The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

Determining which London  
neighbourhood and what type  
of restaurant to open in London

# Business problem

- ▶ We want to determine the ideal London neighbourhood to open up a restaurant
- ▶ We want to determine what type of restaurant to open that will be the most profitable
- ▶ This analysis is targeted at stakeholders wanting to open a restaurant.

## Why London?

- ▶ One of the most popular cities in the world
- ▶ Welcomes millions of tourists each year
- ▶ The number of people entering and exiting London each day boost businesses
- ▶ Therefore ideal to open up a restaurant

# Data

- The analysis is based on 10 London neighbourhoods:

- Mayfair
- Shoreditch
- Chelsea
- Greenwich
- Southwark
- Brixton
- Notting Hill
- Camden
- Soho
- Kensington

- Coordinates of each neighbourhood obtained using geocoder:

	Neighbourhood	Latitude	Longitude
0	Mayfair	51.511087	-0.147058
1	Shoreditch	51.526669	-0.079893
2	Chelsea	51.487542	-0.168220
3	Greenwich	51.482084	-0.004542
4	Southwark	51.502922	-0.103458
5	Brixton	51.456804	-0.116796
6	Notting Hill	51.510999	-0.205527
7	Camden	51.542305	-0.139560
8	Soho	51.513163	-0.131175
9	Kensington	51.498995	-0.199123

- ▶ We would prefer locations as close to London center as possible
- ▶ Distance of each neighbourhood from London center was calculated using the **haversine formula**
- ▶ One can see **Greenwich is the furthest** from London center and **Soho is the closest**

### Haversine Formula:

$$a = \sin^2\left(\varphi B - \frac{\varphi A}{2}\right) + \cos(\varphi A) * \cos(\varphi B) * \sin^2\left(\frac{\lambda A}{2}\right)$$

$$c = 2 * \operatorname{atan2}(\sqrt{a}, \sqrt{1-a})$$

$$d = R * c$$

Where:

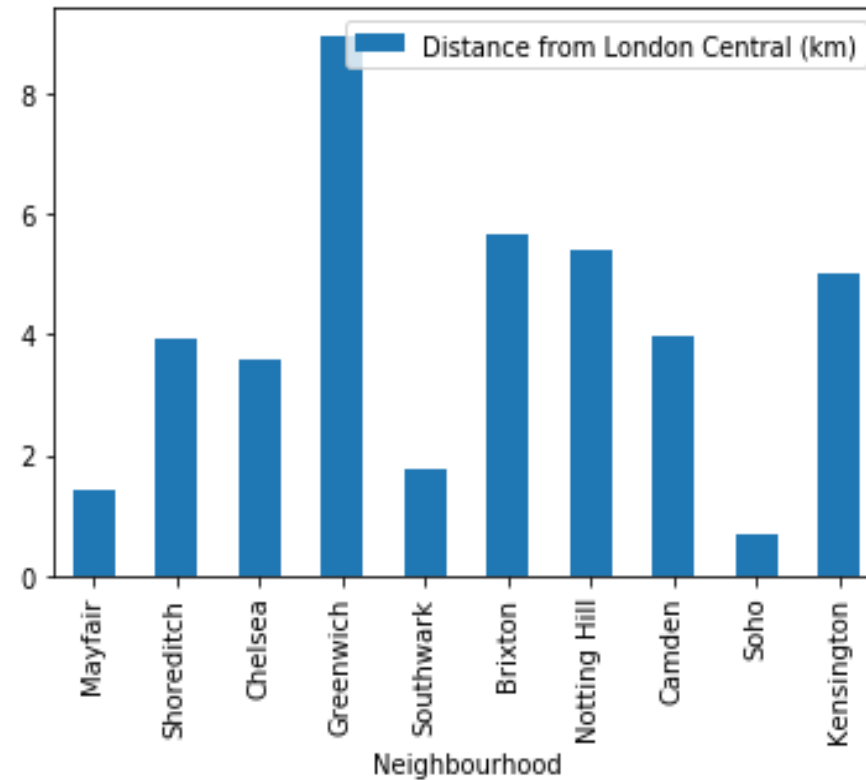
$\varphi$  = latitude

$\lambda$  = longitude

$R$  = radius of the earth = 6371km

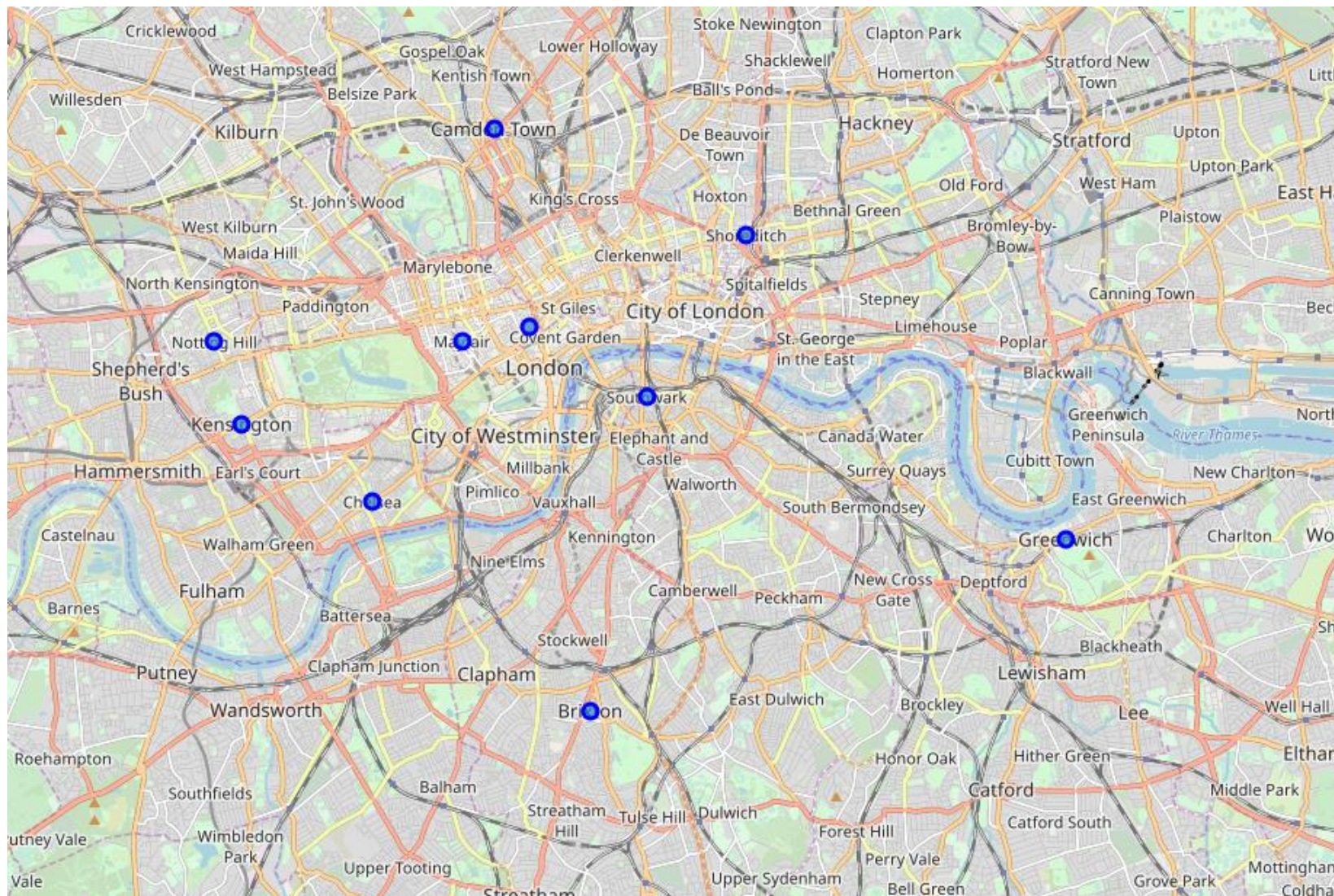
$A$  = 1st location

$B$  = 2nd location



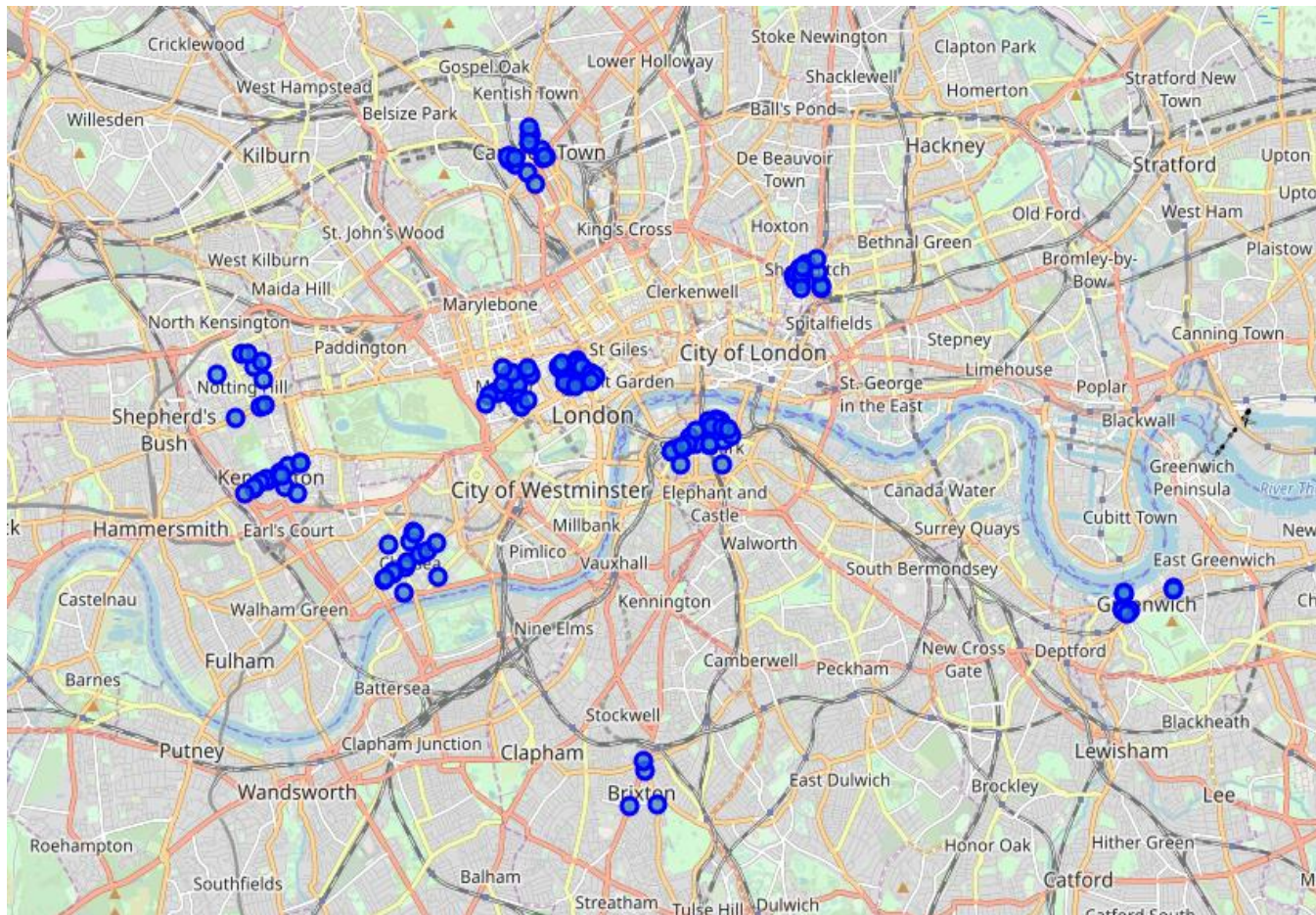


- # Coordinates





- ▶ **Foursquare API** was used to find venue data within a radius of 500m from each neighbourhood
- ▶ Total number of venues surrounding all neighbourhoods = 721 venues
- ▶ Narrow the search down to **restaurants** = **161 venues**
- ▶ The restaurant surrounding each neighbourhood is shown below in a folium map:



- Find the top 10 most common restaurants of each neighbourhood
- **Italian restaurant** is the most common type of restaurant in 7 out of the 10 neighbourhoods we are analyzing

	Neighbourhood	1st Most Common Restaurant	2nd Most Common Restaurant	3rd Most Common Restaurant	4th Most Common Restaurant	5th Most Common Restaurant	6th Most Common Restaurant	7th Most Common Restaurant	8th Most Common Restaurant	9th Most Common Restaurant	10th Most Common Restaurant
0	Brixton	Tapas Restaurant	Indian Restaurant	Caribbean Restaurant	Modern European Restaurant	Vietnamese Restaurant	English Restaurant	Japanese Curry Restaurant	Italian Restaurant	Israeli Restaurant	French Restaurant
1	Camden	Italian Restaurant	Vegetarian / Vegan Restaurant	Caribbean Restaurant	Vietnamese Restaurant	Ramen Restaurant	American Restaurant	Asian Restaurant	French Restaurant	Kebab Restaurant	Malay Restaurant
2	Chelsea	English Restaurant	Japanese Restaurant	Italian Restaurant	French Restaurant	Sushi Restaurant	Middle Eastern Restaurant	Vietnamese Restaurant	American Restaurant	Cantonese Restaurant	Caribbean Restaurant
3	Greenwich	Italian Restaurant	Japanese Restaurant	Portuguese Restaurant	Argentinian Restaurant	Sushi Restaurant	French Restaurant	English Restaurant	Japanese Curry Restaurant	Israeli Restaurant	Indian Restaurant
4	Kensington	Italian Restaurant	Modern European Restaurant	Portuguese Restaurant	Filipino Restaurant	Mediterranean Restaurant	Fast Food Restaurant	Middle Eastern Restaurant	Persian Restaurant	English Restaurant	Japanese Restaurant
5	Mayfair	Indian Restaurant	French Restaurant	Japanese Restaurant	Italian Restaurant	Cantonese Restaurant	Seafood Restaurant	Modern European Restaurant	Chinese Restaurant	South American Restaurant	English Restaurant
6	Notting Hill	Italian Restaurant	Latin American Restaurant	Fast Food Restaurant	Japanese Restaurant	Australian Restaurant	Caribbean Restaurant	Indian Restaurant	Japanese Curry Restaurant	Israeli Restaurant	French Restaurant
7	Shoreditch	Italian Restaurant	Vietnamese Restaurant	Peruvian Restaurant	Japanese Restaurant	Asian Restaurant	English Restaurant	Indian Restaurant	Vegetarian / Vegan Restaurant	Modern European Restaurant	Korean Restaurant
8	Soho	Italian Restaurant	Seafood Restaurant	Japanese Restaurant	Sushi Restaurant	Vietnamese Restaurant	French Restaurant	Israeli Restaurant	Japanese Curry Restaurant	English Restaurant	Dim Sum Restaurant
9	Southwark	Italian Restaurant	Chinese Restaurant	Turkish Restaurant	English Restaurant	Ramen Restaurant	Vietnamese Restaurant	Modern European Restaurant	Argentinian Restaurant	Asian Restaurant	Eastern European Restaurant

- It was chosen to open up an **Italian restaurant** as they are the most common type of restaurant in the majority of the neighbourhoods we are comparing.
- We want to find the neighbourhoods with the **least number of Italian restaurants in the vicinity**

	Neighbourhood	No. Italian Restaurants	Venue
0	Mayfair	2	Delfino, C London
1	Shoreditch	4	Popolo, Via Emilia, Gloria by Big Mamma, Botte...
2	Notting Hill	3	Osteria Basilico, NEGOZIO CLASSICA, Chucs Rest...
3	Camden	3	Casa Tua, Domo94 Italian Restaurant, Anima e C...
4	Southwark	4	Macellaio RC, Capricci, Marco's New York Itali...
5	Soho	4	Vapiano, Lina Stores, Bocca Di Lupo, Sartori
6	Chelsea	3	La Mia Mamma, Made in Italy, Buona Sera at the...
7	Greenwich	2	Franco Manca, Zizzi
8	Kensington	3	Pizzicotto, Il Portico, La Piccola Dely

- **Mayfair** and **Greenwich** have the **lowest number of Italian restaurants** within a 500m radius and so these two neighbourhoods are filtered further



- ▶ Filter Mayfair and Greenwich further as they have the lowest number of Italian restaurants
- ▶ Use Foursquare API to find ratings and tips on these 4 restaurants
- ▶ The lower the ratings of the restaurants results in a better prospect of opening a successful restaurant there

Neighbourhood	Italian Restaurant	Rating	Number of Tips	Tip
Mayfair	Delfino	8.7	92	"Upstairs, delfino do the best pizzas around. Pure and simple. Or you can have traditional Italian. But why would you? The staff are brilliant, just the right amount of upbeat buzz."
Mayfair	C London	8.1	103	"All the dishes we've tried were soooo good and the portions are more than enough! I recommend the gnocchi as a main dish and the parmigiana as an appetizer"
Greenwich	Franco Manca	8.3	0	
Greenwich	Zizzi	6.5	11	"The table by the river is best. Suggest Calzone di pollo and tiramisu! Nice place and good food for the price"

- ▶ Even though Zizzi has the lowest rating, it has a complementary review

# Conclusions

- ▶ The deciding factor between Greenwich and Mayfair was the **distance from city central**
- ▶ Greenwich distance from London center = 8.9km
- ▶ Mayfair distance from London center = 1.4km
- ▶ Therefore **Mayfair** is the most ideal London neighbourhood to open an Italian restaurant out of the 10 neighbourhood's that were compared

## Future Recommendations

- ▶ Radius >500m when obtaining venue data from Foursquare
- ▶ More than 10 neighbourhoods could have been compared
- ▶ More factors can be taken into consideration for future analysis including: noise levels, crime rate and vicinity to public transportation