

# **Open a Chinese restaurant in North London**

## **1. Introduction**

There is a huge amount of Chinese people currently residing in London. Additionally, numerous Chinese students and tourists come to London every year. Therefore, Chinese restaurants are always popular for both Chinese people and those who are not Chinese but love Chinese food. Since I have been living in (North) London for 7 years, I find that there are not many fine Chinese restaurants in North London. However, the number of local Chinese people and students/tourists in North area is massive. It would be a wonderful idea to open a fine Chinese restaurant in North London.

The stakeholders and audiences are those who are interested in opening a Chinese restaurant in North London so that it could meet the local needs. To clearly define the problem, what location should we choose to open a Chinese restaurant in North London?

The stakeholders and audiences would care about this problem because a suitable location is extremely important for the success of the Chinese restaurant.

## **2. Data**

2.1. Firstly, I will be using the 'List of Areas of London' Data (containing location, borough, postcode, and etc.) which is similar to the datasets used in the previous weeks of this course. And it is available on: [https://en.wikipedia.org/wiki/List\\_of\\_areas\\_of\\_London](https://en.wikipedia.org/wiki/List_of_areas_of_London). It will be scrapped from the Wikipedia page, wrangled, cleaned and then read into a pandas dataframe so that it is a structured format which can be ready to use. For example, the data will be reduced to

North London Areas and only relevant features will be selected for further analysis.

2.2. Secondly, the ‘Geocoder’ package will be used to obtain the latitude and longitude of the locations. Also, the ‘Foursquare API’ will be used to obtain location data which will be helpful for searching and exploring various neighborhoods information such as surrounding venues (especially restaurants) in the North London area.

### 3. Methodology

#### 3.1. Data collection and preparation

##### 3.1.1. Scrape the table from the Wikipedia page

	Location	London borough	Post town	Postcode district	Dial code	OS grid ref
0	Abbey Wood	Bexley, Greenwich [1]	LONDON	SE2	020	TQ465785
1	Acton	Ealing, Hammersmith and Fulham[2]	LONDON	W3, W4	020	TQ205805
2	Addington	Croydon[2]	CROYDON	CR0	020	TQ375645
3	Addiscombe	Croydon[2]	CROYDON	CR0	020	TQ345665
4	Albany Park	Bexley	BEXLEY, SIDCUP	DA5, DA14	020	TQ478728

3.1.2. Wrangle and clean the data: including rename and drop some columns, remove references in the 'Borough' column, spread postcodes to multi rows if there are more than 1 postcodes (keep other column values the same), combine the rows whose 'Location' shares the same postcode, and only consider North London Areas (Postcode starts with N).

	Postcode	Borough	Location
0	N1	Hackney	Hackney
1	N1	Islington	Angel
2	N10	Barnet	Colney Hatch
3	N12	Barnet	Finchley
4	N14	Enfield	Arnos Grove

### 3.2. Get the latitude and longitude of each location

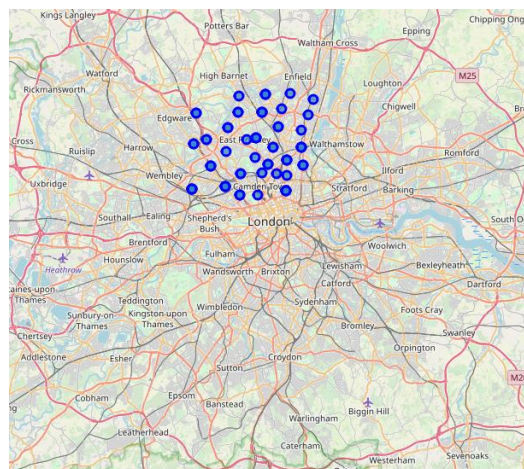
#### 3.2.1. Define a function to obtain latitude and longitude

#### 3.2.2. Obtain the data of latitude and longitude and append them to the dataframe

	Postcode	Borough	Location	Latitude	Longitude
0	N1	Hackney	Hackney	51.53791	-0.09984
1	N1	Islington	Angel	51.53791	-0.09984
2	N10	Barnet	Colney Hatch	51.59107	-0.14852
3	N12	Barnet	Finchley	51.61592	-0.17674
4	N14	Enfield	Arnos Grove	51.63429	-0.13366

### 3.3. Explore the locations in North London

#### 3.3.1. Create a map of London with North London Locations superimposed on top



#### 3.3.2. Explore the single Location Angel in the dataframe and get the top 100 venues

that are in Angel within a radius of 1000 meters

	name	categories	lat	lng
0	69 Colebrooke Row	Cocktail Bar	51.536480	-0.101207
1	Steve Hatt	Fish Market	51.538588	-0.099041
2	The Life Centre Islington	Yoga Studio	51.538056	-0.099171
3	Cass Art	Arts & Crafts Store	51.536379	-0.101013
4	The Bill Murray	Pub	51.536226	-0.098750

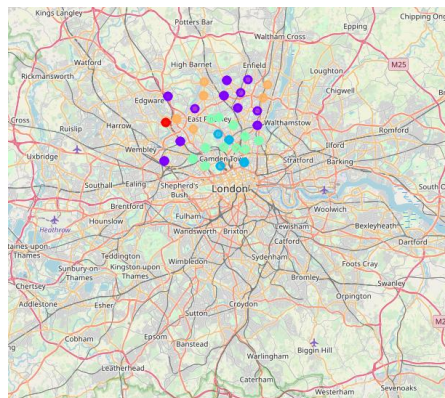
	count
Pub	11
Mediterranean Restaurant	4
Gastropub	4
Burger Joint	4
French Restaurant	4
Bakery	3
Cocktail Bar	3
Boutique	3
Japanese Restaurant	2
Furniture / Home Store	2

### 3.3.3. Explore Locations in North London

	Location	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Angel	Pub	French Restaurant	Mediterranean Restaurant	Burger Joint	Gastropub	Boutique	Cocktail Bar	Bakery	Arts & Crafts Store	Coffee Shop
1	Archway, Upper Holloway	Pub	Coffee Shop	Pizza Place	Italian Restaurant	Hotel	Gastropub	Café	Park	Eastern European Restaurant	Music Venue
2	Arkley	Grocery Store	Discount Store	Train Station	Café	Chinese Restaurant	Pizza Place	Fast Food Restaurant	Bookstore	Salon / Barbershop	Gym / Fitness Center
3	Arnos Grove	Grocery Store	Fast Food Restaurant	Gym / Fitness Center	Coffee Shop	Bus Stop	Pizza Place	Park	Electronics Store	Café	Pub
4	Barnet Gate, The Hale, Mill Hill	Grocery Store	Discount Store	Train Station	Café	Chinese Restaurant	Pizza Place	Fast Food Restaurant	Bookstore	Salon / Barbershop	Gym / Fitness Center

### 3.4. Cluster Locations (using K-Means Clustering, k=5)

	Postcode	Borough	Location	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	N1	Hackney	Hackney	51.53791	-0.09984	2	Pub	French Restaurant	Mediterranean Restaurant	Burger Joint	Gastropub	Boutique	Cocktail Bar	Bakery	Arts & Crafts Store	Coffee Shop
1	N1	Islington	Angel	51.53791	-0.09984	2	Pub	French Restaurant	Mediterranean Restaurant	Burger Joint	Gastropub	Boutique	Cocktail Bar	Bakery	Arts & Crafts Store	Coffee Shop
2	N10	Barnet	Colney Hatch	51.59107	-0.14852	3	Café	Coffee Shop	Pizza Place	Pub	Bakery	English Restaurant	Deli / Bodega	Grocery Store	Gym / Fitness Center	Forest
3	N12	Barnet	Finchley	51.61592	-0.17674	4	Coffee Shop	Supermarket	Café	Indian Restaurant	Turkish Restaurant	Japanese Restaurant	Pub	Gym / Fitness Center	Fast Food Restaurant	Park
4	N14	Enfield	Arnos Grove	51.63429	-0.13366	1	Grocery Store	Fast Food Restaurant	Gym / Fitness Center	Coffee Shop	Bus Stop	Pizza Place	Park	Electronics Store	Café	Pub



### 3.4.1. Examine Each Cluster

## 4. Results

Based on the summary in Methodology Section and the results in the Notebook, some highlights are shown below:

4.1. Chinese restaurant is the top 5 most common venues in these locations: 'Brent Cross, Childs Hill', 'Cricklewood', 'Dollis Hill, Neasden', 'Hackney, Shacklewell, Stamford Hill', 'Stoke Newington, West Hackney'.

4.2. The differences between 5 Clusters are obvious in terms of the most common venues (in the Examine Clusters Section).

4.3. Chinese restaurant is popular in Cluster 2, whereas French, Mediterranean and Italian restaurants are common in Cluster 3

4.4. Cluster 4, compared to the other 4 Clusters, is the only Cluster that does not have many top restaurants. Instead, Café Pub and Grocery Store are more popular.

## 5. Discussion and Conclusion

Since Cluster 4 is the only Cluster that does not have many top restaurants, I would recommend that opening a new Chinese restaurant in Cluster 4 is the most suitable. Furthermore, based on the results in 4.1., Chinese restaurant is the top 5 most common venues in the location of 'Dollis Hill, Neasden'. In addition, the location of 'West Hampstead' in Cluster 4 is the closest to 'Dollis Hill, Neasden'. Therefore, 'West Hampstead' could potentially be a wonderful location for a new Chinese restaurant.