

Develop The Python Script

Team ID	PNT2022TMID22857
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 various icons for navigation. The main content area shows a list of devices, with the device '6032' selected. The device details panel for '6032' is open, showing its identity, device information, recent events, state, and logs. The 'Recent Events' tab is active, displaying a table of events with columns for Event, Value, Format, and Last Received. The events listed show a stream of data points, including latitude, longitude, and bin status, all received within the last 9 minutes. 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

}