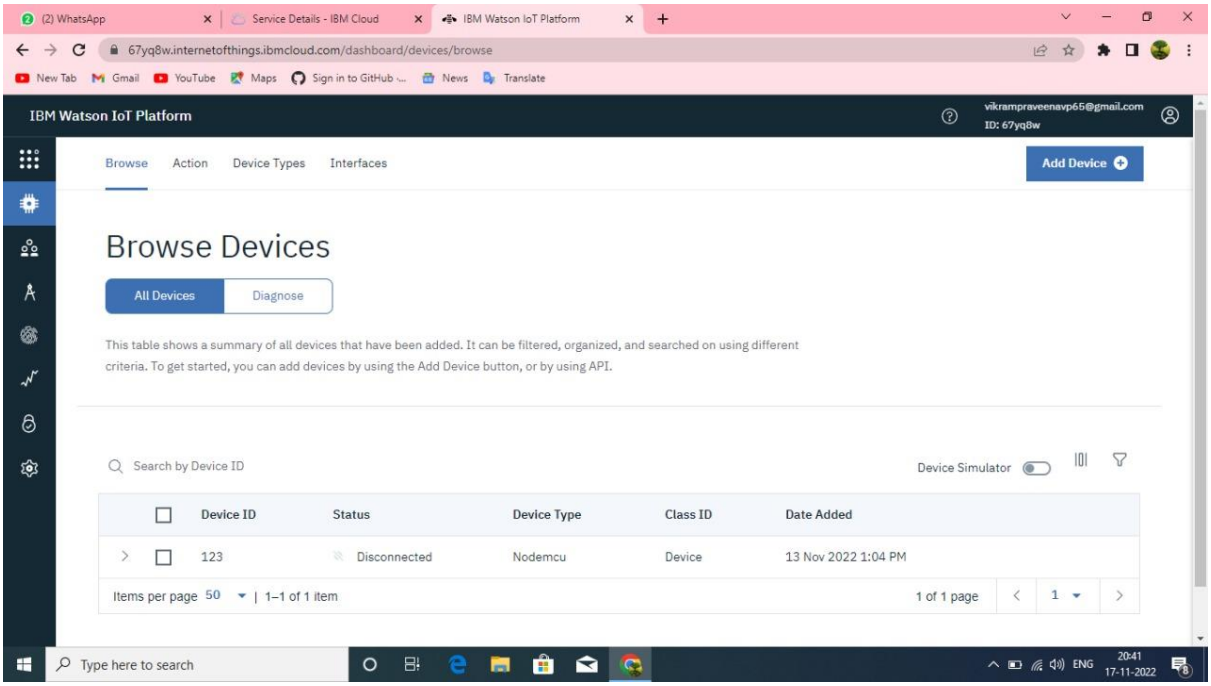


Code runs successfully and random output values are generated

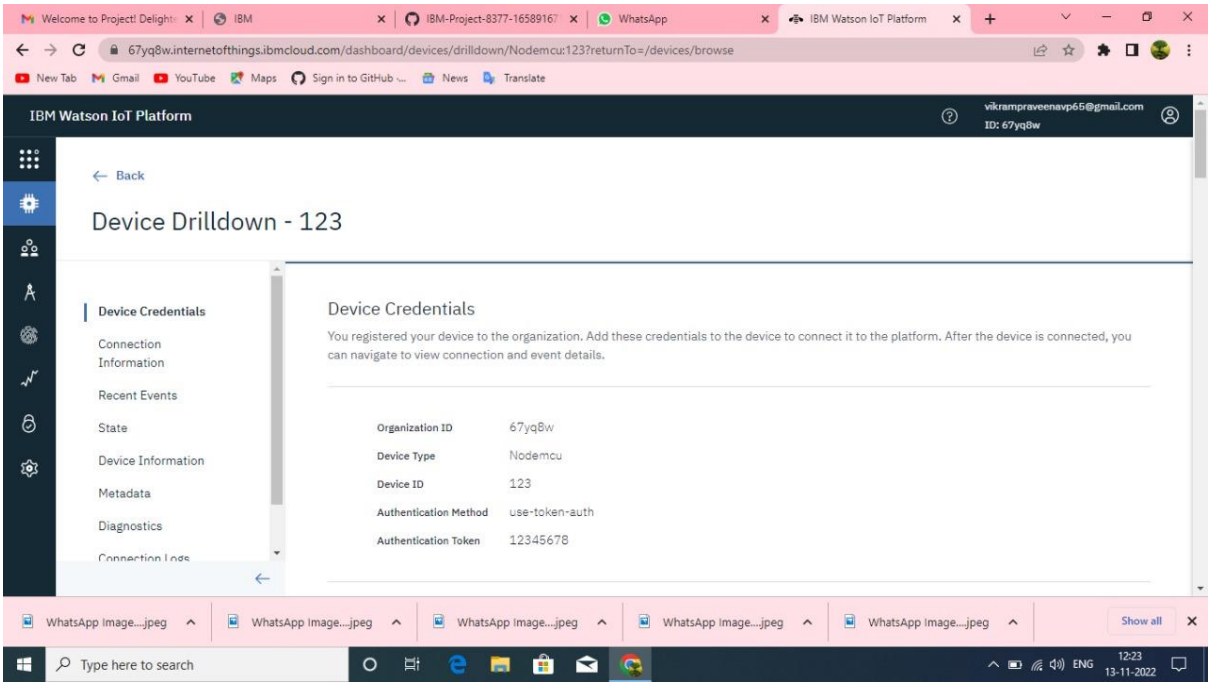
Creation of IBM cloud



Procedure for the creation of IBM IOT watson



Device creation



Generation of random values in IBM Watson