Develop a python script to publish and subscribe to IBM IOT platform

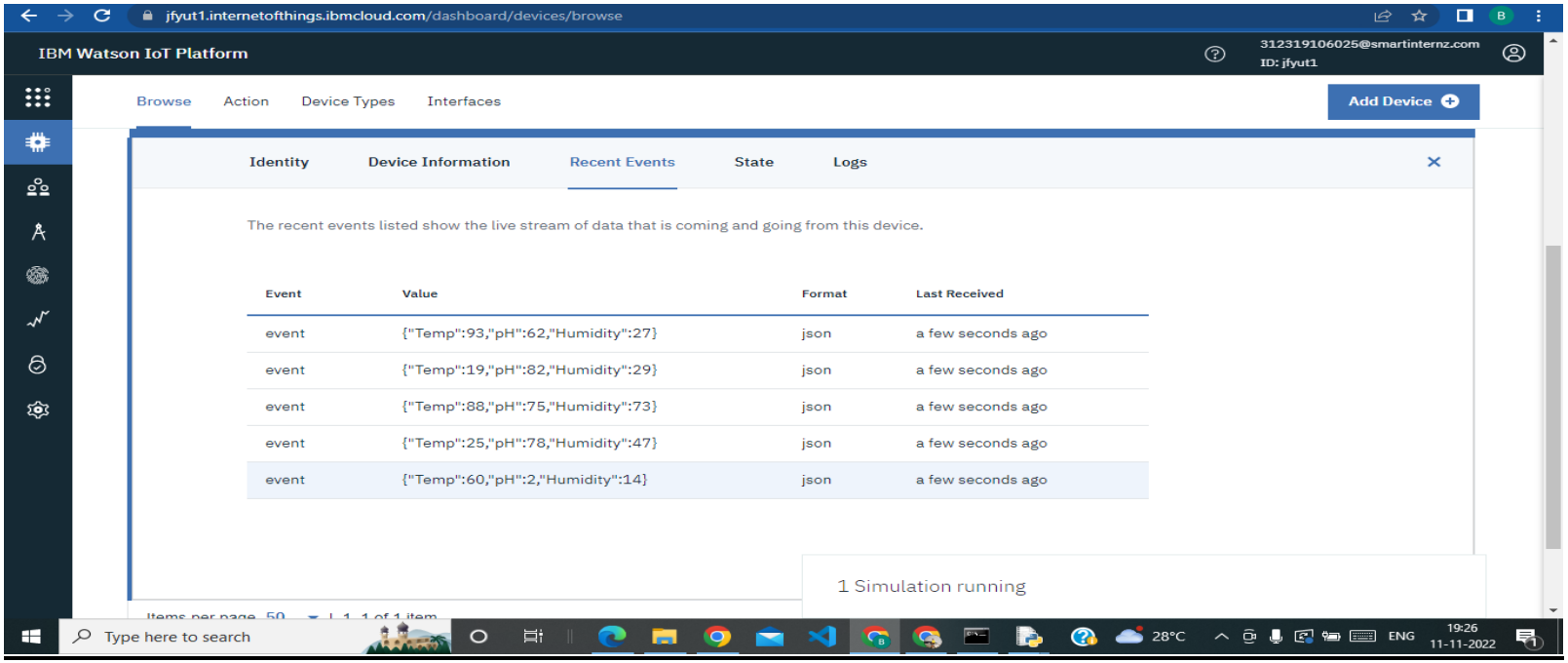
Date	10 November 2022
Team ID	PNT2022TMID00236
Project Name	SmartFarmer- IoT enabled smart faming applications

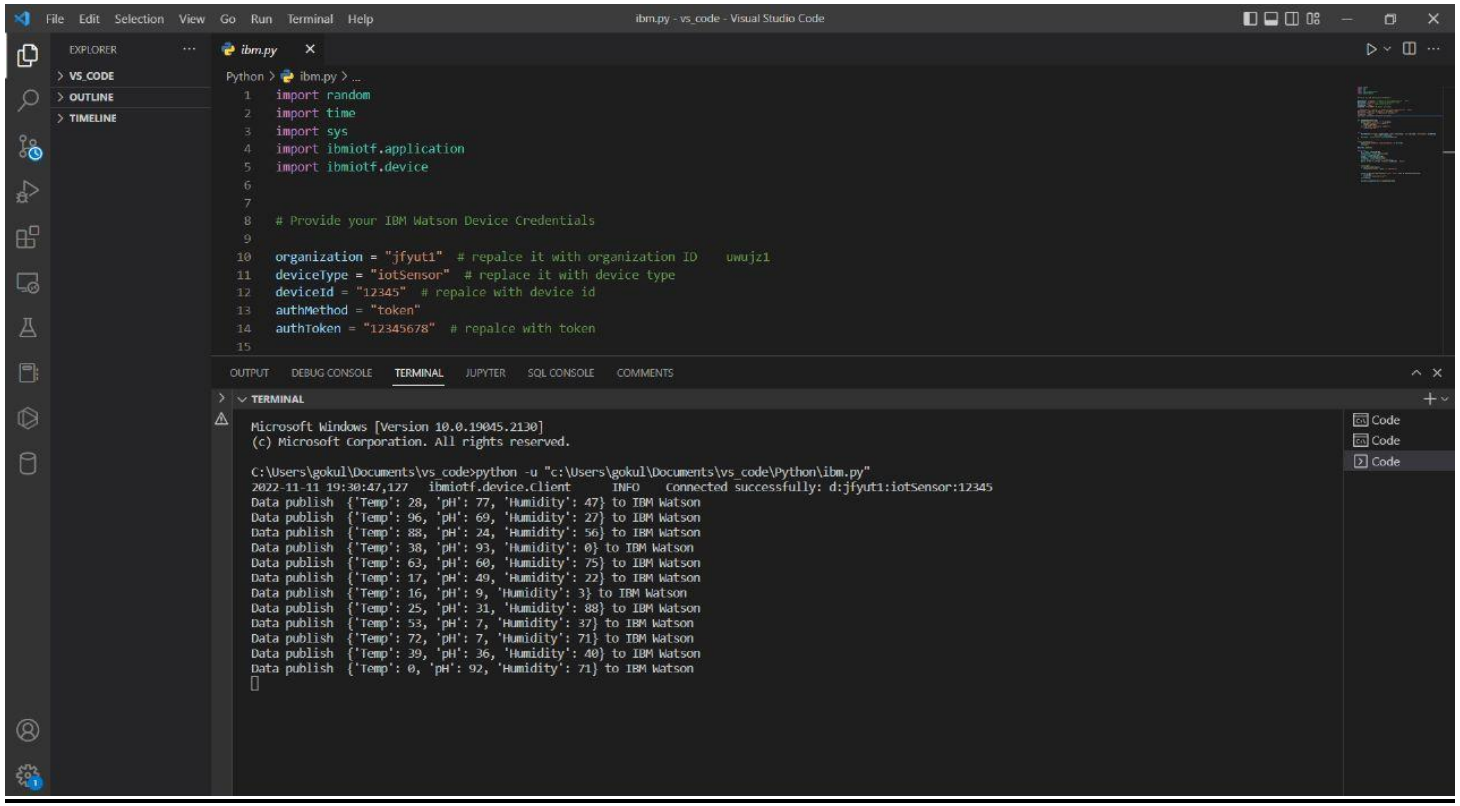
Code:

```
import random
import time
import sys
import ibmiotf.application
import ibmiotf.device


# Provide your IBM Watson Device Credentials

organization = "jfyut1"  # repalce it with organization ID
deviceType = "iotSensor"  # replace it with device type
deviceId = "12345"  # repalce with device id
authMethod = "token"
authToken = "12345678"  # repalce with token

def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data)
    if cmd.data['command'] == 'lighton':
        print("LIGHT ON")
    elif cmd.data['command'] == 'lightoff':
        print("LIGHT OFF")
```

```
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:
    pH = random.randint(0,100)
    conductivity = random.randint(0,100)
    T = random.randint(0,100)
    oxygen = random.randint(0,100)
    turbidity = random.randint(0,100)
    # Send Temperature & Humidity to IBM Watson
    data =  {'Temp':T,'pH':pH, 'Humidity':turbidity}   #output

    # print data
    def myOnPublishCallback():
        print("Data publish ",data, "to IBM Watson")

    success = deviceCli.publishEvent("event", "json", data, 0, myOnPublishCallback)
    if not success:
        print("Not connected to IoTF")
    time.sleep(5)
    deviceCli.commandCallback = myCommandCallback
```

OUTPUT:


jfyut1.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
312319106025@smartinternz.com
ID: jfyut1
Browse
Action
Device Types
Interfaces
Add Device
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
event
{"Temp":93,"pH":62,"Humidity":27}
json
a few seconds ago
event
{"Temp":19,"pH":82,"Humidity":29}
json
a few seconds ago
event
{"Temp":88,"pH":75,"Humidity":73}
json
a few seconds ago
event
{"Temp":25,"pH":78,"Humidity":47}
json
a few seconds ago
event
{"Temp":60,"pH":2,"Humidity":14}
json
a few seconds ago
1 Simulation running
Type here to search
28°C
ENG
19:26
11-11-2022


File Edit Selection View Go Run Terminal Help
ibm.py - vs_code - Visual Studio Code
EXPLORER
VS_CODE
OUTLINE
TIMELINE
ibm.py
Python > ibm.py > ...
1 import random
2 import time
3 import sys
4 import ibmiotf.application
5 import ibmiotf.device
8 # Provide your IBM Watson Device Credentials
10 organization = "jfyut1" # repalce it with organization ID uwujz1
11 deviceType = "iotSensor" # replace it with device type
12 deviceId = "12345" # repalce with device id
13 authMethod = "token"
14 authToken = "12345678" # repalce with token
OUTPUT DEBUG CONSOLE TERMINAL JUPYTER SQL CONSOLE COMMENTS
TERMINAL
Microsoft Windows [Version 10.0.19045.2130]
(c) Microsoft Corporation. All rights reserved.
C:\Users\gokul\Documents\vs_code>python -u "c:\Users\gokul\Documents\vs_code\Python\ibm.py"
2022-11-11 19:30:47,127 ibmiotf.device.Client INFO Connected successfully: d:jfyut1:iotSensor:12345
Data publish {'Temp': 28, 'pH': 77, 'Humidity': 47} to IBM Watson
Data publish {'Temp': 96, 'pH': 69, 'Humidity': 27} to IBM Watson
Data publish {'Temp': 88, 'pH': 24, 'Humidity': 56} to IBM Watson
Data publish {'Temp': 38, 'pH': 93, 'Humidity': 0} to IBM Watson
Data publish {'Temp': 63, 'pH': 60, 'Humidity': 75} to IBM Watson
Data publish {'Temp': 17, 'pH': 49, 'Humidity': 22} to IBM Watson
Data publish {'Temp': 16, 'pH': 9, 'Humidity': 3} to IBM Watson
Data publish {'Temp': 25, 'pH': 31, 'Humidity': 88} to IBM Watson
Data publish {'Temp': 53, 'pH': 7, 'Humidity': 37} to IBM Watson
Data publish {'Temp': 72, 'pH': 7, 'Humidity': 71} to IBM Watson
Data publish {'Temp': 39, 'pH': 36, 'Humidity': 40} to IBM Watson
Data publish {'Temp': 0, 'pH': 92, 'Humidity': 71} to IBM Watson
Code
Code
Code