PREDICTING THE BEST LOCATION TO OPEN A RESTAURANT IN LONDON

Deciding location for a new restaurant is very important

- Starting a restaurant business is no less than a herculean task.
- Choosing a happening place could help restaurateurs keep an upper hand in the market. A happening place would grant you with happening consumers.
- In almost every case the path to entrepreneurial success starts with choosing the right location for their new restaurant.

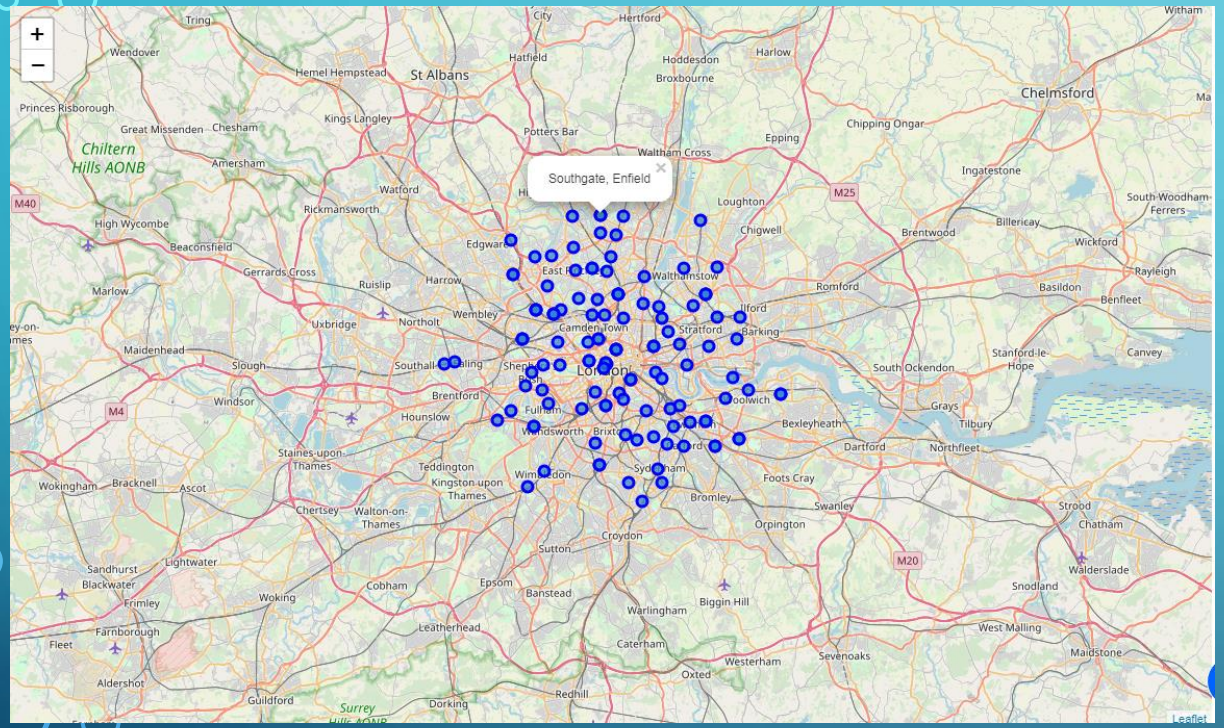
Data Acquisition

- For this project we would primarily use Foursquare location data
- We will use Foursquare location data, for example, for getting popular venues like train station, gym, park, hotels, etc. for the neighbourhood we are exploring in London.
- We will also use location data present in 'geonames.org' website to extract coordinates of diverse neighbourhoods in London.

Data Pre-processing

- To read the data of neighbourhoods into data frame ‘read_html’ method from Pandas library was used.
- The missing values in the form of NaN were handled by removing the rows that contained NaN
- Coordinates dataframe was then joined to neighbourhood dataframe to create a final dataframe for neighbourhood along with latitude and longitude values

Exploratory Data Analysis



- Here we performed exploratory analysis leveraging Foursquare location platform data.
- The column of interest was venue.category which gave information on what type of venue was nearby the neighbourhood like Grocery store, Playground, Park, Theatre, Café, Train station, etc

K-means clustering algorithm

- Task was to cluster the neighbourhoods so that similar neighbourhoods are identified. For this we used K-means clustering algorithm.
- K-means clustering algorithm basically calculates the distance between the entities based on the feature set
- In our case the feature set was nearby venues to a neighbourhood. So first this data was converted into numerical data using one hot encoding technique
- Then finally the clusters were calculated.

Results

- The activities of complementary businesses actually drive diners to you.
- Simply being in close proximity to them can increase your foot traffic.
- Complementary businesses include but aren't limited to: stadiums, theatres, business districts, transportation hubs, and malls.
- Based on this characteristics below cluster is our recommendation

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
Brunswick Park,Friern Barnet,New Southgate	Bus Stop	Park	Beer Bar	Metro Station	Pool
Canning Town,Custom House,North Woolwich,Silve...	Airport Service	Sandwich Place	Duty-free Shop	Italian Restaurant	Theater
Charlton	Bus Stop	Grocery Store	IT Services	Thai Restaurant	Pet Store
Forest Gate	Grocery Store	Train Station	Pub	Bakery	Café
Seven Sisters,Tottenham Green,West Green	Coffee Shop	Pub	Bus Stop	Café	Train Station

Conclusion

- In this project we explored the neighbourhoods of London with the help of location data from Foursquare.
- We found the popular venues in the vicinity of these neighbourhood.
- Using this information we then clustered the neighbourhoods and found unique characteristics for each cluster.
- We then found the cluster best suitable to start a Restaurant based on market intelligence.