According to the characteristics of different regions choose suitable restaurants in London

1.1 Introduction

London is the capital of the United Kingdom. There are different cultures and people from all over the world live in London. At the same time, London also has many tourists. Because London has people from all over the world, specialty restaurants often gather in places where the corresponding ethnic groups live. The analysis is to find out which areas are suitable for opening which restaurants, and give a clear view for inspection.

1.2 Business problem

Restaurant is a very competitive industry, full of individual specialty shops, chain restaurants, local snacks, and fine dining. Various types of restaurants are suitable for the characteristics of different regions. Some places have higher consumption power, and some places Prefer to eat Italian food. In this study, we will solve this problem and give clear suggestions so that people who want to open a restaurant have a good reference index.

We will consider the density of the population, the area where the same type of restaurant is concentrated, and the diversification of the regional restaurant types. Based on the above considerations, we will evaluate the types of restaurants suitable for opening in each region.

2. Data description

In order to establish a recommendation model, the following data sets and information need to be considered for analysis;

1. Using BeautifulSoup scraps Wikipedia website to extract information about 33 London administrative districts, which are divided according to the government.

2. Restaurants available in a given neighborhood and borough of London information be obtained by Foursquare API.
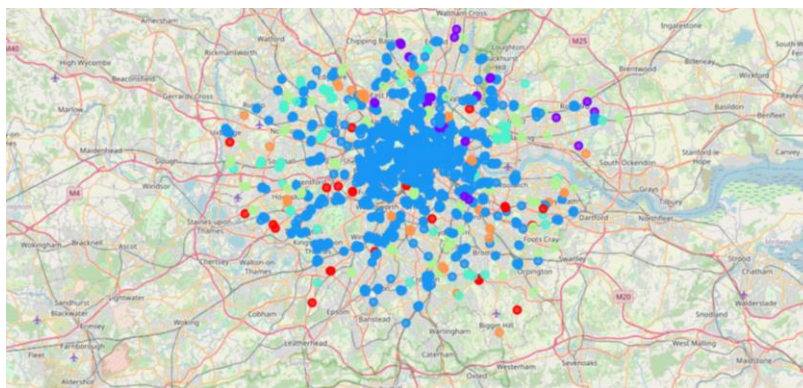
3. Methodology

The London city be divided into 33 boroughs and 527 neighborhoods.

All red markers on the map above are for communities. Obviously, cities are more crowded in the city center and more common in the suburbs.

The k-means algorithm be used to divided the different restaurants into 5 different groups, and show as below:

There are 5 different groups marked by 5 different colors, and each point is a restaurant. Now, we can see that the blue group is the most common one.

4. Result

This table shows that the blue point area is mostly Indian restaurants and fast food restaurants.

	Neighborhood	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
86	Aldgate	Indian Restaurant	Thai Restaurant	Restaurant	Middle Eastern Restaurant	English Restaurant	Vietnamese Restaurant	Japanese Restaurant	Asian Restaurant	Italian Restaurant	Sushi Restaurant
145	Aldwych	Restaurant	French Restaurant	Korean Restaurant	Sushi Restaurant	Italian Restaurant	Indian Restaurant	Lebanese Restaurant	Fast Food Restaurant	English Restaurant	Seafood Restaurant
262	Angel	Restaurant	Vietnamese Restaurant	Vegetarian / Vegan Restaurant	Mediterranean Restaurant	Korean Restaurant	Austrian Restaurant	Caucasian Restaurant	French Restaurant	Hunan Restaurant	Indian Restaurant
330	Archway	Italian Restaurant	Indian Restaurant	Japanese Restaurant	Asian Restaurant	Fast Food Restaurant	Kebab Restaurant	Vegetarian / Vegan Restaurant	Indonesian Restaurant	Israeli Restaurant	Hunan Restaurant
384	Balham	Indian Restaurant	Italian Restaurant	Restaurant	Fast Food Restaurant	Moroccan Restaurant	Portuguese Restaurant	Hunan Restaurant	Himalayan Restaurant	Halal Restaurant	Greek Restaurant
...	...	...	...	...	...	...	...	...	...	...	...
11825	Wimbledon	Sushi Restaurant	Restaurant	Italian Restaurant	Indian Restaurant	Brazilian Restaurant	Asian Restaurant	English Restaurant	Portuguese Restaurant	Argentinian Restaurant	Thai Restaurant
11906	Winchmore Hill	Middle Eastern Restaurant	Yoshoku Restaurant	Greek Restaurant	Ethiopian Restaurant	Falafel Restaurant	Fast Food Restaurant	Filipino Restaurant	French Restaurant	German Restaurant	Gluten-free Restaurant
11912	Wood Green	Fast Food Restaurant	Turkish Restaurant	Mediterranean Restaurant	Portuguese Restaurant	Restaurant	Indian Restaurant	Chinese Restaurant	German Restaurant	English Restaurant	Ethiopian Restaurant
11953	Woodford	Restaurant	Italian Restaurant	Turkish Restaurant	Indian Restaurant	Chinese Restaurant	Gluten-free Restaurant	Ethiopian Restaurant	Falafel Restaurant	Fast Food Restaurant	Filipino Restaurant
12009	Woolwich	Fast Food Restaurant	Asian Restaurant	Portuguese Restaurant	Vietnamese Restaurant	African Restaurant	Italian Restaurant	Thai Restaurant	Gluten-free Restaurant	English Restaurant	Ethiopian Restaurant

Therefore, the Indian restaurant and fast restaurant are the most popular restaurant in these areas. We can open these two types of restaurant in here because the taste here prefers these two types of restaurants.

5. Conclusion

London city is a very diverse city, and there have many cuisions. The k-mean can really help us to identify the different group of types of restaurant. We can see that the blue dots have very similar taste, and it is mean that the most people in these areas have the similar teste. Therefore, we can open the Indian restaurant ans fast restaurant in those area, and they will suitable peoples in these areas.