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-3

IBM Cloud service

- Python code for sending location(latitude,longitude)along with the bin status
- Sending the data to the IBM watson

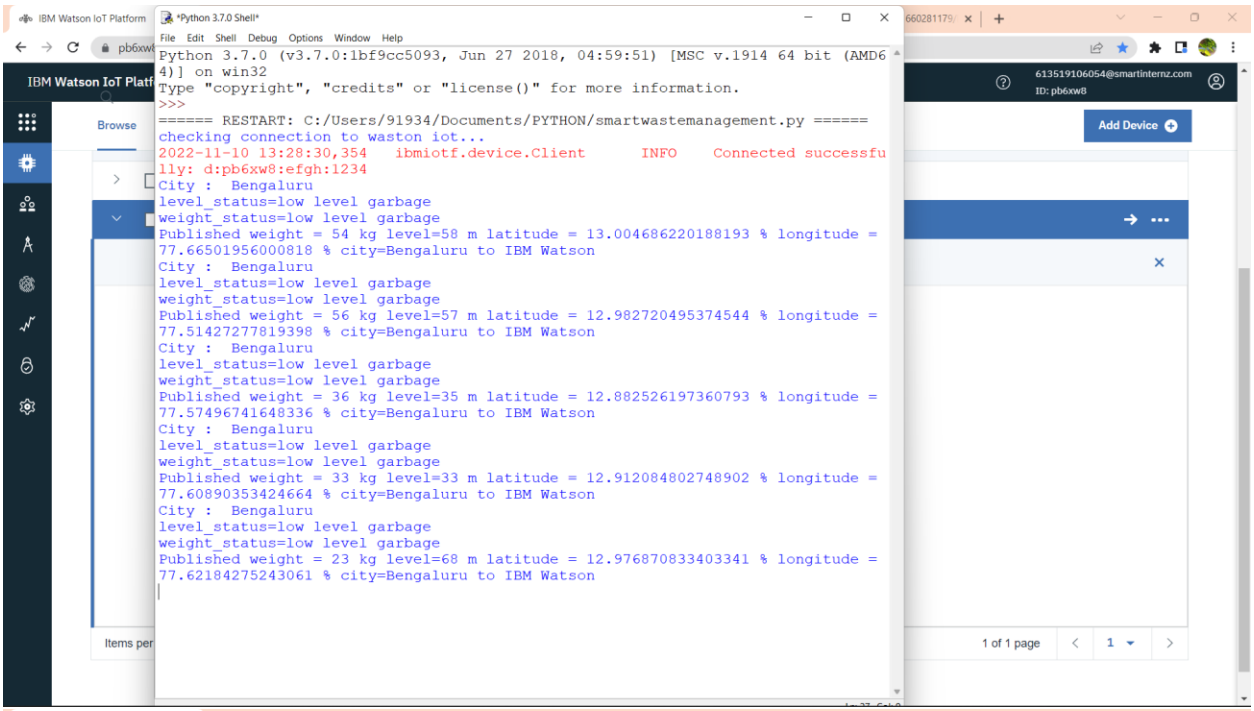
Python code test code:

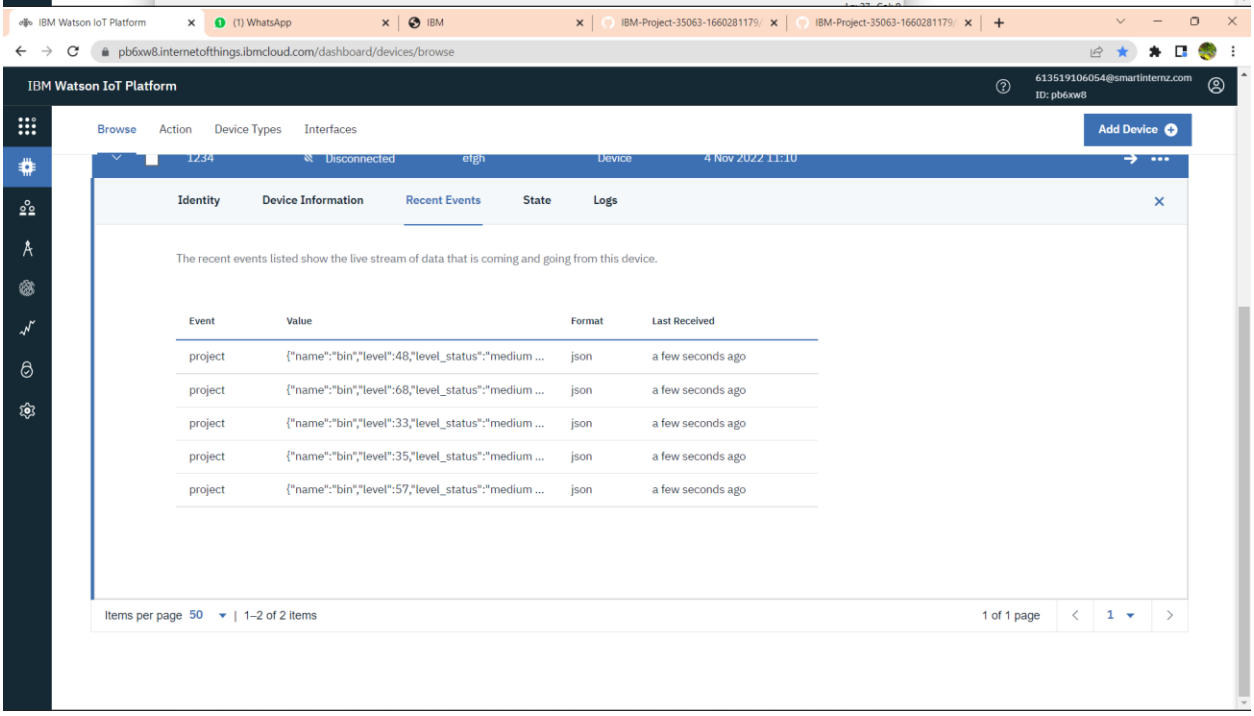
```
import time

import sys

import ibmiotf.application

import ibmiotf.device

import random

from geopy.geocoders import Nominatim


# initialize Nominatim API

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
print("checking connection to waston iot...")
deviceCli.connect()
time.sleep(1)

while True:
    name='bin'
    level=random.randint(1,100)
    weight=random.randint(1,100)
    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 : ', str(city))

#STATUS OF GARBAGE CAN
if(level<30):
    level_status="low level"
    print("level_status=low level garbage")
elif(level>30)and(level<80):
    level_status="medium level garbage"
    print("level_status=low level garbage")
else:
    level_status="high level garbage"
    print("level_status=high level garbage")
if (weight<30):
    weight_status="low level"
    print("weight_status=low level garbage")
elif(weight>30)and(weight<80):
    weight_status="medium level garbage"
    print("weight_status=low level garbage")

else:
    weight_status="high level garbage"
    print("weight_status=high level garbage")
```

```
  data = { 'name' : name,'level' : level,'level_status':level_status,'weight':
weight,'weight_status':weight_status, 'lat': Latitude,'lon':Longitude,'city':str(city)}
#print data

 def myOnPublishCallback():

        print ("Published weight = %s kg" % weight,"level=%s m" %level, "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 lost from sensor to ibm iot")

    time.sleep(10)

# Disconnect the device and application from the cloud

deviceCli.disconnect()
```


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/smartwastemanagement.py ======
checking connection to waston iot...
2022-11-10 13:28:30,354 ibmiotf.device.Client INFO Connected successfully: d:pb6xw8:efgh:1234
City : Bengaluru
level_status=low level garbage
weight_status=low level garbage
Published weight = 54 kg level=58 m latitude = 13.004686220188193 % longitude = 77.66501956000818 % city=Bengaluru to IBM Watson
City : Bengaluru
level_status=low level garbage
weight_status=low level garbage
Published weight = 56 kg level=57 m latitude = 12.982720495374544 % longitude = 77.51427277819398 % city=Bengaluru to IBM Watson
City : Bengaluru
level_status=low level garbage
weight_status=low level garbage
Published weight = 36 kg level=35 m latitude = 12.882526197360793 % longitude = 77.57496741648336 % city=Bengaluru to IBM Watson
City : Bengaluru
level_status=low level garbage
weight_status=low level garbage
Published weight = 33 kg level=33 m latitude = 12.912084802748902 % longitude = 77.60890353424664 % city=Bengaluru to IBM Watson
City : Bengaluru
level_status=low level garbage
weight_status=low level garbage
Published weight = 23 kg level=68 m latitude = 12.976870833403341 % longitude = 77.62184275243061 % city=Bengaluru to IBM Watson
IBM Watson IoT Platform
Browse
Add Device
Items per
1 of 1 page


IBM Watson IoT Platform
pb6xw8.internetofthings.ibmcloud.com/dashboard/devices/browse
613519106054@smartinternz.com
ID: pb6xw8
Browse
Action
Device Types
Interfaces
Add Device
1234
Disconnected
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 {"name":"bin","level":48,"level_status":"medium ... json a few seconds ago
project {"name":"bin","level":68,"level_status":"medium ... json a few seconds ago
project {"name":"bin","level":33,"level_status":"medium ... json a few seconds ago
project {"name":"bin","level":35,"level_status":"medium ... json a few seconds ago
project {"name":"bin","level":57,"level_status":"medium ... json a few seconds ago
Items per page 50
1–2 of 2 items
1 of 1 page