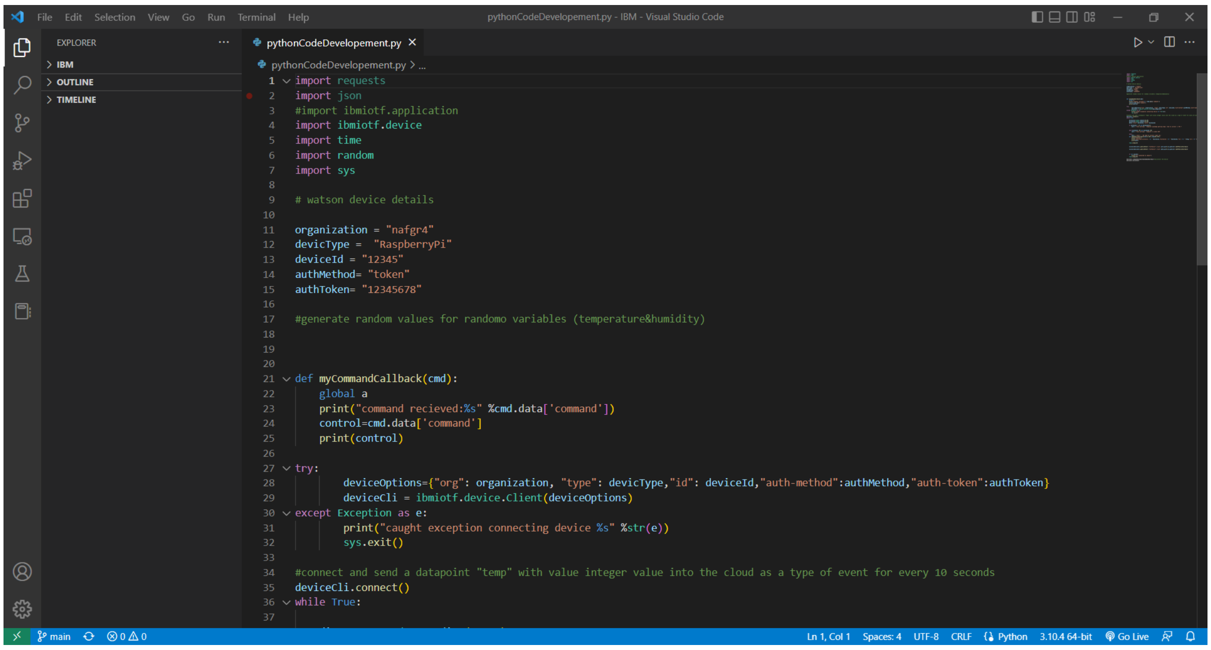
Python Code Development

Team ID	PNT2022TMID02550
Project Name	Smart waste management system for metropolitan cities

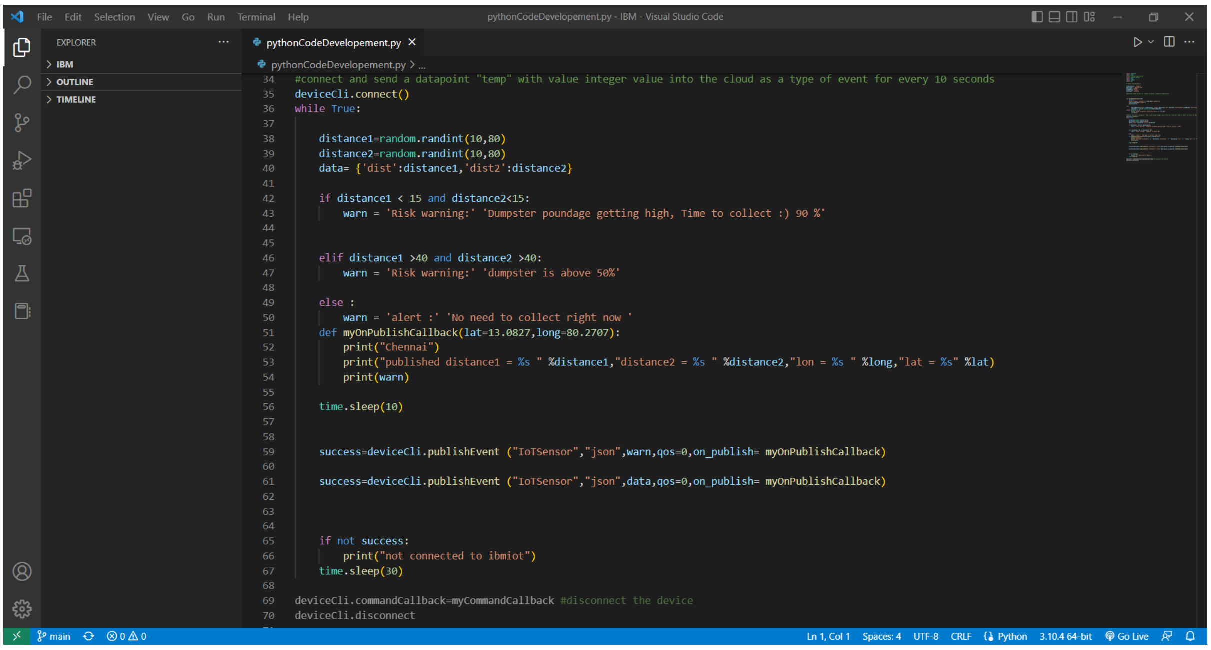
Python Script

```python
import requests
import json
#import ibmiotf.application
import ibmiotf.device
import time
import random
import sys

# watson device details

organization = "nafgr4"
devicType =  "RaspberryPi"
deviceId = "12345"
authMethod= "token"
authToken= "12345678"

#generate random values for randomo variables (temperature&humidity)



def myCommandCallback(cmd):
    global a
    print("command recieved:%s" %cmd.data['command'])
    control=cmd.data['command']
    print(control)

try:
        deviceOptions={"org": organization, "type": devicType,"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 "temp" with value integer value into the cloud
as a type of event for every 10 seconds
deviceCli.connect()
while True:

    distance1=random.randint(10,80)
    distance2=random.randint(10,80)
    data= {'dist':distance1,'dist2':distance2}

    if distance1 < 15 and distance2<15:
        warn = 'Risk warning:' 'Dumpster poundage getting high, Time to
collect :) 90 %'


    elif distance1 >40 and distance2 >40:
        warn = 'Risk warning:' 'dumpster is above 50%'

    else :
        warn = 'alert :' 'No need to collect right now '
    def myOnPublishCallback(lat=13.0827,long=80.2707):
        print("Chennai")
        print("published distance1 = %s " %distance1,"distance2 = %s "
%distance2,"lon = %s " %long,"lat = %s" %lat)
        print(warn)

    time.sleep(10)


    success=deviceCli.publishEvent ("IoTSensor","json",warn,qos=0,on_publish=
myOnPublishCallback)

    success=deviceCli.publishEvent ("IoTSensor","json",data,qos=0,on_publish=
myOnPublishCallback)



    if not success:
        print("not connected to ibmiot")
    time.sleep(30)

deviceCli.commandCallback=myCommandCallback #disconnect the device
deviceCli.disconnect
```

Code:

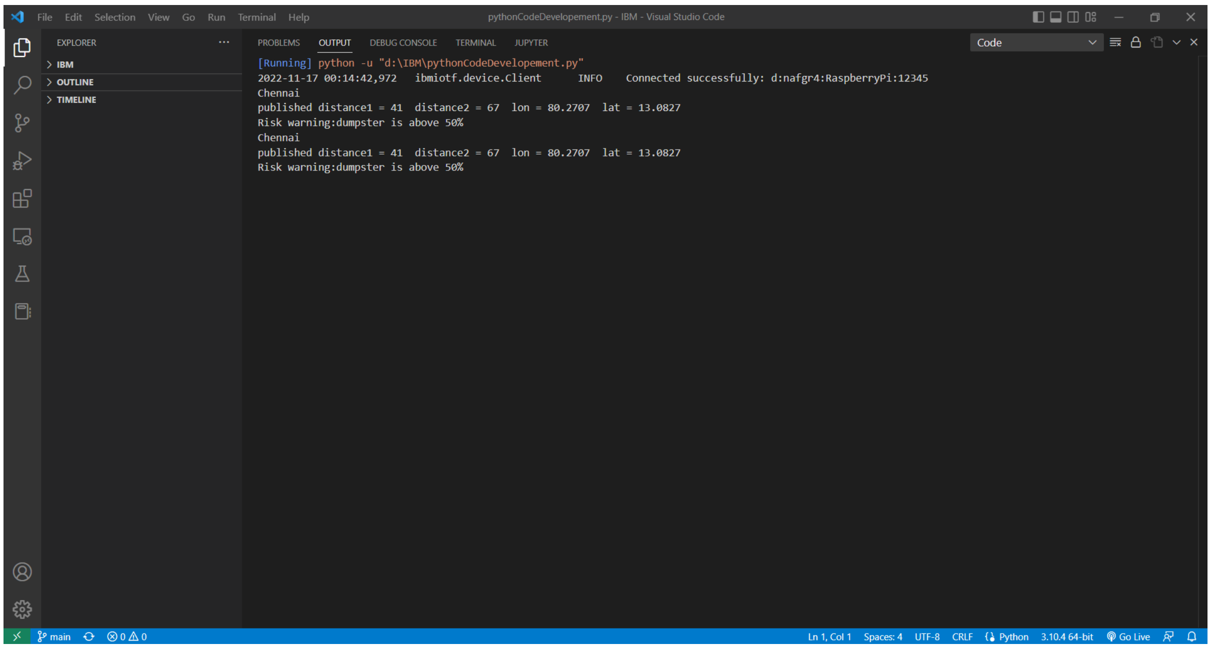


```python
import requests
import json
#import ibmiotf.application
import ibmiotf.device
import time
import random
import sys

# watson device details

organization = "nafgr4"
devicType =  "RaspberryPi"
deviceId = "12345"
authMethod= "token"
authToken= "12345678"

#generate random values for randomo variables (temperature&humidity)



def myCommandCallback(cmd):
    global a
    print("command recieved:%s" %cmd.data['command'])
    control=cmd.data['command']
    print(control)

try:
        deviceOptions={"org": organization, "type": devicType,"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 "temp" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()
while True:

```



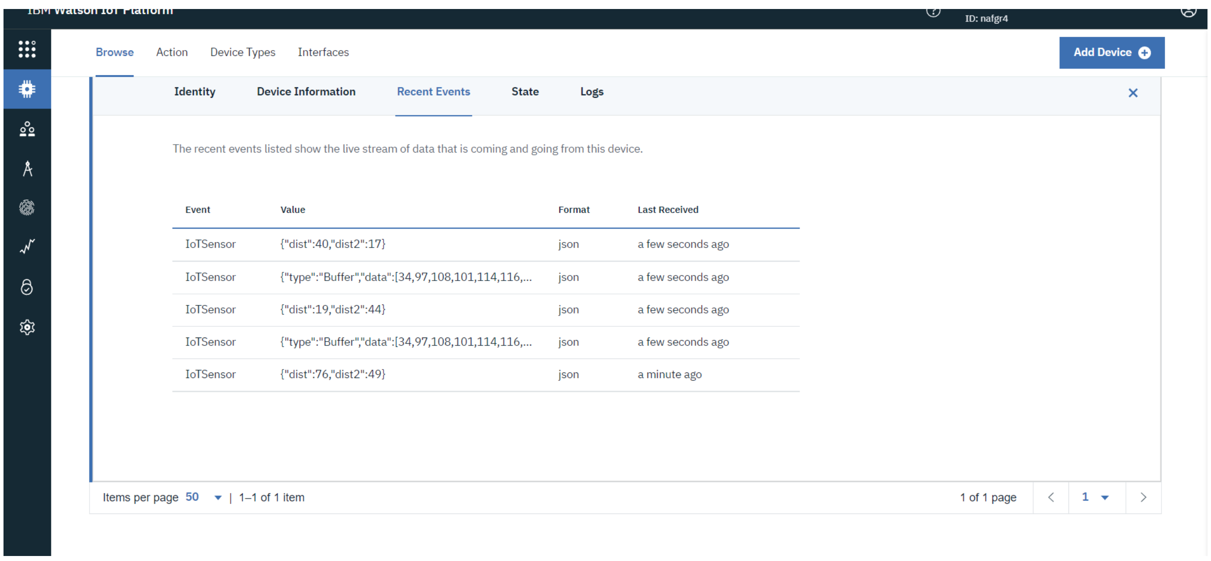
```python
#connect and send a datapoint "temp" with value integer value into the cloud as a type of event for every 10 seconds
deviceCli.connect()
while True:

    distance1=random.randint(10,80)
    distance2=random.randint(10,80)
    data= {'dist':distance1,'dist2':distance2}

    if distance1 < 15 and distance2<15:
        warn = 'Risk warning:' 'Dumpster poundage getting high, Time to collect :) 90 %'


    elif distance1 >40 and distance2 >40:
        warn = 'Risk warning:' 'dumpster is above 50%'

    else :
        warn = 'alert :' 'No need to collect right now '
    def myOnPublishCallback(lat=13.0827,long=80.2707):
        print("Chennai")
        print("published distance1 = %s " %distance1,"distance2 = %s " %distance2,"lon = %s " %long,"lat = %s" %lat)
        print(warn)

    time.sleep(10)


    success=deviceCli.publishEvent ("IoTSensor","json",warn,qos=0,on_publish= myOnPublishCallback)

    success=deviceCli.publishEvent ("IoTSensor","json",data,qos=0,on_publish= myOnPublishCallback)



    if not success:
        print("not connected to ibmiot")
    time.sleep(30)

deviceCli.commandCallback=myCommandCallback #disconnect the device
deviceCli.disconnect
```

Connection To IBM Watson


File Edit Selection View Go Run Terminal Help
pythonCodeDevelopement.py - IBM - Visual Studio Code
EXPLORER
IBM
OUTLINE
TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
Code
main
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF Python 3.10.4 64-bit Go Live

```
[Running] python -u "d:\IBM\pythonCodeDevelopement.py"
2022-11-17 00:14:42,972   ibmiotf.device.Client      INFO    Connected successfully: d:nafgr4:RaspberryPi:12345
Chennai
published distance1 = 41  distance2 = 67  lon = 80.2707  lat = 13.0827
Risk warning:dumpster is above 50%
Chennai
published distance1 = 41  distance2 = 67  lon = 80.2707  lat = 13.0827
Risk warning:dumpster is above 50%
```

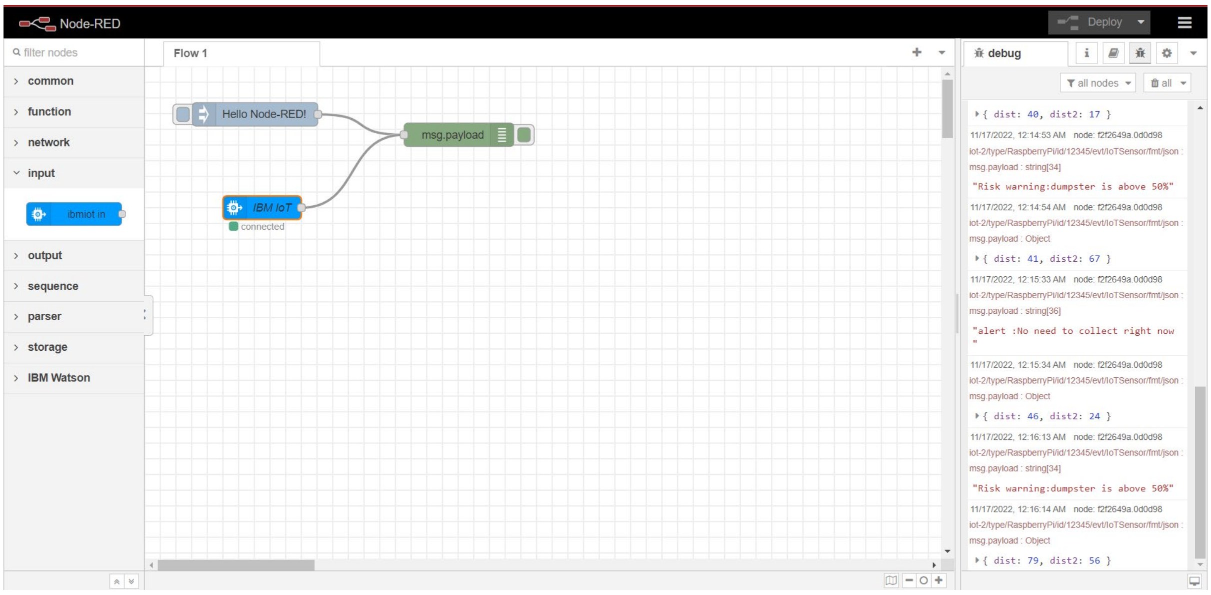
IBM Watson


IBM Watson IoT Platform
ID: nafgr4
Browse Action Device Types Interfaces
Add Device
Identity Device Information Recent Events State Logs
Items per page 50 | 1–1 of 1 item
1 of 1 page 1

The recent events listed show the live stream of data that is coming and going from this device.

Event	Value	Format	Last Received
IoTSensor	{"dist":40,"dist2":17}	json	a few seconds ago
IoTSensor	{"type":"Buffer","data":[34,97,108,101,114,116,...	json	a few seconds ago
IoTSensor	{"dist":19,"dist2":44}	json	a few seconds ago
IoTSensor	{"type":"Buffer","data":[34,97,108,101,114,116,...	json	a few seconds ago
IoTSensor	{"dist":76,"dist2":49}	json	a minute ago

Node Red Output



```
▸{ dist: 40, dist2: 17 }
11/17/2022, 12:14:53 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : string[34]
"Risk warning:dumpster is above 50%"
11/17/2022, 12:14:54 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ dist: 41, dist2: 67 }
11/17/2022, 12:15:33 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : string[36]
"alert :No need to collect right now
"
11/17/2022, 12:15:34 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ dist: 46, dist2: 24 }
11/17/2022, 12:16:13 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : string[34]
"Risk warning:dumpster is above 50%"
11/17/2022, 12:16:14 AM   node: f2f2649a.0d0d98
iot-2/type/RaspberryPi/id/12345/evt/IoTSensor/fmt/json :
msg.payload : Object
▸{ dist: 79, dist2: 56 }
```