Project Development phase

Date	**09 November 2022**
Team ID	**PNT2022TMID41308**
Project Name	**Project – SMART WASTE MANAGEMENT FOR METROPOLITAN CITIES**
Maximum Marks	**4 Marks**

Delivering of Sprint-1

IBM Cloud Services:

I. Devices:
- To create IBM Watson IOT platform for creating a Device
- After add the device.
- Send the location of the bin to the IBM Watson.

II. Broads:
- After creating devices, we create broad chart (line chart, donut chart) for analysis the level of the bins and weight of the bins.

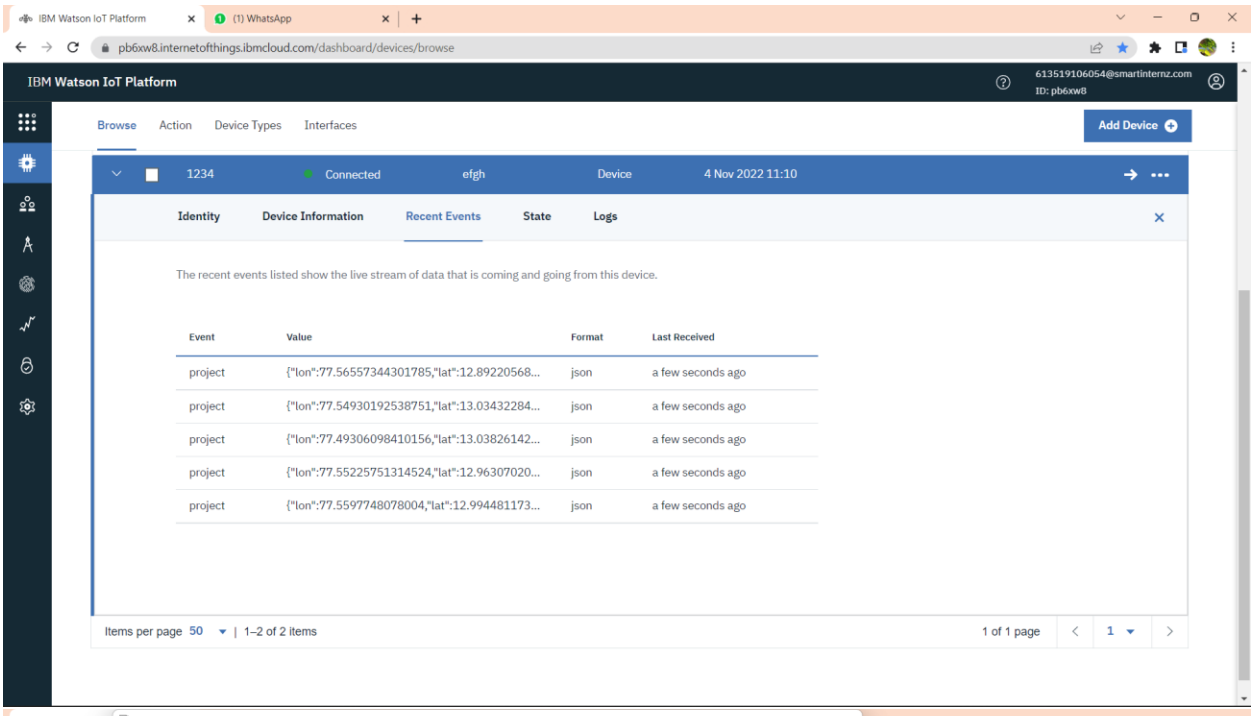
Python test code:(sending location to IBM watson)

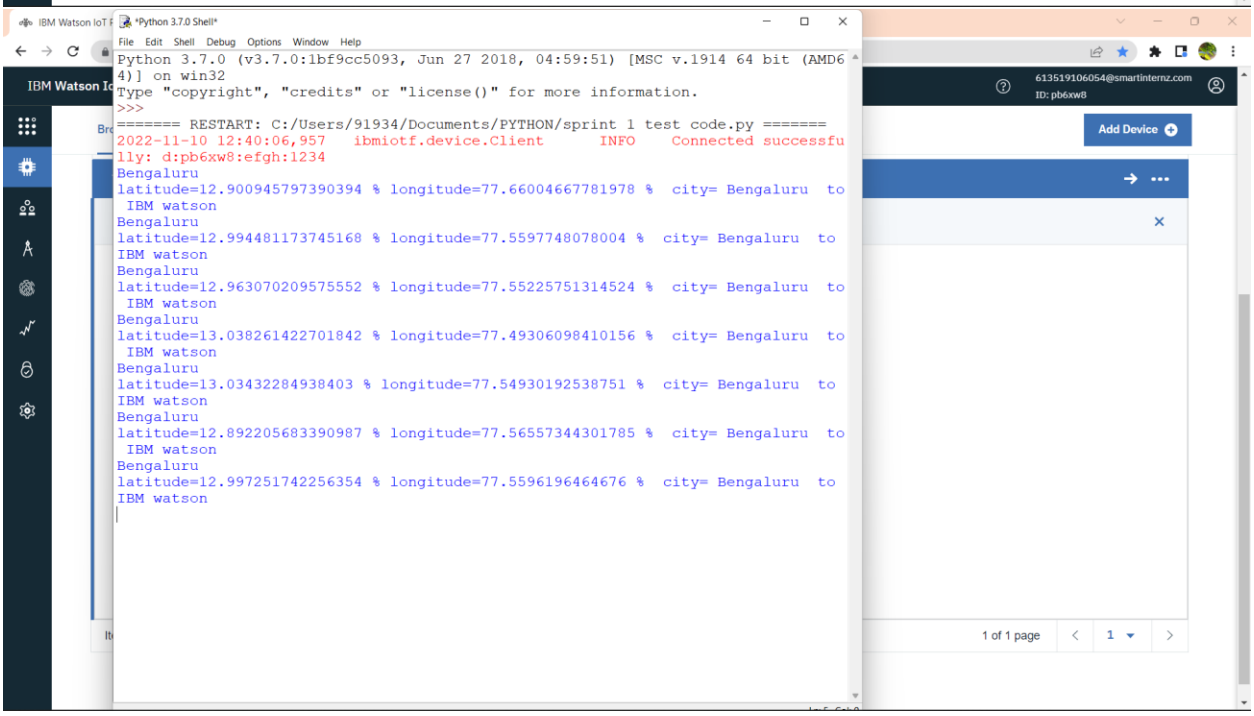
```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
from geopy.geocoders import Nominatim
```

```
geolocator=Nominatim(user_agent="geoapiExercises")
#Provide your IBM Watson Device Credentials
organization = "pb6xw8"
deviceType = "efgh"
deviceId = "1234"
authMethod = "token"
authToken = "12345678"
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:
    latitude=random.uniform(12.867342,13.043514)
    longitude=random.uniform(77.477635,77.695109)
    Latitude=str(latitude)
    Longitude=str(longitude)
    location=geolocator.reverse(Latitude+","+Longitude)
```

```
        address=location.raw['address']
        city=address.get('city','')
        print(city)
        data = { 'lon':longitude,'lat':latitude,'city':str (city)}
        def myOnpublishCallback():
            print ( "latitude=%s %%" % latitude,"longitude=%s %% "% longitude,"city=
%s "%city, "to IBM watson" )
        success=deviceCli.publishEvent("project", "json", data, qos=0,
on_publish=myOnpublishCallback)
        if not success:
                print("not connection last from sensor to IBM IOT")
        time.sleep(10)
# Disconnect the device and application from the cloud
deviceCli.disconnect()
```


IBM Watson IoT Platform
(1) WhatsApp
pb6xw8.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
613519106054@smartinternz.com
ID: pb6xw8
Browse
Action
Device Types
Interfaces
Add Device
1234
Connected
efgh
Device
4 Nov 2022 11:10
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
project
{"lon":77.56557344301785,"lat":12.89220568...
json
a few seconds ago
project
{"lon":77.54930192538751,"lat":13.03432284...
json
a few seconds ago
project
{"lon":77.49306098410156,"lat":13.03826142...
json
a few seconds ago
project
{"lon":77.55225751314524,"lat":12.96307020...
json
a few seconds ago
project
{"lon":77.5597748078004,"lat":12.994481173...
json
a few seconds ago
Items per page 50
1–2 of 2 items
1 of 1 page
1


Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:59:51) [MSC v.1914 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======= RESTART: C:/Users/91934/Documents/PYTHON/sprint 1 test code.py =======
2022-11-10 12:40:06,957 ibmiotf.device.Client INFO Connected successfully: d:pb6xw8:efgh:1234
Bengaluru
latitude=12.900945797390394 % longitude=77.66004667781978 % city= Bengaluru to IBM watson
Bengaluru
latitude=12.994481173745168 % longitude=77.5597748078004 % city= Bengaluru to IBM watson
Bengaluru
latitude=12.963070209575552 % longitude=77.55225751314524 % city= Bengaluru to IBM watson
Bengaluru
latitude=13.038261422701842 % longitude=77.49306098410156 % city= Bengaluru to IBM watson
Bengaluru
latitude=13.03432284938403 % longitude=77.54930192538751 % city= Bengaluru to IBM watson
Bengaluru
latitude=12.892205683390987 % longitude=77.56557344301785 % city= Bengaluru to IBM watson
Bengaluru
latitude=12.997251742256354 % longitude=77.5596196464676 % city= Bengaluru to IBM watson
Add Device
1 of 1 page
1