

# Where to open a Chinese restaurant in London?

Coursera Capstone Project

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# Data preparation – Source 1

Data of London boroughs: area size, population, geo-coordinates scrapped from Wikipedia

Borough	Inner	Status	Local authority	Political control	Headquarters	Area (sq mi)	Population (2013 est) <sup>[1]</sup>	Co-ordinates	W:in map
Barking and Dagenham <sup>[note 1]</sup>			Barking and Dagenham London Borough Council	Labour	Town Hall, 1 Town Square	13.93	194,352	<span><span><span><span><span>51°5607′N</span> <span>0°1557′E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.935°N 0.259°E</span><span><span>﻿</span> / <span>51.935; 0.259</span></span></span></span></span>	25
Barnet			Barnet London Borough Council	Conservative	North London Business Park, Oakleigh Road South	33.49	369,088	<span><span><span><span><span>51°5252′N</span> <span>0°1517′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.875°N 0.253°W</span><span><span>﻿</span> / <span>51.875; -0.253</span></span></span></span></span>	31
Bexley			Bexley London Borough Council	Conservative	Civic Offices, 2 Watling Street	23.38	236,687	<span><span><span><span><span>51°4549′N</span> <span>0°1505′E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.758°N 0.251°W</span><span><span>﻿</span> / <span>51.758; -0.251</span></span></span></span></span>	23
Brent			Brent London Borough Council	Labour	Brent Civic Centre, Engineers Way	16.70	317,264	<span><span><span><span><span>51°5588′N</span> <span>0°2817′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.930°N 0.469°W</span><span><span>﻿</span> / <span>51.930; -0.469</span></span></span></span></span>	12
Bromley			Bromley London Borough Council	Conservative	Civic Centre, Stockwell Close	57.97	317,899	<span><span><span><span><span>51°4039′N</span> <span>0°0198′E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.675°N 0.033°E</span><span><span>﻿</span> / <span>51.675; 0.033</span></span></span></span></span>	20
Camden	✓		Camden London Borough Council	Labour	Camden Town Hall, Judd Street	8.40	229,719	<span><span><span><span><span>51°5290′N</span> <span>0°1255′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.881°N 0.209°W</span><span><span>﻿</span> / <span>51.881; -0.209</span></span></span></span></span>	11
Croydon			Croydon London Borough Council	Labour	Bernard Weatherill House, Mint Walk	33.41	372,752	<span><span><span><span><span>51°3714′N</span> <span>0°0977′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.618°N 0.163°W</span><span><span>﻿</span> / <span>51.618; -0.163</span></span></span></span></span>	19
Ealing			Ealing London Borough Council	Labour	Perceval House, 14-16 Uxbridge Road	21.44	342,494	<span><span><span><span><span>51°5130′N</span> <span>0°3089′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.855°N 0.514°W</span><span><span>﻿</span> / <span>51.855; -0.514</span></span></span></span></span>	13
Enfield			Enfield London Borough Council	Labour	Civic Centre, Silver Street	31.74	320,524	<span><span><span><span><span>51°5338′N</span> <span>0°0799′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.891°N 0.133°W</span><span><span>﻿</span> / <span>51.891; -0.133</span></span></span></span></span>	30
Greenwich <sup>[note 2]</sup>	✓ <sup>[note 3]</sup>	Royal	Greenwich London Borough Council	Labour	Woolwich Town Hall, Wellington Street	18.28	264,008	<span><span><span><span><span>51°4892′N</span> <span>0°0648′E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.815°N 0.108°E</span><span><span>﻿</span> / <span>51.815; 0.108</span></span></span></span></span>	22
Hackney	✓		Hackney London Borough Council	Labour	Hackney Town Hall, Mare Street	7.36	257,379	<span><span><span><span><span>51°5450′N</span> <span>0°0553′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.908°N 0.092°W</span><span><span>﻿</span> / <span>51.908; -0.092</span></span></span></span></span>	9
Hammersmith and Fulham <sup>[note 4]</sup>	✓		Hammersmith and Fulham London Borough Council	Labour	Town Hall, King Street	6.33	178,685	<span><span><span><span><span>51°4927′N</span> <span>0°2339′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.821°N 0.391°W</span><span><span>﻿</span> / <span>51.821; -0.391</span></span></span></span></span>	4
Haringey	<sup>[note 3]</sup>		Haringey London Borough Council	Labour	Civic Centre, High Road	11.42	263,386	<span><span><span><span><span>51°6000′N</span> <span>0°1119′W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>51.000°N 0.187°W</span><span><span>﻿</span> / <span>51.000; -0.187</span></span></span></span></span>	29

Table on Wikipedia



Borough	Headquarters	Area (sq mi)	Population (2013 est) [1]	Political control	Latitude	Longitude	Latitude_DMS	Longitude_DMS
Barking and Dagenham <sup>[note 1]</sup>	Town Hall, 1 Town Square	13.93	194,352	Labour	51.5607	0.1557	51°33′39″N 0°09′21″E	51.5607°N 0.1557°E
Barnet	North London Business Park, Oakleigh Road South	33.49	369,088	Conservative	51.6252	-0.1517	51°37′31″N 0°09′06″W	51.6252°N 0.1517°W
Bexley	Civic Offices, 2 Watling Street	23.38	236,687	Conservative	51.4549	0.1505	51°27′18″N 0°09′02″E	51.4549°N 0.1505°E
Brent	Brent Civic Centre, Engineers Way	16.70	317,264	Labour	51.5588	-0.2817	51°33′32″N 0°16′54″W	51.5588°N 0.2817°W

Pandas data frame

# Data preparation – Source 2

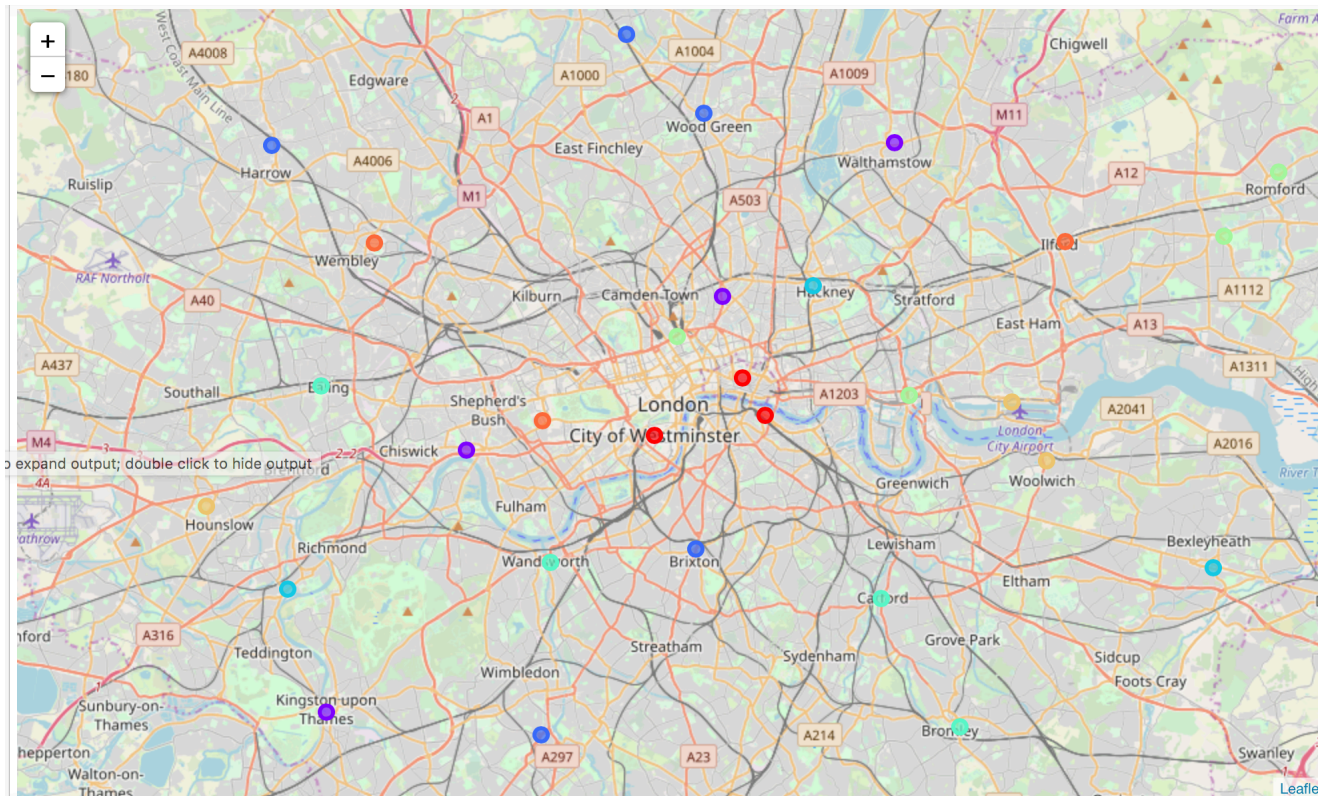
London venue data from Foursquare: venue name, geo-coordinates, venue type

	Borough	Latitude	Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Barking and Dagenham [note 1]	51.5607	0.1557	Central Park	51.559560	0.161981	Park
1	Barking and Dagenham [note 1]	51.5607	0.1557	The Eva Hart (Wetherspoon)	51.570460	0.130342	Pub
2	Barking and Dagenham [note 1]	51.5607	0.1557	The Range	51.575550	0.180254	Furniture / Home Store
3	Barking and Dagenham [note 1]	51.5607	0.1557	Costa Coffee	51.576890	0.179497	Coffee Shop
4	Barking and Dagenham [note 1]	51.5607	0.1557	Harrow Lodge Park	51.555648	0.197926	Park

Sample venue data by borough

# Clustering

*Run K-means to cluster boroughs into 8 clusters*



# Clustering – Results analysis

*Below attributes are desirable for opening a new Chinese restaurant:*

- Significant number of restaurants out of all venues
- Ratio of existing Chinese restaurants out of all restaurants is relatively low
- Large number of pubs
- Large number of hotels
- Relatively fewer gyms
- Densely populated
- Office presence

# Conclusion

*Cluster 0 has the most desirable attributes:*

- Relatively high number of restaurants
- No Chinese restaurants
- Plenty of pubs and hotels
- Fewer gyms

Out of the 3 preferred boroughs in Cluster 0, Southwark is the most preferred because it is more densely populated than the other two boroughs.