

Develop The Python Script

Team ID	PNT2022TMID14871
Project Name	Smart Waste Management System For Metropolitan Cities

TASK:

Develop a python code for publishing the location (latitude and longitude) data along with bin values to the IBM IoT Platform.

PYTHON CODE:

```
Binlocation.py - C:\Python\Python37\Binlocation.py (3.7.4)
File Edit Format Run Options Window Help

import wiotp.sdk.device
import time
import random
import requests
import urllib.parse
address= ['Kodambakkam', 'T.nagar', 'West mambalam', 'vadapalani', 'ekkattuthangal']
myConfig = {
    "identity": {
        "orgId": "dluuhi",
        "typeId": "SWMS",
        "deviceId": "6032"
    },
    "auth": {
        "token": "311519106032"
    }
}
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()

#Location=input("enter location: ")
#while(Location == address0):
for x in address:
    url = 'https://nominatim.openstreetmap.org/search/' + urllib.parse.quote(x) + '?format=json'
    response = requests.get(url).json()
    a = response[1]["lat"]
    b = response[1]["lon"]
    bin_stat = random.randint(0,100)
    In_percent = str(bin_stat)+ "%"
    myData={'Latitude':a, 'Longitude':b,"Bin Status":In_percent}
    client.publishEvent(eventId="status", msgFormat="json", data=myData, qos=0, onPublish=None)
    print("Published data Successfully: |", myData)
    client.commandCallback = myCommandCallback
    time.sleep(2)
client.disconnect()
```

OUTPUT:

```
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
===== RESTART: C:\Python\Python37\Bin\location.py =====
2022-11-11 15:05:56,492 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:dluuh:SWMS:6032
Published data Successfully: {'Latitude': '13.0517176', 'Longitude': '80.2300054', 'Bin Status': '13%'}
Published data Successfully: {'Latitude': '13.03969', 'Longitude': '80.23565', 'Bin Status': '18%'}
Published data Successfully: {'Latitude': '13.038996', 'Longitude': '80.223169', 'Bin Status': '87%'}
Published data Successfully: {'Latitude': '13.0495316', 'Longitude': '80.211027', 'Bin Status': '66%'}
Published data Successfully: {'Latitude': '13.0169222', 'Longitude': '80.2054236', 'Bin Status': '41%'}
2022-11-11 15:06:11,326 wiotp.sdk.device.client.DeviceClient INFO Disconnected from the IBM Watson IoT Platform
2022-11-11 15:06:11,326 wiotp.sdk.device.client.DeviceClient INFO Closed connection to the IBM Watson IoT Platform
>>> |
```

IBM WATSON CLOUD PLATFORM:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various functions. The main content area shows a list of devices, with the device '6032' selected. Below the device list, a 'Recent Events' tab is active, displaying a table of events. The table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are status updates with JSON-formatted location and bin status data. At the bottom of the interface, it indicates '0 Simulations running'.

Event	Value	Format	Last Received
status	{"Latitude": "13.0169222", "Longitude": "80.2054...", "Bin Status": "41%"}	json	9 minutes ago
status	{"Latitude": "13.0495316", "Longitude": "80.2110...", "Bin Status": "66%"}	json	9 minutes ago
status	{"Latitude": "13.038996", "Longitude": "80.22316...", "Bin Status": "87%"}	json	9 minutes ago
status	{"Latitude": "13.03969", "Longitude": "80.23565", "Bin Status": "18%"}	json	9 minutes ago
status	{"Latitude": "13.0517176", "Longitude": "80.2300...", "Bin Status": "13%"}	json	9 minutes ago

Event Payload

Event Name

status

Time Received

Nov 11, 2022 3:06 PM

1

{

2

"Latitude": "13.0169222",

3

"Longitude": "80.2054236",

4

"Bin Status": "418"

5

}