

# FAQ for Singapore Open Data & API access

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# Outline

- **This FAQ endeavours to provide students**
  - An overview of the available open data resources they can tap on for potential geospatial data analytics projects
  - A basic introduction of API and illustrations on how to perform various APIs to different data portals

# Singapore's Open data initiatives

## 1. Where to find them?



- Data sharing is one of the priority areas for Singapore's Smart Nation initiative
- [Data.gov.sg](https://data.gov.sg) – launched in 2011, serves as the primary portal to access various categories of data related to Singapore
- Offers datasets from 70 different government agencies

# Singapore's Open data initiatives

## 1. Where to find them?

### Key features:

- Dashboard
  - Easy to navigate and search for data from different categories/agencies
- Preview and share options
  - Allows users to preview contents of datasets without downloading
- Blog
  - <https://blog.data.gov.sg>
  - Contains examples of data applications and visualisations
- High quality data
  - Standard formats for improving documentation
- Developer's portal
  - For access of real-time open data through APIs
  - 14 real-time APIs are currently available
  - Merged with main site for greater convenience in accessing various APIs

# Singapore's Open data initiatives

## 1. Where to find them?

### LTA DataMall

- <https://www.mytransport.sg/content/mytransport/home/dataMall.html>
- Contains a variety of transport-related datasets and APIs
- Both static and real-time dynamic data available
- Offers access to certain traffic data not easily accessible through data.gov.sg



Static Datasets

Search [input] [magnifying glass icon]

Download All Static Datasets (ZIP, 83 MB)

125 datasets found

Dataset Name	Description	Last Update	Frequency	File Size
Annual Age Distribution of Buses	All buses (excluding road tax exempted buses) registered in Singapore.	-	Yearly	233 kB, 33 kB, 2 kB
Annual Age Distribution of Cars	All cars (excluding road tax exempted cars) registered in Singapore.	-	Yearly	254 kB, 27 kB, 3 kB
Annual Age Distribution of Goods Vehicles	All goods vehicles (excluding road tax exempted goods vehicles) registered in Singapore.	-	Yearly	234 kB, 33 kB, 2 kB
Annual Age Distribution of Motorcycles	All motorcycles (excluding road tax exempted motorcycles) registered in Singapore.	-	Yearly	254 kB, 33 kB, 2 kB

Left sidebar menu: Geospatial, Whole Island, Planned Road Openings, Facts & Figures, Vehicle Ownership & Transfers, Public Transport, Vehicle Population, Vehicle Registration, Road Infrastructure.

Dynamic Datasets

Search [input] [magnifying glass icon]

26 datasets found

Dataset Name	Description	Last Update	Frequency	File Size
Bicycle Parking	Returns the bicycle parking locations within a radius.	-	Monthly	2 kB, 2 kB
Bus Arrival	Returns real-time Bus Arrival information for Bus Services at a queried Bus Stop, including: Estimated Time of Arrival (ETA), Estimated Location, Load info.	-	Real-Time	2 kB, 2 kB

Buttons: Request for API Access, API Documentation (PDF, 1.2MB)

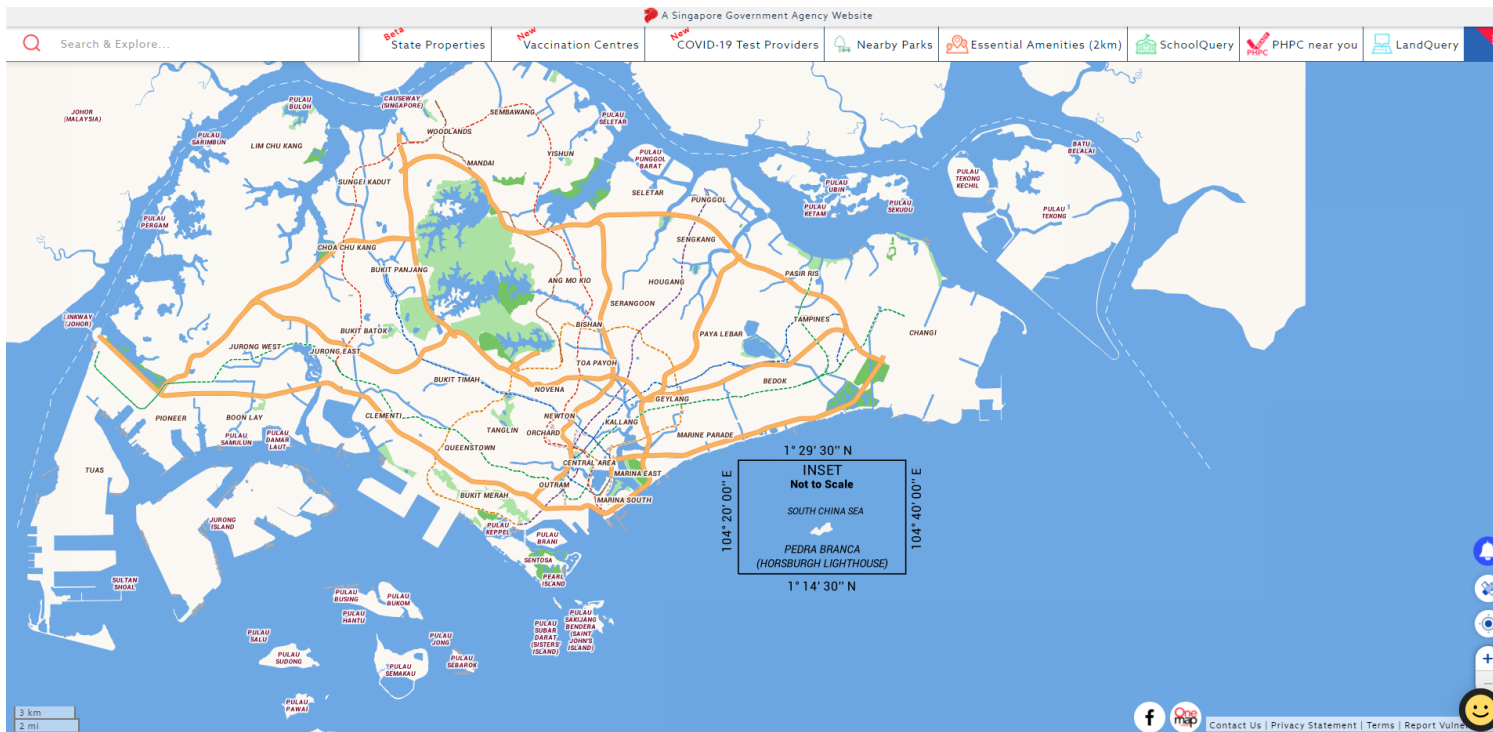
Left sidebar menu: Public Transport, Traffic, Active Mobility, Geospatial.

# Singapore's Open data initiatives

## 1. Where to find them?

### OneMap

- <https://www.onemap.sg/>
- Integrated geospatial data sharing platform where government agencies share location-based services and information.
- OneMap APIs allow users to embed an interactive Map on websites



# Singapore's Open data initiatives

## 1. Where to find them?

### URA SPACE



- <https://www.ura.gov.sg/maps/#>
- An online geospatial map that consolidates detailed land use information
- Access information relating to the master plan, urban design guidelines, private property, car park locations and availability, private residential property transactions, conservation areas and so on

#### WELCOME TO URA SPACE

URA SPACE is a centralised integrated map portal developed by the Urban Redevelopment Authority of Singapore (URA) to deliver location-based services and information. It comprises a variety of mapping services and data from the following par... [Read More](#)

Not sure where to start? [Start a Tour >](#)

#### Popular map services

Access to our popular map services below.

[Go to map >](#)



Explore Development Site



Find Master Plan Zoning



Download Planning Decisions



Check Control Plans



Buy Season Parking



View Government Land Sales Site



Check Allowable Use for Shophouses & Selected Commercial Properties



View Conservation Areas and Buildings



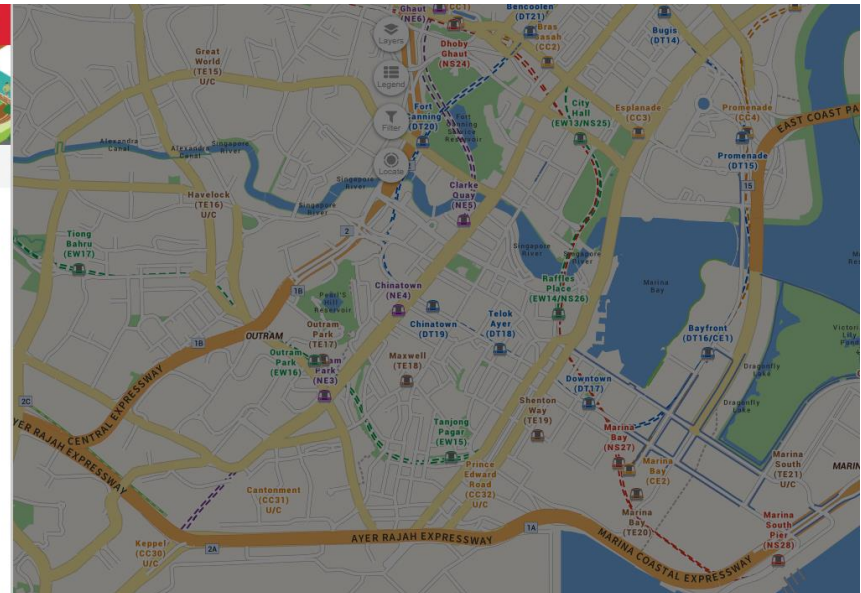
Check Development Charge Rates



View Private Residential Properties

If you are interested in our map data API, click [View Data API >](#).

By proceeding, you agree to our [Terms of Use](#) and [Privacy statement](#).



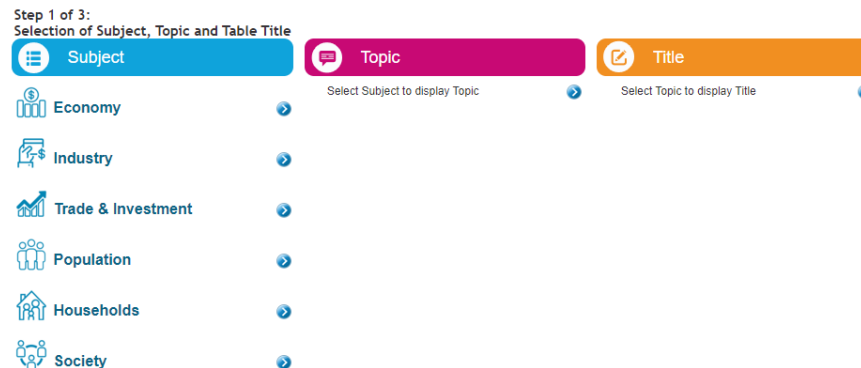
# Singapore's Open data initiatives

## 1. Where to find them?

### SingStat & SingStat Table Builder



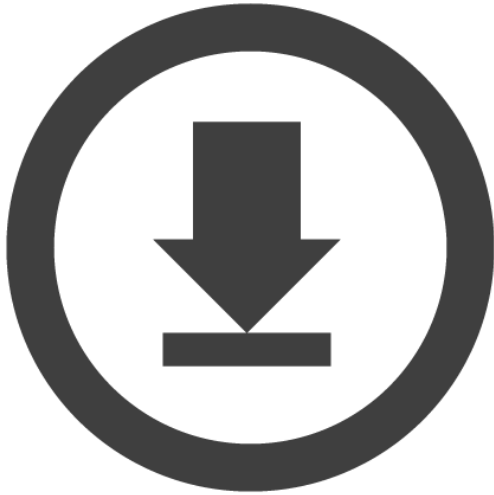
- <https://www.singstat.gov.sg/statistics>
- <https://www.tablebuilder.singstat.gov.sg/publicfacing/mainMenu.action>
- Latest statistical findings and publications on key official statistics of Singapore
- Data formats include infographics, charts, storyboards, excel and so on
- The SingStat Table Builder facilitates access to 2,000 data tables from 70 public sector agencies
- Users can build customised tables and graphs and export them freely





# Singapore's Open data initiatives

## 2. How to get them?



### Direct download

- Many datasets should have this option



### Application Programming Interface

- A kind of messenger that delivers your request to the provider and respond back with your request to get something

# Singapore's Open data initiatives

## 2. How to get them?

### Some methods to call an API:

1. Postman

2. Scripting language

### What is Postman?

Postman is an API platform for building and using APIs. Postman simplifies each step of the API lifecycle and streamlines collaboration so you can create better APIs —faster.



POSTMAN



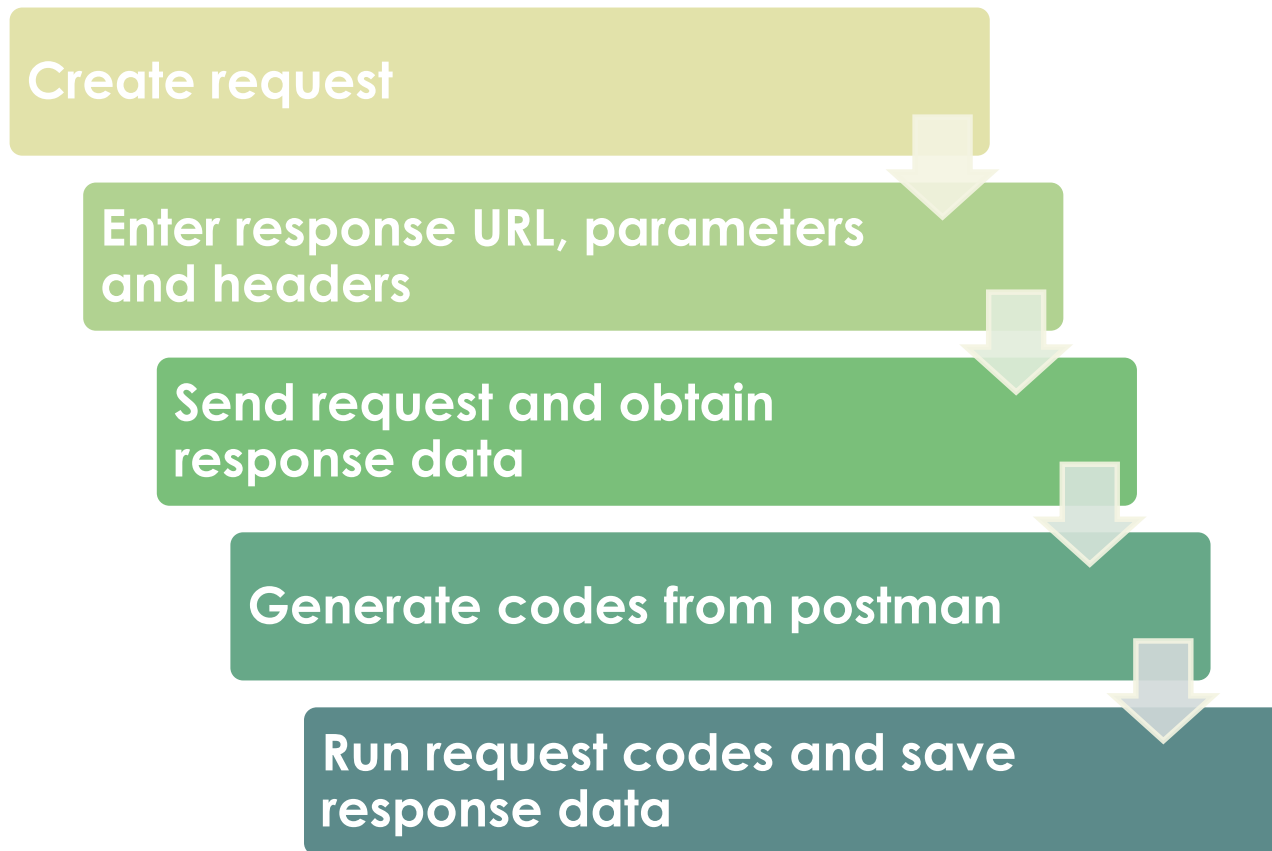
Download here:

<https://www.getpostman.com/>

# Singapore's Open data initiatives

## 2. How to get them?

### Sample workflow - Postman



# Singapore's Open data initiatives

## 2. How to get them?

**Useful API documentations – Read them to understand the structures of calling an API to specific data portals**



<https://developers.data.gov.sg/data-gov-sg-apis/apis>



<https://datamall.lta.gov.sg/content/datamall/en.html>



<https://docs.onemap.sg/>

### **URA SPACE**

<https://www.ura.gov.sg/maps/api/>

- Except data.gov.sg, other portals require a security token/AccountKey for authentication purposes
- you will need to register an account with the agencies and request for a token before proceeding to perform API calls

# Singapore's Open data initiatives

## 2. How to get them?



### API Example 1 – Taxi Availability

Data.gov.sg Topics Blog Developers Data Request

## Taxi Availability

FILES IN THIS DATASET

Taxi Availability

Views:  

API View

**GET** <https://api.data.gov.sg/v1/transport/taxi-availability> Get locations of available taxis in Singapore

- Retrieved every 30 seconds from LTA's Datamall.
- The response is a valid **GeoJSON** which you could insert into a mapping tool like Leaflet
- As LTA does not provide any kind of metadata, the timestamp provided in the response is the scrape time
- We recommend that this endpoint be called every minute
- Use the `date_time` parameter to retrieve the latest available data at that moment in time

Data source: <https://data.gov.sg/dataset/taxi-availability>

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 1 (Postman) – Taxi Availability

GET [https://api.data.gov.sg/v1/transport/taxi-availability?date\\_time=2022-03-10T08:00:00](https://api.data.gov.sg/v1/transport/taxi-availability?date_time=2022-03-10T08:00:00) Send

Params  Authorization Headers (6) Body Pre-request Script Tests Settings

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input checked="" type="checkbox"/> date_time	2022-03-10T08:00:00			
Key	Value	Description		

GET [https://api.data.gov.sg/v1/transport/taxi-availability?date\\_time=2022-03-10T08:00:00](https://api.data.gov.sg/v1/transport/taxi-availability?date_time=2022-03-10T08:00:00) Send

Params  Authorization Headers (6) Body Pre-request Script Tests Settings

Headers  5 hidden

KEY	VALUE	DESCRIPTION	...	Bulk Edit	Presets
<input checked="" type="checkbox"/> Accept	application/json				
Key	Value	Description			

Key in resource URL, parameters and headers based on documentation and press send

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 1 (Postman) – Taxi Availability

```
Body Cookies Headers (9) Test Results
Pretty Raw Preview Visualize JSON
1
2 "type": "FeatureCollection",
3 "crs": {
4   "type": "link",
5   "properties": {
6     "href": "http://spatialreference.org/ref/epsg/4326/ogcwkt/",
7     "type": "ogcwkt"
8   }
9 },
10 "features": [
11   {
12     "type": "Feature",
13     "geometry": {
14       "type": "MultiPoint",
15       "coordinates": [
16         [
17           103.62214,
18           1.27527
19         ],
20         [
21           103.62386,
22           1.29
23         ],

```

You will get the response data like this

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 1 (Python) – Taxi Availability

</> Code snippet



Python - Requests



```
1 import requests
2
3 url = "https://api.data.gov.sg/v1/transport/
    taxi-availability?
    date_time=2022-03-10T08:00:00"
4
5 payload={}
6 headers = {
7     'Accept': 'application/json'
8 }
9
10 response = requests.request("GET", url,
    headers=headers, data=payload)
11
12 print(response.text)
```

Generate codes from postman



# Singapore's Open data initiatives

## 2. How to get them?

### API Example 1 (Python) – Taxi Availability

```
import json
import requests

url = "https://api.data.gov.sg/v1/transport/taxi-availability?date_time=2022-03-10T08:00:00"

payload={}
headers = {
    'Accept': 'application/json'
}

response = requests.request("GET", url, headers=headers, data=payload)

print(response.text)
result = json.loads (response.text)

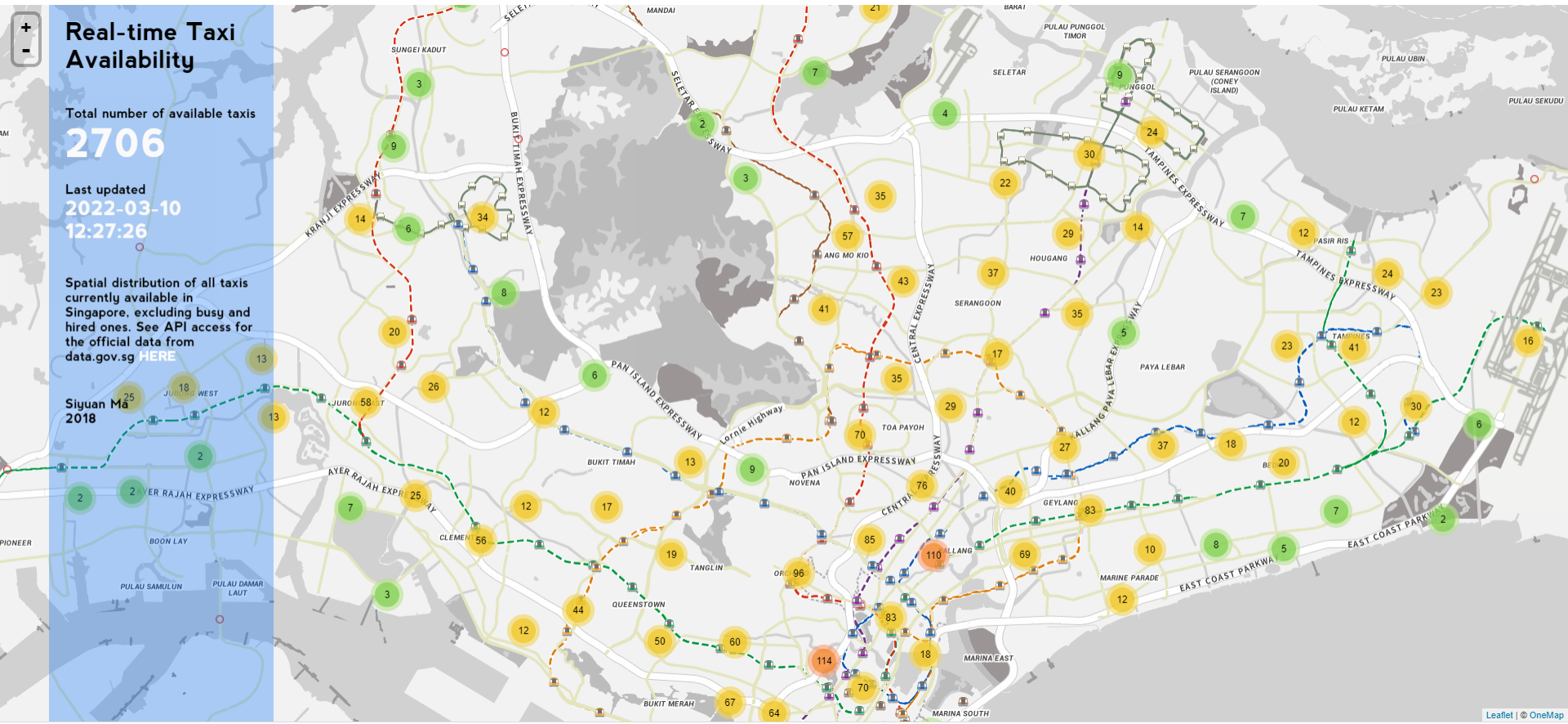
print(response.text)
with open ("Taxi-availability.json", "w") as outfile:
    json.dump(result, outfile, sort_keys=True, indent=4, ensure_ascii=False)
```

Customize the codes to download the returned result as a stand-alone json file

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 1 – Taxi Availability



You can then make interactive maps, conduct spatial analysis, build creative applications or so on using the data 18

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 2 – Passenger Volume by Bus Stops (OneMap)

A Singapore Government Agency Website

Land Transport  
**DATA MALL**

About Us Static Datasets Dynamic Datasets App Zone

DataMall's new web address is now [datamall.lta.gov.sg](https://datamall.lta.gov.sg). Remember to update your [bookmarks \(PDF, 1.9MB\)](#) with our new address!

Land Transport • DATA MALL

LTA publishes a wide variety of land transport-related datasets (static and dynamic / real-time) on DataMall for enterprises, third-party developers, researchers, and other members of the public to promote collaboration and co-creation of innovative and inclusive transport solutions.

Use of LTA's datasets and APIs on DataMall constitutes acceptance of the [Singapore Open Data Licence](#) and the [API Terms of Service](#).

Watch on YouTube

The screenshot shows the DataMall website interface. It features a navigation menu with 'About Us', 'Static Datasets', 'Dynamic Datasets', and 'App Zone'. A yellow banner at the top right contains a search icon and a notification about the website's new address. The main content area has a blue background with a city skyline illustration and a video player showing a street scene with a bus, taxis, and a person on a scooter. A 'Watch on YouTube' button is visible below the video player.



#### Dynamic Data

[View All APIs](#)

Dynamic datasets are updated live, and served out via APIs which are accessible with an Account Key issued only to registered DataMall subscribers. To gain instant access, click on the request link below.

[Request for API Access](#)

[API Documentation \(PDF, 1.2MB\)](#)

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 2 (Postman) – Passenger Volume by Bus Stop (LTA DataMall)

GET <http://datamall2.mytransport.sg/Itaodataservice/PV/Bus?Date=202201> Send

Params Authorization Headers (7) Body Pre-request Script Tests Settings

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input checked="" type="checkbox"/> Date	202201			
Key	Value	Description		

Key in resource URL, parameters and headers based on documentation and press send (For this example we query for Passenger Volume by Bus Stop in Singapore)

GET <http://datamall2.mytransport.sg/Itaodataservice/PV/Bus?Date=202201> Send

Params Authorization Headers (7) Body Pre-request Script Tests Settings

Headers 5 hidden

KEY	VALUE	DESCRIPTION	...	Bulk Edit	Presets
<input checked="" type="checkbox"/> AccountKey					
<input checked="" type="checkbox"/> Accept	application/json				
Key	Value	Description			

You will get the response data in JSON or other desired format <sup>20</sup> that you can plot onto GIS software and so on





# Singapore's Open data initiatives

## 2. How to get them?

### API Example 2 (Postman) – Passenger Volume by Bus Stop (LTA DataMall)

```
import json
import requests

url = "http://datamall2.mytransport.sg/ltaodataservice/PV/Bus?Date=202201"

payload={}
headers = {
    'AccountKey': '+pHzbo78QKW4gYQYFMUqYg==',
    'Accept': 'application/json'
}

response = requests.request("GET", url, headers=headers, data=payload)
result = json.loads (response.text)

print(response.text)
with open ("Passenger_Volume.json", "w") as outfile:
    json.dump(result, outfile, sort_keys=True, indent=4, ensure_ascii=False)
```

Customize the codes to download the returned result as a stand-alone json file





# Singapore's Open data initiatives

## 2. How to get them?

### API Example 3 (Postman) – Retrieve themes (OneMap)

GET `https://developers.onemap.sg/privateapi/themesvc/retrieveTheme?queryName=kindergartens&token=` Send

Params Authorization Headers (7) Body Pre-request Script Tests Settings Cookies

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input checked="" type="checkbox"/> queryName	kindergartens			
<input checked="" type="checkbox"/> token				
Key	Value	Description		

GET `https://developers.onemap.sg/privateapi/themesvc/retrieveTheme?queryName=kindergartens&token=eyJ0eXAI0iJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJz` Send

Params Authorization Headers (7) Body Pre-request Script Tests Settings Cookies

Headers 6 hidden

KEY	VALUE	DESCRIPTION	...	Bulk Edit	Presets
<input checked="" type="checkbox"/> Accept	application/json				
Key	Value	Description			

Key in resource URL, parameters and headers based on documentation and press send (For this example we query for geospatial information of all kindergartens in Singapore)

# Singapore's Open data initiatives

## 2. How to get them?

### API Example 3 (Postman) – Retrieve themes (OneMap)

```
Pretty Raw Preview Visualize JSON ↕
1
2 "SrchResults": [
3   {
4     "FeatCount": 448,
5     "Theme_Name": "Kindergartens",
6     "Category": "Education",
7     "Owner": "EARLY CHILDHOOD DEVELOPMENT AGENCY",
8     "DateTime": {
9       "date": "2021-12-02 06:34:56.000000",
10      "timezone_type": 1,
11      "timezone": "+00:00"
12    }
13  },
14  {
15    "NAME": "PCF Sparkletots Preschool @ Cheng San-Seletar Blk 435 (KN)",
16    "DESCRIPTION": "Kindergartens",
17    "ADDRESSPOSTALCODE": "560435",
18    "ADDRESSSTREETNAME": "435 Ang Mo Kio Avenue 10 #01-1393 S(560435)",
19    "LatLng": "1.36770367492704,103.854214320416",
20    "ICON_NAME": "school.gif"
21  },
22  {
23    "NAME": "PCF Sparkletots Preschool @ Cheng San-Seletar Blk 533 (KN)",
24    "DESCRIPTION": "Kindergartens",
25    "ADDRESSPOSTALCODE": "560533",
26    "ADDRESSSTREETNAME": "533 Ang Mo Kio Avenue 5 #01-4100 S(560533)",
27    "LatLng": "1.37416922383175,103.85300192794",
28    "ICON_NAME": "school.gif"
29  },
30 ]
```

You will get the response data in JSON or other desired format that you can plot onto GIS software and so on



# Singapore's Open data initiatives

## 2. How to get them?

### API Example 3 (Python) – Retrieve themes (OneMap)

```
import json
import requests

url = "https://developers.onemap.sg/privateapi/themesvc/retrieveTheme?queryName=kindergartens&token=c[REDACTED]"

payload={}
headers = {
    'Accept': 'application/json',
    'Cookie': 'Domain=developers.onemap.sg; _toffuid=rB8JqGIpjQ2ZIQcdBGyoAg==; onemap2=CgAACmIpjQ0Y4SIYBqiaAg=='
}

response = requests.request("GET", url, headers=headers, data=payload)

print(response.text)
result = json.loads (response.text)

print(response.text)
with open ("OneMap_Kindergartens.json", "w") as outfile:
    json.dump(result, outfile, sort_keys=True, indent=4, ensure_ascii=False)
```

Customize the codes to download the returned result as a stand-alone json file