

Optimal Location for a Restaurant with European Cuisine in Finchley

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Rationale

- The restaurant business is very important for the UK hospitality sector
- But the business is facing strong headwinds:
 - The risk of a global recession
 - Uncertainty about Brexit
 - The spread of coronavirus
- Therefore, it is very important for a starting entrepreneur to pick a right location and relatively quickly establish a permanent client base

My task

- My client is looking to open a restaurant in Finchley, a thriving area in North London
- Despite the fact that white people constitute over 60% of the area's population (latest Census data), there does not seem to be many restaurants with European cuisine
- My task is to recommend a place
- Target audience: Finchley people and guests who will enjoy high-quality European food for reasonable prices

Initial Dataframe

	Neighbourhood	Borough	Latitude	Longitude
0	East Finchley	Barnet	51.5873	-0.1650
1	Finchley Central	Barnet	51.6010	-0.1924
2	West Finchley	Barnet	51.6092	-0.1887
3	North Finchley	Barnet	51.6131	-0.1769
4	Woodside Park	Barnet	51.6182	-0.1856

Source: Wiki OpenStreetMap, Wikipedia

Methodology

- Create a Folium map with all Finchley neighbourhoods
- Use the explore function and Foursquare APIs to get 100 venues in the first neighbourhood - East Finchley – within a radius of 1000 meters
- Define the function that extracts a venue's category, structure the json file into a pandas dataframe:

	name	categories	lat	lng
0	Campbell & Syme	Coffee Shop	51.589617	-0.163208
1	The Phoenix Cinema	Movie Theater	51.588592	-0.163929
2	Dan & DeCarlo	Café	51.587482	-0.164090
3	The Bald Faced Stag	Pub	51.586177	-0.164845
4	Majjo's	Indian Restaurant	51.589515	-0.163581

Methodology (continues)

- Define the getNearbyVenues function to repeat the process for all the neighbourhoods
- The resulting dataframe consists of 219 venues with 62 unique categories
- Perform one-hot encoding , group the venues and create a new pandas dataframe:

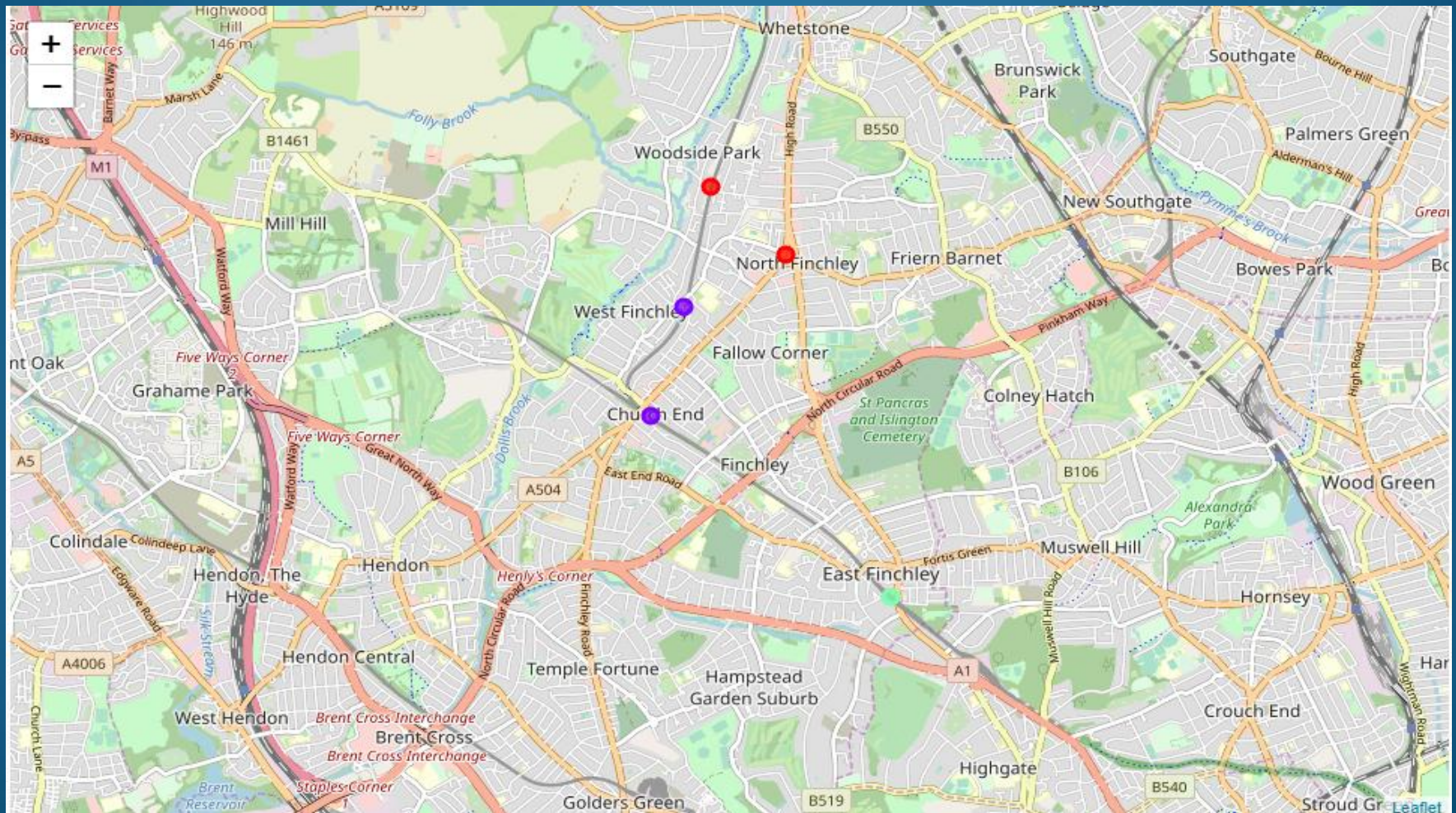
	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	East Finchley	Pub	Park	Café	Coffee Shop	Indian Restaurant	Italian Restaurant	Pizza Place	Japanese Restaurant	Deli / Bodega	Mediterranean Restaurant
1	Finchley Central	Café	Turkish Restaurant	Coffee Shop	Supermarket	Indian Restaurant	Park	Japanese Restaurant	Fast Food Restaurant	Gym / Fitness Center	Pizza Place
2	North Finchley	Coffee Shop	Café	Grocery Store	Supermarket	Turkish Restaurant	Gym / Fitness Center	Portuguese Restaurant	Pharmacy	Bookstore	Sushi Restaurant
3	West Finchley	Café	Supermarket	Fast Food Restaurant	Vietnamese Restaurant	Bakery	Japanese Restaurant	Italian Restaurant	Indian Restaurant	Chinese Restaurant	Coffee Shop
4	Woodside Park	Coffee Shop	Café	Supermarket	Fast Food Restaurant	Bakery	Bookstore	Pharmacy	Grocery Store	Vietnamese Restaurant	Gift Shop

Clustering

- Run k-means to cluster the neighbourhoods into three clusters
- Create a new dataframe that includes the clusters as well as the top ten venues for each neighbourhood

	Neighbourhood	Borough	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
0	East Finchley	Barnet	51.5873	-0.1650	2	Pub	Park	Café	Coffee Shop	Indian Restaurant	Italian Restaurant	Pizza Place	Japanese Restaurant
1	Finchley Central	Barnet	51.6010	-0.1924	1	Café	Turkish Restaurant	Coffee Shop	Supermarket	Indian Restaurant	Park	Japanese Restaurant	Fast Food Restaurant
2	West Finchley	Barnet	51.6092	-0.1887	1	Café	Supermarket	Fast Food Restaurant	Vietnamese Restaurant	Bakery	Japanese Restaurant	Italian Restaurant	Indian Restaurant
3	North Finchley	Barnet	51.6131	-0.1769	0	Coffee Shop	Café	Grocery Store	Supermarket	Turkish Restaurant	Gym / Fitness Center	Portuguese Restaurant	Pharmacy
4	Woodside Park	Barnet	51.6182	-0.1856	0	Coffee Shop	Café	Supermarket	Fast Food Restaurant	Bakery	Bookstore	Pharmacy	Grocery Store

Visualisation of clusters



Results of cluster analysis

- Coffee shops and cafes dominate in the northern part of Finchley
- Cafes are also common in Finchley Central and West Finchley, pubs – in East Finchley
- **No European restaurant is present in Finchley Central or Woodside Park among the top ten most common venues**
- Therefore, I would recommend to open such a restaurant in these areas