1. External service we used in the Project:
Using API to Get Open Data from DATA.GOV.HK in Python

2. Link of materials that we learn how to use this services:

2.1) Data Source and API from DATA.GOV.HK
- Latest situation of reported cases of COVID-19 in Hong Kong:
https://data.gov.hk/en-data/dataset/hk-dh-chpsebcddr-novel-infectious-agent/resource/3fca7904-5b0e-4ca1-85a4-3e35734ffc59

- List of buildings of the home confinees under mandatory home quarantine according to Cap. 599C of Hong Kong Laws
https://data.gov.hk/en-data/dataset/hk-dh-chpsebcddr-novel-infectious-agent/resource/1958c718-cf0e-4da0-9f24-91025a58cd11

2.2) Tutorial on handling JSON Data in Python
- Python Basics:
https://pythonbasics.org/json/
- Data science learner:
https://www.datasciencelearner.com/how-to-get-json-data-from-url-in-python/

3. Sample code from the materials:

(Python Basics) How to parse JSON

```python
import json
import urllib.request

# download raw json object
url = "https://api.gdax.com/products/BTC-EUR/ticker"
data = urllib.request.urlopen(url).read().decode()

# parse json object
obj = json.loads(data)

# output some object attributes
print('$ ' + obj['price'])
print('$ ' + obj['volume'])
```
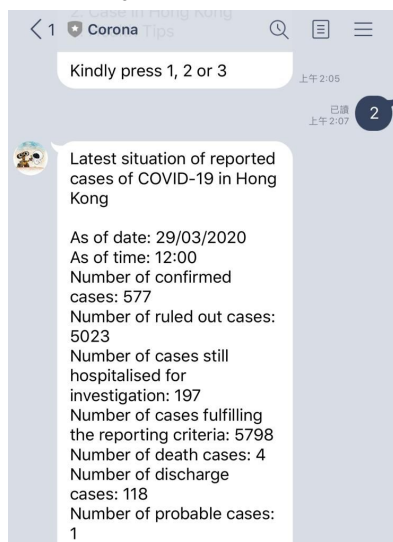
(Data science learner) How to read JSON data from the URL

```python
def getResponse(url):
    operUrl = urllib.request.urlopen(url)
    if(operUrl.getcode()==200):
        data = operUrl.read()
    else:
        print("Error receiving data", operUrl.getcode())
    return data
```

4. How we use that service in your bot:

As COVID-19 has spread rapidly in Hong Kong, the statistics about the virus are changed frequently. Providing the latest information to the public, the updated statistics are important to our chatbot. Thus, we will use API to get the latest data from the Government Open Data - "DATA.GOV.HK". We have already applied the external service to our chatbot and predefined some questions about the virus. The following examples will show a situation that the user would like to enquire about the "Latest Reported Case of COVID-19 in Hong Kong" and "Home Quarantine".

Example1: Once a user enters number - "2", the system will be automatically retrieved the latest data from the DATA.GOV.HK through API. As a result, the latest situation of reported cases will be displayed in Line Chatbot.

Example 2: When a user input a location "南生圍", the system will be automatically retrieved the data which the address contain user's input message "南生圍" from the DATA.GOV.HK through API. As a result, the information of the home quarantine in "南生圍"" will be shown and listed to the user with our template in the Line Chatbot.

Example 3: When the API failure, error message - "Server is busy…." will be displayed.

Server is busy, please try again later.....

Could you please tell me what are you looking for?
1. Face Mask information
2. Case in Hong Kong
3. Health Tips

Kindly press 1, 2, 3
Or input building for searching mandatory home quarantine

10:21 PM