DEVELOPED PYTHON SCRIPT

Date	13 November 2022
Team ID	PNT2022TMID15126
Project Name	Smart Waste Management System for Metropolitan Cities.

Python code:

```
*Smartbin.py - C:\Users\sasik\AppData\Local\Programs\Python\Python39\Smartbin.py (3.9.8)*
File  Edit  Format  Run  Options  Window  Help

#Project: Smart Waste Management System for Metropolitan cities
#Team ID: PNT2022TMID15126

#Installing libraries
import wiotp.sdk.device
import time
import random
import requests
import math

#Configuration details for connecting python script to IBM Watson IOTPlatform
myConfig = {
"identity": {
"orgId": "2w9m6v",
"typeId": "Smart_bin-01.",
"deviceId":"123"
},
"auth": {
"token": "dF)TgLdnFLcKCZ1wk0"
} }

def myCommandCallback(cmd):
 print("Message received from IBM IoT Platform: %s" % cmd.data['command'])
 m=cmd.data['command']
client = wiotp.sdk.device.DeviceClient(config=myConfig,logHandlers=None)
client.connect()

while True:
 res = requests.get('https://ipinfo.io/')
 data = res.json()
 loc = data['loc'].split(',')
 theta = random.uniform(0,2*math.pi)
 area = (0.05**2)*math.pi
 radius = math.sqrt(random.uniform(0,area/math.pi))
 latitude,longitude = [float(loc[0])+radius*math.cos(theta), float(loc[1])+radius*math.sin(theta)]
 binlevel=random.randint(10,100)
 binweight = random.randint(50,1500)
```

```
if binweight>=1000 and binlevel>80:
    myData={'latitude':latitude, 'longitude':longitude,'binlevel':binlevel,'binweight':binweight}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0,onPublish=None)
    ##print("Published data Successfully: %s", myData)
    print("BIN IS FULL..TIME TO EMPTY IT!!!!\n",myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
#break

else :
    print("BIN IS IN NORMAL LEVEL...")
    time.sleep(2)
#Disconnect the client connection
client.disconnect()
```

Output:

IDLE Shell 3.9.8

File Edit Shell Debug Options Window Help

{'latitude': 13.680506299432086, 'longitude': 79.44130469363508, 'binlevel': 100, 'binweight': 1122}
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS FULL..TIME TO EMPTY IT!!!!
{'latitude': 13.660419704548811, 'longitude': 79.38050213927704, 'binlevel': 84, 'binweight': 1364}
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...
BIN IS IN NORMAL LEVEL...